

CCRC YOUNG ECO-ARMY: A STRATEGIC LEARNING CONVERGENCE

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MANGROVES OF BHITARKANIKA

There are many reasons why it is critical that we act to preserve the fragile coastal ecosystem of the Orissan Coast found at Bhitarkanika. Not only is the natural wonder of the sanctuary worth protecting of its own right, but also it provides critical cultural and economic services to the people of the region as well as the people of Orissa and India in general. In fact, Bhitarkanika is a habitat of global importance.

If you have had a chance to gaze into the dark depths of a mangrove grove, or watch the tide flow up to kiss the bright green leaves of a tree, if you have seen fiddler crabs seeming to play in some silent string orchestra as they feed or deer dancing along the muddy banks at low tide, if you've seen a gigantic crocodile sunning itself like some ancient wonder transporting you back to the time of the dinosaurs or watched a mudskipper grip the roots of a tree with the beginnings of limbs like the first creature to crawl out of the sea millions of years ago, you cannot help but be filled with a sense of wonder. You know that this environment is worth preserving because of its beauty, its history, and its spirituality. Earth, water, wind, fire, and space are all present here in all their glory. You can feel the footprints of Gods that must walk among these trees and their twisted network of roots, whistling with every voice in the forest, from the red-breasted kingfisher to the loud squawk of herons nesting on the magnificent island / kingdom of migratory birds.

For a biologist too, with his or her own kind of religion, this place represents a sacred trust. Of the approximately ninety species of mangroves in the world, Bhitarkanika harbors about sixty-two of them. It is also home to over 215 species of migratory birds, which are critical to ecosystems far removed (and part of the reason why Bhitarkanika is listed as a Ramsar site) and an amazing 8 species of kingfisher. Fish and crab species too are abundant, as are reptiles. These include the marvelous estuarine crocodile, which can grow to be between seven and eight meters in length and for which Bhitarkanika serves as a sanctuary and the Olive Ridley Sea Turtle, which makes its annual migration to these sandy shores to lay its eggs. It is the largest turtle-nesting site in the world.

Aesthetic Benefits

But the value of Bhitarkanika does fill with the intangible aesthetic benefits or the joy that it will bring to biologists and naturalists. Bhitarkanika is a source of food security and cultural heritage for the people living in villages nearby or even within the sanctuary itself. The local populous exploits the mangroves for fish/crabs and firewood. The people have little choice because they depend on only one source of income: a type of rice that grows in the salty coastal soil (and a harvest that will also be in danger should climate change effect the duration and intensity of the monsoon). Their income consists of the 70Rupees (under 2USD) a day they earn during harvest time. The rest of the year they depend on the forest to provide. Even when the Department of Forest & Environment in Orissa banned harvesting from the sanctuary, the people risked jail time and sometimes even resorted to organized crime out of desperation.

Mangroves are know as 'soil builders' though it is not just the mangroves themselves that do the job, but the rich ecosystem and habitat that they support. Mangrove roots trap sediment as well as help to create it with the leaf-litter and detritus that they produce. The way their roots break up and slow the current creates eddies that allows sediment to float to the bottom and accumulate.

The mangroves also make the soil richer in elements such as oxygen and play a key part in the nitrogen and phosphorous cycles. Certain photosynthetic algae and bacterium that live among the mud produce secretions that help to trap soil and bind it together like glue.

But the mangrove trees themselves do much more than protect from coastal erosion and the creation of soil. They have been shown to reduce the impacts of tropical storms, tsunamis and other violent acts of nature that are occurring with increasing frequency do to the effects of climate change. This is a valuable service for all the people of Orissa as well as for the people of India as a whole. Unfortunately, mangroves are vulnerable to climate change as well. Added to these stressors is the threat of the human population living near these forests.

What is difficult for the largely uneducated population of villages like Gupti to see is that the mangroves provide many other valuable services for which they should be preserved. The trees provide a home to many of the crabs that the people eat and spawning grounds for the very commercially important Tiger Prawn. The forest also helps to regulate the tide and prevent coastal erosion that would threaten to sink whole villages into the sea.

Coastal Community Resource Center

The Sandhan Foundation of Bhubaneswar, in conjunction with the UNEP-GPA, NC-IUCN-TRP and the Government of Orissa, has begun an innovative project: the Coastal Community Resource Center (CCRC), located at village Gupti. The Center's objective is to educate the local population about the importance of wise management of the mangrove forest both for their own health, protection from the effects of climate change, and for sustainable development. The CCRC is working to provide alternatives to exploitation of the mangrove forest, including research into alternative crops and firewood able to grow in saline conditions, aquaculture in tidal ponds outside the sanctuary, collection of cow-patties or the purchase of biomass/solar cooking equipment as an alternative to mangrove wood and leaves, green fencing, and increased education and development of artistry to provide flexible sources of income and increase human capital. The Center also serves as a rest house for scientist and tourists as part of a promotion of eco-tourism to the region, providing the local people with yet another possible source of income, as well as increasing the demand for a well-developed transportation network.

