

Strategies to overcome hurdles in drought-prone area through innovative campus projects

Dahiwadi College Dahiwadi is run by Rayat Shikshan Sanstha, Satara which is widely known for its missionary zeal for education of masses. Founded in 1919, Rayat Shikshan Sanstha has been extensively striving for education of depressed classes in rural area.

Dahiwadi College Dahiwadi established in 1965, it has been the only platform of higher education in the drought-prone area of Man vicinity. The geographical adversities couldn't stop the college from its mission of providing quality higher education to marginalised sections of society. It gives us pride to mention that the college, that is all set to celebrate its Diamond Jubilee, has provided qualified and skilled human resource in walks of life - education, health, farming, government and private employment, state administration, sports, culture and politics.

Man tahsil (Dahiwadi) is known for the scarcity of rain. The region receives mere 500 to 750 mm of rainfall which is lowest in Satara district. The college is committed to quality as its guiding principle and wishes to provide services leading to the overall satisfaction of the end-users. In consonance with this desire the college takes efforts for drought stricken people. Due to insufficient rain and lack of irrigation facilities, the large numbers of people migrate to other cities. The college plans and implements its policies according to these social and geographical conditions. Keeping in mind the vision of the college - *'Transforming the life of perennial drought-hit population through quality higher education with new vistas of knowledge promoting research and inculcating scientific temper'* all feasible efforts are made to sustain and enhance the campus as a model to the students. Due to immense efforts of all stakeholders, the college is a role sculpt in the vicinity and an oasis for *Mandesh*.

The college implements various schemes for enhancing and sustaining the greenery of the campus. The students from 'Earn and Learn' scheme work hard with the motto 'To convert barren land into best land.' 'One student: One sapling' scheme is in work for last three years getting plants free of cost from local nursery. The college runs demo projects like conservation of local seed varieties, college farm, botanical garden with RET plants, apiculture, incubation centre, polyhouse techniques, sericulture, vermicomposting, farm pond, etc. to inculcate different skills among the students. The participation of students made it possible to change the situation. Plantation and conservation of trees is the only aim to fight against perennial drought. After distributing the saplings among the students, they are asked to look after them and report monthly with geo tagged photos to their mentors. Recently, the college has announced a special scheme for the students with various prizes in three groups. The summary of unique features of the college:

1. **Four Campuses** – The property of the college is divided into four campuses. Campus 1 includes the classrooms, administrative buildings and indoor sports complex along with numerous other centres. Campus 2 is in developing phase having 400m running track, boys' hostel, farm pond and horticulture. Campus 3 includes a water reservoir. Campus 4 is 40 km away from college having 7 acres of land mainly used for practical purposes by students of B. Voc.
2. **Variety of UG and PG programs-** The college provides 7 UG programs and 3 PG programs. Ours is the only college in this area that provides degree courses in recent and new branches of knowledge like Defence Study, B. Voc. in Agriculture and Bank Management. The students from the region can get post graduate degree in commerce, Chemistry, English and Political Science. The college started these PG courses taking into account the need and demand from stakeholders.

3. **Extensive focus on tree plantation-** Aiming to lower the temperature of the region which is very high in summer, the college has taken initiative in tree plantation. Along with Government and Non- government organizations, the college has arranged wide tree plantation campaigns. Special efforts are taken to make all four campuses green and eco-friendly. No wonder, the campus is the most beautiful college campus in Satara district.

4. **Large number of Short Term Courses-** The college offers a wide range of skill based and career oriented short term courses. Ours is the only college located in rural area that provides 24 skill courses, 16 short term courses and 7 career oriented courses. All the courses are need based and skill oriented.

5. **Special focus on preparation for competitive examinations-** The college has well equipped competitive examinations guidance centre. It's the only of its kind in the whole district. Along with AC reading hall, a library full of relevant and newly released books, we arrange expert talks through online and offline mode. Due to adverse geographical conditions students prefer government services. The college provides best facilities for them. As a result, a large the number of students are selected for the same.

