

## **Name of the Partnership/Initiative**

PANAMA CENTER FOR SUSTAINABLE DEVELOPMENT

**Expected date of initiation:** September-October, 2002

**Expected date of completion:** Indefinite

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## **Partners involved**

Government: Panama Canal Authority, National Environmental Authority, Sustainable Development Program of Darien (Ministry of Economics and Finances), National Secretariat of Science and Technology

Local research and education institutions: Smithsonian Tropical Research Institute (STRI), Institute of Agricultural Research of Panama, Gorgas Memorial Institute of Health Studies, University of Panama, Santa María La Antigua University, Florida State University-Panama Canal Campus, National Secretariat of Science and Technology

International and regional research and education institutions: City of Knowledge Foundation, Tropical Agricultural Research and Education Center (CATIE), Inter-American Institute for Cooperation in Agriculture (IICA), Water Center for the Humid Tropics of Latin America and the Caribbean (CATHALAC), George Westerman Center Foundation, Universidad Popular de las Américas, ISTHMUS- The School of Architecture and Design for Latin America and the Caribbean

Foreign research and education institutions: Purdue University, Iowa State University, US Universities Consortium (Cornell, UC Davis, Texas A&M, Iowa State), McGill University, Tulane University, Universidad para la Paz, Saskatchewan Institute of Applied Science and Technology, Caribbean Research Center at Medgar Evers College of the City University of New York, University of Puerto Rico-Mayaguez, Universidad para la Cooperación Internacional, Rosenstiel School of Marine and Atmospheric Science of the University of Miami

International and regional networks: Education for Local Development Initiative (ELDI), Regional Network for Research and Education in Agriculture and Natural Resources (REDCA), International Indigenous Youth Network of Latin America, International African Descendent Youth Network of Latin America, The Southern Caucus of NGOs for Sustainable Development of the Latin America & Caribbean Regions Component

International NGOs: Partnership for the Environment, Earth Council, Southern Diaspora Research and Development Center, Haywood Burns Environmental Education Center

Private sector organizations: Canglobal Management, Panamundo Industrial, Panagator

National and International Cooperation Agencies: Fundación NATURA, UNDP, USAID Panama, UNEP-Regional Office for Latin America and the Caribbean

*Leading Partner:*

Name of the contact person: Rodrigo Tarté

Address: The City of Knowledge Foundation, Bldg. 95, Clayton, Ancon, Panama, R.P.  
Phone: (507) 317-0111/16  
Fax: (507) 317-0118  
e-mail: rtarte@ciudadelsaber.org.pa

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### **Main objectives of the Partnership/Initiative**

The Panama Center for Sustainable Development, with headquarters at the City of Knowledge, is proposed as an international partnership/initiative to develop two major components:

1. International Information Network for Sustainable Development
2. International Institute for the Study and Promotion of Sustainable Development

Major objectives:

- Develop information systems needed to assess environmental and development problems and support research and educational programs in sustainable development
- Promote interdisciplinary and inter-institutional research programs and activities aimed at developing knowledge-based sustainable development plans and policies
- Develop scientific and technical capabilities through education and training for the implementation of sustainable development plans, policies and programs

Specific objectives:

- Disseminate and exchange successful experiences and lessons learned in sustainable development programs
- Collect, analyze, systematize and make available strategic information needed to support research, educational and sustainable development programs
- Promote and conduct research integrating natural, social and economic sciences into ecosystems management
- Develop and validate holistic research-based models of the complexities and interactions underlying decision-making for ecosystems management and sustainable development
- Develop decision support systems on sustainable development
- Develop an integrated educational methodology to understand, teach, and manage ecosystems and sustainable development options
- Disseminate and transfer strategic information and research results through live and distance educational and training programs
- Educate decision makers and stakeholders in sustainable development issues
- Support existing institutions dealing with sustainable development issues
- Enhance partnerships between governmental and non-governmental actors, including all major groups as well as volunteer groups, on programmes and activities for the achievement of sustainable development at all levels
- Complement and support education, information and capacity building to communities involved in sustainable development and protection, conservation and management of watersheds in the Americas
- Enhance and support parallel international initiatives by other major groups

#### Brief description:

The Center is proposed as a strategic solution to the paucity of information management systems on environmental and development issues, and lack of know-how for the integrated management of ecosystems and sustainable development in general.

Panama has several strategic advantages for the development of the afore-mentioned aspects. The City of Knowledge and the Panama Canal watershed constitute, respectively, ideal institutional and physical scenarios.

