

ALTERNATE APPROACHES TO LIVELIHOOD ENHANCEMENT IN RURAL AREAS



Water Harvesting Project District Phagi, Rajasthan

First Impact Report
October, 2016

By


advit foundation
www.advit.org

Submitted to


Anandana
Coca-Cola India Foundation™

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1. BACKGROUND

Groundwater is the major source of irrigation and drinking in the rural areas of Rajasthan. Being an important and integral part of the hydrological cycle, its availability depends on the rainfall and recharge conditions. This is a dependable source of uncontaminated water. The detailed study conducted by Advit Foundation revealed that the entire area including the belt of selected villages is possibly the driest part of the Jaipur district. The area is suffering from a disproportionately poor availability of water, loss of tree cover and very high fluoride content (80%). The situation has worsened over time due to a rapid increase in use-related parameters.

The primary source for groundwater recharge is the scanty and uncertain rainfall, confined to just two months of the year. The area can be categorized as semiarid, which implies that the area is suffering from recurrent water scarcity.

The rainfall in the area is not only inadequate, but also varies sharply from year to year. Consequently, droughts are now almost a normal occurrence. Fluctuations in rainfall influence both surface and ground water availability. The water balance analysis of the area indicates a moderate recharge of only 14%. Due to the dry climate, the evapotranspiration losses are very high (57%). The excessive pumping of groundwater is one of the major reasons for low water levels in the area. The volume of seepage (6.67 %) is also very low due to the structure of the soil. The analysis of monthly rainfall and monthly evaporation data indicates that there is a small period when the evaporation is lesser than the rainfall (mid-July to end-September). This is the period when maximum harvesting of rainwater should be done to increase the groundwater charging. The water stored in water harvesting structures can reduce the pressure on ground water resources.

This scenario indicated that the area requires immediate attention for taking up water harvesting.

Reference to the baseline survey conducted and implementation plan prepared 5 villages were identified where water storage structures would be constructed new or existing ones renovated. Summary is as below.

Name of village	Activity	Existing size (L*B*H* in m)	Proposed size (L*B*H* in m)
Awandia	New pond - at the downstream of nayasagar dam in the west side of the village	-	300 x 20 x 4
Sultania	Deepening - of existing water channel. Located upstream of	1500 x 2 x 1.5	1500 x 5 x 2.5

	village between Awandia and Sultania		
Jodinda	Deepening – of existing pond and spill construction on the same. Located outside the village	150 x 20 x 2	150 x 20 x 5
Pachala	New pond . located upstream of village between Jodinda and Pachala	-	150 x 20 x 4
Sawanka bans	Deepening – of existing pond. Located near the village	200 x 25 x 2	200 x 25 x 4

Along with the above said structures in the second phase of the project, roof top water harvesting would be implemented in 5 schools in the same project villages. The stored water in turn would be used for school cleanliness. Separate boys and girls toilets too would be constructed. The schools have been identified. The details are as below.

Village – Sawan ka Bans (Dhani)
Government School Roof Area =2263.79sq ft.

Village – Awandia
Government School Roof Area= 1088.1sqft

Village – Pachala
Government School Roof Area = 3373.92sqft

Village – Pachala (Dhani)
Government School Roof Area= 1076 sqft.

Village -Jodinda- Bhojpura
Government School Roof Area = 4276 sqft

2. PROJECT UPDATE

Water harvesting structures – Construction status

Prior to the rains this year of the 5 structures 3 have been completed. These have been in villages Awandia, Jodinda and Sawan ka baans. The total water storage capacity of 69,000 cum has been created. Though, the proposed and envisaged storage capacity prior to construction from these 3 structures was 46,500 cum.

