

# Semi-Annual Narrative Progress Report V

Brazil Inland Fisheries: Sustainable Livelihoods  
and Conservation

CIDA Project A-020911



April 1, 2005 - September 30, 2005

Photos: Camila Michelluci

# BRAZIL INLAND FISHERIES

## *Sustainable Livelihoods and Conservation*

**CIDA Project A-020911**

**SEMI-ANNUAL NARRATIVE PROGRESS REPORT V  
FOR THE PERIOD April 1, 2005 – September 30, 2005**

**Canadian International Development Agency  
Brazilian Agency for International Cooperation**

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## Abbreviations and Terms

<i>Agente Jovem</i>	Federal scholarship program to keep at-risk youth in school.
AMMESF	<i>Associação dos Municípios do Médio São Francisco</i> - Association of Municipalities of the mid-São Francisco River
BC	British Columbia, Canada
<i>Beija Flor</i>	Hummingbird - An environmental education program by SAAE-Pirapora, in partnership with MESFA and geography students from Unimontes
BG	<i>Barra do Guaicuí</i> , a sub-municipality of Varzea de Palma at the mouth of the Rio das Velhas with the SF
<i>buriti</i>	Palm tree characteristic of the <i>veredas</i> ecosystem
BZ	Buritzeiro, large rural municipality across the river from Pirapora
CAP	<i>Centro de Apoio ao Pescador</i> , Centre of Assistance for the Fishermen and women in TM, now renamed <i>Parque Municipal do Pira</i> - Municipal Park of the Pira
CAPES	<i>Coordenação de Aperfeiçoamento de Pessoal de Nível Superior</i> - Coordination of Improvement for Trained People, a federal program for special training of scientists and university students
CBHSF4	<i>Comitê de Bacia Hidrográfica do São Francisco -sub- Bacia 4</i> - Basin Committee of the São Francisco River Watershed - Sub-basin 4
CEMIG	<i>Companhia Energética de Minas Gerais</i> - state-run hydroelectric company
<i>cerrado</i>	Tropical grassland savannah typical of central Brazil, considered endangered
CETEC	<i>Fundação Centro Tecnológico de Minas Gerais</i> , a private technological research station of Minas Gerais, located in Belo Horizonte
CIDA	Canadian International Development Agency
CIEA	<i>Comissão Interinstitucional de Educação Ambiental</i> - Federal Inter-Institutional Commission of Environmental Education
CNPq	<i>Conselho Nacional de Pesquisa</i> - National Research Council of Brazil
CODEVASF	<i>Companhia de Desenvolvimento dos Vales do São Francisco e do Parnaíba</i> - Company for Development of the São Francisco and Parnaíba Valleys
<i>coleta seletiva</i>	Selective garbage collection, referring to solid waste management based on sorting garbage at source
COLMEIA	<i>Conselho Local de Meio Ambiente</i> , a local council for the environment - federal program
<i>colônias</i>	Primary institutional structure for professional fishermen in Brazil
COMLAGO	<i>Consortio dos Municípios do Entorno do Lago de Três Marias</i> , a consortium of municipalities on the Três Marias reservoir
CONFEA de MG	<i>Comissão Coordenadora do Forum Permanente de Educação Ambiental de Minas Gerais</i> - Commission Coordinating a Permanent Forum on Environmental Education in MG
COPASA	<i>Companhia de Saneamento de Minas Gerais</i> - Sanitation Company of MG
CPT	<i>Comissão Pastoral de Terra</i> , a Roman Catholic NGO in Brazil dealing with agrarian reform
DFO	Department of Fisheries and Oceans, Canada
DNA	deoxyribonucleic acid - the molecule determining the genetic code of living organisms
EE	environmental education
EMATER	<i>Empresa de Assistência Técnica e Extensão Rural do Estado de Minas Gerais</i> - a public agency of the Secretary of Agriculture of Minas Gerais for extension and development services
EMBRAPA	<i>Empresa Brasileira de Pesquisa Agropecuária</i> - Federal Government company of agricultural research; also deals with fisheries management in the Pantanal
ESEC	<i>Estação Ecológica de Pirapitinga</i> - Ecological Station in Pirapitinga, established by CEMIG
FASFRAN	<i>Fundação São Francisco</i> - municipal foundation in Três Marias responsible for CAP]
<i>fazendas</i>	farms

FEAM	<i>Fundação Estadual do Meio Ambiente</i> - State Environment Agency in Minas Gerais
FEPE-MG	<i>Federação de Pescadores Artesanais de MG</i> - Federation of Professional Artisanal Fishermen and Fisherwomen of Minas Gerais
GRAAL	International network of women founded in Holland concerned with empowerment and self-support; an active chapter in Buritizeiro
IARA	<i>Instituto Amazônica de Manejo Sustentável dos Recursos Ambientais</i> , an Amazonian NGO working with community-based resource management
IBAMA	<i>Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis</i> - Brazilian Institute for the Environment and Natural Resources
IDRC	International Development Research Centre (Canada)
IEF	<i>Instituto Estadual de Florestas</i> - State Forestry Institute of Minas Gerais
IGAM	<i>Instituto de Gestão de Águas Mineira</i> - Water Management Institute of Minas Gerais
Integrated environmental education	Activities that are either integrated across the curricula in the school, or linked to other out-of-school programs in the community. Ideally, programs meet both criteria.
<i>Lixo e Cidadania</i>	Garbage and Citizenship, a UNICEF program in Brazil
<i>mananciais</i>	Water sources, referring to a river's or stream's starting point
<i>mata</i>	forest
<i>Matricula Verde</i>	Graduate Green, an environmental education program at the school Colégio Genecista de Pirapora
MEC	<i>Ministério de Educação</i> - Federal Education Ministry in Brazil
MESFA	Movimento Ecológico São Francisco de Assis, an environmental NGO in the São Francisco Valley
<i>Minha Caderneta de Pesca</i>	<i>My Fishing Notebook</i> distributed by the PNDPA for youthful sports fishers
MMA	<i>Ministerio do Meio Ambiente</i> Federal Environment Ministry in Brazil
<i>nascente</i>	Spring, referring to a place where water flows naturally from the ground
NGO	Non-governmental organization
NUPELIA	<i>Nucleo de Pesquisa em Limnologia, Ictiologia, e Aqüicultura</i> , a research centre in the State University of Maringá [UEM], Paraná state
<i>passeatas</i>	Recreational walks or nature tours
Petrobras	<i>Petróleo Brasileiro SA</i> - principal petroleum company in Brazil, state-owned
<i>piracema</i>	Migration that some Brazilian fish species undergo to spawn. Generally occurs in large schools and upstream, in Minas Gerais between October and January. Fishing is restricted during this period and commercial fishermen receive an unemployment compensation.
PMMG	<i>Polícia Militar de Minas Gerais</i> - state military police in Minas Gerais
PMTM	<i>Prefeitura Municipal de Três Marias</i> -Três Marias City Hall
PNDPA	<i>Programa Nacional de Desenvolvimento de Pesca Amadora</i> - National Program for Development of Sport Fisheries
PPA	<i>Peixes, Pessoas e Água</i> - Fish, People, and Water - local name given to the CIDA project
<i>Programa Semeando</i>	Sowing Program, part of the National Service for Rural Learning Apprenticeships - a partnership between the federal government and UNESCO
<i>Projeto Chuva</i>	Project Rain, offered by COPASA
<i>Projecto Manuelzão</i>	<i>Manuelzão</i> Project, an NGO activity of the UFMG Medical School for restoration of the Rio das Velhas watershed
<i>Projeto Renascer</i>	Project Re-birth - a program by the Federal Secretariat of Social Development and Citizenship, present in Pirapora
<i>Projeto Vereda: Mãe das Águas</i>	Vereda Project: Mother of Waters - a proposal to MMA by FEPE-MG with a variety of partners in Três Marias
PUC – Minas	<i>Pontificia Universidade Católica de Minas Gerais</i> - Catholic University of Minas Gerais

Rio SF, SF	Rio São Francisco
RMEA	<i>Rede Mineira de Educação Ambiental</i> - Network for Environmental Education of Minas Gerais
SAAE	<i>Serviço Autônomo de Água e Esgoto</i> - Autonomous Service of Water and Sewer
Sala Verde	Green Room, an MMA program to make environmental literature available throughout the country for education. Present in SEMEIA of Três Marias and to be implemented in Pirapora by the Municipal Secretary of Infrastructure and Urbanism
SAMARA	NGO of Andrequicé, Três Marias, concerned with cultural conservation
SEAP	<i>Secretaria de Aquicultura e Pesca</i> , a federal agency responsible for aquaculture and fisheries development in Brazil
SEBRAE	<i>Serviço Brasileiro de Apoio às Micro e Pequenas Empresas</i> , a Brazilian federal support and development agency for micro and small business
SEDETUR	<i>Secretaria de Estado de Desenvolvimento Econômico e Turismo</i> - State Secretary for Economic Development and Tourism
SEMAD	<i>Secretaria de Estado do Meio Ambiente e Desenvolvimento Sustentável</i> - Environment Secretary of Minas Gerais
SEMEIA	<i>Secretaria Municipal de Meio Ambiente</i> - Secretariat of Environment for the Municipality of Três Marias
SGA	<i>São Gonçalo do Abaeté</i> – municipality across the river from Três Marias
sítio	Small hobby farm
Sucato	<i>Superintendência do Trabalho Artesanal nas Comunidades</i> - Superintendent of Artisanal Work in Communities, a State program
surubim	A large catfish species native to Brazil and important to commercial fishing
TM	Três Marias
UBC	University of British Columbia in Vancouver, BC, Canada
UEM	<i>Universidade de Maringá</i> , Paraná state university
UFMG	<i>Universidade Federal de Minas Gerais</i> , a federal university
UFRJ	<i>Universidade Federal de Rio de Janeiro</i> , a federal university
UFSCar	<i>Universidade Federal de São Carlos</i> , a federal university
UNICEF	United Nations Children's Fund
Unimontes	Universidade Estadual de Montes Claros, a state university
UNESCO	United Nations Educational, Scientific, and Cultural Organization
UVic	University of Victoria, BC, Canada
veredas	Characteristic springs of the <i>cerrado</i> with distinctive water quality and surrounding ecosystem
WFT	World Fisheries Trust, a Canadian NGO concerned with equitable sustainable fisheries

## **Executive Summary**

The current semi-annual report of CIDA project number A-020911, *Brazil Inland Fisheries: Sustainable Livelihoods and Conservation*, covers the period between April 1, 2005 and September 30, 2005. During this period, numerous activities were carried out, including the following highlights:<sup>1</sup>

- training workshops on leadership and dialogue, as well as participatory planning and bioregional mapping;
- meetings for partnership development with local municipalities;
- an interdisciplinary workshop on Fish Stock Assessment Options, particularly with community participation;
- a conference session on fish bio-telemetry in Brazil;
- training internships to Canada for sustainable aquaculture and for the use of DNA tools in fisheries management;
- a series of gender and community development workshops to build local capacity and pilot initiatives;
- a participatory assessment and strategy-building mission to Brazil on transverse environmental education;
- implementation of several environmental education initiatives;
- organizational and technical support to facilitate civil society participation in an inter-institutional task force piloted to investigate an ongoing, large-scale fish mortality;
- participation in an international conference on conservation of biodiversity and an international conference on radio-telemetry;
- organization and facilitation of a multi-stakeholder event to discuss strategies for reducing industry impacts on the São Francisco River ecosystem and to promote local stewardship and community-based monitoring strategies;
- participation in a series of Pastoral Land Commission meetings that served as basin-wide information-gathering events to identify key social and environmental concerns of communities in the region, and to coordinate

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<sup>1</sup> See report for full list.



partnership development among existing civil society organizations in concert with environmental and social sector initiatives;

- contributions to the local public press;
- support to participants in São Francisco River Hydrographic Basin Committee (CBHSF) meetings;
- project website posted in both English and Portuguese;
- project management and community development support in Brazil; and
- technical visit to Santo Andre in which lessons learned during the CIDA-funded Community Based Watershed Management Project (1998-2003) were shared by Santo Andre municipal government representatives.

The Project continues to be highly relevant and appropriate to the fishing communities, providing numerous new alternatives and options for enhancing sustainability of their livelihoods, including building strong relationships and collaborative links with all levels of government and a diversity of resource users. The Project has also made significant contributions during the reporting period towards community-led and multi-stakeholder environmental stewardship, through the investigation of an on-going and large-scale fish mortality in the Project area.

The Project continues to be extremely cost-effective, despite a continuing shortfall of promised Brazilian counterpart contributions. Progress towards expected short-term outputs within the three sub-projects and three cross-cutting themes is approximately 55%, which corresponds directly with the percentage of financial resources utilized to date – about 50%. Progress towards anticipated medium-term outcomes, fully realizable at the Project's end in 2007, is between 40 and 45%, whereas longer-term impacts cannot be assessed yet.