The City of Knowledge is an international complex of academic, research, technological development, industrial and cultural institutions, which converge within a context of integration of efforts with the purpose of promoting the generation, dissemination and use of knowledge for achieving an integral human development. Its location in a former US military base near Panama City, conforms a complex of more than 300 buildings and houses in an area of 120 has. It promotes the establishment of educational, research, and development programs at both international and national levels, and provides high technology facilities and a capacity to establish strategic alliances among its members. The Panama Canal Watershed is a natural showcase and a living laboratory, where efforts and integrated approaches to resources and ecosystems management can be strengthened and enhanced. The combination of both scenarios provides a unique opportunity to develop and manage an international multi-institutional and multi-cultural environment for research, development of decision support systems, and education in integrated management of ecosystems and sustainable development.

On the other hand, the commitment of the Government of Panama towards sustainable development is evident in the efforts devoted to several projects at national and international levels, such as: the Darien Sustainable Development Program, the Bocas del Toro Conservation and Development Project, and the Mesoamerican Biological Corridor of the Atlantic Region of Panama.

The Information Network component will include social, cultural, economic, and environmental assessments, at the sub-national, national, trans-boundary, and regional levels. It will also include biodiversity assessments, and spatial data systems, through remote sensors, geographic information systems, and field information.

The Institute component will emphasize research and educational activities involving the expertise from many disciplines, including but not limited to history, sociology, anthropology, economy, political science, geography, agriculture and food systems, forestry, climatology, watershed management, aquatic and marine resources, land use, and systems analyses. The Institute will support the countries in sensitising and training the stakeholders and decision makers in defining policies, programs and projects to achieve sustainable development at local and national levels.

The afore-mentioned objectives stand for and comply with the social, economic, institutional, and environmental objectives of Agenda 21 and with the pertinent goals of the United Nations Millenium declaration. These objectives include: reducing poverty and hunger through better sustainable development practices, combating diseases, guaranteeing environmental sustainability, and promoting global approaches to face the problems of less developed countries.

## **Expected results**

This partnership/initiative has the potential to positively impact world society in several important ways. The opportunities to study high-level ecosystems and sustainable development dynamics at the City of Knowledge and the Panama Canal watershed are enormous. In particular the partnership melds together a unique combination of facilities, the complexity of activities within the region, and the location of a vast watershed region that contains virtually all of the components of both social and natural ecosystems. Because the Panama Canal watershed provides a wide variety of biological systems, physical resource challenges and a broad range of socio-economic systems, the effects of interactions between social and natural ecosystems can be studied in unique integrated approaches. This information may be used to predict management effects in a variety of other ecosystems worldwide.

This collaboration will provide a new approach to international cooperation between social and natural scientists and will promote the understanding of how each area contributes to, and is necessary for true ecosystems management and designing better sustainable development options. It will encourage multicultural, international cooperation in studying, modelling, and promoting integrated sustainable development management. A valuable outcome for the industry and business community will be informative models to predict effectiveness, interactions, and potential dangers of unsustainable management practices to ecosystems at all levels. It is expected that students, decision makers, local communities, and the industry will be equipped to integrate aspects of the natural and social sciences research to improve sustainable development options to a level not yet achieved by traditional scientific approaches alone.

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## **Specific targets of the Partnership/Initiative and timeframe for their achievement**

To ensure an orderly and effective plan to ultimately accomplish the project mission, the partnership/initiative has been organized into 4 phases:

Phase I. Formal constitution of the Consortium for Sustainable Development with the partners already identified and committed to the initiative. The Consortium for Sustainable Development is the partnership alliance that will participate in the initiative. Date: September-October, 2002.

Phase II. Development of an Interdisciplinary Project Formative Team of scientists, industry and community leaders from Central, South, and North America to review the proposal, design and develop the initiative. This work will encompass and transform the vision and goals of the initiative into an organizational structure and identify expertise needed to successfully bring together diverse discipline and funds into the Center. Date: January-February, 2003.

Phase III. Organizing and implementing a worldwide conference on Ecosystems Management and Sustainable Development hosted by Panama City of Knowledge. This conference will bring leading scientists from diverse areas and disciplines, private sectors, community leaders, and interested donors to address the needs and challenges in sustainable development. As a result, the conference will serve to sensitize the academic community, decision makers, research-based industries, and the general populace to the opportunities and challenges involved and to generate worldwide recognition and support for Phase IV of the initiative. Date: May-June, 2003.

