

## Conservation of Olive Ridley through community participation: A Case Study of Velas, Ratnagiri District

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### Abstract

Developing and under developed countries of the world possess hotspots of biodiversities. Poor marginalized communities from these countries depend on ecosystems and natural resources for their livelihood. Any changes in ecosystem and biodiversity therein can greatly influence their life. The subsequent environmental degradation will surely result in deprivation of their livelihood. The time has come to identify, assess, and undertake practical actions that can enhance well-being without undermining ecosystems.

The current paper elaborates the turtle festival of Velas from Ratnagiri district of Maharashtra state under the stewardship of NGO Sahyadri Nisarga Mitra. The main aim of the turtle festival is to foster active participation of local community in conservation of turtle while increase their income simultaneously.

This case study is a representative example. The paper concludes that it is necessary to perform the valuation of economic damage due to loss of biodiversity to the region. It can be also computed by assessing the economic value of maintaining biodiversity through conservation policies and other means. The next stage is to perform meticulous review of cost-effectiveness of various alternatives in biodiversity conservation policies and instruments. Once the planning and related execution has been performed, the overall economic impact (gained income, jobs) due to implementation of policies must be studied to assess effectiveness and course correction.

**KEYWORDS** : Olive Ridley, Community, Ex- situ Conservation, Turtle festival, Velas

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### Introduction-

The olive ridley (*Lepidochelys Olivacea*) turtle is named for the generally greenish colour of its skin and shell (carapace). Olive ridleys are the smallest of the sea turtles. The olive ridley is mostly carnivorous, feeding on such creatures as jellyfish, snails, crabs, and shrimp. They will occasionally eat algae and seaweed as well. Olive Ridley sea turtle has found place in *Schedule - I of Indian Wildlife (Protection) Act, 1972 (amended 1991)*. All the species of sea turtles in the coastal water of Orissa are listed as "endangered" as per International Union for Conservation of Nature and Natural Resource (IUCN) *Red Data Book*. The sea turtles are protected under the '*Migratory Species Convention*' and *Convention of International Trade on Wildlife Flora and Fauna*, CITES. These listings were largely responsible for halting large scale commercial exploitation and trade of olive ridley skins. (Olive ridley sea turtle). India is a signatory nation to all these conventions. The 'Homing' characteristics of the Ridley sea turtles make them more prone to mass casualty. The IUCN and

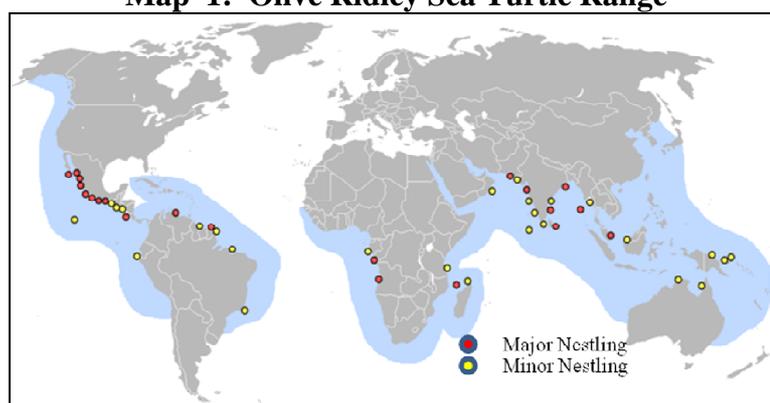
*The Convention on Migratory Species* and the *Inter-American Convention for the Protection* have put restrictions on illegal collection of eggs collection. But these laws are rarely enforced. In spite of National listings for this species range from Endangered to Threatened, enforcing these sanctions on a global scale has been unsuccessful for the most part.

In developing and under developed countries of the world, the poor marginalized sections of community directly depend on natural resources for their livelihood. Environmental degradation may deprive of their livelihood. Hence they are always in the front of protection of natural resources. In recent years, NGO's have emerged as significant elements in fostering environmentally sound practices at local levels. The idea is that under the flagship of NGO's, community based activities projects will be successfully supported by local people when they are benefitted.

