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National Capacity Self-Assessment in Biodiversity, Climate Change and Desertification

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Abbreviations and Acronyms

AME: Asociación de Municipalidades del Ecuador (Association of Ecuadorian Municipalities)
AN-MDL: Autoridad Nacional del Mecanismo de Desarrollo Limpio (National Authority of the Mechanism of Clean Development)
ARD: ARD Inc.
BID: Banco Interamericano de Desarrollo (Interamerican Development Bank)
CAAM: Comisión Asesora Ambiental para la Presidencia de la República (Environmental Advisory Commission for the President) (+)
CAMAREN: Consorcio de Capacitación para el Manejo de Recursos Naturales (Consortium for Training in Natural Resources Management)
CAN: Comunidad Andina de Naciones (Andean Community of Nations)
CARE: Cooperative for Assistance and Relief Everywhere, Inc. (Cooperativa para la Asistencia y Rehabilitación en todo lugar)
CBD: Convenio de Biodiversidad (Convention on Biodiversity)
CEA: Coordinadora Ecuatoriana de Agroecología (Ecuadorian Agro-ecology Network)
CEDENMA: Comité Ecuatoriano para la Conservación de la Naturaleza y el Medio Ambiente (Ecuadorian Committee for Conservation of Nature and Environment)
CEMADEC: Centro Manabita de Desarrollo Comunitario (Communitary Development Center for Manabi)
CESA: Central de Servicios Agrícolas del Ecuador (Ecuadorian Center for Agricultural Services)
CFN: Corporación Financiera Nacional (National Finance Corporation)
CI: Conservación Internacional (Conservation International)
CIAM: Centro de Información Ambiental (Environmental Information Center)
CINFA: Centro de Información Agropecuaria (Center for Agricultural and Livestock Information)
CISP: Comitato Internazionale per lo Sviluppo dei Popoli (Comité Internacional para el Desarrollo de los pueblos) (International Comité for Development of People)
CMNUCC: Convención Marco de las Naciones Unidas para el Cambio Climático (UNFCCC-United Nations Framework Convention on Climate Change)
CNC: Comité Nacional del Clima (National Climate Committee)
CNDS: Consejo Nacional de Desarrollo Sostenible (National Council for Sustainable Development)
CNRH: Consejo Nacional de Recursos Hídricos (National Council for Hydric Resources)
CNULD: Convención de las Naciones Unidas para la Lucha contra la Desertification (UNCCD-United Nations Convention to Combat Desertification)
CNUMAD: Conferencia de las Naciones Unidas Sobre el Medio Ambiente y el Desarrollo (UNCED) United Nations Conference on the Environment and Development)
CODELORO: Corporación para el Desarrollo Regional de El Oro (Corporation for the Regional Development of El Oro)
CONAJUPARE: Consejo Nacional de Juntas Parroquiales Rurales del Ecuador (National Ecuadorian Council for Rural Parrish Boards)
CONAM: Consejo Nacional de Modernización (National Modernization Council)
CONCOPE: Consorcio de Consejos Provinciales del Ecuador (Consortium of Provincial Councils of Ecuador)
CONELEC: Consejo Nacional de Electrificación (National Power Council)
CONESUP: Consejo Nacional de Educación Superior (National Council for Higher Education)
COPEGACH: Corporación Permanente de Gestión Ambiental de Chimborazo (Permanent Corporation of Chimborazo for Environmental Management)

CORDELIM: Corporación de Promoción del Mecanismo de Desarrollo Limpio (Clean Development Mechanism Promotion Corporation)

CORPEI: Corporación para la Promoción de las Exportaciones (Exports Promotion Corporation)

CREA: Centro de Reconversión Económica del Austro (Economic Reconversion Center of the South)

CRM: Centro de Rehabilitación de Manabí (Rehabilitation Center of Manabi)

DEA: Dirección de Energías Alternativas (Alternative Energy Department)

DIGAL: Dirección de Gestión Ambiental Local (Local Environmental Management Department)

DNF: Dirección Nacional Forestal (National Forestry Department)

EADS: Estrategia Ambiental para el Desarrollo Sustentable (Environmental Strategy for Sustainable Development)

ECORAE: Instituto de Ecodesarrollo de la Región Amazónica Ecuatoriana (Eco-development Institute of the Ecuadorian Amazon Region)

EIPAS-VECO: Espacio de Incidencia Política en Agricultura Sustentable (Political Incidence Forum on Sustainable Agriculture)

ENRP: Estrategia Nacional de Reducción de la Pobreza (Poverty Reduction Strategy Paper)

EPA: Environmental Protection Agency (Agencia de Protección Ambiental)

ESPOCH: Escuela Politécnica del Chimborazo (Polytechnic School of Chimborazo)

FADSE: Red Ambiental Juvenil (environmental Youth Network)

FAO: Food and Agriculture Organization (Organización para la Alimentación y la Agricultura)

FOMRENA: Fundación Fondo para el Manejo de los Recursos Naturales (Natural Resource Management Fund Foundation)

FOSEFOR: Fondo de Semillas Forestales (Forestry Seed Fund)

FSC: Forests Stewardship Council

FUNDACYT: Fundación Nacional de Ciencia y Tecnología (National Science and Technology Foundation)

GEF/FMAM: Global Environment Facility (Fondo Medio Ambiental Mundial)

GEI: Gases de Efecto Invernadero (Green House Gases)

GNTB: Grupo Nacional de Trabajo en Biodiversidad (Nacional Workgroup in Biodiversity)

GTP: Grupo de Trabajo en Páramos (Paramo Workgroup)

GTZ: Deutsche Gesellschaft für Technische Zusammenarbeit (Agencia Alemana de Cooperación Técnica, German Agency of Technical Cooperation)

IEDECA: Instituto Ecuatoriano de Desarrollo Campesino (Ecuadorian Institute for Rural Development)

IICA: Instituto Inter Americano de Cooperación Agrícola (Interamerican Cooperation Institute for Agriculture)

INDA: Instituto Nacional de Desarrollo Agrario (National Agrarian Development Institute)

INE: Instituto Nacional de Energía (National Energy Institute) (+)

INEFAN: Instituto Nacional Forestal y de Áreas Naturales y Vida Silvestre (Institute for National Forests, Natural Areas and Wildlife)

INGALA: Instituto Nacional Galápagos (Galápagos National Institute)

INIAP: Instituto Nacional Autónomo de investigaciones Agropecuarias (National Institute for Agricultural Research)

KfW: Kreditanstalt für Wiederaufbau (Gran Banco de Fomento Alemán, German Bank)

MAE: Ministerio de Ambiente del Ecuador (Ministry of the Environment of Ecuador)

MAG: Ministerio de Agricultura y Ganadería (Ministry of Agriculture and Livestock)

MDL: Mecanismo de Desarrollo Limpio (Clean Development Mechanism)

MEM: Ministerio de Energía y Minas (Ministry of Energy and Mines)

MIDUVI: Ministerio de Desarrollo Urbano y Vivienda (Ministry of Urban Development and Housing)

MINTUR: Ministerio de Turismo (Ministry of Tourism)
 MSP: Ministerio de Salud Pública (Ministry of Public Health)
 OECD: Organización de Entidades de Cooperación al Desarrollo (Organisation for Economic Co-operation and Development)
 OGM: Organismo Genéticamente Modificado (Genetic Modified Organism)
 OGs: Organizaciones Gubernamentales (Governmental Organizations)
 OIT: Organización Internacional del Trabajo (International Work Organization)
 ONGs: Organizaciones No Gubernamentales (Non-Governmental Organizations)
 OTCA: Organización del Tratado de Cooperación Amazónica (Amazon Cooperation Treaty Organization)
 OVM: Organismo Vivo Modificado (Living Modified Organism)
 PAND: Plan de Acción Nacional de Lucha contra la Desertificación y la Sequía (National Action Plan to Combat Desertification and Drought)
 PATRA: Proyecto de Apoyo Técnico a la Gestión Ambiental Local (Local Environmental Management Technical Support Project) (+)
 PENB: Política y Estrategia Nacional de Biodiversidad (National Biodiversity Policy and Strategy)
 PIB/FIB: Panel Intergubernamental de Bosques / Foro Intergubernamental de Bosques (Intergovernmental Forests Panel / Intergovernmental Forests Forum)
 PIGSA: Plan Integral de Gestión Socio Ambiental (Integral Socio-environmental Management Plan)
 PMRC: Programa de Manejo de Recursos Costeros (Coastal Resource Management Program)
 PNFR: Plan Nacional de Forestación y Reforestación (National Forestation and Reforestation Plan)
 PNUD - UNDP: Programa de las Naciones Unidas para el Desarrollo (UNDP, United Nations Development Programme)
 PREDESUR: Programa de Desarrollo del Sur del Ecuador (Development Program for the South)
 PRODEPINE: Proyecto de Desarrollo de los Pueblos Indígenas y Negros del Ecuador (Development Project for Indigenous and Black Peoples of Ecuador)
 PROLOCAL: Proyecto para el Desarrollo Local (Local Development Project)
 PROMACH: Programa de Manejo de Cuencas Hidrográficas (Watershed Management Program)
 PROMAS: Programa de Manejo de Agua y Suelo (Water and Land Management Program)
 PROMPAY: Programa de Profesionalización de Promotores y Promotoras Agroforestales (Agro-forestry Promoter Certification Program)
 PRONORTE: Programa de Desarrollo del Norte (Development Program of the North)
 PUCE: Pontificia Universidad Católica del Ecuador (Pontifical Catholic University of Ecuador)
 REMACH: Reserva Ecológica Mache – Chindul (Mache – Chindul Ecological Reserve)
 RISO: Risoe Center (Denmark)
 SENPLADES: Secretaría Nacional de Planificación para el Desarrollo (National Development Planning Secretariat)
 SIG: Sistema de Información Geográfica (Geographical Information System)
 SIGAGRO: Sistema de Información Geográfica Agraria (Geographical Information System in Agriculture)
 SNAP: Sistema Nacional de Áreas Protegidas (National Protected Areas System)
 SNV: Servicio Holandés de Cooperación al Desarrollo (Dutch Service of Development Cooperation)
 SPIP: Subsecretaría de Programación de la Inversión Pública (Public Investment Programming Under Secretariat)
 SWAP: Programa de Enfoque Sectorial Amplio (Sectoral Wide Approach Programme)
 TNC: The Nature Conservancy
 UCE: Universidad Central del Ecuador (Central University of Ecuador)

UCSG: Universidad Católica Santiago de Guayaquil (Santiago de Guayaquil Catholic University)

UDENOR: Unidad de Desarrollo del Norte (Development Unit of the North)

UGAM: Unidad de Gestión Ambiental Municipal (Municipal Environmental Management Unit)

ULEAM: Universidad Laica Eloy Alfaro de Manta (Eloy Alfaro Secular University of Manta)

UNC: Universidad Estatal de Cuenca (Cuenca National University)

UNEP: United Nations Environment Programme (Programa de las Naciones Unidas para el Medio Ambiente)

UNITAR: United Nations Institute for Training and Research (Instituto de las Naciones Unidas para la Investigación y la Capacitación)

UNL: Universidad Nacional de Loja (Loja National University)

UOCIC: Unión de Organizaciones Campesinas Intercomunales (Inter-communal Rural Organizations Union)

USFQ: Universidad San Francisco de Quito (University of San Francisco de Quito)

UTN: Universidad Técnica del Norte (Technical Northern University)

UTPL: Universidad Técnica Particular de Loja (Private Technical University of Loja)

VNU: Voluntarios de Naciones Unidas (United Nations Volunteers)

WWF: World Wildlife Fund (Fondo Mundial para la Naturaleza)

ZAM: Zonas de Amortiguamiento (Buffer Zones)

(+) No present institutions

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-The coordination team-

Executive summary

The National Capacities Self-assessment Project – NCSA Ecuador, has supported a country identification of the limiting factors regarding capacities and needs in order to face the loss of biodiversity and forests, climate change and desertification, by processing national priorities and inter-sectoral opportunities.

The project focus considered the following context:

- Ecuador is a country that has paid little political and social attention, and dedicated low public investment, to the environmental issue and to sustainable development.
- The environmental issue has been addressed, albeit in a sectoral manner, and has not achieved articulating itself in a sustained manner around social developmental actions and the fight against poverty.
- There is no concern for the environment on behalf of the majority of the population or the political classes.

This creates a framework in which the concept of *sustainable development* has still not been digested and even worse been put into practice on behalf of the political decision-makers.

Stemming from this background, the NCSA Ecuador has sought a focus that links capacity building needs to national priorities regarding factors of land degradation, loss of biodiversity and climate change. Said factors limit the availability, access and control of the natural capital on which all productive processes in Ecuador are based upon, and which represent threats to food safety and sovereignty, to the continuous provision of water, to agro-exports and to tourism.

Within this framework, the NCSA Ecuador not only considered the environmental sector but also the productive and social ones, since the loss of natural capital implies a significant reduction in productivity and competitiveness, both of which are intimately linked to poverty, along with the ensuing problems of social marginalization and violence.

Through this focus, and based on the analysis of sectoral, extra-sectoral and trans-sectoral documents, as well as on wide national and regional consultations, the Self-assessment identified priority issues on which capacity building must work toward the improvement of environmental management. These are as follows:

In Biodiversity:

1. Fragile ecosystems and forests, with an emphasis on moorlands, wetlands, mangroves, coastal-marine ecosystems and dry forests, in light of the fact they comprise relevant ecosystems for the country and represent essential pillars of the biological wealth Ecuador possesses.
2. Strengthening of the National System of Protected Areas and the protection of endangered species, as a strategy geared toward preserving biological diversity.

3. Sustainable agriculture and rehabilitation of degraded areas, essentially pointing toward the need of guaranteeing food safety and sovereignty of the Ecuadorian population.
4. Biotrade, conceived as an opportunity for Ecuador to capitalize on its biodiversity for development and economic growth, especially regarding eco-tourism.
5. Bio-safety and genetic resources, considered under the focus of protection of the biodiversity, of the principle of precaution and of defense of the ancestral know-how.

In Climate Change:

6. Lack of a Sustainable National Agenda regarding climate change that would guide efforts in order to confront the causes and effects of climate change within the national sphere.
7. Seasonal and Annual Agro-climatic Forecasts
8. Training, diffusion and use of Agro-climatic Zoning.
9. Forestation of ready and degraded land.
10. Land Planning
11. Management of conservation and Buffer Zones.
12. Existence of important barriers in the use of renewable energy in order to reduce emissions of Green House Gases

In Desertification:

13. Establishment of a specialization program for human talent in order to build capacities in activities surrounding the fight against desertification.
14. Establishment of an information system in desertification along with indicators and a validated baseline, socialized and applied at the national level.
15. Support of network strengthening, forums for debate and workgroups in order to systematize and socialize successful experiences in the use of adequate technologies in sustainable agricultural production and management of natural resources.
16. Design and implementation of a strategy that would pave the way for the implementation of the PAND (National Action Plan to Combat Desertification and Drought)
17. Support of partnering initiatives among the MAE, CONCOPE and AME regarding transfer of environmental competencies to the provincial councils and municipalities.

In addition, cross-cutting issues and synergies among the three thematic spheres were identified, resulting in the knowledge that capacity building has as priority, the following cross-sectional issues:

18. Environmental governance, strengthening of authorities and institutional coordination;
19. Processes of decentralization and deconcentration in natural resource and environmental management (decentralization).
20. Public awareness and participation.
21. Individual talents at the technical and scientific levels; experiences applied to practice; and, Study Programs and University Initiatives at the national level.
22. Availability of technical information regarding the environmental reality of the country (information and research).

23. International Funding and Cooperation Mechanisms.
24. Mobilization of Internal Financial Resources.

During a joint effort embarked upon with the technical personnel of the MAE, twelve issues were qualified as high priority. In order to face them, following project idea-profiles were identified and characterized:

1. Systematization and capitalization of best management practices in biodiversity and support to priority research.
2. Training and information of citizenry in issues in Biotrade and Bio-safety.
3. Strengthening of local environmental management processes and forums of citizen participation.
4. Preparation and implementation of a National Agenda on Climate Change.
5. Addressing Restrictions in Capacity Building for Seasonal and Annual Agro-climatic Forecasts.
6. Addressing restrictions in capacity building for forestation and reforestation in Ecuador.
7. National training plan in the fight against desertification.
8. Structuring of a system of desertification indicators for the country.
9. Development of a strategy for financing and implementation of the PAND.
10. Citizen participation in public policies for sustainable development.
11. Information management for environmental management.
12. Strengthening of an integral environmental management for municipalities.

The identification of capacity restrictions, as well as opportunities for addressing such restrictions, was performed at three levels: individual, institutional and systemic.

The capacity restrictions for the thematic area of Biodiversity can be summarized in that:

- The whole of Ecuadorian society and its institutions still do not consider biodiversity as a strategic resource able to contribute to the development of the country.
- Biosafety and Biotrade generally have deserved lesser attention than the remaining ones due to the fact that it is only recently that they began gathering strength in the global scenario. However, the fact that the lesser attention granted to Biosafety and Biotrade undoubtedly responds to the fact that both comprise polemic aspects difficult to address, must not be disregarded.
- The five issues are known for having very bulky political and legal frameworks. Nonetheless, they still present voids. Worthy of highlighting is the fact that the PENB still does not have the legal force, or that despite the time invested and the consultations performed, the current Biodiversity Law is yet to be enforced.
- In order to address these five issues, as well as others related to environmental management, an institutional weakness, particularly at the level of the MAE can be readily observed, albeit making it extensive to other public and private institutions. The most significant proof of institutional weakness is expressed in the scarce environmental concern noticed in public policy, the difficulties in applying and enforcing political and legal mandates, low levels of internal coordination among institutions and trans-sectoral entities, low budget the MAE possesses, which leads to high dependence on foreign resources, low management capacity and the limited impact of interventions, the atom-

izing, dispersion and disarticulation of efforts expended by NGOs and cooperation.

- Among individual restrictions the collective attitude not conducive to creating “bridges”, augmenting, rather, conflicts and tensions due to varying points of view, can be highlighted.

Regarding Climate Change, the Self-assessment generally showed important individual and systemic limitations, especially related to the non-existence of a National Agenda on Climate Change, the lack of Land planning and Agro-climatic Forecasts that would help confronting the high vulnerability of the agricultural sector and the decrease in forest cover.

In the thematic area of Desertification, the restrictions are as follows:

- Absence of a national development focus geared toward sustainable agricultural production.
- Transfer of competencies not consolidated in sectional governments.
- Weak national environmental authority: slightly socialized and not too coherent sectoral policies; there is no national reference on desertification.
- Weak management capacity for planning, control, information systems managing, diffusion, systematization, financing, land planning and cadastre.
- Lack of community organization building.
- Institutional lack of coordination that generates isolated actions by the stakeholders.
- Scarce investment in sustainable technologies and no economic valuation of the natural resources.
- Limited coverage of productive infrastructure.
- Insufficient technical resources in order to confront desertification: research, expertise, methodologies, specialization of the human resource.
- Human resources are not managed with an integral focus (hydrographic basins, ecosystems).
- The role of universities is not sufficient to confront the environmental problem and its potential is not profited from socially.
- Insufficient environmental awareness and co-responsibility in the environmental management.
- Lack of knowledge in the problem of desertification.
- There is no systematization of experiences.
- Land tenure with low regularization.

