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Article One

Ray of light amid the nuclear gloom

Wednesday, Aug. 17, 2011

The United Nations' latest renewable energy report is a ray of sunshine amid the gloom of Japan's nuclear disaster. According to the REN21 Renewables 2011 Global Status Report, last year renewable energy accounted for 16 percent of global final energy consumption and close to 20 percent of global electricity production.

All this despite ongoing global economic doldrums, cuts in incentives and low prices for natural gas.

Moreover, 2010 witnessed strong growth in renewable energy, reports REN21. An estimated 30 gigawatts (GW) of hydrowater generating capacity was added, and solar water- and space-heating capacity grew by an estimated 16 percent or 25 gigawatts-thermal. Last year, 50 percent of added power-generating capacity came from renewable energy sources, and renewable energy now provides about 25 percent of the world's power-generating capacity.

Wind power accounted for the greatest portion of added renewable-energy capacity, leading hydropower and solar photovoltaic (PV) power.

Global solar PV productions and markets doubled compared with the previous year thanks to government incentives and falling PV module prices. PV markets nearly doubled in Japan and the United States last year. The most impressive growth came in Germany, whose PV installations in 2010 exceeded the global total installed in 2009.

Highlighting the continuing importance of national renewable energy policies, the REN21 report notes that they remain the primary driver of growth in renewable energies. While just 55 countries had such policies in 2005, as of early 2011 at least 119 countries had such policies, with more than half of them in the developing world.

The report also points out that at least 95 nations have enacted policies to support renewable power generation, with feed-in tariffs being the most common type. In 2010, investment in renewable energy reached $211 billion, around 33 percent more than in the previous year. Investments in renewable energy companies, biofuel projects and utility-scale generation projects grew to $143 billion in 2011.

For the first time ever, investments in developing countries surpassed those in developed countries, with China attracting more than one-third of the global investment total at $48.5 billion. Worldwide, the top five ranking of countries employing renewable power capacity were the United States, China, Germany, Spain and India.

Renewable energy accounted for roughly 10.9 percent of U.S. energy domestic energy production in 2010, a 5.6 percent increase from 2009.

The European Union, meanwhile, added more renewable energy in 2010 than ever before; that accounted for an estimated 41 percent of newly installed electric capacity. The EU also exceeded its 2010 targets for wind, solar PV, concentrated solar thermal power and heating pumps.

Efforts by China, the world's top polluter, to go green are reaping impressive results, reports Ren21. It was the top producer of hydropower last year and installed the most wind

turbines and solar thermal systems. It connected 29 GW of renewable energy to the grid, bringing its total to 252 GW — an impressive 13 percent increase over the previous year.

In South America, Brazil not only produces nearly all the world's sugarcane-derived ethanol but is also adding wind, hydro, and biomass power plants.

Regrettably, Japan is all but absent in the Ren 21 report. While it's a leader in power conservation — energy-savings efforts have so far allowed it to avoid blackouts this summer despite only 17 of its 54 nuclear reactors being in operation — Japan currently produces just 1 percent of its power from renewable sources (not including hydropower). Germany, in contrast, produces 18 percent of its energy from renewables.

This situation reflects a lack of policy efforts in this direction rather than a shortage of renewable energy resources. Home to 10 percent of the world's active volcanoes, Japan ranks third in the world in geothermal potential with an estimated 23.5 GW — reportedly enough to replace all its nuclear power plants — and is a leader in geothermal plant technology.

Surrounded by seas and oceans, Japan ranks sixth in the world in wave-energy potential and scientists say waves could generate more than 40,000 megawatts (MW) of power.

Solar energy also has enormous potential, with the Environment Ministry estimating that enough sites are available to install a minimum 100,000 to 150,000 MW worth of solar panels — about half the nation's present power capacity. Wind power also has enormous promise, with offshore and onshore potential estimated at 1.6 million MW and 300,000 MW, respectively, according to the Environment Ministry.

As astonishing as it is in the wake of the Fukushima nuclear disaster, powerful critics of renewable energy still exist and they usually focus on its higher costs. Power generated by nuclear reactors is widely reported to cost an estimated ¥4.8 to ¥6.2 per kilowatt hour (kWh), while solar- and wind-generated power costs ¥49 and ¥9 to ¥14, respectively, per kWh.

