

## Strengthening conservation measures of Greater one-horned rhino (*Rhinoceros unicornis*) in Orang National Park, Assam, India.

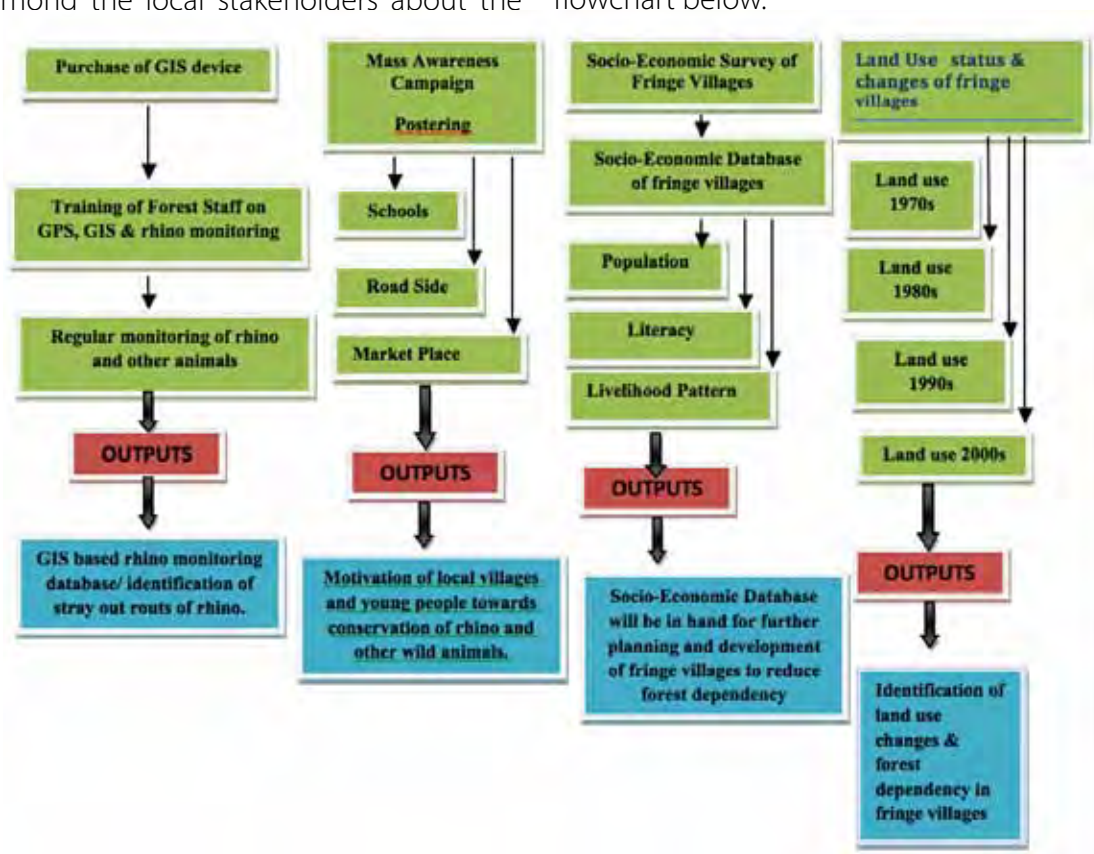
By Pranjit Kumar Sarma, M.Sc, Aaranyak

ARP is proud to support another Aaranyak project in Assam. Though the Greater One horned rhino (*Rhinoceros unicornis*) is considered as vulnerable by IUCN it is still in high risk for its survival in Assam because of severe threats from poachers, wildlife trafficking, fragmentation and degradation of its habitat in past couple of decades. Assam is one of the last strongholds of the Indian rhino with a total population of 2201 as estimated by the Assam Forest Department in the year 2009. Orang National Park, with an area of 78.8 sq. km. is an important rhino bearing area having 64 wild rhinos as estimated by Assam Forest Department in 2009. The rhino population in Orang National Park is fluctuating from 35 rhinos in the year 1972 to 97 rhinos in the year 1991 and which is again reduced to 64 rhinos in the 2009. This fluctuation of rhino population in Orang National Park is mainly due to the severe intensity of poaching in comparison to other rhino bearing areas of Assam. From 1983 to 2009, 122 rhinos were poached in Orang National Park. During the period from 2006 to 2009 approximately 30 rhinos were poached in the park. The major factors attributable to the increased poaching are lack of awareness among the local stakeholders about the

need to conserve rhinos, unscientific monitoring system of rhino and lack of socio-economic database of the fringe villages of the park.

