AGRICULTURAL RESEARCH AND AWARENESS CENTER

INNOVATIVE INCOME GENERATING ACTIVITY FOR FARMERS

B.ARCH DESIGN DESERTATION

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- ## ACKNOWLEDGEMENT

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Last but not the least; I would like to thank A.I.K.T.C. School of Architecture, for providing me with the opportunity to work on this Project.

With Kind Regards

Mohammed Juned Aslam Shaikh

- **ABSTRACT:**

Agriculture is the backbone of the Indian economy which plays the most decisive role in the socioeconomic development of the country. Indian agriculture is a miscellaneous and extensive sector involving a large number of actors. India has one of the largest and institutionally most complex agricultural research systems in the world. The agricultural research system in India includes some 27,500 scientists and more than one lakh supporting staff actively engaged in agricultural research, which makes it probably the largest research system in the world. Historically, the Indian agricultural research system is the zenith of a process which started in the 19th century and which resulted in the establishment of the Imperial (now Indian) Council of Agricultural Research (ICAR) on the recommendation of a Royal Commission on Agriculture in 1929. In the present research system, the Indian Council of Agricultural Research (ICAR) at the National level mainly aids, promotes and coordinates research and education activities in the country. The development of agricultural research system in India, ever since the colonial era till today, is being tried to trace in the paper. An attempt has been made to portray the role of Five Year Plans regarding investment, technology transfer and other aspects related to agricultural development in India. Although agriculture has been playing the most vital role in Indian economy, during the course of the study, it has been observed that not much emphasis has been given to the history of evolution of agricultural research in India

- **LIST OF FIGURE**

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- **LIST OF TERMINOLOGIES**

- **Herbarium** - a collection of dried plants or parts of plants
- **Agricultural Chemistry** - Study of both **chemistry** and biochemistry which are important in **agricultural** production.
- **Agronomy** - The science of soil management and crop production
- **Plant Pathology**- Study of the organisms and environmental conditions that cause disease in **plants.**
- **Entomology** - The branch of zoology concerned with the study ofinsects
- **Agricultural Engineering** -Branch of **engineering** that deals with the design of farm machinery and the processing of farm products.
- **Horticulture** - the art or practice of garden cultivation and management
- **Agricultural microbiology** - Study concerned with plant-associated microbes.
- **Agricultural economics** - Concerned with the application of **economic** theory in optimizing the production and distribution of food.
- **Agricultural extension** – department that deals withdelivery of information inputs to farmers.
- **Soil Science** - Branch of science concerned with the formation, nature, ecology, and classification of soil.
- **Chromatography** - Is a way to look at complex mixtures by separating them into their components.
- **Plant Growth Chamber** – it is designed to produce environmental conditions that maximize plant growth.(Entomology dept.)
- **Digestion Chamber** – A histologic finding in nerves that are undergoing wallere rian degeneration.
- **Animal Husbandry** – The science of breeding and caring for farm animals.
- **Poly House** – Is a tunnel made of polyethylene, usually semi-circular in shape.
- **Greenhouse** – A glass building in which plants that need protection from cold weather are grown.
- **Pot Culture** – The growing of plants in flower pot.

- **Rabi Crops –** The crops sown in winter and harvested in spring.
- **Kharif Crops –** The crops sown in summer and harvested in rainy season.
- **Plant Breeding –** The production of new crop varieties which are Superior to their Parents.
- **Cytogenetics –**The study of structure and function of the cell.
- **Plant Physiology –** Science of how plant develop, grow and respond to their environment.
- **Integrated Farming System-** Utilization of primary produce and secondary produce of one system as basic input of other system.

- **LIST OF ABBREVIATIONS**

ICAR – Indian Council Of Agricultural Research**.**

B.Sc. – Bachelor in Science.

M.Sc. – Master in Science.

NPOF – Network project on organic farming

GDP – Gross Domestic product

MPKV – Mahatma Phule Krishi Vidyapeeth

PGI – Post Graduate Institute

FDI – Foreign Direct Investment

F.P. U – Food Processing Unit

- **CHAPTER 1 : INTRODUCTION**

1.1 INTRODUCTION

Agriculture in India has a significant history. Today, India ranks second worldwide in farm output. Agriculture and allied sectors like forestry and fisheries accounted for 16.6% of the GDP in 2009, about 50% of the total workforce. The economic contribution of agriculture to Indias GDP is steadily declining with the countries broad-based economic growth. Still, agriculture is demographically the broadest economic sector and plays a significant role in the overall socio-economic fabric of India.

Indian population has increased five times than that existed at the time of independence, but the land area is not change even the agricultural land got decease, currently only one fourth of the land is available for per person as compared to the time of independence.

INTERMS OF ECONOMY:

Agriculture is the backbone of most developing economies, particularly India. Green revolution and smaller plot holdings as witnessed by the Asian countries has led to rapid forward strides being made in the agriculture in the last few years. Inspite of this India faces several challenges arising from socio- economic, demographic and **Institutional sectors** that affect its basic survival. While Western economies experienced a rapid and complete transition from agricultural to becoming an advanced capitalist society, the process of transformation has been slow in most of Asian economies, barring a few. In India, 85 % of the population is directly or indirectly dependent upon agriculture and a vast majority is based in the rural belt. India basically being a rural economy.

The Indian economy registered a GDP grow that of 9 per cent during 2007-08

The share of agriculture and industry sector in total GDP however, stagnated at 18 during 2007-08, while that of theservices sector increased from 55 per cent during 2006-07 to 58%

The share of agriculture in total exports of the country declined to 9.9 per cent during 2006-07 from 11.8 percent during 2003-04.

(Base 2004-05)

Sl.No	Year	Agricultural Income (₹ in crores)	Rate of change over previous year	Agriculture and Allied Sectors (₹ in crores)	Percentage
1	2	3	4	5	6
1	2004-05	16980.51		20843.75	17.48
2	2005-06	18041.97	6.25	21882.16	16.67
3	2006-07	16567.85	-8.17	20507.67	14.48
4	2007-08	16196.60	-2.24	20255.14	13.15
5	2008-09	16533.94	2.08	20656.57	12.70
6	2009-10*	16236.47	-1.79	20534.52	11.59
7	2010-11**	16110.59	-0.78	20486.12	10.59

* Provisional ** Quick

Source: Directorate of Economics and Statistics

Table 1: Income From Agriculture And Other Sources

1.2 WHAT IS AGRICULTURE?

The science or practice of farming, including cultivation of the soil for the growing of crops and the rearing of animals to provide food, wool, and other products.

1.3 HISTORY OF AGRICULTURE:

Agriculture in India has a long history dating back to 10,000 years. Today, India ranks second worldwide in farm output. Agriculture and allied sectors employ about 60% of the total workforce. Agriculture is still the largest economic sector and plays a significant role in the overall socio-economic development of India.

British period (1757-1947 CE)

Indian commercial crops-such as Cotton, indigo, opium, and rice made it to the global market under the British Rule in India. The second half of the 19th century saw some increase in and under cultivation and agricultural production expanded at an average rate of about 1 percent per year by the later 19th century. Due to extensive irrigation by canal networks Punjab, and Andhra Pradesh became centres of rice cultivation. post-Independence agricultural production has been brought about by bringing additional area under cultivation, extension of irrigation facilities, use of better seeds, better techniques water management, and plant protection.

