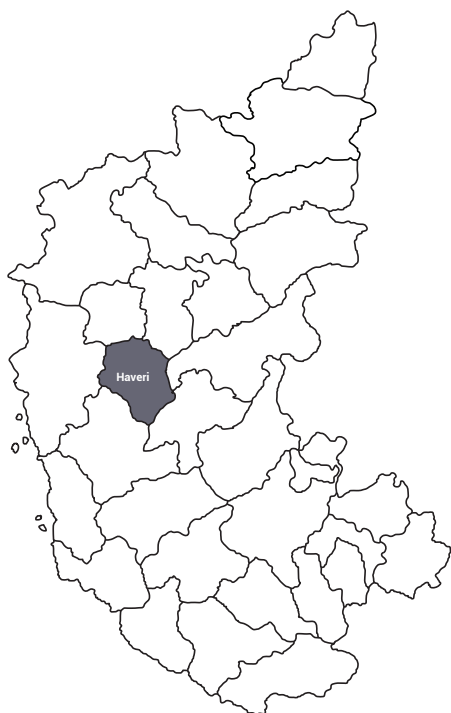




# The WADI Program

Transforming the lives of marginal farmers, acre by acre

Area of operation: Haveri



<b>Name of the Organisation</b>	BAIF Development Research Foundation
<b>Type</b>	Non profit
<b>In the Sandbox</b>	Since 2008
<b>Focus areas</b>	Income generation through horticulture and tree based farming for marginalised and small farmers in Hubli



Wadis are set up typically on 2-3 acre lands and also in contiguous blocks to enable community farming. Each Wadi looks at intensive agricultural development that bears fruit in 5 to 7 years.

A visit to Munni's farm located at the fringes of Shiggaon taluk, Haveri district, is proof that even the toughest land can bear fruit one day. Munni's three acre plot, typical of most small farmer land holdings in the area, has rocky mixed red laterite soil which isn't particularly fertile and yields little under the rainfed agricultural systems that most of monsoon-dependent India farms on. In a semi-arid land with less than 400 mm of rainfall, Munni's rocky outcrop, like many others in the area, was declared "waste" or "kharab" land, unfit for cultivation.

That is until BAIF came to the Hubli Sandbox with their 'Wadi' concept, a Gujarati name for an orchard. Begun in 1992 as a solution towards self-reliance and income generation for the tribals of Gujarat, the combined agri-forestry-horticulture program is designed to help small and marginal farmers revitalize degraded lands as small as half an acre. The Wadi program involves shaping of hilly terrains into small plots through contour bunds to facilitate soil and moisture conservation, establishment of drought tolerant fruit crops like mango, cashew, Indian gooseberry, custard apple, etc. as main crops, cultivation of seasonal food crops in the interspace between fruit plants and live fencing through saplings of various plant species useful for food, fodder, timber, fuel and herbal

medicines. Wadis earn about Rs. 8,000 to Rs. 10,000 in the first 5-6 years beyond which the income goes as high as Rs. 50,000 per annum from fruit-bearing trees and crops.

After two years of working hard on her land, 30-year-old Munni now grows 40 flourishing mango trees, vegetables like tomatoes, cowpeas, pumpkins and greens tightly planted in the space between the trees and 300 forest species including teak, acacia, casuarina and silver oak in a live fence that also serves as additional food.

"I wanted to do something with this waste land. My family does not live here and my relatives who tried to take over my land gave up when they saw it. I decided to take charge and see how I could revive it," says Munni. The woman farmer works all day on making sure that her land is well, from preparing compost and neem cakes to trimming her hedges and examining her fruit trees that have grown halfway in the last 2 years.

### The Sandbox Story

"Our model was already established in Gujarat and Maharashtra when we came to the Hubli Sandbox. We found many similarities between the challenges of the small farmers in Haveri district who struggled to earn a livelihood out of their one-

acre farms and the impoverished tribals we had worked with earlier," says Gulab Rao Patil from BAIF, who has been working on implementing Wadis in the Sandbox over the last 4 years.

Over and above providing know-how on contextualising the model for Hubli's farmer community and land conditions, Deshpande Foundation also advised the non-profit to take a detailed look at their operating costs per acre of Wadi land and see if there were ways to optimize it further. Early pilots helped BAIF realise that they also needed to think beyond the Wadi itself – on how to establish a community around the model, how to market the produce effectively and how to propel the farmers towards taking complete charge of their land.

### 1. Tree-based farming for sustainable livelihoods

Wadis are set up typically on 2-3 acre lands and also in contiguous blocks to enable community farming. Each Wadi looks at intensive agricultural development that bears fruit in 5 to 7 years, this being the amount of time that it takes for saplings to bear fruit, for the Wadis to become self-sustained, and for the farmers to have acquired a wider basket of cultivation practices and water management.

