

# COMMUNITY EFFORTS TOWARD FORESTRY FOR FOOD SECURITY AND ENVIRONMENTAL SUSTAINABILITY

Year 2022

Lets bring back life and diversity in brown, green, & blue

Contribution of agriculture and forestry to environment and economy

A new story to begin toward sustainability

BAGASARA  
GUJARAT  
INDIA  
community  
based  
project

FACILITATED & PREPARED

BY

*Arun Kashyap*

ENVIRONMENTALIST &  
SUSTAINABILITY SPECIALIST

IN ASSOCIATION & COORDINATION  
WITH

LOCAL FARMERS AND INDIGENOUS COMMUNITY



Farmers of tropical, sub-tropical and tropical dry region

# MEMBERS & PROJECT SUMMARY

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**Farming and Silviculture of  
Native Species by local farmers'  
community Coalition on Climate, Forests,  
and nature-culture**

Facilitation and Writing:  
**Arun Kashyap**

**This report was produced  
in support from local farmer collectives &  
tribal groups. A dialogical and recuperative  
association with objectives that 'seek glimpses  
of illumination, and aims towards engagement  
and disclosure of sustainable practices.'**

Layout and Photo credits:  
**Pratik Padariya  
Arun Kashyap**

Project sector:  
**Sustainable Agriculture  
and  
Social Forestry**

Fund support:  
**Collections from local farmers, farmer  
associations, Friends & Philanthropists**

Energy & time Support:  
**Indigenous communities,  
Local farmers  
&  
Many Volunteers from cities of  
India**

Beneficiary:  
**Punarjeeva trust, Rural communities of Kadaya  
(30% to 50% of the overall beneficiary under the  
project would be women), and other Forest  
Species.**

Project duration:  
**Five years**

Project Site:  
**Geet Govind  
Village - Kadaya, Tehsil Bagasara,  
District Amreli - 365440  
Gujarat, INDIA**

**Start Date: April 2021**



Local Grass-Root NGO:  
**Punarjeeva Trust  
Village - Kadaya, Tehsil Bagasara,  
District Amreli - 365440  
Gujarat, INDIA**

# EXECUTIVE SUMMARY

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A country's ability to maintain the environment, population's well-being, and sustainably feed itself very much depends on three factors: availability of productive land with strong accessibility of ecological services, human population, and its lifestyle (consumption and living pattern). The more people there are, especially in poor countries with limited amounts of ecological services, the fewer resources there are to meet basic needs. Not long ago, in 1984, it seemed as if the rate of population growth was slowing everywhere except in Africa and parts of southern Asia. The latest assessment of world population prospects by the UN (UN, 2001a) indicates that there is the prospect of a rather drastic slowdown in world demographic growth. In the time horizon of this study, the world population of 5.9 billion in our base year (the three-year average 1997/99) will grow to 7.2 billion in 2015, 8.3 billion in 2030, and 9.3 billion in 2050. In only 200 years, the world's urban population has grown from 2 percent to nearly 50 percent of all people. While the world's population is doubling, the world's urban population is tripling. Also, within the next few years, more than half the world's population will be living in urban areas. This poses other stress on resources as people who live in urban areas have very different consumption patterns than residents in rural areas. For example, urban populations consume much more food, energy, and durable goods than rural populations and affect the broader global environment. Satisfying increased demands on agriculture with existing farming practices are likely to lead to more intense competition for natural resources, increased greenhouse gas emissions, and further deforestation and land degradation. High-input, resource-intensive farming systems, which have caused massive deforestation, water scarcities, and soil depletion, cannot deliver sustainable food and agricultural production. My assessment of prevailing trends suggests, therefore, that in order to realize the sustainable farming with forest restoration (SFWR) vision, transformative change in agriculture and food systems is required in India and worldwide to maintain the ecosystem services, environment, and population's well-being, thereby securing resources for generations to come.



We can understand that increasing calls for agroecological and other innovative approaches, seen as very different from a “business as usual” approach to agricultural improvement, play a greater role in achieving global food security and nutrition and environmental sustainability. Agroecological practices are becoming increasingly prominent in debates around FSNE (Food security, nutrition, and environment) because they are framed in terms of both their environmental sustainability and social innovation connecting food production and consumption, with strong support for locally adapted solutions based upon the participation of local people and their knowledge. The spark has to be initiated as soon as possible with a change, over a period of time, in a conventional fossil fuel-intensive agriculture system.

Rebuilding a community and eradicating food scarcity, and poverty can only be done sustainably when the community involved repair their ecosystem and form a permanent partnership with forest and nature. Using clever strategic planning and implementation, a community can rebuild its resource base and solve all its problems at the same time as repairing its soil, reserves, and environment. How can a community be sustainable if it can't supply its people with clean water and healthy food all year round? It can't. It may survive for a time, receiving its needs from elsewhere, but eventually, those resources will become expensive and scarce, leading the community back into poverty. Seeing many false paradises in this capitalist world with no mercy for poor farmers, I started making little contribution to the greater established works, in the hope that it can benefit more farmers and families looking for a healthy, happy, and high-quality life not for them only, instead, for whole ecosystem and species around. Whoever will listen can learn, but I assure you, there is something in here for everyone looking for natural solutions to our man-made, unnatural problems.