Our parent institute Rayat Shikshan Sanstha has signed MoU with The Climate Reality Project India in 2020-21. Dahiwadi College has been selected for the activities run under the project Green Campus activities. Their expert team has visited the campus. The college and the local nursery work hand in hand to lessen the effects of drought on human beings in this region. As compared to another zone of Maharashtra people in general and farmers in

particular never think of suicide. The students of the college are oriented through transformative initiatives accordingly. They understand the approach of the college to overcome the panic condition due to famine. They converse with their parents, neighbours and other people from their locality regarding the information they got from the college. They put into operation the ideas they come across while completing their degrees and survive blissful life. As the college is situated in drought-hit area and majority of students belong to rural and disadvantaged communities, the institutional distinctiveness is seen in its success in increasing number of trees through quality in-house programmes and extension activities. This is due to ecofriendly campus of the college in drought stricken area.

- **For more details:**

<https://youtu.be/BDrivYuoyDQ>

<https://youtu.be/EnILDkVSMYU>

https://youtu.be/70K8cmx_QmE

<https://youtu.be/AIR7h9iC7gw>

<https://youtu.be/vqpz8yrPC6k>

<https://youtu.be/UW8D7emdrYg>

<https://youtu.be/n7UNq8lpimE>

- **Supporting documents:**

Please visit

<https://www.dahiwadicollege.in/DSSR/DCDSSR1722CR7.3.1.pdf>

Rayat Shikshan Sanstha's

DAHIWADI COLLEGE DAHIWADI

Tal. Man Dist. Satara 415 508 (Maharashtra)
NAAC Re-Accredited with 'A' Grade (CGPA 3.25)



Barren Land **To** Breathing Land PROJECT

DAHIWADI COLLEGE DAHIWADI



Tree Plantation



Abstract

Recurring drought is a major challenge in the Drought Prone Area of Man Taluka (Dahiwadi) of Satara district Maharashtra State in India, **Rainfall in this taluka is only 30 % Compared to rest of District** this project is started to withstand against this drastic condition by increasing plantation on barren land near by college which will help in carbon sequestration, rainfall , agroforestry restoration etc. Under this project we selected thirteen acres of land of college.

In the beginning **selected land was completely uneven without enough fertile soil and water sources. The entire uneven land was leveled, followed by soil analysis by soil analysis laboratory of our college.** About 1400 various trees are planted in appropriate manner with good irrigation and fertigation management, by which barren and uneven land is brought under cultivation which will help in overcoming the problem

• Introduction

- Dahiwadi College Dahiwadi is located in drought prone region of Man Tehsil in Satara District (Maharashtra) where there is scarcity of water and vegetation. **Topography of this region is not suitable for agriculture, horticulture and natural vegetation due to hilly region and severe drought.**
- **The most of land in this area is barren due to inadequate irrigation** but trees are vital for human life because they offer a varied range of resources such as absorbing carbon or acting as carbon sink, generating oxygen which is important for life's existence on earth so they are also known as earth lung, aiding to regulate hydrological cycle, world's climatic condition, water purification, providing habitat to wildlife, decreasing global warming, absorbing poisonous gases and noise, reducing pollution, preserving soil, and mitigating natural threats like floods and landslides.
- However, currently forest cover is quickly diminishing due to various causes such as development of agriculture, urbanization, road construction, industrial plants and factories that constitute the major and severe danger to the forestry that lead to serious destruction of the environment.

Objectives

- To reduce carbon footprint
- To bring awareness among students about tree plantation and its benefits
- To increase vegetation in locality
- To overcome effect of drought by good water management

- **Material and Methods**

The selected uneven plot is leveled with excavator for proper slope and dimensions. Pits of dimensions 60 x 60 x 60 cm are created and were filled with black soil and organic fertilizer produced from organic waste of college using organic composting pit of college. Neem cake was also added to prevent root decay. After filling the pits with the required manure, they are left open for 15 days before planting. The spacing between each pit is kept of the following; 4 x 4 m, 5 x 5 m, or 6 x 6 m according to the condition of soil for irrigation purpose whole area under plantation was covered by drip irrigation laterals. By which we were able to bring more area under plantation with minimum use of water. The availability of water for irrigation is from farm pond of our college with central water distribution system. This made irrigation feasible and viable.