But the estimated cost of nuclear-generated power does not take into account either the enormous subsidies paid to the nuclear industry (about ¥430 billion in 2010 alone) or the tremendous costs associated with the March 11 nuclear plant disaster.

Roughly the size of California with about 127 million people crammed into just 20 percent of its seismically active land, Japan cannot afford another major nuclear disaster. It must develop alternatives to nuclear power.

To this end, the government should make the development of renewable energy a national strategic priority, just as it did for nuclear energy during the 1973 oil crisis.

A significant first step toward this goal would be passage of the clean energy bill now before the Diet, which would get the power companies to buy all the electricity from renewable power sources at fixed prices, thus giving impetus to green energy generation.

http://search.japantimes.co.jp/cgi-bin/ed20110817a1.htm

Article Two

Innovation of the Week: Harnessing the Sun's Power to Make the Water Flow

By Janeen Madan

Nearly 2 billion people around the world live off the electricity grid. Lack of access to energy can take a huge toll, especially on food security. Without energy for irrigation, for example,

small-scale farmers must rely on unpredictable rainfall to grow the crops they depend on for food and income.

SELF's solar-powered irrigation system is improving food security and raising incomes. (Photo credit: SELF)

In the Kalalé district of northern Benin, agriculture is a source of livelihood for 95 percent of the population. But small-scale farmers lack access to effective irrigation systems. Women and young girls spend long hours walking to nearby wells to fetch water to irrigate their fields by hand.

The Solar Electric Light Fund (SELF), a U.S. nonprofit, has introduced an innovative solar-powered drip irrigation system that is helping farmers—especially women—irrigate their fields. The pilot project launched in partnership with Dr. Dov Pasternak of the International Crops Research Institute for the Semi-Arid Tropics (ICRASAT), has installed solar panels in Bessassi and Dunkassa villages This cost-effective and environmentally sustainable project is improving food security and raising incomes by providing access to irrigation for small-scale farmers, especially during the six-month dry season.

Farmers are diversifying the crops they grow to include trees and vegetables, like tomatoes and lettuce. Their production has increased ten times. And, because women and young girls no longer walk long distances to fetch water, they have more time to participate in agricultural activities.

According to an assessment by Stanford University's Program on Food Security and the Environment (FSE), villagers are not only eating healthier, but they also have year-round access to nutritious fruits and vegetables. And, by selling surplus produce at the local market, women farmers are earning an extra $7.50 per week, which they can use to pay for school fees and medical costs.

SELF is partnering with NGOs, governments, and companies, like Dell and Infosat, to bring solar electricity to some 1 million people in over 20 countries in Africa, Asia, and Latin America. Its Solar Integrated Development (SID) model is designed to enhance self-reliance. Farmers participate in determining the community's priorities for the project; they purchase the solar systems through micro-loans; and SELF provides training and spare parts to install and maintain the panels over the long-run.

Often, national electricity development plans focus on expanding centralized grids, and rarely benefit the rural poor—a majority of whom are engaged in small-scale farming. But

the photovoltaic (PV)—or solar-powered—micro-grids that SELF promotes are benefitting rural communities.
According to SELF's Executive Director, Robert Freling, nicknamed 'the man who wants to light up Africa,' access to electricity is a human right and is essential to achieving the Millennium Development Goals. SELF's projects are providing electricity to power water purification pumps that improve access to clean water, store vaccines, and support local community enterprises. In Haiti, Rwanda, Malawi, and Lesotho, SELF is working with Partners in Health to install solar panels that help power medical equipment in hospitals.

According to Freling, energy is the fuel that powers development—it is cost-effective in the long-term and good for the environment.

Do you know of other ways to ensure self-sufficiency among rural communities in the long-term? Let us know in the comments section below!

Janeen Madan is a communications associate with the Nourishing the Planet project.
https://mail.google.com/mail/?shva=1#inbox/131d30e2d57b8372

Article Three

SAIL goes all out to secure mines in Indonesia

Friday, August 12, 2011

Uncertain regulatory environment in Indonesia has not deterred SAIL from securing major coal and iron ore mines allocation in the country as part of its overseas expansion plans. The idea is to set up steel manufacturing facilities in mineral rich nations for direct allocation of iron ore, coking and thermal coal mines and import surplus mineral production back home. The company has firmed up plans to erect a steel-making plant of 3 million tonnes per annum capacity in the Central Kalimantan Region. The Company is hopeful of securing a thermal coal allocation soon.

