

## **WORK UPDATES FROM JANUARY TO DECEMBER 2016**

### **Local work in Dungarpur**

My work in Dungarpur focuses on conserving soil and water by building / reviving ponds, in collaboration with the Vagad Mazdoor Kisan Sangathan, which is an community-based organisation of adivasi farmers and labourers in Dungarpur district.



*Illustration 1: Pond in Mandwa after the rains.*

Work on two new ponds was completed earlier this year between January-March 2016 in the villages of Mandwa and Valota. The ponds will help improve the groundwater availability in its vicinity, which will be accessed by farmers through wells and borewells for irrigation and drinking.



*Illustration 2: Bund of new pond built in Bharatpur.*

Three district-level workshops / meetings were held at Dungarpur, with members of the Vagad Mazdoor Kisan Sangathan, to share and discuss the results of the work done so far on 7 ponds in 3 villages and to identify new villages where the work can be expanded based on the local need and interest of farmers, and presence of the Sangathan in these villages. Representatives from the older villages where work has been done were present in the meeting to share their experiences. Through this process, 10+ new villages have been identified.





*Illustration 3: Meeting with Vagad Mazdoor Kisan Sangathan leaders about expanding the work on water conservation in the district.*

Work on the bund of one new pond in Dolvar village was completed. The work on the overflow is pending.



*Illustration 4: Work ongoing on a new pond in Dolvar.*

Preparatory work is ongoing in the new villages through site visits and meetings at the village level. This includes some villages where preparatory work began last year after October 2015, but in which on ground work could not be taken up, before the rains began in June 2016.

### **Regional work in Rajasthan**

My work in Rajasthan is through Sambhaav, and focuses on supporting local teams working on soil and water conservation with farmers and pastoralists in Alwar, Jaipur, Dausa, Nagaur, Jaisalmer and Barmer districts, through site visits and meetings and overall coordination with local team members.

Some work done during this period **entirely** through locally raised contributions from farmers and pastoralists and with support from Government programmes raised through the Gram Panchayats:

***Rajgadh Block – Alwar district, Rajasthan***

In the villages of Nandu, Ghevar, Nayala and Chava ka Bas, farm bunding work was done over 5 hectares of land.

(Note: Farm bunds help to conserve soil moisture from rain within the farm itself, which in turn helps to grow crops and recharges groundwater downstream of the bund.)

In the village of Rup Bas, farm bunding work over 9 hectares of land and construction of 2 new ponds was completed.

In the villages of Tilwad, Palpur, Govardhanpura, Mallana, Kakarali, Kho, Dariba, Rampura and Urwadi, farm bunding work was done over 55 hectares of land.

In the village of Tilwad, work on 2 ponds was completed.

In the villages of Kakarali and Rampura, construction of 2 new ponds was completed.

In the villages of Kundla, Ramsinhapura, Virpur, Vidhota and Sakat, farm bunding work was done over 34 hectares of land.

In the village of Sakat, construction of 2 ponds were completed.

In the village of Virpur, construction of 1 anicut was completed.

(Note: An anicut is a pucca structure made of stone in cement mortar, and usually built over a rivulet or a large stream that helps to store rainwater and recharge groundwater downstream of the anicut. It also helps to maintain flow of the rivulet or stream over a longer period of time.)

***Dausa block – Dausa district, Rajasthan***

In the villages of Vapi, Rampura, Udawala, Biharpura, Banjaro ki Dhani, Bisanpura, Koliwadi, Vinawala and Bani, farm bunding work was done over 54 hectares of land.

In the village of Bisanpura, 1 existing pond was deepened. Deepening a pond, helps to improve its water storage capacity, which in turn helps improve the availability of water for drinking for livestock and humans and wherever applicable improves water available for irrigation and recharges groundwater downstream of the pond.

In village Bani, 1 new pond was constructed.

***Dudu block - Jaipur district, Rajasthan***

In village Savli, farm bunding over 23 hectares of land and construction of 2 new ponds were completed.

***Phagi block - Jaipur district, Rajasthan***

In village Hirapura, deepening of 1 pond was completed.

In the villages of Jawad and Hirapura, farm bunding work over 25 hectares of land, and construction of 3 new ponds was completed.



