

# Jal Sangraha



*Stories of Water Conservation under Mahatma Gandhi NREGA*



Volume  3





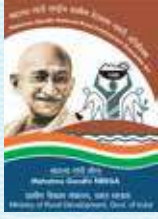












# Jal Sangraha

 Stories of Water Conservation under Mahatma Gandhi NREGA

Volume  3

Mahatma Gandhi NREGA Division  
Department of Rural Development  
Ministry of Rural Development  
Government of India









कृषि एवं किसान कल्याण,  
ग्रामीण विकास तथा पंचायती राज मंत्री  
भारत सरकार  
कृषि भवन, नयी दिल्ली

Ministry of Agriculture & Farmer Welfare,  
Rural Development and Panchayati Raj  
GOVERNMENT OF INDIA  
Krishi Bhawan, New Delhi

नरेंद्र सिंह तोमर

**NARENDRA SINGH TOMAR**

## Message

वर्ष 2014 से भारत सरकार देश में घरेलू, आर्थिक और पारिस्थितिकीय जल सुरक्षा बढ़ाने के उद्देश्य से जल संरक्षण में काफ़ी निवेश कर रही है। महात्मा गांधी राष्ट्रीय ग्रामीण रोजगार गारंटी (मनरेगा) योजना के माध्यम से ग्रामीण विकास मंत्रालय की जल संरक्षण पहल का मुख्य उद्देश्य घटते जा रहे परंपरागत जलाशयों में फिर से पानी भरना, भूजल पुर्नभरण संरचनाओं का निर्माण, नदियों का पुनरुद्धार, वर्षा जल संचयन और अपशिष्ट जल का पुनः उपयोग करना है। मनरेगा के अन्तर्गत ग्राम स्तर पर जल संरक्षण की स्थायी संरचनाओं के निर्माण से करोड़ों ग्रामीण परिवारों के लिए जल संसाधनों की समान और सतत उपलब्धता सुनिश्चित हुई है।

जल संग्रह पुस्तक में समाहित विभिन्न अध्ययन में वर्ष 2014 से हासिल की गई हमारी उपलब्धियों की झलक मिलती है। पुस्तक में उल्लिखित जल-संरक्षण गतिविधियों के माध्यम से ग्राम पंचायतों द्वारा ऐसी परियोजनाओं के कार्यान्वयन में विकेन्द्रीकृत शासन-व्यवस्था की अहम भूमिका का पता चलता है। मैं इस अवसर पर देश की ग्राम पंचायतों के प्रति आभार व्यक्त करना चाहूंगा, जिन्होंने अनेक भारतीय गांवों को गंभीर जल संकट से उबारने में मदद दी है। दरअसल, ये पंचायतें संयुक्त राष्ट्र के सतत विकास लक्ष्यों (एसडीजी) को प्राप्त करने की हमारी प्रतिबद्धताओं को पूरा करने में योगदान करती रही हैं। वर्तमान में जल सुरक्षा सुनिश्चित करना और सभी नागरिकों को सुरक्षित पेयजल उपलब्ध कराना भारत सरकार की सर्वोच्च प्राथमिकताओं में शामिल है। मनरेगा योजना इस अभियान को पूरा करने की दिशा में अहम भूमिका निभाती रहेगी। मैं इस पुस्तक के प्रकाशन के लिए ग्रामीण विकास मंत्रालय के मनरेगा प्रभाग, राष्ट्रीय ग्रामीण विकास एवं पंचायती राज संस्थान के मजदूरी रोजगार केंद्र और अन्य सहभागी संस्थाओं को बधाई देता हूं। मुझे पूरा विश्वास है कि इन मामलों के अध्ययन से सम्पूर्ण भारत में अन्य पंचायतों और राज्यों को भी इसी प्रकार के सफल प्रयोग एवं अनुभव दोहराने की प्रेरणा मिलेगी।

(नरेंद्र सिंह तोमर)







ग्रामीण विकास राज्य मंत्री  
भारत सरकार

MINISTER OF STATE  
FOR  
RURAL DEVELOPMENT  
GOVERNMENT OF INDIA

साध्वी निरंजन ज्योति  
**SADHVI NIRANJAN JYOTI**

**Message**

In the recent past, improved water conservation works under the Mahatma Gandhi NREGS have played a vital role in the rural landscapes by ensuring drinking water, sanitation and increased food production. It has also supported sustainable management of land and water resources. Through employment generation, the Mahatma Gandhi NREGS has created assets for water conservation in convergence with many other government initiatives like Integrated Watershed Management Programme, Pradhan Mantri Krishi Sinchayee Yojana, Forestry, Horticulture etc. The creation of individual assets like the farm ponds, open wells and irrigation channels for small and marginal farmers particularly among the socially marginalized communities has helped them enhance their livelihoods.

The case studies reported in this document highlight some of the best practices in water conservation and farm land management and how they have helped farmers increase their income through extensive cultivation and crop diversification. It may be pointed out that active stakeholder in the water conservation works have been women. For example, the Women Self Help Groups created structures for water recharge in the hilly tracks of Himalayas to create perennial drinking water sources in the valleys. Examples from Uttarakhand show,, that these initiatives have reduced the time and effort women generally spend in fetching water from the valley. I am delighted to learn that the water conservation works under Mahatma Gandhi NREGS have significantly benefited the small and marginal farming communities and rural women who really struggle to eke out a living from agriculture. I congratulate the Mahatma Gandhi NREGA Division at the Ministry of Rural Development and the Centre for Wage Employment at the National Institute of Rural Development and Panchayati Raj and other partner institutions for bringing out these insightful case studies.

  
(Sadhvi Niranjana Jyoti)

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अमरजीत सिन्हा  
**AMARJEET SINHA**



## Message

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Water security can be achieved only when we effectively manage our water resources. Almost a decade ago, it was reported that around 63.4 million rural people faced water stress in India. Issues like pollution of water bodies due to the indiscriminate discharge of wastewater from the industry, agriculture, and household sectors have been reported. The government of India has initiated various policies and programmes to address these issues, in which the contributions of the Ministry of Rural Development through Mahatma Gandhi NREGS in conserving water resources are very significant. It has helped us revive the traditional water bodies and replenish degraded river systems through river rejuvenation activities. Water harvesting and recycling structures were created in many states to improve the adaptive capacity of villagers to the vagaries of rainfall and frequent drought. Large numbers of individual and community soak pits created under the programme have made villages' clean and protected people from various water borne diseases. Today, as a policy, the Ministry spent significant amount of budget for water conservation activities under Mahatma Gandhi NREGS. The best practices of water conservation documented in this book reveals that our effort and resources have generated highly innovative and diversified water structures across the country since 2014.

The case studies also reveal that the water conservation works have not only improved livelihoods but also contributed in augmenting rural ecosystem functions. I congratulate the Mahatma Gandhi NREGS Division of the Ministry of Rural Development and the Centre for Wage Employment at the National Institute of Rural Development and Panchayati Raj for bringing out the case studies in coordination with Indian Institute of Technologies (Kharagpur, Delhi, Mandi), Council for Social Development, New Delhi, Gujarat Institute of Development Research, Centre for Women Development Studies, New Delhi, State Institute of Rural Development, (Mizoram, Tripura, Sikkim), NERC Guwahati and Kerala Institute of Local Administration. I am sure that these case studies on water conservation would not only help us learn and develop new strategies but also help in replicating them in similar contexts.

(Amarjeet Sinha)





## Introduction

This book deals with many water conservation initiatives under Mahatma Gandhi NREGS after 2014. The Government of India allocates significant amount of financial resources for creating water conservation structures for improving water availability and providing access to potable drinking water in rural India. The case studies presented here are a small subset of our initiatives, which throw light on how we addressed the issue of acute water scarcity in many parts of the country. The stories also tell us how it helped augment livelihoods of millions of rural families. Indirect impacts like improved vegetation, retaining of soil moisture, and arresting of soil erosion are also highlighted in these stories.

## Approach

The case studies narrated in this book are originally selected by the state rural development departments. Out of the total 500 case studies and photographs, we have selected 145 case studies for final detailed study. The selected case studies fall into different themes such as water conservation initiatives at individual farms and collective initiatives in common property resources like river rejuvenation, watershed development, check dams and waste water recycling for irrigation. From a spatial point of view, representation of all states, union territories and an alignment with the major agro climatic regions of India also received due attention while selecting case studies. These stories were verified by a team of experts

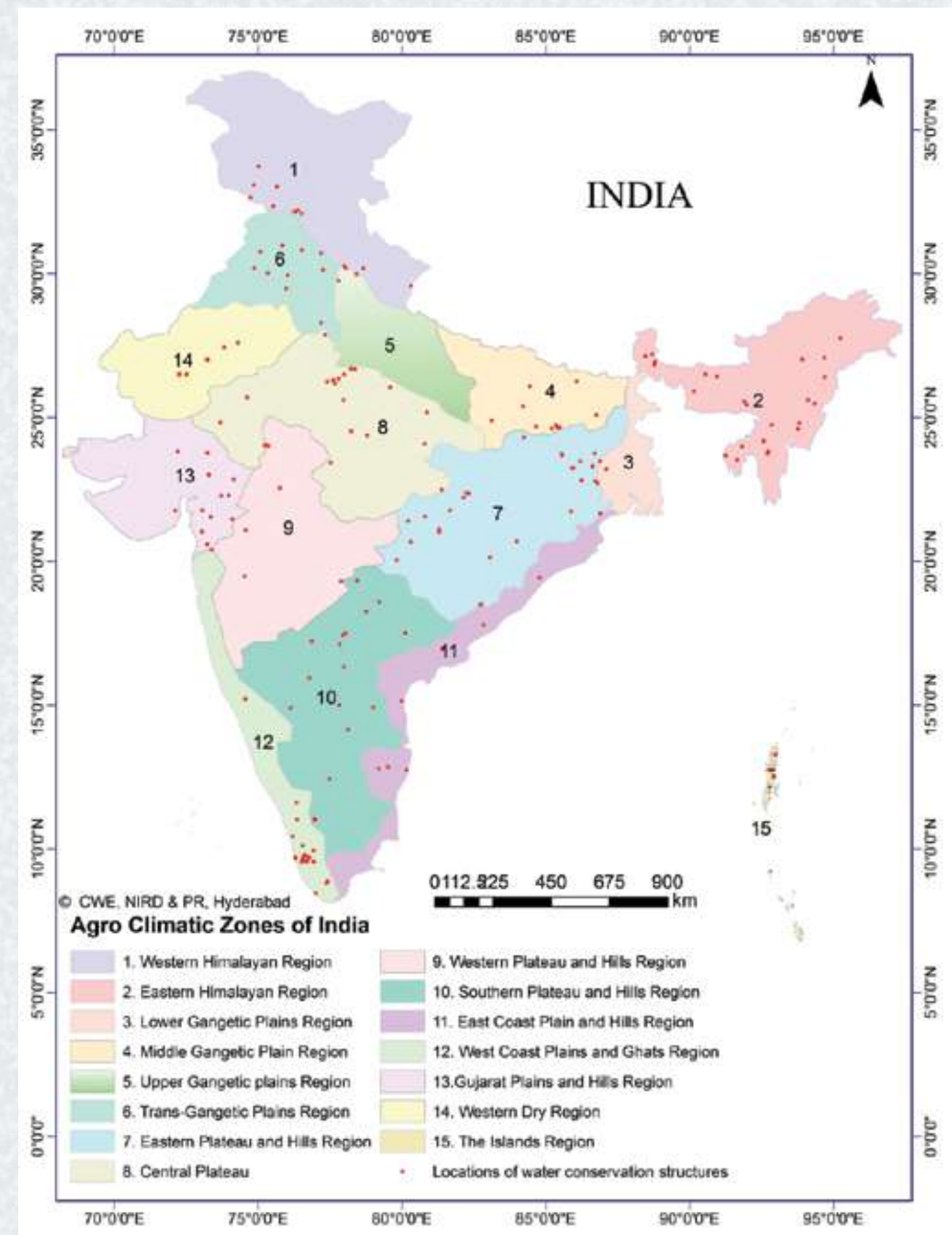


Figure: Locations of Case study across agro climatic regions of India.



for finalisation. The team consisted of technical experts, social scientists and administrators. The final selection and the spread of case studies across agro climatic regions of India is provided in Figure.

Three important criteria were adopted to examine these case studies. First, its relevance and significance in terms of water conservation for addressing domestic, economic and ecological water security, its role in augmenting livelihoods of the people and finally its role in sustaining natural resources of the locality. All water conservation projects are examined in terms of their role in addressing domestic, economic and ecological water security of the locality. The domestic water security includes accessibility and availability of potable water for drinking and other domestic purposes. It is expected that domestic water security ensures not only the drinking needs but also cleanliness and hygiene at household level. It can also have an indirect impact on the nutritional level of the households. The second aspect that was brought into sharper focus is livelihood implication of water conservation particularly by improving farm productivity. For example, extended irrigation facilities by creating farm ponds, introduction of new crops, diversifying agriculture crops, protecting crops at the critical phase of their growth etc. Water conservation also added an economic value to these households by generating supplementary income through fish farming, duck farming etc. It generated scale economy through combo approach in agriculture sector. Finally, the study provided attention on ecological water security while doing these case studies. The role of water conservation in

retaining soil moisture, sustaining vegetation in the area, and also regulating various other ecological functions is also discussed. Raising plantation is an integral part of the water conservation works that directly contributes to the local economy and indirectly to the climate change.

## Implementation of Water Conservation Project and Impact

The stories also touch up on the implementation process of the project, issues faced by villages, factors that triggered water conservation works, and challenges faced during the implementation. It is also important to note that the context of the case studies varies across India depending up on the agro climatic characteristics and topography. As a result, large diversity on creating structures was observed in different parts of the country. For example, when revival of traditional water bodies and watershed works received much attention in the semi arid part of the country, structures for flood control and rainwater harvesting received attention in flood plains and coastal area.

The impact of water conservation works narrated in these case studies brought out both direct and indirect impacts through people's voices. The direct impacts were examined in terms of improved income, employment, hygiene etc, while the discussion on indirect impact is mostly in terms of improved ecosystem functions, individual and social wellbeing etc. As a message, people's voices provided in these case studies reflect the way they perceived these water conservation projects.





## JAMMU & KASHMIR

1. Renovation of *Kulh* Makes Apples and Life Sweeter for Farmers in Kanjikullah ..... 2
2. *Kulh* Renovation—Transforming Fallow Land into Paddy Fields ..... 6
3. How Renovation of a Pond in Smailpur Resulted in Yielding Appreciable Returns ..... 10
4. Micro Irrigation for High Vegetable Yield in Ramgarh Kurmail Panchayat ..... 14
5. Revival of Irrigation Channel in Sungli Brings Cheers to Farmers ..... 18

## HIMACHAL PRADESH

1. Constructing Water Tank to Rejuvenate the Lives of Farmers in Thatharna ..... 24
2. Construction of Additional Tank to Address Water Crisis in Achala Chander Village ..... 28
3. Renovation of Traditional Irrigation System (Kuhl) for the Sustainable Future of Farmers in Jhikli Ichhi Village ..... 32
4. A Simple but Effective Solution for the Economical Upliftment of a Marginalized Farmer: Rainwater Harvesting! ..... 36



## UTTARAKHAND

1. An Old Technique for a New and Better Life, Jamla: Rainwater Harvesting ..... 42
2. Construction of Farm Pond to Enhance the Livelihood of Farmers in Makhdumpur Gram Panchayat ..... 46
3. Creating Khantiyas in Ranchula Village for Sustainable Future ..... 50

## ASSAM

1. Construction of Bund to Prevent Flash Flood and Improve Irrigation in Batakuchi Village ..... 54
2. A Solution to Flood Menace and Achieving Stable Agricultural Production in Bihpuria Village ..... 58
3. Reaping Multiple Benefits by Constructing a Water Conservation Pond in Kachikata Balichapori Village ..... 60

## ANDAMAN & NICOBAR ISLANDS

1. Freeda's Pond of Freedom: Fuelling Aspirations of Development with Water Conservation ..... 66
2. Naw-Shiny's Farm Pond Rekindles Hope for an OBC Family: Creating Livelihood Opportunities in a Remote Village of Andaman and Nicobar Islands ..... 68







## SIKKIM

1. [Reviving Paddy Cultivation Practices in a Flatland by Improving Surface Canal Irrigation](#) 74
2. [Doubling Farm Produce by Proving Individual Water Tanks in Kateng Pamphok Gram Panchayat](#) 78

## MEGHALAYA

1. [Water Conservation in Uphills of Nongthymmai-Lumthangding Transformed the Entire Landscape](#) 84
2. [Water Conservation Through Construction of Check Dam in Pingwait](#) 88

## TRIPURA

1. [Construction of Earthen Check Dams for Rainwater Conservation in Purba Daluchara Village](#) 94
2. [Creating Farm Ponds for Transforming Lives of Marginal Farmers in Matabari](#) 98

## MIZORAM

1. [How a Small Asset Made a Big Difference](#) 104
2. [The Journey of Meidum from Water Scarcity to Surplus Water at the Doorstep](#) 108
3. [Creating Better Storage Facilities and Improving Domestic Water Security in Keifang](#) 112





4.	<u>Boosting Agriculture Yield by Efficient Use of Local Water Sources</u>	116
----	---	-----

5.	<u>Enhancing Crop Yield Through Community Water Harvesting Tank in Sihphir Venghlun</u>	120
----	---	-----

## **MANIPUR**

1.	<u>Eradicating the Hardship of the Residents of Chingmai Khunnou by Constructing Rainwater Harvesting Structure</u>	126
----	---	-----

2.	<u>The Construction of Stop Dam Puts an End to a Long-Standing Issue of Water Scarcity in Nachou Gram Panchayat</u>	130
----	---	-----

## **NAGALAND**

1.	<u>Restoration of an Abandoned Water Channel for Better Lives</u>	136
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JAMMU & KASHMIR



# RENOVATION OF KULH MAKES APPLES AND LIFE SWEETER FOR FARMERS IN KANJIKULLAH

## Introduction

Most of the households in Kanjikullah village of Kulgam District in Jammu and Kashmir depend on horticulture crops like apple, pear and orange for their livelihood. Apple is the dominant crop that constitutes the main source of income. A variety of apples that are produced in this village fetch higher prices as they are delectable. The village has about 400 kanals of apple orchards, and these orchards are irrigated by a traditional irrigation system called "Kulh". Over a period of time, the continuous accumulation of silt and encroachments turned this "Kulh" into a dead stream. This ultimately reduced the volume of the water flowing through the channel. The income of the villagers was also adversely affected as the production of apples dropped down. To resolve the issue, a demand was made by the villagers to renovate this channel in order to ensure regular supply of water to the apple orchards.