Regarding opportunities in Biodiversity, the following are highlighted:

- The national strategic documents address with ever growing force the environmental topics. In some of these documents (ENRP and Pluri-annual Plan, for example), biodiversity and within it the issues that are priority in this study, comprise elements that the State and government of Ecuador identify as being relevant.
- The decentralization policy spearheaded by the Ecuadorian State, despite facing delays and hesitations from the side of the government, has evidenced at the local level an important boost—albeit not generalized—which deserves being backstopped with the purpose of strengthening capacities of the sub-national governments and their populations.

- In contrast with the experience of years ago, it is evident greater social awareness regarding the importance of the biodiversity must be observed, which represents a fertile land as to include the environmental variables with greater force and consistency.
- Despite the weaknesses that may exist, it is undeniable that Ecuador has an important institutional capacity installed that goes from the existence of the MAE and institutions that may directly provide a better use of the biodiversity (INIAP, CORPEI, among the most outstanding ones), all the way to numerous NGOs and academic institutions that have included within their offering programs related to biodiversity.
- In the field of individual opportunities, it must be recognized that the country presents an important professional and technical offering, although it is necessary to strengthen certain areas still slightly developed (Biotrade and professional skills related, and negotiation and conflict resolution, among the most significant ones).
- Within the international context, the opportunities, the availability of resources in order to support issues related to biodiversity, and the strengthening of the necessary capacities in order to assume their conservation and sustainable management, as well as market niches ever more inclined toward natural products, can be highlighted.

In Climate Change, the opportunities are related to the possibility of institutional and national sustenance for the implementation of adaptation measures. In addition, international support, along with internal expectations regarding carbon market, also emerge as opportunities for capacity building on this issue.

Regarding the issue of desertification, the clearest opportunities are as follows:

- Presence of models of local management with high citizen participation.
- Process of decentralization.
- Sectional environmental and developmental plans.
- Environmental instances in sectional governments.
- Pooling of human resources.
- Favorable strategies and legislations.
- Environmental awareness processes.
- Human resources: professional, technical, and experts.
- Research and formation stemming from universities and non-governmental entities.
- Geographical information systems.
- Studies on climate, decontaminants, and hydrology.
- Planning for bi-national management of natural resources.
- Projects from NGOs: production, biodiversity management, ecosystems, environmental sanitation, capacity building.
- Networks, discussion forums and workgroups.
- Infrastructure and installed experience in reforestation.

The need of performing actions for capacity building led to the design of an Action Plan. This was focused on working *nationally* regarding the following thematic axes:

a. General Axis:

- Strengthening of the MAE in order to optimize environmental management in biodiversity, climate change and desertification.
- Impetus of the process of deconcentration and decentralization of environmental management in biodiversity and forests; and, environmental quality issues based on the transfer of competencies¹

b. Specific Axis:

- Development of innovative mechanisms and instruments for the sustainable conservation and use of biodiversity, forests, land and water.
- Boost to rehabilitation and restoration of degraded ecosystems due to inadequate agricultural and livestock practices.
- Reduction of the vulnerability and risk in climate change; and, achievement of their adaptation.
- Political, technical and financial boost to forestation, reforestation and natural forestry restoration.

c. Cross-cutting axis:

- Systematization and transfer of experiences and knowledge around the three thematic spheres.
- Use of information technology as a support tool in the process of decentralization and environmental management.
- Use of complementary national and international environmental initiatives².

Considering the sectoral demand of a sustainable process, and one that is financed around capacity building, the NCSA Ecuador drafted a proposal of multi-sectoral planning and financing in order to improve environmental management around the three thematic spheres.

This proposal gathers the opportunities of the framework for Harmonization and Alignment (Armonización y Alineamiento (A&A)) and stipulates the design and functioning of a Wide Multi-Sectoral Program Focus (Enfoque de Programa Multi Sectorial Amplio (PEMSA)). This, with the end of achieving that the country's agenda be perceived by donors as a guiding agenda of international cooperation in the country.

¹ Includes aspects of climate change and desertification, even though within the process of decentralization these are not defined as responsibilities or competencies capable of being decentralized at the MAE.

² This implies improving the level of correlation and the presentation of proposals to the various cooperation funds available but that are not sufficiently capitalized.

Introduction and background

Basis for the logic and context of the self-assessment

The National Capacities Self-assessment project (NCSA Ecuador), is based on the premise that building capacities forms the basis for the implementation of national processes that would pave the way for sustainable development.

The methodological guide for self-assessments (GEF/UNITAR 2000) proposes inserting the self-assessment into other country processes by guiding them toward sustainable development. According to the Guide: "...a well-planned and comprehensive process will help to insure that the activities embarked upon by a country to build the capacity for protecting the global environment, along with connected requests for financial support, will be correctly coordinated and integrated into the activities of wider environmental ordering or sustainable development embarked upon by the nation."

Further, the guide states that "the self-assessment process must achieve convergence of the various national entities, institutions and organizations whose activities have important repercussions, directly and indirectly on the environment, and will likewise encourage them to assess the deficiencies, identify the synergies and establish a coordinated focus toward capacity building in general."

It was under this conceptual context that the National Capacities Self-assessment in Ecuador was developed.

Focus of the self-assessment

The following context was considered for the National Capacities Self-assessment:

- Ecuador is a country that has paid little political and social attention to, and has dedicated low public investment in, the environmental issue and sustainable development.
- The environmental issue has been addressed just in a sectorally framework, and has not achieved articulating itself in a continuous manner to social development processes and actions and to the fight against poverty.
- There is no concern for the environment on behalf of the entire population or the political sector.

This creates a framework in which the concept of *sustainable development* has yet to be digested and worse yet, be put into practice on behalf of political decision makers.

Stemming from the aforementioned, the NCSA Ecuador has sought a focus that would relate needs to national priorities related in turn to problems of land degradation, loss of Biodiversity and Climate Change. All of the above hinder availability, access and control of the natural capital over which *all* productive processes of Ecuador are based upon. At the same time represent threats to food safety and sovereignty, continuous water provision, agro-exports and tourism.

Within this mainstream, the NCSA Ecuador not only considered the environmental sector but also the productive and social ones, since the loss of natural capital implies a reduction of productivity and competitiveness, which are intimately linked to poverty, and with the ensuing results of social marginalization and violence.

With this vision, the NCSA Ecuador project has involved stakeholders in the national and local scenes linked to development and the environment, as are the agricultural, social development, research, academic and political advisory sectors.

Planning and general aspects of the self-assessment

Self-assessment objectives

The objectives set forth were as follows:

- To identify, confirm or review priority aspects within the following thematic spheres: Biodiversity and Forestry Affairs, Climate Change, Desertification and Land degradation.
- To examine capacity building needs common to the three thematic spheres and those particular to each one of them.
- To prepare an Action Plan, along with a resource mobilization strategy, in order to address the need for promotion of defined capacities.

Treatment of Biodiversity, Climate Change and Desertification issues in Ecuador guided the project toward the attainment of three concrete deliverables:

- a. Profile Documents, Limitations and Action Priorities in each one of the thematic spheres (PLP Documents).
- b. Identification and characterization document regarding cross-cutting issues, priorities, challenges and opportunities, in order to face national capacity limitations in Biodiversity, Climate Change and Desertification (Document Cross-cutting Issues and Synergies)

- c. Action Plan and long-term Funding Strategy that would allow reducing dependency on foreign resources for building national capacities.

Likewise, as part of the execution of the NCSA Ecuador, the following processes will be implemented:

- a. The institutional standing of a dialogue addressing information exchange and the permanent cooperation among the main key stakeholders of society (government, private sector, NGOs, academic community, etc.) within each one of the thematic spheres, and the leveraging of synergies among them.
- b. The institutional development of the three thematic spheres, particularly on Climate Change and Desertification.

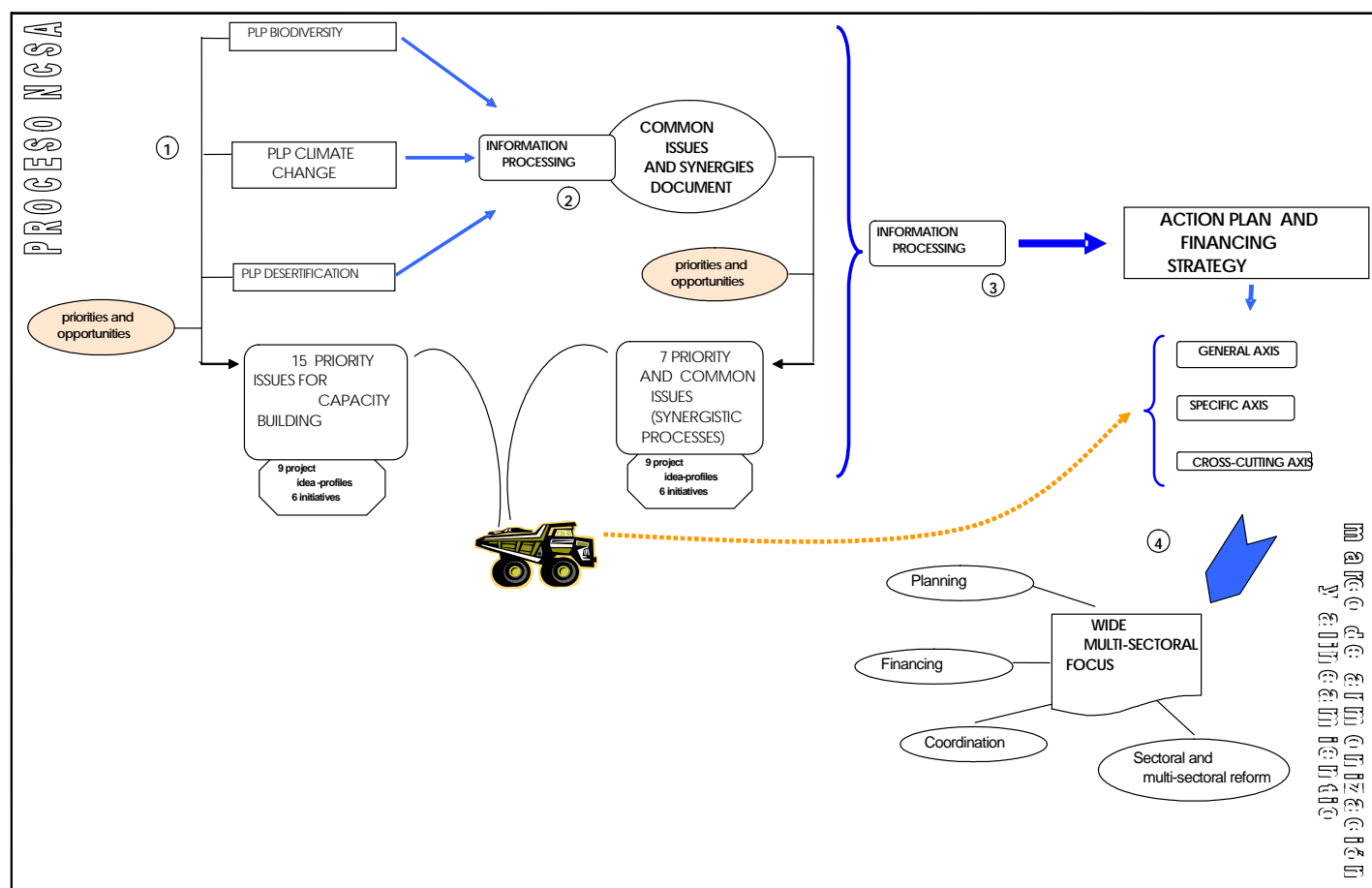
Development of the self-assessment

Drafting of documents

The documents produced during the self-assessment defined the limitations for capacity building regarding facing the problems of environmental management in each thematic sphere and those common to all three spheres. The final result was a characterization of action priorities and identification of the opportunities in facing such limitations. Furthermore, in a participatory manner, project ideas within the priorities of action were defined.

Processing of information presented in the Documents PLPs and Cross-cutting Issues, formed the basis for drafting of the Action Plan. At the same time, the latter, given NCSA process characteristics, defined the long-term Financing Strategy for capacity building for environmental management under the general framework of harmonization and alignment (the long-term Planning and Financing Framework for the strengthening of political actioning and sectoral techniques).

The general scheme for the procedure is presented below:



Profiles, Limitations and Action Priorities (PLP documents)

These documents were built on the basis of reviewing various political frameworks and processes. The framework of reference is comprised by the Convention on Biological Diversity (Convenio de Diversidad Biológica (CDB)), the United Nations Framework Convention on Climate Change (Convención Marco de las Naciones Unidas para el Cambio Climático (CMNUCC)) and the United Nations Convention to Combat Desertification (Convención de las Naciones Unidas para la Lucha contra la Desertificación y la Sequía (CNULD)).

The thematic information stemmed from the National Biodiversity Strategy, the National Strategy for Sustainable Forestry Development, communications and country reports to the Conventions, and the National Action Plan against Desertification. The results of the national workshops and ministerial processes also comprised inputs. The interviews made to experts throughout the entire country, likewise produced important inputs. Due to the project focus, elements of the National Strategy against Poverty, and the Strategy on Food Safety, two documents with a national and multi-sectoral approach, were considered.

After reviewing the entire information, the needs and priorities of capacity building were identified, which were then submitted to the scrutiny of key stakeholders, inside and outside of the MAE.

An identification of limitations to capacity building at the individual, institutional and systemic levels was performed.

Finally, five priority issues that must be addressed in Biodiversity and Desertification were extracted. Seven priorities were defined for Climate Change. Among all of them, three issues by each thematic sphere defined the drafting of the project idea-profiles.

Identification and Characterization of Cross-cutting issues, Priorities, Challenges and Opportunities in order to confront National Capacity Limitations (Cross-cutting issues and Synergies Document).

This document is the result of the processing of prior documents. Under the same characteristics the drafting of the Documents PLPs sustained, this document was put into consideration by key stakeholders at the national level.

Five cross-cutting priority issues were obtained too. Of these, three were incorporated into project idea-profiles.

This document identified the structural limitations for capacity building.

Action Plan and Financing Strategy

This document was created with a wide participation similar to that of the two prior ones. The Plan marks a final processing of the information presented in the PLP documents and synergies, and leads the design of a long-term Financing Strategy. The result is the grouping of initiatives and projects in strategic lines that must be followed on behalf of the MAE. This document had a political validation through the participation of authorities, national and regional departmental directors, ministerial officers and consultants from the ministry.

The Financing Strategy responds to a global harmonization and alignment initiative. It seeks the design of a wide sectoral and multi-sectoral focus in long-term planning and financing. This focus implies the final and permanent functioning of the Action Plan and at the same time the improvement of policy design, inter-institutional coordination, and administration of technical and financial resources in the sector.

Participation: an essential condition

Each one of the frameworks of reference that have guided the NCSA process included studies, consultations and workshops with wide participation. For example, the drafting of the First National Communication to the CMNUCC considered over 30 specific studies and developed several workshops throughout the country, in it, various authorities, scientists and ministerial officers of national and sectional NGOs and GOs. The same happened with the formulation of the Biodiversity Policy and Strategy (Política y Estrategia de Biodiversidad (PEBD)), a process that included the results of 26 studies and various workshops and seminars held throughout the

country. A similar case is that of the National Strategy for Sustainable Forestry Development (Estrategia Nacional para el Desarrollo Forestal Sustentable (ENDFS)). Regarding the issue of Desertification, the National Action Plan in the fight against Desertification and Drought (Plan de Acción Nacional de Lucha contra la Desertificación y la Sequía (PAND) and the First Country Report to the Convention were taken into account.

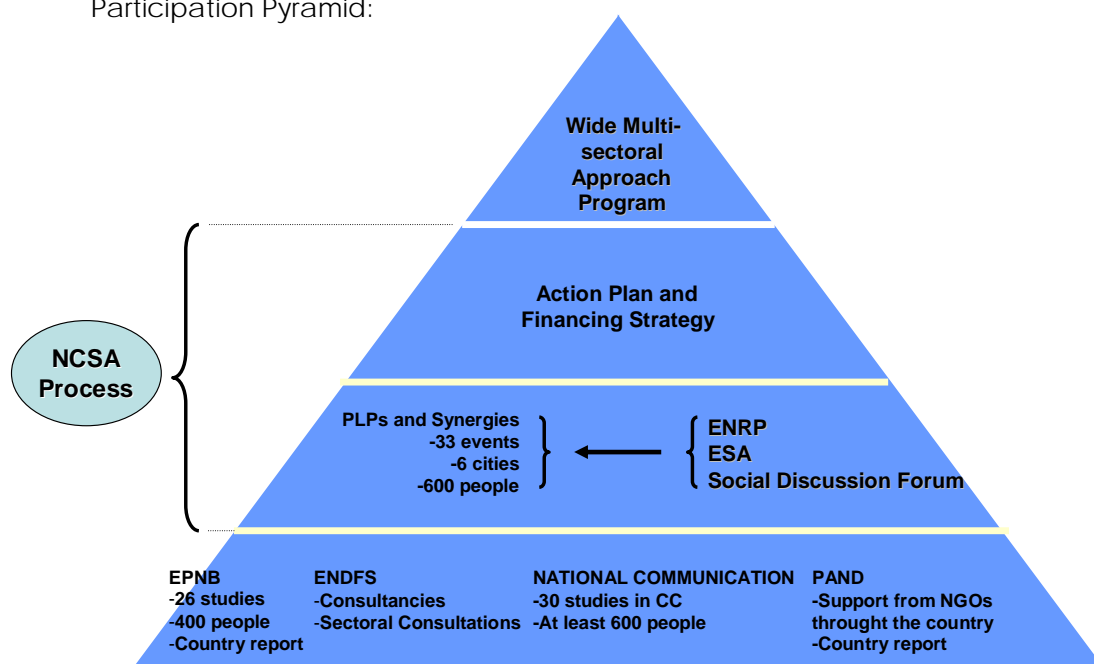
Under the previous consideration, the Forestry Policy Workshop (Puembo Workshop), the National Forum on Protected Areas, the National Workshop on Forestation and Reforestation, and the Biodiversity Report 2000 (Josse 2001) were also included.

To these information sources for the NCSA, others that were enriched through social participation must also be added. These are: the National Strategy on Poverty Reduction (Estrategia Nacional de Reducción de la Pobreza (ENRP) and the Proposal Strategy on Food Safety (Propuesta de Estrategia de Seguridad Alimentaria (ESA)). In addition, the elaboration of the PLPs also took on certain elements from recommendations stemming from the Social Discussion Forum (Foro de Diálogo Social), particularly around the agricultural issue.

All of this configures a “pyramid of participation” for the formulation of the technical, technical-political and political documents in sectoral issues, in which the NCSA process is immersed and that at the same time will serve as the design support for the Multi-sectoral Wide Approach Programme.

The self-assessment process included the organization of workshops, focal groups and work meetings held throughout the country. The number of events held totaled 33 and were held in six different cities with a participation of at least 500 people. The participants came from the public and private sectors, among which scientists from the academic sector, policy advisors, technicians, community leaders, national and local authorities, and university students were found. Surveys and in-depth interviews were also employed.

Participation Pyramid:



The sense of “participation” of the NCSA Ecuador, had the support for the formation of a National Directive Committee and a Multi-sectoral Consultative Group. The Project also has a group of ministerial officers from the MAE that provided support throughout the entire process (Basic Project Group).

Under this framework of participation, the project identified the national priorities on environmental management in the three thematic spheres, the cross-cutting issues and synergies, and elaborated the action plan.