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**Bring back life and diversity in brown, green and blue.**

# PROJECT BACKGROUND

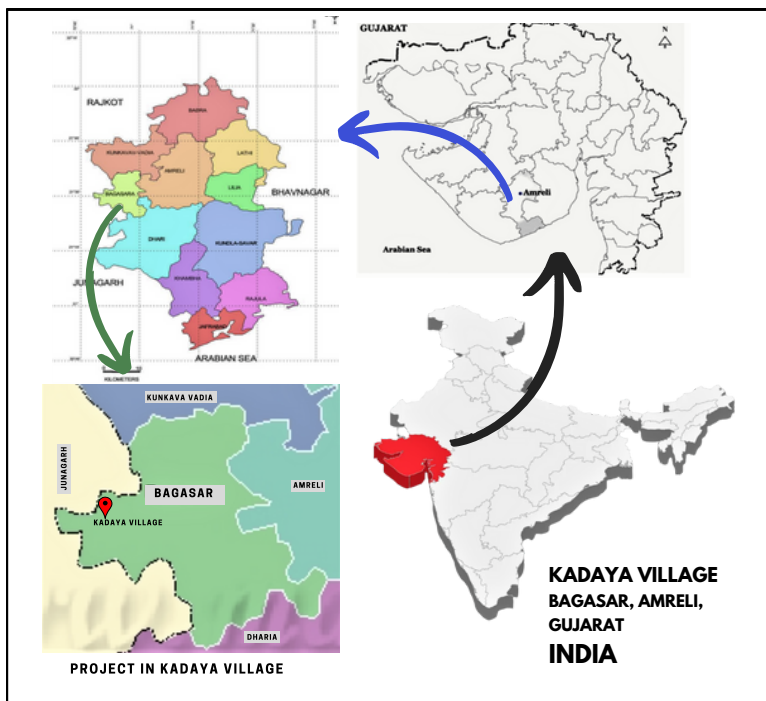
## A new story to begin toward sustainability

Gujarat has a tropical climate, namely sub-humid, arid, and semi-arid, spread over different state regions. North Gujarat region comprising Kutch, part of Banaskantha, Mehsana, and North Western part of Saurashtra has an arid climate during the South Gujarat sub-humid climate, and the rest of the state semi-arid climate. Temperature varies from 6 to 45 degrees Celsius. Annual rainfall varies from 250 mm in the North West to more than 1500 mm in South Gujarat. Out of 225 talukas, 56 talukas are drought-prone. The economy of Gujarat, a state in Western India, has significant agricultural as well as industrial. The major agricultural produce of the state includes cotton, groundnuts (peanuts), dates, sugar cane, milk, and milk products. Gujarat is one of the most industrialized states, with a significant presence in pharma, chemicals, refining and petrochemicals, ceramics, textiles, automobile, etc. sectors. Gujarat recorded the lowest unemployment rate in India in 2015, with 1.2% of the labor force being unemployed.

Geet Govind the Project proposed by Trust "PunarJeeva" in a medium-sized village Kadaya, located in Bagasara Taluka of Amreli district, Gujarat, with 182 families residing. As per the constitution of India and the Panchyati Raaj Act, Kadaya village is administrated by a Sarpanch (Head of Village) who is elected representative of the village. The Kadaya village has a population of 937, of which 474 are males while 463 are females as per Census 2011. The population of children with age 0-6 is 89, which makes up 9.50 % of the total population of the village. The Average Sex Ratio of Kadaya village is 977, which is higher than the Gujarat state average of 919.

In addition, the Child Sex Ratio for the Kadaya per the census is 1070, higher than Gujarat's average of 890. Kadaya village has a lower literacy rate compared to Gujarat. In 2011, the literacy rate of Kadaya village was 75.35 %, compared to 78.03 % in Gujarat. In Kadaya, Male literacy stands at 82.13 %, while the female literacy rate is 68.35 %.

Poor farming practices such as monocropping, soil mining, unplanned human settlements, and rampant bush burning cause low yields of crops. Stunted crops and hence, food and income insecurity, malnutrition, and other health problems. Chemical intensive farming, destructive mechanized methods, and burning post-crop biomass are major causes that kill the biodiversity in soil, loss of carbon content, increase in temperature, and air pollution. This mines maximum outputs out of the soil causing degradation in the number of nutrients and micro nutrients available in the food produced which is negatively impacting our immunity and health as well as the ecosystem. Heavy summer winds and flood irrigation method causes displacement of soil minerals and nutrients eroding the soil heavily. Farmers of the area, in the hope of maximum productivity for more profits, tend to use industrial inputs like hybrid seeds, chemical fertilizer, urea, pesticides, and heavy machinery. The rate of increase in the cost of the inputs is more than the value of their output leads to further deterioration of the financial stability of farmers. This vicious cycle forces them to seek other sources of income for their expense and defeated by this struggle, they push the next generation to other professions or migrate to cities for so-called better education and jobs.