***Kuchaman block – Nagaur district, Rajasthan***

In the villages Kuni and Thikariya, farm bunding work over 5 hectares of land was completed.

***Ramgarh – Jaisalmer block, Jaisalmer district, Rajasthan***

About 50 hectares of Bijrasar Khadin was revived for agriculture by removing unwanted vegetation with contributions from the community and Government programmes. The Khadin was not in use for about 30 years. After the rains, the Khadin held about 2 feet of water. A pond was dug near the Khadin with help from the Border Roads Organisation, which captures the surplus water overflow from the Khadin. The moisture in the Khadin and the water from the pond was used to irrigate the Khadin through sprinklers and to grow a crop of mustard for the first time in 3 decades.

The bund of Sarhan Khadin which was broken since 5 years, was repaired with funds support from Rajasthan State Mining and Minerals Limited.

Several tobas (small ponds) were deepened with funds support from local solar energy companies, which helped to store water for about 8 months in the year even in 30 mm of rainfall.

(Note: A Khadin is an agricultural system that is jointly owned and managed by several villages or farmers from a village, that harvests and stores rainwater. Crops are then grown using the soil moisture that is stored within the Khadin. It also recharges groundwater within and downstream of the Khadin.)

***Bakhasar- Chhotan block, Barmer district, Rajasthan***

In Koliyon Ki Dhani, Dindava and Bhawariya, 3 ponds were deepened over 1-2 months, with support from the NREGA.

In Gangasar, Bhawariya, Manmodo Ki Dhani and Devasiyo Ki Dhani, 4 community tankas were constructed with support from the NREGA. Tankas harvest and store rainwater for drinking for livestock and humans.

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## स्पोटलाइट

**जलस्रोत :** देश में जहां लातूर जैसे इलाके पानी के संकट और सूखे से जूझ रहे हैं, वहीं...

# अकाल में मिसाल रामगढ़

पानी कहाँ कितना बरसता है, यह प्रकृति ने हजारों साल से तय कर रखा है। कोंकण में, चेरापुंजी में खूब तो जैसलमेर के गांवों में उतना ही कम। पर जो जहां है, वहां प्रकृति का स्वभाव देखकर उसने यदि समाज चलाने की योजना बनाई और तालब नहीं किया तो वह समाज पानी कम हो या ज्यादा, रमा रहता है। कभी पूरे देश में पानी को लेकर समाज के मन में एक-सा भाव रहा था। पर नई खेती, नई-नई प्यास वाली फसलें, कारखानों, तालाबों को पूरकर बने और बढ़ते जा रहे शहरों में वह संयम का भाव कब का खत्म हो चुका है। तभी हमें या तो चेन्नई जैसी भयानक बाढ़ दिखती है या लातूर जैसा भयानक अकाल। पर वहीं एक जगह रामगढ़ भी है, जहां पानी को लेकर झगड़े नहीं बल्कि मनुहार होती है।

चतरसिंह जाम

**टे**लीविजन कहां नहीं है? हमारे यहां भी है। हमारे यहां पानी जैसलमेर से कोई सौ किलोमीटर पश्चिम में पाकिस्तान की सीमा पर भी। यह भी बता दें कि हमारे यहां देश में सबसे कम पानी गिरता है। कभी-कभी तो गिरता ही नहीं। आबादी कम जरूर है, पर पानी तो कम लोगों को भी जरूरत के मुताबिक चाहिए। फिर यहां खेती कम, पशुपालन ज्यादा है। लाखों भेड़, बकरी, गाय और ऊंटों के लिए भी पानी चाहिए। इस टेलीविजन के कारण हम पिछले न जाने कितने दिनों

जो बातें आप लोग नारों में सुनते हैं, वे बातें और सिद्धांत हमारे यहां जमीन पर उतार दिए गए हैं हमारे समझदार पुरखों द्वारा। हमारे खेतों में आज के इस गलाकाट जमाने में भी सामूहिक खेती होती है।

से देश के कुछ राज्यों में फैल रहे अकाल की भयानक खबरें देख रहे हैं। अब पिछले दिनों क्रिकेट का भी नया विवाद जुड़ गया और आईपीएल मैच महाराष्ट्र से बाहर हो गए हैं।