Information about the water harvesting structures – as on October 2016

Name of village	Activity	Existing size prior to any construction (L*B*H* in m)	Proposed size for construction (L*B*H* in m)	Pond recharge volume		Status
				proposed	achieved	
Awandia	New pond - at the downstream of nayasagar dam in the west side of the village	-	300 x 20 x 4	24,000 cu m	24,000 cu m	Completed
Sultania	Deepening - of existing water channel. Located upstream of village between awandia and sultania	275x2x1.5	275 x 20 x 6	33,000 cu m		Awaited
Jodinda	Deepening – of existing pond and spill construction on the same. Located	100 x 20 x 1.5	100 x 20 x 5	10,000 cu m	15,000 cu m	Completed – final size is 200x50x1.5

	outside the village					
Pachala	New pond located upstream of village between jodinda and pachala	-	150 x 20 x 4	12,000		Awaited
Sawan ka bans	Deepening of existing pond. Located near the village	125x5x1.3	125 x 25 x 4	12,500 cu m	30,000 cu m	Completed - final size is 200 x 50 x 3

Envisaged Impact of the water harvesting structures

Each of these structures directly impacts a population of 3527. Since in each village population from at least 3 more surrounding villages take benefit of water, thereby indirectly more than 31,000 individuals would be benefitted once the water fills in each of the structures.

Brief population details are summarized below.

S.No	Village name	Block	No. of households	Village population	No. of hamlets (~100 households/ av. 5 individuals per house)	Total direct beneficiaries (approx)
1.	Awandia	Phagi	178	1085	1	
2.	Jodinda - Bhojpura	Phagi	241	1345	2	
3.	Pachala	Phagi	235	1268	5	
4.	Sultania	Phagi	302	1863	3	
5.	Sawanka Bans	Phagi	200	1097	2	
	TOTAL		1156	6658	13 (1300 Households/6500 individuals)	2,456 households/13,158 individuals

Benefit to livestock: Each village comprises of about a 100 cattle and 300 – 400 goats there by benefitting about 500 livestock in each village. With adequate water availability there could be increased milk production thereby enhancing the income level.

Impact on cropping pattern: The water retention in the ponds will bring about increased soil moisture when the rain water gets stored. This would in turn improve the crop quality and quantity. However the challenge would be not to increase the number of crops or look at the kinds of crops that are being sown to ensure that water does not get depleted. Additionally, there will be an increase in forest cover due to the improved soil condition which could improve the rainfall in subsequent years.

Community Empowerment: Community groups in each of the villages have been trained to maintain these structures. In case of any upcoming government schemes, the groups will be able to dovetail grants to meet the cost of maintenance of these structures from these schemes in due course of time.