In the 1970s saw a huge increase in India's wheat production. Additional programs were undertaken to improve food and crops. The focused on food and crops supply respectively.

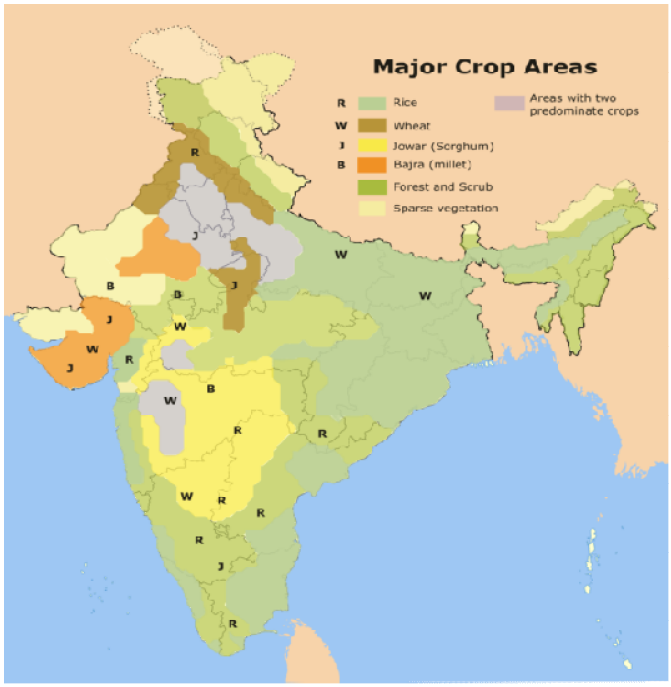


Figure 1: Major Crops Grown

The many production revolutions' initiated from 1960s onwards included Green Revolution in India, Yellow Revolution (oilseed: 1986-1990),(dairy: 1970-1996)and Blue evolution (fishing: 1973-2002) etc.

Following the economic reforms of 1991, significant growth was registered in the agricultural sector, which was by now benefiting from the earlier reforms and the newer innovations of Agro-processing and Biotechnology.

The per capita consumption of cereals declined from 192 to 152 kilograms from 1977 to 1999 while the consumption of fruits increased by 55% vegetables by 167%, dairy products by 105%,and non-vegetarian products by 85% in India's rural areas alone. Urban areas experienced a similar increase.

Agricultural exports continued to grow at well over 10.1% annually through the 1990s. Contract farming -which requires the farmers to produce crops for a company under contract and high value agricultural product increased. Contract farming led to a decrease in transaction cost while the contract farmers made more profit as compared to the non-contract workforce. however Small landholding continued to create problems for India's farmers as the limited land resulted in limited produce and limited profits

Since independence, India has become one of the largest producers of wheat, edible oil, potato, rubber, tea, fruits, and vegetables, in the world. The Ministry of Agriculture relating to agriculture in India. Various institutions for agriculture related research in India were organized under the Indian Council of Agricultural Research (est. 1929).

Banking loans, education for the former are the chief initiatives by the government to develop the life of rural farming lands. Agriculture is also looked with the motive maintaining the ecological balance. Harvest preservation, marketing for agriculture produce, are some of the plans followed by the agricultural department of India.

AGRICULTURE IN INDIA AFTER INDIPENDENCE

The Agricultural Universities were established the agricultural education and research were managed by the respective State Department of Agriculture and Colleges were affiliated Looking the complexities of the agricultural problems and in depth education and research, the concept of farm universities was think with recommendations of Radhakrishnan Commission (1948) the agricultural universities re established In country from 1960.

The Indian Council of Agricultural Research (ICAR) is an autonomous organization under the Department of Agricultural Research and Education (DARE), Ministry of Agriculture, Government of India. Formerly known as Imperial Council of Agricultural Research, it was established on 16 July 1929 as a registered society under the Societies Registration Act, 1860 in pursuance of the report of the Royal Commission on Agriculture. The ICAR has its headquarters at New Delhi.

The Council is the apex body for co-coordinating, guiding and managing research and education in agriculture including horticulture, fisheries and animal sciences in the entire country. With 99 ICAR institutes and 53 agricultural universities spread across the country this is one of the largest national agricultural systems in the world.

The ICAR has played a pioneering role in ushering Green Revolution and subsequent developments in agriculture in India through its research and technology development that has enabled the country to increase the production of food grains by 4 times, horticultural crops by 6 times, fish by 9 times (marine 5 times and inland 17 times), milk 6 times and eggs 27 times since 1950-51, thus making a visible impact on the national food and nutritional security. It has played a major role in promoting excellence in higher education in agriculture. It is engaged in cutting edge areas of science and technology development and its scientists are internationally acknowledged in their fields.

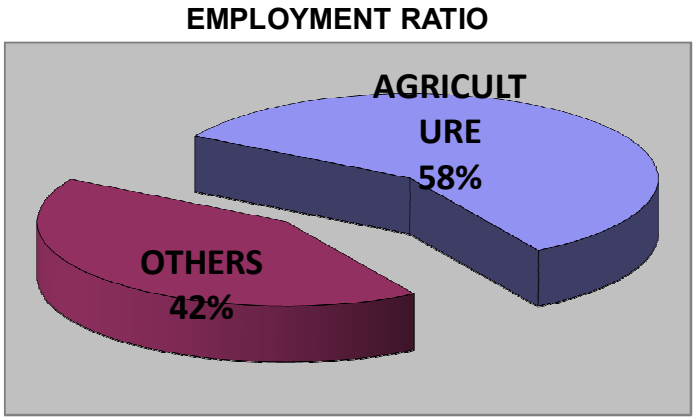


Figure 2: Employment Ratio

1.4 AGRICULTURE AND ITS IMPORTANCE

Agriculture plays a vital role in the Indian economy. Over 70 per cent of the rural

Figure 3: Agriculture and Its Importance

1.5 DEPENDENCY ON AGRICULTURE

Health Care Pharmaceuticals, ointments, surgical sutures, latex gloves, x-ray film.

Manufacturing: Adhesives, lubricants, solvents, detergents, polymers

Education: Crayons, textbooks, chalk, desks, pencils, paper

Construction or : Lumber, paints, tar paper, brushes, dry wall, particleboard,

Architectural materials tool handles, Woods, Rubber Lime, Glass,etc

Provides food to more than one billion people produce more than 51 major crops contribute to 1/6th of export earnings

1.6 FACTORS AFFECTING

a. Awareness about latest technology

b. Awareness about latest schemes

c. Different irrigation methods and pesticides

d. Agriculture as just hand to mouth livelihood

e. Awareness about new fertilizers and pesticides

Figure 4: Factors Affecting Agriculture

ISSUES:

SOCIOLOGICAL ASPECT

Increase in population: India needs 235 million tones of food grain to feed the population of 1 billion people. Even if India is able to achieve the replacement level fertility in next 15 to 30 years, the population will only stabilized towards the end of 21st century at 1.8 - 2.1 billion people so to feed such large population the production capacity should increase with higher pace of growth.