RURAL DEVELOPMENT DEPARTMENT  
MGNREGA 2018-19  
BLOCK BEH BAGH  
WORK NAME - IRRIGATION CHANNEL WITH KING POND  
MOHD. AMIN TO GH. HASSAN AT KANJIKULLAH  
WORK ID - 1C/BB04 909 4 6  
PROJECT ESTIMATE - IN LAKHS 3.00 LAKHS  
START DATE OF WORK - 12/02/2019  
END DATE 30/03/2019  
LABOUR AND MATERIAL COMPONENT - 209994/  
MC - 89978  
NO. OF PERSON DAYS - 1129 DAYS  
UNIT OF MEASUREMENT - RS.105  
DAILY WAGE RATE - R D D  
EXECUTING AGENCY - MGNREGA  
SCHEME - PANCHAYAT Sec. 16RS 76893322





## Implementation

Taking the villagers' demand into consideration, the Gram Sabha of the newly elected Gram Panchayat passed a resolution for the renovation of the "Kulh" of the entire channel in two phases during 2018–2020 at a total cost of Rs. 5.86 lakhs (Rs. 4.07 lakhs was spent on material component and Rs. 1.79 lakhs on wages). Out of the total 1,800 ft of the channel, 440 ft was renovated of which 220 ft covered the mouth and this was enough to ensure an adequate flow of the water. As a result, the water supply to the apple orchards improved drastically.

A major challenge of the construction work was the acquisition of land, as the villagers encroached upon the channel for their kitchen gardens. Villagers were initially reluctant to part away even a small fraction of land for irrigation channel. However, Gram Panchayat persuaded them to part away with the required land for the renovation of the channel by explaining the benefits of the renovation work.







## Impact

After completion of this work, about 50 acres of apple orchards has been irrigated through this channel, and this is a godsend for the farmers in Kanjikullah village, who are now earning better returns. One canal is supporting 30-40 trees, with each tree producing 50-60 packets of apples, and each packet is sold at a price of Rs. 1,400, generating a revenue of Rs. 2-3 lakhs per season on average. Another important benefit of this work was the prevention of flash floods and soil erosion. Most of the beneficiaries are now providing irrigation to their kitchen gardens, which are located all around the channel. More than 100 households from four surrounding hamlets, viz. Kanjikular, Kokargund, Katpora and Brihard, have benefitted from this channel.





# ***KULH RENOVATION—TRANSFORMING FALLOW LAND INTO PADDY FIELDS***



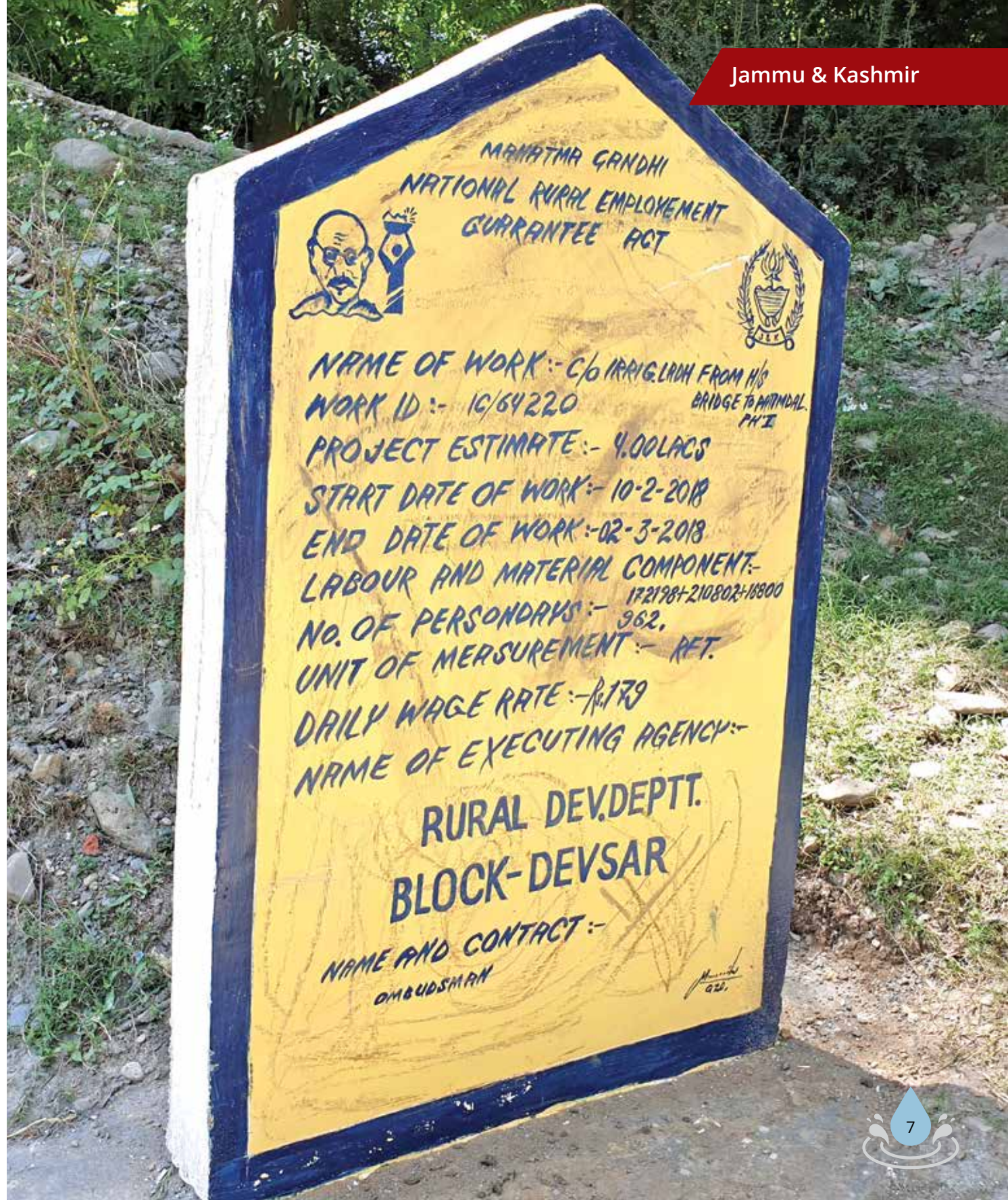


## Introduction

Chowgam Halqa Panchayat is located in Kulgam District of Kashmir Valley, and it is blessed with exceptionally fertile land and abundant water. A channel of the Irrigation Department provides irrigation to 200 hectares of paddy field in four villages. The channel had silted and was not cleaned for the last 3 years, thereby adversely affecting the livelihood of the local paddy cultivators. People were demanding that the irrigation channel be desilted and the flow of water should be restored through the channel. Newly elected Gram Panchayat discussed with villagers regarding the issue and came up with the idea of using water from the nearby Lamri River that flows by the village and renovating the traditional irrigation channel "Kulh", in order to bring water to the paddy fields.

## Implementation

Reclaiming encroached land from the villagers was a challenge faced by the authorities. In addition, the villagers were reluctant to provide land for distributary *Kulh*. The authorities, however, convinced them to give away a portion of their land for the construction of the *Kulh*. The Gram Panchayat also prepared plans for the construction of a bund across the river to divert water to the channel and renovate the "Kulh" to provide water to the paddy fields. As per the estimation, this "Kulh" could cover four villages having approximately 2,000 households. An area of nearly 600 sq ft was renovated with reinforced cement concrete (RCC) in two phases at a cost of Rs. 5 lakhs during the FY 2017–2019.









### *Impact*

*After the desilting of "Kulh" and construction of the bund, about 52 hectares of land is brought under paddy cultivation while about 150 kitchen gardens are getting irrigated. This has directly benefitted 150 households who had initially shifted from paddy to maize due to the lack of assured irrigation. Now, they have reverted to paddy cultivation. In addition, the farmers are also cultivating rabi crops.*



# HOW RENOVATION OF A POND IN SMAILPUR RESULTED IN YIELDING APPRECIABLE RETURNS

## Introduction

Smailpur is a small village located in Purmandal block in Samba District of Jammu. The major source of water in the village is a huge common pond, which is used mainly for harvesting rainwater, providing drinking water to domestic animals and recharging the groundwater of surrounding area. There are two temples on the banks of the pond so people visiting these temples take bath for rituals. Due to the lack of maintenance and the heavy pressure of water during the rainy season in 2018, a considerable portion of the bank was washed away. Consequently, people suffered a lot in summer as the pond dried up. To tackle the situation, a demand was made by the villagers to repair and renovate this pond. The Gram Sabha recognized the proposal and passed a resolution for undertaking repair and renovation of this pond.



## Implementation

A major challenge during construction is reinforcing the sidewall so that it does not get washed away. To strengthen the bund, boulder pitching was built, providing inlet for charging of the pond and outlet for releasing excess water. The renovation was implemented during 2019–2020 at a total cost of Rs. 9.75 lakhs (Rs. 1.14 lakhs from Mahatma Gandhi NREGS and Rs. 8.61 lakhs from IWMP) by the Gram Panchayat in convergence with the Integrated Water Management Programme (IWMP). The villagers also contributed to the beautification of the pond by constructing platforms on the bank of the pond so that people can sit during religious congregation.







### *Impact*

*After the renovation of this pond, its storage capacity has increased significantly. Around the pond, there are more than 100 households with agricultural land; they have benefitted directly due to the groundwater recharge. As water is available throughout the year, this pond is also being used as a source of drinking water for cattle and other animals.*







# MICRO IRRIGATION FOR HIGH VEGETABLE YIELD IN RAMGARH KURMAIL PANCHAYAT



## Introduction

Ramgarh Kurmail Panchayat on the bank of the Chenab River is located on the hills of Doda District. Most of the villagers in the area cultivate vegetables. However, the unavailability of proper irrigation facilities affected the vegetable production. Although there are many water bodies, about 500 *kanals* of agricultural land was dependent only on rains. Even though there was a perennial spring at the hill, it was not accessible to the farmers. To overcome the situation, a demand was made by the villagers to provide assured source of irrigation to their fields. As a response to the demand of villagers, the Gram Sabha decided to pass a resolution for the construction of an irrigation channel under Mahatma Gandhi NREGS.

## Implementation

In 2015, the Gram Sabha passed a resolution for the construction of irrigation channel in Ramgarh Kurmail Panchayat. The irrigation channel along with its distributaries was constructed in six phases during 2015–2018 at a total cost of Rs. 20 lakhs that included the construction of an underground channel through NH 1B. The length of the main channel is more than 1 km. Water is tapped at the hill and brought to the field through underground and open channels. However, due to the complexities in the design and execution of the work, the Department of Rural Development and Panchayati Raj implemented the work.

The acquisition of land for construction of the channels from the small and marginal farmers was challenging, as they were reluctant to part away with even a small parcel of land. The Block Officials and Gram Panchayat worked very hard to persuade the villagers to provide land for the construction of the channel and its distributaries. The next big challenge was to pass the channel under the ground through the NH 1B. The final challenge was that the fields were spread over such a wide area so there was a need for the construction of many distributaries.







## Impact

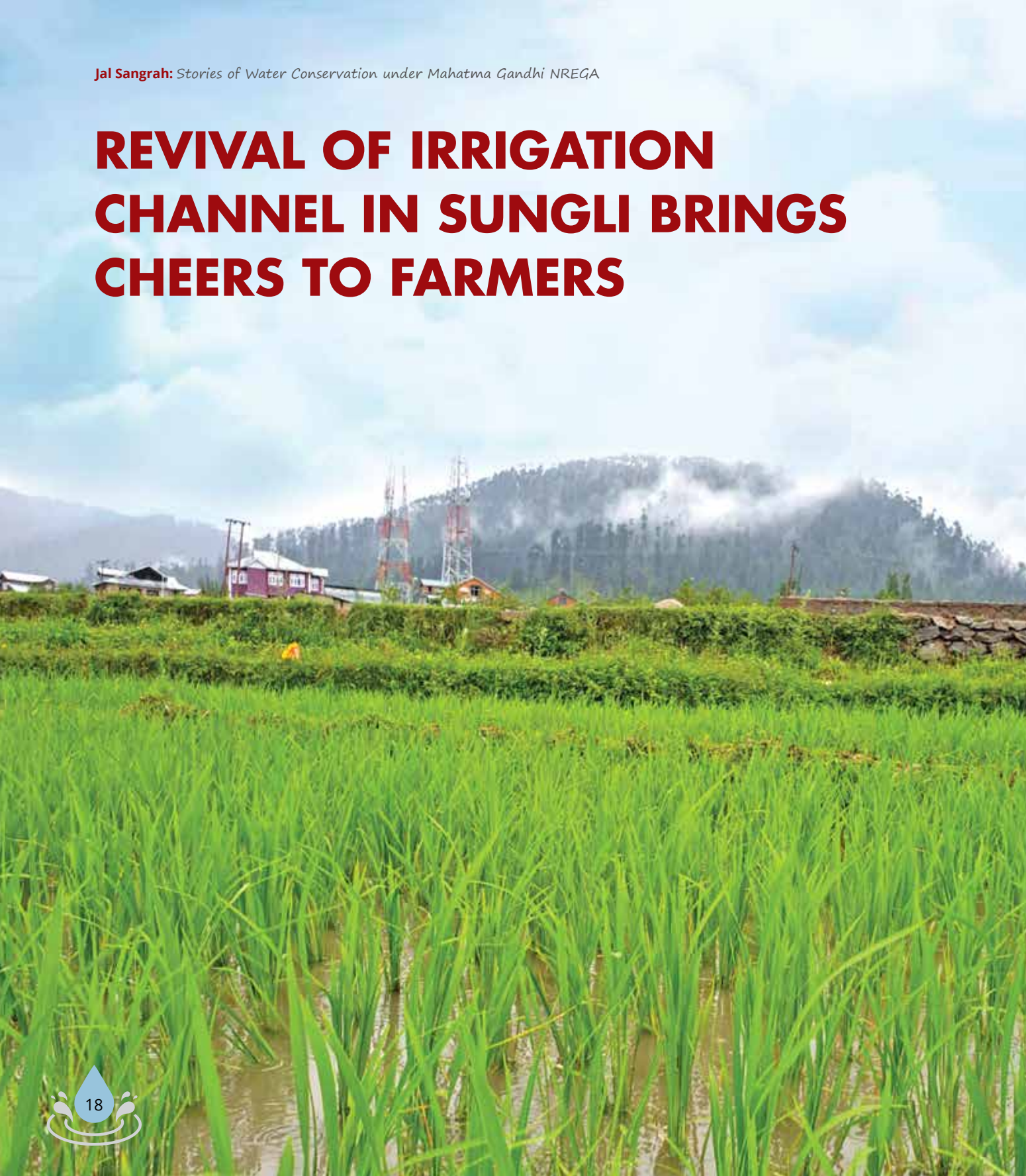
*The construction of this irrigation channel directly benefitted 600 people. Initially, a considerable amount of water flowing down from the Chenab River was being left unutilized for agriculture. However, now this channel is providing irrigation to 25 hectares of land belonging to small and marginal farmers, resulting in intensive cultivation of multiple crops. Earlier, the farmers were able to grow only a single crop of vegetable in the rainy season, but now, they are able to grow double crops in monsoon as well as in winter. Overall, the earnings of the farmers have increased three times. Most of the farmers are earning on an average of Rs. 2.35 lakhs per annum. The total value of vegetables and crops grown by this irrigation channel is approximately Rs. 2.12 crores.*







# REVIVAL OF IRRIGATION CHANNEL IN SUNGLI BRINGS CHEERS TO FARMERS



## Introduction

Sungli Gram Panchayat is situated near Bhaderwah in Doda District, and hills surround it from three sides. The villagers of this GP were practising rainfed agriculture and monocropping. A perennial natural stream called *Puneja Nallah*, not far away from these paddy fields, flows down to the Chenab River. Earlier, there was a traditional channel for irrigation, but over time, it lost its way due to encroachment and construction of houses. Due to this, the paddy field on the other side of the road faced shortage of water. There arose a demand from villagers for reviving this channel for assured irrigation by tapping water from *Puneja Nallah*.





## Implementation

A channel of a total length of 110.50 m was reconstructed in two phases during 2015–2016 and 2017–2018 at a cost of Rs. 6 lakhs with its mouth in perennial Puneja Nallah, and the Gram Panchayat executed the work successfully. A major challenge faced by the implementing agency was the acquisition of land from private individuals. This was particularly difficult since the price of land in the area was quite expensive. The villagers were initially reluctant to part away with land, which was required for the construction of the channel. Also, a certain path of the channel has to be constructed through the houses. Therefore, there was greater reluctance. After much persuasion by the GP and officials of the block, they parted away with the required section of land.