The efforts of the CCRC, especially in training local people to replant mangroves (which have a surprisingly slow natural re-growth rate) shows hope that those living in or near the sanctuary will at least have the tools at their disposal to adapt and to develop in harmony with the natural resources that will protect them from some of the worse effects of climate change as well as help to preserve them for humanity as a whole.

Key Concepts

It is my belief that in order to both understand and desire conservation, it is necessary to fully comprehend and internalize a few key concepts, or ways of thinking. Many of these concepts are ones which human beings seem naturally predisposed to understand, as they are critical to our understanding of the world around us. However, some of them, it seems, are not as easily seen a world without a good understanding of economics, or at least a market.

Nature can seem so vast and bountiful, in fact, people are predisposed to view it as 'the environment,' that thing out there that effects us, whether this is by personification, deification, or simply in the modern view that human beings operate outside of nature, and that things that are human-made are 'unnatural.' It is the understanding of the collective ability to act (what Hannah Arendt called power), or the summation of individual actions and trade-off decisions leading to an overall outcome, Adam Smith's 'invisible hand,' along with a conception of scarcity, that allows human beings to truly comprehend the kind of decisions we must make in order to conserve wisely.

CCRC Young Eco-Army

After the 'Super-Cyclone-1999' the coastal fabric of Orissa has got devastated and thus seen extreme poverty. Extreme poverty persists due to lack of mission-zeal and appropriate opportunities. To begin this mission-zeal the CCRC Young Eco-Army has been formed to attend education to spread awareness on wise use of coastal resources. The Center's Community Schooling objective is to educate the coastal children and young people about the importance of wise management of the mangrove forest both for their own health, protection from the effects of climate change, and for sustainable development. They learn here the awareness campaign messages for coastal resource conservation through ICT equipped curriculum and convince their parents, villagers not to destroy the mangrove vegetation for selfish gain. This practice is developed to widen their access to learning opportunities in the failed schooling system in these inhospitable coastal situations. This has been further improved to army the CCRC mission voluntarily. They are being trained to become the carriers of messages to the community folks on the programs of CCRC Community Schooling.

Conservation Education

1. Expanding access to knowledge using ICT/ ODL on Biodiversity Conservation Education and Health Care.

In 2005 when the CCRC was engaged to train the local children on conservation syllabus it was heartening that they were not aware about the purpose of conservation. The above description on the mangrove ecosystem of Bhitarkanika with Power Point preparations, Slides and pictorial support those are hung in our CCRC Mangrove Museum convince all about the magnificence of the subject and the place of natural coastal wetland and marine importance. The regular community previewing of our Documentary film (45min.16mm Eastman color) on the Mangrove Ecosystem has made them understood the intricacy of the mangrove vegetation and its surroundings what they see every day but fail to determine the natural assets in it and its ability of continuous sustenance.

The lucid coastal ecology although attract them what they are not aware about the purpose of nature in the swampy areas they live in. Compiling their queries the CCRC has designed audiovisual programs on sustainable development and ecosystem conservation planning to attend their curiosity with practical information. With the help of ICT they are made to learn on Health Education and care to pursue living in these inhospitable coastal situations. The given background information on conservation made them alert to spread awareness on the fragile mangrove ecosystem and their survival by community awakening with the formation of Young Eco-Army. They are trained to move around the villages to convince their parents, elders and friends on their responsible role as Young Eco-Army to safe guard the ecosystem to benefit all for all time to come if preservation and conservation and wise use of the coastal wetland-marine resources taken care around them.

2. Providing skills training and support for small entrepreneurs to increase opportunities for employment and income generation.

In 2006 the Young Eco-Army are exposed to a varieties of alternate livelihood options to give a halt to ruthless use of the fish resources by killing innumerable micro organisms by their parental livelihood practices which they use to from the time immemorial. They become vocal to limit their needs and opt for shift to new avenues of livelihoods. Their parents and fellow community members are convinced the new approaches and start appreciating the new role of their children

as Young Eco-Army. The community folks more curiously the Small fishers attach all credit to the Community Schooling, a pioneer attempt designed by CCRC.

3. Protecting the environment, to ensure that natural resources are conserved and renewed for future generations.

The people live in mangrove ecosystem are unaware of the natural contributions to create and recreate the mangrove vegetation along the coast. The natural balance maintained with this ecosystem with the habitation of many animals and micro fauna are uncommon along the coast. With this backdrop they are made to learn the conservation of the resources to maintain the coastal equilibrium and to ensure the upkeep of the environmental status for the future generations.