Identification of priority issues in the three thematic spheres

Treatment of the thematic spheres of Biodiversity and Forestry Issues, Climate Change, and Desertification and Land Degradation in Ecuador

Legal Aspects of environmental management in Ecuador

Environmental issues and their link to aspects of sustainable development, have a wide legal framework in Ecuador. Regarding issues linked to Biodiversity, Climate Change and Desertification, the main juridical bodies are as follows:

CROSS-CUTTING LEGAL BODIES

- Political Constitution of Ecuador (especially article 3, numeral 3; article 23, numeral 6, and articles 86 through 91).
- Environmental Management Law.
- Civil Code.
- Penal Code.
- Unified Text on the Secondary Legislation of the Ministry of the Environment (Texto Unificado de Legislación Secundaria del Ministerio de Ambiente).
- Law on Pollution Prevention and Control (Ley de Prevención y Control de la Contaminación).
- Health Code.

SECTORAL LEGAL BODIES

- Law on Water.
- Law on Agrarian Development.
- Law on Mining.
- Law on Hydrocarbons.
- Law on Tourism.
- Law on Fishing and Fishing Development.
- Law on Forests, Natural Areas and Wildlife.
- Law protecting Biodiversity in Ecuador.
- Law of Special Regimen for the Conservation and Sustainable Development of the Province of Galapagos.
- Special Law on Decentralization and Citizen Participation (1 and 2; these two legal bodies modified several laws in the country - not only in environmental issues).
- Law on Provincial Regimen.

- Organic Law of Municipal Regimen.

In addition, Ecuador has several norms for the management of natural resources, among them:

- Norms of the Forestry Management System.
- Norms of Administrative Procedures for Authorizing the Use and Felling of Trees.
- Norms for the Use of Lumber from Cultivated Forests and of Lumber in Agroforestry Systems.
- Norms for Sustainable Forestry Management for the Use of Lumber in Humid Forests.
- Norms for the Management of Forestry Seeds.

The reforms regarding environmental protection that were added to the Political Constitution of Ecuador in 1996, later on consolidated and expanded through the Carta Magna issued in August 1998, comprise the most significant normative advance. The reforms declared the recovery of degraded natural forums and the sustainable management of natural resources, as being of public interest, besides consecrating the constitutional right of the citizenry to live in an environment free of contamination.

This configures an innovative politic and legal base to the environment management in Ecuador.

Advances in the three thematic spheres in Ecuador

Biodiversity and Forestry Affairs

At the beginning of 1993, Ecuador signed the Convention on Biological Biodiversity (Convenio de Biodiversity Biológica (CDB)), and was the first Latin American country to ratify the Convention in February 1993. On December 29, 1993, the Convention was recognized nationally and was published in Official Registry No. 647 dated March 6, 1995.

Ecuador has actively participated in all forums and other forums related to the BDC with delegations comprised by representatives of the public sector, of non-governmental organizations, grass-root organizations and with the participation of environmental experts. Until 1996, state participation fell upon the former Forestry, Natural Areas and Wildlife Institute of Ecuador (Instituto Ecuatoriano Forestal y de Áreas Naturales y Vida Silvestre (INEFAN)). Afterwards, the responsibility fell upon the Ministries of the Environment and of Foreign Affairs. The technical focal point is located in the Under Secretariat of Natural Capital of the MAE. It is important to point out that the Ecuadorian sign in the CBD has had a influence in the incorporation of certain of its principles in the Political Constitution of Ecuador.

Likewise, Ecuador has signed and ratified the Biosafety Protocol. Within this framework, the first commitment fulfilled by the country has been the creation of the National Commission on Biosafety (Executive Decree No. 3516, dated March

31, 2003). Also pertinent, is the "National Framework on the Safety of Biotechnology" "Marco Nacional de Seguridad de la Biotecnología" with the end of supporting Ecuador in the preparation of a National Framework on Biosafety based on the principles of previously established precaution and consent.

In the legal field, Ecuador has implemented the Biodiversity Protection Law, which is not regulated, although being in force. There have been efforts on behalf of public and private sectors interested in conservation, regarding the formulation of the Special Law on Conservation and Sustainable Use of Biodiversity in Ecuador (Ley Especial para la Conservación y Uso Sustentable de la Biodiversidad en el Ecuador). This law has already been submitted to Congress for debate and its second debate is underway. Meanwhile, the legal framework that currently governs the use and conservation of Biodiversity, and in general, that of forestry resources, is the Law on Forestry, Natural Areas and Wildlife (Ley Forestal y de Áreas Naturales y Vida Silvestre).

In observance of the Political Constitution of Ecuador and the BDC, the country has formulated the National Biodiversity Policy and Strategy (Política y Estrategia Nacional de Conservación de la Biodiversidad (2001)) and the Biodiversity Country Report 2000. In addition, there is the National Workgroup on Biodiversity (Grupo Nacional de Trabajo en Biodiversidad (GNTB)), which is officially recognized through Ministerial Agreement No. 82, published in Official Registry No. 219, dated June 24, 1999. This group acts as advisor to the MAE and represents the main advocate in the implementation of the BDC. The GNTB gathers workgroups with specialists in issues on biodiversity, ecosystems, genetic resources, *ex situ* conservation and biodiversity economics.

A political initiative worthy of highlighting, is the approval on behalf of Ecuador—and member countries of the Andean Community of Nations—of Decision 523, which contains the Regional Biodiversity Strategy for the Andean Tropic Countries. Another important step is the approval of the Expanded Work Program on Forestry Biological Diversity (Trabajo Ampliado sobre Diversidad Biológica Forestal (COP 6 2002, BDC).

Quite possibly the sector where more normative advances have existed, is that of the forestry sector. Presently, the country has several norms for forestry management, a mixed monitoring body for the illegal traffic of wood and wildlife (Vigilancia Verde- Green Watch), and a Forestry Management System. In all of these initiatives, several of the Action Proposals were included in the working agenda of the Forestry Inter-governmental Panel / Forestry Inter-governmental Forum (Panel Intergubernamental de Bosques / Foro Intergubernamental de Bosques (PIB/FIB)).

Despite these advances, the felling of at least 100 thousand hectares of trees per year has still not been reduced and presently, Ecuador does not have a National Forestry Plan (Plan Forestal Nacional (PFN)). The country has certain political instruments in the forestry field, among them are the following: Strategy for the Conservation of the Biological Diversity in the Ecuadorian Forestry Sector (Estrategia para la Conservación de la Diversidad Biológica en el Sector Forestal del Ecuador), the Strategy for Sustainable Forestry Development in Ecuador (Estrategia para el Desarrollo Forestal Sustentable del Ecuador (EDFS)), and the Law Project

on Sustainable Forestry Development (Proyecto de Ley para el Desarrollo Forestal Sustentable), with this latter one agreed upon by the conservationist and lumber sectors.

Although the country has all these legislation, the problem of biodiversity loss and deforestation is not being systematically addressed. Environmental contamination, unplanned urban advance, wildlife trafficking and in particular the underlying causes of deforestation, configure a scenario that is very difficult to manage by a still-weakened environmental authority.

Climate Change

Ecuador ratified the CMNUCC through a resolution by Congress passed on January 6, 1993, which was recognized in Executive Decree 565 (Official Registry No. 148, dated March 16, 1993). The country has also signed and ratified the Kyoto Protocol in December, 1999 (Official Registry No. 342, dated December 20, 1999). The technical focal point of the Convention and the Protocol is located at the Under Secretariat of Environmental Quality of the MAE.

Over the basis of stipulations of the Convention and situation of the country, in 1993, the (Instituto Nacional de Meteorología e Hidrología (INAMHI) began the "Climate Change Process in Ecuador" (CCPE) directed toward the fulfillment of four objectives:

- To install a basic institutional capacity in order to face the problem of Climate Change.
- To analyze climate change in Ecuador and its possible impacts over strategic areas.
- To define the response alternatives of climate change regarding decision-making.
- To fulfill international commitments assumed by the country regarding this issue.

These objectives have addressed the activities executed in the country regarding this issue and have guided several projects supported by international cooperation. Among them, the following can be found:

- Ecuador Climate Change Country Study (sponsored by EPA).
- Ecuador-Netherlands on Climate Change in the Coastal Region (sponsored by Embassy of the Netherlands) (Ecuador-Holanda Sobre Cambio Climático en la Región Costanera (Embajada de los Países Bajos).
- Climate Change Train-Ecuador (CC Train, sponsored by UNITAR).
- Limitation on Greenhouse Effect Gases (Limitación de las Emisiones de los Gases de Efecto Invernadero (sponsored by UNEP-RISO)).
- Climate Change, Phases I and II (funded by GEF-UNDP).

The work was initially developed by the INAMHI, which created and began the Climate Change Process in Ecuador in 1993 and that were assumed by the Ministry of Environment of Ecuador (MAE).

The development of the issue and the CC Train Project, boosted the creation of the National Committee on Climate (Comité Nacional sobre el Clima (CNC)) in 1997 and its later ratification in June of 1999. Afterwards, the Climate Change Unit (Unidad de Cambio Climático) was created at the MAE. For this, there was the support by the Ministries of Energy and Mines (Ministerios de Energía y Minas (MEM)) and that of the Environment (Ambiente (MAE)). The CNC has among its representatives, members of universities, productive sectors and environmental NGOs. The Committee also has several workgroups underway.

The most important strides in attention to the CMNUCC, are the presentation of the First National Communication (Primera Comunicación Nacional (PCN)) and official participation in international negotiations. The PCN is based on the general framework of existing environmental priorities. Further, it considers the results of 19 studies on climate change. The PCN Process was widely participative and had an important participation by the CNC.

On another side, the participation of the country in international negotiations had an important evolution related, and sustained directly, with the institutional standing of the environmental authority, the execution of projects and the formation of the committee.

Regarding the issue of carbon market (within the Kyoto Protocol), the CNC has created an institutional standing comprised by the Corporation for the Promotion of the Mechanism for Clean Development (Corporación para la Promoción del Mecanismo de Desarrollo Limpio (CORDELIM) and the National Authority for the Mechanism for Clean Development (Autoridad Nacional para el Mecanismo de Desarrollo Limpio (AN-MDL)). The CORDELIM was created in January 2001 as a non-profit, mixed entity for promotion and training in the MDL. By decision of the CNC, the Ministry of the Environment acts, since April 2003, as the AN-MDL and thus is the governmental entity charged with the regulation of the MDL in the national arena.

Finally, it is necessary to highlight the existence of 44 documents (studies, evaluations, methodologies and inventories in greenhouse effect gases) in aspects such as the evidence of the CC, inventory of Greenhouse Effect Gases (Gases de Efecto Invernadero (GEI)), mitigation of the causes of the greenhouse effect, and the evaluation of the vulnerability and adaptation to Climate Change.

Despite the advances, the political support received has not been enough when introducing climate and climate change issues in the national, regional and local agendas. Ecuador still does not have a national process that can provide adequate technical and political backstopping when participating in negotiations relative to climate change, and in benefiting from opportunities presented by the convention and the protocol.

Desertification and Land degradation

The Ecuadorian State actively participated in the preparation of the United Nations Convention on the Fight Against Desertification and Drought (Convención

de las Naciones Unidas de Lucha contra la Desertificación y la Sequía (CCD, *UNFCCC*), ratified by the executive power and published in Official Registry No. 775, dated September 6, 1995. The technical focal point of the CNULD is located at the MAE, in the Under Secretariat for Natural Capital.

The main commitment assumed by the country when signing this Convention was to develop a National Action Plan for the Fight against Desertification and Drought Mitigation (Plan de Acción Nacional para la Lucha contra la Desertificación y Mitigación de la Sequía (PAND)). This should have been achieved as a result of a national consultative process.

Preparation of the PAND was set into motion in 1995 by the Interamerican Development Bank (IDB) through Fundación Grupo Esquel in the United States, the Embassy of the Netherlands and other national and international institutions. Elaboration of this plan had the technical support of Fundación EcoCiencia in collaboration with the former Ecuadorian Forestry, Natural Areas and Wildlife Institute (Instituto Ecuatoriano Forestal y de Áreas Naturales y Vida Silvestre (INEFAN)) and the Environmental Advisory Commission (Comisión Asesora Ambiental (CAAM)). These activities were subsequently assumed by the Ministry of the Environment. The PAND was drafted with the participation and support of various sectors of society in regions considered as having been affected by processes of desertification. The final deliverable of the PAND was submitted in April 2004.

One of the needs identified during the drafting process of the PAND was the creation of a National Committee for the fight against Desertification (Comité Nacional de Lucha contra the Desertification), an entity that has yet to be formed. Although during the preparation of the PAND, sufficient political support, the creation of the Ministry of the Environment, generated in governmental circles a strong commitment for furthering the application of the CCD and especially of the PAND, did not exist. Nonetheless, the PAND has yet to be fully implemented.

Another important aspect is the elaboration of the Country Report to the Convention presented in April 2000. The document makes a clear reference to the political, institutional and technical treatment of the fight against desertification in Ecuador.

The United Nations Volunteer Program for Ecuador (Programa de Voluntarios de Naciones Unidas para el Ecuador UNSO/PNUD/VNU) sought the active participation of all groups involved in the implementation of the Convention. The most patent action areas were those around training and diffusion.

Ecuador also took part in the formation of the Regional Coordination Unit for Latin America and the Caribbean (Unidad de Coordinación Regional para América Latina y el Caribe, operative since 1999. This entity has as its mandate, the regional application of the CCD, as well as the drafting and execution of the PANDs. Ecuador is a member of the Regional Network for the Exchange of Information on the Fight against Desertification (Red Regional de Intercambio de Información sobre la Lucha contra la Desertificación (DESELAC)). It is from this regional level that harmonizing public policies on desertification by the various

states so as to execute common initiatives foreseen in the Convention, has been sought.

Presently, Ecuador participates along with Argentina, Brazil, Bolivia, Chile and Peru, in the Sub-regional Program for the Fight against Desertification and Mitigation of the Effects of Drought in South America (Programa Subregional de Lucha Contra la Desertificación y Mitigación de los Efectos de la Sequía en América del Sur), which seeks addressing strategic priorities and actions for the region defined in the cooperation agenda of the Interamerican Agricultural Cooperation Institute (Instituto Interamericano de Cooperación para la Agricultura (IICA)). The objective of the program is to improve the social and economic conditions of those communities affected by desertification stemming from a new model of production and development, as well as behavioral changes through the use of appropriate technologies, training and coaching geared towards sustainable development.

The country also participates in the Sub-regional Action Program for the Sustainable Development of the American Puna (Programa de Acción Subregional para el Desarrollo Sustentable de la Puna Americana (PASPUNA)). This program articulates, focalizes and integrates efforts in order to increase the administration executed by member states (Argentina, Bolivia, Chile, Ecuador and Peru) in the fight against desertification and drought, the fight against poverty and the sustainable development of the American Puna. The higher objective of the Program seeks contributing toward the improvement of the quality of life of inhabitants of this ecosystem.

The immediate perspectives of the implementation of the CCD for Ecuador are linked to the initiatives that the Regional Action Program for the years 2003-2007 has created, as drafted during the 9th Regional Meeting of Latin America and the Caribbean (IX Reunión Regional de América Latina y el Caribe) (Bogota, Colombia June 17-20, 2003 UNCCD). Through this instrument the countries of the region are intent on developing the following:

- Identification and use of indicators and reference points in desertification and drought.
- Strengthening of the Information Network on Desertification and Drought (Red de Información de Desertificación y Sequía (DESELAC)).
- Execution of programs on the comprehensive management and efficiency of water resources.
- Promotion of agro-forestry and the fight against poverty.
- Promotion of best practices, know-how and traditional technologies.
- Promotion of sustainable renewable energies.

Further, it is important to highlight that the country has consolidated important policy instruments such as: the National Strategy for Sustainable Development (Estrategia Nacional de Desarrollo Sostenible (MAE 1999)), the National Biodiversity Strategy (Estrategia Nacional de Biodiversidad (MAE 2000a)), and the National Forestry Strategy (Estrategia Nacional Forestal (MAE 2000b)), all of which propose various actions in order to fight desertification, albeit none of them enjoys patent normative support.

There are also elements on the application of the CCD in Ecuador, with documents such as the National Social Developmental Plan (Plan Nacional de Desarrollo Social) (Technical Secretariat of the Social Front - Secretaría Técnica del Frente Social, 1996) and the National Food Safety Program (Programa Nacional de Seguridad Alimentaria (PESAE; FAO 2003)). Most of these advances are addressed in the Country Reports prepared by the MAE and presented in the meetings of the CCD (MAE 2000c and 2002). Various institutional forums also incorporate the issue of desertification, the most important ones being as follows:

- National Council of Water Resources (Consejo Nacional de Recursos Hídricos).
- National Social Development Program (Programa Nacional de Desarrollo Social (1996)).
- Special Program on Food Safety in Ecuador, PESAE (1997)(Programa Especial de Seguridad Alimentaria del Ecuador, PESAE (1997)).
- Environmental Policy for the Agricultural and Livestock Sectors (Política Ambiental para el Sector Agropecuario (1999)).
- Norms for Sustainable Forestry Management for the use of lumber in Ecuador (June 2000) (Normativa para el Manejo Forestal Sustentable para aprovechamiento de la madera en el Ecuador (Junio del 2000)).
- Strategy for Sustainable Forestry Development in Ecuador (July 2000)(Estrategia para el Desarrollo Forestal Sustentable del Ecuador (Julio del 2000)).
- Norms for Dry Forests (2000) (Normativa de Bosque Seco (2000)).

By the other hand, there are the legislations and certain decrees that comprise the legal framework applicable for the issue of desertification in relation to water, land, biodiversity and activities that lead to degradation, They are:

- Law on Agrarian Development (Ley de Desarrollo Agrario).
- Law on Water (Ley de Aguas).
- Law for the Prevention and Control of Environmental Contamination (Ley de Prevención y Control de la Contaminación Ambiental).
- Law on Environmental Management (Ley de Manejo Ambiental).
- Law on Forests and for the Conservation of Natural Areas and Wildlife (Ley Forestal y de Conservación de Áreas Naturales y Vida Silvestre).
- Law on Decentralization (Ley de Descentralización).

In addition, legislation projects for Sustainable Forestry Development and the Law for Conservation and Sustainable Use of the Biodiversity in Ecuador, also contribute with legal elements in the fight against desertification.

Within the national institutional scope, the Ministry of Agriculture and Livestock, along with the Ministry of the Environment, are two governmental institutions that play important roles in processes related to desertification. Notwithstanding, its presence in regions affected by desertification or land degradation processes is weak, since it does not have management instruments or economic resources in order to develop activities. Other ministries still apply norms and regulations with-

out greater coordination effectiveness, which leads towards a contraposition and no law application.

Other national institutions involved directly or indirectly in this issue, are the Autonomous Institute for Agricultural and Livestock Research (Instituto Autónomo de Investigación Agropecuaria (INIAP)), the National Rural Farmer Training Institute (Instituto Nacional de Capacitación Campesina (INCCA)), the Agrarian Geographical Information System (Sistema de Información Geográfica Agrario (SIGA-GRO)), the National Secretariat of Development Planning (Secretaría Nacional de Planificación para el Desarrollo (SENPLADES)), the Center for the Integrated Collection of Natural Resources through Remote Sensors (Centro de Levantamiento Integrado de Recursos Naturales por Sensores Remotos (CLIRSEN)), and the INAMHI.

The Regional Development Corporations³, the sectional governments (prefectures and municipalities) as well as various cantonal and provincial civil committees, hold the basic responsibilities in the furtherance or fight against desertification.

In Ecuador, the struggle against desertification has also been a concern by certain socio-territorial organizations, national and international NGOs and cooperation entities. There are various networks of organizations operating in the country who, while concerned by the environmental issue, have sought to implement actions in the fight against desertification and drought.