- It has been observed that spacing of 6 x 4 m with a proper drip irrigation system has provided good growth in the plants and will enhanced the fruit-bearing. For plantation we selected the plant species which have good tolerance to scarcity of water and suitable to climatic conditions of locality. Students together planted 1400 trees such as bamboo, mango, custard apple, orange, chiku and coconut in proper sequence to give good aesthetic sense. work is done in following stages
- **Stage – 1 : Preparation of land (2021)**











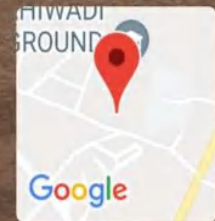
Dahiwadi, Maharashtra, India
PG4V+W7M, Dahiwadi, Maharashtra 415508, India
Lat N 17° 42' 27.3996"
Long E 74° 32' 37.4604"
05/10/21 09:18 AM



Dahiwadi, Maharashtra, India
Unnamed Road, Dahiwadi, Maharashtra 415508, India
Lat N 17° 42' 28.4472"
Long E 74° 32' 33.3168"
07/10/21 02:47 PM



Dahiwadi, Maharashtra, India
PG4V+W7M, Dahiwadi, Maharashtra 415508, India
Lat N 17° 42' 28.4868"
Long E 74° 32' 35.6568"
04/10/21 04:41 PM



Dahiwadi, Maharashtra, India
PG4V+W7M, Dahiwadi, Maharashtra 415508, India
Lat N 17° 42' 28.4616"
Long E 74° 32' 35.6928"
04/10/21 04:42 PM

Soil Analysis





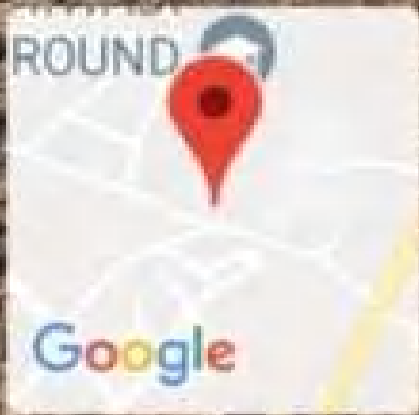


- Stage – 2: Digging of Pits



- Stage – 3 : Filling of pits with soil





Dahiwadi, Maharashtra, India

PG4V+W7M, Dahiwadi, Maharashtra 415508, India

Lat N 17° 42' 27.7452"

Long E 74° 32' 35.97"

18/10/21 01:23 PM



DAHIWADI
GROUP



Google

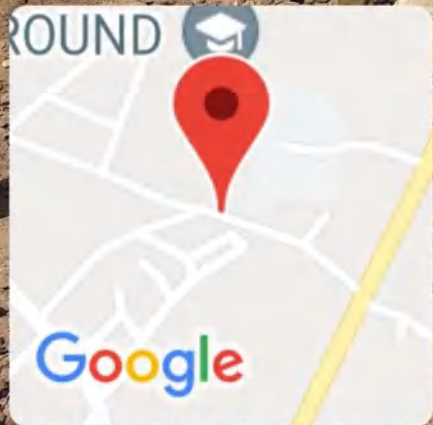
Dahiwadi, Maharashtra, India

Unnamed Road, Dahiwadi, Maharashtra 415508, India

Lat N 17° 42' 29.9088"

Long E 74° 32' 34.2852"

26/10/21 09:08 AM



Dahiwadi, Maharashtra, India
PG4V+W7M, Dahiwadi, Maharashtra 415508, India
Lat N 17° 42' 26.9532"
Long E 74° 32' 36.942"
22/10/21 10:45 AM



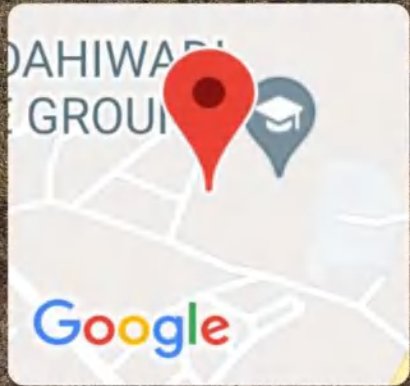
Dahiwadi, Maharashtra, India

PG4V+W7M, Dahiwadi, Maharashtra 415508, India

Lat N 17° 42' 27.9936"