Development of awareness among the farmers: The girl and hard work of Indian farmer and the vision of Indian scientist's lead to a spectacular increase in agricultural yields in India. This green revolution rise the food production from 70 million tones in 1954 to 202 million tones today. Storage facility now holds 31.1 million tones in reserve. This was due to the awareness and awakening among the farmers towards agro industry and its development from last three decades.

Required self sufficiency : The Indian farmer is aware of latest technology and education and wants to achieve and wants to achieve it to become self sufficient which he had not achieved yet.

Developing an agricultural college in an region which has an urge for it may benefit the local people specially the fatmers. It would serve them a closer by educational institute which

would impart them the knowledge which would improve the yield of particular holdings in to the benefiting economic standard of that particular area.

ECONOMIC ASPECT:

Agriculture has recently developed from an occupation to a science the spurt in the agriculture has become an instrument of change in the chronically stagnant country side.

Development of agro industry:

The development of agro industry has occurred due to the awareness of that industry and importance of that industry and importance of that industry is now known to the Indian farmer in rural areas also.

LARGE MARKET DUE TO GLOBALIZATION:

Recent liberalization of Indian market has given the agro industry a large platform to sell their products in world market which gives a justice to the efforts of Indian farmers. The common people will be in a position to consume better produces. A surplus yield may also increse national income. A social awakening forwarded due to education may also benefit the rural society.

EXPORT INCOME BY AGRO INDUSTRY:

Large amount of foreign exchange is gained by exporting Indian food/agro products to developing countries. Due to export competition agro industries are meeting with international standards.

1.7 PRESENT SCENARIO OF AGRICULTURE

Number of farmers decreased by 8.6 million in last 10 years. more than 60,000 farmers commited suicide between 1997-2013 in maharashtra.hence, there is need to make them aware from theknowledge of capital, marketting and technology which is been missing in this modern era and to also introduce any secondary sourceof income from farm

1.8 AGRICULTURAL POLICIES

1. To encourage transformation from conventional agricultureto mechanized agriculture

2. To undertake renovation and maintanance works for old irrigation,pumping and underground water systems.

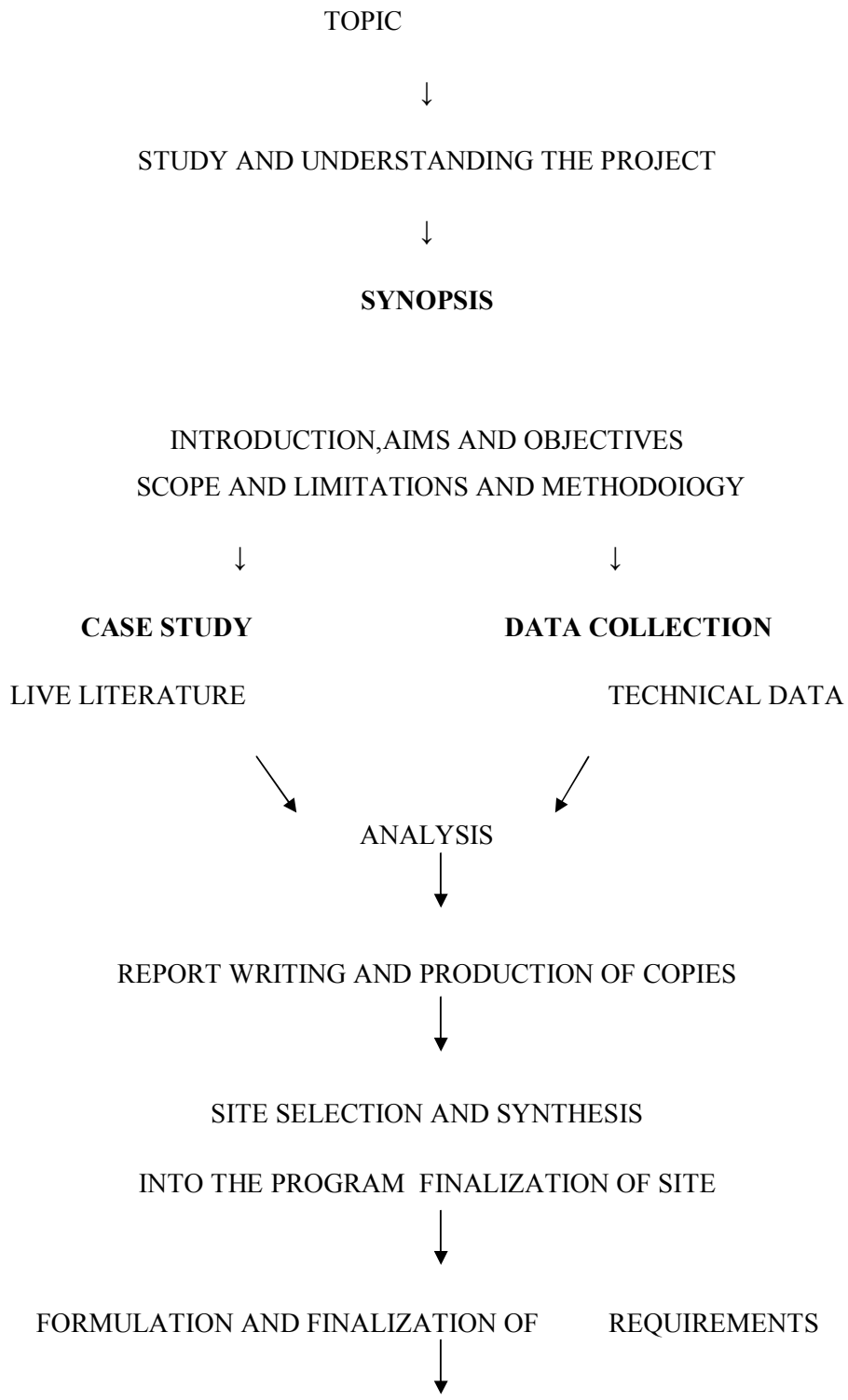
3. To support rural development and poverty reduction activities through development of agriculture sector

4. To help strengthen the market and allow the farmers freedom of choice in crop cultivation

5. To encourage local and international investment in agriculture sector

6. To appropriate and amend the existing agriculture laws and regulations in line with current situation

- **CHAPTER 2: RESEARCH METHODOLOGY:**



DESIGN

DESIGN CRITERIA AND CONCEPT

SKETCH DESIGN AND EVALUATION

FINALIZED DESIGN AND EVALUATION

DETAILED DESIGN

AIM:

1. To increase the farm productivity in order to meet the growing demand of increasing population.

2. To improve the lifestyle of farmers by generating any allied source of income to them.

OBJECTIVES:

1) To continuously raise productivity, employment and income in agriculture and allied activities through optimal utilization of natural and human resources;

2) To strengthen, reorganize or newly build up physical infrastructure and institutions to effectively help adopt and operate modern technologies and practices to provide further impetus to agricultural growth and rural Development.

3) To provide food security.

4) To focus all activities in support of small and marginal farmers, poor and disadvantaged people with a view to secure social justice and to reduce poverty and distress.

