

IIT-Jodhpur Students Visit GRAVIS

May 24, 2015



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Students at GRAVIS



GRAVIS Visit: A group of 9 people from IIT-Jodhpur, mostly students visited GRAVIS on May 24th, 2015. We started at 7:30 am in the morning in a Tempo Traveler and travelled to Gagari village in the Osian Tehsil. It was a pleasant journey and we reached the site at around 9:00 am. The map of the state of Rajasthan along with our route from IIT-Jodhpur to Gagari and Cherai are illustrated in page 3. Gagari and Cherai are located at an approximate distance of 80 Km from IIT- Jodhpur. Mr. Rahul Mishra, project co-ordinator at GRAVIS joined us at the Gagari center. After breakfast, we discussed the Gagari center activities and spent

some time looking around. At Gagari we visited the GRAVIS training center, a new hostel for girl students under construction, and one school. After Gagari, we headed out to see GRAVIS project sites at Cherai and Minoo-ki-dhani. At Cherai and Minno-ki-dhani, we visited an Asha

school, a lemon orchard, several *Taankas* and *Khadeens*. Although the main focus of GRAVIS's work is concentrated on efforts to reduce drought caused by the scarcity of water in the Thar desert, they are also engaged in work related to education, microfinance, health and advocacy for the rights of people vulnerable in the society. Mr. Mishra explained how GRAVIS organizes meetings inside the center to train farmers on various aspects of agriculture. Food and accommodation are also available to the trainees at the GRAVIS training center. Besides the center, training is also provided in villages. In such cases, trainings are usually organized in schools for children. Women and men usually meet in separate groups during the training.