In the Sandbox, BAIF implemented the Wadis with a key difference: Wadis typically cost Rs. 25,000 per acre to set up, including material costs, labour and machinery. In Haveri district, BAIF change the model to only provide input material and support in the form of training and expertise; the farmer had to dig his own bunds, plant his own crops and labour on his field. BAIF started working with farmers who believed in the concept and were willing to invest in it provided BAIF could provide them intense technical support over four years. Far from being a disincentive, this model helped increase adoption widely: Working hands-on as a single farmer to transform wastelands helped small farmers feel knowledgeable and empowered enough to own their land and also innovate constantly while maintaining it. With a model that they had tried out for the first time in their 2-decade long existence, BAIF and DF brought down Wadi costs to a mere Rs. 7,000 per acre, a whopping 70% reduction in costs.

Given the long-term nature of returns through the Wadi program, BAIF encouraged farmers to explore alternate sources of intermediate income like dairy and livestock farming. Farmers started to dig vermicomposting pits at the borders, for rich compost which they could sell to vegetable growers and landscaping companies.

Finding that the farmers most critically lacked technical expertise and the ability to modify their traditional wisdom for contemporary methods, the non-profit has also started farmer training every quarter, sometimes more frequently at the training centre in Hubli where they were taught how to maintain their wadi, irrigation techniques, composting, water management etc. In order to encourage farmers to participate, BAIF also arranged for regular farm visits where potential Wadi farmers could meet those in the program and see for themselves the results of the agri-forestry-horti combination.

Today, five years later, most farmers have started to reap the fruits of the Wadi program. Farmer incomes have increased to over 1 lakh per annum on an average land size of one-acre.

Girija Vibhutimath opted for a Wadi in 2008 in her 2-acre land where she mostly grows tomatoes and mangoes. She recently received an award of Rs. 5,000 from Deshpande Foundation and was chosen as the best farmer in the Farmer Conference held during Development Dialogue. "The whole program has really helped to get us started. Earlier I cultivated beans and jowar but there was not much harvest and could grow only one crop in a year. Now in Wadi I can grow multiple crops," says Vibhutimath, referring to one of the major advantages of the

Wadi system, the intricate space-optimised multi-cropping system.

## 2. Tukdi – Going from single farmer to an empowered producer community

The Wadi program was initially started with a DF grant of Rs. 12,000 per acre per farmer, but funding has now trickled down to a meagre Rs. 3000 per acre as the idea has started to show returns and farmers are coming forth to bear upto 75% of the operational costs. The bigger support DF has been providing of late is in helping with monitoring, guiding and providing human resources to reach farmers in far-flung areas of Haveri and Gadag district. "Deshpande Foundation also provides technical guidance and advises us on agricultural areas that we need to work on," says Bharat Bhosle, regional head at BAIF.

As the concept is community based, disinterest from one impairs the entire system. Farmers often get impatient, not wanting to wait 3-4 years before they see any sign of returns from the land. "There are times when farmers do not take the project seriously and the Wadi project fails for their land," rues Bhosle.

To establish the larger sense of community, BAIF created 'Wadi Tukdies' – a group of 10-12 farmers based on geographical proximity.



BAIF provides intensive training to farmers about maintaining their wadi, irrigation techniques, composting, water management.



BAIF helps the small, marginal farmers make their produce commercially viable by connecting them to mainstream markets.

“Tukdi members work together from start to finish – helping each other on their lands, solving local problems, sharing resources and aggregating the final produce for better prices in the market. It also helps ease the co-ordination between us and the Wadi farmers,” says Patil, who elaborates that the group model that they implemented with the help of DF has been instrumental in bringing operational efficiency to the program in the Sandbox. BAIF is now looking at forming a federation that can be a single point entity to market the farmers’ produce, leaving the cultivators more free time to work on their farms.

BAIF also helps the farmer showcase and market their produce through the many avenues and melas the DF supports in running, from Krishi Melas during the annual Development Dialogue conference to the monthly organic mandis and traditional rice/millet melas in Hubli and Dharwad.

### 3. Walking the last mile with the farmer

The road from barren land to productive self-employment is sprinkled liberally with challenges that the combined DF and BAIF team work on. Open grazing of cattle is a big threat to young plants in Wadi plots. A stronger fence on the border

has helped some farmers, others use old CDs and shiny objects as scarecrows while many others employ non-toxic, foul odour to keep the animals away. Maintaining a wadi also requires elaborate planning and coordination as seeds, fertilizer and other inputs have to be supplied at the right time in optimum ways.