The overall goal of this project is to provide training on handheld GPS to the ground staff of the Orang National Park which will be useful for monitoring of rhino and other wild animals in the park. The GPS devices will be under the custody of Aaranyak and it will be given to the Orang National Park authority for regular monitoring of rhino in the park. Aaranyak will be responsible for maintenance of the GPS devices and these will also be in use in other rhino bearing areas of the state. This project also seeks to generate a GIS based spatial database on rhino monitoring in Orang NP at regular interval. This project also intends to generate a socioeconomic database of the fringe villages of Orang NP. It intends to prepare land use map of the fringe villages across the park using satellite imagery and also to assess the changes in land use pattern during a course of 30 years using historical and current satellite imagery.

The methodology of this project is shown in the flowchart below.



### Long lasting conservation outcomes of the project

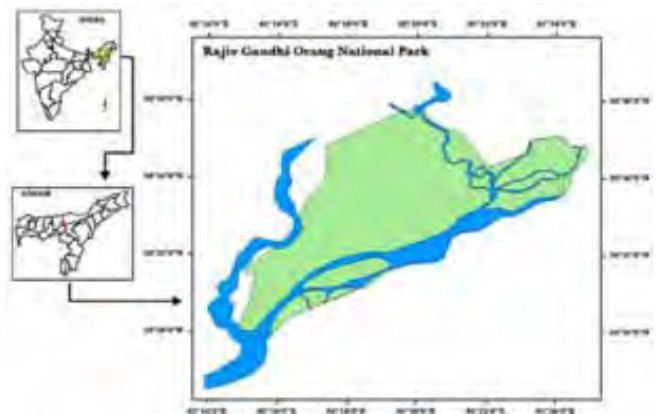
The proposed project will make a significant contribution to the nature conservation arena through strengthening conservation of rhino in Orang National Park.

- This proposed project seeks to provide training to the forest staff on Global Positioning System (GPS) and GIS application. This training will make the staff eligible to handle the GPS receivers that will help the forest department in monitoring straying rhinos both inside and outside the park. This scientific method of rhino monitoring will help the conservation of rhino and also other important species in the park. The handheld GPS receivers will be handed over to the park authority, which will be an asset for the park managers for the conservation of wildlife in the park.
- The mass awareness campaign along the fringe villages will have a long lasting impact on rhino conservation in Orang National Park. Local communities residing at the fringe of the Park are unaware about the conservation value of rhino and most of the time they help poachers in return for small amount of money. This mass awareness drive with posters will help in motivate people to conserve wildlife in general and rhino in particular in the Park.
- The land use pattern and socio-economic information of the fringe villages will have a very long lasting impact on conservation of rhino and other wildlife in Orang National Park as it will provide the settlement pattern, cropping pattern, population structure and population density of the fringe villages. This will be the first initiative of creating a GIS based digital database of the land use pattern and socio-economic condition of fringe villages of Orang National Park and it could also be treated as base line information for further conservation of Orang National Park.

- The GIS based spatial layers of the fringe villages of Orang National Park will be fed in to the spatial decision support system (SDSS) of the park, which was already prepared through a project supported by Asian Rhino Project, Australia.
- Last but not least the proposed project will encourage conservation initiatives by the State Government of Assam, like translocation and restocking of rhino in Orang National Park from Pabitora Wildlife Sanctuary and Kaziranga National Park.

### About the study area

The Orang NP of Assam, located in flood plain region of the river Brahmaputra. The park has been often regarded as the man made forest that lies within the geographical limits of 26° 29' N to 26° 40' N latitude to 92° 16' E to 92° 27' E longitude (fig-2). Orang was earlier an abandoned village which later on transformed into a forest with sizable areas of grassland and wetland. The total area of the national park is 78.8 sq. km. Orang was declared as wildlife sanctuary in the year 1985 keeping in view the potential habitat of one horned rhino. In 1999, Orang was declared as Orang National Park. Figure 1 shows the location of Orang National Park. The average annual rainfall is between 2,000 to 3,000 mm, and average temperature in the winter season is 8° C which rises to 37° C in summer. Relative humidity varies from 60% in March to 95% in July.



Location Map of Study Area

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