

Restoration and Conservation of Ecosystems through ‘Orans’

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Background and Context

Orans are Community Conserved Areas protected for their sacred values. They include woodlots, pastures, orchards, sacred groves, and habitats usually centered around sources of water such as natural springs, rivulets, or artificially constructed ponds. Additionally, there is usually a shrine dedicated to a local deity at the heart of an *Oran*. Their traditional boundaries are based on landmarks or geographical milestones established by indigenous and agro-pastoral communities associated with them. *Orans* are usually defined by a strong community-territory relationship and a well-functioning governance system.

The socio-ecological practices embodied in *Orans* are centered around the ‘sacredization’ of non-human life through associating them with divinity, thus making them what can be described as ‘sacred areas’. While *Oran* is a colloquial term used specifically to describe such areas in Rajasthan, a variety of terms are employed to describe similar areas across India. Some of these terms include *Sarna* or *Dev* in Madhya Pradesh, *Devrai* in Maharashtra, *Sarnas* in Bihar, *Devarabana*, *Devarakadu*, *Rulidevarakadu* or *Nagabana* in Karnataka, *Kovilakadu* in Tamil Nadu, *Kavu* in Kerala, *Dev van* in Himachal Pradesh, *Ki Law Lyngdoh* or *Ki Law Kyntang* in Meghalaya, *Sarana* or *Jaherthan* in Jharkhand and *Lai Umang* in Manipur.

It is estimated that there are over 25,000 *Orans* in Rajasthan, including *Gauchars* (grazing lands) which together occupy a significant 5 per cent of the total land area of the state. Further estimates forecast that about 80 per cent of the area covered by the *Orans* lies in arid and semi-arid parts of Rajasthan.



Bhomiya ka Oran Kalasikara Jaipur ©KRAPAVIS

¹ KRAPAVIS “Krishi Avam Paristhitiki Vikas Sansthan”, an ecological and agricultural grass-root based organization, actively engaged in the exploration and development of strategies for promoting sustainable livelihoods for the rural communities living in the semi-arid belt of the Aravalli hill region in Rajasthan (krapavis.oran@gmail.com).

The Baseline

Orans are now also recognized as repositories of biodiversity and provide critical landscape connectivity, while at the same time nourishing agro-pastoral communities associated with them. Further, *Orans* have immense cultural, emotional, spiritual and livelihood significance (fodder-grazing, water, medicinal plants and wild foods) for the communities associated with them. They also provide ecosystem services in the larger landscape.

The *Orans* in Rajasthan are inextricably linked to agrarian livelihoods². *Orans* used to be a home to a number of important Non-Timber Forest Product (NTFPs) yielding species. The potential economic value of the NTFPs available in this region is immense and significant for the economic well-being of the people. According to a study³, there was a severe depletion (up to 50%) of some NTFP species in the Aravalli region compared to the situation 15–20 years ago. The species under threat include Khair (*Acacia catechu*), Salar (*Boswellia serrata*), Aritha (*Sapindus trifoliatus*), Dhavra (*Anogeissus latifolia*), Paneer bandh (*Withania coagulans*), Safed Musli (*Chlorophytum borovillianum*), Bamboo (*Dendrocalamus strictus*) and Aonla (*Embellica officinalis*).

These areas form a critical refuge for wildlife in an otherwise densely populated landscape. About 20 years ago, KRAPAVIS recorded 54 species of wild animals in the *Orans* studied. The major animals found in the *Orans* include sambhar, blue bull, wild boar, monkey, wolf, jackal and a number of reptiles and amphibians including snakes, lizards and frogs and toads. Sighting of critically endangered big cats like the leopard and the tiger, listed as rare, and threatened in Rajasthan is possible in the *Orans* of Alwar/Sariska⁴. The Karnimata *Oran* spread over 200 ha. in Bikaner district conserves a rare rodent species known as 'Kaaba'. Caracal (*Caracal caracal*), another rare and uncommon Indian small cat can occasionally be sighted in the *Orans*. Some other animals listed as rare, endangered and threatened in Rajasthan, like common giant flying squirrel (*Petaurista petaurista*), three striped palm squirrel (*Funambulus palmorum*), chowsingha (*Tetracerus quadrieornis*), mouse deer (*Tragulus memmina*), and rusty spotted cat (*Felis rubiginosa*) can be commonly spotted in several *Orans*.