### कम बारिश नहीं परेशानी

आपके यहां कितना पानी गिरता है, आप ही जानें। हमारे यहां पिछले दो साल में कुल हुई बरसात की जानकारी हम आप तक पहुंचाना चाहते हैं। वर्ष 2014 में जुलाई में 4 मिमी. और अगस्त में 7 मिमी. पानी कुल 11 मिमी. पानी गिरा था। तब भी हमारा यह रामगढ़ क्षेत्र अकाल की खबरों में नहीं आया। हमने खबरों में आने की नौबत ही नहीं आने दी। फिर पिछले साल वर्ष 2015 में 23 जुलाई को 35 मिमी., 11 अगस्त को 7 मिमी. और फिर 21 सितंबर को 6 मिमी. बरसात हुई। इतनी कम बरसात में भी हमने हमारे पांच सौ बरस पुराने विप्रासर नाम के तालाब को भर लिया था। यह बहुत विशेष

तालाब है। लाखों वर्षों पहले प्रकृति में हुई भारी उथल-पुथल के कारण इस तालाब के नीचे खड़िया मिट्टी की, मेट की या जिप्सम की एक तह जम गई थी। इस पट्टी के कारण वर्षा जल रिसकर रेगिस्तान में नीचे बह रहे खारे पानी में मिल नहीं पाता। वह रेत में नमी की तरह सुरक्षित रहता है। इस नमी को हम 'रेजवानी पानी' कहते हैं।

### पुरखों ने अपनाया था

तालाब में ऊपर भर पानी कुछ माह तो गांव के काम आता है। इसे हम 'पालर पानी' कहते हैं। उस पूरे विज्ञान में अभी नहीं जाएंगे पर तालाब ऊपर से सूख जाने के बाद रेत में समा गई इस नमी को हमारे पुरखे न जाने कब से बेरी, कुई नाम का एक सुंदर ढांचा बनाकर उपयोग में लेते रहे हैं। अब अप्रैल के तीसरे हफ्ते में भी हमारे तालाब में ऊपर पानी भरा है। जब यह सूखेगा तब रेजवानी पानी इसकी बरियों में आ जाएगा और हम अगली बरसात तक पानी के मामले में एकदम स्वावलंबी बने रहेंगे।

इस विशेष तालाब विप्रासर की तरह ही जैसलमेर क्षेत्र में कुछ विशेष खेत भी हैं। यूँ तो अकाल का ही क्षेत्र है यह सारा। पानी गिर तो एक फसल हाथ लगती है। पर कहीं-कहीं खड़िया या जिप्सम की पट्टी खेतों में भी मिलती है। समाज ने सदियों से इन विशेष खेतों को निजी या किसी एक परिवार के हाथ में नहीं जाने दिया। इन विशेष खेतों को समाज ने सबका बना दिया। जो बातें आप लोग शायद नारों में सुनते हैं, वे बातें और सिद्धांत हमारे यहां जमीन पर उतार दिए गए हैं हमारे समझदार पुरखों द्वारा। इन विशेष खेतों में आज के इस गलाकाट जमाने में भी सामूहिक खेती होती है। इन खेतों में अकाल के बीच भी सुंदर फसल पैदा की जाती है।

### रेगिस्तान में भरपूर पानी

पिछले साल कुल गिरे पानी के आंकड़े तो आपने ऊपर देखे ही हैं। अब उनको सामने रखकर इस विशाल देश के किसी भी कृषि विशेषज्ञ से पूछ लें कि दो-चार सेंटीमीटर की बरसात में क्या गेहूँ, सरसों, तारामीरा, चना जैसी फसलें पैदा हो सकती हैं। उन सभी विषेयों



रामगढ़ में पानी से भरे विप्रासर तालाब की तस्वीर

### परेशानी बनी अवसर

महोले जैसलमेर के कुछ गांवों में भी थिगड़ा था पर पिछले 10-15 वर्षों से फिर सुखरे भी लगा है। इस दौर में यहां समाज ने मिलकर करीब 200 नई बेरियां, 100 नए खड़ीब, 5 कुएं पालाती मीठे पानी के, कोई 200-150 तलाई, नडियां, टोपे अपनी हिम्मत से, अपने साधनों से बनाए हैं।