In the south-central part of the Saurashtra Peninsula, the Amreli one of the most important districts covers an area of 7397 sq. km. near the Gulf of Khambhat. Amreli district is situated between north latitudes 20 45' & 22 05' and east longitude 70 40' & 71 45'. It is bounded by the Rajkot district in the north Junagarh district in the west and southwest Bhavnagar district in the east, and the Arabian Sea in the south. The climate of the Amreli district can be regarded as one of the extreme kinds with hot summer and cold winter except in the coastal region, where it is generally pleasant throughout the year. The air is humid in coastal locations. The temperature at district headquarters ranges from 45 degrees centigrade higher in the summer and 4.2 degrees centigrade lowest in the winter. The average annual rainfall is 609 mm. Mid-June to October is the normal rainy season.

Geographically one of the taluka in Amreli called "Bagasara" is situated west of the Amreli district and a prominent place in Aari embroidery and gold plating occupations. It is famous as the birthplace of renowned poet and freedom fighter Zaverchand Meghani and famous magician K Lal from Mavjinjava village.

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**For sustainable agriculture and food systems that enhance food security, nutrition and biodiversity**

## PROJECT LOCATION:

GEET GOVIND,  
VILLAGE - KADAYA,  
TALUKA/ BLOCK - BAGASARA,  
District - AMRELI  
(Between 20°45' to 22°05'N  
&  
70° 50' to 71°40'E)  
Area: 7397 Sq Km  
SOUTH GUJARAT, INDIA

Group of Marginalised  
Farmers

## Forest type:

**Topological Characteristics:**  
**Climate Classification:**  
**Average Annual Precipitation:**

Dry Land  
Semi Arid Tropical  
609 mm (Mid June to October  
is the normal rainy season)

**Temperature Range:**  
**Population of Kadaya:**

13.5 to 45 degree Centigrade  
977

**Population  
Growth:**

Population growth rate over the decade 2001-2011 was 8.59%. Sex ratio of 964 females for every 1000 males, and a literacy rate of 74.49%.

**Soil Type:**

Medium black soil, coastal alluvial soil, Rocky soil and Alkaline soil. Kadaya village has mostly deep loamy red & lateritic soils.

**Drain Pattern:**

The major river draining the district is Shretrunji. The main tributaries of this river are Sotali, Vadi, Thebi, and Shell.

**TROPICAL THORN FORESTS:** Forests occur in the region with less than 600 mm rainfall. These forests contain sparse and stunted growth of species like Acacia and thorn bushes etc.



The proposed project in **Geet Govind** activities is in line with the interventions of the National Mission on Sustainable Agriculture (NMSA) under the National Action Plan on Climate Change. The project proposes sustainable agriculture with forest restoration practices through the adoption of practices such as increasing biomass at the soil surface through afforestation hence organic matter content of the soil through the planting of Agroforestry trees that can grow well with crops and development of climate-resilient landscape design and cropping patterns and demonstrating to the communities other soil and water conservation practices such as contour ridging, mulching, recycling crop residues, and controlled burning.

This further, will eventually provide a variety of harvests in abundance every month which will be sufficient for self-consumption, fulfills food requirements, and for meeting consumers' demand in cities. Our harvests will include fruits, vegetables loaded with nutrients, spices, nuts, timbers, and other products completely organically grown which can attract ample revenues for the maintenance and growth of the project. This will make the project self-reliant in the coming years. The project will set an example of abundant life before the village community which will influence them to leave the conventional methods and gradually shift to take up such regenerative farming methods.

The farm model of "**Geet Govind**" includes a vegetable garden, food forests, and annual crops like grains, pulses, etc., which will provide highly nutritious organic food for the residents of a farm as well as a source of revenue all year due to innumerable variety of harvests every season. Moreover, the farming design and rainwater harvesting structures will complement each other to raise the water table level and provide enough quality water for domestic and irrigation purposes.

The future plans of the trust- "PunarJeeva," is to work with the community and government to turn barren lands into forests through rainwater harvesting techniques and plantation of local species, which will eventually contribute toward a sustainable solution to present-day ecological problems like climate change, global warming, frequent natural disasters and their other ill effects on lives of the planet. Furthermore, we intend to plant local species in the landscapes according to the need of different animals, which will provide spaces for them and helps in increasing diversity. This will also decrease their invasion of human habitats in the region.