Orans also support habitats for birds. Bird species listed as rare, endangered and threatened found to be in the *Orans* of Rajasthan are; Godawan /Great India Bustard (*Ardeotis nigriceps*), White-Rumped Vulture (*Gyps bengalensis*), Red-Headed Vulture (*Sarcogyps calvus*), Indian Vulture (*Gyps indicus*), Amur Falcon (*Falco amurensis*), Black headed Munia (*Lonchura malacca*), White naped tit (*Parus nuchalis*), Indian Purple rumped Sunbird (*Turdus nuchalis*), Green Munia (*Estrilda formosa*), Aravalli Red Spurfowl (*Galloperdix spadicea*), Siberian Crane (*Grus leucogeranus*), Grey Jungle Fowl (*Gallus sonneratii*), Painted Spurfowl (*Galloperdix lunulata*).

They also provide habitats for plant species in the IUCN threatened list, e.g., shrubs like *hiran chabba* (*Farsetia hamiltonii royle*), *gugal* (*Commiphora wightii*), *phalsa* (*Grewia damine gaertn*), *aak* (*Calotropis procera*) and *kaland* (*Convolvulus scindicus*) and trees like *kala khair* (*Acacia catechu*), *rohida* (*Tecomella undulata*), *dhaman* (*Eriolaena hookeriana*) and *indok* (*Anogeissus sericea*). Some tree species, like *Jiyapota* in the *Oran* of Bera village, are so rare that they still miss a botanical name.

Orans are sometimes located in watersheds and thus the presence of *Orans* is often linked to the presence of perennial sources of water such as reservoirs, artificial and natural ponds, step wells (colloquially referred to as *jal kund* or *bavari*), open wells, streams, springs, rivers and lakes. The conservation of *Orans* in a water scarce state like Rajasthan (with over 10% of India's total area, but barely 1% of its water resources) is critically important. Several *Orans* such as *Garva ji*, *Adaval*, *Talvraksh*, *Kalaka*, *Bharthari*, *Naraini Mata* in the Alwar district; *Jeen Mata*, *Lohargal*, *Shakambari*, *Mansa Mata* in Sikar and Jhunjhunu; *Tariba* and *Jhameshwar* in Udaipur, *Galta ji* in Jaipur, *Kameshwar* in Kota, *Sheetal Kund* in Jahaj, Bharatpur district, have large perennial water springs. The *Ubeshwar Oran* in Udaipur district is a beautiful example where natural and man-made features come together in the regulation of the *Oran*'s water system. This *Oran* has an old step well (*jal kund*) from which a rivulet originates through a waterfall.

2 Chaitrali Kulkarni, JWBI/Both ENDS; The Oldest Institution for Nature Conservation, 2018

3 Pradeep Chaudhry; The role of non-timber forest products in the rural economy and their quantitative assessment in the Aravalli mountain range of India; Int. J. Green Economics, Vol. 2, No. 4, 2008

⁴ Singh, Aman. 2011. "Oran/Devyani Matters, Trees and Tigers Conservation by Tribes: A Case Study from Sariska". ENVIS Newsletter 10(1):2-6.

Similarly, *Orans* such as *Jugrawar ki Rundh Bani*, *Gujawas ki Bani*, *Bherunath ji ki Bani* have human-made reservoirs (colloquially referred to as *talabs*) which are constructed as catchments for seasonal streams. In recent times accessibility to water canals and the ever-depleting ground water as a result of cheaper boring techniques, have temporarily reduced the traditional reliance on water sources in *Orans*. *Orans* also play an important role in maintaining soil quality and nutrient recycling, critical for sustainable agricultural practices. Livestock, while foraging in *Orans*, also leave droppings, which are then broken down by the rich microbial life and returned to the fields through water run-off.