### खुद के बूते बनाए

इन पर सरकारी या किसी स्वयंसेवी संस्था का नाम, बोर्ड, पटरा टंगा नहीं मिलेगा। ये हम लोगों ने अपने लिए बनाए हैं। सब पानी से लब्धस्व है। देश में कोई भी इलाका ऐसा नहीं, जहां जैसलमेर से कम पानी गिरता हो। इसलिए अन्य जगहों पर पानी का कष्ट देख बहुत कष्ट होता है।

### अकाल विचारों का भी

जल का संकट तभी कम होगा जब हम सब अपना इलाका ठीक कर लेते के साथ-साथ देश के सूखेगास्त इलाकों में भी ऐसी बातें, ऐसे काम पहुंचा सकें। हमारे मित्र अनुपम मिश्र ठीक कहते हैं कि अकाल अकेले नहीं आता। उससे पहले अच्छे कामों का, अच्छे विचारों का भी अकाल आता है।

### रेल से आ रहा है पानी

आज नई खेती, नई-नई प्यास वाली फसलें, कारखानों, तालाबों को पूरकर बने और बढ़ते जा रहे शहरों में यह संयम का भाव कब का खत्म हो चुका है। तभी हमें या

तो चेन्नई जैसी भयानक बाढ़ दिखती है या लातूर जैसा भयानक अकाल। चेन्नई का हवाई अड्डा डूब जाता है बाढ़ में और लातूर में रेल से पानी भरकर लाया जाता है।

का उत्तर 'ना' में होगा। पर आप रामगढ़ आए तो हमारे यहां के खड़ीनों में ये सब फसलें इतने कम पानी में खूब अच्छे-से पैदा हुई हैं और अब यह फसल सब सदस्यों के खलियानों में रखी जा रही है। तो धुत्त रेगिस्तान में, सबसे कम वर्षा के क्षेत्र में आज भी भरपूर पानी है। अनाज है और पशुओं के लिए खूब मात्रा में चारा है। यह बताते हुए भी बहुत संकोच हो रहा है कि इतने कम पानी के बीच पैदा की गई यह फसल न सिर्फ हमारे काम आ रही है, बल्कि दूर-दूर से इसे काटने के लिए दूसरे लोग भी आ जुटे हैं। इनमें बिहार, पंजाब, मध्यप्रदेश के मालवा से भी लोग पहली बार आए हैं - यानी जहां हमसे बहुत ज्यादा वर्षा होती है, वहां के लोगों को भी यहां काम मिला है।

### पानी भरने पर मनुहार

मराठवाड़ा, लातूर की खबरें देख मन दुखी होता है। धारा 144 लगाई गई जलस्रोतों पर। पानी को लेकर झगड़ते हैं लोग। और यहां हमारे गांवों में इतनी कम मात्रा में वर्षा होने के बाद भी पानी को लेकर समाज में परस्पर प्रेम का रिश्ता बना हुआ है। आपने भोजन में मनुहार सुना है, हमारे यहां तो तालाब, कुएं और कुई पर पानी निकालने को लेकर भी 'मनुहार' चलती है - पहले आप पानी लें, पीछे हम लेंगे। पानी ने सामाजिक संबंध जोड़ कर रखे हैं हमारे यहां। इसलिए देश के अन्य भागों में जब पानी के कारण सामाजिक संबंध टूटते दिखते हैं तो हमें बहुत ही बुरा लगता है।

मराठवाड़ा ने कुदरत से पानी थोड़ा

कम पारा पर गने की खेती अपनाकर भुजल का दोहन कर लिया। अब एक ही कुएं में तल पर चिपका पानी और उसमें सैकड़ों बाल्टियां ऊपर से लटकती मिलती हैं।

### कहीं बाढ़, कहीं अकाल

पानी कहाँ कितना बरसता है, यह प्रकृति ने हजारों साल से तय कर रखा है। कोंकण में, चेरापुंजी में खूब तो जैसलमेर में काफी कम। पर जो जहां है, वहां प्रकृति का स्वभाव देखकर यदि समाज चलाने की योजना बनाई गई, सरकारों की बातें नहीं सुनी, लालच नहीं किया वह समाज पानी कम हो या ज्यादा, रमा रहता है। यह रमना हमने छोड़ नहीं है।

(लातूर में जलसंकट को देखते हुए यह अलेख रामगढ़ के किसान चतरसिंह जाम ने जलविद् अनुपम मिश्र को भेजा था, पत्रिका को यह अलेख मिश्र से प्राप्त हुआ।)



AGRICULTURE

# A River Comes to the People

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Nanduwali in east Rajasthan started flowing again when the villagers decided to work with nature and not against it. The river is now lifeline to those settled on her banks.