http://www.constructionupdate.com/CMS/Newsletter/NewsFiles/48625.html

Article Four

Production of iron

Most of the iron ore sold is smelted by in blast furnaces. The ore is fed into the furnace along with coke, and very hot air is blasted in. The chemical reactions that take place form a mixture of molten iron and slag.
The dense iron sinks to the bottom of the furnace and is tapped off. Once cooled, it is called pig iron. This is used to produce steel, or further refined to produce commercially pure iron.
The world's second largest steel producer Rio Tinto's HIsmelt® subsidiary (Rio Tinto: 60 per cent) has developed an alternative process that is lower cost, more efficient and environmentally cleaner than the traditional blast furnace. HIsmelt® is short for high intensity smelting.

It is the world's first commercial direct smelting process, meaning that it produces premium quality pig iron – with no slag – directly from iron ore. The process allows iron ore fines with significant impurities to be used, and cheaper, non-coking coal instead of coke.

http://www.riotinto.com/documents/ReportsPublications/corpPub_IronOre.pdf

JSPL, Rio Tinto sign MoU for advancing HIsmelt technology

Published on Fri, Aug 05, 2011 at 16:00 | Source : PTI

Naveen Jindal led Jindal Steel and Power today said it has signed a Memorandum of Understanding (MoU) with global mining giant Rio Tinto to jointly work for global commercialisation of the HIsmelt technology to be used in a fully integrated steel-making facility.

"JSPL will be introducing the HIsmelt technology for the first time in the world other than a pilot plant commissioned in Australia," it said in a statement. HIsmelt, short for high-intensity smelting, is the world's first commercial direct smelting process for making iron straight from the ore and is fully owned by Rio Tinto.

The technology smelts iron ore fines directly using non-coking coals, and offers significant economic and environmental benefits to the steel industry, the statement said.

"We are excited to tie-up with Rio Tinto for the HIsmelt technology and look forward to developing it for usage in a fully integrated steel plant," JSPL Chairman and Managing Director Naveen Jindal said. As per the MoU, Rio Tinto's Kwinana HIsmelt plant from Australia will also be relocated to JSPL's steel plant in Angul in Orissa, the statement further said.

The Kwinana HIsmelt plant is owned by a Joint Venture comprising Rio Tinto (60%), Nucor Corporation (25%), Mitsubishi Corporation (10%) and Shougang Corporation (5%). The statement added that the relocated plant will be fully owned by JSPL, while both the firms -- JSPL and Rio Tinto -- will jointly develop and market the HIsmelt technology in future, with sharing of royalties.

Describing the deal with JSPL as a natural progression for the HIsmelt technology, Rio Tinto's CEO for Iron Ore and Australia, Sam Walsh said, "We believe the HIsmelt process remains the future for iron making, particularly in locations where coking coal and good quantity of iron ore lumps are not available.

"HIsmelt is suitable to the resources of India and offers huge environmental benefits to a steel maker like JSPL". JSPL, which has an annual turnover of USD 2.9 billion, currently produces 3 million tonne of steel per annum and has two large plants at Angul in Orissa and at Patratu in Jharkhand. It also has a power production capacity of 1,800 MW.

In recent times, the company has been expanding its steel, power and mining businesses operations globally and now has a presence in various parts of Asia, Africa and South America. Similarly, Rio Tinto is a leading international mining group, involved in finding, mining, and processing mineral resources and its activities span the world but are strongly represented in Australia and North America.

http://www.moneycontrol.com/news/business/jspl-rio-tinto-sign-mou-for-advancing-hismelt-technology_573500.html

Relationship between Devbanis/Orans and Tiger Reserve: a case study from Sariska

Aman Singh

Krishi Avam Paristhitiki Vikas Sansthan (KRAPAVIS)
5 / 218, Kala Kua, Alwar - 301001 {Rajasthan}, India
website**:** www.krapavis.netne.net

Genesis

Sariska, The well-known tiger reserve of Alwar was CCAs (community conserved areas) before being designated as PA (protected area). In other words, today's' Sariska is one such collection of Devbanis/Orans and Roondhs that together formed a substantial forest tract. To this day it is possible to identify the various Orans that comprise the Sariska Reserve. To certain extent, the traditional institutions and systems still exist, but they have weakened by new institutions, laws and hindered by park management. Through this case study, KRAPAVIS tried to track how the relationship between CCAs and the PAs has evolved since the time the Protected Areas were designated. KRAPAVIS (Krishi Avam Paristhitiki Vikas Sansthan), a voluntary organization in Rajasthan which, since 1992, has been working to revive Orans, both physically and conceptually, includes the development of people friendly policies.