This paper unfolds that in most regions, illegal poaching of eggs is considered a major threat to olive ridley populations. Conservation natural resources may not be successful without the participation of local communities. Because local community are important stakeholders in using natural resources and their participation plays a vital role in the development of capacity building and can play a pioneering role in aspects necessary for sustainability and equitability.

**Literature review:** Numerous case studies have been conducted in the regions of *arribadas*<sup>1</sup> beaches to investigate and understand the socio-economic, cultural, and political issues of egg collection. In Ostional, Costa Rica, since 1987 legal eggs harvest had able the villagers to harvest and sell around three million eggs annually. Over 27 million eggs are left un-harvested, and villagers have played a large role in protecting these nests from predators, thereby increasing hatching success. This is viewed by many as both biologically sustainable and economically viable. It was reported that harvesting eggs is the most important activity of local villagers and profits earned were superior to other forms of available employment, other than tourism.

**Map 1: Olive Ridley Sea Turtle Range**



Source-[http://en.wikipedia.org/wiki/File:Lieux\\_pontes\\_tortue\\_olivatre.png](http://en.wikipedia.org/wiki/File:Lieux_pontes_tortue_olivatre.png)

The *Gahirmatha* Beach in *Kendrapara* district of Orissa, India; is the largest breeding ground for these turtles. The *Gahirmatha* Marine Wildlife Sanctuary, which bounds

<sup>1</sup> In Spanish language *arribadas* means the mass arrival and nesting of turtles

the Bhitarkanika Wildlife Sanctuary to the east and encompasses Gahirmatha Beach and an adjacent portion of the Bay of Bengal. It is the world's largest known rookery of Olive Ridley sea turtles. Apart from Gahirmatha rookery, two other mass nesting beaches have been located which are on the mouth of rivers Rushikulya and Devi.

Most studies on sea turtles in India have mainly focused on the east coast and little information is available on the population on the west coast. The olive ridley is known to nest sporadically along the entire coast of Maharashtra. There are some reports of nesting of green turtle (Shaikh, 1983) (Gole, 1997). Some researchers have noticed the nesting of olive ridley and leatherback turtles in Goa (Das, 1985) (Giri & Chaturvedi, 2003). Katdare describes success story of an NGO in sea turtle conservation movement in Maharashtra since 2002 (Katdare & Mone, 2003).

**The Olive Ridley turtle, a marine turtle an endangered species:** Historically, this species has been widely regarded as the most abundant sea turtle in the world. But, studies indicate a dramatic decrease of 28% to 32% in the global population within only one generation (i.e., 20 years) had made them endangered species. The olive ridley has been exploited for food, bait, oil, leather, and fertilizer. The meat is not considered a delicacy; but the eggs. The olive ridley is classified as vulnerable species.

In most regions, illegal poaching of eggs is considered a major threat to olive ridley populations. Many eggs of olive ridleys are commercially/ illegally harvested off the coasts. The crabs, raccoons, pigs, snakes, and birds apart from humans are also responsible for exploitation of eggs.

**Study area-** Konkan is a coastal region of Maharashtra state of India. It is one of the socio- economically under-developed region of the state. But it is located in the ecologically rich and fragile zones i.e. the Arabian Sea and Western Ghat zone.

Velas is a small village from Mandangad taluka, located on the mouth of River Savitri on the northern most tip of Ratnagiri district of coastal Maharashtra is one of the favourite destinations of the turtles. It is around 225 kms away from Mumbai.