4. The practiced strategies are to educate the coastal children and young people on the wise-use of coastal wetland –marine resources.

The strategic convergence to form the group of Young Eco-Army by educating the coastal children with the help of ICT/ODL pave a new methodology after coming back from PCF4 in 2006 held at Jamaica. We have framed improved syllabus to impart teaching and assembled information to equip the Young Eco-Army with practical solutions how to wise use the coastal wetland-marine resources by limiting their excessive dependency on the coastal resources. This becomes a turning scenario to groom the Young Eco-Army with new ideas, which finally motivates them to spread awareness and campaign for the conservation of the ecosystem services. They are continuously informed and backed with new ideas to perform meaningful to arm the unique mission of the CCRC.

5. Community Schooling is an innovative attempt to attract community folks irrespective of their age, gender and religion, what we have introduced to run the methodology of Conservation-Education. Here any methodology fits well with ease and that attracts the illiterate intelligent to understand what 'open learning' does to millions. Online learning is being seen as a killer application of Internet. Web and Internet have already affected most walks of life; and it is currently hovering around education. We are trying to introduce WEB, the latest technology to the arena of Community Schooling. It is being adapted to address many of the coastal problems with traditional education and of the earlier approaches of computer application in education.

Volunteer Teacher: A New Role

It is the need and demand of the time to dress a changed role to teachers who should act as a Mentor, Motivator and Counselor what we have introduced in our CCRC as Volunteer-mentor and others to run the activities of our Community Schooling. They are motivated to attach thrust not on imparting bookish 'knowledge' but act on identifying the strengths and ready to play counseling to put the community children in the right path of learning. Other than a guardian they are leading as catalysts to promote the potential creative abilities of the community students. The much-discussed 'Type' indicators are the basis to act as the guideline to identify strength and weaknesses of the students. They are acting as the facilitators to change the "Personality-Type" to upward the homogeneity of serving conservation-education in spirit and philosophy. This experiment to introduce Volunteer-Teacher from the community itself has magnified the success scenario in this innovative endeavor in these most poorly advanced coastal village situations. The asset-based approach to development is an innovative alternative to conventional needs-based approaches. In spite of the wide variety of "participatory approaches" to development, the community development process is, in far too many places, still being "driven" by NGOs and other external players and not the community members themselves.

Approaches such as Appreciative Inquiry, Asset-Based Community Development, the Asset-Building Framework and the Sustainable Livelihoods Approach can assist communities to

mobilize, restore and further develop their internal assets as a means of addressing fundamental issues such as poverty and injustice.

Young children will learn how to assist community members to identify and mobilize the skills of individuals, the capacities of local associations, the assets of businesses and institutions, as well as local natural resources toward community building activities and economic development initiatives. At every step of the way the focus will be on ensuring that the development process is and remains "community-driven."

As a result of this program, the coastal children are enabled to:

- Select, design and apply tools for identifying and mobilizing community assets
- Critically evaluate various methods and approaches in terms of their potential to strengthen the capacity of community members to control and sustain the development process
- Understand a broad range of asset-based approaches to community development
- Understand their own behavior and attitudes and how these elements affect their capacity to facilitate community-driven development

Conclusion

Connecting the Community with Knowledge using ICT/ ODL on Biodiversity Conservation Education and Health Care is an intuitive experiment humbly introduced in our CCRC with a form of Community Schooling. We are encouraged with the success of energizing the Young Eco-Army of the CCRC with renewed zeal and vigor. But many things are yet to make an entry but with our unstinted exercise a community forum has been geared up to adopt the technological innovations into the process of Online learning. Online learning has already gone through the hype and the field is maturing to be able to distinguish the realizable and desirable roles that such technology can play. There is wide spread realization that just by web enabling the Power point slides and lecture notes we cannot suffice to provide a learning environment. A learning environment should be built over a clear model of instruction. Instruction technology, e-Learning design and operational psychology play major roles at this point.

Obviously, in order to want to conserve the environment, it is necessary to understand the need for conservation. There is no point in conserving something that's infinite or something that use does not impede (like conserving light, for example, or conserving the word 'apple'). Nature is big. Growing up in a city, or in a small area, it's hard to remember how big, but for people who have lived at the edge of the forest and had their livelihood provided to them by the forest for thousands of years, it's easy to think of nature as infinite, or infinitely bountiful at least. As long as nature can reproduce faster than humans can destroy it, it is essentially a gift that keeps giving, because of the ability of organisms to reproduce them. If the scope of human impact, or our imagination of our impact, is small enough, then we can make ourselves believe that we can continue to use wastefully forever.