

ABC Adventure on the Brazilian Coastal Building Awareness on the Coastal Waters Management Object of a Five Years Project Covering the Entire Coast Line of Brazil

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ABSTRACT

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Based on the thesis project of the Social Scientist Helga Leal (Environmental Science/UFF/2004) that aims to investigate the relation of the coastal population with the strange universe (for that population) of the coastal waters, as well as based on a prior experience of living on aboard a sail boat during two years sailing around the south and east coast of Australia, the project Adventure on the Brazilian Coastal ABC of Diffusion the Coastal Waters Management, is a round-trip expedition along the Brazilian coast, a sailing cruise on board Helga II, a classic sail boat ketch rigged. The cruise will follow the Brazilian coast line, north and south bound, continuously back-and-fro (during a minimum time frame of five years) and anchoring at approximately 203 locations, building awareness on the coastal waters management, raising environmental education debates, integrating the academic and scientific community's works with the general public, through local outdoor seminars (on each city of anchorage using a specific methodology developed for this project), a literature developed exclusively and frame worked as "I use the sea", "I manage the sea" and/or "I enjoy the sea", and a national campaign called "ecological microprojects". The ABC Adventure on the Brazilian Coastal is supported by Fundação Universidade de Rio Grande/Museu Oceanográfico, Marinha do Brasil (Brazilian Navy), PNUMA-Brasil, Ministério do Meio Ambiente/GERCOM and Força Aérea Brasileira (Brazilian Air Force); the project funding is to be made by private enterprises and individuals.

ADDITIONAL INDEX WORDS: *Coastal cruise; environmental education; ecology; water ballast; coastal population; water management; leisure, sport and professional sailing; environmental sustainability; sea and ocean.*

INTRODUCTION

"Our organism, its inner medium, nothing else, has the same mineral personality, the same marine physiognomy of the sea water" (RENÉ QUINTON *et al.*, 1925), this citation taken from "O Segredo das Nossas Origens" e.g. (MAHÉ, ANDRÉ *et al.*, 1962) was the threefold insight for the milestone of the present work. The ICS 2004 International Coastal Symposium, supported by the Coastal Education and Research Foundation - Journal of Coastal Research, taking place at the Universidade do Vale do Itajaí (UNIVALI, Brazil) is a multi-disciplinary event convened as a forum for scientists, engineers, planners and managers to discuss new advances in scientific, technical, and socio-economic understanding of environmental issues related to coastal processes. Thus, at least an unusual place for a sailor journalist, and fiction writer, to share the spot lights even thou in partnership with a sociologist.

However the bellow lines were a single part of a threefold insight that brought us here to join this forum and whether there is the one thing the scientific community perhaps is lacking of that is to build awareness broadly to the general public about its field of work and subject of study. The CERF, through the medium of scientific publications, television, and radio brings accurate information to the public and coastal specialists on all aspects of coastal issues in an effort to maintain or improve the quality of shoreline resources aiming to stimulate awareness of coastal (marine and fresh-water shorelines) land and water problems; initiate and foster research and innovation to promote long-term coastal productivity; establish an educational forum for the debate of contentious coastal issues; and develop new principles and approaches for enlightened coastal management, and to encourage their adoption and use. Attaining to the Brazilian environment the Adventure in the Brazilian Coastal project aims to be a bridge of information and appropriate communication linking the general public, government and the

scientific community regarding coastal waters zone management matters.

The one third of the insight came with our life experience while sailing for a long period of time along the continental coast waters of Australia (e.g. PEAZÊ, 2001), where we could collect false ideas related to the sea environment from the people we met on shore. Another third was to base our approach towards the ABC project on the Brazilian National Program of Integrated Coastal and Marine Management (GERCOM Projeto de Gestão Integrada dos Ambientes Costeiro e Marinho) following one of yours very principles close, that is: to promote the integration of the management of the land and marine environment of the Coastal Zones with the construction and maintenance of transparent mechanisms as well as interactive ones in relation to decision making, based on information and technology available and on the signage and comparability of public policies within all level of public administration.

After all it is important to state that this is an in progress project, on its first steps, with a challenging time frame, that is five years period, and although its core will not be changed we will attain here to its frame work only. And this is not to be considered a theoretical one but a living experience.

Objective

The Adventure on the Brazilian Coastal ABC of Diffusion of the Coastal Waters Management project is a round-trip expedition along the Brazilian coast, a sailing cruise, on board Helga II, a classic sail boat ketch rigged, and will follow the Brazilian coast line, north and south bound, continuously back-and-fro (during a minimum time frame of five years), anchoring at approximately 203 locations, building awareness on the coastal waters management, raising environmental education debates, integrating the academic and scientific community's works with the general public, through local outdoor seminars (on each city of anchorage using a specific methodology for this

developed project), a literature developed exclusively and frame worked as "I use the sea", "I manage the sea" and/or "I enjoy the sea", and a national campaign called "Create an Ecological Microprojects".