5) To continuously improve economic well-being and quality of life of all stake holders and

6) To help the district/village/rural areas to take off on a faster track of growth and sustainable development

7) To train the farmers with respect to get them the maximum output from their farms.

8) To introduce the allied source of income for farmers by proposing small scale industry and agro tourism.

9) To promote agriculture and scope in it by setting up the exhibitions, workshops and N.G.O's programs for public/farmers

TOPIC JUSTIFICATION:

Number of farmers decreased by **8.6 million** in last 10 years. more than **60,000 farmerscommitted suicide** between 1997-2013 in Maharashtra. Hence, there is need to introduce any secondary source of income for the farmers from farms and to also make the people feels about the hard work and seriousness of the business

"Securing farmers is like securing future"

YEAR	MAHRASHTRA	ANDHRA	KARNATAKA	MP	All India
1999	2,423	1,974	2,379	2,654	16,082
2000	3,022	1,525	2,630	2,660	16,603
2001	3,536	1,509	2,505	2,824	16,415
2002	3,695	1,896	2,340	2,578	17,971
2003	3,836	1,800	2,678	2,511	17,164
Total (NDA) 84,235					
2009	2,872	2,414	2,282	3,197	17,368
2010	3,141	2,525	2,585	2,363	15,964
2011	3,337	2,206	2,100	1,326	14,027
2012	3,786	2,572	1,875	1,172	13,754
Total (UPA-2) 61,013					

SOURCE: National Crime Records Bureau
* NCRB data merely records suicide by farmers. It does not specify the reasons for suicide.

Table 2: No. Of Farmers Committed Suicides

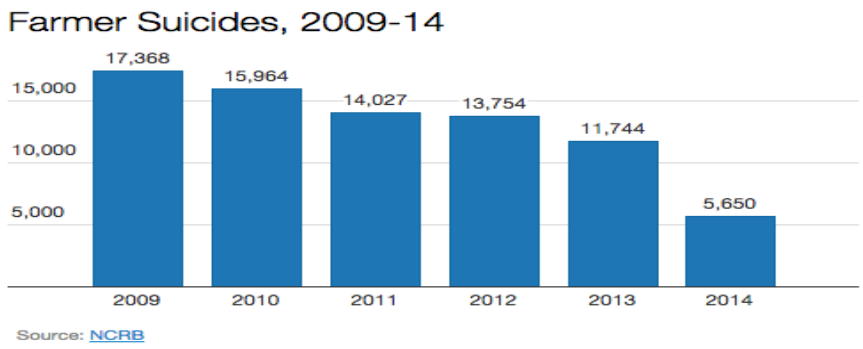
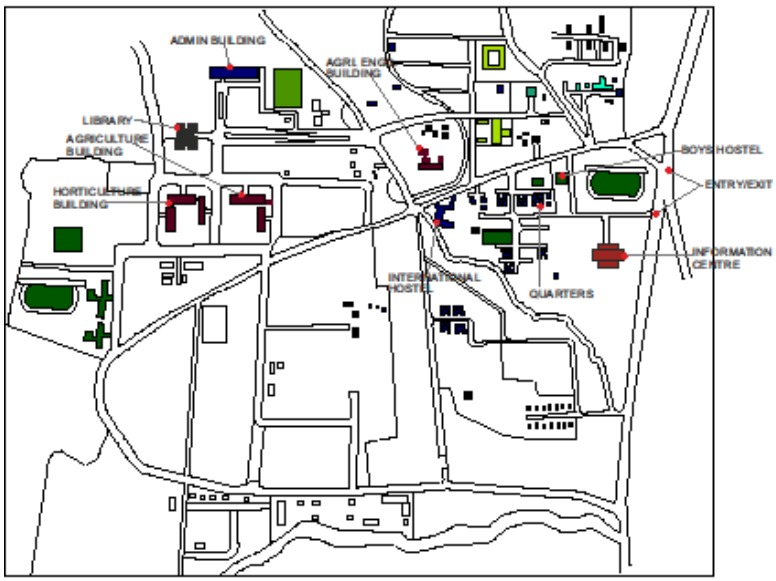


Figure 5: Farmer Suicides, 2009-14

- **CHAPTER 3 : CASE STUDY**

A. KONKAN KRISHI VIDYAPEETH, DAPOLI



LOCATION PLAN

- **DATE OF ESTABLISHMENT:** 18th May 1972
- **LOCATION:**

  Taluka - Dapoli

  District- Ratnagiri

  State - Maharashtra

- **JURISDICTION**: It extends over five district namely Thane, Raigad, Ratnagiri, sindhudurg and Greater Bombay. It is an autonomous body under maharashtra government
- **AREA:** College of agriculture, dapoli extends over 189.22 Ha. Research station at wakavali extends over 76 Ha.
- **TOPOGRAPHY:** The region has hilly terrain and extensive coast line of 720 km. It recieves heavy rainfall ranging from 2000-4000 mm mostly from june to september. The climate is warm and humid through out the year
- **OBJECTIVES:** The government of maharashtra established Konkan Krishi Vidyapeeth with major aim and primary feature of meeting the need of an integrated campus where teaching, research and extension in agriculture and allied fields can carry out with more accuracy, precisely and accurately. It also established to cater the the scientific research done by researchers to the farmers, to stimulate adoption of new methods and techniques to increase national food production.

- **ABOUT COLLAGE (Architectural Brief):** The site of campus is near to dapoli town. It is bounded by road on north side. The campus is spread over 181 hectors of land. Basically the Konkan Krishi University is subdivided in to three departments

1. research department

2. Education department

3. extension department

Apart from this it also have hostels for student and museum where all the exhibition is set up

1. **Research Department** : It looks after all the research work in konkan region i.e Raigad, Palghar, Sindhudurg, Thane, Ratnagiri and greater Mumbai. There are 16 research stations which fall under the supervision of the university. The konkan region is divided in to 2 zones

a. South zone and

b. North zone.

The main research station of south zone is at Vengurla and of north zone is at Karjat, the main incharge of this zones are "Associated Director Of Research".

All the programs of this 16 research station including monitoring, evolution and planning are administrated by "Director of Research". To carry out the work effectively and need fully there are 3 "Deputy Director Of Research" is also assigned, One is who looks after.

a. Seeds and Planning Material another who looks after b. agricultural economy (as per the planning of university) and the third one who look completely after the research works, organization of meetings, monitoring of research programs etc.

Faculty of agriculture:

1. College of agriculture

2. Agriculture Research station, Palghar, Raigad

3. Grass Breeding station, Panvel, Raigad

4. Agriculture Research Station, Panvel, Raigad

5. Agriculture Research Station, Karjat, Raigad

6. Kharland Research Station, Panvel, Raigad

7. Agricultural School, Roha, Raigad

8. Trial-cum Demonstration farm, Repoli, Raigad

9. Arecanut Research Station, Shriwardhan

10. Central experiment station, Wakawali, Ratnagiri

11. Soil Conservation Research Station

12. Agricultural Research Station, shirgaon, Ratnagiri.

13. Regional Coconut Research Station, shirgaon, Ratnagiri.

14. Agricultural School, Lanja, Ratnagiri.

15. Agricultural Research Station, Phondaghat, Sindhudurg.

16. Mango Research Sub-center, Airye, Sindhudurg.

2. **Education Department:** It runs under the administration of director of Instruction. All the collage programs, Strategies, Functions and curriculum work set by the university of ICAR are executed under his supervision. There are 6 colleges under this university

1. agricultue

2. forestory

3.Engineering collage of dapoli

4. Ratnagiri fishries collage

5. Sindhudurg horticulture college

and 6. Post Harvest Management Roha, Raigad.