Phase IV. Establishment at the City of Knowledge of the Panama Center for Sustainable Development and its programs in information management, research, and education. The Center will be the organizational structure to foster worldwide cooperation among international teams of scientists and educators. The Center will provide the environment and programs needed to study and model the Panama Canal watershed, and to conduct collaborative activities with other watersheds in the Americas, such as the Albany, New York-Patruon Creek watershed (estuary of the Hudson River in the United States) (Annex 1). It will also provide the environment to establish a world-class model of ecosystem management for active teaching and research that will bring together natural and social sciences in a cooperative project to study the world-wide problems and dynamics of sustainable development. Date: September-October, 2003.

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### **Coordination and implementation mechanism**

The coordination and implementation mechanism will be identified and recommended in Phase II. However, it could be envisaged that a coordinated entity will operate from the City of Knowledge, where the Center is located. Field research will be conducted in locations at the Panama Canal watershed and coordinated with research in other areas of the country, the region and the continent. Laboratory and teaching facilities exist already at the City of Knowledge and/or affiliated institutions. An International Advisory Council will provide appropriate guidance to the general direction of the Center's efforts. The consortium is expected to be actively involved in strategic and operational planning and implementation of the activities required to comply with the objectives.

At the national level, the Inter-institutional Commission for the Panama Canal Watershed (CICH) will strengthen the coordination mechanism of this initiative.

The CICH was created in 1999 to integrate efforts and resources for the conservation and management of the PWC, and promote its sustainable development. It serves as a strategic mechanism to build consensus among local and national institutions.

The CICH has become an effective and unique regional model for the inter-institutional coordination on the management of a watershed, with partnership between governmental, at ministerial level, and non-governmental organizations at the highest executive level. The Commission is integrated by six governmental entities and two non-governmental organizations with mandates and interests in the Panama Canal Watershed. The Panama Canal Authority chairs the Commission, and additional technical levels integrate committees involving fourteen governmental organizations.

It is important to mention that the Panama Canal Authority operates an Environmental Information Center for the Panama Canal Watershed, which is managed by the CICH. There is also a National Environmental Information System operated by the National Environmental Administration, and the very important input from the Smithsonian Tropical Research Institute in the fields of Biology and Ecology, which will all contribute with important basic information, and will be part of this partnership/initiative. Florida State University-Panama also offers, as part of its curriculum an undergraduate degree program in Environmental Studies. This program focuses on both the scientific and policy aspects of environmental issues. It is also important to mention that the consortium based in the George Westerman Center at the City of Knowledge is currently partner to the Albany watershed management and

conservation program designed to share best practices in this discipline developed in the Albany program in conjunction with work that will be accomplished with communities in and adjacent to watersheds in Panama (Annex 2) and Latin America. The “Universidad Popular de las Américas”, in organization stage at the George Westerman Center, is developing programs and curriculum to train specialists in sustainable development issues and has arranged for distance learning satellite operations in the United States and countries in Latin America in partnership with the Southern Caucus of NGOs for Sustainable Development.

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### **Arrangements for funding**

Physical facilities are already in place at the City of Knowledge (COK) and its affiliated institutions. Expected sources of funding for the implementation of the partnership/initiative include: Government (through different projects already on-going at the Panama Canal watershed and other locations of the country), International Organizations and donors, such as: USAID, UNDP, IDB, World Bank, and others.

A national and international campaign to raise funds for the initiative will be conducted. It is important to mention that several of the projects and programs implemented at the City of Knowledge have initiated from negotiations conducted by several affiliated institutions. For example, a USDA grant for a period of three years was allocated to a consortium of US Universities (Cornell, UC Davis, Texas A&M, and Iowa State) to conduct an educational project on Tropical Agriculture and Sustainable Development, using the Panama Canal watershed as a living laboratory. We expect that the Center’s collaborations will serve to produce further opportunities for funding and thus research and education.

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### **Arrangements for capacity building and technology transfer**

As indicated above, the objectives of the Center provide for training, informational support, institutional strengthening and other capacity building measures. Training is conceived as both formal higher education programs, such as the joint CATIE-IICA masters program in Agro-eco-businesses (already in a planning phase) headquartered at the City of Knowledge, to continuing education programs and training activities oriented at training decision makers, government and non-government organizations, private sector, and the general public. The City of Knowledge is establishing an information technology services center that will have the capacity to conduct a broad array of distance and virtual education activities, and develop educational and promotional materials, e.g. CD-roms, and multimedia presentations.