## Impact

*Around 160 households from four villages, namely, Dareja, Puneja, Sungli and Bhaderwah of Sungli GP, have benefitted from the construction of this channel. An additional command area of 15 hectares is now provided with irrigation for paddy cultivation. People in this area cultivate Geeza (a local variety) and Chinese and Japanese varieties of paddy.*

*Before the construction of this channel, people were cultivating only a single crop of maize during the rainy season. Now they have shifted to paddy cultivation. The yield of paddy has doubled from 2.5 quintals per kanal to 5 quintals per kanal now. This has ultimately resulted in significant increase in the income of the beneficiaries.*







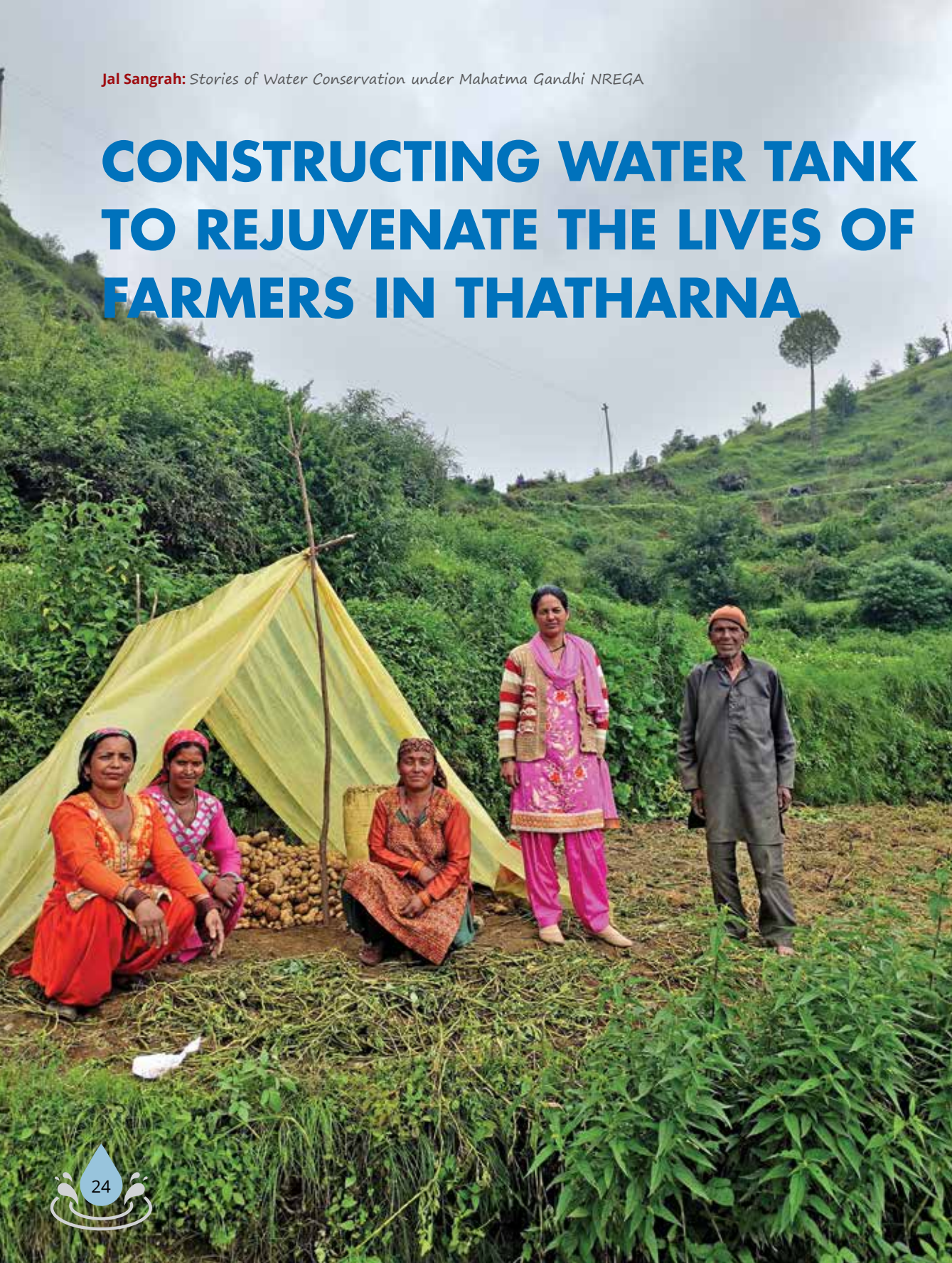


# HIMACHAL PARADISE





# CONSTRUCTING WATER TANK TO REJUVENATE THE LIVES OF FARMERS IN THATHARNA





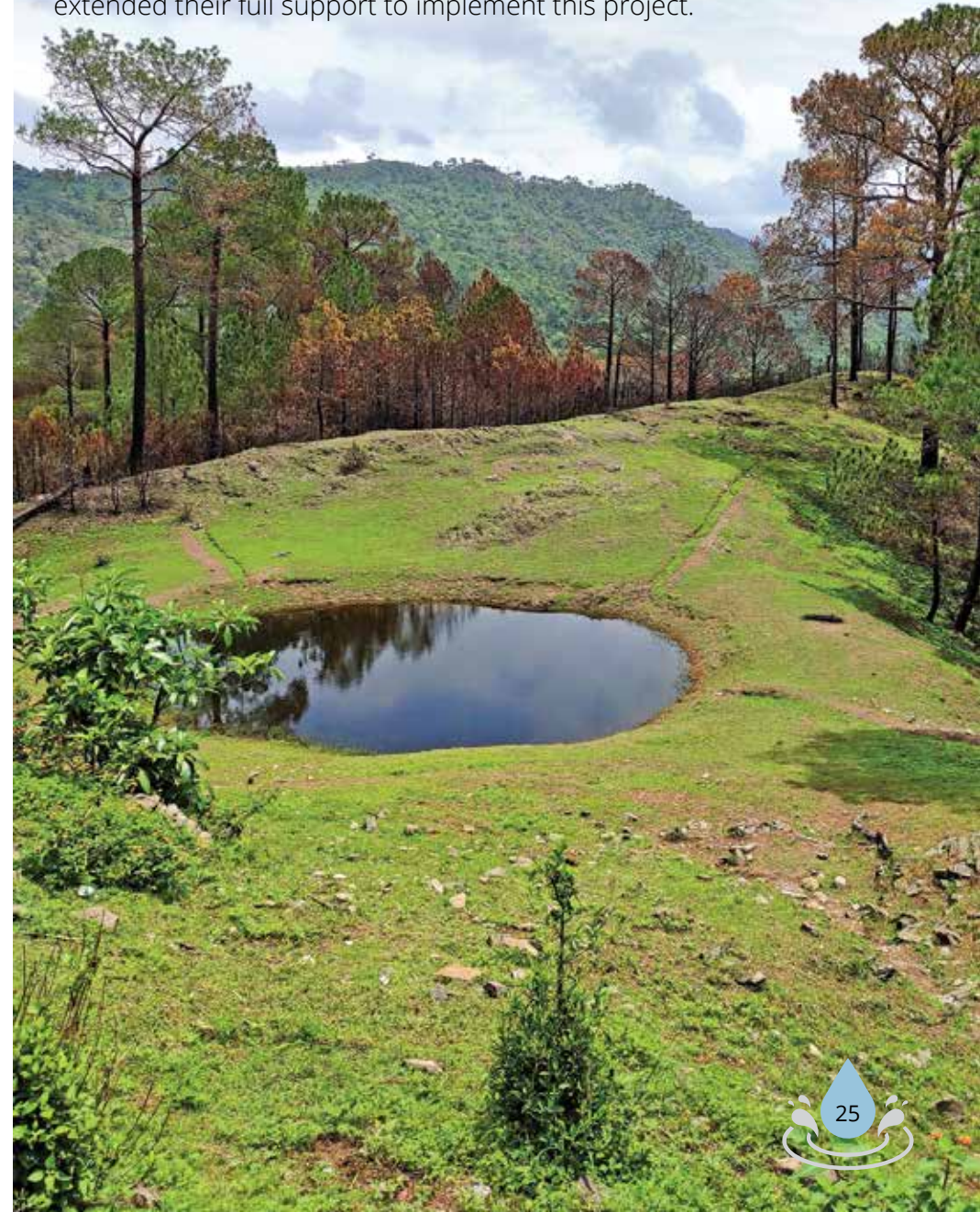
## Introduction

Thatharna is a small village in Sangrah block in Sirmour District, and it is located at an elevation of 3,647 m above sea level in the Churdhar range. The area receives high rainfall and snowfall, which adversely affects farming. Further, the terrain is very steep and hilly, which makes farming a very tough venture. Around 90% of the villagers depend on agriculture for their livelihood. Despite receiving a sufficient amount of rainfall, the villagers were unable to effectively use the water for irrigation because of lack of water storage facility. Therefore, the panchayat decided to construct a new water tank.

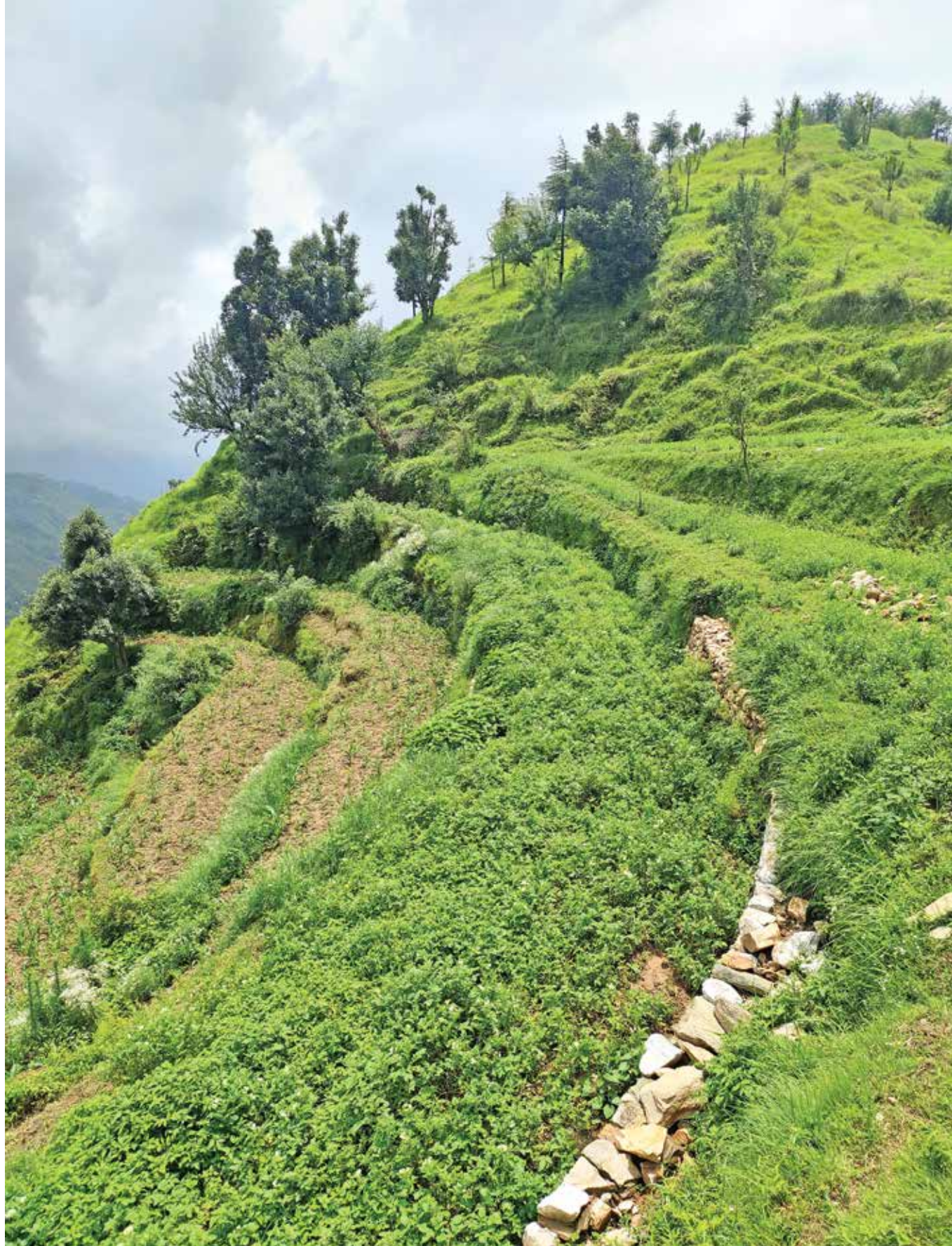


## Implementation

The GP carried out the construction of water tank with a storage capacity of 1,32,940 litres during the financial year 2018–2019 at a total cost of Rs. 5 lakhs (Rs. 97,000 for wages and Rs. 4.03 lakhs for material). After knowing the benefits of this project, the villagers extended their full support to implement this project.









## Impact

After the construction of the irrigation tank, the farmers in the village are now able to cultivate a variety of vegetables throughout the year. The production of crops and vegetables has also increased. About 40% of the fallow land was brought under cultivation and almost 25 families have benefitted by this intervention. The other benefits include increased soil fertility, availability of water throughout the year, increased agricultural productivity, etc.



*“The water tank which was constructed here is very useful. Our condition was very pathetic without any proper water source. People are happy, and the benefits of this scheme of Mahatma Gandhi NREGS must be given to other people too, who are facing difficulties regarding irrigation. I thank the Gram Panchayat who has brought this scheme to us”.*

—Shri. Jaipal, Farmer

*“We are benefitting greatly after the construction of this tank. Cultivating potatoes was a distant dream earlier, but now we are exporting potatoes to Chandigarh. We had to travel afar in search of water, but now after the construction of this tank everything is good and water is accessible”.*

—Smt. Asha Devi, Resident



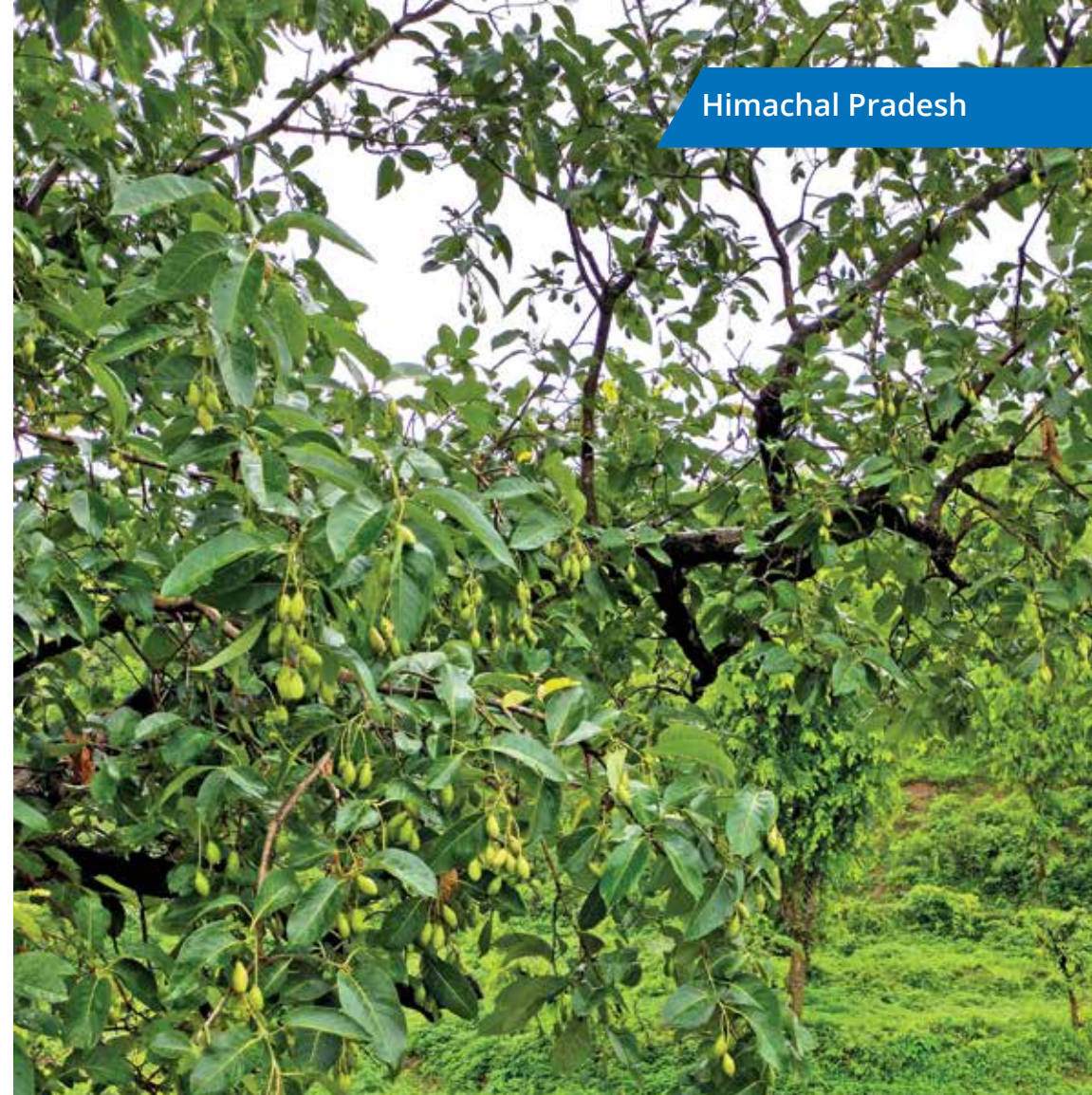
# CONSTRUCTION OF ADDITIONAL TANK TO ADDRESS WATER CRISIS IN ACHALA CHANDER VILLAGE





## Introduction

Achala Chander is one of the remote villages located in Sirmour District. The village is known for producing a medicinal herb called “Chebulic Myrobalan”, also known as “Herde” in vernacular language. Most of the inhabitants are poor and also face acute water scarcity in winter and summer seasons. Women and children travel long risky hilly paths to fetch drinking water. Farming remained less productive and lots of land remained as fallow. Therefore, it was proposed to construct two irrigation tanks in the village under Mahatma Gandhi NREGS.



## Implementation

The Gram Panchayat had constructed an irrigation tank with a storage capacity of 65,000 litres for the villagers in 2015–2016 at a cost of Rs. 3.5 lakhs. In addition to this, another tank was constructed in November 2018 with a storage capacity of 1,14,000 litres, which is circular in shape, at a cost of Rs. 5 lakhs (Rs. 1.13 lakhs for wages and Rs. 3.87 lakhs for materials). Water from Rajyon Nala is drawn through pipes to these tanks. The piping work was arranged through other resources.