Customary laws/ taboos

Conservation in Sariska has a long history. Control over natural resources has played a fundamental role in the formation of the state since its founding, as evidenced by the system of *Roondhs* and *Devbanis or Orans*. For the best part of the 19th century, demarcation of state and community lands followed the *panidhal* (water course) system, whereby hill summits were reserved for the state while the slopes were left to common use. Sariska is in fact one such collection of Roondhs and Devbani that together formed a substantial forest tract. To this day it is possible to identify the various Orans that comprise the Sariska Reserve. In all there are about 300 identified Devbanis/ Orans in the Alwar District.

At the heart of every Devbani/ Oran is a Deity, whose domain has at some point in time been marked out by a ritual, usually consisting of the pouring of Ganges water or saffron-milk around the grove. Taking care of the shrine is a Sadhu, whose own modest needs are met by local communities. The Sadhu is an interface between local community concerns and the preservation and wellbeing of the Orans. Also implicated historically in the upkeep of the Oran is a traditional local institution in the village going by the name of Thain. Comprising a group of five to seven village notables, the Thain had an important role in the appointment of the Sadhu, also having the power to dispense with his services. These checks and balances played an important role in governing the community's interests and those relating to the preservation of the Oran.

In brief, the systems employed by the communities for the protection of the Orans, were as follows:

- ***Kankad***: Refer to the Oran forest on the common geographical boundaries of two or three villages i.e. a system of inter-village demarcation, probably for revenue purposes,

which served to delineate *de facto* grazing grounds and harvesting other important MFPs for each village in the area.

- ***Roondhs*****:** *Roondhs* were being the Maharaja's fodder and timber reserves as well as popular sites for *shikar* (hunting). From the month of Karthik until the summer villagers were permitted to graze animals and cut grass in the roondh for a small fee ((after the Maharaja had taken his share). They were also expected to contribute labour. During this period land tenure, including forest management was dominated by *zamindars* (intermediaries), who devised local rights and rules. Through coercion, they enforced sanctions on violators and managed to extract labor for harvesting of resources, guarding and maintenance activities such as fencing, planting and de-silting ponds. These areas still known by names like KalikholRoondh, BinakRoondh, SirawasRoondh, BharthariRoondh, MadhogarhRoondh etc.

- ***Khadu***: An important traditional system of resource use in Sariska villages is *khadu*. Each family group (defined here as three to four brothers) will bring their buffalo to graze around one particular *johad* (pond), of which there are eleven in the village. Family rights to johads are inheritable, and it is universally known in the village which johad is used by which family. Management of both the watering hole and the grazing land surrounding it is thus the responsibility of one extended family group, thereby reducing the likelihood of 'self-interested' exploitation and instead promoting prudent use of available resources. In the case of the khadu (literally, 'herd') system, the intertwining of ecology and kin-based history encourages conservation through a concern for welfare of a given family's future generations.

- ***Dara***: *Dara* (literally meaning 'part') is another traditional household-centered mode of environmental preservation. Each family has an area within the kankard (usually on the hillsides above the plateau where buffalo are unable to graze) from which they are allowed to cut grass. These dardas may vary in size according to the size of the family and the number of livestock they own. The cut grass is then stored in piles in the courtyards of the village, to be used as fodder during the dry months when water is scarce and buffalo are unable to graze in the plateau. The dhara system is largely informal. In the past, according to Sitaram Gujar from Bera village, the boundaries were marked by stones, but since the forest has become less dense conspicuous trees serve this purpose. There are no written rules regarding the dhara system; if for some reason a family over-harvests their section, it is down to them to negotiate additional grass from other families, but on the whole this is a rare occurrence. The dhara system affords

security from both *akhal* (famine) and incursive harvesting by members of neighbouring villages.

- ***Dharadi:*** This refers to religio-cultural symbolism attached to planting and protection of plants. Many gotras (clans) have a tree as a totem. The people belonging to the 'gotra' regard this particular tree as sacred.

In general, wall drawings from Sariska's Gujjars show that their psychological life is closely linked with their biological environment. In fact tigers and other animals are present in majority of the manifestations of their inner life, born from their experience & knowledge of biological life. There are taboos that presence of a tiger; their excreta are considered very auspicious for keeping away diseases from their livestock.