GRAVIS Training Center



The following group from IIT-Jodhpur visited GRAVIS



Aditya R. Gautam, PhD Candidate



Chandana D., B. Tech 2nd Year



Sourav Khoso, B. Tech 2nd Year



Gaurav Kumar, Project Engineer



Raj Kumar Satankar, PhD Candidate



Vinit Kumar, B. Tech 4th Year



Suresh Singh, PhD Candidate



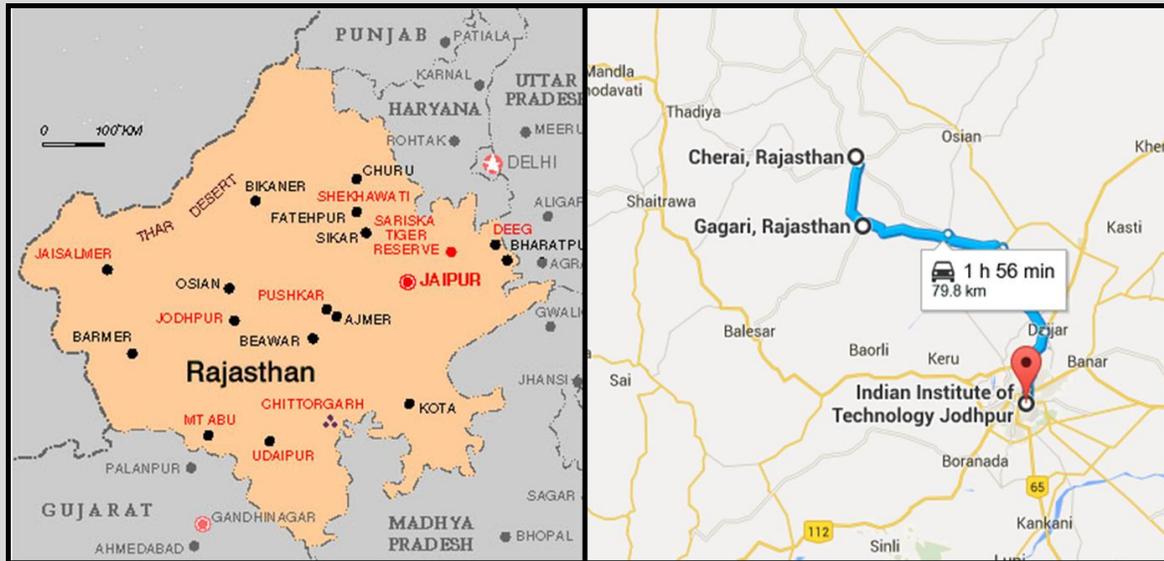
Manisha P., B. Tech 2nd Year



Dr. Ajoy K. Saha, Scientist

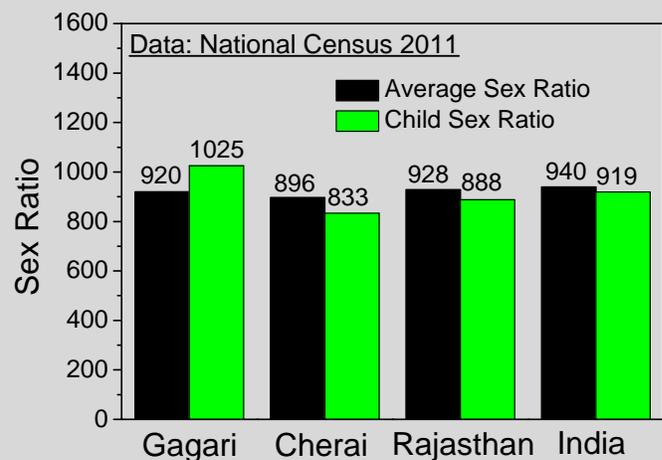
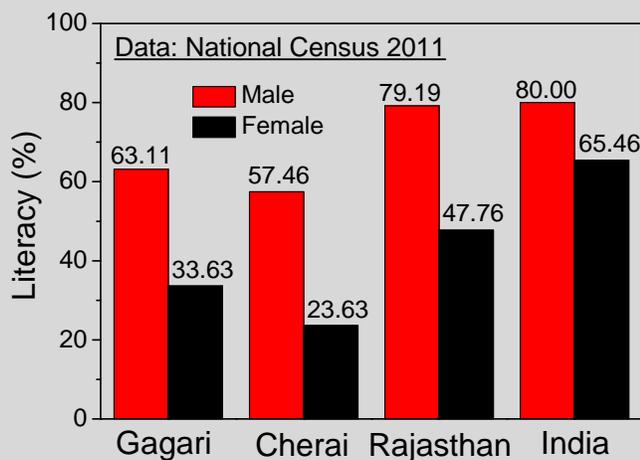
Parivartan: The trip to GRAVIS was organized in collaboration with members from Parivartan, which is an initiative undertaken at IIT-Jodhpur to improve education level and awareness in the poor and deprived section of society through teaching, youth counseling and parent counseling. During the last few years, several Parivartan members helped in organizing medical camps in the Sangariya village, located in Jodhpur, Rajasthan. They also regularly organize summer camps in the institute campus every year. Students from nearby schools at Jodhpur undergo summer training in these camps. During the training, students are exposed to interesting and fun aspects of science and technology. They are encouraged to work in teams. Students also participate in play acting.

Map of Rajasthan and our route to Gagari, Cherai.