Despite being community projects, Wadi farmers are a lonely lot, toiling away single-handedly on their one acre plots. “Finding labour is also difficult, no one wants to work in farms these days. I spend a lot of time and effort de-weeding and making my farm pest-resistant,” says Siddiah, a farmer. DF and BAIF staff leave no stone unturned in keeping these farmers motivated – from monthly visits to informal knowledge sharing sessions, quarterly partner meets and the annual Krishi melas, the team organises many ways for farmers to connect with others like them and feel the strength of the larger initiative.

### The Wadi way forward

The Wadi program has now grown to 747 Wadis and over 1443 acres out of which 176 Wadis were constructed this year alone. Marginal farmers in Haveri have seen a significant increase in their income from the Wadi projects. On

an average a farmer earns a profit of Rs.20,000 annually and some farmers have even managed to net a profit of Rs.65,000 in a year.

“The benefits are tremendous as they have made so much profit out of their waste lands. The wadi intercropping system has helped farmers place millets which ensure food security but are not high paying alongside fruit trees like mango and sapota that fetch much higher returns,” says Bhosle.

Yet the Wadi project is more than just improving rural livelihoods, acre by acre, in a sustainable way. It has dimensions of farm production, natural resource management, social mobilisation and economic upliftment. It encourages farmers to aggregate land holdings without giving up ownership, and partake of both successes and failures with their neighbours. And for small holding farmers, this serves as a positive scale-up factor as well as some form of micro-insurance for a bad day.

Secondly, the multi-cropping systems followed in Wadi have brought back traditional practices of growing millets and other ignored crops that play a critical role in environmentally sustainable farming and most importantly, food security for the family.

And thirdly, it spares these remote small farmers the agony of distress migration to the cities to work as daily wage labourers and live in squalor.

But the biggest impact that the Wadi project has brought about is a change in the attitude of farmers

towards farming; it has not only given them courage to experiment but has also made entrepreneurs out of land cultivators.

"My relatives are showing renewed interest in my land now, but I am not budging," says a determined Munni. The spunky Shiggaon farmer even

politely refused an installation of a windmill on her plot that would fetch her some extra revenue. "I have turned around this barren land to produce fruits, vegetables and crops of all kinds in the last two years. Why would I give up even a sq.ft of this work to anyone?"

### Sandbox Snapshot

BAIF came into the Sandbox in 2008 in order to replicate the Wadi model from Gujarat and Maharashtra.

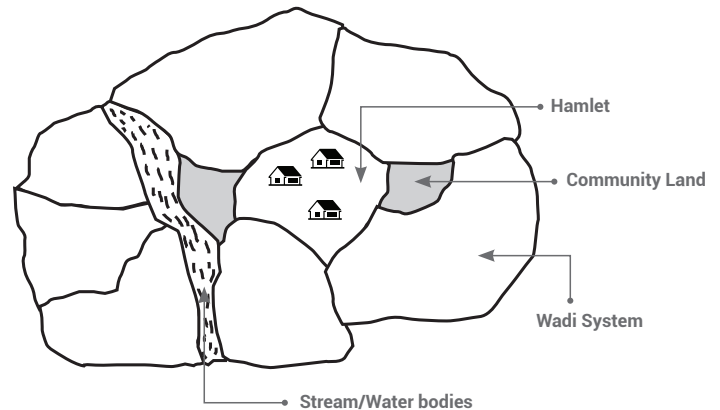
With the help of DF, BAIF made changes in the Wadi model to focus on input material and extensive training. The process empowered small, marginal farmers to take complete ownership of the land and brought down costs by a whopping 70%.

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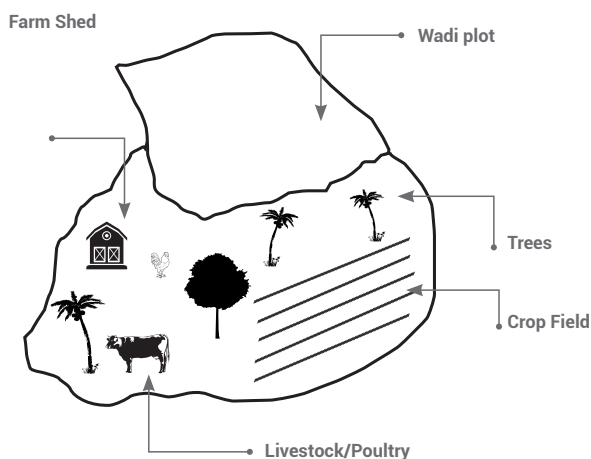
### What is a Wadi?

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### Portion of a Wadi cluster



### A typical Wadi plot



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