## **Summary of Activities<sup>2</sup>**

### **Activities for Sub-Project 1 – Preparing Communities for Co-management**

#### ***Activity 1.1.4 - Identify and resolve user group conflicts***

User group conflicts are being identified and addressed on an on-going basis by the Project and conflict management is an important element present throughout a variety of the Project's activities. During the reporting period, the Project specifically facilitated the management of a conflict on July 14 in Três Marias regarding the use and application of the Centre of Assistance for the Fisherman (CAP) July 14. Also, the Project is providing conflict management support through the facilitation of a pilot community development initiative involving the municipality of São Gonçalo de Abaete's Beira Rio Secretariat of Tourism and Sports and the board of directors of the Beira Rio Residents' Association (see Activity C.1). Through the promotion of an inter-institutional task force for investigation of fish mortalities and the organization and facilitation of the multi-stakeholder forum: *Reducing Industry Impacts on the São Francisco River Ecosystem*, the Project has successfully created space for dialogue between private, public and civil society sector users of the river resources with regard to their common interests in protecting the local ecosystem of the São Francisco River (see Activity 3.7.7).

#### ***Activity 1.2.1 - Transfer of an Amazon experience to the São Francisco River (IARA) - IDRC***

The Project continues to support and assist a subsidiary IDRC-funded project that involves transferring fisheries co-management experience of the Amazon region to the São Francisco River region. This initiative is led by the Amazonian NGO called IARA and the UFSCar. WFT personnel and others in the local communities have provided assistance for the implementation of the specific events and subsequent follow-up. Noteworthy events realized during the reporting period included the following:

Community Radio Reporters Training Workshop (May 19-22). Communication is one of the key elements to getting communities involved in effective co-management, and community radio has been found to be the ideal mechanism in the Amazon. An earlier

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<sup>2</sup> See Appendix A for a tabular summary of results and indicators for activities completed during the reporting period, and Appendix B for activities planned for the next period.

workshop of this kind was very well received in the Project area communities, but community groups found it difficult to access commercial radio infrastructure. This second workshop was designed to provide training in alternatives for community reporting, as well as to help develop strategies for getting access to radio infrastructure. The workshop was attended by 23 people, of whom approximately half were women. See Appendix C-1 for the action plan of the community reporter network.

In August and September 2005, Sarah Bryce (WFT) and Daiana da Silva (FEPE-MG) followed-up by organizing and facilitating a number of workshops for an expanded community reporting group whose goal is to publish a regular community newspaper in Beira Rio. Two information sessions were held (Aug. 23 and Sept. 11, 2005) in which the participants from the May 2005 workshop outlined the community reporters' initiative and explained its importance to interested potential new members. Following these information sessions, three training workshops were planned and facilitated by Sarah Bryce and Daiana da Silva, with contributions from community reporters already trained. Both the Beira Rio and Pirapora community reporter groups are meeting regularly to prepare the first edition of their respective community newspapers, with an anticipated publication date of November 2005. Community reporters in Ibiai have a regular radio program called *Pescador das Noticias* (Fisherman of the News) that presents information and interviews from the Ibiai fishing *colonias* and community in general. See Appendix C-2 for the first and second Beira Rio community reporter workshop agendas, attended by approximately 12 people, two-thirds of whom were female and 80% being youth.

Leadership and Dialogue Workshop (July 19 to 22, 2005). A similar workshop on leadership and facilitation was very well received the first time it was given in 2004, so this second version was requested by the communities during the current reporting period. The workshop included a session on the history of fishing class organization in Brazil, and had a strong focus on skills development for accessing public institutions and achieving productive dialogue. Held in Pirapora, the workshop was attended by approximately 25 representatives from 6 fishing communities in the Project areas (40% female, 60% male), as well as representatives from the State Military Police of Minas Gerais (PMMG), the local water service sanitation provider (SAAE) and the Pirapora River Port Authorities (Brazilian Navy.) During the workshop, the participants improved their capacity to effectively identify, approach and interact with appropriate local, regional and state institutions to get information, request assistance and discuss issues. Skills imparted during the workshop included letter writing, organizational planning and public speaking. The workshop included a special session to try out new skills in structured interactions with representatives from the local public institutions mentioned above. The workshop was organized and implemented by Marcelo Apel (IARA), with support from Ana Thé (UFSCar) for the IDRC project, and included assistance from Alison Macnaughton (WFT), in addition to supplementary funding from the CIDA project. See Appendix C-3 for the workshop report from Marcelo Apel.

Co-management course for institutional partners – September 5-9, 2005. As the IDRC project has focused primarily on community preparation for co-management, the CIDA project invested in a community resource management course with Mauro Ruffino, Director of the Pro-Varzea program in the Amazon Region, in order to provide capacity-building support to government regulators and other institutional partners of the Project in preparation for fisheries co-management in the São Francisco Basin. This exceptional course was enthusiastically received by the Environmental Division of the State Military Police of Minas Gerais (PMMG), the State Forestry Institute (IEF) responsible for regulating state fisheries, local *colonias* and State Fisheries Federation (FEPE-MG) representatives, and university participants. Unfortunately, the course was poorly attended by federal fisheries regulators (IBAMA) for a variety of reasons, including scheduling difficulties. The participants were 40% female, 60% male. See Appendix C-4 for the workshop report from Mauro Luis Ruffino and Alzenilson Santos Aquino.

### ***Activity 1.2.3 - UFSCar monitoring program***

Several students at the UFSCar received scholarships during the reporting period to participate and monitor project activities. These were reported on in the University-wide students' conference in October, 2005.

### ***Activity 1.3.1 - Community policing review***

Conflicts between police and fishermen were identified as one of the principal issues of concern in the fishing communities at the start of the Project, and community involvement in policing is an essential element in effective co-management of resources. Therefore, policing and policing conflicts have thus been an important focus of the Project. During the current reporting period, a team of exemplary community police officers and a federal fisheries official from Canada joined members of the Environmental Division of the state military police of Minas Gerais, IEF state fisheries regulators, and a fisherman from Beira Rio, Minas Gerais to review, through a field visit and a final seminar, community-based fisheries policing in the Amazon and the status of fisheries policing in the Project area of the São Francisco River. This was carried out between May 23 and June 16, 2005. The purpose of the activity was to exchange expertise on community policing and to assist the development of community policing in Brazil, particularly for fisheries issues, including contributions to an enhanced training program for the police force. The Canadian team included Rick Haddow and Debra Perry (Calgary Police Service) and Herb Redekopp (Fisheries and Oceans Canada). The visit included meetings with state military police, policy-makers and state government officials, community volunteers and representatives of the IARA and Pro-Varzea projects in Santarem, Pará, as well as fishing community representatives from the Project area in the São Francisco River region. See Appendix C-5 for the trip report from Rick Haddow, and Appendix C-6 for Miguel Ribon Junior's visit report.

A policing seminar was also held June 6, 2005 in Belo Horizonte. The seminar was attended by 22 individuals, including representatives of the State Military Police of Minas Gerais (PMMG), state and federal government agencies (IBAMA, IEF, Ministério Público), local fishing *colonias* (Três Marias, Ibiaí, Pirapora), universities (PUC – Minas, UFSCar) and the Canadian team. The seminar laid the groundwork for the development of a training manual and provided direction to fisheries community policing in Minas Gerais. See Appendix C-7 for the policing seminar report from Magda Salles de Moura.

### **Outputs for Sub-Project 1 on Preparing Communities for Co-management:**

**Short-term results for activity 1.1.4:** Improved dialogue in the community with respect to an on-going conflict; improved conflict management skills within the community; revised network for addressing conflict. Specifically, in the conflict regarding the use of CAP, over this reporting period the municipal foundation responsible for the management of CAP (FASFRAN) has re-organized itself and become more effective and active, working through conflicts with the support of Project facilitators, defining a new use for CAP, dividing tasks among member institutions. The FASFRAN is now actively organizing steps towards this new use of the CAP in an increasingly independent way. In another example, the user-group conflict between the São Gonçalo de Abaeté municipal government and the Beira Rio Residents' Association, which was made explicit through the community development and gender workshops held in Beira Rio July 8-10, is being managed with success through a series of meetings between the two groups with facilitation support from the Project. These meetings have helped the groups to communicate in a more positive way, moving away from a blame-assigning situation for the lack of local community improvement initiatives to a new approach of working together in planning community activities to address common concerns identified in the community development workshops. An indication of these positive results is that in a recent community forum hosted by the municipal government, the president of the Community Association was given speaking time equivalent to that of the Mayor. Other positive aspects of this event included the recognition and speaking time given to a local youth representative and to a Project representative. Conflicts between fishing, industry and other uses and impacting activities on the river have begun to be recognized and addressed more directly through the Project's work towards implementation of the inter-institutional task force to investigate fish mortalities (since March, 2005) and the multi-stakeholder forum on *Reducing Industry Impacts on the São Francisco River Ecosystem*. Representatives of local government, representatives of the local regional basin committee COMLAGO, local representatives of the Environmental Division of the State Military Police (PMMG), the State Fisheries Federation (FEPE-MG), fishing *colonias* representatives, and project champions in IEF and IBAMA have worked together with Project staff since this time to create political support for the implementation of this group. The group has grown from an inter-agency investigation among partner agencies in the State Secretariat of the Environment to include participation by FEPE-MG, the local municipal governments, the Ministério Público (state public prosecutors) and more recently by private industry.

- **Short-term results for activity 1.2.1:** Continued adaptation of elements of co-management process; community reporting further developed with reporters a) actively reporting on local issues and Project activities, b) seeking new membership and strengthening local groups, c) seeking local funding support and d) producing pilot editions of a community newspaper. Community reporter activities have also stimulated increased interest in participating in other project activities (especially among youth), such as environmental education, fish mortality investigation, as well as the Forum on *Reducing Industry Impacts on the São Francisco River Ecosystem*. Some 25 leaders of fishing communities have undergone training in leadership and dialogue (40% women and 30% youth); and have improved their networking skills with local government institutions. State, academic and community partners have an improved understanding of co-management principles and practices (15 participants, six of them women).
- **Short-term results for activity 1.3.1:** Improved networking for community policing within Brazil (Amazon, São Francisco River communities and policing stations); new concepts of community policing and participatory environmental policing adopted by state police of Minas Gerais and incorporated in community policing courses.
- **Short-term results for cross-cutting theme A:** Continued changes in, and improved implementation of, state fisheries and policing policies to improve fishing communities' input to fisheries management and policing. Increased recognition of and participation by fisheries organizations (*colonias* and Federation) in environmental issues including inter-agency investigation of fish mortality and Forum for *Reducing Industry Impacts on the São Francisco River Ecosystem*.
- **Short-term results for cross-cutting theme B:** Improved profile of fishing profession through multi-stakeholder participation and publicity on local television and radio news (including coverage by community reporters in local media), and in local, state and national newspapers, also with regard to fish mortality investigation, environmental education initiatives. See Appendices F-4 through F-10.
- **Short-term results for cross-cutting theme C:** Equitable participation by women and youth in all activities; youth empowerment through participation in community radio reporters training and follow-up activities (e.g. youth pursuing environmental issues and interviewing a range of local stakeholders; community empowerment through recognition and inclusion of fishing class as a primary stakeholder in Forum for *Reducing Industry Impacts on the São Francisco River Ecosystem* and through participation in inter-agency investigative team of fish mortality).

The percentage of short-term project outputs achieved to date for Sub-project 1 is estimated to be 40%.

### ***Outcomes for Sub-project 1 on Preparing Communities for Co-management:***

Medium-term results include substantially increased capacity in the communities for self-determination and organization, as well as increased voice in local and regional media. A conservative estimate of how close we are to achieving the medium-term outcomes in Sub-Project 1 is 50%.

## **Activities for Sub-Project 2 - Building Sustainable Communities**

### ***Activity 2.1.2 - Technical training to evaluate and improve livelihood and community options***

Community-based, socially inclusive economic development is often hampered by biased or incomplete perception of local resources and assets. Participatory community mapping is one mechanism to foster more broadly based development that takes into account marginalized communities, such as the fishing community. A workshop on facilitating community bio-regional mapping processes was held July 15, 2005 in Três Marias. The workshop was attended by 15 individuals (7 women, 8 men) representing local government agencies, including the regional agricultural planning and extension service (EMATER), the municipality of São Gonçalo do Abaeté's Secretariat of Tourism and Sport, the municipality of Três Marias' Secretariats of Environment and Agriculture (SEMEIA) and Economic Development, Tourism, and Culture (SEDETUR). During the workshop, participants were exposed to the concepts and basic steps of bio-regional mapping, improved their capacity to use these methodologies to create inclusive environments and promote community participation in local planning. Discussion of ways to use these concepts and methodologies in assessment and planning processes was encouraged throughout the workshop. Jason Emmert, a project volunteer, planned and led the workshop with support from Alison Macnaughton and Sarah Bryce (WFT). The workshop was held at the CAP, with the support of the Três Marias Secretariat of Environment and Agriculture in organizing and providing the venue, transportation, and food for the workshop. The technologies learned in this workshop are now being applied by EMATER in their regional sustainable rural development planning processes, as well as by the municipal governments in São Gonçalo do Abaeté and Três Marias in their current planning for promoting fisheries-related tourism, as well as other initiatives.