Finally, the role that the National Council for Higher Education (Consejo Nacional de Educación Superior (CONESUP)) plays, which supports the three thematic axes: Contamination, Desertification and Biodiversity, must also be highlighted. There are other initiatives such as undergraduate and graduate academic offerings related to the issue in question that are underway at various universities.

Priority Issues in each thematic sphere

Biodiversity and Forestry Affairs

The main reference framework for the elaboration of the Biodiversity PLP was the National Biodiversity Policy and Strategy (Política y Estrategia Nacional de Biodiversidad). Under this guide, the following priority issues were identified:

- a. Fragile Ecosystems and Forests, with a special emphasis on moorlands, wetlands, mangroves, coastal-marine ecosystems and dry forests, insofar as being

³ Regional Development Corporation of the Northern Sierra (Corporación Regional de Desarrollo de la Sierra Norte), Regional Development Corporation of Cotopaxi (Corporación de Desarrollo Regional de Cotopaxi), Regional Development Corporation of the Central Sierra (Corporación Regional de Desarrollo de la Sierra Centro (CORSICEN)), Regional Development Corporation of Chimborazo (Corporación de Desarrollo Regional de Chimborazo (CODE-RECH)), Regional Development Corporation of El Oro (Corporación de Desarrollo Regional de El Oro (CODELORO)), Study Commission for the Development of the Basin of the Guayas River (Comisión de Estudios para el Desarrollo de la Cuenca del Río Guayas (CEDEGE)), Economic Re-conversion Center of Azuay, Cañar and Morona Santiago (Centro de Reconversión Económica del Azuay, Cañar y Morona Santiago (CREA)), Rehabilitation Center of Manabí (Centro de Rehabilitación de Manabí (CRM)), and the Development Program of the South of Ecuador (Programa de Desarrollo del Sur de Ecuador (PREDESUR)).

relevant ecosystems of the country and that comprise basic pillars of the biological wealth of Ecuador.

- b. Strengthening of the National System of Protected Areas and protection of endangered species, as a strategy geared toward preserving biological diversity.
- c. Sustainable agriculture and rehabilitation of degraded areas, essentially pointing toward the need of guaranteeing food safety and sovereignty of the Ecuadorian population.
- d. Biotrade, conceived as an opportunity that Ecuador can capitalize from in relation to its biodiversity for development and economic growth, especially regarding ecotourism.
- e. Biosafety and genetic resources, as seen under the optic of protection of biodiversity, of the principle of precaution and of defense of ancestral knowledge.

Climate Change

The elaboration of the PLP regarding this issue implied the compilation of information of the entire climate change process in Ecuador. Processing of this information and consultations to various stakeholders, resulted in the following priority issues for capacity building in climate change:

- a. National Sustainable Agenda on Climate Change that would guide efforts in facing the causes and effects of Climate Change in the national arena.
- b. Seasonal and Annual Agro-climatic Forecasts.
- c. Training, diffusion and use of Agro-climatic Zoning.
- d. Forestation on ready and degraded lands.
- e. Land Planning.
- f. Conservation Management and Buffer Zones of protected areas.
- g. Renewable Energies for reduction of green house gases.

Desertification and Land degradation

Regarding this issue, the framework of reference was the PAND. Its analysis, added to consultations made to key stakeholders, allowed defining the following priority issues:

- a. Specialization of human talents in order to strengthen capacities in activities for the fight against desertification.
- b. Managing of Information System in Desertification with indicators and validated baseline, socialized and applied at the national level.
- c. Strengthening of networks, discussion forums and workgroups in order to systematize and socialize successful experiences in the use of adequate technologies in sustainable agricultural production and management of natural resources.
- d. Implementation of the PAND.
- e. Partnering initiatives among the MAE, CONCOPE and AME, for the transfer of environmental competencies toward provincial councils and municipalities.

Limitations in capacities and capacity building opportunities in the three thematic spheres

Limitations in capacities in the three thematic spheres

Limitations in Biodiversity and Forestry Affairs

From a social perspective, biodiversity in Ecuador is still not considered a strategic resource. Nor has its contribution to food safety, agricultural and livestock promotion, employment and income generation, or the fight against poverty, been recognized.

Further, there is an unfavorable national and international context around the issue of conservation that is expressed in:

- An increase in economic pressures on land and marine ecosystems, particularly in forests, which intensifies extractive activities or the establishment of non-sustainable crops aimed at agro-exports. This is the result of efforts to obtain more income in order to attend to the requirements of a foreign debt that in 2004 represented 55% of the GNP.
- The increase of pressure placed over land and water resources on behalf of rural farmers and indigenous communities, which redounds in depletion of the land and increase in the risks of erosion and desertification.
- The weakening of the State and the loss of its role as regulator, planner, and auditor in issues related to development, such as employment, salaries, education and health. Furthermore, such weakening has undermined the possibility for the Ecuadorian State to enforce in a better manner, its main role in the correction of inequities.

Added to these structural problems are individual, institutional and systemic limitations that inhibit the possibility of sustainably preserving and managing biodiversity, and that hinder fulfillment of BDC objectives.

Below are the limitations listed at the individual, institutional and systemic levels.

Individual Limitations

One of the most important individual limitations stems from the fact that biodiversity is yet to be assumed in social terms as a strategic resource. Until society creates awareness of its importance and has greater information in establishing relationships between the environment and daily life, it will not be possible to have the social support needed in conservation efforts, nor will a culture of rights enforcement and fulfillment of obligations regarding biodiversity be capable of being created.

Awareness and education are urgent issues in the change of attitudes and practices. Likewise, information regarding rights and obligations in order to live in a healthy environment, respecting traditional cultural practices and perspectives and fostering a more democratic and inclusive development, must be delivered.

Regarding human talent, the country has a very wide and diverse professional offering. In the field of conservation and sustainable management of biodiversity, a considerable advance in the number and quality of the careers and training courses related with this sphere, can be observed. Nevertheless, there are deficiencies of human talent at the research level.⁴ Weaknesses in aspects such as conflict resolution, environmental "extension", sustainable agriculture and forestry, and process management, all represent individual constraints in capacity building.

In the population sectors that could get directly involved in the conservation and management of biodiversity (rural farmers, small producers and communities), a lack of knowledge in issues such as business administration, accounting practices, drafting and follow-up of business plans, market analysis and negotiation strategies, regarding biodiversity use can be seen.

Individual limitations are also generated derived from the low access to financial resources that would allow improving the capacities of people, or investing in sustainable forms in the use of biodiversity.

Passiveness and indifference by leaders and the citizenry also represent limitations, especially when considering efforts expended in preserving the biodiversity that other stakeholders are furthering.

⁴ There are only 83 research and development scientists and engineers per million inhabitants, an indicator considered as critical by sectors linked to the academic world that clamor for the need for Ecuador to strengthen its scientific capacities through a greater number of doctorates. This situation in Ecuador contrasts with realities in other countries tagged as a medium for human development, among which Bulgaria, Brazil, the Ukraine, Tunisia, Turkey or Colombia, can be cited. In these cases, while investment in research and development represented between 0.3% and 0.9% of the GNP during the 1996-2000 period, availability of scientists surpassed the 300 per million inhabitants mark (UNDP 2003: 275).

Finally, resistance to change, along with the crisis in principles and values, is translated into not very proactive attitudes by the citizenry that do not contribute toward establishing new practices and relationships regarding biodiversity and its conservation.

Institutional Limitations

The principal institutional limitation is the weakening of the State and the loss of its role as regulator. Consequently, the MAE faces difficulties when impacting in the planning and management of development within the national scope. This weakening is explained in the absence of a political will on behalf of the various governments. This absence of will has led to the impossibility of making the National Council for Sustainable Development (Consejo Nacional de Desarrollo Sustentable (CND)) operational, among whose functions the inclusion of the environmental variable in the various development processes and political structure of the State, can be highlighted.

A similar case is that of the National Biodiversity Workgroup (Grupo Nacional de Trabajo en Biodiversidad (GNTB)). Its intermittent functioning is the result of the lack of continuous financing and non-existence of a regulation that would clarify its functions and that of sub-workgroups. On another side, the absence of a minimum working agenda restricts its contribution in conservation policies in biodiversity.

For addressing the five priority issues within the thematic sphere of Biodiversity, it was crucial for the MAE to form part of the FAT Negotiating Commission since among its competencies is the protection of the genetic resources and associated ancestral knowledge. The MAE did not form part of this commission, which demonstrates the weak political power it brandishes.

The weakening of the MAE suppose a reduced availability of financial resources. There is a clear trend year after year to reduce the budget of the sector in question: during 2003, only 12% of Maze's budget corresponded to the Ecuadorian State (fiscal resources, local counterpart and pre-assignments) and to resources of self-management, while the remaining 88% originated from foreign credits and non-refundable funds (10% and 78%, respectively). During 2004, with a coded budget close to 19 million dollars, while 20% corresponded to state resources and self-management, 16% represented foreign facilities and 64% were non-refundable funds.

If this trend is maintained, the possibilities for the MAE to forcibly and dynamically maintain its role, would be considerably reduced. Many of its efforts must be directed toward raising cooperation funds or to the identification of self-management mechanisms in detriment of the definition of a long-term, coherent plan that would allow providing continuity to the conservation processes of biodiversity.

The institutional weakness of the MAE is further expressed in the scarce clarity and definition of the roles, functions and links between the national and regional levels, as well as in relation to other institutions of the State.

Another capacity restriction is the absence of an efficient forestry control policy. This has become more complex starting with the suspension of the Outsourced Forestry Control System (Sistema Mercarizado de Control Forestal) resulting from the appeal presented by the lumber industrial sector. Likewise, there are insufficient personnel, financing, equipping and services within protected areas. Added to this, are land tenure problems within the protected areas and the scarce state clarity regarding productive processes capable of being developed within the National System of Protected Areas (Sistema Nacional de Áreas Protegidas (SNAP)). Finally, local weaknesses regarding participative management in protected areas make it ripe for a centralist style to govern decision-making.

Institutional weakness is not a characteristic foreign to the MAE. Within the local sphere, the UGAM (Municipal Environmental Management Units) or the UMPS (Municipal Sustainable Development Units) generally have insufficient personnel, insufficiently prepared or equipped. This presupposes limited capacities and technical-managerial tools so that locally an efficient biodiversity conservation management was made.

Among NGOs and other actors of civil society, weakness is expressed in other dimensions. The former, that have emerged in the generation of novel practices in biodiversity management and that have contributed in positioning the environmental thematic in local and national forums, currently are facing certain limitations derived from restriction in financial cooperation funds⁵ and the change in ways of execution within bilateral and multilateral entities.⁶

In light of this scenario, as well as given the activism expressed by NGOs as a result of daily tasks centered around elaboration of project proposals and their execution, little attention has been paid to the systematization, thoughts and debate on environment and development. This is further expressed in forestry extension, sustainable agricultural projects, and the few linkages that exist among them.

Within social organizations, the fragmentation of interests, as well as immediate trade vindications, hinder the possibility of these becoming forums for debate and thought regarding national environmental problems and mainly on biodiversity. According to opinions expressed during workshops, the reaction by these organizations tends to give way to the "...generation of an insufficiently sustained, *a priori* resistance."

⁵ Restriction of funds represents a limitation for the majority of NGOs, although some manage annual budgets surpassing 700,000 US dollars. This situation, privy of only a few NGOs, contrasts with the realities in certain public institutions. Information provided by the INP in a survey, revealed that its annual budget barely reaches the 50,000 US dollar mark.

⁶ Among the changes in the modes of cooperation, trends can be highlighted in the last few years regarding growing restrictions in funding the so-called "administrative expenses" of the NGO or channeling of funds directly toward communities without intermediation by these organizations. This trend can be verified in projects such as that of PRODEPINE or PROLOCAL.

With regard to public and private institutional management, there is a growing concern for planning annual actions and intervention strategies for development. Notwithstanding this, operative planning does not correspond to strategic planning, and it is common to see a lack of mid- and long-term visions so direly needed in environmental management and especially in biodiversity. This mindset has determined that many organizations solely respond to the logic of projects and to the sum of loose activities. This restricts construction of greater-reaching transformations and impact that sustained processes command.

Although follow-up is performed, this has been centered around institutional activities and their functioning but not on their impact or the effect their actions have. Forums for follow-up and evaluation, generally speaking, are moments for discussion among technical personnel with little room for allowing participation of other actors, and in many instances these are not recognized as management tools.

Insofar as treatment of information is concerned, the non-existing initiatives are limited to diffusion, having little possibilities for knowledge generation and the execution of research or knowledge management. To overcome these deficiencies, having greater state support is demanded. In order to illustrate the magnitude in the demand to perform research, it is sufficient to cite as an example that during the 2003 summon carried out by FUNDACYT, over 300 proposals were presented. Based on resource availability, they were only able to support slightly less than 10% of that number.

Within the priority issues for biodiversity, some of the most relevant voids in knowledge and information are as follows:

- Insufficient are the efforts expended in implementing forestry conditions alongside those of fragile ecosystems. Some of the voids are represented by the lack of identification of seed-providing forests and the limited boost given to genetic improvement of certain native forestry species.
- Proper support in biological studies related to the load capacity of natural ecosystems and their productive and regenerative potential, is not present.
- There is a lack of systematization in knowledge regarding medical or nutritional applications of the Ecuadorian biological wealth in order to enrich national development.
- The number of studies that reveal the value of products and services of biodiversity, is limited.
- Transcending experiences with representative species, such as the condor or the ring-eyed bear, sufficient funds for bio-ecological monitoring processes in the long-term, is not present, nor is there further research underway regarding the situation of endangered species.
- Seed banks are scarce and required for endemic or endangered forest species, whether, and other native seeds for industrial and community forestry and for the preservation of watersheds.

- Lines of credit directed toward strengthening Biotrade initiatives are insufficient. Traditional banking, for example, does not have any experience in this issue.
- The country lacks laboratories or technical facilities in order to perform analyses of genetically-modified organisms.
- The country lacks research that would allow identifying impacts resulting from the use of biotechnology (transgenics crops in particular) in ecosystems, agro-ecosystems, agro-biodiversity and rural farming economies.
- Neither the public, nor the private sector, has been concerned in analyzing the environmental and social costs that free-trade agreements may have over Biodiversity.

Systemic Limitations

Ecuador possesses a vast set of national legislation capable of directing its environmental management. However, regarding the issue of Biodiversity, there is a lack of legislation that would effectively regulate and enforce its conservation and sustainable use.

Added to this central limitation, is the no formalization of very important political instruments such as the National Strategy for Sustainable Forestry Development (ENDFS). This has relegated its applicability to consultation and reference documents in agreement with institutional interests or will, and even knowledge that may be there regarding its existence.

In many situations, legal weaknesses are due to the “rigidity” of many laws and their weak applicability within the national context. In others, there is insufficiency or lack of consultative mechanisms for the drafting of laws and regulations. However, the main legal framework limitation existing, is its scarce applicability due to weak political will in enforcing present norms and the notorious lack of State policies.

Many laws, such as that of the Law on Forests, Natural Areas and Wildlife, are anachronistic in light of the new conservation concepts and mechanisms established in the BDC and other similar instruments.

The lack of will and policies on behalf of the State has hindered decentralization processes. The transfer of competencies to sectional governments has been hesitant, interrupted and unclear among the parties. All of this has restricted effective local actioning toward the conservation of Biodiversity.

Regarding knowledge and information management, its diffusion has been scarce and is disarticulated from the country's needs. There is little will for sharing and diffusing information. There are few databases, and when so, these generally

contain obsolete and partial information.

Another systemic limitation is the conceptual focus under which the issue of biodiversity is managed, as characterized by the absence of trans-sectoral and multi-disciplinary visions. This is reflected, for example, in that a large portion of projects executed by the MAE as well as by NGOs touch only on a part of reality, in contrast with the demand for a trans-disciplinary standing implicit in the management of biodiversity. This limitation is also evident in the case of training processes, which have expressed difficulties when overcoming rigid conceptions or that have formed technical personnel in the management of only one resource or issue.

Within planning (local, national or regional), the efforts that the country has expended in orienting the management of biodiversity also have a scarcely trans-sectoral vision. The result is an unrealistic national planning with insufficient social support and absence of cooperation mechanisms for the fulfillment of goals. This is evidence in the counter position between the conservation of protected areas led by the MAE, and extractive activities not permitted in the National System of Protected Areas (SNAP) led by the Ministry of Energy and Mines (MEM) or the assignment of land within protected areas on behalf of the National Agrarian Development Institute (INDA).

The comparative advantages the country has, as is its great potential in Biotrade and sustainable agriculture, face certain challenges. The country has privileged production practices geared toward exportations in detriment of the attainment of other types of market niches (fair and common trade, green markets, etc.) There are no public promotion policies or support to rural agricultural farming production or strategies directed to protecting and capitalizing traditional know-how.

One of the pending tasks, is the discussion and elaboration of regulations that address access to genetic resources and protection of ancestral knowledge, as well as regulation for the National Biodiversity Framework (Marco Nacional de Bioseguridad).

Finally, the international scenario is hardly favorable for environmental considerations. Development policies are controversial and contradictory since on one side, there is a global interest in fighting against the loss and degradation of the biodiversity, and on the other, there is a trend to increase extractive styles and of squandering natural resources.

Limitations in Climate Change

Individual Limitations

Regarding the individual order, the greatest limitations are the scarce availability of trained human talents and an inadequate personnel management, in the public institutions involved in this thematic sphere. Inside the various institutions that have performed Climate Change studies, the professional pool that was involved then, is presently performing other activities.

Another aspect is the scarce incentive and promotion personnel from public institutions receive for improving their performance or achieving continuity in the subject matter. In addition, these persons have very few opportunities of updating their knowledge, of improving their foci or of accessing specialized literature given the cost these represent.

The reduction of the state apparatus, within the process of modernization, causes certain public ministerial officers involved in the issue to have a work overload. Within this same framework, professionals and technical personnel with knowledge on climate change, have little opportunities for entering public and private sectors, specifically into institutions related to this issue.

Little public awareness emerges as another important hindrance. Despite the negative socio-economic impacts experienced during the last few decades in the country due to climatic anomalies (drought, floods, freezes), these still have not impinged in the collective awareness or concern for the effects of climate change. And, therefore, there are no actions geared toward land planning, for the use of renewable energies, and for the conservation of forested ecosystems, given their importance in the local and global climates. Nor has any work been done in management of buffer zones of protected areas (ZAM) and their relation to variability and climate change. In summary, important levels of awareness-creation and operationally that would thrust social actors into influencing adequate decision-making at the political level, have not yet been reached.

The educational systems of the country do not have the installed capacity for forming professionals in climate and climate change, not even in fourth-level programs.

To a good extent, this is due to the national educational system at all levels, having maintained a passive focus regarding this thematic sphere in the past. It has not considered its importance for the country's socio-economy, whether as a supporting planning element or as a social, economic and environmental destabilizing element.

In addition, the curricula of the formal higher education system—especially that of schools related to the management of natural resources—impart insufficiently knowledge, for example, on agro-climatic forecasts and are null in the formation to management of the ZAMs.

Similar shortcomings can be noted in the professional formation of renewable energies professionals. All of the aforementioned is related to the few professional opportunities that can be found in the public and private sectors.

Institutional Limitations

Within the order of institutional limitations, the lack of financial, technological and human talent resources at institutions involved, comprises the major problem. For example, in the case of agro-climatic zoning, land planning, management of ZAMs and use of alternative energies, Ministry of Agriculture and Livestock (MAG), INAMHI or MAE provide only scarce human talent, technological and economic

resources, all of which restricts research, updating of results and the increase in coverage and scale of interventions.