Long E 74° 32' 35.466"

22/10/21 12:16 PM



Dahiwadi, Maharashtra, India

Unnamed Road, Dahiwadi, Maharashtra 415508, India

Lat N 17° 42' 30.5856"

Long E 74° 32' 33.9"

22/10/21 01:47 PM



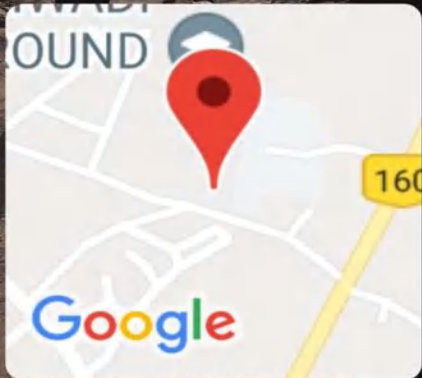
Dahiwadi, Maharashtra, India

PG4V+W7M, Dahiwadi, Maharashtra 415508, India

Lat N 17° 42' 27.8928"

Long E 74° 32' 35.4336"

22/10/21 12:16 PM



Dahiwadi, Maharashtra, India

PG4V+W7M, Dahiwadi, Maharashtra 415508, India

Lat N 17° 42' 27.8244"

Long E 74° 32' 37.2372"

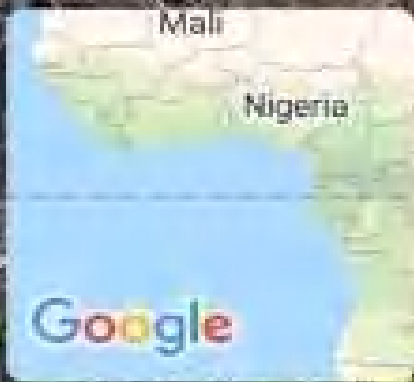
21/10/21 02:31 PM

Stage – 4 Use of Organic Fertilizer



Use of Decomposing Culture to decompose Organic waste .2.5 tons of Manure from 3 tons of waste





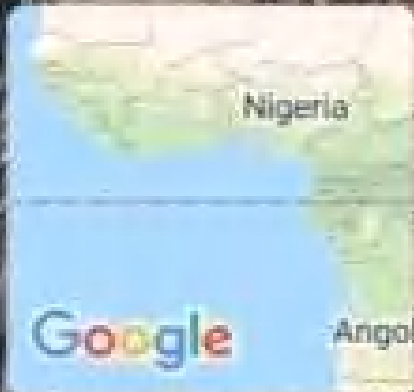
Dahiwadi, Maharashtra, India

Dahiwadi-Phaltan Rd, Dahiwadi, Maharashtra 415508, India

Lat N 17° 42' 33.1668"

Long E 74° 32' 41.7984"

07/12/21 01:28 PM



Dahiwadi, Maharashtra, India

Dahiwadi-Phaltan Rd, Dahiwadi, Maharashtra 415508, India

Lat N 17° 42' 33.1668"

Long E 74° 32' 41.7984"

10/12/21 10:16 AM



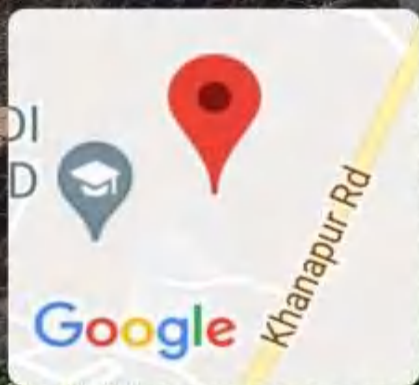
Dahiwadi, Maharashtra, India

Dahiwadi-Phaltan Rd, Dahiwadi, Maharashtra 415508, India

Lat N 17° 42' 33.1668"