### ***Activity 2.2.1- Canadian social scientist in Brazil***

Alison Macnaughton continued in Brazil on 4-month short-term assignments during the reporting period. During these assignments, she developed and organized activities with local partners and promoted the Project and its purposes. Her presence improved community support and ownership of the Project significantly, enhanced multi-stakeholder communication networks, improved networking between communities and government, and enhanced the capacity in the communities to recognize and deal with problems and opportunities. See Appendix D-1 for an invitation to a July 24<sup>th</sup> event publicizing the community development office.

### ***Activity 2.2.3 - Community interchange within Brazil***

In a partnership with SEBRAE (Serviço Brasileiro de Apoio às Micro e Pequenas Empresas) representatives of all of the communities in the Project area participated in a technical visit to Sto. Andre, in São Paulo, to view experiences with socially-inclusive tourism and other community economic development initiatives fostered by a previous CIDA project led by UBC.

### ***Activity 2.2.4 - Foster NGO networks***

The Comissao Pastoral de Terra (CPT) is a Roman Catholic NGO that has been active throughout Brazil with agrarian reform, and has recently launched an initiative to address social and environmental issues in the São Francisco basin (including fisheries). The Project, together with the municipal government of Três Marias, continued to foster and support participation of Brazilian partners in several CPT meetings to strengthen NGO networks.

The Project collaborated with the NGO SAMARA of Andrequicé, a historical neighbourhood of Três Marias that is concerned with conserving cultural heritage, particularly that of agrarian and fishing women of the region.

The Project helped instigate the creation of a new NGO in the region concerned with environmental issues – "SOS São Francisco".

The Project has been collaborating with the Projeto Manuelzão, an NGO branch of the UFMG Medical School, on environmental education in the targeted area.

### ***Activity 2.3.1 - Aquaculture risks and development***

Aquaculture is often considered one of the most natural means for fishing communities to diversify their livelihoods. However, many such initiatives have been failures in Brazil, while posing significant environmental risks. The government is currently strongly promoting the culture of tilapia, which as an introduced species may present further environmental threats, in addition to being bundled in technological packages that have not proven very successful for fishing communities. The Project has been relatively cautious in this area so far, promoting community and public awareness of the risks and issues involved in the ventures to ensure that communities will enter into such activities with greater chances of sustainability. The federal agency responsible for aquaculture development (Secretaria de Aquicultura e Pesca – SEAP) has thus also participated in many of the Project's events over the past year and a half. During the reporting period we accomplished the tasks enumerated below.

The Project assisted in hosting a Brazilian intern in Canada on the topic of sustainable aquaculture in the previous reporting period. This intern, Bernardo Sardão, was contracted during the current period after graduation from the Aquaculture Program at the Federal University of Santa Catarina, to produce a report based on a review the variety of



aquaculture proposals and interests of the fishing *colonias* in the Project area, including an assessment of the principal restrictions, environmental and social risks they are facing. Bernardo's report has been distributed to the *colonias* and government agencies in the area, and will contribute to the discussion of what our project can do in this area of endeavour in its next year of activities. See Appendix D-2 for the technical report from Bernardo Nobre Sardao.

Canadian consultant Anton Baer was contracted by the Project to prepare a review of environmental risks of aquaculture in the São Francisco River Basin. The paper, submitted in June 2005, will also help document in the assessment of the environmental risks for fishing *colonias* considering expanding into aquaculture. See Appendix D-3 for the executive summary of Anton Baer's technical report.

Early on in the Project (2003), we presented a special session at the World Aquaculture Conference in Salvador, Brazil, called *Freshwater Aquaculture and Environment in Brazil: What's Next?* During the current reporting period, the proceedings of this conference session were published in an easily readable and distributable booklet format. This was produced in Portuguese and distributed at a "cage-culture" conference in Belo Horizonte, as well as at other venues and meetings. Further English and Portuguese versions of the booklet, as well as a CD of the presentations from the session, are currently being printed for distribution in Canada and Brazil. See Appendix D-4 for the Portuguese translation of the booklet.

### **Activity 2.3.3 - Value-added development in Brazil**

An essential step in fostering sustainability of inland fisheries with limited natural resources is to make better use of existing catch levels. The Project has previously invested in a Canadian review of fishing practices in the area, with a view to optimizing returns in fashions that do not increase fishing pressure. In the current reporting period, together with SEBRAE, we have also embarked on initiatives for "value-added" development – either increasing the value of fish being sold and/or making use of fish parts that are currently discarded. Stephen Price of Victoria, BC was contracted to help develop value-added fish products such as fish leather, smoked fish, and fish fertilizer, and SEBRAE received a significant grant to develop fish leather as a regional specialty (using a firm from southern Brazil for training). Dr. Price's work complemented the SEBRAE initiative with a global survey of fish leather products and an investigation of environmental and human health implications of making fish leather on an artisanal level. Other products explored with Dr. Price's survey (implemented in workshops in December of 2005) included fish fertilizer smoked fish, and dried fish. See Appendix D-5 for the technical report from Stephen Price & Appendices D-6.1 and D-6.2 for the SEBRAE Agreement and proposal on artisanal activity.

### **Activity 2.3.5 - Participatory review of alternate activities**

The Project carried out a survey of community assets and aspirations during the previous reporting period to initiate the Project's community economic development program. The principal activity that most municipalities identified as their hope for economic development was tourism. However, a concern is that tourism development be socially and environmentally appropriate, with long-term local returns. In this sense, the Project supported several activities during the reporting period – primarily building on successful results of a recently completed CIDA project in Santo André, São Paulo.

A technical exchange visit with Santo André and surrounding communities, June 22 to 25, 2005, to share lessons learned during the CIDA-funded Community-Based Watershed Management project. The trip was attended by 11 people (6 men; 5 women), including 9 representatives of local municipal governments including São Gonçalo de Abaeté, Três Marias and Ibiaí, as well as representatives of local economic and tourism development agencies in the Project area [SEBRAE, Agência para o Desenvolvimento Econômico Social de Três Marias, EMATER-MG, Associação dos Artesãos de Três Marias and Consorcio dos Municipios do Entorno do Lago de Três Marias (COMLAGO)]. Participants met with staff from the Santo André municipal government to learn about Santo André's experiences, and visited a number of successful cooperatives and small businesses that were started in low-income, socially-excluded neighbourhoods with municipal government support. The group spent a day in Paranapiacaba, where they learned about municipal government strategies for promoting environmentally and socially responsible tourism. The Project paid for transportation and accommodation for trip participants, while all other expenses were covered by Brazilian partner institutions and the Santo André municipal government. Alison Macnaughton (WFT), Sarah Bryce (WFT) and Erika de Castro (UBC), all previously of the CIDA-funded Community-Based Watershed Management project in Santo André, organized and conducted the visit. See Appendix D-7 for the agenda, Appendix D-8 for the trip report from Andrea Alves, and Appendix D-9 for Ailton Joaquim de Oliveira's trip report.

A public presentation of the trip, entitled "Eco-tourism and local economic development strategies: the Santo André example" was held July 12, 2005 in Três Marias. The event was attended by community members, fishing *colonias* representatives, the president of the state fisheries Federation (FEPE-MG), government officials, including the Mayor of São Gonçalo do Abaeté, municipal staff from Três Marias and São Gonçalo do Abaeté, as well as members of local organizations and agencies related to tourism and community development. The purpose of the event was to share lessons learned from the technical visit to Santo André conducted June 22 to 25, 2005 and to create a public forum to discuss the challenges and opportunities facing tourism development in the Três Marias/São Gonçalo do Abaeté region. Presentations of lessons learned through the technical visit and proposals for new initiatives were made by all of the trip participants, as well as by Raimundo Marques (FEPE-MG) who had participated in a technical visit to Sto. Andre in the previous reporting period. Overview presentations of the Project and of the trip were

also made by Alison Macnaughton (WFT) and Sarah Bryce (WFT), who planned and hosted the event with the assistance of two Três Marias municipal interns. Space and food for the event was provided by Brazilian project partners. See Appendix D-10 for the presentation announcement.

On-going participation in local tourism development working group meetings and events to promote socially responsible development and appropriate development for the fishing communities. These events have included a State tourism development fair for the area (April 5-8, 2005), and tourism development working group meetings in Três Marias (April 13 & 26; May 11, 2005).

Promotion of local artisanal skills and values. The Project paid a per diem to three local female fishing net weavers to participate in a workshop between July 12 to 15, 2005 during the *IV Semana de Arte e Cultura: Festa de Manuelzão* cultural festival in the town of Andrequicé, organized by the Três Marias municipal government. See Appendix D-11 for the agenda. The weavers demonstrated how traditional net-making techniques can be adapted to make shawls and other crafts with a view to enhance local economic development. The workshop was coordinated with the support of Barbara and Claudia Johnsen, and attended by Sarah Bryce (WFT).

A fruit dehydrator was loaned to a local fishing family to test their application for diversifying income. Both fruit dehydration and fish dehydration were tested, with promising results, but clearly still requiring some coordination and marketing planning.

### ***Outputs for Sub-Project 2 on Building Sustainable Communities:***

- **Short-term results for activity 2.1.2:** Improved capacity by local agencies to use participatory planning tools, encouraging community engagement in local planning processes (15 participants in bio-regional mapping workshop).
- **Short-term results for activity 2.3.1:** Improved recognition in communities of risks and alternatives for aquaculture. Improved recognition of aquaculture risks at state government level.
- **Short-term results for activity 2.3.3:** Blueprint prepared for increasing returns from existing fisheries through improved fish handling. Dialogue established with local actors involved in community initiatives to coordinate development of value-added products. Some alternative product testing initiated.
- **Short-term results for activity 2.3.5:** Increased awareness of socially-inclusive tourism within municipal governments and among local tourism operators. Greater community awareness of options for alternative activities.
- **Short-term results for cross-cutting theme A:** Increased awareness among municipal policy-makers about the importance of community participation in sustainable tourism

development and in value-added fisheries initiatives. Increased interest among municipal policy-makers in setting policies for youth involvement in tourism development. Increased awareness among state policy-makers about the risks of aquaculture and the need to develop and publicize careful guidelines for community-managed aquaculture operations.

- **Short-term results for cross-cutting theme B:** Increased awareness among municipal partners about innovative environmental education centres and tools, as seen during the technical visit to Santo Andre.
- **Short-term results for cross-cutting theme C:** Women and youth integrally involved in all activities. Women identified as a principal force in community economic development workshops.

The percentage of short-term project outputs achieved to date for Sub-project 2 is estimated to be 45%.

### ***Outcomes for Sub-project 2 on Building Sustainable Communities:***

Activities continue to set the stage for desired outcomes of this sub-project, though we foresee that these activities will intensify in the next reporting period. Appropriate supporting networks at the municipal level have been identified and primed, with a variety of possible development directions initiated. These will need to be reviewed, organized in order of priority, and focused on accordingly in the coming year. Confirmation of sustainable outcomes is thus expected in later stages of the Project. An estimate of how close we are to achieving the medium-term project outcomes in Sub-project 2 is 25%.

## **Activities for Sub-Project 3 – Securing the Fisheries Resource**

Sub-project 3 has been considered the more technical component of the Project, reflecting the inherent technical background of WFT, many of its partners, and Canadian fisheries management history. Brazilian fisheries management in the São Francisco River Basin is particularly hampered by a lack of data, so technologies for enhancing this data and researching fisheries-relevant fish behaviour and biology are very welcome, as are technologies and experiences for habitat restoration and stock enhancement.

However, Brazilian resources for carrying out research and technical development are limited. Inter-institutional conflicts are numerous, and feedback to rural communities is non-existent or very poor, though it is clear that sustainable application in the field will depend on community involvement through community-based stewardship. Thus, while pursuing some of the very technical components proposed for the Project, we have so far focused considerably on building capacity and collaborative links for community participation and enhancement of community understandings of research and development. All technical visits to Canada have highlighted volunteer efforts by communities in habitat and stock restoration and integration with research groups, whereas in Brazil we have included fishing representatives in research activities, promoted community participation as much as possible in technical discussions, and promoted participatory research with academic and government partners. It is expected that, together with the advances in community organization, the Project will be able to consolidate its activities in technical aspects over the coming year to result in a good blend of community stewardship and technical expertise for enhancing sustainability of the natural resources.

### ***Activity 3.1.2 – DNA training in Canada***

Genetic markers in the DNA of fish are promising tools for fisheries management and assessing the impacts of stock enhancement efforts. Previous projects by WFT have contributed to the development of Brazilian capacity in this field, and during the current reporting period, Gabriel Yazbeck (UFMG) completed his internship in Canada that will complement these developments. The internship was largely funded by the Brazilian CNPq, with the Project providing local support and supervision. We expect that in the coming year, we will be able to consolidate research lines being followed by our various partners with DNA technologies to apply them to locally relevant questions. (See Appendix E-16).

### ***Activity 3.2.2 - Radiotelemetry assistance in Brazil***

Brazilian Lisiane Hahn, previously supported by the Project in the development and application of fish telemetry in Brazil, participated in a conference on fish telemetry in Portugal during the reporting period (see activity A.3).