A Few Glimpses

Village Awandia – new structure construction



Construction initiation



Near to Completion

Village Jodinda – deepening widening of existing structure



Construction Initiation



Near to Completion

Village Sawan ka baans – deepening and widening



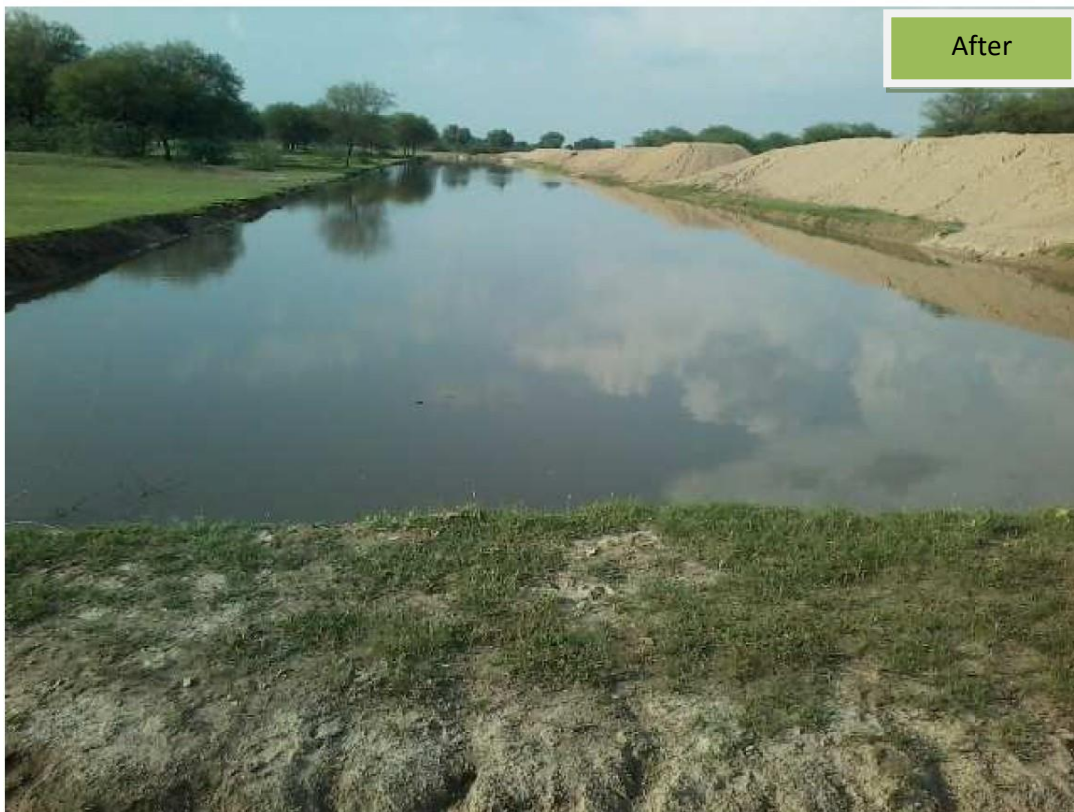
Construction initiation



Near to Completion

Impact after the First Rain

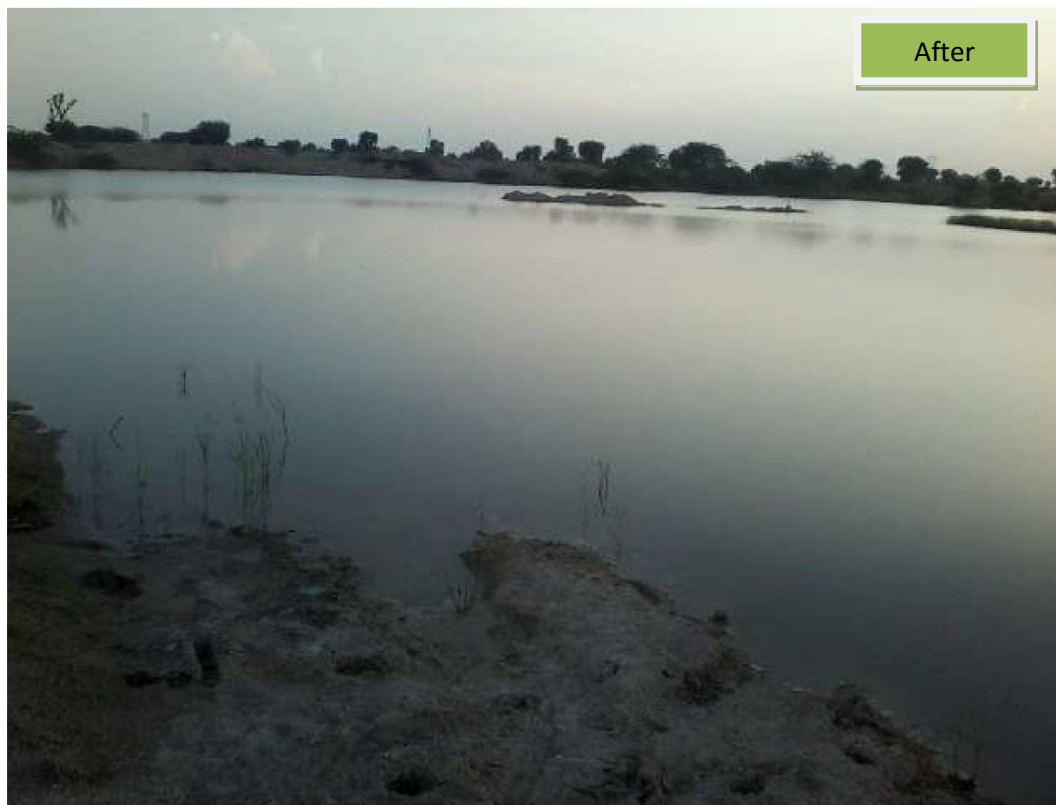
Village Awandia



Village Jodinda



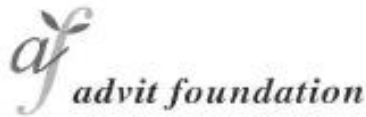
Village Sawan ka baans



Glimpses of inauguration of structures and handover to panchayat



Annexure 1: Permission towards start of work for water ponds



June 17, 2013

To,

The Village Panchayat
Phagi Block,
Pachala Panchyat, Jaipur

Subject: The Permission towards the start of work in Pachala Panchyat villages.