## Impact

*Almost 25 families have benefitted from this water tank. Because of the availability of water, people started cultivating more, and a notable change in the cropping pattern was also observed. The farmers also started to cultivate vegetables. The implementation of work led to a reduction in the time spent by women and children in collecting water for domestic purposes.*





*“With this water tank, we are able to cultivate crops for the entire year which was not possible earlier. Earlier, there was a tank but it did not help us, so we requested the panchayat officials that the second tank should be constructed with more capacity. After the construction of the second tank, we are able to avail a lot of benefits”.*

**—Smt. Sheela Devi, Resident**

*“Our village was dry earlier, we got access to some water from 2015 to 2016, but this water was not enough for agriculture. Now, this new tank has been built and we are able to grow cash crops, which has enhanced our financial status”.*

**—Shri. Beliram, Farmer**





# RENOVATION OF TRADITIONAL IRRIGATION SYSTEM (KUHL) FOR THE SUSTAINABLE FUTURE OF FARMERS IN JHIKLI ICHHI VILLAGE

## Introduction

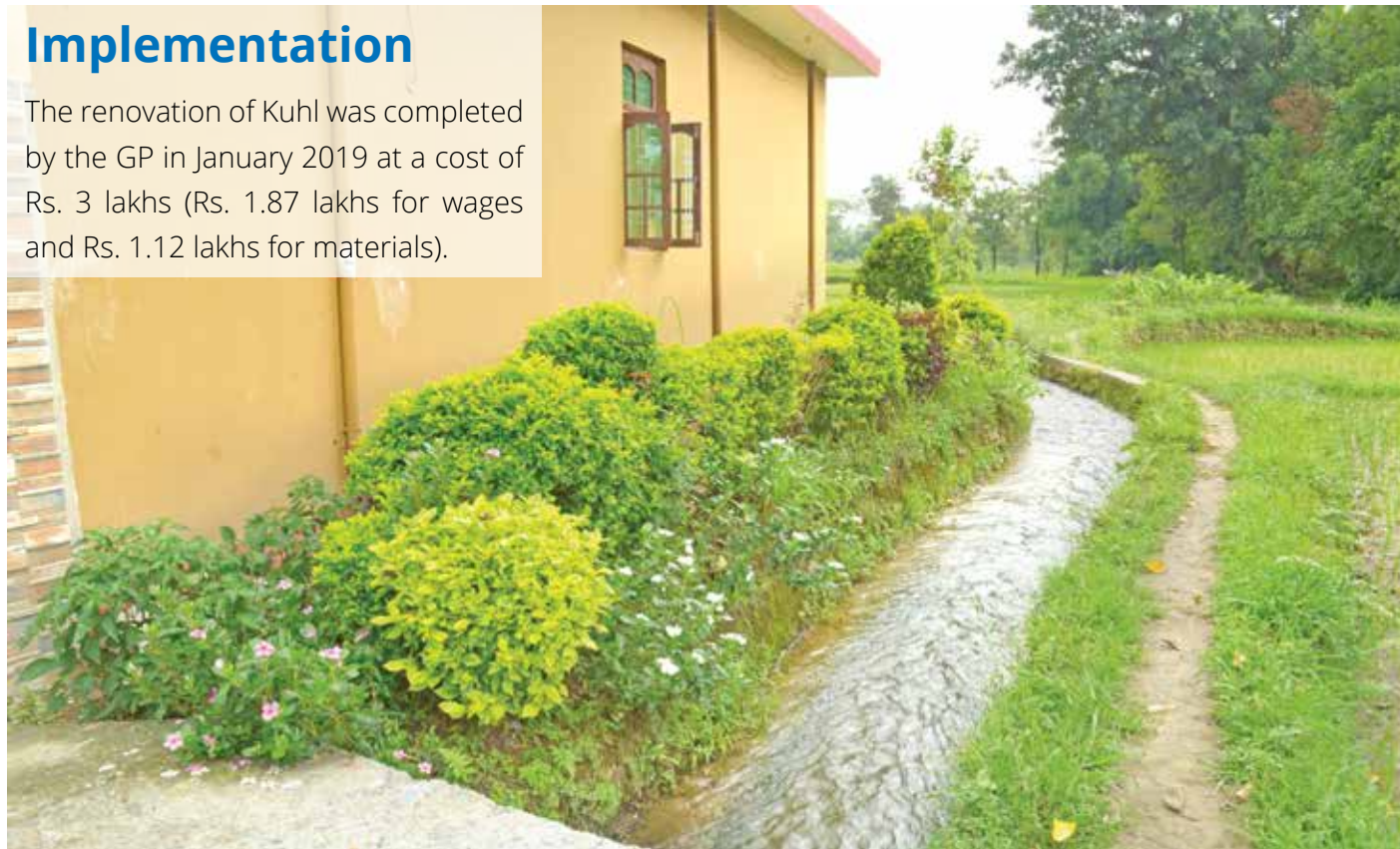
Jhikli Ichhi village is located in Kangra block of Kangra District, and it has two hamlets, namely, Ichhi Khas and Jhikli Ichhi. Around 600 families reside in this village. Most people of this village are farmers, and their only source of income is agriculture. Migration is an alternative to supplement their livelihoods. Acute water scarcity affected farming in this village. Heavy rainfall in monsoon season also would create havoc in the village. The existing traditional irrigation system “Kuhl”, which was extended over 2 km, was damaged at several points, and therefore, it required repairs or fresh construction. In the Gram Sabha meeting, in 2018, it was decided to renovate the Kuhl to solve the acute water scarcity problem of the village.





## Implementation

The renovation of Kuhl was completed by the GP in January 2019 at a cost of Rs. 3 lakhs (Rs. 1.87 lakhs for wages and Rs. 1.12 lakhs for materials).





## Impact

*After the completion of this work, around 400 hectares of land is irrigated using the Kuhl water. Due to the availability of water, the area of cultivated land has increased by 40%. In addition, the residents of the village have started cultivating cash crops, which leads to an increase in their income. The cropping pattern in the area has also changed. Vegetables are grown throughout the year. The residents are maintaining a vineyard with the help of the water from the Kuhl. The yield per acre, livestock and horticulture have also significantly increased. The Kuhl is physically accessible to all farmers of the village.*





*“Before the repair of Kuhl, water was not enough for irrigation. Our farms would dry up leaving us in dismay. I am benefitted greatly because of the construction of this Kuhl. We are able to get Tibetan vegetables from which we generate good income”.*

**—Shri. Surjeet Singh, Resident**

*“We irrigate our fields and grow vegetables with the water from the Kuhl. We sell these vegetables in Lahaul and Spiti, where we have a good market for vegetables. Because of the Tibetan vegetables, our earnings have doubled. I thank the village panchayat for the reconstruction of Kuhl”.*

**—Shri. Anil Kumar, Farmer**





# A SIMPLE BUT EFFECTIVE SOLUTION FOR THE ECONOMICAL UPLIFTMENT OF A MARGINALIZED FARMER: RAINWATER HARVESTING!

## Introduction

Khalet village of Bhavarna Panchayat is situated in Palampur Tehsil of Kangra District. Kangra is one of the rainfed districts of Himachal Pradesh. Though it has several tributaries of Beas River, the farmers are struggling to access water for irrigation, and the hillocks are waterless. Mostly, they are irrigating plains or low-lying areas.

Shri. Sher Singh was one of the marginalized farmers, and he had 4 karnal uncultivated land. He tried to cultivate vegetables and crops in his land, but the soil was dry due to lack of irrigation and dry weather, and the yield was very low. So, he sought the help of Gram Sabha for the construction of water conservation structure in his land. In a Gram Sabha meeting in 2016, it was decided to approve the request of Shri. Sher Singh for construction of a rainwater conservation tank.







## Implementation

The construction of a rainwater conservation tank with a storage capacity of 42,000 litres was carried out by the Gram Panchayat during 2017–2018 at a cost of Rs. 0.97 lakh (Rs. 0.58 lakhs for wages and Rs. 0.39 for materials). The outlets of the tank channelize the water into fields through pipes and drains.







## Impact

The water conservation tank in his farmland changed his agriculture production many folds. The soil quality of his land has improved. The intervention has also helped him to increase the cultivated area and the number of crops grown per year. Now, Shri. Sher Singh and his family are cultivating different vegetables like tomatoes, potatoes, onions, green chillies, okra, eggplant, pumpkins, cucumbers, taro, spinach, coriander, turmeric, garlic, arrowleaf, etc., and fruits like litchi, mangoes, apples, plum lemon, etc.



"Mahatma Gandhi NREGS has fulfilled my dreams. Everybody can take advantage of such schemes. All this is precious for people. I gained several advantages from it".

—Shri. Sher Singh, Beneficiary

"Because of Mahatma Gandhi NREGS, our family has benefitted a lot. Now, we are able to cultivate many fruits and vegetables in our fields. We need not to buy fruits and vegetables from the market. Instead, we are selling our vegetables and fruits from our fields in the market. We are also able to grow vegetables all around the year".

—Smt. Simrata Devi, w/o of Shri. Sher Singh











# AN OLD TECHNIQUE FOR A NEW AND BETTER LIFE, JAMLA: RAINWATER HARVESTING

## Introduction

Jamla Gram Panchayat is located in Pauri Garhwal, and it is a rainfed village. During the summer season, the residents of the village face acute water shortage, primarily due to depletion of natural resources and improper watershed management. The households are dependent on traditional natural sources such as *naulas* and *dharas* for meeting their drinking water needs. Agriculture is the primary occupation for the population here, but agricultural production is declined due to the non-availability of water. In the Gram Sabha meeting, it was decided to construct rainwater harvesting ponds on community land.



# आंगन बाड़ी केन्द्र, ग्रा. पं. जामला, वि. खं. कौट, 2018-19

जिला पौड़ी गढ़वाल

मेरा गाँव  
मेरी सन्तरेगा

आंगन बाड़ी	
आंगन बाड़ी योजना, राष्ट्रीय स्तर पर	
प्रारंभिक, 2018-19	
आंगन बाड़ी, प्रारंभिक स्तर पर	आंगन बाड़ी - 511
आंगन बाड़ी, मध्य स्तर पर	आंगन बाड़ी - 512
आंगन बाड़ी, उच्च स्तर पर	आंगन बाड़ी - 513
आंगन बाड़ी, उच्च स्तर पर	आंगन बाड़ी - 514
आंगन बाड़ी, उच्च स्तर पर	आंगन बाड़ी - 515
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आंगन बाड़ी, उच्च स्तर पर	आंगन बाड़ी - 518
आंगन बाड़ी, उच्च स्तर पर	आंगन बाड़ी - 519
आंगन बाड़ी, उच्च स्तर पर	आंगन बाड़ी - 520

सही पोषण  
देश रोशन





## Implementation

Three interconnected ponds at different gradients of the slope were constructed by the GP during 2018–2019 at a total cost of Rs. 4 lakhs (Rs. 1.88 lakhs for wages and Rs. 2.12 lakhs for material). The three tanks were connected through interconnecting pipes provided by the GP, which were carefully laid to ensure overflow of water from one pond to another pond under gravity to ensure water availability for plots at different gradients.





## Impact

*The integrated water harvesting structure has ensured the availability of water for cultivation throughout the year. The network of farm ponds has changed the face of agriculture in this hilly village. It has not only rejuvenated the life of the villagers and but also changed their overall outlook towards agriculture. Earlier, the majority of the villagers left their plots fallow but now, about 30–35 households were actively engaged in growing various vegetables like beans, capsicum, chillies, bitter gourds, okra, pumpkin, tomatoes, cauliflower, cabbage and other summer and winter vegetables. Further, an SHG of six women was able to produce two quintals of vegetables every month from approximately 1-hectare land, which after meeting the expenditure costs gave them a net profit of Rs. 18,000, i.e. Rs. 3,000 per member each month.*





# CONSTRUCTION OF FARM POND TO ENHANCE THE LIVELIHOOD OF FARMERS IN MAKHDUMPUR GRAM PANCHAYAT





## Introduction

Makhdumpur Gram Panchayat is located in the Narsan block of Haridwar District. The agricultural production of the village was uncertain due to lack of availability of water throughout the year. Mr. Satpal is one of the marginal poor farmers of this village. He cultivates sugarcane in 4 *bighas* of land, and his field faces the risk of floods for 4 months due to surface run-off during monsoon and acute water shortage in remaining seasons. So, Mr. Satpal has sought the help of Gram Sabha for the construction of farm pond in his land. In the Gram Sabha meeting during the financial year 2017–2018, it was decided to approve the request of Mr. Satpal.





## Implementation

The construction of the farm pond was carried out by the Gram Panchayat during the year 2018–2019 at a cost of Rs. 0.98 lakh.





## *Impact*

*After the construction of the farm pond, the beneficiary is able to irrigate his sugarcane crop in all seasons. The increased water availability also offers potential for fish farming. Mr. Satpal is expecting to earn an annual profit of Rs. 30,000–40,000 from fish sales. The potential for enhanced income has attracted other farmers to take up similar works under Mahatma Gandhi NREGS.*





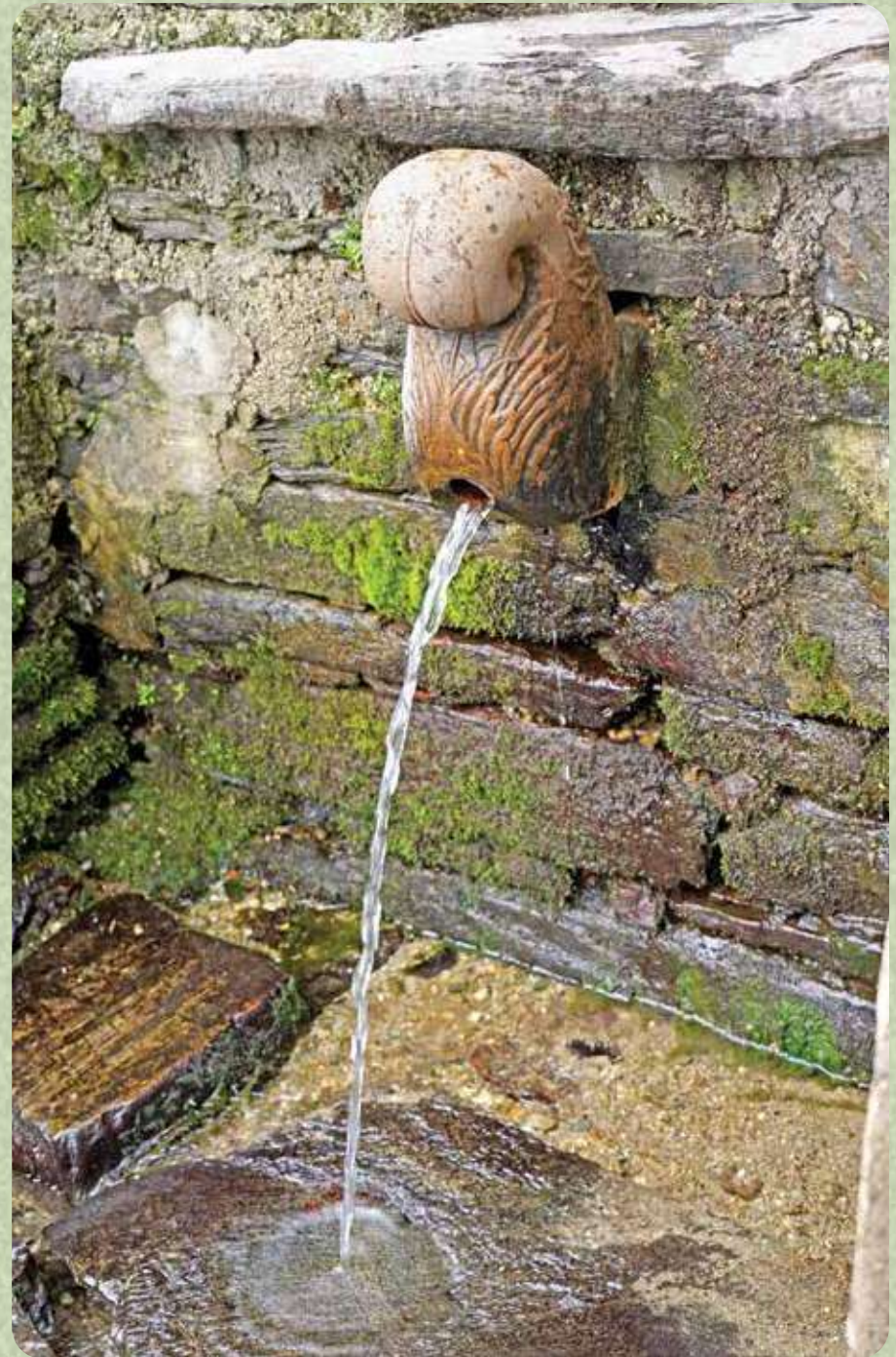
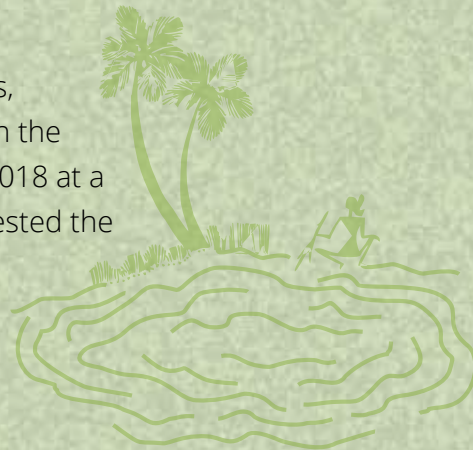
# CREATING KHANTIYAS IN RANCHULA VILLAGE FOR SUSTAINABLE FUTURE

## Introduction

Ranchula is a remote hilly village located in Yamkeshwar block of Pauri Garhwal District, and it has been experiencing acute drinking water shortage during summer. The households were dependent on a traditional natural source, *Panchikal*, which was located about 500 metres downhill from the habitation. The restoration of collection point at the “Panchikal” water source led to the availability of clean water but could not ensure its sufficient supply in summer. The volume of water in Panchikal reduced significantly, which resulted in long queues at the collection point. A solution for the problem was sought particularly by the women of the village whose drudgery increased manifold during the summer months. Based on suggestions from officials at block office, the decision was taken to dig several trenches, i.e. “Khantiyas”, to ensure moisture retention and recharge of groundwater.

## Implementation

The GP dug 810 “Khantiyas” (trenches) on barren plots, community land and surrounding agricultural lands on the slopes above the “Panchikal” during July–September 2018 at a cost of Rs. 0.98 lakh. The gradient of the trenches arrested the natural flow of water and aided in percolation. One of the major challenges faced during digging *Khantiyas* was the hard soil.