A temple and a small pond at the origin of Nanduwali.

Gajanand Sharma is excited about the monsoon this year. He is building an anicut on the small stream that runs through his farm. “After the rain, the land will be filled with water and then I will sow wheat and reap record production in this area,” he prophesies. This forecast doesn’t come from his knowledge of astrology, but that of geology, gained over the years.

Anicut is a cement wall erected perpendicular to the natural flow of a river or a stream. The excess water overflows the walls while the water it can hold, gradually seeps down the earth, raising the groundwater level and replenishing wells. The water also brings fertile silt from upstream, enriching the land beneath it. This monsoon, Sharma's farm at Ghewar village on the southern edge of Sariska Tiger Sanctuary in Alwar district of Rajasthan will witness this. The anicut will also recharge over a dozen wells downstream; the reason why the neighbouring farm owners too have chipped in with labour and finances.



Gajanand Sharma (with bucket) builds an anicut on his farm to humour water.

Besides anicuts, the region has several *johads* (ponds), *medhbandhi* (farm bunds) and a rich forest, that turn 20 villages in a radius of 160 square kilometres water surplus. The most evident indicator of the ecological wealth here is Nanduwali, the river which had gone completely dry once, but filled up again after the water table rose and seeped into its channels.

### **When it was worse**

There was a time when these farmers believed that crops grow only with the rainfall on their farms and in wells. They had little knowledge about the underground movement of the water and how that can be enhanced.



“We were heavily dependent on rain and were reaping very little harvest. Only one third of the land could be cropped. Wells would dry up frequently forcing us to migrate to earn a living,” recalls Sharma who spent five years in Delhi doing odd jobs.

The condition of the lower caste families was worse. They either had no land or an infertile patch allotted from the common land that belonged to the village. The women would walk 2.5km to Nandoo village, which had more upper caste families, who gave them butter milk in return for managing animal waste. Men would work on others’ farms and get a small share of whatever grew in the good monsoon year. Those with fields and livestock also saw difficult times forcing them to sell their buffaloes because they could not afford to feed them. Huge money had to be spent on the transportation of fodder. Many families replaced the buffaloes with goats.

Today, Ghewar is dotted with *pucca* houses, good strength of livestock and abundant vegetable farms. A tourist resort has also come up on the outskirts offering rural life experience to the city looking for a break from the urban life. Water is available at 40-50 feet despite the monsoon deficit of over 40% last year.

But it’s not just about the water-harvesting structures or the wealth attained that make Ghewar and surrounding villages unique. Had it been so, many regions in Rajasthan have seen a spurt of watershed-management activities and subsequent growth in agriculture. But the real test takes place when these structures break down and the financial support withdrawn.



The water is available at a depth of 40-50 despite 2015 being a dry year.

### **Beginning of a change**

Brothers Kunj Bihari and Satish Kumar from Nandoo village wanted to make their region water surplus. But the weak local economy and a divided society were the biggest barriers to their aspiration.

“Despite being a local, it took me one year to gain the confidence of the people. Even though johads are heritage of this region, the loss of traditional wisdom made people doubt if building johads and conserving the forest can assure more water in the wells. The real task was to make all castes sit and work together,” says Kunj Bihari.

Another challenge was to make the villagers self-reliant. Sambhaav Trust, which supported the work initially, was clear that the society has to partly fund the rejuvenation work. The villagers did not have money to contribute, but they chipped in with labour as part of their 25% share.

The good result yielded from the first johad built in Ghewar village helped. “In the first year, the water level of a well near the johad went up by 50 feet. This was real evidence of what we had been trying to explain. Once they started trusting us, all social boundaries were broken because everybody wanted to prosper. They were ready to meet all conditions,” Kunj Bihari



says.

The brothers also depended a lot on the knowledge of the elderly, who recalled the systems once prevalent to connect the society with nature. In the past, the full moon and the new moon days were always kept for volunteer work which included strengthening johads or tree plantation. “We revived these traditions along with physical work. After all these years, everybody has realised the connection between social unity, ecology and farm production,” Kunj Bihari says.