**Map 2: Study Area : Velas**

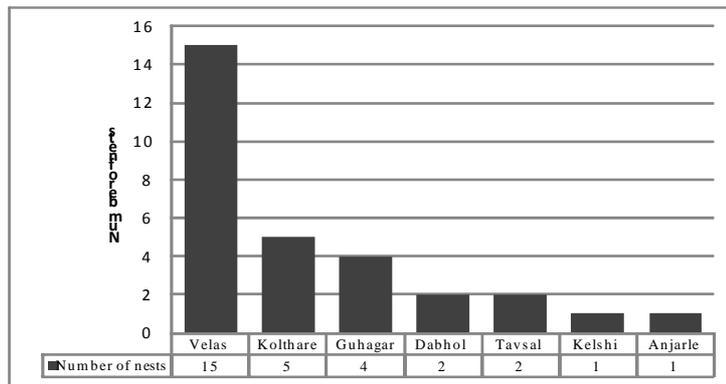


Source:<http://travel.india.com/travel-blogs/velas-olive-ridley-haven-on-maharashtra-coast>

The Velas village is about 1 km. away from the beach. The beach is approximately 2 km. in length, backed by Casuarina plantations. There is a small stream between the village and the beach which gets flooded during high tide. The village is separated from the beach during this period. Thus it is largely a secluded and undisturbed beach, it has moderate tourist activity being less populated beach and hence it is suitable for nesting of turtles. The maximum number of nests was recorded at Velas.

The main occupation of the people of Velas village is agriculture. Earlier the people of this village used to eat eggs of the sea turtle. The main threat to the sea turtle nests on this beach is from predation by jackals. The following statistics shows highest number of nesting at Velas among the Ratnagiri districts of Konkan.

**Figure 1: Nesting statistics in Ratnagiri district in 2011–2012**



Source: India,snmcpn@rediffmail.com

**Ex-situ conservation<sup>2</sup> through turtle festival of Velas:** The *Sahyadri Nisarga Mitra* (SNM) is Chiplun based an environmental NGO, established in 1992 started Marine turtle conservation in Maharashtra state in 2002 at Velas in Ratnagiri district of Maharashtra. The NGO functions in the Western Ghats, a global biodiversity hotspot, and thus, a critical habitat supporting a rich variety of endemic and endangered species. Its work also spans the Konkan.

The project of releasing the turtles primarily of the Olive Ridley turtle species hatching is celebrated as the “*The Turtle Festival*”. This gives opportunity to people to learn about the cause and directly/ indirectly spread the awareness. It also offers unique experience of witnessing the hatching of the turtle eggs and the march of the turtle babies to the sea (Sahyadri Nisarga Mitra).



Plate 1: Turtle Festival Velas



Plate 2: crawling of baby turtle towards sea



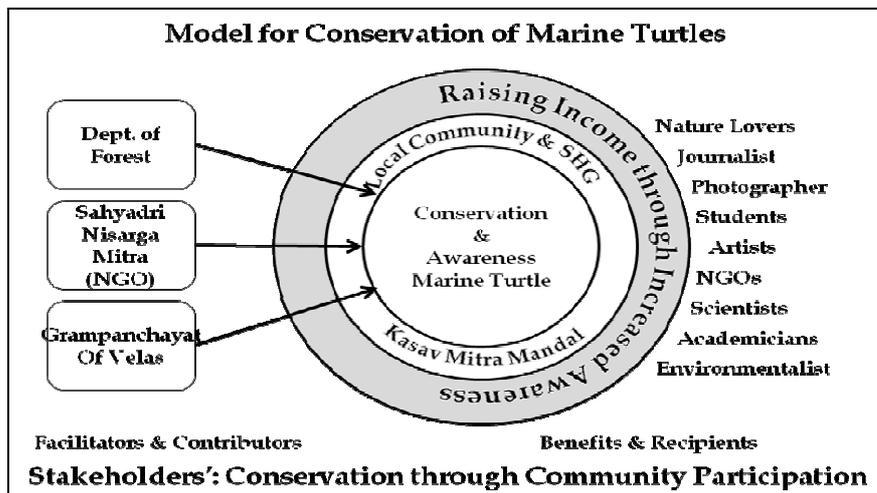
Plate 3: Releasing turtles to the sea

<sup>2</sup> Ex-situ conservation- conservation out of the natural habitat

**Synchronizing the livelihood and Conservation for local community-**The main aim of the turtle festival is to increase the active participation of local community in conservation of turtle and to increase their income. The local community has successfully protected the turtles under the flagship of SNM through ex-situ conservation. The ex-situ conservation technique of hatchery management provides employment to local villagers.