## Impact

*The work has drastically reduced the run-off of rainwater and soil erosion. The rainwater that is collected in the Khantiyas percolates into the ground and recharges the groundwater. As a result, the soil moisture has improved which has enhanced the productivity of farmland. The natural source, i.e. "Panchikal", is now replenished with more groundwater, which results in faster water outflow. Natural springs in the valley have also benefitted with rejuvenated water levels. A total of 100 households living in the downhill have benefitted from the initiative. Testimonies from women in the village indicate that they are happy with the work, as it has addressed water collection problem at Panchikal, particularly reduction in collection time and ensured availability of water around the year.*











ASSAM



# CONSTRUCTION OF BUND TO PREVENT FLASH FLOOD AND IMPROVE IRRIGATION IN BATAKUCHI VILLAGE

## Introduction

Batakuchi village is located in Kamrup District at the top of Dhunaguri hills, and it receives rainfall throughout the year. However, due to lack of water harvesting structures, the rainwater would drain off through the traditional channels into the Boko River. Therefore, despite receiving ample rain, the farmers were unable to reap benefits. The villagers attempted twice to construct a bund to regulate the flow of water in the channel. However, their efforts end up in vain due to heavy rain. There was a strong demand from the villagers to construct a bund to utilize the rainwater for irrigation. Based on the demand of the villagers, the Gram Sabha passed a resolution for the construction of a bund under Mahatma Gandhi NREGS.







## Implementation

The construction of bund was carried out by the Gram Panchayat with technical support from the Rural Development Department during December 2017–December 2018 at a cost of Rs. 10 lakhs (Rs. 8.18 lakhs for materials and Rs. 1.81 lakhs for labour).





## Impact

A water reservoir with a capacity of 73,000 m<sup>3</sup> was created after the construction of the bund. Additionally, it has also prevented flash floods and enhanced groundwater level in the catchment area. Initially, the villagers depended on ring wells for drinking water needs, which used to get dry during the winter season. However, after construction of the bund, these ring wells were rejuvenated. The bund has also benefitted wild animals and attracted migratory birds.

About 10 villages, i.e., eight from Bongaon block and two from Boko block, benefitted from the intervention and started cultivating two crops in a year. The intervention has facilitated the residents of the village to grow vegetables like okra, bitter gourd, tomato, chilly, carrot, pumpkin and other local foods. The villagers also started cultivating fish in the reservoir and sold fish worth Rs. 1.75 lakhs. The bund has turned into a picnic spot, as there is an inflow of daily visitors.







**“Voice**  
From The Field

*“The availability of water to our field has been a boon to our families. Now we can cultivate our fields and work towards producing more yield in both the seasons”.*

**—Smt. Mahima Rabha, Beneficiary**

*“We are very grateful to the department for helping us to conserve the much-needed water through the construction of the bund. It changed our lives and brought in a wave of happiness and opportunities in our village”.*

**—Smt. Subarna Rabha, Villager**



# A SOLUTION TO FLOOD MENACE AND ACHIEVING STABLE AGRICULTURAL PRODUCTION IN BIHPURIA VILLAGE

## Introduction

Bihpuria Gram Panchayat in Lakhimpur district falls under a massive rainfall zone near the hills of Arunachal Pradesh. Kachikata rivulet which is a tributary of Bhrahmaputra river flow the through the paddy field. During monsoon, the field gets filled with water but water does not stay there as slope of the terrain toward the Kachikata river. About 160 families from eight villages in the GP are cultivating paddy in Doalpara paddy field. There was a demand by the villagers to construct a *bandh* along the field with arrangement for regulating water flow from the field, so that required amount of water is retained in the paddy field and excess water is allowed to flow down the river. The Gram Sabha approved the construction of *kachha bandh* and *gully bandh* under Mahatma Gandhi NREGS.



## Implementation

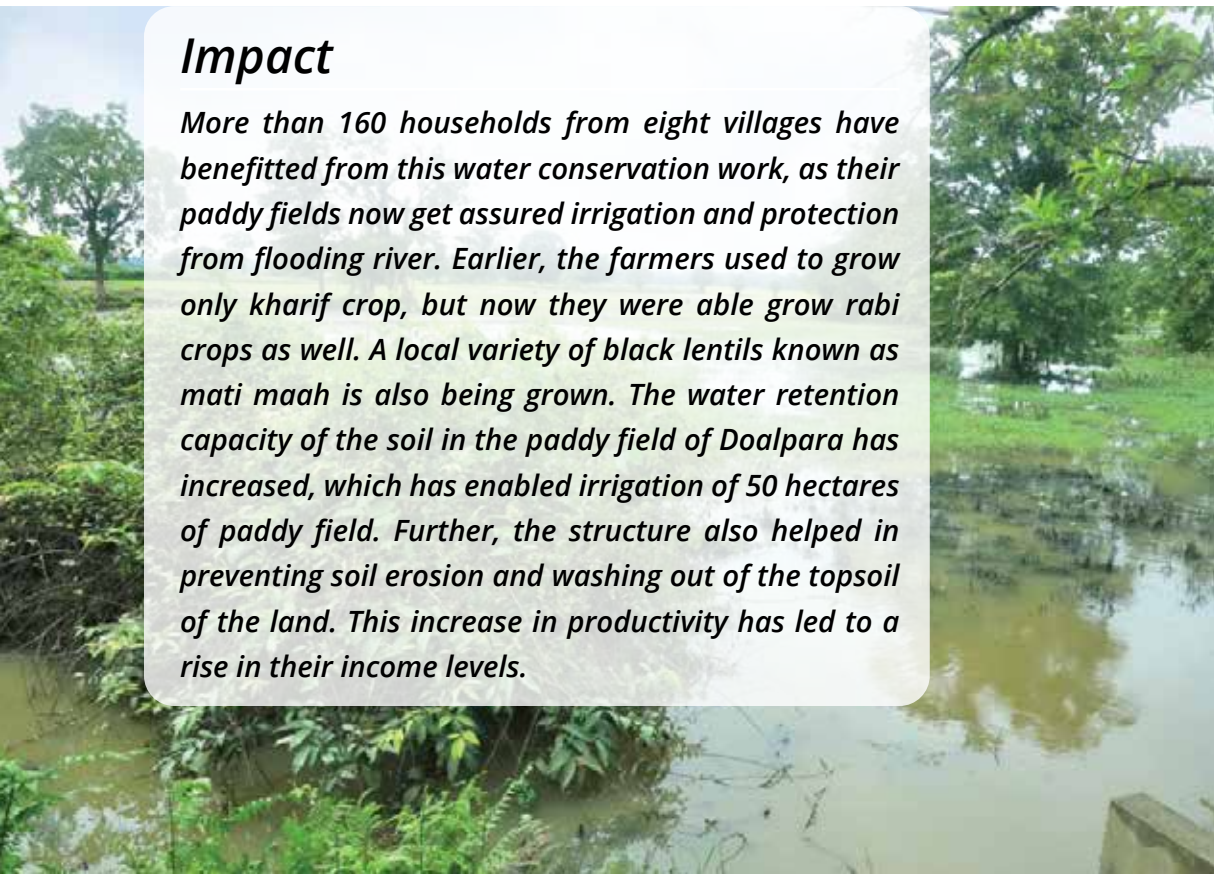
The work was taken up by Gram Panchayat in March 2017 and completed in August 2018 at a total cost of Rs. 13.45 lakhs (Rs. 8.89 lakhs for materials and Rs. 4.56 lakh for wages). The dimension of the constructed *kachha bund* was approximately 760 m. The gully bund was also constructed in a scientific manner to regulate the flow of water to the river from the field, as the traditional check dam would not have survived the force of flow of water. Another important aspect was the height of the *bund*, which was calculated by surveying the land from all directions. The bund only retains the level of water that is required for paddy cultivation, and the excess water flows down the river.





## Impact

*More than 160 households from eight villages have benefitted from this water conservation work, as their paddy fields now get assured irrigation and protection from flooding river. Earlier, the farmers used to grow only kharif crop, but now they were able grow rabi crops as well. A local variety of black lentils known as mati maah is also being grown. The water retention capacity of the soil in the paddy field of Doalpara has increased, which has enabled irrigation of 50 hectares of paddy field. Further, the structure also helped in preventing soil erosion and washing out of the topsoil of the land. This increase in productivity has led to a rise in their income levels.*





# REAPING MULTIPLE BENEFITS BY CONSTRUCTING A WATER CONSERVATION POND IN KACHIKATA BALICHAPORI VILLAGE

## Introduction

Kachikata Balichapori village is located in Lakhimpur District. Most of the households in the village are dependent on rainfed agriculture. The entire region would have abundance of water during the monsoon and face acute scarcity during the winter. Even though there is an adequate rainfall in the area, due to lack of water storage facility, the water cannot be retained and used for irrigation. So, the water flows to various rivers without benefiting the villagers. There was a need for water conservation in this area, and the villagers also demanded construction of water conservation pond. Accordingly, the Gram Sabha passed a resolution for construction of pond.

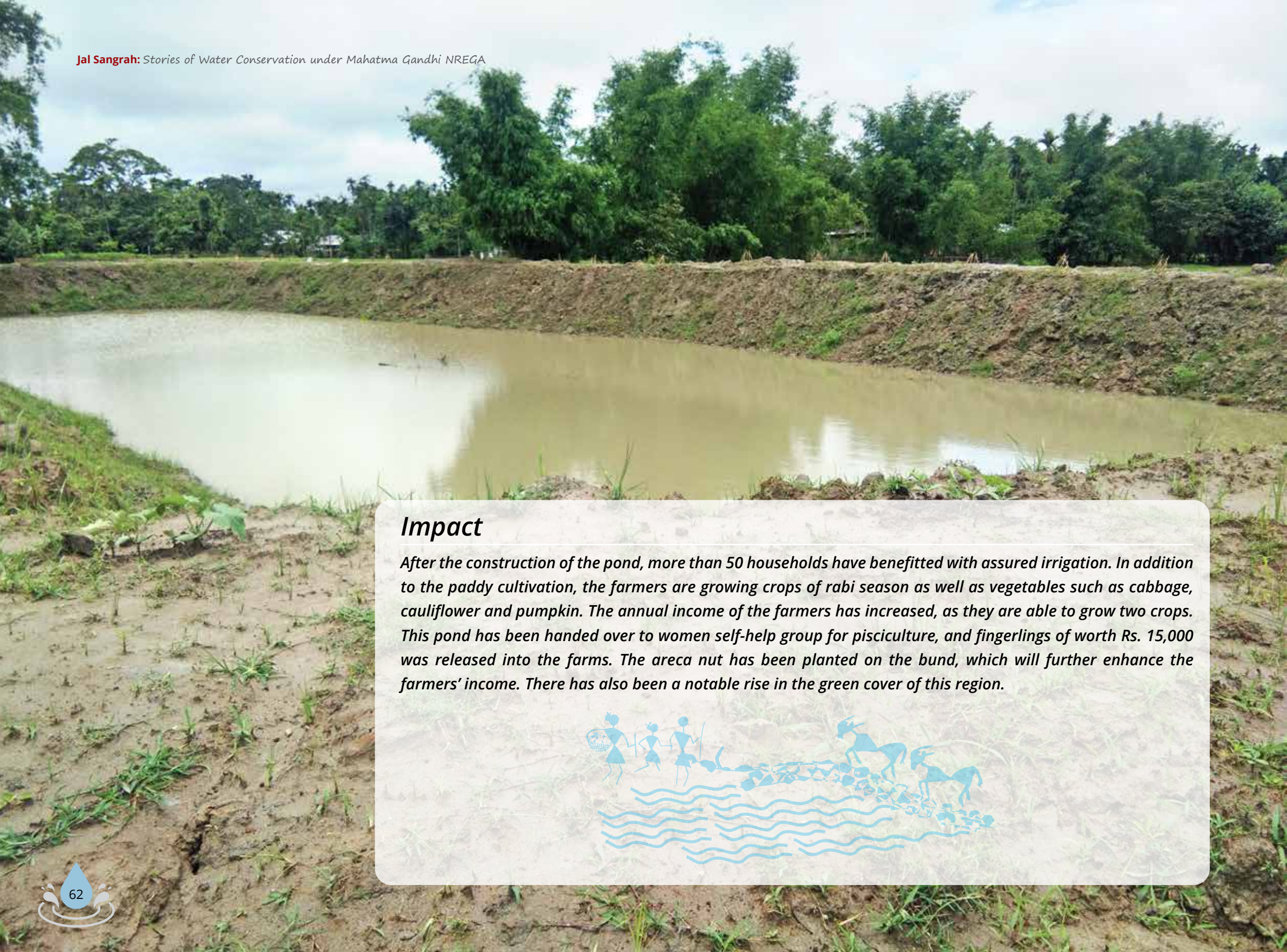


## Implementation

The construction of water conservation pond with a water storage capacity of 10,000 m<sup>3</sup> was carried out by the Gram Panchayat during 2017–2019 at a total cost of Rs. 4.92 lakhs (Rs. 4.76 lakhs for wages and Rs. 0.16 lakh for materials). A significant challenge for the construction of the water pond was to ensure that the pond is protected from floods during the rainy season. So the bund was constructed at a sufficient height to ensure that the pond does not submerge during the rainy season.







## ***Impact***

*After the construction of the pond, more than 50 households have benefitted with assured irrigation. In addition to the paddy cultivation, the farmers are growing crops of rabi season as well as vegetables such as cabbage, cauliflower and pumpkin. The annual income of the farmers has increased, as they are able to grow two crops. This pond has been handed over to women self-help group for pisciculture, and fingerlings of worth Rs. 15,000 was released into the farms. The areca nut has been planted on the bund, which will further enhance the farmers' income. There has also been a notable rise in the green cover of this region.*















ANDAMAN &

NICOBAR ISLANDS









## Impact

*The newly constructed farm pond provides water for irrigating the 4-hectare land for cultivation in two seasons, which was not the case earlier. It also helps the family to maintain a kitchen garden. In the kitchen garden, they are able to grow mushrooms and other vegetables. The family has also started duck rearing, a profitable business, as each duck sells for about Rs. 500. In addition to this, the ducks' eggs also bring extra income to the family. Their neighbours are also getting a share of benefits of the farm pond, such as drinking water for cattle and water for irrigating the adjoining fields.*



*"This is my first harvest of mushroom and I want to share it with everyone in the extended family. It is my way of expressing the gratitude that I feel towards Mahatma Gandhi NREGS farm pond, which has brought prosperity to our lives".*

**—Shri. Ashu, Husband of  
Smt. Freeda George**



# NAW-SHINY'S FARM POND REKINDLES HOPE FOR AN OBC FAMILY: CREATING LIVELIHOOD OPPORTUNITIES IN A REMOTE VILLAGE OF ANDAMAN AND NICOBAR ISLANDS





## Introduction

Mr. Saw Wilson resides in the remote village of Deopur in Rampur GP in Mayabunder block of North Andaman District. He owns 2 hectares of land but due to shortage of water, the crop production was limited to the monsoon season. Because of the scarcity of water, the betel nuts in his field were dying. Also, there was no enough water for the consumption of livestock. He needed a pond for water conservation in summer to meet irrigation requirements for his field. He approached the Gram Sabha for the construction of farm pond, and the same was approved.

## Implementation

The farm pond was excavated by the Gram Panchayat during January–March 2019 at a cost of Rs. 1.99 lakhs. The block officials helped in selection of location and design of the pond.



### ***Impact***

*The farm pond in Mr. Wilson's land has become a boon for not only his family but also for the neighbours. The water is now available for cultivation in the 2-hectare land both during kharif and rabi seasons. The farm pond has also enabled water availability throughout the year. Wilson has now started a new business of rearing ducks, which is an additional income.*





*"This pond has brought me so much happiness that I can only compare it with the birth of my granddaughter. Hence I have named it 'Naw-Shiny pond' after the name of my granddaughter, Shiny".*

**—Shri. Saw Wilson, Beneficiary**









# SIKKIM



# REVIVING PADDY CULTIVATION PRACTICES IN A FLATLAND BY IMPROVING SURFACE CANAL IRRIGATION

## Introduction

Lower Fambong Gram Panchayat is situated in Daramdin block of West Sikkim at an altitude of 3,280 ft. The village is characterized by clay loam and silt loam. This soil is good for paddy cultivation. Due to erratic rainfall, paddy cultivation reached a critical stage wherein farmers were unable to provide sufficient irrigation to 116 hectares of paddy cultivation. Thus, the productivity of paddy was declined, and the water disputes among the villagers also increased. There was an immediate need to improve the surface irrigation system, thereby providing a solution to the situation. A Gram Panchayat Pro-Poor Perspective Plan was launched by the state, which was focused on creating durable livelihood assets for the poorest of the poor to ensure that they were lifted out of poverty. Giving priority to the bottom 20%, the plan for the construction of minor irrigation channels was drafted, and in the Gram Sabha meeting, it was decided to implement it in a phased manner. The major part of initiatives was taken up after 2014–2015 when the Ministry of Rural Development, Government of India made it mandatory for all states to emphasize expenditure on Natural Resource Management (NRM) works.







## Implementation

As all the civil works were material-intensive, the villagers were mobilized to contribute local materials like stone and timber for construction. Other labour-intensive works like land development, land terracing and plantation activities were also carried out. A total of 26 minor irrigation channels of 12.9 km long were constructed during the last 5 years, at a total investment of Rs. 231.07 lakhs at different locations in phased manner. These works were executed by Gram Panchayat during the FY 2014–2019.



## Impact

*With the completion of 26 minor irrigation channels, more than 80 farmers have directly benefited and 116 hectares of land has been brought under irrigation. The farmers have also reported that there is a 50% increase in crop production. Twelve varieties of paddy were cultivated in the Gram Panchayat and sold in the local market. Further, the farmers were able to grow mustard, potatoes and vegetables on other seasons, which were used for local consumption and also readily sold in the local market.*





*"In the year 2016-2017 under Mahatma Gandhi NREGS, we constructed a minor irrigation channel (MIC) measuring 490 m. This asset helped 16 farmers, including me. Nearly 15 persons got employment in the construction of the said MIC. This has enabled farmers to grow paddy on time without having to wait for the onset of monsoon. The minor irrigation channel provides enough water for cultivating paddy, and the flow of water also remains constant throughout the season".*

**—Shri. Chabi Lal Rasaily, Farmer**



# DOUBLING FARM PRODUCE BY PROVING INDIVIDUAL WATER TANKS IN KATENG PAMPHOK GRAM PANCHAYAT

## Introduction

Kateng Pamphok Gram Panchayat under Namthang block having an area of 830 hectares is located in South District of Sikkim. This block is one of the drought-prone blocks of Sikkim and falls in the rain shadow region of Darjeeling hills. The Gram Panchayat depends on *Seti Khola*, a major stream that originates from Nagi Lake at the hilltop and flows to Teesta River and two other perennial rivers, namely, Kali Khola and Andheri Khola. Nevertheless, the discharge in these sources reduces by 65–75% during the lean period, which results in water crisis. The pipeline connections from these sources were frequently disrupted by landslides. As a result, the Gram Panchayat experienced scarcity of water for agricultural and other household purposes. Women and children were the most affected as they had to fetch water from downstream which took more than an hour. To get rid of the long-pestering problem, the Gram Sabha prioritized the construction of rainwater harvesting tanks for every household.