### ***Activity 3.3.2 - Assistance for implementing stock assessment options***

Jason Emmert, a project volunteer, led community organization for monitoring fish mortalities. These newly developed community skills and networks will be used for future refinement of community-based stock assessment.

### ***Activity 3.3.4 - Evaluation workshops***

Fisheries management in Canada is largely based on quotas (number of fish than can be fished) developed from estimates of how many fish are present in the environment (stock assessment) that is monitored on an annual basis. In Brazil, generally the number of fish in a river is not known, and management is based on restricting fishing to areas and techniques that are not too efficient, and thus less likely to eliminate stocks. However, resources are not available for monitoring the effectiveness of management strategies, so considerable conflicts arise that tend to be addressed either through best estimates or through political mechanisms. The Project thus held a workshop in late January, 2005, to explore options for participatory stock and/or fisheries assessment and monitoring. During the present reporting period, this was followed up with a visit by a technical team (Brazilian and Canadian) to the fishing communities June 9-10, 2005, to discuss approaches. However, at this time significant fish mortality was occurring in the river, diverting all interest in research. Components of the stock evaluation approach were thus transferred to community-based investigation of fish mortality, and stock evaluation itself will likely be addressed again later in the Project (75% men; 25% women).

### ***Activity 3.4.1 – Mitigation of dam impacts***

A team of Brazilians participated in a technical review mission to Canada on the mitigation of dam impacts, environmental resource management, habitat restoration, and protected areas from June 4 to July 15, 2005. The Brazilian team included representatives of the hydroelectric industry, state and federal governments, NGOs, academia, and fishing *colonias* – Procópio Rezende (CEMIG), João Lopes (CEMIG), Alex Godinho (UFMG), Mário Tallarico de Miranda (Núcleo de Ecossistemas Aquáticos, IBAMA-BH), Miguel Ribon Jr. (Diretoria de Pesca e Biodiversidade, IEF), Norberto dos Santos (Colony Z-05), Carlos Bernardo Mascarães Alves (Projeto Manuelzao/UFMG) and Roberto Messias

Franco (Gerente Executivo – IBAMA-BH). The mission was organized by Brian Harvey, Joachim Carolsfeld and Carmen Ross, and guided by Joachim with some help from Brian (WFT). The tour involved meetings with fisheries and resource management organizations and professionals, including Herb Redekopp, Matt Foy, Glen Jamieson, Gary Logan and Al McDonald (Fisheries and Oceans Canada), Hugh Smith (BC Hydro), Doug Biffard (Ministry of Water, Land and Air Protection), Kelly Poirier (West Coast Vancouver Island Aquatic Management Board), Arlene Suski (Pacific Rim National Park), Jessica Brady and David Marshall (Fraser Basin Council), Gary Marty (Ministry of Agriculture, Food and Fisheries), Alex Grybowski (UVic Dispute Resolution) and Shawn Bethel (Ministry of Forest – Fire Protection). See Appendix E-1.1 for agendas, and E-1.2 for Miguel Ribon Junior’s trip report.

There was also a tour of a hydroelectric and restoration project throughout BC, including Seymour River and North Shore restoration sites (Matt Foy, DFO); the Stave Creek dam and restoration site (Goff Longworth, BC Hydro); Hell’s Gate (Roy McGechaen); Seton Creek spawning channel and Bridge River facility (Jesse Brown, BC Hydro); and North Shore Outdoor School; Mamquam groundwater channel, Squamish estuary and restoration sites (Hugh Smith, DFO). Environmental education and community involvement was additionally addressed by meetings and tours with Nikki Wright (SeaChange Society), Cathy Carolsfeld (WestWind SeaLab Supplies), and the Goldstream Hatchery in local restoration areas and schools. See Appendix E-2 for the BC Hydro presentation on generation, and Appendix E-3 for the CEMIG presentation.

In Ontario, tours guided by Renata Claudi (RNT Consulting) with support from Alison Macnaughton (WFT) addressed questions on invasive species management in Ontario and freshwater fisheries management, including visits to Ontario Federation of Anglers and Hunters, Ontario Ministry of Natural Resources, Ontario Power Generation, Nanticoke coal-fired generation facility on Lake Erie, Aquatic Sciences Inc., and the Glenora Fisheries Management Unit. See Appendix E-4.1 for the agenda, and Appendix E-4.2 for the trip report from Norberto Antonio dos Santos.

### ***Activity 3.4.3 – Canadian assistance to implement solutions to environmental problems***

Renata Claudi and Tom Prescott (RNT Consulting) conducted a technical visit on the topic of aquatic invasive species to Brazil from April 25 to May 12, 2005, focusing on the question of golden mussel invasions – a rapidly evolving problem comparable to the zebra mussel invasion in Canada last decade. The trip included participation in the National Seminar on Aquatic Invasive Species in Belo Horizonte, April 26 to 28, 2005; meetings with government, industry and community representatives (CEMIG, CODEVASF, IBAMA, PMMG, PMTM, SAAE, Embrapa, etc.) in Belo Horizonte, São Simão, Três Marias and Pirapora; as well as a tour of infestation sites in the Pantanal region and

Cuiabá. The visit contributed to the development of control and monitoring programs, as well as research plans on future control mechanisms. Natural control mechanisms in the Pantanal, if understood, could lead to better purposeful control elsewhere in the country. Costs associated with Renata and Tom's participation in the seminar and travel expenses within the Project area were shared by the Project and CEMIG. Organizational and translation support was provided by Alison Macnaughton (WFT) during the Três Marias region visit and by Jason Emmert during the Pantanal region visit. See Appendix E-5 for the workshop report from Renata Claudi, and Appendix E-6 for the seminar flyer.

### ***Activity 3.6 - Improving water management practices***

Water management models in Brazil are quite well developed, based more on European models that charge for water use, than the Canadian model that avoids making water an economic amenity. The Brazilian processes are highly political and tied to a variety of national and international initiatives. Our project has thus far not focused on influencing this process, but has rather worked on enhancing community awareness of and participation in the process – a clear weakness in the current processes. Thus, we supported community participation in basin committee meetings of the National Basin Committee of the São Francisco River (CBHSF) and Sub Basin SF4 meetings held in Montes Claros on May 11 (see announcement in Appendix E-7), Três Marias (June 28), and Pirapora (July 18). Our strategy in this portion of the Project will be reviewed in late 2005, including a decision on the relevance of some Canadian models. Water management principles were also addressed in the technical visit to Canada (see activity 3.4.1), particularly with visits to BC Hydro and the Fraser Basin Council.

Community understanding of water management is being fostered by the construction of interactive models of local water basins (see activity B.1.2).

### ***Activity 3.7.7 - Develop pollution assays***

The Project had initially proposed community-based pollution monitoring, improved multi-stakeholder aquatic stewardship, and improved environmental and social responsibility by industry. The agenda for these areas was first accelerated by the feedback from an IDRC-funded (and project-instigated) 2004 film on fisheries in the area ("Fishermen's Blues" by TVE-BBC), that also highlighted metals contamination in Três Marias, and, subsequently by a significant but unexplained and continuing mortality of one of the prime commercial fish species – the surubim catfish. The mortalities peaked in January, 2005 but continued through the reporting period.

Project activities during the reporting period have included: support for field work and education initiatives of an IDRC-funded contamination investigation by the UFSCar Laboratory of Biogeochemistry; organization and support for community-led monitoring,



and community involvement in an inter-institutional task force investigation of the surubim mortality; lobbying for greater government interest, action and inter-agency cooperation on the surubim mortality; multi-stakeholder dialogue with respect to this mortality; and finally, a multi-stakeholder forum, *Reducing Industry Impacts on the São Francisco River Ecosystem*, September 29-30, on both the surubim mortality as well as longer-term aquatic environmental monitoring and stewardship. See Appendix E-8 for the invitation letter, Appendix E-9 for the forum program, and Appendix E-10 for the forum report.

In addition, the Project commissioned Dawna Brand of the University of Victoria to conduct a review on pesticide toxicity in aquatic systems. During the months of September and October, another Canadian scientist, Jeremy Hackett, and, a Brazilian fish mortality expert, Geraldo Eysink, helped investigate the fish mortality, concurrently with a Project-organized technical visit by Department of Fisheries and Oceans experts Vince Palace and Lisa Peters. The examination of contamination in aquatic environments in the Tres Marias area was conducted between September 17 and October 10, 2005 (technical reports will be included in the next reporting period). See Appendix E-11 for the trip report from Jeremy Hackett, and Appendix E-12 for Lisa Peters and Vince Palace's trip report.

These activities were led primarily by Alison Macnaughton (WFT), Joachim Carolsfeld (WFT) and Jason Emmert (project volunteer). Coordination has involved numerous Brazilian partners including professional fishers, Federação de Pescadores Artesanais, IEF, IGAM and Ministério Público. Activities included participation in the SEMAD investigation with fishing community involvement in sediment sampling conducted by FEAM, IGAM, IEF and the Ministério Público between July 4 and 9. Informational meetings for local fishers held in Pirapora and São Gonçalo de Abaeté were held July 20 and 25, respectively. It also included collection and analysis of fish, water and sediment samples for pesticide and heavy metals content; creation of a database of detailed observations by professional fishers and project staff of sick and dead surubims (involving the development and pilot implementation of monitoring forms as part of a systems to create a network of professional fishers along the river collecting data and reporting on dead fish or other abnormal environmental occurrences); a report providing a detailed history of the mortality, the responses to date by environmental agencies, and the principal hypotheses about possible causes. Other activities included providing support to the collection of water, sediment and fish samples by the IDRC-funded UFSCar Biogeochemistry team from August 7 to 10, 2005; and participation in a number of meetings with government agencies, civil society and industry representatives to discuss next steps, including the possible creation of an inter-agency task force to investigate the mortality. Activities conducted during the reporting period related to this initiative are further detailed in the appendices. See Appendix E-13 for Alison Macnaughton's initial report on the surubim investigation. See also Appendices 14 and 15 regarding the first water quality workshop held from June 12 to 13, and plans for two more.

### ***Outputs for Sub-Project 3 on Securing the Fisheries Resource:***

- **Short-term results for Activity 3.1.2:** Improved understanding of DNA tools in fisheries management (1 trainee).
- **Short-term results for Activity 3.3.4:** Multi-stakeholder group (20% women; 6 institutions) and fishing communities better informed on stock assessment and fisheries monitoring options. Networks developed for improved participatory approaches to fisheries monitoring.
- **Short-term results for Activity 3.4.1:** Improved and diversified understanding of impacts of dams and improved networking through technical tour to Canada (6 participants; 6 institutions). Improved initiatives by CEMIG on environmental awareness; protocols being developed.
- **Short-term results for Activity 3.4.3:** Improved monitoring and research protocols for prevention and control of invasive golden mussels (CEMIG, Embrapa and CETEC).
- **Short-term results for Activity 3.6.2:** Improved local community awareness of water management issues. Project partners elected as representatives on water management committees.
- **Short-term results for Activity 3.7.7:** Multi-stakeholder forum for Reducing Industry Impacts on the River Ecosystem (200 participants; 50% women; 15 institutions signed on as official event partners). Community-based fish mortality monitoring program (5 presentations by community representatives on a variety of occasions). Improved community awareness and participation in environmental monitoring.
- **Short-term results for cross-cutting theme A:** Improved industrial and state government policy for community involvement and communication.
- **Short-term results for cross-cutting theme B:** Improved public awareness of water quality issues through publicity of fish mortalities.
- **Short-term results for cross-cutting theme C:** Enhanced opportunities for women, youth and family in securing the fisheries resource.

The percentage of short-term project outputs achieved to date for Sub-Project 3 is estimated to be 35%.

### ***Outcomes for Sub-Project 3 on Securing the Fisheries Resource:***

The most marked outcome in this sub-project to date is the greater participation and recognition of the fishing community in the consideration of environmental monitoring by the government and other partners, and the level of ownership the community has taken of the investigation of fish mortalities. This will be an important basis for the intensification of activities in this component in the coming year. We estimate that we are 40% towards achieving the medium-term project outcomes proposed for Sub-project 3.

## **Activities for Cross-Cutting Theme A – Assist the Development of Policies for Sustainable Fisheries with Community Participation**

The Project continues to influence fisheries policies, primarily at the state level through IEF and the Military Police, as well as community and municipal policies and industrial practices. These are inherent in the activities reported above and/or are on-going impacts of past activities as the policies evolve. In addition, we have classified participation in conferences within this category, and results of the Project were presented in three international conferences during the reporting period, with the Project supporting participation in the two international conferences that were held in Brazil.

### ***Activity A.3 - Participation in international conferences***

The Congresso Internacional sobre Mulheres, Gênero e Relações de Trabalho-Goiânia, May 5 – 7, 2005 – was attended by Thais Madeira (UFSCar). See Appendix F-1 for Thais' conference report.