Based on the project of thesis of the Social Scientist Helga Leal (Environmental Science/UFF/2004) that aims to investigate the relation of the coastal population with the strange universe of the coastal waters (80% of a mass of interviewed people according to a field research e.g. "Gallup, 1998", although give large importance to the sea don't know a great deal of its essential aspects), and in the experience of a cruise along the Australian south and east coast, the Adventure on the Brazilian Coastal, called from now on as ABC project, is supported by Fundação Universidade de Rio Grande/Museu Oceanográfico, Marinha do Brasil (Brazilian Navy), PNUMA-Brasil, Ministério do Meio Ambiente/GERCOM and Força Aérea Brasileira (Brazilian Air Force); the project funding is to be made by private enterprises and individuals.

METHODOLOGY

From the very beginning we consider of utmost importance to anchor the entire project on strong grounds in order to be accredited with up scale credentials, so the rational was to find the most appropriate entities of a kind in Brazil, regarding coastal waters. And this rational guided us directly to the Marinha do Brasil (Brazilian Navy) and to the Museu Oceanográfico da Universidade de Rio Grande (Museum Oceanographic of the University of Rio Grande). Subsequently we invited the Aeronáutica (Air Force), Ministério do Meio Ambiente/GERCOM, SECIRM Secretaria da Comissão Interministerial para os Recursos do Mar, which has a program called *Mentalidade Marítima* (Maritime Mentality) towards developing the maritime mentality among officials bureau, within the Brazilian Navy and among the Brazilian population as well, yet Fundação Roberto Marinho, a non profit organization associated to the major TV Network in Brazil that is TV Globo, related to cultural and educational programs, and, not going down into detailed list of supporters, we realized it was important to have a source of data such as the PNUMA-Brazil, another non profit organization associated to the UN, whose board of directors is a group of well known environmentalists, including its chairman who is also at the secretary of the steering international committee for ISO 14000, Dr. Haroldo de Mattos Lemos.

Subsequently we started from a bubble chart, that is an IBM methodology for analysis of systems, an eye ball of data information and hierarchized tasks broken-down into cities along the coast and its who is who/where is what data info, as well as ports, yacht clubs, universities, media available, etc. The third anchor of the ABC project is "the intensive articulation oriented program", a "hands on" project drafted to be oiled constantly by enthused new comers, keen with the social impact characteristic of the project. This in particularly drove us to introduce the figure of the Coordenadores de Base (Base Coordinators), key persons with specific job description to support "the cruise and outdoor seminar" regarding logistic and operational matters.

And this brings us to the ultimate anchor that is it must to have by the end of the day a social impact. Thus these were our methodologies principles to choose planning and management tools to develop the ABC project. Finally, we are oriented to the minimum financial demand expenditure.

The data base we use to work with, as per the objective of the ABC project, is the available official data from the Ministério do Meio Ambiente (Federal Department of Environment), data and literature from the Marinha do Brasil, inputs from the Museu Oceanográfico and a hand full of bibliography. Yet, as a methodology we fashioned the project with a fourfold structure as follow:

- PHASE I, ANCHORAGE
Planning and presentation to the entities for institutional support (May and June, 2003).
- PHASE II, UNDOING THE MOORING LINES
Fine tuning of the project, signing agreements with institutional supporters, decision making on promo pieces, prototype of Helga II (the vessel) and scope of a publication to use as one of the tools to reach out the objective of the ABC (July till August, 2003).
- PHASE III, BREAKING THROUGH THE BAR
Funding the project and building Helga II (September 2003 through July 2004).
- PHASE IV, ADVENTURE IN PROGRESS
Press media presentation at the Oceanographic Museum in Rio Grande and setting sails north (September through December, 2004).

Management

Four areas were set to manage and run the project and they are: a) Publishing & management of the book "Adventure in the Brazilian Coast I use the sea, I manage the sea, or I enjoy the sea" (to be published), which under the supervision of the Marinha do Brasil (Brazilian Navy) and Museu Oceanográfico (Oceanographic Museum); b) marketing and production of promo pieces; c) budgeting and administration, buying, suppliers and human resource relation; d) Public Relation including management & publishing of content of the website www.aventuranobrasilcostal.com.br.