The collage building of Konkan Krishi Vidyapeeth, is mainly includes classrooms, laboratories, and Rest rooms for professors, H.O.D's, Seminar room

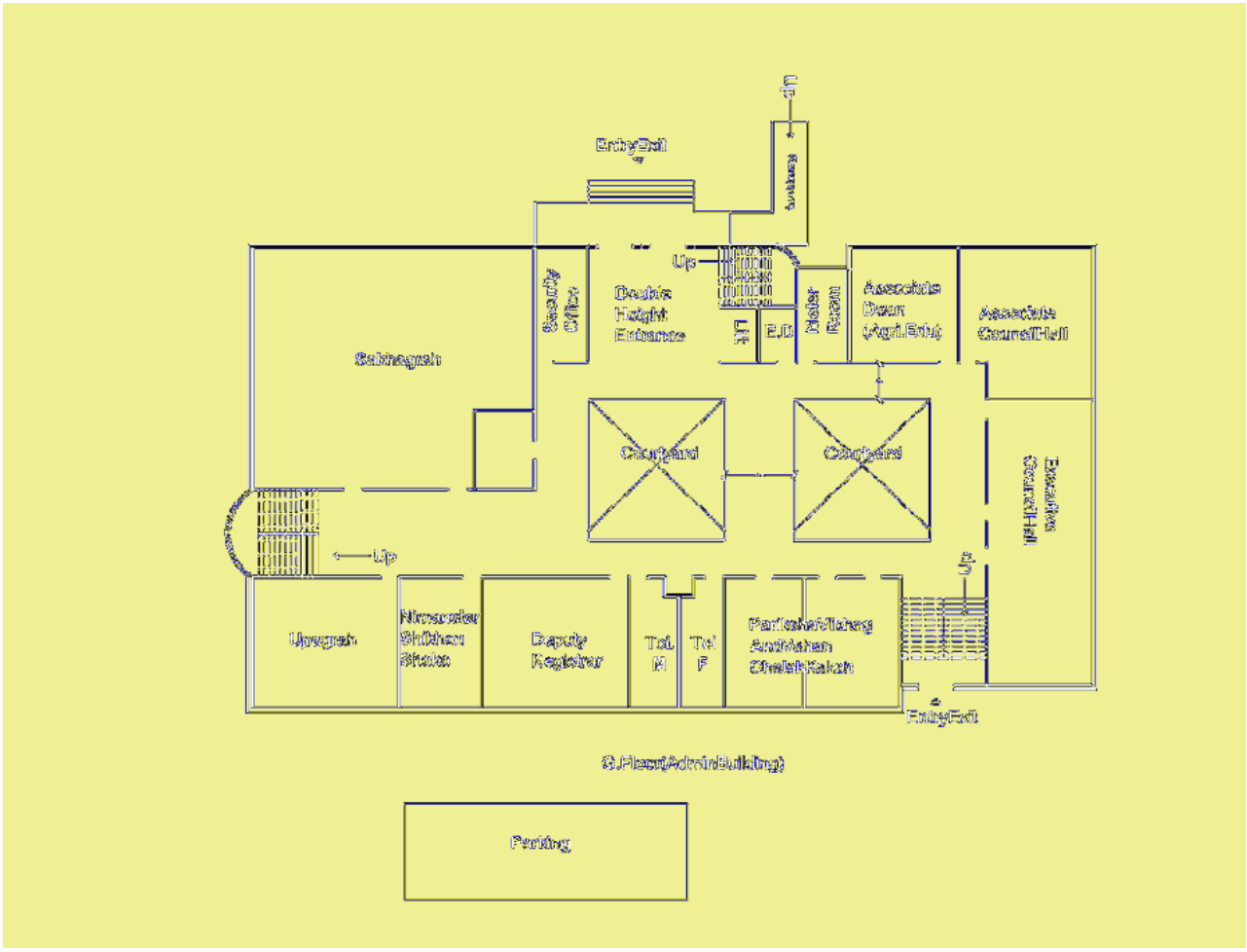
3. **Extension Departments** main task is to promote and aware the peoples about the research done by the researchers about agriculture to also plan the workshop for the farmers or public, to also notify the problems faced by the farmers with respect to farming.

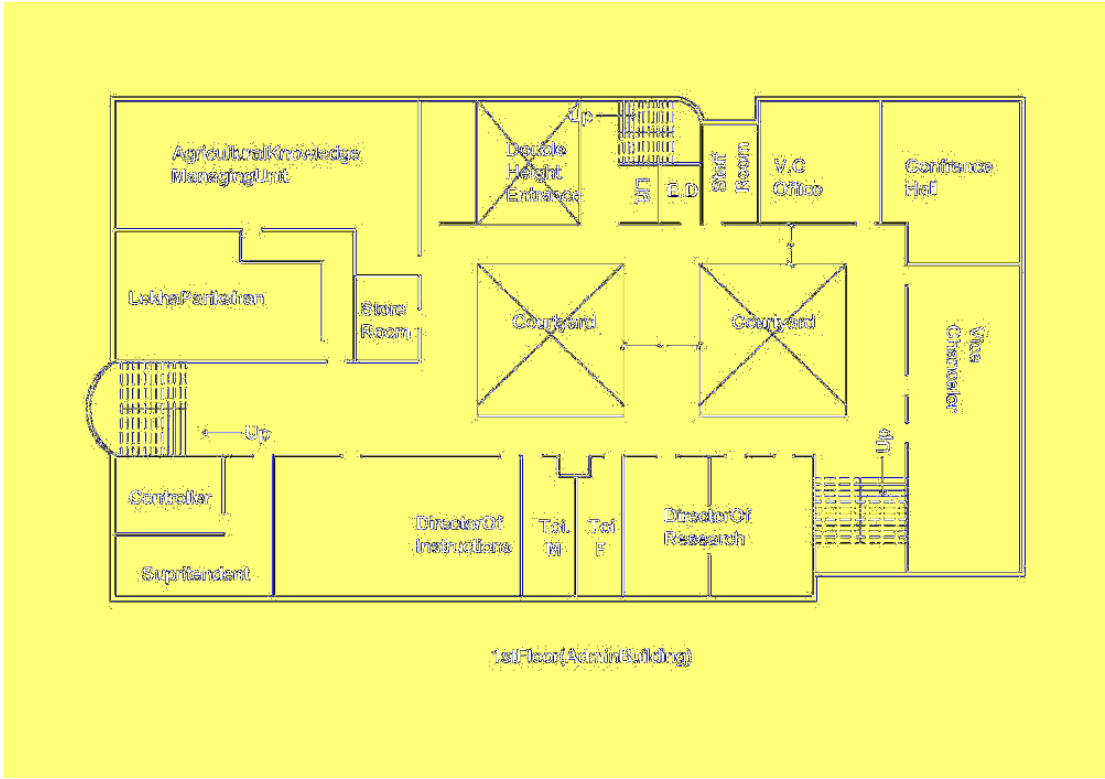
The Extension Building mainly includes room for extension agronomist, Supervisors, Draughtsman, Engineers, Registrar and agro forestory department.