The Annual Meeting of the Society for Conservation Biology, Brasilia, July 15-19, was attended by Dr. Ana Thé (UFSCar), who presented a paper entitled *'Fishes' and 'Stones' to Implement Fisheries Co-management in the Upper São Francisco River, Minas Gerais, Brazil*. This was within the special symposium on contributions of community co-management to conservation. The paper was co-written by Ana Paula Glinfskoi Thé, Maria Inês Rauter Mancuso, and Thais Madeira of UFSCar; Regina Cerdeira, Gilvandra Silva Santos, Marcelo Apel, Lígia Apel, and Marcos Mota of IARA; in addition to Alison Macnaughton and Joachim Carolsfeld of WFT. See Appendix F-2.1 for the symposium paper and Appendix F-2.2 for the presentation.

The International Symposium on Radiotelemetry in Portugal was attended by Brazilian scientist Lisiane Hahn of NUPELIA, supported by a CAPES scholarship and the conference. Ms. Hahn presented a paper on work arising from training workshops held by the Project at Itaipu, Foz de Iguaçu, authored by Lisiane, personnel from LGL Associates Ltd., and Joachim Carolsfeld (WFT).

### ***Outputs for Theme A on Policies for Sustainable Fisheries with Community Participation:***

- **Short-term results for Activity A.3:** Improved and diversified Brazilian capacity to pursue fisheries co-management and allied issues. Networking indicated by the number of participants and number of new policy and strategy developments.

The percentage of expected short-term outputs achieved to date for Cross-Cutting Theme A is estimated to be 50%.

### ***Outcomes for Theme A on Policies for Sustainable Fisheries with Community Participation:***

All sub-projects have contributed to improved self-determination of the fishing communities and increased positive interaction with government and industrial stakeholders and managers. Supportive policies to foster this input have resulted, and are gradually being implemented – at times through fairly subtle processes. Advances can be estimated as 40% of the overall desired medium-term outcomes.

### **Activities for Cross-Cutting Theme B – Public Awareness and Education**

While public awareness and education are cross-cutting themes addressed in some fashion in all activities, environmental education was identified as being of particular interest as a specific objective and specific activities. We also report on publications related to the Project in this section.

#### ***Activity B.1.2 – Create pilot educational tools and materials***

Jason Lasuik, a Canadian environmental educator, began a six-week assignment in Brazil on September 15, 2005 to design, build, and install watershed models as part of the Project's environmental education initiatives. Prior to that, he developed a presentation on Victoria BC's Cecelia Creek and Rock Bay as Canadian models of community involvement in watershed restoration. Archival photos, video, and information were provided by the Burnside Gorge Community Association in Victoria. In September, Jason Emmert (project volunteer) created a base map for Mr. Lasuik and a team of community participants to use in construction of a model of the Barreiro Grande Creek and its outfall into the São Francisco River. Mr. Lasuik familiarized himself with Brazilian environmental education initiatives by participating in the Federal Ministry of Environment and Ministry of Education's Environmental education workshop for teachers in Pirapora. Local environmental educator, Barbara Johnsen toured him on the watershed area to bring him up to speed on specific issues facing the Barreiro Grande Creek watershed., Local fisherman and project champion, Norberto Antonio dos Santos also participated in the reconnaissance. Mr. Lasuik and project staff began publicizing the watershed model progress and recruiting volunteers to help with the construction at the end of September 2005. See Appendix F-3 for the presentation by Jason Lasuik.

#### ***Activity B.2.2 - Pilot travelling displays/stands and folders***

T-shirts and banners were made for all of the environmental education activities and displayed at various public events. This has served to improve the Project's public profile considerably.

### **Activity B.2.4 – Contribute to local press on fisheries issues**

Several articles have been published in local Brazilian newspapers describing the Project and its initiatives. They included: a description of the Project and its goals (*Jornal a Semana – Pirapora*, May 20, 2005) entitled *Acordo Brasil-Canadá pela no Rio São Francisco*, plus two articles on the Project’s investigation of surubim mortality events (*Jornal a Semana – Pirapora*, April 29 and May 20, 2005) entitled “*Peixes mortos não páram de descer o rio*” and “*Missão investiga mortandade de peixes*”. These articles were written by project partner, Adelson Toledo de Almeida (Associação dos Municípios de Médio São Francisco). Other articles, including one highlighting the technical visit on eco-tourism to Sto. Andre also appeared in the Três Marias regional paper, *O Sertanejo*. See Appendix F-4 for the articles.

### **Activity B.2.5 – Evaluate educational goals**

Cathy Carolsfeld (WestWind Sea Labs), in partnership with Barbara Johnsen, wrote an in-depth report based on her initial technical assessment visit to Brazil from February 28 to March 12, 2005 (conducted during the previous reporting period) to survey existing environmental education programs in the Project’s focal communities. The report includes a summary of the survey results, as well as a list of proposed actions for each community as part of an integrated environmental education strategy. See Appendix F-5 for the environmental education review report.

Subsequently, Ms. Carolsfeld planned and conducted a three-day tour (June 15-18, 2005) of aquatic environmental education programs in the Victoria area for WFT staff. The tour was designed to familiarize WFT personnel with initiatives proposed for the Project and to develop relationships with local environmental education experts. Alison Macnaughton, Sarah Bryce, and Carmen Ross of WFT, Jason Lasuik of Burnside Gorge Community Association, and Nikki Wright of SeaChange Marine Conservation Society, participated.

Sarah Bryce (WFT) and Barbara Johnsen attended the implementation of the local environmental council COLMEIA at the São Francisco River-Três Marias Reservoir Sub-basin Committee (CBHSF4) meeting on June 28, 2005. The meeting included a presentation by Mauricio Laxe of the federal Environment Ministry (MMA) that summarized the structure of the São Francisco Revitalization Program. Rachel Trajberg and Marcos Sorrentino presented the environmental education component of the São Francisco Revitalization Program. Volunteer project partners Barbara Johnsen, Ceiça Bezerra and José Vicente de Souza submitted a proposal to the São Francisco Revitalization Program for funding local environmental projects that focus on the São Francisco River and surrounding marsh lands – *veredas* as a means of securing

counterpart investment in the Project's environmental education initiatives. See Appendix F-6 for the environmental education proposal.

Ms. Carolsfeld conducted a second technical visit to Brazil from Aug. 10-Sept. 27, 2005 to plan, coordinate and conduct a number activities related to the Project's environmental education (EE) initiatives. These included meetings with project partners: Dr. Haydée Torres de Oliveira (UFSCar), local partner institutions, municipal environment secretariats, COMLAGO, CODEVASF, the Agente Jovem program, as well as other youth programs, and community/fishing *colonias* representatives. The objectives were to plan joint actions to contribute to the Project's EE strategy; develop proposals for community-based watershed EE centered around the construction of a watershed model; create a course for teachers and community educators that would focus on helping educators create EE strategies about water and watersheds; and link schools to the wider community plus secure in-kind contributions from municipal partners. Ms. Carolsfeld also participated in separate three-day EE workshops (in Três Marias Aug. 31-Sept.2 and in Pirapora Sept. 19-21) as part of the federal government's São Francisco River Revitalization Program, run jointly by the Ministry of Environment (MMA) and the Ministry of Education (MEC). At each workshop, Ms. Carolsfeld presented her Canadian experience in environmental and explained the watershed model proposal to audiences of approximately 50 Brazilian teachers from the Project area. She was able to generate considerable interest among them as indicated by the number of questions, requests for copies of the presentation, and names added to the list of those requesting information about the watershed model initiatives. This activity has contributed to integrating of the Project's initiatives with the Brazilian government's environmental education programs. See Appendix F-7 for Cathy Carolsfeld's presentation.

Lillian Howard was contracted by the Project to assess joint Canadian input into the development and delivery of integrated watershed education and related programs in schools and communities in the Project area, as well as of the conflict management program being implemented among stakeholders. Lillian is paying particular attention in her assessment to issues relating to sensitivity to culture, as well as the encouragement and preservation of local knowledge. She is applying her unique experiences as a member of a Canadian First Nation as well as an international development expert. In preparation and planning for her planned mission to Brazil, she met Mowachaht/Muchalaht First Nations fisheries projects, from September 6-10, 2005. She also assisted in the planning and implementation of an exchange program on fisheries and eco-tourism. Finally, she provided technical expertise and support for the development and implementation of collaboration between the Project, local government, and other key local actors in community development strategies and initiatives. Ms. Howard is on a short-term, intermittent contract that began Sept. 1, 2005 and will continue through March 2006, with a trip to Brazil planned for that month.

As part of the implementation of the environmental education proposal, the Project supported the preparation of an environmental education workshop for local educators to be held October 3 and 4, 2006 under the leadership of Dr. Haydée Torres de Oliveira

(UFSCar) with pedagogic and technical support from Tatiana Terasin de Lima (UFSCar) and Barbara Johnsen (please see next semi-annual report for more details and workshop report).

### **Activity B.2.6 - Improving fishermen esteem**

The Project contributed to the costs of a student's project by the UFSCar and the Três Marias municipality documenting an oral history of Três Marias through film. The British Broadcasting Corporation Film *Fishermen's Blue's* commissioned by IDRC that aired internationally on Television for the Environment was screened during the reporting period and demonstrated to the fishing community that they indeed have a voice on issues of water quality and sustainable fisheries.

### **Activity B.3.1 - Promote television and print coverage of the Project in Canada**

A contribution was made to the Vancouver Aquarium website during the current reporting period, describing the Project and specifically, the aquaculture intern. See Appendix F-8 for the online article.

A story on the participation of the Department of Fisheries and Oceans (DFO) in our project appeared in the DFO newsletter, *Oceans*. See Appendix F-9 for the magazine article.

An article on a co-op student's experience (Branden Beatty) with the Project in Victoria, BC, was published in the University of Victoria newspaper. See Appendix F-10 for the print article.

At least one scientific journal article is expected to be published by Dr. Vince Palace (DFO) resulting from his technical analysis of the fish sampled in September and October.

### ***Outputs for Theme B on Public Awareness and Education:***

- **Short-term results for Activity B.1.2:** Enhanced capacity in Brazil to create public awareness; improved public awareness indicated by the number of awareness tools and strategies developed and level of public awareness.
- **Short-term results for Activity B.2.4:** Improved public awareness of Brazilian fisheries issues in Brazil indicated by the number of contributions and level of public awareness.
- **Short-term results for Activity B.2.5:** Discussion generated during the participatory survey of environmental educational status and needs has stimulated development of new education plans in many schools in Project communities. Over 200 interviews were carried out for this survey, primarily with women.
- **Short-term results for Activity B.3.1:** Improved public awareness of Brazilian fisheries issues in Canada indicated by the increasing numbers of viewers and readers.
- **Short-term results for Sub-project 1:** Environmental education is an essential long-term contribution to increasing co-management capacity in the community. Participation of fishers in environmental education is considered highly important. The contribution of sub-project 1 activities in preparing communities for co-management, however, have focussed more on enhancing the public image of professional fishermen and women.
- **Short-term results for Sub-project 2:** Education activities have contributed to greater consciousness with regard to activities relating to building sustainable livelihoods, primarily in the sense of making users aware of and reducing environmental impacts of planned activities.
- **Short-term results for Sub-project 3:** Participatory research and stewardship of the aquatic environment have been cornerstones of all activities pursued in sub-project 3.

The percentage of short-term project outputs achieved to date for Cross-Cutting Theme B is estimated to be 35%.

### ***Outcomes for Theme B on Public Awareness and Education:***

Public awareness of the fishing profession has improved through the Project activities, particularly among closely related stakeholders and government managers. Educational elements for the environment have also had substantial impact on participants as well as the general public. Advances can be estimated as 30% of the overall desired medium-term outcomes.



## **Activities for Cross-Cutting Theme C – Creating Opportunities for Women, Youth and Family**

The original proposal for the Project deemed gender and youth issues to be cross-cutting themes worthy of consideration when implementing all activities – principally in the sense of ensuring equitable access to opportunities provided by the Project. These issues, along with racial harmony and discrimination, were also dealt with specifically in a survey of local resources and characteristics of the fishing community. However, it became clear that this approach did not really improve equitable opportunities for women over the medium or longer term. Neither did it create sufficient opportunities for youth. As a result, project staff began developing more specific strategies for women and youth, again calling on the experience and partnerships of the earlier CIDA project in Sto. André.