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### **Links of Partnership/Initiative with on-going sustainable development activities at the international and/or regional level**

In compliance with its mission, the City of Knowledge has affiliated 13 local institutions, and more than 15 foreign and international research and education institutions and programs involved in sustainable development activities (Annex 3). Links with other local and regional programs and projects also aggregate value to the initiative, besides funding possibilities. Among those projects it is worth mentioning the Mesoamerican Biological Corridor and its links with the biological corridor of the Atlantic Zone of Panama, the Sustainable Development

project for the Darien region, and several projects implemented at present in the Canal watershed.

In addition, City of Knowledge affiliated foreign and international organizations with on-going sustainable development activities such as CATIE, STRI, CATHALAC, and several US, Canadian, and Latin American Universities, account for unique partnerships.

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### **Monitoring arrangements**

Expected arrangements for monitoring of progress in the implementation of this Partnership/Initiative will be identified during the above-mentioned Phase II, along with the coordination and implementation mechanism.

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### **Other relevant information**

The Panama Canal watershed is a natural laboratory for integrated ecosystems and sustainable development management. The Panama Canal watershed constitutes more than 500,000 hectares of land, including: lakes, national parks, natural forests, agriculture and livestock, adjacent coastal zones in two oceans, small and big industries, subsistence farming, and urbanization projects. In addition, the area of influence of the Panama Canal watershed extends to two major cities (Panama in the Pacific, and Colon in the Atlantic) where 80% of the country's industrial, commercial, and economic activities occur, and where half of the country's population lives. The watershed also has a climatic and environmental database that has been operating for close to one hundred years. It has been also a major laboratory for biological and ecological research for more than 80 years, due mainly to the dynamic scientific programs of the Smithsonian Tropical Research Institute.

The need to link human activities with the natural biological processes occurring in such an ecosystem is necessary to achieve sustainable human development while at the same time assuring the ecosystem's health. In an attempt to promote uses compatible with the resource potential, a land use plan for the watershed was approved by law in 1997. More than 25 organizations, including domestic, international, regulatory, and scientific institutions, as well as NGOs, are involved in the implementation of the plan and a new institutional coordinated mechanism has been put into operation in 2000.

For its part, the City of Knowledge provides a unique institutional framework to incorporate and promote synergies among institutions and programs into a concerted international effort aimed at developing a model for the study of sustainable development. For more information on the activities, see the City of Knowledge Web-site: [www.ciudadelsaber.org.pa](http://www.ciudadelsaber.org.pa)

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### **Name and contact information of the person filling in this table**

*Name:* Rodrigo Tarté

*Position:* Director, Academic Area, The City of Knowledge Foundation

*Address:* Edif. 95, Clayton, Ancón, Apdo. 83-0645, Panamá, R. P.

*Phone:* (507) 317-0111/16

*Fax:* (507) 317-0118

*E-mail: [formac@ciudaddelsaber.org.pa](mailto:formac@ciudaddelsaber.org.pa)*

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## Annex 1. Notes on the Albany, New York-Patroon Creek Watershed

The Patroon Creek is one of two contaminated urban water bodies in Albany County of the State of New York that are in the process of being rescued from a history of abuse and is being restored. The Patroon Creek watershed encompasses five water bodies. The main branch of Patroon Creek originates at the Rensselaer Lake Reservoir and flows east approximately 6 miles to its mouth on the Hudson River at Albany. The northern branch originates at Murray Pond before it joins with the main branch just upstream of Patroon Reservoir. Tivoli Lakes Reservoir is located on a smaller tributary that joins the main branch further downstream. About 75% of the creek flows above ground. The midsection flows in pipes and culverts, reportedly since industrialization in the late 1800's. Six miles due east of Rensselaer Lake the Patroon Creek empties into the Hudson River at the Corning Preserve. The Hudson River crosses about 300 miles of New York State, north to south from the Adirondack Mountains to New York Harbor.

For approximately 3 miles the Creek travels north of old city residential neighbourhoods - West Hill, Arbor Hill, Sheridan Hollow and North Albany. These are populated by a high proportion of low income minority households and are designated targets of local, state, and federal urban revitalization efforts (HUD Community Development Block Grant program, Federal Enterprise Community Designation, and State Economic Development Zone Program).

The River's outstanding ecological and historic value is recognized by the State and Federal governments. The NY State 1987 Hudson River Estuary Management Act, 1991 Hudson River Greenway Act, State Coastal Zone Management Program, and Federal Hudson River Valley National Heritage Area and American Heritage designations promote coordinated efforts by federal, state, and local interests to improve the Hudson River and its watershed. Implementation efforts to reduce point and non-point pollution, restore ecological habitats, enhance recreational use, and provide public education/interpretation are underway.