The above is applicable to the issue of forestation and reforestation. MAE, in its Organic Norms by Processes, approved in 2001, included the National Forestry Department within its Under Secretariat for Natural Capital. However, the personnel assigned and the resources stipulated in the budgets of the last few years, are insufficient in order to comply with the actions necessary to implement the National Forestation and Reforestation Program (Programa Nacional de Forestación y Reforestación (PNFR)). There are even some funds from the National Financial Corporation (CFN) that, given no institutional coordination, have not been capitalized.

Coordination among the main institutions charged with this thematic, such as the MAG, technological and higher education centers, and the INAMHI, is almost non-existent. This causes the loss of opportunities in information or climate change experiences exchange.

In the case of the Climate Change Agenda, the absence of sustainable financing by the CNC and its workgroups determines that this entity may not play an important role in the formulation of political proposals and search for institutional commitments in order to develop and implement it.

The scarce promotion of aspects related to Climate Change from institutions involved also comprises an important limitation, particularly in the use of alternative energies and agro-climatic zoning drafted by the MAG, INAMHI, Institute for Ecodevelopment of Ecuadorian Amazon Region (ECORAE) and institutions of the academic sector. There is confusion and lack of clarity regarding institutional roles, especially regarding who must create and disseminate scenarios of climate change, train and disseminate, and use agro-climatic zoning.

The modernization process of the State has also left its mark in institutions involved in this thematic sphere. As an illustration, the case of the technical personnel of institutions directly involved (INAMHI, MAG) that have capitalized in the knowledge and experience gained in this thematic sphere, albeit that within the context of the policy of reduction of the state apparatus, have been segregated from other institutions, can be cited. If this trend were to continue, in the short term, problems of availability of qualified personnel would arise.

In accordance with the Law on Modernization, INAMHI, Geographical Information System for Agriculture (SIGAGRO), Center of Integrated Raising of Natural Resources by Remote Sensor (CLIRSEN) and ECORAE must be self-sufficient. This implies that they must sell the information, which may represent serious barriers for their widespread use.

Also, it is necessary to point out that the scientific knowledge on climate change in Ecuador still has not reached levels that boost and lead decision-making on behalf of all the levels of society. Scientific research regarding climate change, in general, is insufficient due to the lack of incentives and resources. The lack of a top priority standing by the issue, makes the only official entity to finance research,

the National Science and Technology Foundation (Fundación Nacional de Ciencia y Tecnología (FUNDACYT), not include it in its project portfolio.

The country has generated close to 50 studies on the vulnerability and mitigation of Climate Change. Nonetheless, their results have not been translated into national policies or strategies. Climate Change presupposes a threat to agricultural productive systems whether for nutritional or agro-export ends, as well as to the social environmental and natural disaster prevention systems.

Systemic Limitations

Systemic limitations are closely linked to the invisibility of the issue in public development and environmental policies. With the exception of the Environmental Policies for the Agricultural and Livestock Sector (Políticas Ambientales para el Sector Agropecuario), of a succinct note on the carbon market at the ENDFS, and of its tangential reference in the Pluri-annual Governmental Plan (Plan Plurianual del Gobierno), no proposal drafted by public policies even considers the issue of climate change and its link to national priorities.

Within the plans of the Government, the national priorities related to the environment, education or food safety do not reach the level of being introduced or of being made operational at the national scale regarding the use of tools for agro-climatic zoning.

This evident lack of inter-sectoral political treatment, makes forestation and reforestation, land planning, conservation of natural resources and management in the ZAM, not achieve concrete results that would allow the country to face Climate Change.

A closed focus of each sector restricts establishing relations in the issue of Climate Change, and therefore, no means to address them in a multi-disciplinary way are included.

The weak application of legal bodies also represents limitations to environmental management in Climate Change, particularly in the priority issues identified. For example, the Constitution of the Republic establishes as a national priority, the implementation of the National Forestation and Reforestation Plan (Plan Nacional de Forestación y Reforestación (PNFR)), however the lack of political support and economic and technological resources has restricted its development.

Another characteristic of the legal bodies is their dispersion and contradiction regarding Climate Change. In particular, within the issue of land planning, there is a dispersion that promotes legal imbalances and contradictions between the central government and local and regional entities. This restricts the construction of an eco-systemic, holistic and strategic land planning.

Added to the difficult and complex application of the law, is the vast diversity of juridical instruments, institutional competencies (local, national and regional) and

legal contradictions. These laws, policies and strategies do not direct the importance of Climate Change and its relation to development.

Regarding the specific issue of renewable energies, the legal framework of energy and environmental policies and priorities related to this thematic, establishes a general context for its use. Nonetheless, this has not been translated into legally-approved, operative instruments that regulate and promote them. The National Power Council (Consejo Nacional de Electrificación (CONELEC)), in observance of Art. 64 of the Law of the Regimen for the Power Sector (Ley del Régimen del Sector Eléctrico), issued a regulation in 2002 in order to foster the use of renewable energies through preferential prices and dispatches. However, this regulation has yet to produce important results.

The scarce inter-institutional coordination also represents a limitation to capacity building. For example, efforts regarding agro-climatic prevision in the short-term, are isolated and are not supplemented by a coordination by the community, potentially able to generate forecasts (MAG and INAMHI), with the users (professional schools related to the issue, rural farming organizations), and with those responsible for local, national and regional planning (central government and sectional governments). Therefore, not included with operative programs and plans, is the adequate use of lands that would leverage productivity and profitability of crops in agreement with agro-climatic zones. For example, there is cartographic information of the real and potential use of land at the SIGAGRO and ECORAE, in whose generation, vast numbers of human and technological resources have been invested. However, this is not either known by, or used by, potential users.

Within the issue of land planning, institutions of the public sector with direct responsibilities, do not maintain adequate coordination or interactions that would allow joining efforts and guiding land planning in the local, national and regional arenas (for example, the MAE does not form part of the National System of Participative Planning (SNPP). However, in accordance with the law on Environmental Management, it is the guiding entity in land planning and in sectional, land planning plans). Although the legal framework of the country delegates responsibilities of land planning to various national institutions (MAE, MAG); regional (provincial councils), and local (municipalities), under direct coordination by the National Council for Modernization (CONAM), and within the framework of the Sub-system for Land Planning, there is no coordination among them, which generates dispersion of responsibilities.

The decentralization process of the State represents an opportunity for capacity building, however, in certain cases, it represents a limitation. In the management of the ZAMs and the forestry sector, which has a close relationship to local development, the decentralizing process presents acute problems around competencies and financing. The municipalities—the main stakeholders in local development—lack the capacity and interest in order to immerse their own resources in favor of conservation of wooded ecosystems.

Modernization of the State can also imply a limitation when, for example, institutions are eliminated as with the National Energy Institute (Instituto Nacional de En-

ergia (INE)), which generated a technical and planning void regarding the issue of renewable energies.

The modernization process of the country has changed the rules of the game in the forestry sector. The delays and problems that have emerged in relation to decentralization and outsourcing, have generated uncertainty in the sector and have halted forestation and reforestation initiatives.

A weak institutional standing limits coordination and interaction among key stakeholders of the various sectors involved (production, planning, agricultural policies, education, climate), which restricts the definition of national priorities that may be made operative in their respective spheres of action. For example, there are no levels of coordination that promote the opportune transfer of specific information generated by the INAMHI to the SIGAGRO and vice versa. Despite the fact that the national legal framework designates the INAMHI, as the responsible for activities related to meteorology, this institution lacks sufficient political support, financing, human and technological talent in order to comply with the responsibility of issuing agro-climatic forecasts within the seasonal and annual spheres.

Another limitation is in the sense that the influence of Climate Change has not been dimensioned regarding socio-economic aspects. In the case of agro-climatic forecasts, there are no specific and important initiatives that link those forecasts to facing problems such as poverty and threats to food safety.

The absence of national response structures to climatic phenomena is also an important limitation to environmental management regarding this issue. The country does not have the response capacity in light of the emergence of anomalous climatic events. This deficiency can be even greater when facing Climate Change. Nor does it have an operative system for prevision and agro-meteorological alerts, and the support the country can receive in order to face climate problems and prevent socio-economic debacles is not known.

Limitations in Desertification and Land degradation

Individual Limitations

There is insufficient environmental awareness and civil co-responsibility in environmental management, involved with this thematic sphere.

Desertification is understood basically by professionals and technical personnel from institutions and organizations, especially in regard to natural resource management. However, there are still weaknesses regarding a deeper knowledge of the issue and it is not evident the capacity of analyze the political and socio-economic implications of the phenomenon of desertification. Notwithstanding this, the lack of general knowledge on Desertification is also due to a limited dissemination of the PAND and of the Convention to Combat Desertification.

Likewise, there is low capacity for community organization at the national level related to the growing loss of a strategic vision and prioritization of immediate inter-

ests, this curbs establishing of sustainable agricultural production models.

Institutional Limitations

The main institutional limitation is the lack of consolidation in the transfer of competencies toward sectional governments. This is also a systemic limitation, albeit one that evidences institutional limitations in management generally, and in environmental management, specifically. The transfer of competencies forms the basis in order to locally face certain environmental problems, as well desertification. Nonetheless, the majority of sectional governments do not have the technical or economic capabilities in order to assume them.

The manner in which the transfer of environmental competencies is being carried out by the MAE, CONAM and CONCOPE, does not enjoy widespread acceptance by many sectional governments, because it does not respond to policies existing locally and regionally. Further, local stakeholders complain that there is interjection by political parties, thus hindering implementation of the process. In addition, the MAE does not have sufficient capacity to promote and provide follow-up for this process: for combat desertification is indispensable a close coordination with MAG.

In light of this reality, it is important to rescue processes of development stemming from local experiences, possibilities and expectations. Experiences such as those lived by joint communities must be strengthened, since these comprise a significant example of trans-jurisdictional resources such as watersheds.

It is obvious that without tools such as planning of agricultural production, land planning, information systems, cadastres and others, the efficiency and effectiveness of an institutional management, at national and local levels, can be very limited.

There is an absence of planning, and a lack of indicators, regarding the issue of Desertification, that comprise limitations for institutional management that restrict capacity building.

In addition, the lack of socialization of information, of optimization of resources and joint actions among institutions, limit their management capacity. There is resistance to co-management initiatives on behalf of institutions, which hinders negotiation efforts and the attainment of resources to fight against desertification.

In addition, there is limited coverage in infrastructure for the development of rural farming production, essentially due to irrigation. There are limitations of the technological and economic types for systems installed by regional institutions to expand especially toward high areas where numerous rural farming producing communities are settled. Irrigation is a strategic axis in national development although it does not have political state support, and moreover, institutions responsible for building irrigation systems do not have sufficient resources.

The irrigation infrastructure built decades ago by the State, is suffering continuous deterioration, which in turn generates conflicts of use among the various parties

involved. Hydrographic basin management programs within the national sphere are centered on channel maintenance and conflict management.

Although certain alternatives in production such as agro-ecology, agro-forestry, permaculture or analogous forestry may be applicable without benefit of irrigation, these must be socialized among the vast majority of rural farmers for whom irrigation is still vital to their productive activities.

Isolated actions by parties and institutions are perhaps the most important limitation at the institutional level when facing the fight against Desertification. Political distrust and a clientelar mode of working restrict institutions from adequately coordinating or generating deeper positive impacts in the long-term.

The installed capacity present in universities is not capitalized socially. Universities develop important efforts in incorporating the environmental issues to their curricula, generating masters programs and other special programs around the environmental issue. However, students are not trained in reaching rural communities since education is merely instrumental and universities are not articulated around their day-to-day. In addition, on the side of institutions and social organizations, this demand for articulation with real needs of rural agricultural production, is not expressed either in a sustained and systematic manner.

Finally, there is no systematization of experiences regarding the fight against Desertification. Certain experiences provide important teachings regarding the adequate handling of natural resources and sustainable production, but these are not processed, based on widely generating, disseminating and developing the correct knowledge.

Systemic Limitations

The relationship between agricultural production and desertification is direct. Within the country, this has not been related through a national developmental focus directed toward sustainable agricultural production. Inadequate practices in water and land management in productive activities, both in small and medium-sized rural farming production such as agro-exporting companies, represent the main factors causing land degradation and contribute to desertification in dry and sub-humid areas.

Current demands for agricultural development and competitiveness towards national and international has meant embarking on new processes for training and learning for the development of corresponding attitudes and aptitudes, new negotiation and relations models, and new foci for local development. Nevertheless, several initiatives frequently presupposes models of production that depletes the fertile soil and give opportunity to erosion and land degradation.

Despite the fact that in the country there are political and legal frameworks that mandate the Ecuadorian State to face environmental and social problems, these cannot be implemented due to lack of economic resources or politic decisions. Until now, national priorities have been centered on payment of the foreign debt, unconditional support to the banking sector, and incentives to agro-exports, all of

these in detriment of agrarian policies that promote sustainable agriculture and that guarantee food safety and poverty reduction.

To the above, irregularity in land tenure by rural farming and indigenous communities must be added. There is much resistance in campesinos to land regularization by the National Institute of Agrarian Reform (INDA), due to the fact that this means tax payment. The lack of deeds represents a limitation in facing desertification, since it restricts possibilities of applying alternative production programs or adequate management of natural resources through a wide, regular and sustained coverage.

The MAE and the MAG do not have sufficient support by the Government in order to further its missions. Institutional weakness is expressed in low enforcement of environmental legislation because there are insufficient regulatory mechanisms and technical human talent to implement them. There is very little socialization of sectoral policies, so efforts are duplicated and effects limited, thus generating incoherence in their application at the local and regional scales. For example, the lack of economic and technical resources has blocked installation of information systems in the regional offices of the two ministries. In the case of the MAE, the PAND has not yet been executed or create the Technical Coordinator Committee to Combat Desertification.

Opportunities to address capacity building limitations

Opportunities in Biodiversity and Forestry Affairs

It is necessary to insist in dissemination and education strategies that point toward deepening the levels of appropriation by society regarding environmental issues in general, and of biodiversity in particular. This emerges as a high-impact element with greater environmental awareness by the population.

Another valuable opportunity is the fact of having a significant number of human talents with diverse aptitudes and experience. With the exception of certain issues, generally speaking, Ecuador has an adequate professional and technical offering. These talents can assume challenges in areas such as research and education, development and adaptation of technologies, social and environmental management, management of techniques and methodologies for planning, processes and project follow-up and evaluation, and management of the biodiversity. One of the areas that has the greatest strength is that of agro-ecology, with an offering of professionals who have put into practice novel and creative foci.

Empirical and traditional knowledge, especially that of peoples and nationalities of Ecuador, represents a valuable opportunity for the sustainable management of biodiversity.

Ecuador has an important installed institutional capacity. Besides having a public entity for norming and enhancing environmental management (the MAE), there are other institutions working directly in issues related to Biodiversity, such as the INIAP, the National Council of Hydric Resources (CNRH) and the Corporation to Exports Promotion (CORPEI), among others. Provincial municipalities and councils, and to a lesser degree parish boards, complement the state institutional capacity with potential for assuming a more active management in Biodiversity. Sub-national governments also represent an opportunity for impacting local markets favoring the application of a sustainable agricultural focus.

Operating in the country, is a large number of NGOs that have helped in the construction and strengthening of environmental management, that have improved experiences in the sustainable management of Biodiversity and that represent a valuable source to capitalize learning. These institutions represent opportunities in fields such as agro-ecology, sustainable agriculture, conservation, bio-safety and forestry, among others.

Although restriction of funds stemming from cooperation comprises a limitation, there is an opportunity to develop new mechanisms and responses in order to fit into an ever-changing scenario. Still, at initial stages among NGOs, self-management processes are being fostered, as well as the creation of networks and alliances to capitalize the comparative advantages of the involved stakeholders.

This installed capacity is complemented with that of the academic offering, of formation and training that universities and programs offer under flexible modes of working, and that in the last few years have developed curricular proposals and of content related to Biodiversity. Among the first, academic programs offered by universities such as that of the University of Azuay, of the Technical Private University of Loja (UTPL), of the Catholic University Santiago de Guayaquil (UCSG) and the Pontifical Catholic University of Ecuador (PUCE-Ibarra), just to mention a few. Training offerings, such as those of the Consortium for Training in Natural Resources Management) CAMAREN and the CEA (Ecuadorian Agro-ecology Network), besides having a national standing, represent a valuable asset in the promotion of new modules and topics impinging over populations not considered until now. Eventually, certain NGOs will also venture into the field of training through specific courses or discussion events, as well Ecociencia.

Transcending the institutional sphere, various forums from civil society have assumed an active role in the discussion and generation of proposals related to Biodiversity, such as the National Workgroup in Biodiversity (GNTB) and the Ecuadorian Committee for Conservation of Nature and Environment (CEDENMA). Several other initiatives underway also represent opportunities in the issue of Biodiversity. These are as follows:

- The proposal by the Andean Parliament (Parlamento Andino) geared toward building the Andean Biodiversity Institute, probably in Ecuador
- The execution of a GEF project charged to the INIAP and peer institutions in the Andean Region (Colombia and Bolivia in particular) in order to foster

research and capitalization of genetic resources, and to strengthen the capacity and generation of technology.

- The Loja Herbarium, the National Herbarium, EcoPar, the San Francisco Foundation and the Kew Botanical Garden, are preparing a project related to banks of germoplasm that would support recovery of the dry forests of the southern part of Ecuador.
- The MAE has begun the formulation of a National Forestry Research Strategy jointly with the universities of Loja and Quevedo, EcoPar, Fund for Forestry Seeds (FOSEFOR)⁷ and Arcoiris.
- German Agency of Technical Cooperation (GTZ), Fundación Futuro Latinoamericano, Forests Stewardship Council (FSC) and the University of Göttingen, have submitted to the European Commission, a project that would support the formulation of the PFN in the eight Amazon Basin Treatment Organization (OTCA) countries.
- Underway, is the GEF-Protected Areas project at the Ministry of the Environment.
- There is an Institutional Strengthening project for the MAE funded by the Embassy of the Netherlands.
- CORPEI and the Foundation Fund for Natural Resources Management (FOMRENA) are furthering the Biotrade initiative.

Worthy of mentioning, is the signing in 2003 of a Memorandum of Understanding with Conservation International (CI) directed to facilitating implementation of the Andean Biodiversity Strategy.

Other opportunities are as follows:

- Projects underway that incorporate components and strategies for research, policies, training, conservation and sustainable use of moorlands (Andean Moorland Project - Proyecto Páramo Andino - GEF; MAE-EcoCiencia).
- The synergy among institutions working in fragile ecosystems: paramos, Chocó, Ceja Andina (Paramos Workgroup (GTP)-Carchi GTP Consortium; Northern Alliance; Natural Resources Management Network (MACRENA); CEA; GTP-Loja; Corporation of Private Forests.
- Availability of research infrastructure, such as centers and stations that facilitate the study of forests dynamics (Jatun Sacha, PUCE, University of San Francisco de Quito (USFQ), Central University of Ecuador (UCE), EcoPar and EcoCiencia).

The growing concern regarding the environment, as well as the signing on behalf of the Ecuadorian State of numerous international agreements and covenants geared toward protecting the biodiversity, have facilitated the passage of a vast set of policies, laws and norms that point toward regulating management of Biodiversity. This incidence is seen in the Pluri-annual Plan for 2003-2007 by the Government and the Poverty Reduction Strategy Paper (PRSP).

⁷ For four years, FOSEFOR facilitated the identification of seed sources for native Andean forestry species (there are over 53 sources identified). Further, there are publications on the phenology of such species.