## Implementation

Under this programme, 125 rainwater harvesting tanks were constructed in convergence mode during 2014–2018 by Gram Panchayat at a total cost of Rs. 181.76 lakhs. The process of beneficiary selection and field verification for creation of the water harvesting tanks was jointly done by the elected representative and the field functionaries at Block and Gram Panchayat level. Beneficiary selection for water harvesting tanks was conducted through the participatory identification of the poor (PIP) method by conducting a SWOT analysis of the beneficiary's assets. The sanction capacity for each tank was 10,000 litres. Along with the contribution of non-stock material, all households contributed to the work by providing extra labour without wages. On specific days like laying of concrete, each family contributed an extra worker to complete the day's work.







## Impact

After the construction of water tanks for every household, the agriculture production has increased, which results in the improvement of the livelihoods of the farmers. Many farmers started to cultivate vegetables using water from the harvesting tanks. The vegetables are sold in the local market twice a week, and on average, each farmer earns about Rs. 60,000–80,000 per annum from the vegetable sale. With the implementation of the scheme, each household is able to store at least 5,000 litres of water even during the driest of months. Also, conflicts over sharing of water came down considerably in the Gram Panchayat.



*“I own a small land (0.5 hectare) on which I grow vegetables and sell them in the local market. Before a water tank was provided under Mahatma Gandhi NREGS, I used to carry water for domestic purposes from the local spring in the village, which is located around 3 km away from my home. After the completion of the water tank, I am able to harvest 30 kg of cherry pepper from half an acre of land and sell it for Rs. 200/kg”.*

—Smt. Asha Kumari Neroula, Resident

*“After the allotment of the asset under Mahatma Gandhi NREGS, I never left my land barren. Even during winter, I cultivate vegetables. With the help of the intervention, I had grown cauliflower, tomatoes and sold them in the nearby market”.*

—Shri. Dil Bahadur Tamang, Farmer











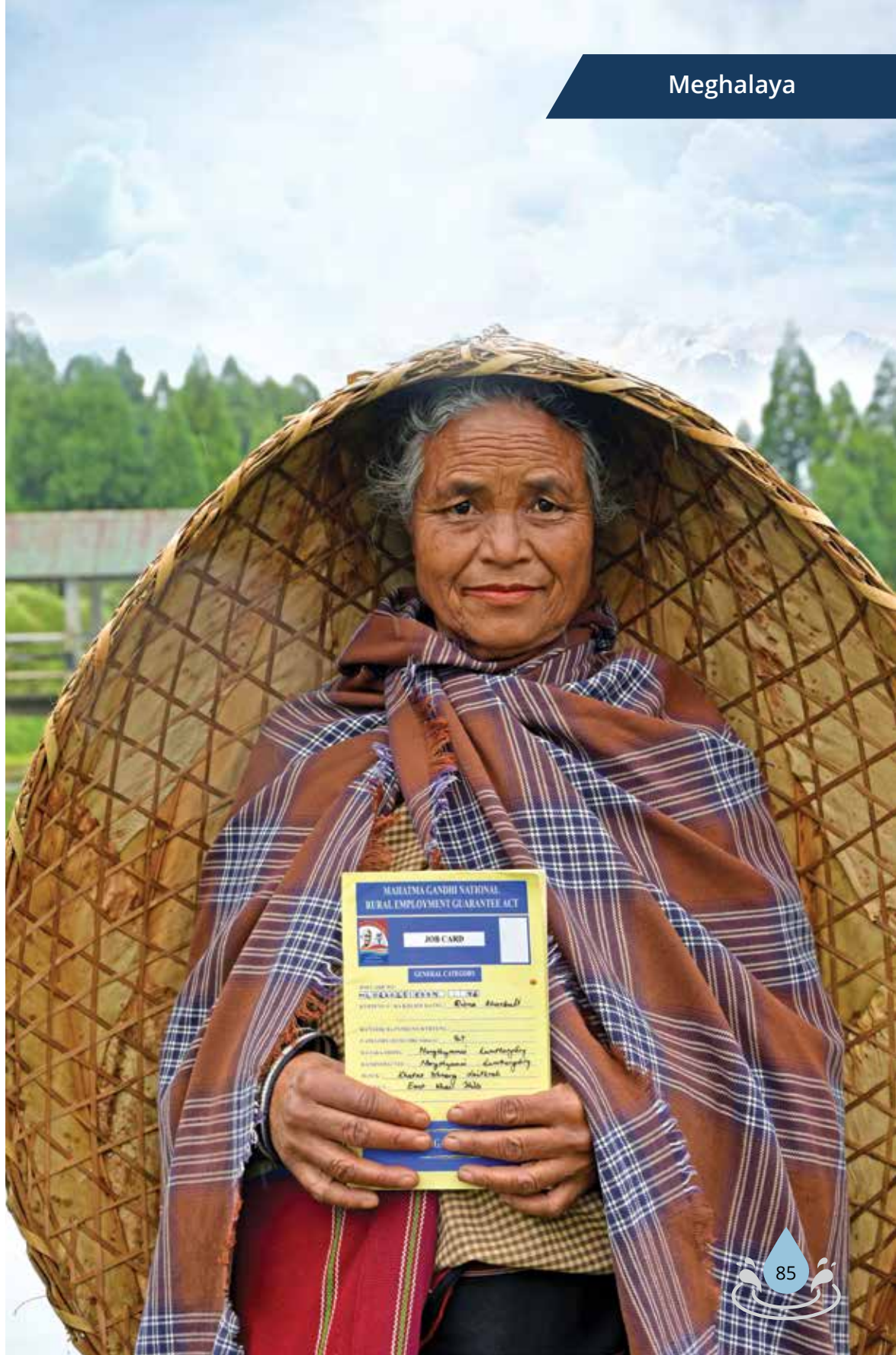


# WATER CONSERVATION IN UPHILLS OF NONGTHYMMAI-LUMTHANGDING TRANSFORMED THE ENTIRE LANDSCAPE

## Introduction

Nongthymmai-Lumthangding village is located in Khatarshnong-Laitkroh block of East Khasi Hills District, and it is one of the old and traditional villages among Khasi Tribe settlements. The main occupation of the residents of this village is agriculture. The village receives plenty of rain during the monsoon but the rainwater flows down through perennial streams into the marshy community land and the same is not being utilized. Village Employment Council (VEC) faced umpteen challenges in channelling the water that percolates from these perennial sources and drains into this marsh. After careful scrutiny of the area, the VEC and non-government tribal body decided to construct a water harvesting pond and drainage cum retaining wall to collect water at one place in the marshy land.







## Implementation

The VEC completed the construction of water harvesting pond at Khlieh Kshaid at a cost of Rs. 30.70 lakhs in the year 2015. In addition to the water harvesting pond, other projects such as footpath leading to waterfalls and a viewpoint were planned in convergence with Block Rural Infrastructure Development Fund in the year 2016. The work of fencing along the viewpoint was constructed in 2017–2018 at a total cost of Rs. 21.33 lakhs and a footpath cum railing and retaining wall in 2018–2020 at a cost of Rs. 27.97 lakhs.





## Impact

*The stored water is being used for fishing, boating, tourism and irrigation purposes. It has also improved the availability of drinking water for villagers and livestock. Besides improvement in the infrastructure of the village, this project has also enhanced the scenic beauty, and the villagers are now breeding fish in this pond as a means of livelihood. After the implementation of these projects, a lot of tourists throng the area. Additionally, the assets are helpful in preserving ecological diversity of the area. Afforestation and horticulture development activities have also been associated with this project.*



*"I have registered myself under this scheme and I'm very happy because of the changes made in the village. This water harvesting pond has helped our family a lot in livelihood generation. I run a tea stall every Saturday".*

**—Shri. Riona Kharbuli, Villager**

*"After facing lots of hardships in the village for agricultural irrigation and household water access, we got this harvesting pond as a blessing. Now we have sufficient water access for agricultural land and for our household works. At present, boating facility has also been started in that pond".*

**—Shri. Rangbah Shnong, Villager**



# WATER CONSERVATION THROUGH CONSTRUCTION OF CHECK DAM IN PINGWAIT

## Introduction

Pingwait is a village in Mawkynrew block of East Khasi Hills District, which is located 20 km from district headquarters of Shillong. The residents of this village practise rainfed agriculture, and water scarcity is considered as the major problem leading to low agricultural productivity and crop diversity. Giving utmost priority to water harvesting, conservation and regulate water run-off from hills, the Village Employment Council (VEC) mooted the idea to conserve water at source on Wahlangru stream, and a multipurpose check dam was planned.



## Implementation

The multipurpose check dam project, with a total water storage capacity of over 5,512 m<sup>3</sup>, was completed during the financial year 2016–2017 at a total cost of Rs. 26.35 lakhs. The planning and implementation of work were carried out by the VEC, with support from the Village Council, a traditional institution for village-level governance, and other local tribal non-government organizations. It was completed by participatory approach wherein most of the villagers worked for the project on a paid or voluntary basis and contributed to constructing the durable asset. Mobilization of job cardholders, transportation of construction material and unfavourable weather conditions were major challenges which were overcome by the VEC through persuasion.





## *Impact*

*The construction of multipurpose check dam has brought complete transformation in the community. Around 60–80 households have benefitted from the irrigation facility, especially in the winter season. They can have water for their household chores without any interruption. The villagers use multipurpose check dam as a community laundry space. Promotion of pisciculture in convergence with Fishery Department has become another livelihood opportunity. A tourism spot has also been developed for generating revenue for the villagers. These durable assets potentially generated environmental benefits such as reduction of soil erosion, water and biodiversity conservation, enhancing food security and building resilience to current climate risks.*



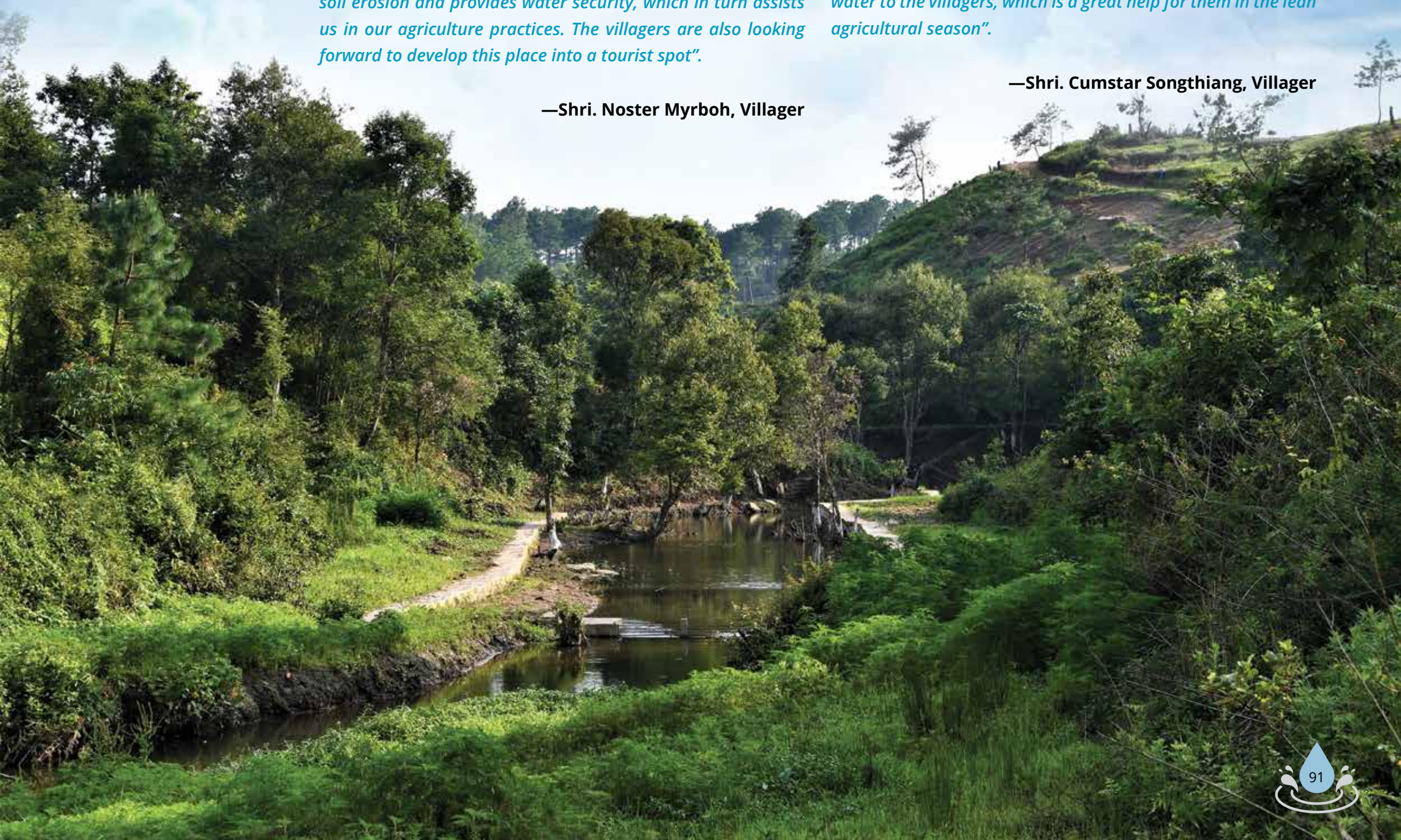


*“Before the introduction of this project, the villagers had to walk for hours to fetch water for domestic use such as washing, cleaning, etc., but now it is made easy. It helps in curtailing soil erosion and provides water security, which in turn assists us in our agriculture practices. The villagers are also looking forward to develop this place into a tourist spot”.*

**—Shri. Noster Myrboh, Villager**

*“The check dam is a big support for us in providing drinking water, irrigation and fisheries. A mini tourism spot has also been developed for generating revenue. This asset is providing water to the villagers, which is a great help for them in the lean agricultural season”.*

**—Shri. Cumstar Songthiang, Villager**









A scenic view of a river with dense green foliage on the banks. The word "TRIPURA" is written in large, metallic, 3D letters across the middle of the river. The water is a murky, brownish-green color, and the foliage is a vibrant green. The letters are positioned in the center of the frame, floating on the water's surface. The background is a dense wall of green trees and bushes, extending to the top of the image. The overall scene is a natural, outdoor setting.

TRIPURA



# CONSTRUCTION OF EARTHEN CHECK DAMS FOR RAINWATER CONSERVATION IN PURBA DALUCHARA VILLAGE

## Introduction

Purba Daluchara village is situated in the Dhalai District of Tripura, and it is a backward area. More than 70% of the area is hilly and covered with forest, small water streams and rivers. The village faced regular floods in the monsoon season, which in turn led to heavy damage to the crop. The villagers had no alternative livelihood opportunities and mostly depended on rainfed agriculture. To increase the agricultural productivity, it was necessary to develop irrigation facilities. Therefore, the Block Officials proposed a watershed management plan and identified suitable locations for the construction of water conservation structures. The Gram Sabha approved proposals for construction of two earthen check dams.





## Implementation

The construction of two earthen check dams was carried out by the Gram Panchayat during 2017–2018 at a cost of Rs. 4.70 lakhs and Rs. 4.11 lakhs, respectively. The remoteness of locations, disruption of works due to unseasonal rain and time required for soil settlement were major challenges faced during execution, which were overcome through concerted efforts of Mahatma Gandhi NREGS and panchayat officials.





## ***Impact***

*The construction of earthen check dams has provided irrigation facilities to the village and nearby areas. These works have also resulted in recharging surrounding wells through percolation of rainwater, which has significantly increased the level of groundwater table. Apart from irrigation, beneficiaries are utilizing water from the reservoir for pisciculture to generate additional income and livelihood. Fish production in these check dams ensures sustainable income for households. It is reported that beneficiaries are also earning more than Rs. 50,000 per annum from pisciculture.*

*After the successful construction of the check dams, the productivity of 6 hectares of agricultural land of Purba Daluchara Gram Panchayat has increased significantly. The number of crops also increased from one to three annually.*





## “Voice From The Field”

*“Two years back, I was totally dependent on rains for a single kharif crop for my sustenance throughout the year. I was so distressed that without Mahatma Gandhi NREGS, it was very difficult for me to feed my family two meals a day. My condition changed gradually after the construction of the check dam. A big water reservoir has been created from rainwater deposition. Water is now available throughout the year in the check dam, even in summers. Now nearby fields receive sufficient water due to which agriculture production has increased. I am also earning more than Rs. 50,000 per annum from selling the fish”.*

**—Shri. Anil Debbarma, Beneficiary,  
Purba Daluchara GP**





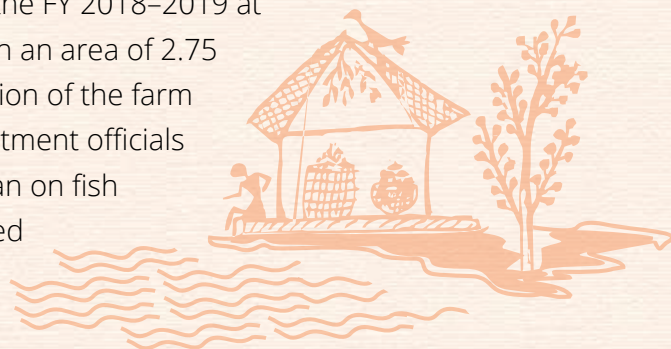
# CREATING FARM PONDS FOR TRANSFORMING LIVES OF MARGINAL FARMERS IN MATABARI

## Introduction

The rural community in Matabari of Gomati District is largely dependent on agriculture and allied activities. The average annual rainfall is quite high. However, most of the rainwater is lost as surface run-off. As community land is limited in the state, the government took initiative for creation of farm ponds in individual farmlands for rainwater conservation, irrigation and livelihood generation. Shri. Milan Chandra Das, a marginal farmer of Jowalikhamar GP, requested the Gram Sabha for digging a pond in his farmland, and it was approved.