There is a distinct and discernable relationship between the *Orans* and formally protected areas. *Orans* have had a long history of conservation and many of today's wildlife parks and sanctuaries, known for their role in conserving iconic species such as tiger, were established through evictions of agro-pastoral communities and *Orans* belonging to them. While there are tensions between 'formal' and 'informal' approaches to conservation, it is widely recognized that *Orans* serve as a successful form of conservation supported by associated agro-pastoral communities, making them an important element in the conservation of bio-cultural heritage⁵.

Threats

Apathy or even antipathy towards *Orans* can be traced back to colonial times, when they were formally appropriated by the State and subtracted *de jure* from the care of their custodian communities. After independence, many *Orans* were degraded as a result of State concessions for quarrying, mining and reduced by land privatization for agriculture etc. In the larger scheme of things, it is evident that *Orans* continue to operate in something of an institutional vacuum and it remains unclear which agencies or institutions have jurisdiction over these areas. Traditionally, the management of *Orans* was shared as a communal responsibility of villages. This has unfortunately disintegrated over time. In majority of cases, government institutions have ownership of these areas, but have little understanding of the traditional practices associated with *Orans*.

Orans are under severe threat from being converted for solar and wind energy projects. Over 30 *Orans* in Jaisalmer, Barmer and Jodhpur districts have been taken over by companies for establishment of wind and solar parks. One *Oran* impacted by this is the *Veer Aalaji Ka Oran* (about 4,000 hectares area) in the Jaisalmer district. A large area of the *Oran* has already been taken over by wind farms. This *Oran* is also a critical winter habitat for the GIB (Great Indian Bustard) as well as over 150 other associated wildlife species. Furthermore, over 10000 livestock including camel, sheep and goats are directly dependent on the *Oran* for their survival. Despite several representations made by local communities, no action was taken to stop the encroachment into the *Oran*. Similarly, communities from the *Dungarpeer ji Oran* in Mokla village and the *Degray Oran* in Jaisalmer district are also raising their voices against encroachment.

Orans are also under severe threat from mining. The *Bherav ji ki Bani Oran* located in Karoli village of Jaipur district, which is critical for the survival of the rare tree *Anogeissus sericea* is under threat from illegal stone mining. The area of the *Oran* is 20 ha. And although it is not physically fenced or demarcated, community members can discern the distinct boundaries of the site. There are several seasonal streams here that serve as tributaries to local river *Sabi Nadi*. This sacred grove is known for the treatment of evil spirits through the ethno medicinal system, particularly 'the *jhara dena* ritual'. The deity '*Bherav ji*' is considered the '*Kuldevta*' (folk god) by the local communities. Similarly *Bhomiyaji ka Oran* located on a hillock and covered by dense *Dhok* (*Anogeissus pendula*), is a significant source of water for the community that lives in the vicinity. Mining in its vicinity poses a huge threat to the water security here.

Encroachment is a recurrent problem that every *Oran* is contending with. Cultivators living on the margins of these areas, surreptitiously expand their farmlands into *Orans*. Substantial tracts of land, that often include *Orans*, have been distributed for cultivation. This benefits few people, mostly entrepreneurs from outside the local community, yet significantly contributes to the heightening of local tensions. In the Pali District, *Orans* belonging to nine villages have been allocated by the government for the establishment of an industrial zone.

⁵ Dr. Shonil Bhagwat, University of Oxford, personal communication, 2020



Sand mining in Oran Luni River ©KRAPAVIS

The Initiative

Aman Singh, a key leader in the movement to revitalize and conserve *Orans*, recognized the significance of *Orans* in the ecology and culture of Rajasthan and founded KRAPAVIS 30 years ago. The vision was to promote the conservation of biodiversity and protection of rural livelihoods through revitalizing and reinforcing communities' relationships with the *Orans*⁶.