### **Reconnecting with tradition**

New red leaves are sprouting out of *Dhaak* (*Butea monosperma*/flame of the forest) trees but the canopies of *Kadam* (*Neolamarckia cadamba*), *Dhonk* (*Anogeissus pendula*) and *Khejri* (*Prosopis cineraria*) are mature enough to merge and shield us from the harsh summer sun. Peacocks raise a ruckus as we drive towards the Hanuman temple in Jahaj region, north of Nandoo. The unmetalled road, full of rocks and shrubs, give way to moistened earth until it merges with water. This is the point of origin of Nanduwali river, which nourishes the farms and the wells of several villages in the region. Around 20 small streams join the river in its onward journey towards Manglasar dam.

It’s difficult to imagine today that the whole stretch was once dry, but easy to comprehend why it’s flowing again. There was no plan to revive Nanduwali, but nature responded positively to the conservation efforts of the villagers.



Revival of traditional customs helped conserve trees.

In bygone times, the region used to have forests and grazing areas demarcated for specific purposes. If *Dev Bani* was a sacred grove never to be damaged, *Rakhat Bani*, a protected forest area, was to be used only during droughts. *Kaankar* was a forest area that separated the two villages and *Charagah* was the area for pasture. *Dharadi pratha* was another custom in which every caste had a sacred tree species. “Our caste has Khejri as its dharadi. We would pray to it on auspicious occasions, plant and nourish more of it and won’t allow anybody to harm it in front of us,” Kunj Bihari says.

In these villages, all these traditional practices were revived and special forest-protection committees were formed which penalised those who disobeyed the rules. This put a halt on the corrupt forest officials who allowed the villagers to cut trees in exchange for grains and ghee.

Thankfully, nature responded very well to such efforts. Today, there is little revenue land which is not covered by trees. *Pipalvani* is a stretch with hundreds of young pipal trees protected by the villagers. “More than plantation, it’s the protection from grazing that has helped with the green cover. Once villagers recognised the connection between forest, water and farming, they were willing to work with nature,” Kunj Bihari says.



A credible indicator of this transformation is that while the out migration has stopped, the in migration has started. Many people from villages as far as 50km, are taking fields on lease here. “Now only youth go out for higher education or jobs. It’s different from compulsive migration for survival 20 years back,” Kunj Bihari says.

There are 15 families of Raika community in this area. Raikas are nomadic camel herders at the bottom of the caste hierarchy living on whatever they get through occasional selling of camels. But they are now settled here and grow vegetables, wheat and mustard on 20 bigha of land which fetch them good money. “The land had no irrigation source earlier, but the construction of a johad nearby raised the water table. Now we have wells which irrigate the crops throughout the year,” says 30-year-old Jai Singh Raika. Buffaloes have replaced the camels and the community has pucca houses now.



Children of Raika community go to school while their parents tend to vegetable farms (in the background).

### **The resilient society**

Gradually, when water conservation improved the agriculture production, the locals took over the financial responsibility. For the last three years, Sambhaav Trust has not spent money on the anicuts and johads that are being built.

The locals build and maintain these structures, and protect forests on their own while Kunj Bihari acts as a technical guide, whenever the need arises. “Everybody is an engineer here. They not only know about the surface and the underground trajectory of water, but also the components of structures that can be built,” Kunj Bihari says.

This knowledge has also led to better monitoring of government works as villagers are aware of the discrepancies in accounts and engineering. “Many times, the work done under the rural job scheme is of bad quality. Once we started objecting to that, not much work gets sanctioned for our villages. We are happy with that. At least public money is not being wasted,” says Sharma.



Kunj Bihari (right) with a farmer on his well.

The success story has travelled far and wide. Today, both Satish and Kunj Bihari are guiding the neighbouring regions in similar efforts. Just like Nanduwali nourishes the fields and the lives on its course, the people living on its banks are empowering others with their knowledge.

*The article originally appeared (<http://www.indiawaterportal.org/articles/river-comes-people>) in India Water Portal (<http://www.indiawaterportal.org/>). You can read the article here (<http://www.indiawaterportal.org/articles/river-comes-people>).*