The building of Helga II will follow a parallel process and management and will cease when its done, turning to be a scheduling of a program of maintenance under the responsibility of the Captain and the crew of the ABC.

Concept

Since the United Nations Conference of 1972, Stockholm, when the environment arouse for the first time before the eyes of the international community, and twenty years ahead at the ECO-1992, and subsequently the Rio +10 in Johannesburg, South Africa in 2002, when the environmental conscious and drive of the governments worldwide were set towards the Earth's devastation - heating levels of the earth's surface; the ozone layer's holes; the forests devastation; the extinction of some species of the fauna and flora; the increasing urban pollution; the access to sanitation system by the poor; the need of proper use and management of potable water; the sand of rivers, lakes and bays; the impoverishing of hydrographic bays and phreato water table and its recharge areas; the impoverishing of rural zones by the irrigation/wasting of water; the aggressive use of agrotóxicos and their contamination of the surface and underground waters; and recently the discovery of the persistent pollutants and the insertion of exotic species by the waterballast as well as with the growth of the OGM's; all this endangering the life of living beings since then, all these problems were not solved, in many cases they were rather aggravated, although year after year more and more programs and sustainable policies are being sponsored within the private and public sphere.

However the demographic explosion has been feeding that status quo, not only demanding more energy, food and goods (e.g. The Ocean...Our Future), but surely by the lack of information broadly available to the general public regarding the resources and coherent alternatives and need of the sustainability thinking, which seems to be the only option to guarantee a certain level of quality of life on earth, for the next few centuries, at least.

Social Impact

We understand that building a broad awareness on the coastal waters management with emphasis on environmental education, in a way that the activities of the scientific community as well as the Brazilian Navy (regarding the Eco agenda) be brought to everyone sight, from south to north and back-and-fro continuously, encouraging interaction with the

general public is a substantial contribution to the civil society.

The mechanics of the expedition ABC combined with the outdoor seminars, added by the publication "I Use the Sea, I Manage the Sea, I Enjoy the Sea", created exclusively for the ABC project, plus the national conquest "Crie Microprojetos Ecológicos" (Develop your own Micro Ecoproject), and on top of all that the evaluation of the "coordenadores de base" (base coordinators) are a bold human effort to guarantee the positive desired social impact.

It also aims to contribute to the enhancement of the IDH Index of Development of Human Quality of Life, directly with education and indirectly with regards to the environment itself.

We believe that it is not conceivable nowadays any human activity, related to productivity or not, of leisure or entertainment, professional or not, and especially on education level that has not a strong ecological appeal.

And the threefold ABC's philosophy entails the following: 1) Coverage and target; 2) The expedition; 3) The interaction. Each one broken down to three figures and so on.

Coverage - It covers the entire Brazilian coast and its target falls within (first) the Class A, B e C economically active, between 18 and 60 years old, and (second) the Undetermined Classes and ages, the general public. It will cover approximately 203 cities and beaches, along 17 estates. 65% of the population, considering 50km in land from the coast line. The media will include approximately 40 newspapers, 51 local TV stations, 34 local radio stations and 5 national magazines. We will deliver a monthly electronic newsletter and the web site will have a web log/forum and a data base nich of information on coastal waters.

The first challenge of the ABC will be the communication language to reach out such a broad spectrum of public this is the reason why we planned outdoor seminars, the book, and a web site. We intent to translate into an average language the subject of study of the fields such as the geology, geography, marine biology, biochemistry, biophysics and oceanography in general, and demonstrate thematic charts by planimetric bases, use and ground cover, geomorphology, geology, agriculture liability, water quality, flora and fauna, oceanographic parameters, meteorology, zone plans and socio-economics aspect *e.g.* (Configuração de Metodologia para o Macrozoneamento Costeiro do Brasil, 1995) for each site/city the Helga II will anchor. Rationally, always using a straightforward language, we will relate those aspects above to the actual characteristics of each area regarding their socio-economical class of activities *e.g.* (Perfil dos Estados Litorâneos do Brasil: Subsídios à Implantação do Programa Nacional de Gerenciamento Costeiro, 1998).

The Expedition - anchorage at approximately 203 cruising grounds, along the Brazilian coast, organizing outdoors seminars (planned ahead of time and supported by the Base Coordinators of each location), promoting the book "ABC I Use the Sea, I Manage the Sea, I Enjoy the Sea", collecting subscription to the national campaign "Develop your own Micro Ecoproject".

The crew of the Helga II will be formed by Luís Peazê as the captain, Helga Leal as the First Mate, and Germano Pestana as the skipper for specific legs. Occasionally it will also have on board guests such as scientists, students, officers of the Navy, and others.