Despite difficulties and obstacles, decentralization represents an opportunity in achieving a more effective relationship among local stakeholders and their natural resources.

Within the legal arena, the following landmarks represent opportunities to strengthen management of biodiversity:

- The pre-project to the Organic Law on Land Planning prepared by the CONAM, (National Development Planning Secretariat) SENPLADES, Galápagos National Institute (INGALA), Ministry of Tourism (MINTUR), Ministry of Urban Development and Housing (MIDUVI), Ministry of Energy and Mines (MEM) and other institutions.
- The proposal of a new law for the Conservation and Sustainable Management of Biodiversity, which is presently awaiting second debate at Congress.
- The law project for the Conservation of the Mangrove Ecosystem, which is waiting its approval in Congress.

The new forestry legislation and the Law on Environmental Management, begins configuring a viable scenario for the conservation of biodiversity, which is implemented through the Environmental Police Unit (Unidad de Policía Medio Ambiental (UPMA)) along with the Green Supervision (Vigilancia Verde) program. In addition, the Penal Code contemplates sanctions for trafficking of endangered species and flagrant crimes against the environment.

From the perspective of citizen participation, the constitution and operation of forums and other forums for debate, whether local or national, open up opportunities for a more democratic and inclusive environmental management. Resulting from this type of processes, is the food safety proposal that was generated from the input of numerous social organizations whose contents and orientations can be sustained by the adoption of promotional policies to sustainable agriculture.

Lastly, it is worthy to note that Ecuador boasts a Vice Presidency in the CBD in representation of Latin America. This situation comprises recognition for its participation in these forums, as well as an opportunity to position its proposals within this context.

Other opportunities are related to intrinsic conditions of the country regarding its high Biodiversity.

This has sparked external cooperation interest, which has placed representative offices in the country like The Nature Conservancy (TNC), Wildlife Conservation Society (WCS) and Conservation International (CI). These and other organizations linked to issues of rural development, have emphasized capacity building.

At the regional level, there is a valuable effort on behalf of member countries of the Andean Community of Nations (CAN) in joining processes that contribute in the solution of environmental problems. One of the most significant results, is the signing of Decision 391 by the five Andean countries, which directs and regulates access to genetic resources, and of Agreement 169 from the International Work

Organization (OIT), which protects collective rights. Likewise, the CAN is spearheading the Regional Biodiversity Strategy for Andean Tropic Countries – Decision 523 (CAN 2004) (Estrategia Regional de Biodiversidad para los Países del Trópico Andino -Decisión 523-(CAN 2004).

The GEF, within its strategic priorities, will concentrate its funding efforts toward capacity building for the implementation of the Cartagena Protocol and the generation and dissemination of best practices regarding biodiversity issues.

Capacity building also comprises an axis for concern within the issue of sustainable management of the land and of persistent organic contaminants. By virtue of being a strategic priority of the GEF, it is facilitating enabling activities in a specific manner regarding Climate Change and Biodiversity, and Capacity Building as a cross-cutting axis (*cross-cutting capacity building*).

Other sources interested in investing in conservation are the Swiss and German governments and agencies, as well as multi-lateral banks, which have incorporated within their methodologies and strategies, local “empowering” and capacity building, with varying intensities and magnitudes.

Within another place of analysis, in regard to the international arena and that of the country’s—albeit with lesser force—the increase of ever-demanding consumption regarding the quality of goods and services, the social and environmental characteristics of its production, and a growing preference for “natural” products, can be observed. From this perspective, the country has exceptional opportunities and advantages given its cultural and biological wealth. Protected areas, handled efficiently, can comprise an important source for income generation given the high influx of tourists they welcome (over 350,000 in 2002) (MINTUR 2003). Topics and sectors such as capitalization of extractive forestry resources, the certification of forests, eco-tourism and organic agriculture, managed under criteria of social and environmental responsibility, can find important market niches, as well as accessing fair and associated business circuits.

Opportunities in Climate Change

Several initiatives at the MAE integrate a capacity building platform. A very important one is the support given by the Dutch government to management at the MAE regarding the area of environmental quality. One of the components of this cooperation is directed to the CNC. Support to the CNC is not completely identified in a program, and this is why this marks an opportunity to introduce certain activities related to capacity building.

The MAE coordinates the Technical Inter-institutional Commission (Comisión Técnica Interinstitucional (CTI)) for the implementation of the National Forestation and Reforestation Plan (Plan Nacional de Forestación y Reforestación), conceived as a priority by the Ecuadorian government. The Plan’s proposal establishes four programs: Plantations and Commercial Production, Social Forestry, Activities for Agro-forestry and Recovery Repopulation, Conservation and Protection of Natural Resources, Forestry Training and Research. The proposal itself marks an opportu-

nity for capacity building in the forestry sector along with climate and Climate Change.

The FAO, the CAN and the Ministries of Agriculture and Livestock of Andean countries are executing a project that has as its main objective the establishment of a National Food Safety Strategy (Estrategia Nacional de Seguridad Alimentaria (ENSA)). This strategy seeks guaranteeing sustainable access to food and the re-activation of the agricultural and livestock sector, impelling local development and promoting sustainable management of the natural environment, as well as innovating and strengthening the institutional standing of food safety. A review of the proposal allows indicating important voids when not considering vulnerability of food safety, given climate and its natural and anthropogenic variations. Nonetheless, this initiative recognizes certain elements analyzed in the Self-assessment, as are land planning and management, development of production systems corresponding to the vocation of the land, and to opportune prevention and mitigation measures in the case of natural disasters. Within the legal scope, there is a motion for approving a law on food safety. This is a proposal that is under discussion and analysis and that presents itself as an opportunity for key stakeholders working on climate, Climate Change and capacity building.

The Agricultural Sectoral Program of the MAG, with the support of the Interamerican Development Bank (BID), is executing a consultative process in order to support the Executive power in the formulation of policies directed to modernizing the sector, improving its institutions and benefiting the productive sector of the country.

It is within this context that the MAG approved the Environmental Policy for the Agricultural and Livestock Sector through Ministerial Resolution dated July 22, 1998. The environmental policy of the sector recognizes in several of its Chapters and Actions programmed, the influence of climate and Climate Change in the agricultural and livestock sector.

Regarding the issue, civil society has also assumed an active role in the discussion and generation of proposals related to Biodiversity, such as the Climate Change Group of the CEDENMA and the CNC itself. The latter has foreseen performing a review of its Action Plan and seeking resources for its implementation, which can mark an opportunity to introduce results of the Self-assessment on Climate Change into the proposal.

The Government's Pluri-annual Plan also constitutes an important political opportunity. One of the actions stipulated in the fight against poverty and unemployment, has as its objective to improve the conditions of life of the population with an emphasis in those sectors having greater vulnerability and exclusion, and therefore it sets forth the design and formulation in consensus of the land planning policy.

The axis related to food safety and the environment, highlights as one of its goals, guaranteeing adequate use of natural resources, for which it establishes among its policies, the promotion of forestation and reforestation activities, halting of native forest deforestation, and the incorporation of risk prevention (natural, anthro-

pogenic, and technological) in developmental planning. Among priority programs and projects, Climate Change is mentioned.

Within the productivity axis, projects for investing in the generation of alternative sources of energy such as solar, wind and geo-thermal, are promoted. Among priority programs and projects, there is a mention of those relative to the construction of irrigation and flood-control systems in several provinces of the country, and the emergency program to confront the El Niño phenomenon.

With regard to international policy actions, the Plan establishes the creation of global funds destined to programs regarding the environment and the fight against AIDS, malaria and tuberculosis, as well as follow-up of the application of international agreements.

The ENRP also constitutes a good political opportunity for capacity building in Climate Change. The environmental agenda establishes five components that jointly visualize opportunities for capacity building. Indicated, are the capitalization of the MDL and sustainable forestry development, which are considered as a priority by the National Forestation and Reforestation Plan, and forestry ordering.

The CMNUCC, through the various Conferences of the Parties, has decided developing options related directly or indirectly to capacity building. These decisions have been implemented through the GEF, all of which has redounded in the following:

- a. Operational Program 6: Promotion of the use of renewable energy through the elimination of obstacles and the reduction of execution costs.
- b. Operational Program 7: Reduction of the long-term costs of technologies for the capitalization of energies produced by scarce emissions of greenhouse effect gases.
- c. Operational Program 9: Integrated Operational Program on Land and Water, which covers multiple activity spheres.
- d. National Communications: the Eighth Conference of the Parties (2002) adopted the Guide for the preparation of the Second National Communication, which requested that the GEF implement this decision. The format of the Second National Communication (2CN) includes five major components: national circumstances, GEI inventory, general description of the steps taken in implementing the Convention, and technical, capacity and financial Needs. In this manner, the 2CN marks a great opportunity to introduce certain issues that emerge from the Climate Change Self-assessment.
- e. The 2005-2007 Activity Plan: addressing the guidelines of the Convention, the GEF has considered increasing its support for capacity building through activities related to the National Capacity Building Self-assessments, as well as through activities contemplated in its 2005 - 2007 Plan as approved by the GEF Council during the month of November, 2003. The Plan considers among its priorities, "capacity building" and "demonstrating an operative focus of adap-

tation to Climate Change.” This creates an opportunity for key stakeholders of the Action Plan of the NCSA project and its ulterior execution.

- f. Special Fund on Climate Change: under the guidelines of the Convention; presently, the GEF is preparing the operational guidelines so that the countries may access resources from this fund. In this regard, the Ninth Conference of the Parties decided that the fund be used for related activities in capacity promotion and urged GEF to do whatever necessary for quick access to the resources.
- g. Adaptation Fund of the Kyoto Protocol (Fondo de Adaptación del Protocolo de Kyoto): this fund will be financed with a percentage of the Emission Reduction Certificates (Certificados de Reducción de Emisiones) from projects of the Clean Development Mechanism (Mecanismo de Desarrollo Limpio). Also funded, are activities of adaptation in agriculture, fragile ecosystems, promotion of capacity in the strengthening of information centers and networks for quick actions due to extreme meteorological phenomena.
- h. Strategic Declaration (Planteamiento Estratégico) in order to foster capacity building. During the month of May, 2003, the GEF presented the Council with the Strategic Declaration, which contemplates three components:
 - Support for adaptation of activities within the sphere of Climate Change included in the National Communications.
 - Support to projects relating adaptation strategies on Climate Change to other measures seeking other global benefits.
 - High consideration to the impacts of Climate Change as a long-term risk for the sustainability of GEF projects.

The GEF Council, during its meeting held in November 2003, adopted the Strategic Declaration, and requested that the Secretariat continue its practical work. This task must be developed jointly with the executing agencies and the Follow-up and Evaluation Unit (Unidad de Seguimiento y Evaluación).

- i. Carbon Market: industrialized countries that have ratified the Kyoto Protocol, have quantified commitments for emissions reduction for the 2008-2012 period. These reductions may be achieved in their own countries, and in developing countries, through projects of the Clean Development Mechanism (MDL). Within the context of the MDL, there are opportunities for forestation and reforestation projects, as well as for renewable energy options. At the moment, a parallel market is being fostered mainly by those countries that do not have the intention of ratifying the Kyoto Protocol, which generates another opportunity for forestry projects and renewable energies. Ecuador maintains the institutional standing necessary for regulating and promoting this opportunity. The National Climate Committee (Comité Nacional sobre el Clima), formed the Corporation for the Promotion of the Clean Development Mechanism (Mecanismo de Desarrollo Limpio (CORDELIM)) for promotional and training objectives. In addition, it created the National Authority (Autoridad Nacional (AN-MDL)) for the regulation and issuance of approval letters for MDL projects.

This opportunity become broader with the operationally of the Kyoto Protocol, which began in the first quarterly of 2005.

Finally, the Regional Andean Program for the Prevention and Mitigation of Risks (PREANDINO), coordinated by SENPLADES and the Technical Assistance and Training Project for Sectional Governments on Natural Disasters, imply vast opportunities on this issue, particularly regarding land planning, agro-climatic zoning and construction of a national agenda on Climate Change.

Opportunities in Desertification and Land degradation

There are opportunities in reference to processes underway and to installed institutional, technical and legal capacities within the national scope. Through adequate relationship by these capacities with the limitations identified, a great possibility for capacity building in order to face Desertification, regardless of problems of a structural standing, can be observed.

Likewise regarding the issue of Biodiversity, environmental awareness-creation processes form the basis for embarking on change opportunities. Several institutions, whether public, private, national, sectional or local, are deploying initiatives in this sense by incorporating students from middle and high schools, ecological clubs and volunteer groups. Among them are the following:

- Environmental Education Programs, Probosque Foundation – Guayas.
- Ecological Clubs. Plan Ecuador (formerly Plan Internacional) - Guayas Sta. Elena.
- Program for 46 communities on deterioration of natural resources. UNOR-CAC- Imbabura.
- Environmental Youth Network. FADSE - El Oro.
- Dry Forest Project - Loja.
- Environmental Convention - Cotopaxi.
- Institutionalization process for environmental education in bilingual intercultural education - Tungurahua.

At the community and public and private institutional levels, there is an information and experiences base that can be built and specialized for the issues of Desertification, Biodiversity and environmental problems. The greatest potential for these bases will be in the field of management of natural resources and sustainable agricultural production, and specifically in the field of Desertification, which is the better known one.

Local management models, referring to processes having high citizen participation and legitimacy, are worthy of being considered. This opportunity allows articulating and recovering the strategic vision of community organizations in order to face concrete problems such as with Desertification. Some of these models of local management are located in Cotacachi, Penipe, Guamote, Alausí and Colta in the Central Sierra, Cotopaxi and Tungurahua.

Regarding the institutional arena, several opportunities are present. One of the most important ones are projects underway on behalf of regional NGOs and institutions. There is installed capacity regarding infrastructure, personnel and above all, in expertise. All of these comprise opportunities to train local human talent for the improvement of production, adequate handling of natural resources and establishing exchange programs, and for the systematization and socialization of experiences. Some of the most interesting ones are as follows:

- Production: agricultural production for food safety FAO; Local DEvelopment Project (PROLOCAL) in six cantons of the southern zone of Manabí; CONSORCIO MANABÍ and Center of Manabi for Communitary Development (CEMADEC), and also 10 institutions with a strategy for facing Desertification with productive processes in Manabí); FADSE El Oro; Tahuin PREDESUR Project El Oro; Second Phase of Coastal Resources Management Programme (PMRC); Plan Internacional Latacunga, Pujilí, Sigchos and Saquisilí; World Vision in Pujilí.
- Watershed Management of: master development plan for the basin of the Portoviejo River (being drafted), Portoviejo River Foundation; Integral Socio-environmental Management Plan (PIGSA) for the management of the watershed comprised by the Portoviejo and Chone Rivers; Monitoring of the Puyango-Tumbes and Casacay River Basin, PREDESUR El Oro; Decontamination of the basin of the Calera and Amarillo Rivers, AME - FADSE El Oro; Chongón-Colonche Project, Fundación Natura, Guayas, Sta. Elena; AME Provincial Council of Chimborazo for the management of the Chibunga River; management of the Ambato River Basin coordinated by PROMACH.
- Forest Management: mangroves, PMRC El Oro; Chongón Colonche Project, Fundación Natura - GTZ, Guayas, Sta. Elena; FBU Project, Sta. Elena Guayas; Probosque Foundation Guayas; Management of the Portoviejo River Bio-corridor (Manejo Biocorredor Río Portoviejo), AME- CISP Manabí.
- Environmental Sanitation: CARE in Arenilla, Las Lajas, Huaquillas El Oro; PROLOCAL Manabí.
- Institutional Capacity building: European Union Esmeraldas, Carchi and Imbabura; PROLOCAL Manabí; PMRC El Oro; Center of Rural Promotion (CPR) organizational strengthening for production Sta. Elena; GTZ - Eloy Alfaro Secular University of Manta (ULEAM) for environmental competencies Manabí; International Comité for Development of People (CISP) Manabí.
- Biodiversity Management, ecosystems: European Union Esmeraldas, Carchi and Imbabura; World Vision (Visión Mundial) with the UOCIC, management of moorlands.
- Catamayo Chira Bi-national Project: Spanish Cooperation, Governments of Ecuador and Peru.

Local or regional association of institutions interested in natural resource management has generated the appearance of joint communities. Under a joint community, economic resources can be optimized, management can be rationalized and, more importantly, community and institutional working efforts can be unified in light of resources. In this manner, the lack of coordination and disperse actions by institutions can be reduced. Within the country, those representing opportunities against Desertification are those focused around the following:

- Management of the Machalilla National Park: Provincial Council of Manabí and the cantons involved;
- Management of the Puyango Petrified Forest: Provincial Council of El Oro, Provincial Council of Loja and the Municipality of Puyango, with the support of AME-ARD.
- Integral community solid waste management, municipalities of the high zone of El Oro: Zaruma, Portovelo, Piñas and Atahualpa, with the support of the AME-FADSE.
- Conflict management for the use of water in Pillaro, with 15 organizations.
- Conflict management for the use of water, South-western Front, municipalities of Mocha, Tisaleo, Quero and Cevallos.

The growing concern by municipalities and provincial councils, as well as by communities, in incorporating the environmental dimension in the management of development, has resulted in environmental plans. Many have difficulties in their execution given their limitation of technical and economic resources, but, without a doubt, they comprise an essential tool and action reference. Given their formulation, the AME, UDENOR, NGOs and even the Ministry of the Environment through the Technical Support Project to the Local Environmental Management, and to the Local Environmental Management Board (Dirección de Administración Ambiental Local (DIGAL)), have also contributed. In the thematic sphere of Desertification, the following can be named:

- Strategic Plan for Manabí (Plan Estratégico de Manabí) (underway).
- Environmental diagnostics in 70 communities of the cantons of Sigchos, Saquisilí, Pujilí and Guamote.
- Development Plan for the Province of Cotopaxi.
- Provincial Management Model for Tungurahua, three axes: work, people and water; comprehensive management of watersheds is an essential element; 19 provincial proposals, among them the Green Letter (Carta Verde) as an agreement of wills to work in priorities.
- Cotopaxi Environmental Convention, five axes: which possesses an environmental legislation, environmental quality, water for consumption, moorlands and lands; 43 provincial agreements.

A line already adopted since approximately seven years ago in the country is the creation of environmental units in sectional governments. Within this context, several municipalities have issued protection legislation for natural resources or espe-

cial zones, such as protecting forests or conservation of areas. These units, needing capacity building, represent an opportunity for the issue of Desertification.

The discussion forums, the networks and the workgroups provide the possibility of generating viable political, technical and legal proposals at the local and regional scales. They also provide inputs in achieving agreements, establishing strategies for political incidence and in the systematization of experiences directed to facing Desertification. Their importance lies in the possibility of reaching the majority of citizens in decision-making and in the formulation of proposals regarding important aspects of the country. The forums that represent opportunities for addressing the issue of Desertification and sparking capacity building in civil society are as follows:

- Water Forum in several provinces, especially of the Central Sierra.
- MACRENA Network.
- Río Blanco Consortium - Tungurahua.
- Chanchán River Basin - Cotopaxi.
- Permanent Corporation of Chimborazo for Environmental Management (COPEGACH).
- Provincial Office for hydrographical resources in Tungurahua.
- Political Impact Forum for Sustainable Agriculture (Espacio de Incidencia Política en Agricultura Sustentable (EIPAS-VECO)), which operates with the "objective of impelling a process leading to the execution of political actions from the organized citizenry in order to transform the power relationships and hence achieve specific changes favoring Sustainable Agriculture."
- Carchi Consortium.
- Board of agreement for the management of resources in dry forests, and control of Desertification (Loja).
- Ceja Andina Platform.
- Financial Network of Manabí, comprised by 13 institutions with the purpose of economically supporting small and medium-sized rural farming through sustainable agricultural alternatives. This network has the backing of the Project for the support of production and reduction of rural poverty (Proyecto de apoyo a la producción y reducción de la pobreza rural (PROLOCAL)).
- Moorelands Workgroup (Grupo de Trabajo en Páramos (GTP)).
- National Workgroup in Biodiversity (Grupo Nacional de Trabajo en Biodiversidad (GNTB)).