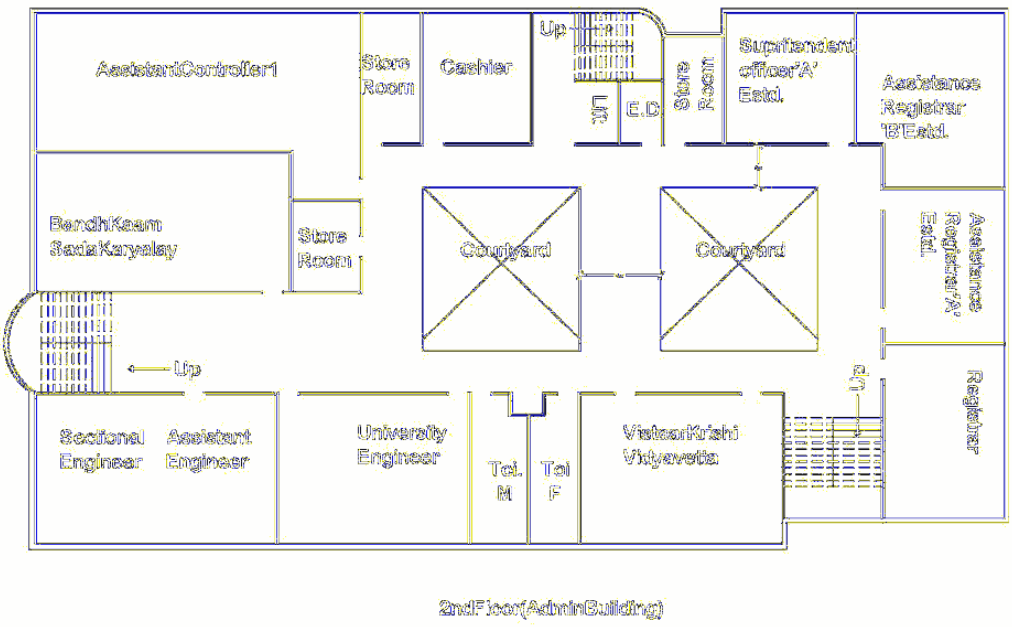
The university undertakes extension education activities for extension of workers and farmers. The university also set up the workshops in which all the scientist actively participate, It also setup training program arranged for the staff of the training and visit systems.

Admin Building:

There is one main admin building which looks/caters after all these three main programs . It is G+2 structure with two courtyards and grand double height entry. Ground Floor and first floor is freezed by research and education department, and third floor is for extension department.




Agricultural Knowledge Managing Unit
Up
Staff Room
V.C Office
Conference Hall
Lekha Parikshan
Store Room
Courtyard
Courtyard
Up
Up
Controller
Superintendent
Director Of Instructions
Tel. M
Tel F
Director Of Research
1st Floor (Admin Building)


Assistant Controller 1
Store Room
Cashier
Up
Store Room
Superintendent officer 'A' Estd.
Assistant Registrar 'B' Estd.
Bandh Kaam Sada Karyalay
Store Room
Courtyard
Courtyard
Assistant Registrar 'A' Estd.
Up
Up
Registrar
Sectional Engineer
Assistant Engineer
University Engineer
Tel. M
Tel F
Vistar Krishi Vidyavetta
2nd Floor (Admin Building)

Library building

The library is well designed with huge opening for natural lights. it is placed on spot which serves to be a great welcoming and attractive structure which gets spotted within first view itself. Aesthetically it is good, But it is not barrier free as the admin building or collage building.

Overall the structure is well catering in terms of functions and climate such as rain, sunlight and ventilation. It is G+1 structure. Library room for students has 3 tiers within this hall on ground issuable books. On top of library room, there is exhibition space, which is column free and skylight and top.

Hostel:

There are two hostel buildings for boys (separate building for Post Graduate students and graduate students) at walking distance of eight minutes from agriculture college building and a small girls hostel is also provided in the campus itself, there is also a separate international hostel

Kisaan Bhavan :

There is also an accommodation facility available for the farmers or the workers visiting their for learning purpose and for attending the workshops, arranged by the extension department with central canteen on the ground floor in one of the building. As the category for whom the building is been built are mostly from the lower class but the rooms and the services that are proposed and maintained are of excellent level with the minimal charge of rs. 90/ per day.

And now talking about the sustainably, the material which is been used for the construction of the structure right from the building to boundary wall are all of laterite stone which is easily available there as a local material. The structure is been designed with the passive cooling techniques, such as cross ventilation, big opening, windows puncture inside with fins going parallel to cater the direct sun light, huge floor heights with ventilator so as to exit the warm and and at the same time welcomes the fresh and cool air. There is fibre green house, glass houses, green houses with plastic papers

and polyhouses where the small plants are kept for their initial growth and temperatue is maintained inside.

- **ACTIVITY COURSES:**

SR. NO.	COURSES	DURATION	CAPACITY
1	B.Sc (AGRICULTURE)	4 YRS	80
2	B.Sc (HORTICULTURE)	4 YRS	257
3	B.Sc (FORESTRY)	4 YRS	22
4	M.Sc (AGRICULTURE)	2 YRS	57
5	PH.D (BY RESEARCH)	4 YRS	20
6	MALI TRAINING	1 YRS	30

LIST OF DEPARTMENT:

a. Agricultural Chemistry

b. Agronomy

c. Plant Pathology

d. Entomology

e. Agricultural Engineering

f. Horticulture

g. Agricultural Microbiology

h. Agricultural Economics

i. Soil Science

All the departments are included in the same building.

- **ROOMS AND AREA STATEMENT**

Every Department consists of the following rooms

ROOM	NO.	AREA
H.O.D	1	18.0M
Professors room	1	18.0M
Asst. Professors	1	30.0M
Store	1	250M

Along with these rooms are the most important rooms and labs which might be categorized as follows:

AGRONOMY DEPARTMENT:

No labs required as practical work is carried out on field itself.