Respected Sir,

This letter is regarding grant of permission from village authority towards the construction and renovation of 5 water ponds in Pachala Panchyat villages, Jaipur. 2 new ponds would be constructed and 3 would be deepened – we seek permission to deepen these structures and make 2 new structures on the decided land area.

Advit Foundation, an NGO based in Gurgaon will be implementing the work in 5 villages - Awandia, Sultania, Jodinda-bhojpura, Pachala and Sawa ka bans.

Enclosed are details of the pond location, present size and the size to which they would be deepened. This work would help more water to be stored in each of these structures and thereby more water would be available to the village communities for their use.

The whole work will be done under the consent of the Village Panchayat.

Thank you.

Regards,

Gaurav Tiwari

A handwritten signature in black ink, appearing to read 'Gaurav Tiwari'.

Advit Foundation
810 A, Udyog Vihar, Phase V
Gurgaon 122016

Village designated authority

1. सरपंच
2. A handwritten signature in black ink, appearing to be the name of the Sarpanch.
3.

Annexure 2: Permission towards start of work in schools



June 17, 2013

To,

The Village Panchayat
Phagi Block,
Pachala Panchyat, Jaipur

Subject: The Permission towards the start of work in Pachala Panchyat village
Schools

Respected Sir,

This letter is regarding grant of permission from village and school authority towards the construction of separate bathroom for boys and girls and rain water harvesting system in each five schools in Pachala Panchyat villages, Jaipur.

Advit foundation, an NGO based in Gurgaon will be implement the work in 5 schools - initiating development work in schools, which help the children in their day to day routine.

The villages we identified to start the work are Awandia, Jodinda-bhojpura, Pachala, Pachala dhani and Sawa ka Bans for the construction of bathrooms and rain water harvesting system in schools.

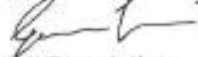
Enclosed are detail of schools name and dimension of rain water harvesting system and bathroom design. This work would help children in their day to day routine.

The whole work will be done under the consent of Village Panchyat and School authority

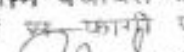
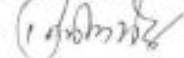
Thanks You.

Regards

Gaurav Tiwari


Advit Foundation
610 A, Udyog Vihar, Phase V
Gurgaon 122016

अवित फाउण्डेशन
सरपंच
Designated authority/ies

1.  जयपुर
2. 
- 3.
- 4.
- 5.

कार्यालय ग्राम पंचायत पचाला

पंचायत समिति फागी, (जिला-जयपुर) राज.

प्रेषक :- श्रीमती भंवर चौधरी सरपंच ग्राम पंचायत पचाला पं. स. फागी (जयपुर) 9828322771	प्रेषिति : _____ _____ _____
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क्रमांक SPL-I

अनापत्ति प्रमाण पत्र

दिनांक 20/6/13..

प्रमाणित किया जाता है कि यदि अद्वितीय फाईलिंग
द्वारा खुदाई कर सार्व. गाडी या एनिकट बनाकर मिट्टी
पाल पर डाली जाती है तो ग्राम पंचायत पचाला
को कोई आपत्ति नहीं है। इसके द्वारा करवाये जाने
वाले कार्य निम्न प्रकार है।

- ① सार्व. गाडी खुदाई सवा का वास
 - ② सार्व. गाडी खुदाई कोडिन्दा भोजपुरा
 - ③ नया एनिकट निर्माण आवडिया
 - ④ सार्व. लालाब खुदाई पचाला
 - ⑤ सार्व. नाला को गहरा कराना सुलतानियां
- सह सब कार्य ग्राम पंचायत की सहमति लेकर
जिर-वाल करवाये गये हैं।

भंवर चौधरी
सरपंच
ग्राम पंचायत पचाला
पं. स-फागी जयपुर