When the turtles come to the beach to lay their eggs, some of the eggs are relocated to a hatchery, where they have a much better chance to survive. If the eggs were left on the beach, they would face many threats such as getting washed away with the tide or getting poached. Once the eggs hatch, the baby turtles are carried to the beach and released. During the turtle festival, SNM ensures that no hatchling is harassed by restricting the handling of hatchlings to only its volunteers. Hatchery managers patrol the beach daily to look for marine turtle nests, relocate these nests into the hatchery and release the hatchlings into the sea on their emergence. During this festival, tourists flock to the beach to watch hatchlings emerge from the hatchery nests and crawl towards the sea. The villagers at Velas provide home stay arrangements for the visitors. Sahyadri Nisarga Mitra, in addition to a few villagers who wanted to work for conservation, has established the *Kasav Mitra Mandal*. The members of the Kasav Mitra Mandal set aside 10% of their total income during the festival towards the cause of marine turtle conservation in Velas. Such a conservation initiative benefits both the local community and the marine turtles, thus ensuring the sustainability of the project in the village (Rustic Konkan Village - Velas) (Velas: Olive Ridley: Heven on Maharashtra Coast).

**Stakeholders-** To involve the local community in turtle conservation, a Turtle Festival has been initiated in the village since 2007. The Velas Turtle festival is organized by SNM jointly with Department of Forest and Grampanchayat of Velas in Mar-April timeframe every year.



Source: Researcher

From 2007 to 2009, Sahyadri Nisarga Mitra implemented the Small Grants Program under the Global Environment Facility of the United Nation Development Programme (UNDP) and the Centre for Environmental Education (CEE) India. Through this project, community members from the project villages were encouraged to participate in turtle conservation activities. *Mahila Bachat Gat*, Youth Group sold household

products and earned about Rs. 50,000 within two days of festival. This has provided economic incentives to the local community to earn by providing home stay to the tourists. This has ensured the success of this project.



Plate 4: Ex-situ conservation of Olive Ridley in Velas



Plate 5: Local community provides food to the tourists

As the number of tourists is going up, more number of families has an opportunity to earn by providing lodging and boarding facility to the tourists. Now SNM aims to replicate this model in other villages that have had a considerable amount of nesting this season. Improved awareness levels and benefits from initiatives like the Turtle Festival led to many locals choosing to associate themselves with marine turtles and their conservation.

The turtle festival has attracted many academicians, scientists, NGO's, students, journalists, photographers, nature lovers, artists and environmentalists.

**Findings:** The Turtle festival of Velas has inculcated following capacity building through training in local community

**Table 1: Training of SNM has inculcated following capacity building in local community**

Training	Capacity Building in local community
Species Identification	Observation of Olive Ridley and hatching an eggs
Beach Etiquette	Beach patrolling methodology
Record Keeping	Survey and moving eggs
Hospitality	Provision of lodging and Boarding to the tourists
Marketing & Sales	Selling home made products prepared of SHG's to the tourists
Event Management	Organizing entire show of Turtle festival, competitions, workshops, sand arts etc.

Source: Researcher

**Conclusion:** Community based conservation thus has become instrumental to achieve sustainable development provided with efficient management and implementation of conservation projects. Economic incentives and compensation is reinforcing the local community to get involved in such projects. Similarly the mechanism of distribution of benefits and conflict solving approach is also making community involvement in such projects more successful.

The elaboration of turtle festival of this paper is a representative example. It is necessary to perform the valuation of economic damage due to loss of biodiversity to the region. It can be also computed by assessing the economic value of maintaining biodiversity through conservation policies and other means. The next stage is to perform meticulous review of cost-effectiveness of various alternatives in biodiversity

conservation policies and instruments. Once the planning and related execution has been performed, the overall economic impact (gained income, jobs) due to implementation of policies must be studied to assess effectiveness and course correction.

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