HORTICULTURE:

SR. NO.	**ROOMS**	**NUMBER**	**AREA**
1	Tissue culture lab	1	15.75 M
2	Balance room	1	15.00 M
3	Preparation lab	1	15.00 M
4	Cold storage	1	30.00 M
5	Chromatography lab	1	15.75 M
6	Growth chamber	1	15.75 M
7	Digestion chamber	1	15.78 M
8	Store	2	20.00 M

BOTANY:

SR. NO.	ROOMS	NUMBER	AREA
1	Herbarium lab	1	15.75 M
2	Balance room	1	14.00 M
3	Gas plant	1	14.00 M
4	Labs	2	76.00 M

CHEMISTRY:

SR.NO.	ROOMS	NUMBER	AREA
1	Labs	2	76.00 M
2	Preparation room	1	25.00 M
3	Balance room	1	40.00 M

ENTOMOLOGY:

SR. NO.	ROOMS	NUMBER	AREA
1	Labs	2	76.00 M
2	Preparation room	1	25.00 M
3	Balance room	1	40.00 M

AGRICULTURAL ENGINEERING :

SR. NO.	ROOMS	NUMBER	AREA
1	Labs	1	76.00 M
2	Workshop	2	76.00 M
3	Store	1	40.00 M

FARM AREA:

1. Agronomy:- 25 ha of production of food-grains of crops like Cane.
2.Animal Husbandry department:- 10 ha farm required for housing cattle, greasing areas and other processing units.
3. Botany department 5 ha. for production of hybrid with glass house and potting sheds.
4. Horticulture departments:- 40 Ha for production of high quality tress like mango, cashew, coconuts etc.
5 Chemistry department:- 5 acres to carry out soil experiments.
6. Entomology:- 1 acre with a glass house for breeding insects and insecure.
7. Plant pathology:- 1 acre farm with a iron net house for pot culture.
administrative setup

- **SWOT ANALYSIS:**

Strength: Proper site for agriculture with respect to suitable site conditions, amount of rainfall, climatic conditions as well as in amount of large area required.
well planned vegetation pockets.
Good clusters of academic buildings.
The structural form is designed as per the climate of konkan
Use of local materials in construction.
It receives good rainfall of 2000-4000mm.

Weakness: There is no connection between two faculty blocks as they are designed separately.
It is not easy to access the site via train, the only mean of traveeling there is by road.

Opportunities: The structure have expansion possiblities.
The faculty blocks can be connected by some extension or bridge
There is an opportunity to design the new administration block including all the services especially fire fighting.
local agriculture + linkage+ market + funding.

Threats: No safety measure has been taken for fire.
Lack of funding
Growing industrialization.
Less security as there is hardly any CCTV cameras installed.
Under the banner of mechanization they might be promoting the pesticides, which is not a hygienic solution at all.

B. REGIONAL AGRICULTURAL RESEARCH STATION KARJAT, DIST. RAIGAD

- **INTRODUCTION:**

TOTAL AREA (Ha.)	32.37
Area under cultivation (ha.) (1+2)	26.65
1. area under research trials (ha.)	16.59
2. area under seed production (ha.)	10.06
Other area (ha.)	5.72

Station is established on 14th august 1919 by the government of Bombay with a view to develop an improved rice strains from existing tall varieties of Thane and Raigad districts.

Station was functioning under-

- The state government up to 1968.
- Maharashtra Agriculture University up to 1969.
- Mahatma Phule Krishi Vidyapeeth, Rahuri up to 1972.
- Dr. B.S. Konkan Krishi Vidyapeeth, Dapoli from 18th May 1972.

- **GEOGRAPHICAL LOCATION, SOIL AND CLIMATE:**

Latitude	18.55 deg. N
Longitude	71.18 deg. E
Altitude	51.75 m (MSL)
Climate	Hot and humid
Annual mean maximum temperature	25 - 37 C

Annual mean minimum temperature	17 - 27 C
Mean annual rainfall	2500 - 3500 mm
Major soil type	Medium black

Rainfall:

Sr. No.	Year	Rainy days	Rainfall ()
1	2011	109	4417.0
2	2012	103	3268.4
3	2013	111	4152.5
4	2014	89	3490.2
5	2015	90	2536.6
	Average	100.4	3572.94

It can be revealed from the above table that Kharif 2015 (2536.6mm) season recieved 29.00 per cent less rainfall in comparison with last five years average rainfall (3572.94mm)

- **AREA OF THE RESEARCH STATION:**

a. **Farmwise Area And Its Utilization:**

Sr No.	No. Research	Name of the farm			Area (ha)
		Research	Seed Production	Other Purpose	
1	Breeding	6.87	6.50	3.94	17.31
2	Horticulture	2.50	-	-	2.50
3	MAE	5.05	0.44	1.07	6.56
4	Agronomy	2.17	3.12	0.46	5.75
5	Lift Irrigation	-	-	0.25	0.25
Total Area (ha)		16.59	10.06	5.72	32.37

b. **Area Under RABI Crops :**

Sr. No	Name Of The Farm	Research	Seed Production	Total Area (ha)
1	Breeding	-	0.20	0.20
2	Horticulture	0.75	-	0.75
3	MAE	3.48	1.08	4.56
4	Agronomy	1.0	1.0	2.0
Total Area (ha)		5.23	2.28	7.51

- **LIST OF PLAN AND NON-PLAN RESEARCH PROJECTS OPERATING AT RARS, KARJAT:**

a. Research and Extension work on Rice

b. National Agriculture Research Projects

c. All India Co-Ordinated Research Project on Rice Improvement

d. All India Co-Ordinated Research Project on Integrated Farming Systems

Main centre - RARS, Karjat

ECF Unit - ARS, Palghar

e. Network Project on Organic Farming

- **OBJECTIVES:**

a. **Plant breeding:**

To undertake basic and applied research on all major thrust areas with special emphasis on rainfall as well as irrigated rice.

To serve as a major center for exchange of research material and information.

To co ordinate rice improvement programme for Maharashtra State.

To develop semi dwarf, high yielding rice varieties resistant to biotic and abiotic stresses.

Collection and maintenance of germplasm and their utilization in breeding programme.

Production of nucleus, breeder and foundation seed of released rice varieties and hybrid

To standardize seed production packages for rice hybrids suitable for various agro climatic conditions.

b. **Integrated farming systems:**

To identify profitable and efficient cropping system for the region.

To develop organic farming packages for high value crops and cropping systems.

Study of resource efficient, economically viable and sustainable integrated farming system model developed for small and marginal farmers of the region.

To demonstrate efficient use of available farm resources.

c. **Network project on organic farming (NPOF):**

To identify suitable variety of crops for organic management practices.

d. **Rice Agronomy:**

To evaluate different crop establishment methods for increasing rice yields.

To develop efficient and economic weed management methods.

To participate in production oriented survey of the region.

e. **Plant protection on rice:**

To identify lines for broad spectrum resistance to major rice pests and diseases.

To develop need based management methods and practices for major plant diseases and pests.

To identify different types of diseases and pests, estimation of losses due to disease and pests of different crops and to develop low cost technology for their management.

f. **Agricultural chemistry and soil science:**

Research work on soil problems in the region.

Research work on organic farming.

Recycling of farm and industrial wastes in agriculture.

Enhancement of nutrient use efficiency.

Testing of Bio-chemical properties of rice.

g. **Horticulture:**

Need based research of horticultural crops.

Extension work related to horticultural crops.

h. **Agricultural economics:**

collection of basic statistical data of the region.

To test economic viability of technologies developed by the scientists.

To work out economics of major crops grown in the region.

Field survey related to inputs use, production, marketing, credit, employment, income of the farmers of the region and identify new problems emerging from the adoption of technologies.

i. **Agricultural extension:**

To conduct frontline demonstrations of newly released inbred and hybrid rice varieties on farmers fields.

To conduct extension workers and farmers training programmes on rice cultivation and seed production technologies.

To conduct adaptive trials of newly pre-released inbred and hybrid varieties on farmers fields.

