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The road ahead for the Indian one-horned rhinoceros

By
Maan Barua

The alluvial grasslands and riverine floodplains that Indian one-horned rhinos inhabit is one of the most dynamic habitats in the world. These giant plant-eaters display a remarkable ability to adapt to their constantly changing environment, but they are now threatened by poaching for the value of their horns and by habitat loss. In fact, populations have plummeted so sharply that *Rhinoceros unicornis* probably represents one of the world's least sustainable 'resource' uses in history.

Labelled a success story, the truth is that the one-horned rhino is in dire straits, with a total world population of fewer than 2,500 animals surviving in the wild in roughly 3,000 sq. kms. of land. Experts say that this population needs to rise to at least 3,500 individuals, spread over a larger area. Meta-population ecologists, view this population as a collection of smaller, sub-populations, each occupying a suitable patch of habitat in a vast landscape of otherwise unsuitable habitat. A subpopulation could go extinct in one patch, while re-colonisation could conceivably take place in another if it is connected to a habitat from where animals are able to disperse. Unfortunately, rhino conservation in Assam has largely traced the former path – with extinctions of smaller populations vanishing with no possibility of other rhinos taking their place because they were cut off by a sea of human settlements.

Manas and Kaziranga represent the two ends of the rhino conservation spectrum. Kaziranga with its phenomenal rise from a number below 100 to the current 1,500-1,600 rhinos is a conservation success story; Manas on the other hand has staggered from catastrophe to catastrophe, resulting in a complete wipe out of its rhino population. Several smaller populations of rhino that existed in Assam in the 1970s and 1980s have been exterminated. Apart from Kaziranga, Pabitora is the only protected area in Assam where their numbers have increased.

The Government of Assam has announced its Assam Rhino Vision 2020, with an objective to: "Increase the total rhino population in Assam from the current 2,000 to 3,000... ensure that they are distributed over seven protected areas... to provide viability for an Assam metapopulation of rhinos". Though this sounds ambitious, it is a very vital step in the right direction at a crucial time in the history of rhinos.

With peace having returned to Manas, it is only natural that plans are afoot to work towards repopulating the forest with these pachyderms. And from past experiences Assam is acutely aware that *in situ* conservation through a network of core areas and intensive protection zones is the only way forward for rhino protection. Apart from Manas other target habitats for rhino relocation include the Laokhuwa-Burhachapori-Kochmora grassland complex, Dibru-Saikhowa and possibly the Orang National Park. The worry that rhinos may actually be overpopulating Pabitora and Kaziranga adds weight to the rationale of shifting some from here to other safe havens.

Weighing almost two tonnes, the rhino understandably has a profound impact on the habitat in which it lives. Its size and feeding habits make it a natural landscape-architect of sorts, influencing the physical habitat and spatial distribution of other species in the ecological community.

With the disappearance of the rhino from areas such as Manas this vital 'landscape-architecture' phenomenon also disappears and the resultant ecological changes can be swift and profound. If trees take over once suitable grasslands, for instance, relocation into erstwhile areas becomes difficult. It is reasoned that each relocated population should consist of about 20 rhinos and not the 'historical maximum', although they would ultimately have to attain population sizes of over 100 animals to constitute a viable pool. Of course, very tiny populations of any rhino such as the Javan, are well on the road to extinction and cannot be expected to play any real functional ecological role.

The question today is whether Assam's 2020 vision for rhinos is achievable. The IUCN criteria for reintroductions, lays emphasis on the assured long-term protection of the animal and its habitat. This poses the greatest challenge to the Assam Forest Department, though it is clearly a world leader in the implementation and strategy of rhino-protection. In Manas, the extinction of rhinos has been relatively recent phenomenon and the lesson for habitats such as Dibru Saikhowa, Pabitora, Orang or any other selected area, must surely be to *prevent* such annihilation, rather than try and restore populations after a crash.

There can be no half-way measures on the road to rhino protection. The animals need a fool-proof guarantee. Dibru-Saikhowa, identified for future rhino populations, is for instance, a sanctuary in which 6,000 people and 9,000 cattle live. The grasslands that the rhino needs are in the control of graziers. This places a doubt on the future of whatever number of rhinos currently exist there, leave alone the future of populations yet to be translocated. In Laokhuwa, another sanctuary that witnessed a rhino massacre and population wipe out, local people beat up the Range Officer and forest staff and the morale of staff is down. Only exceptional political support can remedy this situation. In plain language this means equipping, supporting staff and implementing effective anti-poaching strategies.

Prior to relocation of rhinos, it is necessary to study and manage and monitor the future home through effective grassland and habitat management practices. Signs of Manas' grasslands being colonising by tree cover are already evident. Orang faces a serious *Mimosa* weed problem. Sub-optimal habitats are a formula for failed relocation. Conversely, by restoring habitats in preparation for the translocation of rhinos we not only ensure the long-term survival of this incredible mega-herbivore, also restore the eroded ecological process, a step that can only benefit the people of Assam.

BOX

Bring them back alive

returning rhinos to Manas

According to Abhijit Rabha, Field Director of the Manas Tiger Reserve, a single rhino is to be released in Manas later this year. Part of a Wildlife Trust of India Programme, the rhino is to be taken from the animal rescue centre at Borjuri, Kaziranga for released into a one sq. km. fenced area in Manas' Kuri Beel area. Vision 2020 further aims to translocate 20 rhinos to Manas in the year 2007. These animals are to be sourced from Pabitora and Kaziranga. But this is not going to be easy. In an interview Dr. Thomas Foose of the International Rhino Foundation (IRF) suggests that: "the cost for relocating 20 animals would amount to a minimum of US$ 200,000." Unless the fund constraints are overcome, this might not work out as soon as imagined.

This, of course, is not the only challenge. Setting up anti-poaching infrastructure after so many years of a protection vacuum is going to be a major challenge. And the poaching gangs that wiped out the rhinos of Manas have not just wound up and gone home. They are there and waiting for the chance to take out whatever 'soft touch' rhinos they can (animals in zoos have actually been killed by the trade).

Our Kaziranga experience suggests that armed gangs of poachers are willing not only to kill wild animals, but guards too. This means a network of protection must be restored so reinforcements can be rushed to any spot. Rabha says: "Several roads have been built in the park after a long time and this is only the first of many necessary steps." These would include setting up of anti-poaching camps, regular and intensive patrolling, weapons training for guard and building back their lost morale. Only when this is achieved can the physical rhino-relocation business be contemplated.

Perhaps India might like to consider some kind of bi-lateral ties with South Africa, a nation that has developed rhino protection and translocation into a fine art. Here rhinos are tranquilised from helicopters, darted animals are followed till the drug takes effect, then the helicopter lands a few metres away and the vets get started. The rhino will be blindfolded and positioned into a perfectly fitted crate. Flat-bed trucks will then carry the animal-laden crates to the release location, where squads of people are on the alert to protect them over the next weeks and months.

Not all of this is possible in the Assam landscape, where helicopter operations might actually be impossible. But tranquilizing from elephant back is a practiced art here and it is probably the safest from the rhino's point of view because the elephants can go anywhere the rhino can. This latter ability is crucial as *beels* or ox-bow lakes, so intrinsic to the rhino's habitat could end up in the animals drowning if a darted animal ends up in a water body.