## Implementation

The farm pond on Shri. Milan Chandra Das's land was constructed by the Gram Panchayat in the FY 2018-2019 at a cost of Rs. 4.09 lakhs in an area of 2.75 *kani*. After the construction of the farm pond, the Fishery Department officials provided training to Milan on fish farming and also supplied fingerlings to him.







### ***Impact***

*The construction of the farm pond changed the life of Shri. Milan Chandra Das. He said that he had already sold more than 100 kg of fish from his newly excavated pond and earned around Rs. 40,000 in his first catch after constructing the pond. He is now expecting an annual income of Rs. 1,50,000 from this pond annually. The excess water available in the pond can be used for irrigating nearby 15 kani paddy fields.*









*“As allied support for the farm pond, Animal Resource Development Department has distributed ducks for additional income. The Fishery Department is also helping me with financial and technical support. I have received some banana saplings and areca nut saplings from the local Gram Panchayat which have been already planted nearby the pond from which I can get some additional income”.*

**—Shri. Milan Chandra Das, Beneficiary**











# HOW A SMALL ASSET MADE A BIG DIFFERENCE

## Introduction

Darlawng village is situated on a hilltop in Thingsulthliah block of Aizawl District at an altitude of 3,438 ft from the sea level. The main source of water for the village was an old reservoir having a capacity of 60,000 litres, which was constructed by the Public Health Engineering Department (PEHD), but it was not sufficient to cater the growing needs of the village. Women and children had to wait in a long queue to collect drinking water from a spring near the village. During the dry season and at times, the villagers had to wait an entire night for their turn to receive only 13 litres per capita per day (lpcd) for the entire week. To put an end to this situation, the Gram Sabha passed a resolution to construct an additional water reservoir for the benefit of the community.







## Implementation

It was decided to execute the work in convergence with Shyama Prasad Mukherji Rurban Mission (SPMRM). The construction of RCC reservoir of capacity 50,000 litres near the old reservoir was taken up under Mahatma Gandhi NREGS, and other components like pump house, laying of pipelines, etc., were sourced through SPMRM. This work was then successfully executed by Village Employment Council (VEC), Darlawng in the FY 2016–2017 at a cost of Rs. 13.00 lakhs wherein the cost of materials was Rs. 10.66 lakhs.









## Impact

After the construction of additional water reservoir, the households started receiving water three times a week. The quantity of water supply to every individual was enhanced to 72 lpcd compared to the earlier quantity of 13 lpcd. Now, clean water is available at a distance of 50 m radius around the houses in the village. Therefore, women and children no longer need to stand in long queues even during dry seasons. The reservoir also enabled the community in providing sufficient amount of water for the consumption of livestock and for household kitchen vegetable gardens. The water tank was designed keeping in view to serve as a mini recreation park for the villagers and local tourists where they can relax and enjoy the scenic view at the top of village. The park is now maintained by a voluntary group for beautification of the area by planting flowers and trees. This work ultimately benefitted around 160 households in the village.

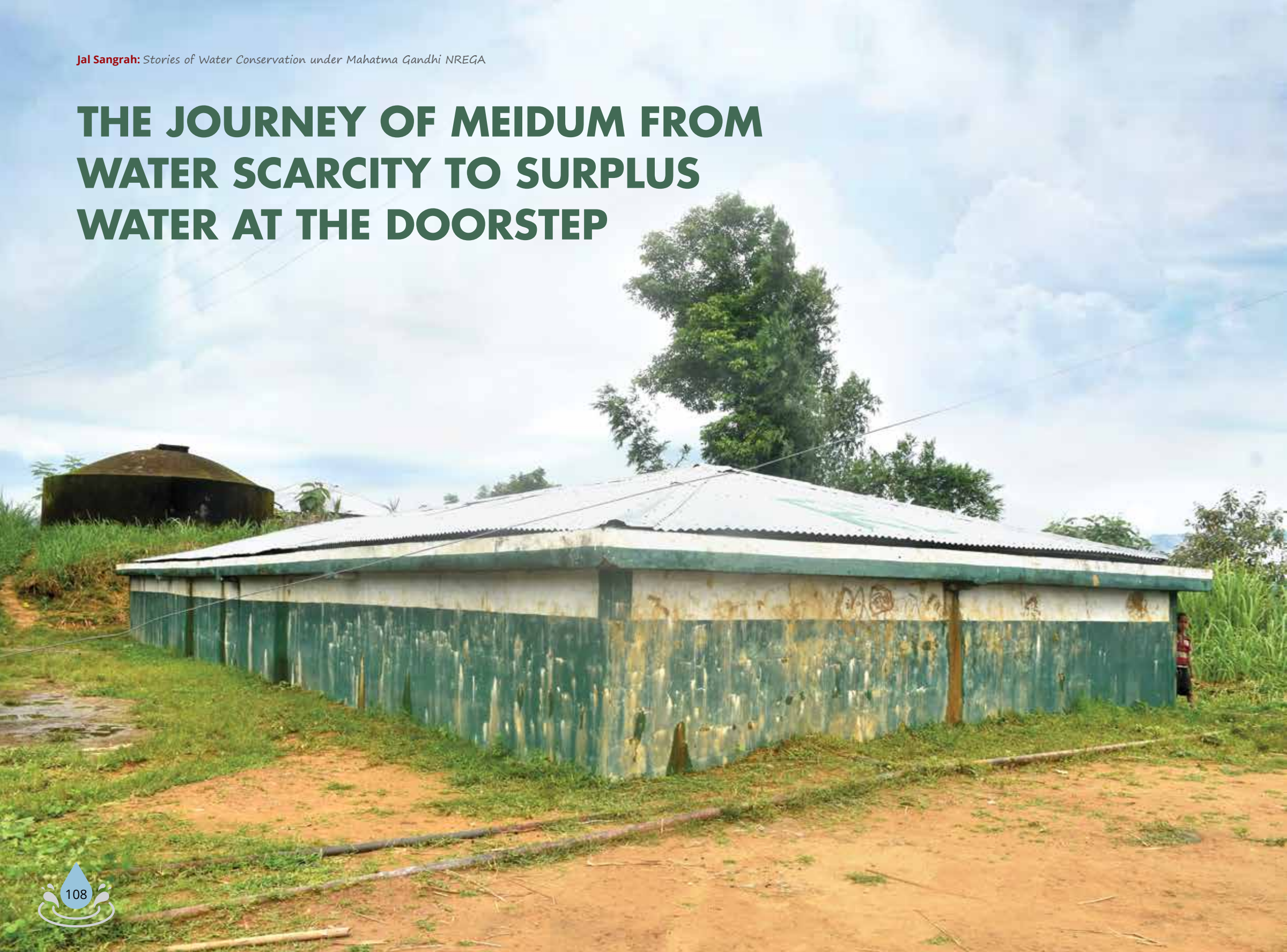


*"I am very proud to say that Darlawng village is lucky enough to have such an asset through Mahatma Gandhi NREGS in convergence with SPMRM as per our needs. Earlier, it was hard to manage with the quantity of water given to us. Women and children used to spend a lot of time for collecting drinking water. But now, with this additional asset, we have enough water for domestic consumption, washing, bathing and livestock rearing".*

—Shri. K. Lalzarlian, Beneficiary



# THE JOURNEY OF MEIDUM FROM WATER SCARCITY TO SURPLUS WATER AT THE DOORSTEP





## Introduction

Meidum village, in block Bilkhawthlir, is located at a distance of 29 km towards west from the district headquarters Kolasib. Only 8 lcpd of drinking water was supplied by the Public Health Engineering Department (PHED) with the help of a 60,000-litre capacity tank through nine public points once in a week. The village had two perennial water sources: Bawngdai Lui and Pu Dawla Tui Lak Lui, which were 3.5 km and 1.5 km away from the village, respectively. These two sources are sufficient to supply water to the village throughout the year and even could have surplus for consumptions of livestock and agriculture activities. PHED could provide water from these perennial water sources through gravity flow via pipelines, but they were unable to construct a water tank. After discussions in the Gram Sabha to find solutions to meet the requirement of storage tank to cater the need of the community, it was decided to construct a water tank with a capacity of 2 lakh litres at Vengthar, the highest point in the village, in order to enable the water distribution by gravitational flow.



## Implementation

The villagers played crucial roles in achieving the convergence with PHED by approaching both entities for the works. The construction of the tank was started in November 2015 and completed in February 2016. Simultaneously, PHED also started laying pipelines for collection of water from the source. The cost of pipelines was borne by the beneficiary for household connection. Village Employment Council (VEC), Meidum then executed this work at a cost of Rs. 13.5 lakhs, out of which Rs. 8.86 lakhs was spent on materials. The community even contributed in terms of labour for laying of distribution pipelines for public points by organizing voluntary works known as “Hnatlang” or “Shramdaan”.





## Impact

The quality of water supplied to the community is very good and safe for drinking, and the time spent on collecting water is reduced. The asset alone supports a population of about 1,073 of the whole village. The water tank with a capacity of 2 lakh litres is sufficient to provide a minimum of 80 lpcd. The number of public water points also increased from 9 to 17, and 16 household connections were provided, which ensured that every household could have access to clean water within 50 m radius from their houses. Water is distributed every day for domestic purposes. At the public point, a small collection tank was also constructed for storing surplus water from main water tank, which is to be utilized by the community for washing, bathing and livestock consumption. The surplus water is supplied to agricultural lands of about 75 hectares where 70 scheduled tribe farmers are benefitted. The paddy crop production per year has increased by twofold. The farmers are now able to practice multi-cropping system in their field even during dry season.



*“It is a good gesture that the Rural Development Department and PHED have converged for water supply in our village. Now, women and children need not stand in long queues to fetch water every day. We can even wash our clothes and bathe at the water point with surplus water collected in the tank. For the convenience of women, a closed bathroom is provided to bathe. The supplied water is clean and safe for drinking as compared to spring water. The entire village is happy with this work, and it is our responsibility to maintain the asset in good condition”.*

—Smt. Lalnipuii, Beneficiary



# CREATING BETTER STORAGE FACILITIES AND IMPROVING DOMESTIC WATER SECURITY IN KEIFANG





## Introduction

Keifang village, under Thingsulthliah block, is situated at 75 km towards east from Aizawl city. The majority of the population of the village is engaged in agriculture and allied activities and petty trades. The village is blessed with natural spring water called “Chalte Tuikhur” which is one of the perennial water sources for the nearby households for over a decade.

However, the people living in and around Champhai Road locality of Keifang did not have access to regular water supply for domestic use. It had a very small open storage tank of about 200 litres that serves as common water point for drinking water, washing, bathing and other consumptions. This tank was too small to cater even for 40 households. They had to wait in a long queue during dry season that many a time led to disputes among the community. The inhabitants in this locality were also prone to various communicable waterborne diseases, which was suspected to be due to the consumption of contaminated water. Despite the availability of land for water tank and a good water source of water, raising funds for construction of water tank remained a problem for the residents of the village.

The Mahatma Gandhi NREGS functionaries and the Village Council identified the need for construction of new water storage tanks in the area, and the same was approved by the Gram Sabha.







## Implementation

The work was completed during the FY 2018–2019 at a cost of Rs. 17 lakhs by Village Employment Council (VEC), Keifang. The water storage tanks have been constructed for multipurpose uses under Mahatma Gandhi NREGS. The project includes the following components: one large tank made for storing drinking water, one small tank for washing of clothes, two bathrooms with showers for men and women, and a shed on top of the tank where children can play while their mothers are washing clothes. It also acted as a rest shed for travellers where they could refresh and clean up while travelling on the nearby Champhai Road.



## Impact

The water storage tank can now store about 98,000 litres of water. The intervention has minimized water-related disputes that arose in the village. The water is now free from pollutants and soap residue as it is a closed water tank. Women can now take bath/shower safely in the closed bathrooms attached to the tank, without any inconvenience. More than 40 families now have access to clean and safe drinking water throughout the year. There has been no report of existence of waterborne diseases post the creation of assets. The stored water in the tank now enables the community to have kitchen garden for nutritious vegetables and improvement in domestic livestock production.

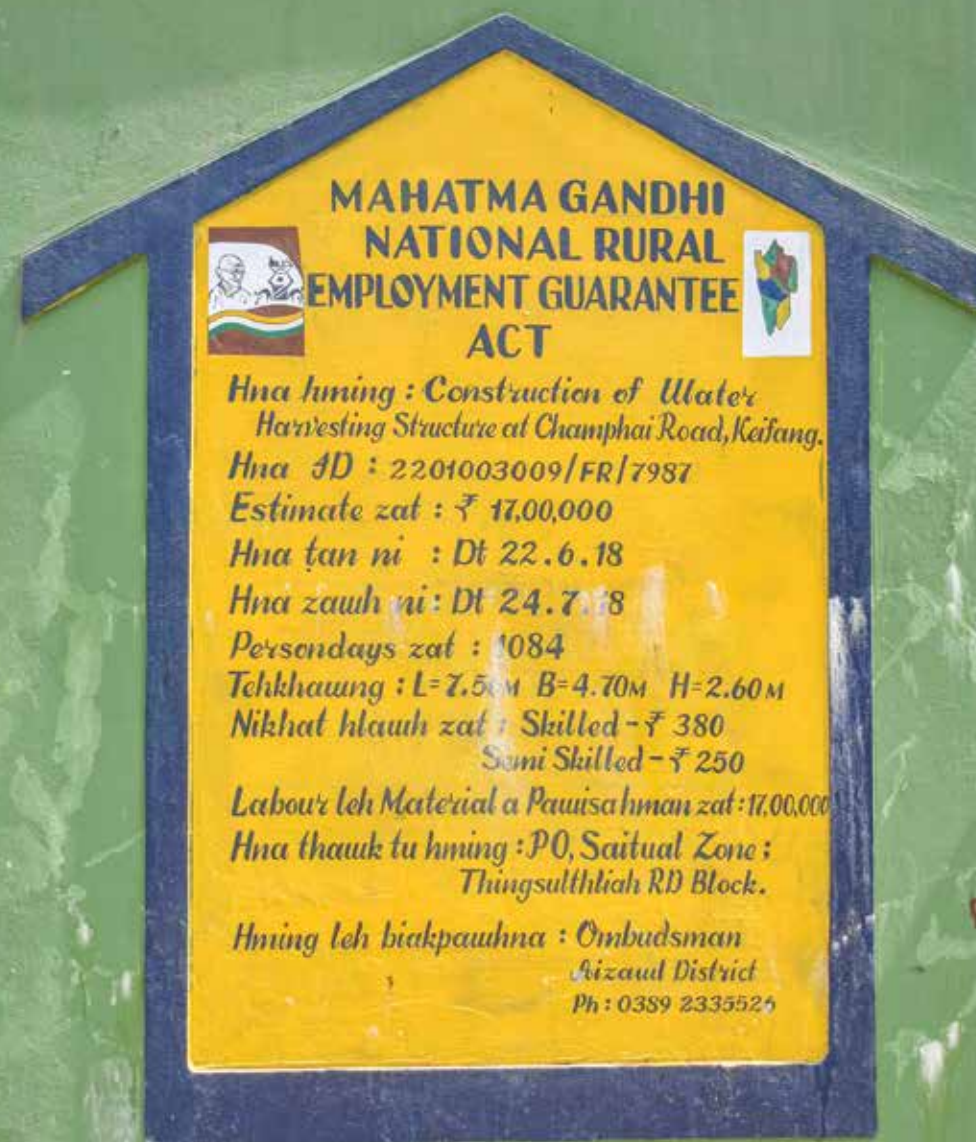


“The existing water tank in the past was an open tank with kutcha construction which was easily polluted with soap residue and other pollutants. The quality of water available at that time was not fit for drinking. Currently, it is a closed tank with higher capacity, free from pollutants and can be utilized by more people for drinking, washing and bathing, and also for consumption of livestock”.

—Shri. Lalchhuangi, Beneficiary

“In the past, the availability of water in the tank was not sufficient for many people and this has led sometimes to quarrels among the villagers. The villagers are very happy that large tank is providing more water with better quality for consumption and domestic purposes. The water is now sufficient for us to run the kitchen garden and to feed our livestock throughout the year”.

—Shri. K. Zoliana, Beneficiary





# BOOSTING AGRICULTURE YIELD BY EFFICIENT USE OF LOCAL WATER SOURCES

## Introduction

Zotlang is a small village situated on the southern edge of Champhai town in Champhai District. Thingthupuilui, a small stream located 2 km away from the village, is the only source of water for the villagers for more than three decades. Usually, water from the stream is supplied to the village through pipelines for domestic and livestock consumption and agricultural use. However, the sources of water were depleting due to deforestation. Preservation and revival of forestland, reduction of run-off velocity in the area and recharge of the water sources were vital to make this Thingthupuilui a dependable water source. Therefore, afforestation, RCC water reservoir, water harvesting structures, recharge pit, farm pond and plantation of trees were planned to be established in the area.





## Implementation

Village Employment Council (VEC), Zotlang, implemented the project in convergence with the Public Health Engineering Department for providing pipelines from water source to distribution tank and through distribution lines to the public points. All the works were taken up in the community land and the land donated by beneficiaries.

Community participation along with an NGO played a vital role in the implementation of the works. Awareness on the need for conservation of the catchment area greatly influenced the villagers to take an active role in the conservation of the area. The works were completed at a total cost of Rs. 21.72 lakhs. The details of the completed works are as follows:



Sl. No.	Name of work	FY	Total cost (in lakhs)
1	Afforestation (jungle clearance) at YMA Park	2014-2015	3.99
2	Water harvesting structure at Khawulh	2015-2016	9.78
3	Digging of recharge pit at Thingthupuilui	2017-2018	3.74
4	Community farm pond at YMA Park	2017-2018	0.92
5	Plantation of trees at Thingthupui tui lak hnar	2019-2020	3.29
<b>Total</b>			<b>21.72</b>





RCC WATER RESERVIOR AT ZOTLANG  
UNDER MGNREGS. MORD  
CAPACITY - ONE LAKH LITRES  
DATE OF START - 12.11.2013  
DATE OF COMPLETION - 11.2.2014  
AMOUNT : ₹ 650000  
CHAMPAL RD BLOCK  
2013-2014



## Impact

After successful completion of the project, the village received a lot of benefits. The conservation of the catchment area of water sources significantly improved the lives of the villagers in Zotlang. Water is now distributed at regular intervals at certain points through which every household receives sufficient amounts of clean water through pipelines at their doorstep. Besides, the production of crops and plantations such as apples, grapes, tomatoes, green peas, etc., has increased. About 100 scheduled tribe farmers owning 100 hectares of agriculture land have benefitted from this project. It was found that the number of fishponds increased from 40 to 90, and the production of fish increased by twofold after the creation of these assets. Another notable development pertaining to this region is a rise in groundwater level and the common grazing ground for cattle.