### ***Activity C.1 – Workshop component on women's needs***

A series of three workshops were conducted between June 29 and July 17, 2005 on sustainable community development with a gender focus. The workshops successfully brought together 81 community members and 26 municipal staff from six different communities: Três Marias, Ibiaí, Pirapora, Buritizeiro, São Gonçalo do Abaeté and Barra do Guacuí. Women constituted 54% of the workshop audiences. The first workshop, a Community Development and Gender Workshop for Facilitators, was held in Ibiaí June 29-30. Workshop participants included five municipal staff from São Gonçalo de Abaeté, Três Marias and Pirapora, three municipal staff from Ibiaí and Barra do Guacuí, and fishing *colonias* presidents from Ibiaí and Buritizeiro. During the two days, they participated in a capacity-building training session to discuss basic concepts of community economic development and gender, as well as to learn about methodologies for promoting community development, equal participation between men and women, and reflection about gender roles. Afterwards, each municipality started planning a pilot community development project that incorporated these concepts. The second two workshops, held July 8-10 in Beira Rio, São Gonçalo do Abaeté, and July 16-17 in Ibiaí, were directed to community members, with the participation of municipal officials who attended the first workshop. These workshops encouraged the exchange of ideas between the municipal officials and community members, plus helped to facilitate the discussion and development of community development and gender initiatives that will benefit all involved. Thaís Madeira (UFSCar) and Erika de Castro (UBC) were contracted by the Project to plan and facilitate the workshops, together with Alison Macnaughton and Sarah Bryce of WFT, and supported by Zé de Andrade Matos and two undergraduate students from UFSCar who are currently researching women, gender, race and the environment in the Project pilot communities for their undergraduate theses. The Project paid for workshop supplies as well as transportation, meals and incidentals, and accommodation costs for participants and printed gender and community development project t-shirts for all participants. A report of the workshops, their results and recommendations for next steps was prepared by Erika de Castro (UBC) and Thais Madeira (UFSCar), in

collaboration from Ana Bichoffe, Priscila Medeiros and José de Andrade, all of UFSCar. José Andrade (*consultor*) also prepared a report of the workshops highlighting the male component of participation in the workshops and assessing the preparedness, interests and needs of local men to participate in further gender-related activities. See Appendix F-11 for the narrative report from Thais Madeira; Appendix F-12 for the facilitator's report; Appendix F-13 for the community development manual; and Appendix F-14 for workshop series report from Erika de Castro and Thais Madeira.

As follow-up to the community development and gender workshops mentioned above, Alison Macnaughton and Sarah Bryce (WFT) have regularly supported and participated in activities conducted by the Três Marias and São Gonçalo do Abaeté working groups, including meeting to further develop community development initiatives, providing conflict management support while promoting partnership initiatives between local government, local residents' associations, and local community members, in addition to helping organize a community festival/information dissemination event on August 12, 2005. The event was organized jointly by the São Gonçalo de Abaeté municipal government, members of Beira Rio community and the Project, including presentations by local community members who organized the event, Alison Macnaughton (WFT), Thais Madeira (UFSCar), Andrea Alves (São Gonçalo do Abaeté Municipal Secretariat of Tourism and Sports), the president of the Beira Rio Residents' Association, and Raimundo Marques (FEPE-MG). The event was attended by approximately 150 participants from the Beira Rio community, 25 participants from the Três Marias community, including approximately 15 youth, the President of the Federação de Pescadores Artesanais de MG, five representatives of the São Gonçalo do Abaeté municipal government, five representatives of the Três Marias municipal government, and six UFSCar students.

### ***Activity C.3 – Youth workshop identifying needs & strategies***

Alison Macnaughton (WFT) assisted in the creation of a youth group in Beira Rio, an initiative of the Tourism and Sport Secretariat of the municipal government of São Gonçalo de Abaeté. The second meeting of the group, Aug. 29, 2005, was attended by 53 Brazilian and three Canadian youth (70% women; 30% men).

Canadian youth expert, Susan Kurbis (Environmental Youth Alliance), began a 2-week assessment mission to Brazil on September 25, 2005 to review and assess community assets and requirements for development of a youth strategy for the Project. During her field assignment, Ms. Kurbis also conducted community development, youth visioning and capacity-building workshops in the Project area (details will be in the next semi-annual report).

### ***Outputs for Theme C on Creating Opportunities for Women, Youth and Family:***

- **Short-term results for Activity C.1:** Women have been well represented in almost all activities of the Project, and have been dominant in some.
- **Short-term results for Activity C.3:** Strategies are being developed to increase opportunities for youth in fishing communities – indicated by the number of participants, number of initiatives identified and implemented, and number of new opportunities.

The percentage of short-term project outputs achieved to date for Cross-cutting Theme C is estimated to be 35%.

### ***Outcomes for Theme C on Creating Opportunities for Women, Youth and Family***

The percentage of progress towards medium-term project outcomes to date for Cross-Cutting Theme C is estimated to be 30%.

## **Management Activities Completed**

Project management has been a continuing activity both in Canada and Brazil. Initially UFSCar identified Ana Thé as the Executive Secretary for the Project. However, as she was also manager of the parallel IDRC project, which was all-consuming and did not permit her to commit to the CIDA project at the level we had initially hoped. In addition, as a result of the continued lack of counterpart funding for project management, the bulk of the practical management of the CIDA project fell to WFT staff in both Canada and Brazil during this period. The project team however continued working in conjunction with a variety of the Brazilian partners.

### ***Activity D.1 - Project Website***

The Project website was regularly updated during the reporting period in both English and Portuguese to include planned project activities, project news, results during the reporting period, and copies of all reports associated with the 4<sup>th</sup> Semi-Annual Narrative Report.

### ***Activity D.2 - Project newsletter***

The first edition of a project community bulletin was prepared and distributed throughout local project communities in August, 2005. The bulletin included a section for news and announcements from fishing *colonias* and the Federação de Pescadores de MG (FEPE-MG) and was prepared by the Project in collaboration with FEPAMG staff. Approximately 60 poster-size bulletins were posted in public places, including schools,

municipal government offices, fishing *colonias*, stores, bars, and churches, throughout the Project area. Sarah Bryce (WFT) organized and oversaw the production and distribution of the bulletin, assisted by project partners, such as community reporters, fishing *colonias* representatives, and municipal staff. The Project funded the printing of the bulletin, with some support from Brazilian partners. See Appendix G-1 for August and September project bulletins.

### ***Activity D.3 - Creation of other publicity material***

PowerPoint presentations on the Project were developed in both Portuguese and English and have been presented at a variety of venues, including management meetings, community meetings, and university courses.

The Project's approach to environmental education and conflict management was presented to the Environmental Education Master's program at Royal Roads University by Joachim Carolsfeld, Project Manager (Appendix G-2).

### ***Activity D.4 - Communication group***

A local group has been formed in Três Marias from youth and the community reporters that have been involved in project communication. These have assisted with the project's newsletter and are planning their own community newsletter.

### ***Activity E.1 - Project organization meetings***

The CIDA project supported and participated in an organizational meeting for the IDRC project with fishing community representatives on June 14-15, 2005. This meeting helped define strategies for the next activities of this project.

Several project management meetings were held in São Carlos, Brazil June 20 and 21, 2005 between WFT project staff and UFSCar representatives. The meetings were attended by Alison Macnaughton (WFT), Sarah Bryce (WFT), Erika de Castro (UBC), and Maria Inês Mancuso, Ana Thé, and Thaís Madeira of UFSCar. During the meetings, participants planned upcoming project activities and reviewed the 4<sup>th</sup> Semi-Annual Report.

A project review meeting was held with key partners on Sept. 23 and 24. The meeting was attended by both CIDA and ABC, as well as the new Executive Director of World

Fisheries Trust, Penny Poole. This meeting served to document the progress all partners feel they have made with the Project, and map possible future steps. A subsequent meeting is planned to recover a more participatory version of project management. See Appendix G-3 for the management meeting report from Antonio Brito.

### ***Activity E.3 – On-going project management***

Alison Macnaughton (WFT) and Sarah Bryce (WFT) began a four-month term in Brazil on June 20, 2005 to provide project management assistance. Both were based in Três Marias during the period and conducted regular visits to the five other pilot communities and Belo Horizonte, plus assisted in the transfer of participatory management technology, community development strategies, network and community capacity-building, plus provided local coordination of the Project and its numerous activities.

Penny Poole (WFT) conducted a two-week project management and technical mission to Brazil from September 14 to 26, 2005. During her visit, Ms. Poole conducted numerous meetings with project partners and funders, visited project operations in Três Marias, and participated in the Project strategic planning meetings.

Ana Thé (UFSCar) and Alison Macnaughton (WFT) accompanied Merle Faminow and Brian Davy (IDRC program coordinators) on a field visit to the IDRC co-management project from August 4 to 7, 2005. During this visit, they reviewed the final activities and reporting strategy planned for the IDRC project, as well as discussed the current situation with respect to research and development needs in the São Francisco Basin. As part of this discussion, they shared ideas about ways in which the IDRC and CIDA project have supported each other and identified possibilities for how the productive aspects of this relationship might be carried forward into future activities.

Joachim Carolsfeld (WFT) conducted a seven-week project management and technical mission to Brazil from August 18 to October 8, 2005. During this field visit he helped organize and/or participated in a variety of meetings for reviewing and implementing project conduct, participatory investigation of fish mortality, environmental education, youth initiatives, etc.

A variety of internal meetings were held at World Fisheries Trust in Victoria, B.C. to carry out the Project, as well as informal meetings with project partners both in Brazil and Canada and continuing internet and telephone communication for adapting strategies, planning, and implementing activities, managing personnel and contractors, and managing funds.

### **Outputs for Communications and Management:**

- **Short-term results for Activity D.1:** High website activity and positive feedback on reports posted there.
- **Short-term results for Activity D.2:** Increased community awareness of Project activities and increased community and partner interest in participation in activities was achieved. Sixty project community bulletins were posted in communities and 150 copies of the first edition of the Project newsletter were distributed to Project partners and community members at events in Belo Horizonte and Três Marias. Positive feedback from recipients has been strong and project staff continue to receive requests for more editions, suggestions for submissions, and promises for future contributions.
- **Short-term results for Activity E.1:** Effective project administration, including conflict resolution indicated by annual and individual event reports. Feedback surveys of participants.
- **Short-term results for Activity E.3:** Effective project administration, including coordination and implementation of activities, strengthened community participation in all project activities, higher local profile and improved local project communications, greater synergy developed between partner and community priorities and project activities, and pro-active conflict management, indicated by timely implementation of activities, reporting to partners and CIDA, as well as by feedback from participants and partners. Reports to CIDA included: Annual Progress Report #2 and Annual Financial Report #2 filed by April 30, Semi-Annual Narrative Report #4 filed by April 30, quarterly financial report #10 to CIDA July 31.
- **Short-term results for cross-cutting Theme A:** Strengthened community participation in all project activities, greater recognition of fishing *colonias*, FEPE-MG and industry representatives in policy discussions about issues affecting the environment and fisheries by state and federal agencies reinforced by project management support and lobbying for inclusion, contributing to greater motivation and mobilization by state and federal agencies to develop inter-disciplinary and inter-institutional task forces on environmental and fisheries issues that include fishing community representation.
- **Short-term results for cross-cutting Theme B:** Strengthened community participation in all aspects of environmental education and public awareness initiatives promoted by Project management activities. Broad support for Environmental Education initiatives from a variety of academic and municipal institutions indicated by significant in-kind counterpart contributions to these initiatives.
- **Short-term results for cross-cutting Theme C:** Equitable opportunities for women, youth and family in project activities ensured by broad participant recruitment, indicated by wide range of participants involved in project activities and positive participant feedback demonstrating continued interest in project activities and suggesting new activities.

### ***Outcomes for Communications and Management:***

Medium-term results include: increasing responsibility being assumed by project partners for project initiated activities (for example federation and *colonias* representatives assuming responsibility for training and coordination of new community reporters, and multiple agencies assuming responsibility for the inter-agency task force on fish mortalities); new public-public, public-private, and public-civil society sector partnerships and approaches to local environmental stewardship being explored by project partners (for example the *Forum on Reducing Industry Impacts on the River Ecosystem*); increased ability to anticipate and respond to change demonstrated by adjustment of Stock Evaluation Strategy to incorporate locally identified needs to monitor ongoing fish mortality.

An estimate of how far we have moved towards the goal of sustainable, participatory management, including participatory performance of all CIDA-required reporting, is 40%.

### **Project Spin-Offs**

The principal unexpected activity of the Project during the reporting period was the investigation of fish mortalities and related activities. This has created a variety of new linkages with stakeholders and regulators that will be beneficial to the Project. The levels of impacts on policies for invasive mussel control and environmental education were also unexpected. Both of the latter have resulted in proposal development for work independent of the Project.

Proposals for Canadian consulting work in biotelemetry in Brazil have resulted out of project activities (joint proposal of LGL and Lisiane Hahn to Tractabel), and some with regards to mussel control are pending (Renata Claudi with CEMIG and Duke Power).

## **Variance of Activities Planned vs. Carried Out**

Despite the continuing paucity of counterpart funding, of the 65 activities proposed for the current half-year in the 2005/6 work plan, only 24 (36%) were not carried out, and the majority of these have been simply delayed for various reasons. These are primarily activities related to: 1) development of value-added products, aquaculture, and stock assessment, which have been put off because of increased commitment in the area of community monitoring (fish mortality investigation); or 2) development of materials for public awareness and education delayed due to lack of counterpart funding. A few of the proposed activities have been found to be too optimistic and unlikely to be carried through, including some related to the IDRC project, but most of the remainder have not yet found their most appropriate timing. In the case of community monitoring, substantial activities have been carried out with relation to the fish mortality that were envisioned only for later in the Project.