A key reason for the initiative was also the lack of exhaustive documentation of *Orans* in the State. KRAPAVIS approached this challenge in two steps. A quick point location for the listing of the *Orans* was conducted, followed by a detailed on-ground mapping of these areas. Over the years, KRAPAVIS has made significant progress in the documentation of *Orans*. An attempt has been made to determine through GIS based methodology, community accepted and local government approved demarcated boundaries of *Orans*.

KRAPAVIS has compiled an *Oran* Atlas consisting of 100 *Orans* from the Aravalli hills. The Atlas covers several aspects related to *Orans*. These include: cultural practices; biodiversity therein; livestock, management and ownership; ecosystems services and livelihoods offered by *Orans*. Additionally, the KRAPAVIS team documented various local myths, customs, and the importance of medicinal plants associated with these *Orans*. This GIS based Atlas of *Orans* could potentially be used for infrastructure development planning. The methodology adopted a geospatial approach for the mapping of *Orans*, and involved the following steps:

- Mapping- The location of *Orans* was collected using mobile devices, which supported GIS applications. These locations were then imported into a GIS mapping platform for demarcation of the *Orans*. The mapping exercise also attempted to identify different types of encroachments and land tenure within these *Orans*.

⁶ www.krapavis-oran.org

- Field Surveys- These used the ODK (Geographical Open Data Kit) mobile app. This app is useful for collecting, managing, and using data in resource-constrained environments. It allows the collection of data offline and collates the data on an online platform when internet connectivity is available. The KRAPAVIS team collected data on over 160 points related to socio-ecological factors in these *Orans*.

For KRAPAVIS a major source of motivation for this initiative came from local communities that expressed interest and appreciation for *Orans*. Protecting and restoring *Orans* have provided communities an incentive to restore biodiversity as alternate source of livelihoods and also strengthen local governance. Many women and young people are actively involved in restoring and protecting *Orans* with a sense of great pride. They find through this exercise that the gifts of nature are still available to them, as also, rare peace of mind. KRAPAVIS has been helping communities understand the need for managing *Orans*, considering the many benefits that these bring. It has helped communities get organised; has trained women and youth to disseminate information; and also run awareness-raising campaigns, highlighting the importance of local management processes.

KRAPAVIS supports annual fairs (*melas*) that are dedicated to the conservation of *Orans*. These events are a celebration of these sacred groves. One of the outcomes of these *melas* are the formulation of rules and regulations to govern and safeguard *Orans*. This is almost entirely due to the space these groves enjoy in the socio-cultural life of the community. A few anecdotal examples of such rules include - 'fallen tree logs can be used, but trees in an *Oran* cannot be cut for fuel wood'; 'water bodies in *Orans* can be used by livestock, but not for irrigation purposes'; 'herbs in the *Oran* can be used for medicinal purposes by the community, but not for commercial purposes'⁷.

An '***Oran & Livelihood Training Cum Resource Centre***' has been established by KRAPAVIS specifically for training, policy advocacy and support to local communities to facilitate the rehabilitation, conservation, and management of *Orans*. In 2009, KRAPAVIS conceived the ***Oran Forum***. This is an open discussion forum focusing on *Orans* in Rajasthan. Stakeholders include: local managers, researchers, activists, students, NGOs and government agencies. KRAPAVIS has trained and assisted over 500 community volunteers, many of whom are women and youth. These "***Barefoot Oran Champions***" have disseminated information to community members on a range of issues relevant to the conservation and management of *Orans*. This initiative has adopted a partnership-centered approach and linked itself to existing community-based organizations such as Self Help Groups and Joint Forest Management Committees. There have also been partnerships with other NGOs, private sector bodies and government institutions like the Rajasthan State Biodiversity Board.