The W. Haywood Burns Education and Research Center and the Arbor Hill Environmental Justice Corporation, Albany City, have been involved in the remediation of this Watershed.

Context of program in relation to other US Environmental Program Linkages:

*City of Albany.* In January 1998 the Mayor of Albany created a Task Force to comprehensively evaluate the City's water resources including lakes, wetlands, ponds and streams, and to make recommendations for their protection and enhancement. The Patroon Creek watershed encompasses many of the most prominent city water bodies. The City Water Department is now monitoring the Creek for baseline bacteria levels and overall water quality, sampling twice per month at 8 sites along the Creek. They have identified high levels of bacteria and describe the Creek as having qualities similar to that of a storm sewer system.

*Arbor Hill Environmental Justice Corporation.* Arbor Hill Environmental Justice Corporation (AHEJ) is based in the predominately African-American community of Arbor Hill within Albany, New York, the state capital. The mission of AHEJ is to serve the community as environmental health advocate, conduct environmental testing, rehabilitate green and open space, and serve as a resource for legal redress. This organization is comprised only of community members representing the Arbor Hill neighbourhood associations.

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## Annex 2. Activities of the Panama Pilot Process for Community Participation in Sustainable Development

National Master Planning sessions took place from 1996 through 1997. The New Gamboa Master Planning sessions took place in 1997. The Master Planning sessions of the Western Colon area in the Province of Colon took place in 1997. The Master Planning sessions of Bocas del Toro started in the year 1999 and was completed in the year 2002

Those processes put together and implemented by NGO groups with extensive community participation and in the case of the City of Colon with the endorsement of the City Council, have produced several initiatives that have been followed up by the Institutions in the George Westerman Center, City of Knowledge, Panama, and some of them have already been exported to groups of NGOs in other countries.

The action plan ideas generated have been submitted to processes of consultation organized by the Southern Caucus of NGOs for Sustainable Development as part of the United Nations preparatory process for Johannesburg as follows:

- The National Consultation of NGOs for Sustainable Development of Panama (George Westerman Center in the City of Knowledge (Panama 2000)
- The Summit of Blacks in the Americas O.N.E.C.A. (Honduras 2000)
- The Multi Regional Electronic Forum of Latin America (Costa Rica (2001)
- The multi-regional conference of Latin America and the Caribbean (Dominica 2001)
- The Algerian Summit on Partnership for Sustainable Development (Algeria 2002)

The current Panama Government has begun to dialogue with the Institutions in the George Westerman Center Consortium as to work they can do in partnership including working together on initiatives involving the protection of the watershed in Panama, initiatives for education of communities, capacity building of micro businesses and skill training of workers.

The following are international partners currently involved in the Panama Processes of Community Participation in Sustainable Development at the George Westerman Center of the City of Knowledge:

US Based International Research and Education Institutions:

Medgar Evers College (City University of New York)  
Medgar Evers College Caribbean Research Center (City University of New York)  
The Schomberg Museum  
The Southern Diaspora Research and Development Center

US Based International NGO Participants:

The Panama International Alumni Association  
The Women's Workshop in the Americas  
The Latin American Market Penetration & Participation Group of the U.S.

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Annex 3. Education and Research Institutions affiliated and/or with programs at the City of Knowledge

Water Center for the Humid Tropics of Latin America and the Caribbean  
ISTHMUS-The School of Architecture and Design for Latin America and the Caribbean  
Inter-American Institute for Cooperation in Agriculture  
Tropical Agricultural Research and Education Center  
George Westerman Center Foundation  
McGill University  
Smithsonian Tropical Research Institute  
Florida State University-Panama Canal Campus  
US Universities Consortium (UC Davis, Cornell University, Iowa State University, Texas A&M)  
Tulane University (USA)  
St. Clair College (Canada)  
San Martin University (Colombia)  
Saskatchewan Institute of Applied Science and Technology (Canada)  
Southern Methodist University (USA)  
Florida Atlantic University (USA)  
Complutense University of Madrid (Spain)  
School for International Training (USA)  
Institute of Agricultural Research of Panama  
Gorgas Memorial Institute of Health Studies  
University of Panama  
Santa María La Antigua University (Panama)  
Latin American University of Science and Technology (Panama)  
Latin University (Panama)  
Technological University of Panama  
Old Panama Foundation  
Panama Canal Museum  
National Secretariat of Science, Technology and Innovation (Panama)  
Institute of Ecumenism, Society and Development  
National Environmental Authority (Panama)

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