The Seminars - City halls from each location were contacted (contacts in progress), needless to state that the Base Coordinators (locals) must to interface the contact, and arrangements will be made prior to each outdoor seminar, according to the soft schedule of the expedition. There is a kit of fittings and fixtures accomplished by flags (sponsors, supporters, national, etc), a well crafted ABC mat, microphone facilities and plastic chairs.

The format of the seminars will be outlined as follow: a) recapping the ABC as a whole and presenting the events that had

taken place prior to that particular location; b) quick view of Micro Projects enlisted and an approach to eco-cases (Environment Liability or Assets) of the actual location with the participation of local lecturers and from other places (universities, for instance); c) presenting the navigation plan as well as cases from places ahead. Of course this is a simple description of the seminars format. In most cases it will be a week long event, in some case it will be a day long one and so on. The expedition will be subjected to a variety of events such as the weather conditions, that we have a frame work schedule although defined in detail but with enough allowances for delays and/or anticipations.

Needless to state that the expedition will be a natural venue for collecting field data and so a collection of blank data sheets has been designed to collect these information., to feed the data base available online on the web site.

The Interaction - Three levels of interaction and three places for interact with the ABC will be available. Blue Gold, Green Gold and Yellow Gold will be the levels of interactions. The Internet, the seminars and the coordination base will be the places to interact with the ABC. The Blue Gold level will be granted to people subscribing with a Micro Eco Project for the annual awarding. The Green Gold level will be given to people when they buy the promo kit (which includes the book) but did not presented a micro ecoproject. And the Yellow Gold level will be given for those subscribing for mailing list only. The promo kit will include caps, polo shirts, adhesives, postal cards, the book "ABC I Use The Sea, I Manage The Sea, or I Enjoy The Sea" and the Blue or Green card. Eventually the Yellow Cards subscribers will get by mail a complementary welcome folder.

The book - Its content includes basic information about coastal ecosystems, regulations, framework legislation, laws and norms on amateur and leisure navigation, ports activities broad view, and safety on the sea. But a variety of literature supplied by the institutional supporters, academic supporters and sponsors will be also distributed to the public.

Website - Its interactive content includes restricted and non restricted areas according to the levels Blue/Green/Yellow will have an expedition log; an area of columnists called "Conversa no Pier" (Pier's Chatting); announcements and a comprehensive information on the ABC project; a shopping area; and a data base area with coastal waters management information.

ACHIEVEMENTS

As stated earlier this is an in progress project thus the achievements listed ahead must to be added by numbers of others while you are reading.

The fact that the Marinha do Brasil, the Museu Oceanográfico da Universidade de Rio Grande, Ministério do Meio Ambiente/GERCOM, PNUMA-Brasil, the Força Aérea e others supporters are involved in this is already a substantial achievement, but the most appreciable one perhaps is the long list of incomers from the general public, including academics, interested to join in as a Base Coordinator voluntary job while he can be a payee figure during each seminar. We are currently sorting them all out by categories such as level of education, activity, age and affinity/knowledge about coastal waters and environment. Not necessarily as a criteria for selection but to address individuals properly while we are running an one-to-one induction procedure nationwide through the Internet, telephone or face-to-face.

Interactions between human society and the coastal waters are manifold, and the consequences complex and numerous. From the management viewpoint it is inevitable that different users, managers and at leisure ones of coastal waters resources are organized under distinct groupings each with its own highly developed regime.

It is fundamental to maintain the focus on the above while undertaking a task on such dynamic field, focusing on the interactive biological, chemical, geological and physical processes that define its dynamics, the changes that are occurring in these dynamics, and the role of human activities in these changes.

On each site/city the Helga II is set to anchor we keep records as well as we broadcast them through our means (internet, media and effort of the base coordinators) under the umbrella concept of a sustainable system and an integrated coastal zone management system putting those dynamics in the perspective of possible changes such as:

a) River basin deliveries to the coastal zone and human dimensions; b) Coastal development and change: Implications of land and sea use; c) Fate and transformation of materials in coastal and shelf waters, unfolding to the Vulnerability of Coastal Systems and Human Safety.

These interacting changes are threefold into a broad sphere:

a) global changes which are natural changes, such as climate, and those due to changes in the global economy/trade and policy; b) regional (trans-boundary and supra-national) changes as a result of regional and national drivers and pressures in the coastal zone; and; c) regional changes at the river catchment level which affect the downstream coastal zone and in the Exclusive Economic Zone.

The magnitude of the task is challenging, especially in making the link between human dimensions and the natural processes. In addition, coastal systems are characterized by a tapestry of small-scale variability and non-linearity of system functioning which links with larger trans-boundary and regional interconnection processes.