How these institutions changed

As mentioned above that the Sariska Tiger forest reserve is collection of Orans. The local populations have been increasingly excluded from management over their resources, after the designation of Sariska as a Wildlife Reserve in 1955 and a Tiger Reserve in 1978. The Forest Department restricts access to Orans, or declare the grove an inviolable reserve (except allowing worship). There are two consequences to this trend, one being the alienation of local peoples, and the second being the deterioration of natural resources due to mismanagement. The village of Bakhtpura in our study area elucidates the difference a community's involvement in an Oran can make. The Oran of this village has been segmented into two parts, with one governed by the community and the other having been enclosed as a Sariska's forest reserve. The results of this dichotomy have been that the reserved forest has been stripped bare, presumably by the local community, whereas the community-controlled forest retains fairly thick vegetation. As per the causes of alienation, another explanation could be the relationship between the loss of the people's faith in the spiritual relevance of Orans and the consumerist mentality of the private sector. The role of the state in promoting the growth of industry without heeding the concerns of local communities, as well as the relevant lack of economic employment in the rural paradigm, results in people immigrating and hence further weakening the socio-cultural and spiritual ties that bind them.

It is evident that the Orans are operating today in something of an institutional vacuum and indeed it is not clear at the present time what agency enjoys jurisdiction over the Orans of the Sariska. The upkeep of the Oran was the responsibility of a traditional village institution (e.g. the *Thain*). Today the traditional institutions have disintegrated. Modern institutions that have supplanted them, such as the official village *Panchayat* have displayed little interest in the management of Orans. Unlike the Thain which represented community concerns pertaining to the use of the Oran the Panchayat is not in any way oriented to these

ends. This is nowhere manifested more clearly than in the weakening of village institutions that held the community together.

Sariska's management plans declared human habitation to be a major threat to the preservation of the Reserve's flora and fauna, in particular the tiger. Management takes place under very different ecological, political and economic circumstances. Today, the Gujjars, their traditional systems of nature resource conservation and management have seriously deteriorated. Enforced state control over Sariska has shoved communities aside, and away from management. This complex and infinite variety of direct and underlying causes undermine local forest management systems.

Role Devbanis/Orans play in the dynamics between communities and tigers

There have shared the landscape with tigers and their livestock and ready to lose a few of the livestock to protect the rest. They have helped the Forest Department nab the poachers and outsiders who steal timber. They have protected their Orans (sacred forest). All was well till the forest was theirs. And, Orans played the following dynamics:

- its importance to the livelihood and life of the resource users (meeting not only economic, social but also cultural and spiritual needs of the community
- there is strong internal social control within the different communities of users which enables effective sanction on the violators
- credible, transparent and inspirational Mahatma
- pride in being identified with a good Oran
- there is a well-defined boundary of a Oran
- egalitarian, with respect to all users
- there is a mechanism for conflict resolution among resource users
- there is strong stakeholdership of resource users (annual contributions in maintaining the Orans)
- simple and clear rules to all users
- strong religious belief; respect for Devbani stems from strong faith in God
- All of the animals, save the milking buffaloes, remain in the Orans/mountains at night and as a result about 2 – 4 % fall victim to wild animals/tigers every year.

Pattern of resource extraction in Orans and in the rest of Sariska

Orans serve seedling orchards and contribute to seed production areas of ethno-silvicultural species and sustain the essential ecological processes and life support systems of the Sariska land. Also, Orans preserve endemically endangered or threatened species, medicinal plants and a variety of wild cultivars. Endangered or threatened species like Kala Khair (*Acacia catechu*) and Gugal *(Commiphorawightii)* have also been conserved in the Sariska's Orans. The most important species of the Oran in terms of its grazing utility is the plant Dhok (*Anogeissuspendula*). Yet there are very few young specimens of this tree available today. Another example of species vital for the ecological system is the Jiyapota which has been protected by the community in the Bera village Oran. People of Bera village mainly protect four species of trees in their Devbani. One is Jiyapota, the other Gular (fig), as well as the Acol (*Allangiumsalvifolium*), and the Jamun (*Syzygiumcuminii*).