This initiative of KRAPAVIS has been supported over the years by many different national, state, international, and CSR agencies. These include: UNDP/GEF; Rohini Nilekani Philanthropies; Grow Trees/Grow Trees Ecosystem Foundation; ALL Tigers/Poh Kao; Kalpvriksh; Rajasthan State Biodiversity Board (RSBB); CICADA; Misereor/KZE; Canadian High Commission; IIT Delhi; Australian High Commission; SPWD; Konings School Foundation/ Both Ends; SDC/IC; Trees For The Future; Canara HSBC OBC Life Insurance Company Limited; Foundation Ensemble: INTACH; Leaders Quest/CORO; IDS; PKF Foundation; International Land Coalition (ILC); ERA; Sewa Mandir; DDS; CPRCEE; Natural Justice; EEJP; Winrock International India (WII); Duleep Matthai Nature Conservation Trust/FES; TERI; Brij Foundation, including the Government of Rajasthan (Departments of the Forest, Livestock, and Agriculture) as well as Government of India.

⁷ Singh, Aman; "Orans; Indigenous Community Conserved Areas of Rajasthan; Lessons from Past, Future Perspectives" (KRAPAVIS 2016)



Oran Restoration Devnarain Oran Rogra Village ©KRAPAVIS



Waterbody restoration in Oran Doba Village ©KRAVIS

The Present-Day Scenario

Through this initiative KRAPAVIS has succeeded in the restoration and conservation of over 140 *Orans*, covering an area of over 4000 ha. The documentation and mapping of *Orans* has created a database on 1400 *Orans*. Continuous dialogue with the government over the years has helped *Orans* getting recognition in the Rajasthan State Forest Policies 2010 and 2021.

In 2018, the Supreme Court (SC) of India issued an Order declaring all *Orans* to be "deemed forests". If implemented, this Supreme Court Order would go a long way toward providing much-needed protections for these community forests as they face pressure from encroachment and mining. This judgement should provide the *Orans* with greater legal protection against mining, urbanization, and other grave threats facing them. However, owing to the insufficient registry of location, ownership and size of the *Orans*, it often becomes difficult to extend the legal protections available to them. KRAPAVIS has prepared a list of prominent *Orans* and submitted it to the Forest Department with the goal of declaring them as 'deemed forests'.

Lessons Learnt and Conclusions

The conclusions from this initiative are twofold: First: *Orans* are not a single entity, but a network of many, interrelated and mutually supporting areas important for the integrity of landscapes. Second: *Orans* are valuable for both biodiversity (ecosystems and species) and human livelihoods and wellbeing. In Rajasthan, they provide territories of life, contribute to the livelihoods and cultural and spiritual wealth of 7.5 million pastoralists and exemplify peaceful human-wildlife coexistence. More importantly, *Orans* function as hotspots for biodiversity by providing safe spaces for rare, threatened and endangered and keystone species⁸.

What makes *Orans* unique is the management and restoration embodied in them whereby sustainability is ensured in accordance with community-defined rules. Such rules ensure that the relation between communities and forests is one of care rather than of extraction. In the event of depletion of water in *Orans*, communities contribute to their revival either through cash contributions or through labour. *Orans* also serve as extremely important Common Property Resources (CPR) used most commonly by pastoralists for grazing their livestock. Such grazing is however also communally managed and regulated through communally enforced rules for the opening and restriction of certain areas.

The success of the *Orans* restoration work can be largely attributed to the communally upheld socio-ecological belief systems embodied in such areas. The general scarcity of resources and unpredictability of weather cycles under semi-arid conditions provide a strong incentive for communities to restore their traditional management strategies and adhere to social norms regarding the governance of commons.

The strength⁹ of the *Oran* system lies in:

- Its importance to livelihood and life in meeting not only economic, social but also cultural and spiritual needs of the communities associated with them.
- Promoting strong internal resolve and discipline amongst the community through practices of divinity.
- Promoting identification and conservation of biodiversity by associated communities.
- Promoting a sense of equality and common access to the members of the community through a set of communally framed rules.
- Promoting a mechanism for conflict resolution among the people that rely on its resources.
- Promoting responsible use of resources through the ritualization of annual festivals and financial contributions.

⁸ Singh, Aman. 2018. "Oran as Biodiversity Heritage Sites"; Desert Environment Newsletter; ICAR-CAZRI, Vol. 20 (3-4), 2018

⁹ Singh, Aman, & et al; "**Oran Atlas of Aravallis of Rajasthan**"(KRAPAVIS 2021)