The plan for activities in Reporting Period 6 continues mostly as indicated in the work plan, with the addition of activities not completed in the current reporting period. Some activities that may be amplified are activities on environmental education, youth, gender, and community monitoring/fish mortality, whereas the co-management conference may not come to fruition. Prioritization of activities will be subject to deliberation of the management partners during their meeting, scheduled for late November. Please see Appendix B.

## **Variance of Expenditure Forecasted vs. Actual**

Overall expenditures for this reporting period are within that expected for the year. However, according to July to September Quarterly Financial Report, there was 25% overspending on consultants due to peaking activities in the field and *surubim* fish mortality activities.



## **Problems and Challenges**

Brazilian counterpart funds continue to be scarce for the Project, in particular for the managerial component of the Project. As a result, overall project management has become increasingly Canadian in nature, though it has also allowed individual activities to be managed more closely by different partners that are more directly affected, and has permitted the development of additional initiatives. However, it has also meant that an increasing proportion of the activity costs are being borne by Canadian funds, which is not indicative of sustainability of the efforts. An additional demand in this regard is expected at the end of the IDRC project.

To deal with this issue, the Canadians have started to directly approach institutional partners more aggressively, particularly in key areas showing the greatest receptivity: i.e. environmental education, responsive at the federal and municipal levels, and fish mortality, which is inducing receptiveness at the state level. Together with a revised management structure, to be established in late November, we hope that more substantial Brazilian support will develop for the Project over the final years. Nevertheless, we still expect a transitory increase in spending on "Brazilian" costs as this transition period passes.

## **Report on Gender Equity Strategy**

The Project has embarked on a more aggressive gender equity and youth strategy during the current reporting period. This has resulted in increased self-awareness of both groups, and increased capacity for self-determination. Both of these strategies are linked to community development initiatives, expressed as short-term projects, so we will know by early 2006 how well the strategies are working. Further specific gender activities will depend on these returns and how much our partner municipalities are prepared to carry initiatives forward.

## **Key Lessons Learned During Reporting Period**

During the current reporting period, we have intensified our delivery of activities, including responding substantially, within the mandate of the original proposal, to a community request for assistance with resolving an unexpected fish mortality incident. However, due to the lack of counterpart funding and time on the part of the Brazilian management partner, we have sacrificed some of the participatory nature of the over-arching project management. This strategy has increased our results output, but may also be compromising the potential sustainability of our efforts. Conversely, many of the specific project activities and initiatives have been managed with a high degree of partner agency participation. Relying less on a single management partner has provided the opportunity to work more closely with a variety of specific partner agencies for different activities, enhancing their management participation and increasing the likelihood of continued ownership and sustainability of these activities. We plan to re-invest in participatory project management in the coming quarter and final year of the Project to build greater sustainability for project outputs through increased Brazilian ownership and more reliable counterpart commitments.

## **Areas Requiring CIDA Action or Approval in Near Future**

CIDA approval will be required for hiring Brazilian short-term consultants in the near future. We hope that this is a transitional commitment as Brazilian-funded projects develop the follow-up of the CIDA project. In addition, CIDA assistance may be required to attain Brazilian counterpart commitments to the Project, as well as developing follow-up and publicity.

## Planned Missions To and From Brazil<sup>3</sup>

The most immediate foreseen missions to and from Brazil include:

- **Jeremy Hackett** (consultant) – technical visit on fish pathology (Oct – Nov 2005)
- **Susan Kurbis** (Environmental Youth Alliance) - technical visit in youth initiatives (Oct 2005)
- **Vince Palace** (Government of Canada, Department of Fisheries and Oceans, Habitat Impacts Research Section) and **Lisa Peters** (Canadian Rivers Institute, University of New Brunswick, Department of Biology) – technical visit on fish pathology (Oct 2005)
- **Jason Lasuik** (consultant) – technical visit on development of watershed models (Oct 2005 and Feb-Mar 2006)
- **Alison Macnaughton** (WFT) - community development and project management support (Nov 2005 – Feb 2006)
- **Sarah Bryce** (WFT) – environmental education and project administrative support (Nov 2005 – Feb 2006)
- **Stephen Price** (consultant) – value-added assessment mission (Dec 2005)
- **Erika de Castro** (consultant) – technical visit on gender, community development and youth (Dec 2005 & Mar 2006)
- **Joachim Carolsfeld** (WFT) – project management field trip (Nov –Dec 2005; Mar 2006)
- **Lillian Howard** (consultant) – technical visit on participative planning, integrated watershed education, and conflict management (Mar 2006)
- **Cathy Carolsfeld** (consultant) – technical visit on environmental education (Feb-Mar 2006)
- **Canadian Teacher and Educational Outreach Team** (Mar 2006)
- **Stewart Lampe** (WFT) - project communication mission (Feb 2006)
- **Elaine Ward** (WFT) - gender and community development mission (Mar-Apr 2006)
- **Michael Shawyer** (consultant) - financial planning and icing courses for fisherfolk (Mar 2006)
- **Water management technical visit to Canada** (Feb-Mar 2006)
- **Fish mortality evaluation and analysis technical visit to Canada** (Feb-Mar 2006)

**Appendix A – Results and Indicators for Activities Conducted  
During the Reporting Period<sup>3</sup>**

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<sup>3</sup> activity titles and numbering from revised LFA

## Appendix A – Results and Indicators for Activities Conducted During the Reporting Period<sup>1</sup>

Subproject/theme Component Activity	Completed During Reporting Period	Result	Indicators
<b>1. Preparing communities for co-management</b>			
<i>1.1 Assessment and revision of co-management strategies</i>			
1.1.4 Identify and resolve user group conflicts	2 <sup>nd</sup> workshop for planning future of Fisherman's assistance centre (CAP)	Center changed to municipal Park of the Pira, with strategy and plans arrived through consensus	1 Consensual agreement reached; approx. 15 participants; 5 women
	Multi-stakeholder meeting on fish mortality and human impacts on aquatic environment	Creation of interdisciplinary multi-user forum for resolving impacts on aquatic environment	Coordination network formed 65 participants; 25 women check Roberto report
	Facilitation of neighbourhood organizations - Beiro Rio	Start of revitalization of Neighbourhood Association in fishing community	Improved communication 35 meeting participants; 15 women
<i>1.2 Adaptation and transfer of the Amazonian fisheries co-management experience to the São Francisco River</i>			
1.2.1 Transfer of Amazon experience to São Francisco River (IARA)	Radio reporters training workshop (with IDRC project)	Motivated reporter groups in each community; development of community radio programs and/or newsletters; improved knowledge of fishing issues in some communities	15 Participants - 9 women; 3 reporter programs
	2 <sup>nd</sup> workshop for leadership and communication (with IDRC project)	Improved capacity in fishing community to recognize and resolve problems and improve relationships with other resource stakeholders	28 Participants, 14 women
	Co-management training workshop for institutional partners	Improved understanding and capacity for co-management in academic partners, government management and policing partners, fishing leadership; improved relationship amongst participating partners	14 Participants, 5 women

<sup>1</sup> activity titles and numbering from revised LFA

<b>Subproject/theme</b> <i>Component</i> Activity	<b>Completed During Reporting Period</b>	<b>Result</b>	<b>Indicators</b>
1.2.3 UFSCar monitoring program	Variety of student projects to assess project activities	Improved understanding of project impacts within UFSCar; improved educational reach of project within UFSCar	About 5 projects completed
<b>1.3 Assessment and implementation of community policing strategies</b>			
1.3.1 Technical visit to Brazil to review policing situation	Technical visit by Canadian - Brazilian community policing team	Tri-lateral learning on community-based fisheries policing and organization in Canada, Amazon, and Minas Gerais; program changes unclear yet	7 Participants, 1 woman
	Assist development of community policing training program	Workshop in Santarem and in Belo Horizonte on community policing	7 Participants, 1 woman About 75 receiving participants in Santarém (35% women); 22 receiving in Minas, 4 women. Action plan for policing development in BH developed
1.3.3 Technical visit to Canada to review Canadian experiences in policing	Fisheries managers as part of hydroelectric visit to Canada (Activity 3.4.1)	Improved institutional (IEF and IBAMA) understanding of management options and development; improved relationship between community, IEF and IBAMA; improved IEF support of project initiatives;	Strengthened regional IBAMA office in area; improved linkage between community, IEF and IBAMA 6 participants in visit, representing 5 institutions
<b>2. Building sustainable livelihoods</b>			
<b>2.1 Participatory assessment of community attributes, needs and development strategies</b>			
2.1.2 Technical training to evaluate and improve livelihood and community options	Community economic development & gender equality workshops (see activity 2.3.5)	Improved capacity in communities to assess and develop economic opportunities incorporating gender equity	About 5 projects initiated, 107 Participants in workshops, 80% women
<b>2.2 Building community capacity</b>			
2.2.1 Canadian social scientists in Brazil	Canadian social scientists to assist in project coordination in Brazil & network building; workshops to summarize activities	Improved community support and ownership of project; improved delivery of activities; improved multi-stakeholder communication network; Improved networking amongst communities and gov't; Improved capacity in community to recognize and deal with problems and opportunities	About 26 activities organized;  1 multi-stakeholder forum on aquatic environment formed;

2.2.3 Community interchange within Brazil	Opportunistic exchange with communities, including participation in relevant workshops and conferences	Interchanges with Sto. Andre - improved understanding of socially inclusive tourism and other economic development	12 participants in exchange with 7 women; 1 SEBRAE project initiated, About 3 municipal programs fostered
2.2.4 NGO network strengthening	Assisted in meetings with the CPT; collaborated on workshop with SAMARA; fostered development of new environmental NGO	Improved networking amongst NGOs and the fishing community and NGOs	2 women sponsored at CPT meetings, 11 women sponsored for SAMARA workshop, 1 new NGO formed
<b>2.3 Building alternative livelihood options</b>			
2.3.1 Aquaculture risks and development	Publication of World Aquaculture Conference 2003 session proceedings (CD and booklet)	Distribution of booklet at conference and other opportunities	Approx. 250 booklets distributed
	Publication of review paper on status of Brazilian fish culture	Preliminary report on environmental impacts of aquaculture prepared	1 report prepared
	Technical support for development of aquaculture proposals (SEAP, MMA)	Review of current proposals carried out and report distributed; relevant discussion on environmentally and socially responsible aquaculture initiated	25 copies of report distributed
2.3.3 Value added development in Brazil	Development of proposals for value-added strategy	Partnership with SEBRAE on fish leather proposal; review of fish leather, fish smoking, and fish fertilizer	1 Proposal 1 Review
2.3.5 Participatory review of alternate activities	Assist municipal programs for alternative livelihoods	Component of gender equality & leadership workshops; Sto. Andre exchange visit; fishnet weaver workshop at Festa Manuelzão	12 participants on trip to Sto. Andre (7 women); 11 women sponsored at SAMARA wkshp
2.3.6 Alternate activity intro week	Artisanal Fairs and training (in partnership with municipalities)	Not pursued yet	
2.3.7 Alternate activity implementation by Canadian and Brazilian sociologists	Training courses for value-added fish products (leather, fertilizer, smoked fish, filleting and de-boning) & artisans (SEBRAE & SEAP partnerships, Aqua Doce project)	SEBRAE fish leather course initiated	About 15 participants with 12 women

Subproject/theme Component Activity	Completed During Reporting Period	Result	Indicators
<b>3. Securing the fisheries resource</b>			
<i>3.1 Improving fisheries management through DNA training</i>			
3.1.2 Brazilian in Canada to train on use of DNA	Gabriel Yazbeck (UFMG) internship in DNA technologies	Internship completed, results incorporated in PhD thesis	2 publications in press
<i>3.2 Improving ability to study and understand Brazilian migratory fish behaviour</i>			
3.2.2 Canadian radiotelemetry assistance in Brazil	Assist in follow-up: Lisiane Hahn at international conference presenting results; Alexandre Godinho with dourado project including fishermen; LGL with proposal to GERASUL, participation in Brazilian conference session	Improved radiotelemetry skills and partnerships; opportunities for Canadian firms	2 projects assisted; greater community involvement
<i>3.3 Improving stock assessment capabilities</i>			
3.3.2 Canadian assistance for implementing stock assessment options	Volunteer (Jason Emmert) on community-led fish mortality monitoring	Communities better prepared for participative environmental monitoring	3 Public presentations of results with community members; 2 press coverages; approx. 20 fishermen involved in monitoring
3.3.4 Evaluation workshops	Technical visit to communities to discuss stock assessment options	Fishing communities more prepared for participatory stock assessment; scientists better prepared for participative programs; community participating in fish mortality monitoring	55 community participants; 7 scientists; 35% women
<i>3.4 Reducing industry impact</i>			
3.4.1 Brazilian review mission to Canada on mitigation of dam impacts	Technical visit to Canada (CEMIG, IBAMA, UFMG) to discuss hydroelectric dam impacts and impact reduction strategies	All participants more aware of options and the role of communities in environmental stewardship	8 participants in mission; public and internal presentations and discussion of results; new environmental NGO formed
3.4.2 Workshop to review operational problems and build mitigative strategies	Follow-up meetings from technical visit	Broadened understanding in CEMIG of operational and mitigative strategies for minimizing environmental impact; improved appreciation of community involvement; improved community partnership	5 internal reports; 15 internal presentations at CEMIG