*“It is a great relief for me after the revival of Thingthupuilui. It is now a perennial source of water, and we practise cultivation in our fields throughout the year. Water is now pumped to my field through pipelines and is sufficiently available for my crop throughout the year. Production of crops has doubled post the creation of the assets as cropping is possible even in the lean season”.*

—Shri. Hrangzuala, Farmer

*“In the past, I used to practise a single cropping system as I barely managed to cultivate during monsoon. Now, I have access to water which enables me to cultivate multiple crops like apples, tomatoes and capsicum throughout the year”.*

—Shri. Lalrochhungi, Farmer



# ENHANCING CROP YIELD THROUGH COMMUNITY WATER HARVESTING TANK IN SIHPHIR VENGHLUN

## Introduction

Sihphir Venghlun is located in Tlangnuam RD block at a distance of 15 km towards north from Aizawl. The agricultural land in this region is uneven with shallow red and yellow soil, at an altitude of about 3,736 ft from sea level. The village is named after the twin streams Sihphir and Venghlun, which are the perennial source of water for local farmers for many years. Since the village is located on a hilly terrain, the run-off velocity of rainwater is quite high, which results in soil erosion. Despite receiving a sufficient amount of annual precipitation, due to lack of water storage facilities, the villagers are not able to store the rainwater for future use, resulting in scarcity of water which negatively impacts the production of crops. The village officials addressed the issue and planned to construct a multipurpose water tank and farm ponds through Mahatma Gandhi NREGS.

## Implementation

A multipurpose water tank with a capacity of 4.3 lakh litres was constructed under Mahatma Gandhi NREGS near "Sihphir Lui" at a cost of Rs. 20.99 lakhs. The farmers were also provided with 30 mini farm ponds for storing water in their fields. The water from this harvesting tank was distributed through pipelines, and the cost of pipelines was borne by the farmers.





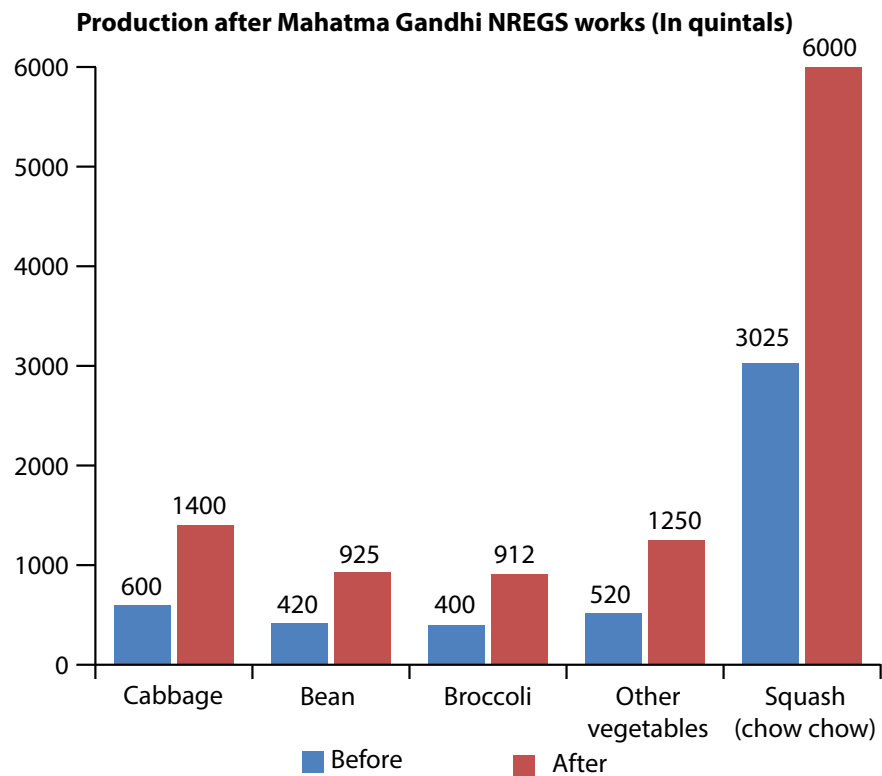




## Impact

The conservation work benefitted 30 farmers owning almost 32 hectares of agriculture land. The productivity has increased tremendously as abundant water is available for agriculture even during the dry season. Further, these works revived topsoil and moisture resulting in high yield of crops and enhancing livelihood support for the poor people. The water conservation works have increased the water supply, which is sufficient to cater for domestic needs, for consumption of livestock and for irrigation purposes.

Before-and-after analysis in crop production as per record by the user group is given below:







*"We have been farming in this area for decades without proper access to water and usually struggle for water during the dry season. The construction of water harvesting structure at Sihphir Lui changed everything and provided sufficient amount of water during the dry season, enhancing the moisture content of our land to have winter crops. Our production doubled as compared to the yield before creation of the asset".*

**—Shri. Lalremmawia, Farmer**

*"Being a farmer, the most important need is having a good source of water for our field. Luckily, water harvesting structure is constructed at Sihphir Lui under Mahatma Gandhi NREGS, which supplies sufficient amount of water to the beneficiaries for irrigation, livestock and domestic consumption. Farmers are very grateful to the Department for the valuable asset created for improvement of our water source".*

**—Shri. R. Liandawla, Farmer**





KEINOU GRAM PANCHAYAT  
Mandal - West, Malappuram District

# MGNREGA

2018-2019  
KEINOU  
G/P



Name of Work: RENOVATION OF  
PUBLIC POND WITH 3 (three) SIDES OF RETAINING  
WALL & STAIR CASE AT KEINOU PANCHAYAT GHAR.  
SANCTION AMOUNT : 1417020  
M/COST : 566808      WAGES COST : 850212  
WAGES RATE : 209      MANDAYS : 4068  
No. OF DAYS : 2 Days      WORK CODE : 8833  
WORK START DATE : 30-07-2018  
WORK END DATE : 9-08-2018

name of Executing agency Keinou G/P







# ERADICATING THE HARDSHIP OF THE RESIDENTS OF CHINGMAI KHUNNOU BY CONSTRUCTING RAINWATER HARVESTING STRUCTURE







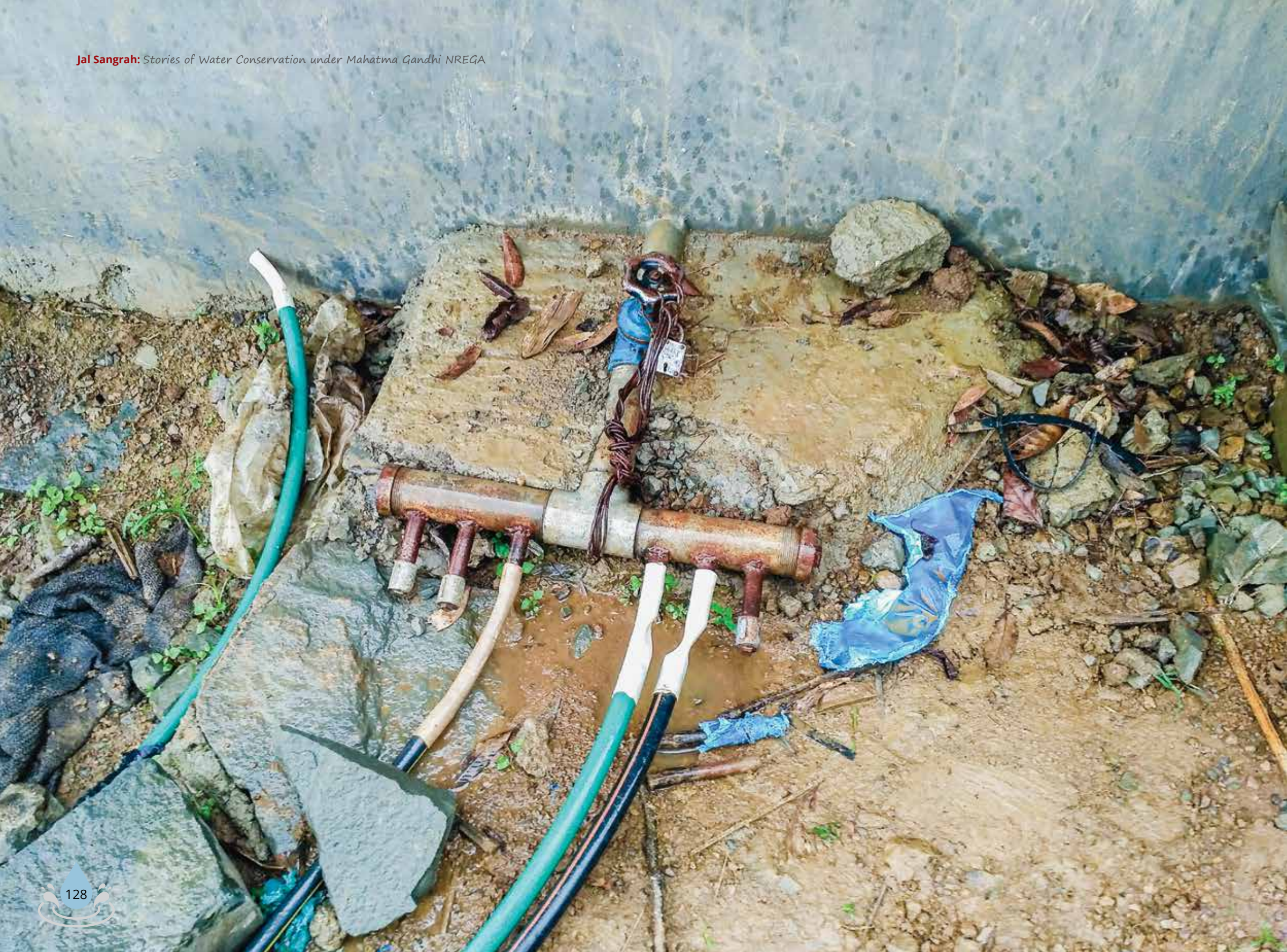
## Introduction

Chingmai Khunnou village is situated on a kaleidoscopic mountain in Senapati District of Manipur. The nearest stream is around 4 km from the main village, and the villagers faced difficulty in fetching water. The bamboo pipes and banana stumps were used to fetch water from the stream, and these were neither durable nor efficient. There was an old metal tank for storage of water in the village, but it had become rusty and had many leaks. In addition, it was not possible to repair the metal tank. Due to lack of effective water storage facilities, the villagers were not able to harvest the rainwater for domestic water needs. So the village officials decided to construct a rainwater storage reservoir.

## Implementation

The construction of rainwater storage reservoir was taken up under Mahatma Gandhi NREGS by the District Rural Development Agency (DRDA) through the Village Authority during 2018–2019 at a cost of Rs. 6.36 lakhs (Rs. 1.27 lakhs for material and Rs. 5.09 lakhs for labour). The pipelines of water tank were arranged by village officials through contributions from the villagers. The challenges faced in construction were selection of the worksite at proper elevation to ensure supply of water by gravity and transportation of construction materials, which were overcome with constant motivation and monitoring of the Village Authority.









## Impact

The construction of water reservoir resolved most of the domestic water-related issues in village, and it benefitted around 400 households. The newly constructed water reservoir is helping the villagers, especially women, save their time and energy. Nearly 80% of households now have access to safe drinking water. The water from the reservoir is also used for livestock. This reservoir also helped villagers to grow vegetables and earn extra income.



*“Before the construction of the water reservoir, we used to go up and down the hill for around 3-4 km to fetch water from a small pond. It was very difficult and time-consuming to get water. After the construction of the reservoir, the problem of fetching water from long distances has been solved. Now, we can get water at our doorsteps through PVC pipes from the reservoir. The water from the reservoir is mainly used for domestic consumption and livestock”.*

—Shri. N. G. Nakhu, Beneficiary



# THE CONSTRUCTION OF STOP DAM PUTS AN END TO A LONG-STANDING ISSUE OF WATER SCARCITY IN NACHOU GRAM PANCHAYAT







## Introduction

Nachou Gram Panchayat is located in Bishnupur District of Manipur, and it has 11 wards covering three revenue villages, namely, Nachou, Kha-Potsangbam and Upokpi. The agricultural areas of Nachou GP around the Nachou Awang River, which flows through the GP, are prone to frequent drought and flood. Due to unpredictable nature of monsoon and lack of effective water management strategies, the farmers of the GP were not able to do farming in a profitable way. During the Gram Sabha meeting, a unanimous decision was taken to construct a dam to solve the problems faced by farmers.

## Implementation

The project was completed by the GP in 2018–2019 at a total cost of Rs. 8.74 lakhs (Rs. 5.24 lakhs for wages and Rs. 3.50 lakhs for materials). The construction of dam on the Nachou Awang River involved a lot of technical expertise to ensure its quality and durability, and the same was executed diligently.

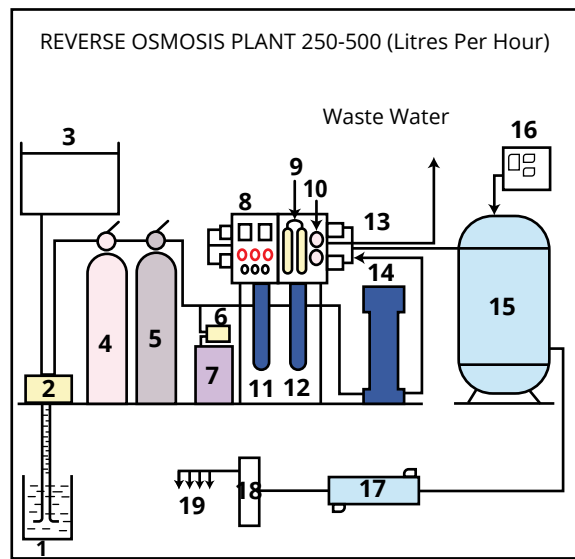






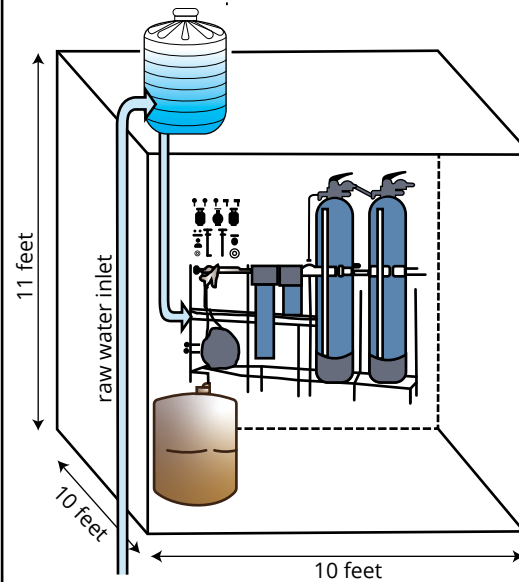
## Impact

After the construction of the dam, around 200 acres of agricultural land has been benefitted. The dam has not only facilitated the supply of water for agricultural purposes but also being used for livestock consumption and pisciculture. The farmers are now able to cultivate crops and vegetables during the winter season also. With the abundant inflow of freshwater, the availability of local fishes and shells in the river has increased. Further, the fodder availability in the area has also increased.



### Label description:

- 1 - Ground water, 2 - feed Pump, 3 - Water Storage Tank, 4 - Sand Filter
- 5 - Carbon Filter, 6 - Boiling Pump, 7 - Dosing System, 8 - Electrical Panel
- 9 - Flow Meter, 10 Pressure Meter, 11 - Micron Filter (FRP), 13 - R.O. Membrane
- 14 - High Pressure Pump, 15 - R.O. Product Water Tank, 16 - Ozonator
- 17 - UV System, 18 - Micron Filter, 19 - Dispense Water



Model structure of an Unit



*“The dam is useful not only for agriculture purposes but also supplies water to nearby ponds for domestic, fisheries and livestock consumption. Due to this dam, cultivation of rabi crop is possible, and there is availability of fodder in all seasons, as dairy is one of the main occupations of the residents in this panchayat”.*

—Shri. N. Jadu Singh, Pradhan, Nachou GP











# RESTORATION OF AN ABANDONED WATER CHANNEL FOR BETTER LIVES

## Introduction

Kigwema village is located in the Jakhama block of Kohima District, and it is one of the ancient heritage villages of Nagaland. Chiedzühi water channel is one of the oldest channels flowing through Jakhama. It had supplied water for terrace cultivation in the past but now, it was abandoned for two decades because of heavy damages caused to the channel. With the increase in population and demand for better amenities, the reconstruction and improvement of water bodies became inevitable. The villagers decided to address the issue of water shortage by repairing and renovating water channel to an extent of 5 km for irrigation and construction of a water reservoir under Mahatma Gandhi NREGS.









## Implementation

The renovation of water channels to an extent of 5 km was carried out by the Village Development Board (VDB) of Kigwema Village in 2016 at a cost of Rs. 8 lakhs. The construction of a water reservoir was completed by VDB in 2017–2018 at a cost of Rs. 47 lakhs.







## Impact

After the renovation of the channels and water reservoir, water is now available for the terrace fields, which has led to the development of healthy plantations. The enhanced availability of water also enabled the farmers to take up cultivation of an additional crop. Improvements in settled agriculture indirectly helped to reduce pressure on forest ecosystem, bringing down Jhum/shifting cultivation. Improved availability of drinking water for humans and livestock was another important benefit of these newly created assets. The assets created are directly helping in recharge of groundwater and prevention of soil erosion. Around 15,000 people of three villages have benefitted from this intervention.



*"I managed to transplant paddy on three plots (including wet terrace fields) of land in a week's time. The free flow of water from the newly constructed channels greatly relieves our burden of frequently manning small channels".*

—Miss. YasenoNeihu, Beneficiary

*"The asset has helped to improve the income levels of many individuals—unemployed/unskilled, etc."*

—Shri. NeithonguzoNakhr, Beneficiary



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