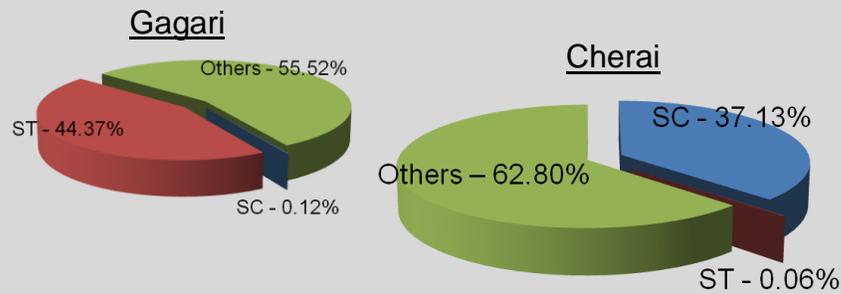


Basic Demographic Indicators

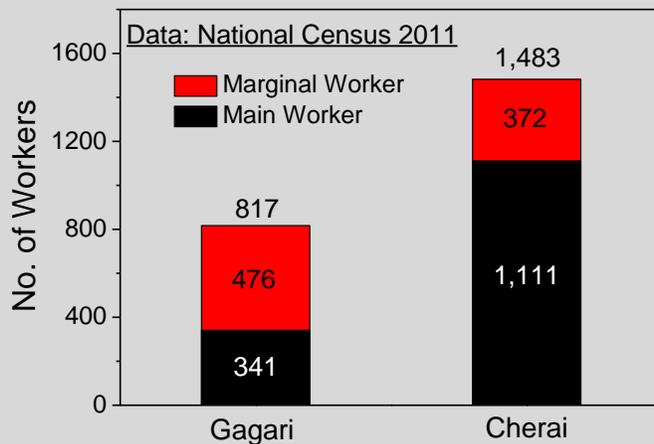
According to the National Census 2011, Gagari and Cherai villages have total populations of 3,500 and 3,175 respectively. The literacy rates for both male and female members of the villages are found to be considerably lower than that of Rajasthan and India. The figure below illustrates this



fact. When gender ratio is taken into account, which is defined as the number of females per 1,000 males, both Gagari and Cherai ranks below Rajasthan and India. Considering Child Sex Ratio, defined as the number of females per thousand males in the age group 0-6 years in a human population, Gagari ranks higher than Rajasthan and India.



Gagari and Cherai villages also have a high concentration of Scheduled Caste/Tribe (SC/ST) members, as evident from the National Census 2011 data shown above in the pi-diagrams. The village populations are mainly engaged in farming activities. The workers may be divided into two groups, (a) main workers and (b) marginal workers. Main workers are those who have employment of earning for more than 6 months in a year, while those involved in marginal activities have their livelihood provided for less than 6 months. From the stacked bar diagram provided below, both Gagari and Chennai have considerable amount of marginal workers. Out of the total 1,483 Cherai village workers, 867 are cultivators (owners and and co-owners), while



87 are agricultural are laborers. All Gagari village workers are owners or co-owners, none of them work as laborers. From the figures presented so far, it is evident that these villages need support for improvement in various areas, especially education and livelihood. In this connection, GRAVIS's work for the past few decades in the sector of water management, education and health is commendable. It has been reported that poverty in Rajasthan has reduced from 34% in 2004-2005 to 15% in

2011-2012 (Ref: Mayank Mishra, "How Rajasthan reduced poverty", Business Standard, Aug 6, 2013). When compared to the national average poverty drop of 15%, Rajasthan has registered a near 20% drop in poverty during the same time period. This is good progress, attributed to Government's progressive policies. To my opinion, NGOs like GRAVIS are also contributing to poverty reduction.

Training Unit: GRAVIS also has training cum production unit for spices and handicraft items. In the top pictures on page 5, dolls prepared by village artisans are presented. One of the students can be seen to inspect a spice mixer/grinder. Some students hold up final spice products in packets for display. Spice powders of cumin, coriander, chilli pepper and turmeric are processed and packed in plastic packets for sale. These are mainly sold for local consumption. The artisans also prepare table cloths and other household items. The next stop was at an Asha supported school in Cherai. The

Spices and Handicrafts



school is for children in their primary classes. It has two teachers and a total of 83 students, of which 32 are boys and 51 are girls. This school was incepted in 2008 as there was no nearby school within the 3 Km radius. One of the teachers can be seen in the 2nd picture at the bottom of this page. The land on which the school currently stood was donated by Jiamam ji, who can be seen standing alongside me in 4th picture. We have been told that he is a highly motivated person, and is instrumental in keeping the school in running condition. The school got its current building in 2010, financed by a German agency. Asha for Education currently provides funds for school administration, including teachers'

honorarium and stationery. The school is currently running well with financial support from Asha. While we were at the school, students showed their notebooks, in which they have made paintings and did their homeworks. Teachers and other local community members told us how the school has been useful to the local children, since the nearest school is 3 Km away. The population in the school area is

around 2,000 - 3,000, and most of them are farmers. Others are landless-laborers. The teachers and school authorities were concerned that the school does not have a mid-day meal scheme, which is prevalent in other government supported schools. Considering the need, I recommend financial support from Asha to start mid-day meal scheme in this school.