3.4.3 Canadian technical visit to assist implementation of mitigative measures	Technical visit on the topic of invasive mussel species - conference presentations, advice to research programs and industry	Improved understanding of options for mussel control; role of public education; approaches to research	4 core members of team (3 women); 45 participants in workshop (50% women); 2 PhD researchers advised (both women)
3.4.4 Workshop on appropriate corporate policies for social and environmental responsibility	Multi stakeholder forums to reduce aquatic environmental impacts (Municipal partnership)	Multi-stakeholder forum held; working groups formed	194 participants with 53 women; about 25 institutions
<b>3.5 Improving the effectiveness of stocking</b>			
3.5.1 Conference session on stocking	Publication of Joachim Carolsfeld's I SEGAP (in Rio de Janeiro) conference presentation in Brazilian Journal	No progress in reporting period	
<b>3.6 Improving water management practices</b>			
3.6.1 Brazilian mission to Canada to review water management practices	Included in hydroelectric technical visit (activity 3.4.1)	Improved understanding of available options amongst participants	8 Brazilian participants; 25 Canadian hosts (40% women).
3.6.2 Workshop to review water management models	Participation in local basin committees	Fishing and community representation in committees guaranteed; improved communication with community	Facilitation of 50 participants (20% women)
3.6.3 Canadian in Brazil to help develop water management model	Assistance to local water rehabilitation project (see activity 3.7.5)	Watershed model and environmental education initiatives - see education	Approx. 500 youth involved, 60% women.
<b>3.7 Improving habitat</b>			
3.7.1 Conference session and technical review mission to Brazil on habitat restoration	Technical workshop and assistance for proposal development - restoration of marginal lagoons (with follow-up implementation workshop)	No specific progress; some input to IBAMA/CODEVASF proposal	1 proposal assisted informally
3.7.5 Community based environmental improvements as part of community workshops	Support for Barreiro Grande restoration initiatives (with Agua Doce project)	Watershed model and environmental education initiatives - see education	Approx. 500 youth involved, 60% women.
3.7.7 Develop pollution assays	Develop & deliver training courses for community water sampling (with IDRC project, CEMIG, CODEVASF)	1 UFSCar water sampling course delivered	39 Participants; 14 women
	Workshop to develop community monitoring program	Participative monitoring and evaluation of fish mortality with community members	
	Presentations by Canadian technical team and Brazilian consultant on using fish as bio-indicators of aquatic contamination at multi-stakeholder forum and PUC-Minas university	Improved local (Minas Gerais) understanding of options and role of community	194 participants in forum (53 women); 25 at workshop, 40% women; 2 new research programs; 1 improved state monitoring program; 1 collaboration network created.
	Volunteer (Jason Emmert) developing community capacity for community-based environmental monitoring program	Improved community understanding of issues, participation in sampling, effective participation in forums	Approx. 45 community members affected, 10% women.

Subproject/theme Component Activity	Completed During Reporting Period	Result	Indicators
<b>Cross-cutting theme A. Assisting the development of policies for sustainable fisheries with community participation</b>			
<i>A.3 Participation in international conferences</i>			
	Participation in Conservation Biology Conference (Brasilia); Radiotelemetry conference (Portugal); Gender strategy conference (Goiania)	Improved exposure of project results in all venues; broadened horizons of all participants	3 participants, all women
<b>Cross-cutting theme B. Public awareness and education</b>			
<i>B.1 Activities for a riverine community target</i>			
B.1.2 Create pilot educational tools and materials	Develop and install watershed model	Participative watershed model construction initiated	Approx. 350 youth involved (60% women); 8 core youth (7 women).
<i>B.2 Activities for a broader Brazilian target</i>			
B.2.2 Develop pilot traveling displays/stands and folders	Folders and stands - Brazilian audience	Banners and t-shirts for environmental education developed; vastly improved profile for project and project goals	3 banners, 250 T-shirts distributed
B.2.4 Contribute to local press on fisheries issues	Assist with films on predatory fishing, water quality, garbage, etc.& contribution to public press as possible	Local press coverage & project newsletters published	4 press reports
B.2.5 Evaluate educational goals	Develop integrated environmental education strategy (follow-up to technical visit B.1.1)	New proposal to MMA developed participatively and submitted; participative report on environmental education needs	1 proposal with 5 partners; 1 review report
	Teacher - training workshop planning sessions with UFSCar; participation in regional education board (COLMEIA) meetings	Improved capacity to develop and carry out environmental education projects	8 facilitators involved, all women
	1 <sup>st</sup> Nations education consultant employed	Start on incorporating Canadian 1 <sup>st</sup> nations experience in environmental education strategies	1 woman facilitator
B.2.6 Improving fishermen esteem	Support for documenting and publicising local colony histories	Support for UFSCar/ Municipality local history film	1 film assisted
	Contributions to Brazilian sport fishing journals and IBAMA fishing awareness folder	No progress in reporting period	

<b>Subproject/theme Component Activity</b>	<b>Completed During Reporting Period</b>	<b>Result</b>	<b>Indicators</b>
<b>B.3 Activities for a Canadian/international target</b>			
B.2.6 Promote television and print coverage of project in Canada	Contributions to Canadian press and publicity venues: Vancouver Public Aquarium website, presentation at Royal Roads University, publication at University of Victoria, article in Department of Fisheries and Oceans newsletter.	Improved Canadian knowledge of project	3 articles published; 1 public presentation
<b>Cross-cutting theme C. Creating opportunities for women, youth and family</b>			
<b>C.1 Workshop component on women's needs</b>			
	Gender and Masculinity exploratory workshops (including follow-ups for specific trainings in CED) held in 3 communities	Improved female empowerment and participation in economic development in fishing communities; improved male recognition of women's needs & roles	91 participants (53 women); 3 facilitator workshops, 3 community workshops
<b>C.3 Youth workshop identifying needs &amp; strategies</b>			
	Technical visit by Canadian experts in youth initiatives (Susan Kurbis); youth forums	Technical visit only started within reporting period	
<b>Cross-cutting theme D. Communication</b>			
<b>D.1 Project website</b>			
	Website maintained, local contents not yet incorporated	Well recognized website; improved project awareness	All comments positive
<b>D.2 Project newsletter</b>			
	Newsletter - Built on earlier initiatives	Local project newsletter published twice; increased local awareness of project	Approx. 250 copies of newsletter distributed
<b>D.4 Communication group</b>			
	Establish communication strategy and team in Brazil; Local group developed in Três Marias with Radio Reporter and youth group participants; broader group not yet established	Increased local capacity for communication; increased local awareness of project	Approx. 25 participants; 50% women

Subproject/theme Component Activity	Completed During Reporting Period	Result	Indicators
<b>E. Management</b>			
<i>E.1 Project organization meetings</i>			
	Strategic planning meetings for project: 1 formal project progress and partnership review meeting held; informal subsequent follow-up on management strategies	Consolidation of results and impacts to date amongst partners and funding agency; start on Improved management strategy	45 participants; 50% women
<i>E.3 Ongoing project management</i>			
	Management and technical missions to Brazil by Joachim Carolsfeld, Penny Poole, Alison Macnaughton, Sarah Bryce; new management team members in Canada - Stewart Lampe and Elaine Ward	Improved management liaison between Canada and Brasil.	4 management missions; approx. 25 management meetings; conflicts managed;
	Management meetings in Victoria to review project activities, plan for upcoming activities and discuss management issues	Strategy developments with new staff	Approx. 6 meetings; WFT management team of 6 (67% women).
	Co-ordinate project sustainability: Informal meetings in Brasil with partners to pursue Brazilian funding & project support	Meetings in Brasilia, Belo Horizonte, Três Marias and Sao Carlos with MMA, SEAP, IBAMA, Secretaria de Meio Ambiente (IEF, FEAM), Muncipal Governments	Approx. 15 meetings; 5 new commitments
<i>E.4 Institutional building</i>			
	Continued institutional strengthening of Federation and Colonies of Professional Fishermen; strengthening of community association in Beiro Rio (fishing neighbourhood)	Better capacity in institutions for self-determination	Increased effective participation in meetings

**Appendix B – Schedule of Activities for Next Reporting Period**

## Appendix B: Schedule of Activities for Next Reporting Period

	Oct 05	Nov 05	Dec 05	Jan 06	Feb 06	Mar 06
<b><u>Sub-project 1: Preparing Communities for Co-Management</u></b>						
1.2.1 Transferring Amazon experience to the Sao Francisco - termination of the IDRC project activities with the creation of the Fisheries Working Group, final report, and follow-up strategies	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>		
1.2.3 Monitoring program for the project - participation in Results-Based Management and Outcome Mapping workshops; revision of monitoring strategies			<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>
1.3.3 Technical visit to review Canadian experiences in policing - part of the visit to review water management					<b>X</b>	<b>X</b>
<b><u>Sub-project 2: Constructing Sustainable Livelihoods</u></b>						
2.1.2 Training youth in sustainability options for the community - follow-up on Susan Kurbis' visit by Canadian intern and consultant José Andrade	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>
2.1.3 Community economic development groups - correlated with activity 2.3.5		<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>
2.1.3 Sto. Andre exchange to help set up development fairs					<b>X</b>	<b>X</b>
2.2.1 Canadian social scientist, Alison Macnaughton	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>

	Oct 05	Nov 05	Dec 05	Jan 06	Feb 06	Mar 06
2.2.3 Community interchange in Brazil - opportunistic, including participation in conferences and workshops	X	X	X	X	X	X
2.2.4 Construction and strengthening of networks between civil society and municipal governments	X	X	X	X	X	X
2.3.1 Development and risk assessment of aquaculture - publication of review article on risk and status of fish culture in Brazil					X	X
2.3.3 Workshops on value-added fish products - fish leather, smoked or salted/dry fish, fish fertilizer, optimization of icing and economic planning of fishing operations			X			X
2.3.6 Introductory week on activities for sustainable livelihoods - artisan fairs and training (in partnership with municipalities) - linked to Community Economic Development workshops and Santo Andre (activity 2.3.5).					X	X

**Sub-project 3: Securing the Fisheries Resource**

3.2 Improving studies of fish migration - radiotelemetry and otolith techniques				X	X	X
3.3.2 Canadian assistance to implement stock evaluation options						X
3.4.4 Workshop on appropriate responsible environmental and social corporate policies - participatory multi-stakeholder forums to reduce impacts on the aquatic environment (municipal and industrial partnerships).	X	X	X	X	X	X

	Oct 05	Nov 05	Dec 05	Jan 06	Feb 06	Mar 06
3.5.1 Evaluation of fish stocking - publication by J. Carolsfeld, Y. Sato, and partners; experimental fry tagging.						X
3.6.1 Multi-disciplinary mission to Canada to revise water management practices (tied to activity 3.4.1)					X	X
3.6.3 Canadians in Brazil to help develop water management models - assistance for local water resource rehabilitation (see activity 3.7.5) - next period.						
3.7.1 (To be evaluated) Conference or technical mission to Brazil on habitat restoration - technical workshop and assistance for proposal development - restoration of floodplain lakes - next period						
3.7.5 Community-based environmental improvements - assistance to the Barreiro Grande restoration (projeto Agua Doce) - next period						
3.7.7 Workshops and development of community-based water quality monitoring and pollution control					X	X
3.7.7 Develop bio-indicators for pollution - partnership with DFO - Winnipeg (Canada)					X	X

**Cross-cutting Theme B: Public awareness and education**

B. 1.2 Create pilot educational materials and tools - develop educational material for ongoing curriculum development in Brazil (enhance the transversality of environmental education in the curriculum)			X	X	X	X
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	Oct 05	Nov 05	Dec 05	Jan 06	Feb 06	Mar 06
B.2.2 Develop folders and stands for Brazilian and Canadian audiences - including new folder for project				X	X	X
B.2.4 Contribute to local press on fisheries and environmental issues	X	X	X	X	X	X
B.2.6 Improve public image of professional fishing - assist in documentation and publication of local community history					X	X

**Cross-cutting theme C - Creating opportunities for women, youth, and families**

C.1 Workshop components on women's needs - workshops on film and gender, Buritizeiro					X	X
C.1 Workshop on municipal gender strategies; presentation of UFSCar theses						X

**D. Communication**

D.1 Project website - add local Brazilian content	X	X	X	X	X	X
D.2 Project newsletter	X	X	X	X	X	X
D.4 Communication group - establish communication team and strategy in Brazil				X	X	X

	Oct 05	Nov 05	Dec 05	Jan 06	Feb 06	Mar 06
<b><u>E. Management</u></b>						
E.1 Management and strategy meetings	X		X	X		X
E.3 On-going project management - coordinate project sustainability	X	X	X	X	X	X
E.3 On-going project management - Canadian assistance to management in Brazil	X	X	X	X	X	X
E.4 Institutional strengthening	X	X	X	X	X	X