In the academic field, opportunities arise through research and formation programs stemming from universities and other institutions. Among the most important ones are the following:

- Agricultural Extension Program of the Santiago de Guayaquil Catholic University (Programa de Extensión Agrícola de la Universidad Católica Santiago de Guayaquil).
- Master's Program in Environmental Management with an emphasis in Environmental Quality and Desertification from the Polytechnic School of Chimborazo (ESPOCH) in consortium with eight universities.

- Master's Program in Andean Agro-forestry Management and Formation Program for Agro-forestry Promoters (PROMPAY) by Polytechnic School of Chimborazo (ESPOCH).
- Management of natural resources in Cotopaxi and Chimborazo: Honorable Provincial Council, Ecuadorian Central for Agricultural Services (CESA), CAMAREN Consortium ; EcoCiencia, Plan Internacional; Dutch Service of Development Cooperation (SNV), Interjuntas.
- Agricultural extension plans of Ecuadorian Agro Forestry Network (RAFE).
- Research activities by the Private Technical University of Loja (UTPL), National University of Loja (UNL) and the University of Azuay.

The country has certain infrastructure and installed expertise in reforestation. Its importance stems from the potential support they may provide for restoration of degraded zones. For example:

- Nursery and personnel. Army at Arenillas, El Oro.
- Nursery, programs under execution. CODELORO.
- Experimental farms (forestry / productive), Granjas demostrativas (forestal / productivo), nursery. PREDESUR, EL Oro.
- Mega reforestation project by the Provincial Council of El Oro.
- Programs in communities of the Central Sierra.
- Plan Ecuador reforestation program. Guayas, Sta. Elena.
- Nurseries from PREDESUR in Loja.
- Nurseries from the CREA in Azuay.
- Nurseries from the UNL in Loja.
- Database of forestry seeds providers of FOSEFOR.

One of the main pillars of capacity building is comprised by geo-referenced information. This allows informed decision-making that can define concrete actions in the fight against Desertification. Several institutions own facilities for Geographical Information Systems (Sistemas de Información Geográfica (SIG)) and personnel specialized in its management. Among the most important ones are the following:

- SIGAGRO - MAG.
- Center for Agricultural and Livestock Information (CINFA) - UNL Loja.
- Water and Land Management Program (PROMAS) – National University of Cuenca (UEC).
- SIG - ESPOCH.
- SIG - Chanchán.
- Environmental Information Center (CIAM) - MAE.
- SIG – Technical Northern University (UTN) Ibarra.
- SIG - EcoCiencia.
- SIG Economic Reconversion Center of the South (CREA) - Association of Ecuadorian Municipalities (AME). CREA-AME Agreement.

Valuable information can also be provided by different studies, among them:

- Climate study in the Province of El Oro by the Development Program for the South (PREDESUR).

- Study on decontaminants of the Estero Salado. Santiago de Guayaquil Catholic University.
- Indigenous Agricultural Census of Tungurahua. SWISSAID - PROMACH.
- Inventory of hydrographical resources of the Province of Tungurahua. Made by the Consortium formed by Ecuadorian Center for Agricultural Services (CESA) - Ecuadorian Institute for Rural Development (IEDECA) – Watershed Management Program (PROMACH).
- Studies on land loss due to erosion. UNL Loja.
- Monitoring of hydrographical erosion. UNL Loja.
- Monitoring of land loss. University of Azuay.

Within the opportunities are the frameworks of policies and laws favorable to combating Desertification. These impact directly in the consolidation process of the transfer of environmental competencies, and in the development of capacities for institutional management, despite this thematic sphere is not yet defined as a “competence” in the decentralization process.

Among the most significant political and institutional instruments, the following can be found: Law on Decentralization and Social Participation, Law on Environmental Management, Law on Agrarian Development, Law on Water, Law on Prevention and Control of Environmental Contamination, Forestry Law, and others being discussed, such as the Biodiversity Law and the Law on Sustainable Forestry Development. Also present are the Environmental Strategy for Sustainable Development in Ecuador, the Biodiversity Policy and Strategy, the Norms and Strategy for Sustainable Forestry Management, the Environmental Policy for the Agricultural and Livestock Sector, the Norms for Dry Forests, and the National Strategy for the Eradication of Poverty.

It is pertinent to take into consideration that both the Law on Environmental Management, and the Law on Decentralization and Social Participation, offer sectional governments and communities a framework for political and institutional actions regarding environmental management. Perhaps the most relevant aspect is the Decentralized Environmental Management System (Sistema Descentralizado de Gestión Ambiental (SDGA)) as a mechanism of political, institutional, legal and operative articulation of the efforts in facing and managing environmental problems. Although the transfer of environmental competencies still has a series of obstacles of a technical and political nature to overcome, it is possible to provide coherence to an environmental management stemming from existing local conditions and possibilities. An opportunity is presented in the activation of the Cantonal Development Committees foreseen in the Law on Environmental Management.

National and sectoral projects and agreements can enhance capacity building at the national level in the fight against Desertification. For example, the “Development of the Decentralized Environmental Management System” Technical Cooperation Agreement between Ecuador and the IDB, has as its goal to prepare the Ministry of the Environment so that it may operate as the directing, coordinating and supervising entity of the National Decentralized Environmental Management System (Sistema Nacional Descentralizado de Gestión Ambiental (SNDGA)), in order to make environmental management decentralization processes, opera-

tional. In addition, the Decentralization Strengthening Project (Proyecto de Fortalecimiento a la Descentralización) from the CONAM, contemplates, among other aspects, funds for training programs in various topics.

A major opportunity is the bi-national natural resource management—particularly with Peru—which has the legal support of both States involved. This implies a greater commitment in the assignment of economic resources. The signing of the peace agreement between Ecuador and Peru, which has not sufficiently expressed the commitments assumed by both countries, has awakened, specially from the international cooperation side, the interest for investing in developmental projects, as with the case of the Swiss and German cooperation in the mountainous range of El Cónдор.

Finally, with the view of achieving funding for the fight against Desertification, the presence of the following GEF operational programs can be seen:

Operational program 1: Arid and Semi-arid Ecosystems

Operational program 2: Coastal, Marine and Sweet water Ecosystems.

Operational program 4: Mountainous Ecosystems.

Operational program 9: Land and Water, multiple activity spheres.

Operational program 12: Comprehensive Ecosystem Management.

Operational program 13: Conservation and Sustainable Uses of the Biological Diversity for Agriculture.

Summary of Cross-cutting Issues and Opportunities for capacity building on the three thematic spheres

Cross-cutting Issues on the three thematic spheres

The identification of issues common to the three thematic spheres, implied grouping the characteristics of priority issues in each thematic area as confronted by its priorities and opportunities.

In this manner, the identification and characterization process of cross-cutting issues achieved defining seven “synergistic forums” that in turn define three cross-cutting issues.

The synergistic issues and forums are shown in the following table:

| CROSS-CUTTING ISSUES | SYNERGISTIC FORUMS |
|--|---|
| Governance, social awareness and institutional coordination Seen as the lack of capacities to impact in: a. Political Agendas. b. Decision processes. c. Public awareness creation regarding issues of the Conventions. d. Promotion of the participation by civil society in said issues. | 1. Environmental governance, strengthening of institutional authority and coordination. 2. Processes of decentralization and deconcentration in the management of natural resources and the environment. 3. Public Awareness and Participation. |
| Human talent and knowledge management, learning and information. Seen as the absence or lack in: | 1. Individual talents at the technical and scientific levels; experience applied to practice; study programs and univer- |

| | |
|--|--|
| a. Training of human capital. b. Generation of knowledge for management and decision-making. c. Learning systems. | sity initiatives within the environmental field. 2. Availability of technical information regarding the environmental reality of the country. |
| Financing Seen as the existence of economic limitations and of infrastructure in institutions, as well as the absence of sustainable financing mechanisms and opportunities. | 1. International Financing Mechanisms. 2. International Cooperation. 3. Mobilization of Internal Financial Resources. |

Opportunities for developing cross-cutting initiatives, plans and capacity building projects on the three thematic spheres

The opportunities for capacity building in these issues are as follows:

| CROSS-CUTTING ISSUES | OPPORTUNITIES FOR CAPACITY BUILDING IN SYNERGISTIC FORUMS |
|--|---|
| Governance, social awareness, and institutional coordination. | <p>Environmental Governance, Authority Building and Institutional Coordination</p> <p>The existence of instances such as that of the National Sustainable Development Council (CNDS), the environmental authority represented in the Ministry of the Environment and local governments; their inter-relationship and their heterogeneous strengthening levels, represent forums to address cross-cutting issues of the three Conventions and apply concrete actions benefiting application of commitments assumed in the Conventions. From these forums, they seek boosting processes in order to achieve:</p> <ul style="list-style-type: none"> ▪ A state policy favoring sustainable development. ▪ Commitment by multiple public and private stakeholders regarding the challenge of sustainable development. ▪ Institutional capacity for the application of the law; inter-institutional arrangements for land planning. <p>Decentralization and Deconcentration Processes in the Management of Natural Resources and the Environment</p> <p>The process of decentralization and deconcentration has generated a series of experiences and capacities in certain municipalities and sectional governments. Likewise, it has allowed development of institutional agreements among local and national instances and have fostered cooperation initia-</p> |

| | |
|--|---|
| | <p>tives among local entities for the promotion of an integrated management of common environmental territories or problems. These processes must be empowered through the promotion of:</p> <ul style="list-style-type: none"> ▪ Initiatives of responsible participation by local stakeholders in the management of natural resources and the environment and support through effective application of existing legal frameworks. ▪ Agreements that optimize the use of financial resources and management of necessary environmental information. ▪ Capacity building at the local institutional level. ▪ Coordinated management of necessary financial resources stemming from international cooperation. <p>Public Awareness and Participation</p> <p>Levels of public awareness existing among the population regarding environmental issues, require being capitalized along with elevating the environmental thematic to levels similar to those that socio-economic issues command. Environmental aspects must be considered within the concept of social debt. This strategy must be boosted at various levels and through diverse orientations. The following are identified as forums for intervention:</p> <ul style="list-style-type: none"> ▪ General Public. ▪ Communication Media. ▪ Decision makers. <p>The strategy must be directed to the establishment of public forums for awareness creation, dialogue and concretion in order to address the environmental problem and implement national agendas.</p> |
| <p>Human Talents and knowledge management, learning and information</p> | <p>Individual talents at the technical and scientific levels; experiences applied to practice; study programs and university initiatives within the environmental sphere.</p> <p>There are capacities and talents developed at the technical and scientific levels within the scope of Biodiversity. This very development must be reached within the scope of the other Conventions (CMNUCC and CNUCD). The strengthening process must be leveraged around critical areas such as:</p> <ul style="list-style-type: none"> ▪ Scientific research that can be translated into public policies on natural resource management. ▪ Scientific knowledge with a bio-regional focus. ▪ Participation by communities in the production of knowledge and application of findings. ▪ Negotiation capacities of the country regarding the issues of the Conventions, and improvement of its presence in the international arena stemming from research results. <p>Further, the existing development of university programs must be capitalized as focused to environmental sciences, many at</p> |

| | |
|-------------------------|--|
| | <p>the graduate level. Likewise, present in universities, is an opening for working jointly with public and private institutions in the development of a new thematic. Despite this, critical areas must be addressed such as:</p> <ul style="list-style-type: none"> ▪ Strengthening of college programs in issues related to combating Desertification and Climate Change. ▪ Analysis of current curricular offerings. ▪ Personnel training. <p>Availability of technical information regarding the environmental reality of the country</p> <p>The existence of national and regional institutions has allowed having wide availability of information regarding the environmental reality. However, there is a series of limitations that hinder optimizing the use of said information for improvement of the management of natural resources. The critical areas to be addressed are as follows:</p> <ul style="list-style-type: none"> • System of indicators of sustainable development validated within the local sphere. • Meta-base formats of various existing information systems (this requires the promotion of standards, protocols, institutional arrangements, etc.) • Access to information and updating through decentralized mechanisms that allow participation of the Ministry of the Environment and local governments. |
| <p>Financing</p> | <p>International Financing Mechanisms and International Cooperation</p> <p>The country has experience in the access and management of funds originating at the GEF. In addition, successful experiences of international coordination and cooperation were identified. All of these can heighten topics of interest in the national sphere regarding:</p> <ul style="list-style-type: none"> • Coordination of multilateral cooperation. • Economic activities related to the environmental sphere for its promotion. <p>Mobilization of Internal Financial Resources</p> <p>There is a greater availability of public investment at the local governmental level. National political instruments identified the environmental issue as key for development, which could orient national investments. It is a priority to address areas such as:</p> <ul style="list-style-type: none"> • Optimization in the use of natural resources through delegation of functions to the private sector and/or civil society. • Sustainability of investments performed around the environment. |

| | |
|--|--|
| | <ul style="list-style-type: none"> • Coordination from the Ministry of the Environment with national institutions of the public sector. • Conception of investments in the environment as an integral part of social debt, in order to guarantee sustainability of issues at hand. |
|--|--|

Capacity building actions for environmental management in Biodiversity and Forestry Affairs; Climate Change; and, Desertification and Land Degradation in Ecuador

Action Plan

The projects and initiatives presented in the PLP Documents and Cross-cutting issues and Synergies, were processed in order to define and characterize the **Strategic Lines** of action regarding Capacity Building in the three thematic spheres. The lines consider the priority issues inside each sphere, to identify **Action Mechanisms**. In addition, **stakeholders** were identified to lead the actions (in management), others for support, and possible sources of financing.

On their part, the strategic lines have been grouped into three **axes**, a general one, a specific one, and a cross-cutting one. These axes are the "Capacity Building Needs in Biodiversity, Climate Change and Desertification", which must be addressed through the Action Plan and Financing Strategy.

The specifics of the axes are as follows:

a. General Axis:

- Strengthening of the central environmental institutional standing.
- Backstopping of the decentralization process.

b. Specific Axis:

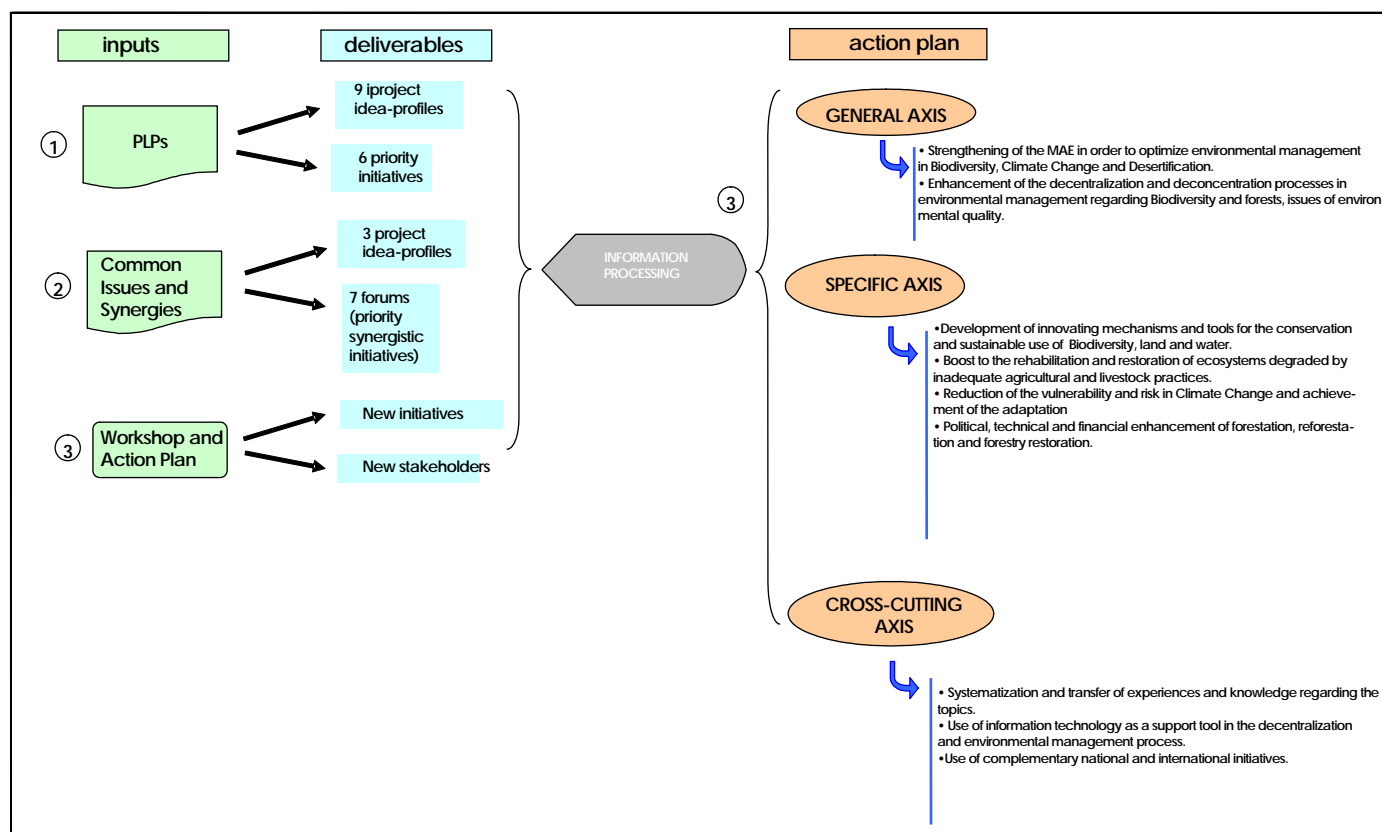
- Creation of conservation, Biodiversity and natural resource instruments
- Promotion of the rehabilitation and restoration of degraded ecosystems.
- Promotion of reforestation and forestry restoration.
- Adaptation to Climate Change and lessening of the risk and vulnerability of its effects.

c. Cross-cutting Axis:

- Systematization and transfer of experiences and knowledge in the three thematic spheres.

- Use of information technology as a support tool in the process of decentralization and environmental management.
- Capitalization of complementary national and international initiatives.