Asha Supported School



Rain water harvesting: Due to severe scarcity of water in Rajasthan, especially in the Thar desert region, GRAVIS has undertaken initiatives in rain water harvesting and water conservation. The NGO is helping locals in building *Taankas* and *Khadeens*. GRAVIS's efforts are mostly invested in building these constructions.

Taanka, Khadeen and Nadi



Taankas are underground cylindrical cisterns having usual dimensions of 10' × 10', and are used to store water collected from courtyards or artificial or natural catchments built around it. The average water holding capacity of a *Taanka* is 20,000 liters. The stored water can be used by a family during the dry season. Once filled, the water stored in a *Taanka* can be utilized by the family over a period of 5-6 months. The 1st picture on the left exhibits a *Taanka* having artificial catchment around it, built using gravel, which is impervious to water and thus prevents its loss when draining into the *Taanka*. In the 2nd picture on the left, *Taanka* beneficiaries in the Cherai region could be seen. The constructional expe-

nenses for a *Taanka* lie within INR 30,000 – 60,000. *Khadeens* are low earthen dams, built in the Thar deserts where run offs from a catchment can be collected and stored in the fields behind a bund at low levels. They are usually 1,000 –3,000 feet long and 4-6 feet in height, and made of mud. I have been told that it costs around INR 30,000 – 35,000 to built one *Khadeen*. The region of the field immediately behind the bund usually remains submerged with water during the rainy season, while the regions higher up within the *Khadeen* retains enough moisture to grow a rainy season crop. Depending on the amount of moisture stored in the different levels of a *Khadeen*, various crops are sown in this area. Yields usually consist of *bajra* (pearl millet), *til* (sesame) and pulses. The 3rd picture above shows a *Khadeen* in the Cherai village. (For more information on *Taankas* and *Khadeens*: Gaur et al., *Environmental Monitoring and Assessment* 99: 89-103, 2004). GRAVIS has built several *Taankas* and *Khadeens* utilizing Asha's funds in the drought afflicted Thar region.

Khejri trees: A typical *Khadeen* has a lot of *Khejri* (*Prosopis Cineraria*) trees. *Khejri* trees help in Nitrogen fixation and thus enrich the soil. These plants grow under extremely arid conditions, with rainfall as low as 150 mm annually (Wikipedia). In the 1st picture on page 7, standing below a *Khejri* tree, Mr. Mishra can be seen explaining its usefulness to the students. The fruits of a *Khejri* tree are called *Sangar* or *Sangria*. In the dried form, they are used as animal feed.

Nadi: Next, we visited a *Nadi*. It is a local man-made pond, owned and maintained by the community for rainwater harvesting purposes. The rainwater collected in the *Nadi* is utilized by the community for several months after the rainy season. IIT-Jodhpur students can be seen overlooking a *Nadi* in the 4th picture above.

Useful Plants



Lemon orchard: Along the way, we visited a lemon orchard having around 200 plants. Chutraram ji and his father Hiraram ji, seen in the 2nd picture on the left have developed the lemon orchard from scratch. The lemons grown in this orchard are of high quality and sold in the local market. Yield from the orchard runs into several tons and the whole family, comprising of several members, is sustained from the sale proceeds. Although their orchard is located in a remote village, they seemed quite well off financially and have their own land and concrete buildings. They also own a tractor. We have been told that it took great efforts to develop the lemon orchard, and that the family has the

unique distinction as the sole developer of such an orchard in the entire village. At Cherai, we visited a small garden located beside the school, developed and maintained by the villagers with support from GRAVIS. In this garden, they have cultivated fruits like *Gunda* or *Lasoda* (*Cordia*), pomegranates and lemons. In the 3rd picture above, a student can be seen holding two lemons produced in this garden. The 4th picture exhibits a pomegranate plant.

In summary, this was a useful visit for the IIT-Jodhpur group. Our group got to witness the various activities undertaken by GRAVIS and appreciated their work. We returned to Jodhpur at around 5:00 pm.

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