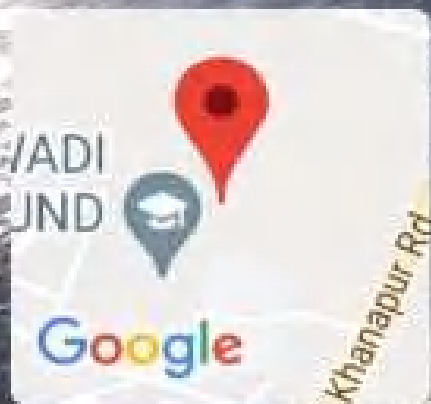
Long E 74° 32' 41.7984"

07/12/21 01:19 PM



Stage – 5 Drip Irrigation setup





Dahiwadi, Maharashtra, India

Dahiwadi-Phaltan Rd, Dahiwadi, Maharashtra 415508, India

Lat N 17° 42' 34.0956"

Long E 74° 32' 39.2856"

24/10/21 08:25 AM



Stage – 6 : Plantation







SHOT ON MI 101





Dahiwadi, Maharashtra, India
PG3R+625, Dahiwadi, Maharashtra 415508, India
Lat N 17° 42' 10.9116"
Long E 74° 32' 23.4276"
06/12/21 01:26 PM



Dahiwadi, Maharashtra, India
PG3R+756, Dahiwadi, Maharashtra 415508, India
Lat N 17° 42' 13.1184"
Long E 74° 32' 22.182"
05/01/22 12:43 PM




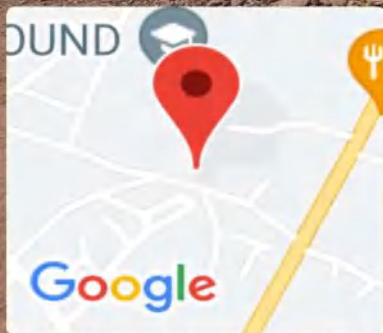
Table showing details of Plantation

Sr. No	Common Name	Scientific name	Variety	Number of Plants
1	Mango	Mangifera indica	Gir Keshar	400
2	Custard apple	Annona reticulate	NMK-01 Golden	450
3	Mosambi	Citrus reticulata	Nucellar	50
4	Coconut	Cocos nucifera	T cross d	50
5	Chiku	Manilkara zapota	Cricket ball and Kali Patti	100
6	Bamboo	Bambusoideae	Bambusa vulgaris	150
7	Peru / Guava	Psidium guajava	Sardar	100
8	Total Plantation			1400

Present Status 2023



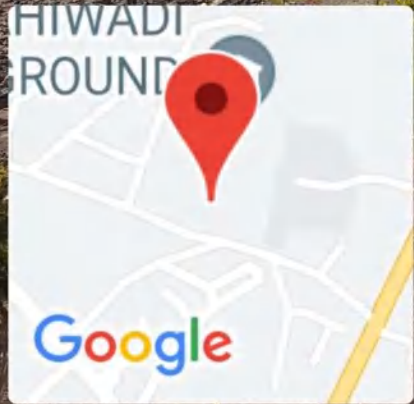
 GPS Map Camera



Dahiwadi, Maharashtra, India
PG4V+V7W, Dahiwadi, Maharashtra 415508, India
Lat 17.707628°
Long 74.543874°
26/01/23 12:54 PM



GPS Map Camera



Dahiwadi, Maharashtra, India
PG4V+V7W, Dahiwadi, Maharashtra 415508, India
Lat 17.70797°
Long 74.543258°
26/01/23 12:56 PM











Outcomes

- As Dahiwadi taluka (Man) is rain shadow region and of dry mountain ranges it also facing recurring droughts which badly affected the vegetation and reduced number of trees .By this project we contributed to overcome this drastic condition where barren land of less utility is converted to green productive land plot by planting variety of trees. Huge plantation in minimum water use which did not exerted any pressure on water resources and ground water level of area. The use of organic fertilizer which is produced by decomposing waste material of college found to be very beneficial from the view of waste management and increasing fertility of soil in holistic manner.
- Entire plantation project activity will be beneficial in
- Carbon sequestration
- Decreasing drought effects
- Decreasing soil erosion on slopes
- Providing habitats for birds and animals
- Increasing vegetation .
- Fruits for Students and revenue for maintenance