Orans also serve as socio-religious medicine – if any outbreak happens in their stock, then they gather in one place and promise to the deity that if you take away this disease that's happening we will come to you and do a feasting. The Oran's Sadhu's practices also have a preventative dimension; where in order to ensure that livestock is protected from sickness and other evil forces he is called upon to 'anoint' the animals using twigs from the Neem (*Azadirachta Indica*) tree (the *jharadena* ritual). Specialist knowledge of this sort is not limited to the Sadhu; most of the older generations are aware of various plants used to treat, among other things, sore throats, migraines, open wounds and osteoarthritis. And in many villages, tribal communities still gather once a year for the *dudhkidhardena* ritual, during which milk is collected from each household and then drizzled around the sacred grove with the whole village following in procession. This practice is thought to ward off evil spirits for the coming year. KRAPAVIS has recorded as many as 82 plants of medicinal value in the Orans of Sariska.

Orans often protect watersheds and/or water sources. Several Orans like Garvaji, Adaval, Talvraksh, Kalaka, Bharthari, Naraini Mata, Nadeshwarji, Parasharji and so on in Sariska, have large perennial water springs used for irrigation and other purposes year-round. Such dependable availability of water has been shown to be a major incentive for communities to use Orans in a sustainable manner. Basically, Orans are a living and active part of the socio-ecological landscape of local communities by:

- Linking biological conservation with cultural integrity,
- Combining ancient hydro-engineering to rehabilitate or recreate water sources,
- Employing scientific biological gene pool conservation techniques to combine local traditional variety of habitats and involving the local communities directly in caring for their own environmental flora and fauna,
- Providing an age-old Oran constitution, thereby giving it the power of a written record and combining it with the modern management system of "Joint Forest Management".

Conflicts

There is a heavy pressure from outsiders who have nexus with the department for felling trees is also what the villagers feel, because earlier villages used to have checks on these kinds of unwanted activities.

Due to denied grazing of domestic livestock, invasive species (e.g. Panwad, Adusta, Lampala, Bilayati Babool etc.) are taking over the forest and Orans of Sariska, as a result the food available for wild animals are decreasing.

Also, it is ironic that on one hand local people are being displaced from here, and on other hand new kind of people, in form of tourist, are being invited to the area! These new people cannot be that sensitive toward forest and Orans as the local communities were.

During our field survey people confirmed that the process of the Forest Rights Act has not been completed; indeed it has not even been initiated. It also does not appear that there have been any consultations with regard to the declaration of the area as Critical Tiger Habitat (under the Wild Life Act 2006). Consent of the relevant gram sabhas for relocation

has also not been sought, as required under both these Acts. Thus there are multiple illegalities in the ongoing relocation.

- Communities not getting fair value of their produce and do have much opportunity for value added processing of their milk,
- There is strong dependence on middlemen for the marketing of their dairy products,
- Rapid increase in population of livestock in recent years in an area where there is no more frontier zone,
- There are forces of change that is threatening to destroy the sustainable way of life of the Gujjars,
- Inappropriate education alienating children from Gujjar way of life,
- Issue of sustained pastoralism not in the agenda of political leadership of Gujjars (demand only focused on allotment),
- Disease infection during migration to lowland plains and growing dependence on modern/commercial remedies and medicine, losing their indigenous knowledge, increase levels of intoxication by chemical farming in the plain lands,
- Pastoralist rights are not fully recognized by the government and their sustainable pastoralism is not appreciated by forestry people and by policy makers.

Conclusion

The communities and their livestock in Sariska share the space and natural resources with all organisms. A conjunct of attitudes, practices and techniques evidenced their coexistence harmonious, even with the potentially life threatening large predators (e.g. tiger), serpents and scorpions. Practices followed by them include:

- Never putting oneself between the predator and its prey,
- Distancing oneself slowly in the presence of a tiger,
- Respecting it and observing a complex conjunct of behaviors (for example looking into its eyes) and being careful and silent,
- Villagers understand the tigers,
- Communities believe that the association of domestics and wild animal, which graze together in Sariska, is never competitive. According to them, domestic livestock and wild animals have complementary functions in the maintenance of equilibrium and productivity of vegetation. Gujjars considerer the wild herbivores a buffer against predators livestock lifting tendencies,
- Communities of Sariska understanding is that if there were no tigers, there would be too many sambhar and so one day there would be no grass or trees, there would be no forest for them.

Precisely, strengthening the co-existence way of living, rather than displacing people, will be a win-win for both the communities and the reintroduced tigers in Sariska.