The procedure for the elaboration of the Action Plan is shown below:



The strategic lines defined, and their action mechanisms, are presented in the following table. Cross-cutting axes lines, given their essence, are not developed:

GENERAL AXIS OF STRATEGIC LINES

| STRATEGIC LINES | IMMEDIATE IMPLEMENTATION MECHANISMS PROPOSED | | |
|--|---|--|---|
| LEVELS | INDIVIDUAL | INSTITUTIONAL | SYSTEMIC |
| 1. Strengthening of the MAE in order to optimize environmental management in Biodiversity, Climate Change and Desertification. | 1.1.1. Training of ministerial officers in issues of: Project Management from the public sector; Monitoring and Evaluation, English; Information Management Systems; Systems for Decision-making; Conflict Management; Group Facilitation and Management; Normative Framework; Processes and Responsibilities of the Institutional Environmental Management in the Environmental and Public Sectoral Spheres (at the national, regional and global levels). Likewise, in issues regarding the environment stemming from the CAN, and of agreements and protocols of which Ecuador is a signing party. | <p>1.2.1. Permanent reporting within the interior of the MAE (central and regional plants) of the activities it performs in Ecuador in the fulfillment of international environmental agreements it has signed</p> <p>1.2.2. Design and implementation of a simple database in order to provide follow-up to attendance reports of international meetings on behalf of ministerial officers in order to provide follow-up of agreements</p> <p>1.2.3. Definition of roles and activities of the Foreign Affairs Office, of the INECI and of the MAE in the follow-up and capitalization of the opportunities donors offer to Ecuador</p> <p>1.2.4. Impel activation and participation of existing workgroups and committees in:</p> <ul style="list-style-type: none"> a) the formulation and follow-up to the implementation of sectoral policies; b) the coordination with other sectional and national governmental agencies c) Formation of environmental review offices d) the structuring of information exchange networks <p>1.2.5. Design and implementation of a dynamic and online national environmental information system</p> <p>1.2.6. Design, ratification and dissemination of the procedures for the setting of priorities in environmental projects and of sustainable development. This implies establishing and disseminating mechanisms so that they may be used by all in project formulation, follow-up and evaluation system, as determined by the legal framework in force.</p> | <p>1.3.1. Reactivation of the National Sustainable Development Council</p> <p>1.3.2. Structuring and implementation of the National Decentralized Environmental Management System (SNDGA), and the setting into motion of the Coordination Commission</p> |

| | | | |
|---|---|---|--|
| | | <p>1.2.7. Formation from the Planning Board and the International Affairs Board of the "Project Group" comprised by the coordinators, managers and directors of ALL projects executed with the backing of the MAE</p> <p>1.2.8. Dissemination of activities of the units, processes and sub-processes of the MAE within the interior of the institution.</p> <p>1.2.9. Formulation and implementation of a policy of employment incentive for MAE personnel under objective evaluation schemes regarding performance and accountability</p> | |
| <p>2. Boost of the deconcentration and decentralization process of environmental management in biodiversity and forests; and, issues of environmental quality based on the transfer of competencies⁸</p> | <p>2.1.1. Training for ministerial officers of the MAE in: issues of local development and legal frameworks regarding deconcentration and decentralization; follow-up, control and technical assistance to local governments stemming from the new role the MAE must assume following decentralization</p> <p>2.1.2. Systematization and dissemination of successful local experiences regarding decentralization / deconcentration within the MAE (experiences exchange workshops)</p> | <p>2.2.1. Local reporting of the real possibilities for decentralization and deconcentration.</p> <p>2.2.2. Establishment of agreements and procedures within the MAE regarding issues that the MAE must define IMMEDIATELY, such as "decentralizables" based on practical needs and the political scenarios of deconcentration and decentralization</p> <p>2.2.3. Feedback from the environmental information system, and its decentralized usage</p> | <p>2.3.1. Structuring and implementation of the National Decentralized Environmental Management System (SNDGA)</p> |

⁸ Involves climate change and desertification as *issues* not as competencies or responsibilities, because they are not defined as such for the decentralization process

| SPECIFIC AXIS OF STRATEGIC LINES | | | |
|---|---|--|--|
| STRATEGIC LINES | IMMEDIATE IMPLEMENTATION MECHANISMS PROPOSED | | |
| LEVELS | INDIVIDUAL | INSTITUTIONAL | SYSTEMIC |
| 3. Development of innovative mechanisms for the conservation and sustainable use of biodiversity, forests, land and water | <p>3.1.1. Sharing perspectives, viewpoints and real valuation social and political possibilities (payment-collection) for environmental services, particularly water, through experience exchange and dissemination of the proposals of the Hydrographical Resources Forum⁹</p> <p>3.1.2. Training for the ministerial officers of the central and regional plants in the use of the preventive principle through clean technologies with the purpose of reducing contamination to air, land and water; and, Evaluation and Risk Management on OVM-OGM</p> | <p>3.3.1. Furtherance in the generation of concrete proposals to the workgroups of the National Climate Committee, National Biodiversity Workgroup, Paramos Workgroup</p> <p>3.3.2. Promotion of the declaration and management of private protected areas through adequate technical, scientific and social national realities</p> <p>3.2.3. Support of the ad hoc working group in MDL forestry issues in order to support effective and competitive entrance of the country into the carbon market</p> <p>3.2.4. Formalization of the National Biodiversity Policy and Strategy, and the National Forestry Strategy</p> | <p>3.3.1. Request the Central Bank of Ecuador and the Ministry of the Economy and Finance to further elaboration of "environmental satellite" accounts</p> <p>3.3.2. Generation from the MAE for environmental economic valuation mechanisms and instruments</p> |
| 4. Boost to rehabilitation and restoration of degraded ecosystems due to inadequate agricultural and livestock practices | <p>4.1.1. Local training and dissemination of agro-ecological and sustainable agricultural practices, particularly in those that reduce generation of contaminant wastes</p> <p>4.1.2. Sharing local sustainable agricultural experiences and markets (coordinating with INCCA and local governments)</p> <p>4.1.3. Rescue of traditional technologies of natural resources management</p> | <p>4.2.1. Local impel to agro ecological practices use coordinating with AME and INIAP</p> <p>4.2.2. Promotion to experiences diffusion on appropriate technologies use in agricultural production</p> | <p>4.3.1. Boost of local governmental incidence in markets for agro-ecological or organic products</p> <p>4.3.2. Sitting up of permanent financing lines to technological innovation and research in sustainable agriculture (in coordination with MAG, INIAP and local governments)</p> |

⁹ This implies socialization of payment for environmental service experiences developed by other internal and external MAE projects (Chaco or Pimampiro Cases)

| | | | |
|---|--|--|--|
| <p>5. Reduction of the vulnerability and risk of climate change and achievement of the adaptation</p> | <p>5.1.1. Training for MAE ministerial officers regarding the institutional process of Climate Change</p> | <p>5.2.1. Definition and execution of a minimum agenda on working issues of the CNC, and impelling its treatment</p> <p>5.2.2. Boost in the preparation of adaptation and mitigation proposals on behalf of the working groups of the National Climate Committee</p> <p>5.2.3. Dissemination within the interior of the MAE and of other governmental agencies regarding the climate change process in Ecuador and the risk represented to productive systems and to the national economy</p> | <p>5.3.1. Scientific knowledge management in order to sustain preventive adaptation measures due to climate change</p> <p>Development of a national agenda in climate change that implies:</p> <ul style="list-style-type: none"> a) Formulating national policies and planning of adaptation measures due to climate change in the USCUSF and water provision b) Social dissemination and training on adaptation to climate change. |
| <p>6. Political, technical and financial boost to forestation, reforestation and natural forestry restoration</p> | <p>6.1.1. Training and dissemination directed to local capacity building on issues of forestry management, International Forestry Regimen (Régimen Forestal Internacional (RFI)) and National Forestry Norms</p> | <p>6.2.1. Dissemination of the national forestry plan at the regional level, and also internally and externally at the MAE</p> <p>6.2.2. Dissemination of the possibility Ecuador has of entering into the carbon market regarding the forestry sector</p> <p>6.2.3. Introduction of the issue of management of natural regeneration and biology of conservation (from the perspective of sustainable forestry management) regarding the norms of forestry management</p> <p>6.2.4. Formation of the National Forestry Council</p> | |

Each PLP defining five priority issues must be remembered. Of these priorities, three were integrated into project idea-profiles. The same case applies for Cross-cutting issues and Synergies.

The NCSA Ecuador seeks for capacity building to become a process that can achieve mid- and long-term implementation and financing.

Short-term implementation is fulfilled with the execution of emerging activities defined within each mechanism and financed by the NCSA itself.

Regarding the mid- and long-terms, two options can be observed. The first one is the execution of projects identified by this Self-assessment (12 in total), and the second one is the design and implementation of a Wide multi-sectoral approach program¹⁰.

For the first option, three of the priority issues in project idea-profiles were integrated. These fit into the strategic lines of the Action Plan in the following manner:

| STRATEGIC LINES | INITIATIVE (With Project Profile) | THEMATIC SPHERES | | | CROSS-CUTTING ISSUES |
|--|---|------------------|----------------|-----------------|----------------------|
| | | biodiversity | Climate change | desertification | |
| Strengthening of the MAE in order to optimize environmental management in biodiversity, climate change and desertification | Citizen participation and public policies for sustainable development | | | | ✓ |
| Boost to the process of de-concentration and decentralization of environmental management in biodiversity and forests; and, issues of environmental quality based on the transfer of competencies. | Strengthening of integral environmental management in municipalities | | | | ✓ |
| | Strengthening of local environmental management and of citizenry participation forums | ✓ | | | |
| STRATEGIC LINES | INITIATIVE (With Project Profile) | THEMATIC SPHERES | | | CROSS-CUTTING ISSUES |
| | | biodiversity | Climate change | desertification | |
| Development of innovative mechanisms and instruments for the conservation and sustainable use of biodiversity, forests, land, and water | Citizen training and information in issues of Biotrade and bio-safety | ✓ | | | |

¹⁰ See Chapter 6.

| | | | | | |
|---|---|---|---|---|---|
| Boost to the rehabilitation and restoration of degraded ecosystems due to inadequate agricultural and livestock practices | Development of a strategy for financing and implementation of the PAND | | | ✓ | |
| | National Training Plan in the fight against desertification | | | ✓ | |
| | Structuring of the system of indicators on desertification in Ecuador | | | ✓ | |
| Reduction of the vulnerability and risk in climate change and achievement of the adaptation | Preparation and implementation of a National Climate Change Agenda | | ✓ | | |
| | Facing capacity building limitations for Seasonal and Annual Agro-climatic Forecasts | | ✓ | | |
| Political, technical and financial boost to forestation, reforestation and forestry restoration | Facing capacity building limitations for Forestation and Reforestation in Ecuador | | ✓ | | |
| Systematization and transfer of experiences and knowledge* | Systematization and capitalization of best practices in biodiversity management, and support of priorities research | ✓ | | | |
| Information technology for support of the decentralization and environmental management process | Information management for environmental management | | | | ✓ |

Through these entries, a matrix defining logical means of facing capacity building limitations was configured, in agreement with a priority issue found in the PLP documents, Cross-cutting issues and Synergies.

Each PLP defining five priorities must be remembered. Of these, three were integrated in project idea-profiles, and two were considered as “initiatives” in the Action Plan.

The NCSA Ecuador seeks for the Action Plan to be “implementable” in the short-term. In order to execute this idea, three of the priority issues were integrated into the project idea-profiles. These fit as follows in the strategic lines of the Action Plan.

Complementary measures proposed

The need for a multi-sectoral capacity building process

In order to define the Financing Strategy, and given the inter-sectoral standing of the Action Plan described, it is necessary to start from a wide framework of relationships, as presented in the one below:

IMPRESA: FAVOR INSERTAR AQUÍ EL GRÁFICO QUE SE PROVEE EN FORMATO ELECTRÓNICO

The integrating focus of the macro, along with the productive and the social, sustain the need for recruiting international support in order to solve national problems, moreover considering that the country's resources will be focused on combating poverty. Under this framework of relationships, the possibilities for success of a financing strategy based on the fiscal, on tax increases or on resource deployment from the social to the environmental, does not appear to be considerable, although it is not impossible either.

This evidence, linked to the qualification of stakeholders obtained during the NCSA process, shows that there are two possible ways in the search for financing: the national public banking system, and international cooperation. Regarding national public banking, the financing strategy depends on the decisions and actions that the main

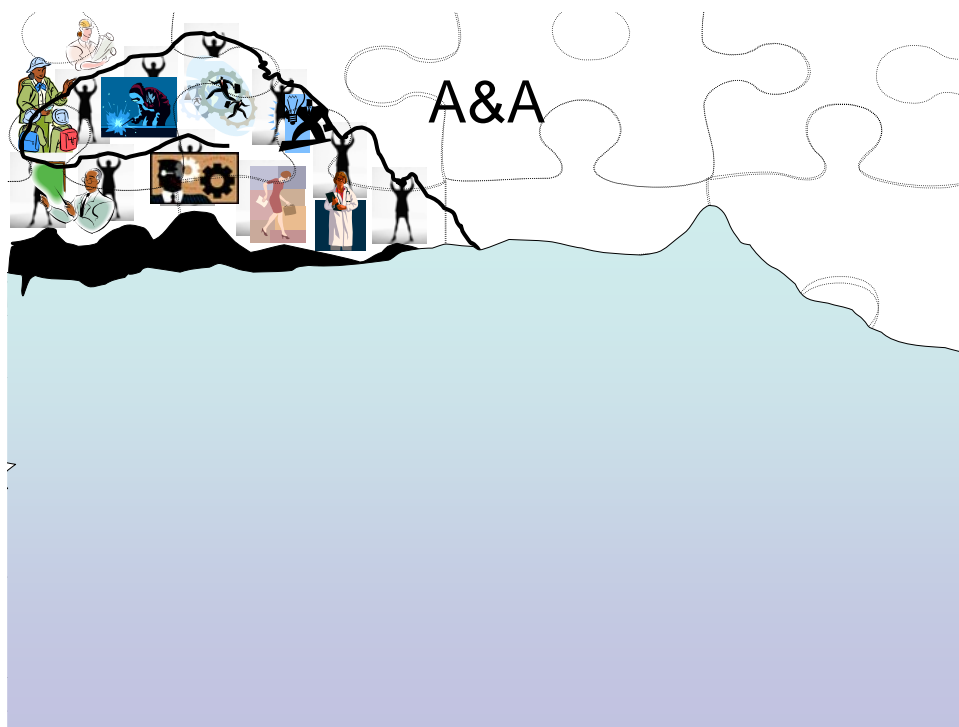
stakeholders identified carry out (mainly by the MAE). Regarding cooperation, the strategy is more difficult to structure, since despite the fact that the MAE has traditionally based itself on international resources for its actions and projects, it faces in this case, a challenge in financing a far-reaching and packed agenda.

Therefore, a focus that sets forth an integral and multi-sectoral financing plan that guarantees maintenance of the natural capital and sustainability at the country level, and that allows complementing of resources stemming from diverse donors regarding a defined agenda, must be sought.

Fortunately, a new Cooperation Framework based on the Global Harmonization and Alignment Initiative can be observed. This framework can be validated as the axis for this financing strategy for capacity building.

The Harmonization and Alignment Framework (A&A)

The graph below integrates the harmonization and alignment framework with a sea of cooperation. In this, a group of resources (fish) is captured by a country whose inter-sectoral stakeholders are joined by a conductive thread (the country agenda) that not only guides the attainment of internal alignment agreements but that furthermore, is extended to the international cooperation forum as a guide for the attainment of agreements with the international cooperation.



In order to allow for capture, the conductor thread of the country must be connected to a donor group with which it has identified the common interest for joining the agenda of said country and in which, furthermore, it had previously achieved harmonization of its rules of conduct (assistance for development) and has a minor resis-

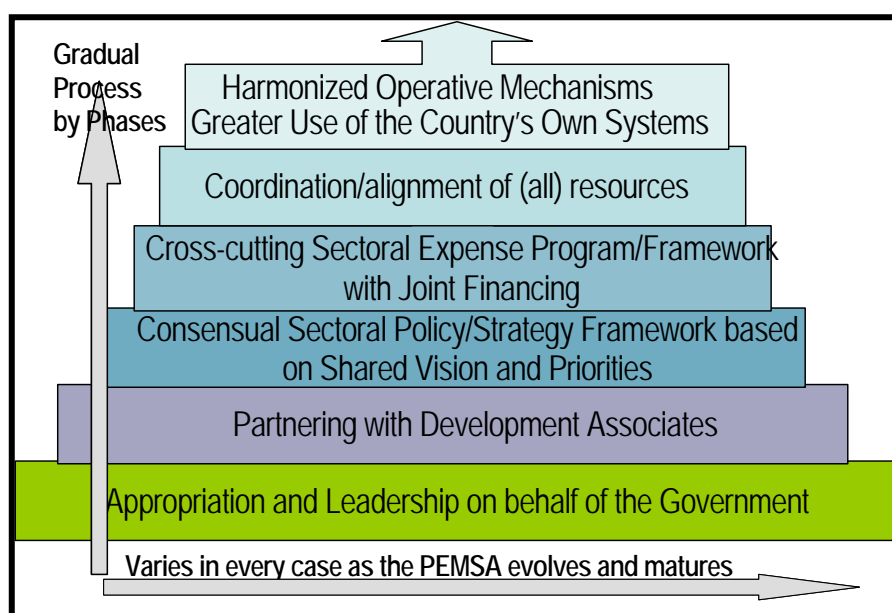
tance for leaving its natural forum and working in a network (international cooperation agenda).¹¹

In the application of the Financing Strategy of the Action Plan, it is necessary to decide about whether the three thematic spheres (Biodiversity, Climate Change and Desertification) can comprise the "strings" that the NCSA process can turn into a conductor thread (fishing net) implemented by the country agenda. In this manner, it can join the global cooperation network that has begun to harmonize its criteria regarding the three thematic spheres.

If this is so, and if the best international practices for cooperation are followed within the framework of harmonization and alignment, the next step is to build a PEMSA program (Wide multi-sectoral approach program - Programa de Enfoque Multi Sectorial Amplio) that would convert into an internationally-known program known as SWAP (Sector Wide Approach Programs).

The Multi-sectoral Wide Approach Programme (PEMSA)

In order to make the country agenda be perceived by donors as an international cooperation agenda, building not only an Action Plan and a Financing Strategy, but going immediately into the construction of an execution process such as the following one, is required:



The NCSA process has advanced in the elaboration, validation and study of the PLP documents and Synergies, the capture of complementary inter-sectoral information, the definition of a draft of the Strategic Lines, the execution of Technical Interviews for

¹¹ This graph has been drafted by Hexagon Consultores (Consultants) based on the conclusions of the Harmonization and Alignment Regional Workshop (Taller Regional de Armonización y Alineamiento) organized by the Interamerican Development Bank and the Organisation for Economic Co-operation and Development (OECD) in Honduras during November 2004. As preparation for this workshop, Hexagon Consultores was selected by IDB Headquarters in Washington as the firm charged with elaborating and presenting, prior authorization from the Ministry of the Economy and Finance, the "Case Study of Ecuador on Harmonization and Alignment."

the construction of the Action Plan, the systematization and preparation of the Action and Stakeholders Matrix, a National Technical Workshop for adjustment and validation of the Matrix, and the systematization of workshop results (memoirs).

This is better explained in the following graph:

IMPRENTA FAVOR INSERTA AQUÍ GRAFICO QUE SE ADJUNTA “ORGANIZACIÓN”

When contrasting the advances of the NCSA Project as shown in the graph above¹² with the gradual process identified in the PEMSA graph process¹³, the phase of appropriation and leadership on behalf of the Government (MAE), must be started. The definition of the multi-sectoral consultative group accompanying the Government. At the same time visits to donors in order to define the best forums for technical collaboration and financing for capacity building also can be made.

In that way, the stream towards programmatic support in long-terms for capacity building can be supported by donors in a technical and financial manner. This suppose a potent innovation in the field of environmental management in Ecuador.

¹² Graph created by Hexagon Consultores as part of the methodological proposal and work offering presented during the contest summoned by the UNDP in order to select it as the firm charged with the facilitation of the elaboration process of the Action Plan and the Financing Strategy of the NCSA Ecuador Project.

¹³ Graph created by an expert team in Sectoral Wide Approach Programme (SWAP) operations at the World Bank Headquarters in Washington, DC.

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