PERSPECTIVES

Direct Human Influences in the Coastal Zone

Understanding as "human influences" those sponsored by the industry, by its economic/productive activities and people's habits (for good or for bad) the coastal domain of land and coastal seas is influenced by human activities in the maritime seaboard and in river basins, and extending the perspective alterations to upland areas are causing marked changes in the timing, the flux, and the dispersal of water, sediments, nutrients and contaminants, according to the Land-Ocean Interaction in the Coastal Zone e.g. (LOICZ, 2003) including:

- changes in the timing of water discharges from river systems (catchment areas) to the coastal zone, through flood/wave mitigation, via reservoir storage, or entire water diversion schemes;
- changes in the amount of water transported to the coastal zone due to water use for urban development, industry and agriculture;
- changes in energy fluxes within systems of the coastal domain;
- regional decreases in the delivery of sediment to the coastal zone through sediment trapping within reservoirs;
- regional increases in the delivery of sediment to the coastal zone through increased soil erosion driven by agriculture, construction (urban development, roadways), mining, and forestry operations;
- changing the flux of nutrients to the coastal zone (e.g., storing carbon within reservoirs; elevated nitrogen flux from sewage and agricultural activities);
- changes in flow patterns and sedimentation in estuaries due to dredging (for ports and sand resources) and reclamation;
- loss of space and habitat, and increased loadings on estuaries through sedimentation
- building of shoreline engineering structures, ports and urban developments;
- harvesting and often over-harvesting of marine resources;
- loss of traditional food resources and environment (cultural

values) for indigenous people;

- increased pollutants, contaminants and atmospheric emissions from industries and urbanization;
- modification of the type and quantity of coastal discharges from surface and groundwater flows;
- alienation of coastal wetlands and other valuable ecosystems through land use change; and
- modification of habitat structure and functioning through introduction of non-indigenous species.

The consequences include changes in:

- 1) ecosystem health and diversity;
 - 2) vitality and productivity of coastal wetlands, mangroves, and reefs;
 - 3) impacts on coastal stability, biodiversity, shoreline morphology;
 - 4) dispersal area of riverine particulate and dissolved loads;
 - 5) fate and distribution of materials in coastal and shelf waters;
 - 6) yields of resources and products that sustain society and economies;
 - 7) increased risk to life, property and investment; and
 - 8) uncertainty or diminished options for sustainable development.
- 9) loss of ecosystem services capability

Our perspective on the above issues, once we build awareness as per the objective of the Adventure on the Brazilian Coastal's project with the proper language, that is to communicate with the general public as clear as possible (starting from a didactic way down to the lowest level as for "what one can do, what one can not do" tables), is to make major advances (being helped by the scientific community) in our understanding of the biogeochemical and the physical role of the coastal zone in global cycles and change, by addressing the following major questions on a large/local scale:

- Is the coastal macro/microzone a sink or source of CO₂?
- What are the mass balances of carbon, nitrogen and phosphorus in the coastal zone?
- How are humans altering these mass balances, and what are the consequences?
- How do changes in land use, climate and sea level alter the fluxes and retention of water and particulate matter in the coastal zone and affect coastal morphodynamics?
- What is the role of the coastal zone in trace gas (e.g., DMS, NO_x) emissions?
- How can knowledge of the processes and impacts of biogeochemical and socio-economic changes be applied to improve integrated management of the coastal environment?

CONCLUSIONS

The human dimension is crucial in modifying, directly and indirectly, the coastal system. Also, humans individually and collectively respond to these and "natural" changes in order to mitigate or resolve problems.

There is no other way than to remind our selves all the time about the above idea.

We could even deviate to a more emotional concept, if one would struggle to the limited point to conclude the effectiveness of building awareness on the coastal waters management as part of the goal to have a better world to live in, by saying one takes care of only what he loves and one can only love what he knows.

The Capital eventually considered the one thing one can rely on to improve his means of living also carry a great deal of backlash effects and can not be employed alone, never.

The conclusion is simple as that: no law, no regulation, no enforcement of any kind, including the powerful discovery unveiled within the walls of a lab or on the field of research, nor even the whole amount of money a man can make will drive people's willingness to accept any idea if "the" idea is not a

reasonable common knowledge. And if it is true that nowadays is not conceivable any activity, professional, of entertainment, leisure or educative that has not a strong ecological appeal, is even truer that people must know it.

The matter of a fact Building Awareness on the Coastal Waters Management's project starts from a conclusion into a permanent proceeding task.

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