To organize and participate in farmer's farmers-scientists forum, field days, group discussions and exhibitions.

- **ACHIEVEMENTS / STRENGTHS:**

Rice breeding : Rice varieties / hybrid released

Year	Nos.	Name
1919 to 1970	10	Kolamba-42,zinia-31, zinia-149, Kada-68-1,...etc
1971 to 2014 HYVs Hybrid	10	Karjat 184, Karjat 2, Karjat 3, Karajat 4,5,6,7,8 and Karjat 9
	04	Sahyadri, Sahyadri 2, Sahyadri 3 and sahyadri 4

In 1960 the statistics show the growth of yeilded crops of rice was 15 quintal per hector, and now it's 41 quintal per hector.

RARS had also had "A" grade for excellent research and extension work on hybrid rice under the NATP mission during National Group meeting on NATP- Hybrid crops project at IARI, New Delhi.

Outstanding contribution in the development and promotional efforts for Hybrid rice technology in the state during "International workshop on publiv-private sector partnership for promotion of Hybrid rice technology" at Pune.

- **CONSTRAINTS / WEAKNESS:**

Vacant positions of Scientists and Ministerial Staff.

Non-availability of contractual farm labourers due to urbanization and industrialization in peri-urban area and high wage rates.

Lack of irrigation facilities.

Constriction of wall fencing.

Renovation of farm roads, old office buildings, godowns and residential quarters.

Construction of Laboratories.

Construction of RCC field bunds.

Due to this research station some agro-based industries have came u psuch as rice husking 'fruit processing (small scale).dairy.

This has provided some employment to the villagers ,which has helped in stopping the migration happening toward the Mumbai for the analysis, Absence of cafeteria; which is one of the necessities of such station.

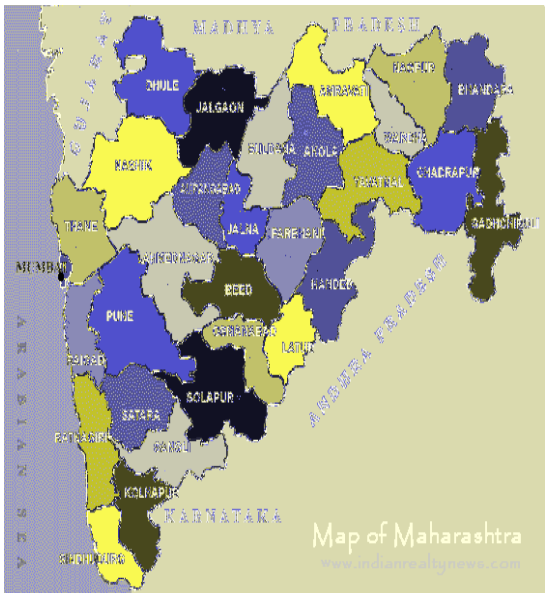
Aim of such center is to carry out regional architectural development and also to make invention in the interest of the country.

C. MAHATMA PHULE KRISHI VIDYAPEETH RAHURI

LOCATION :

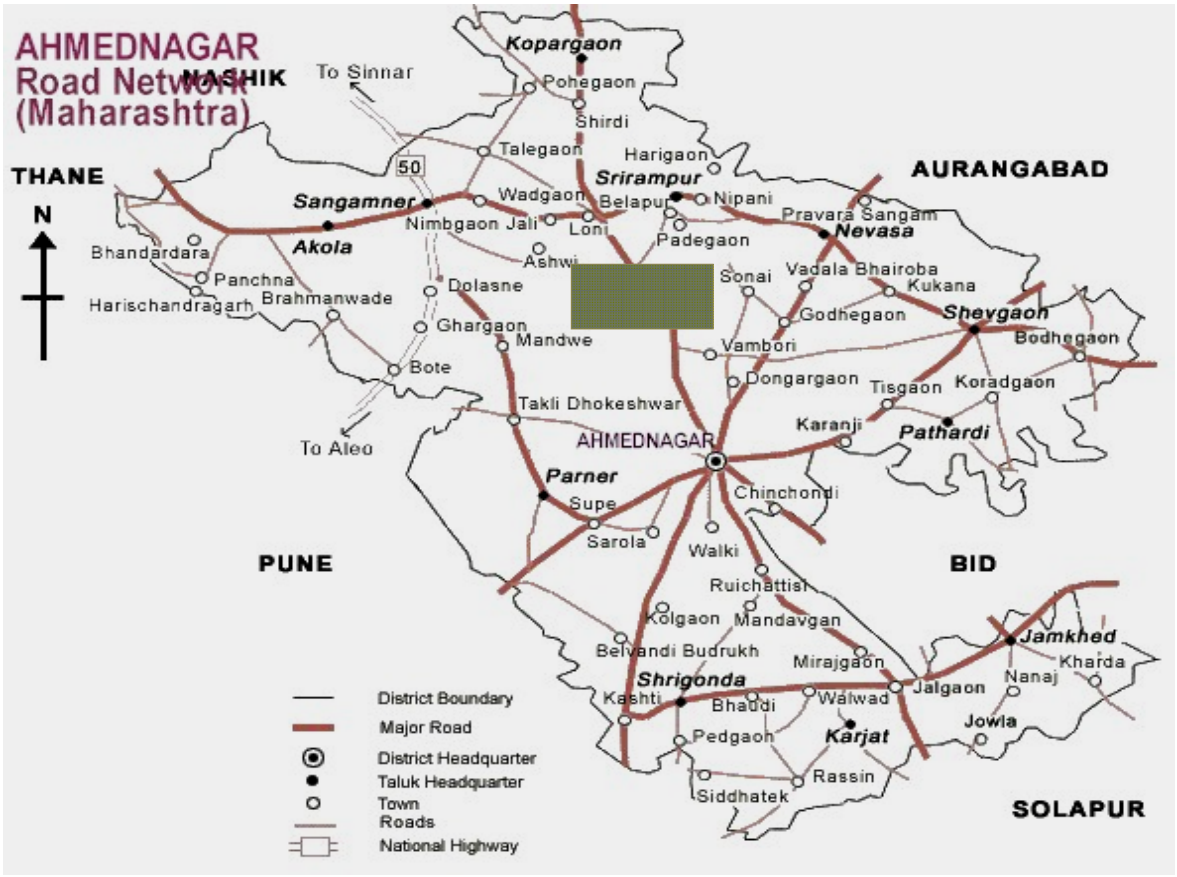
State – Maharashtra

District – Ahmednagar



Located at the scarcity zone of Maharashtra at Ahmednagar

Taluka - Rahuri



ESTABLISHMENT:

It was established in pursuance of Maharashtra agriculture act 1967 and it started functioning from October 29, 1969.

SITE AREA:

Total university land 850 acres

Built up area is 20-30% of total area.

SOIL CONDITION:

Black Cotton Soil.

CLIMATIC CONDITION:

Rainfall is from June to October maximum temperature during April - May minimum temperature December – January.

OBJECTIVES:

To provide education in agriculture and allied sciences.

To further the advancement of teaching and research in agriculture and allied sciences.

To undertake and guide extension programme for the improvement of agriculture productivity.

To co-ordinate agriculture education research and extension activities.

JURISDICTION:

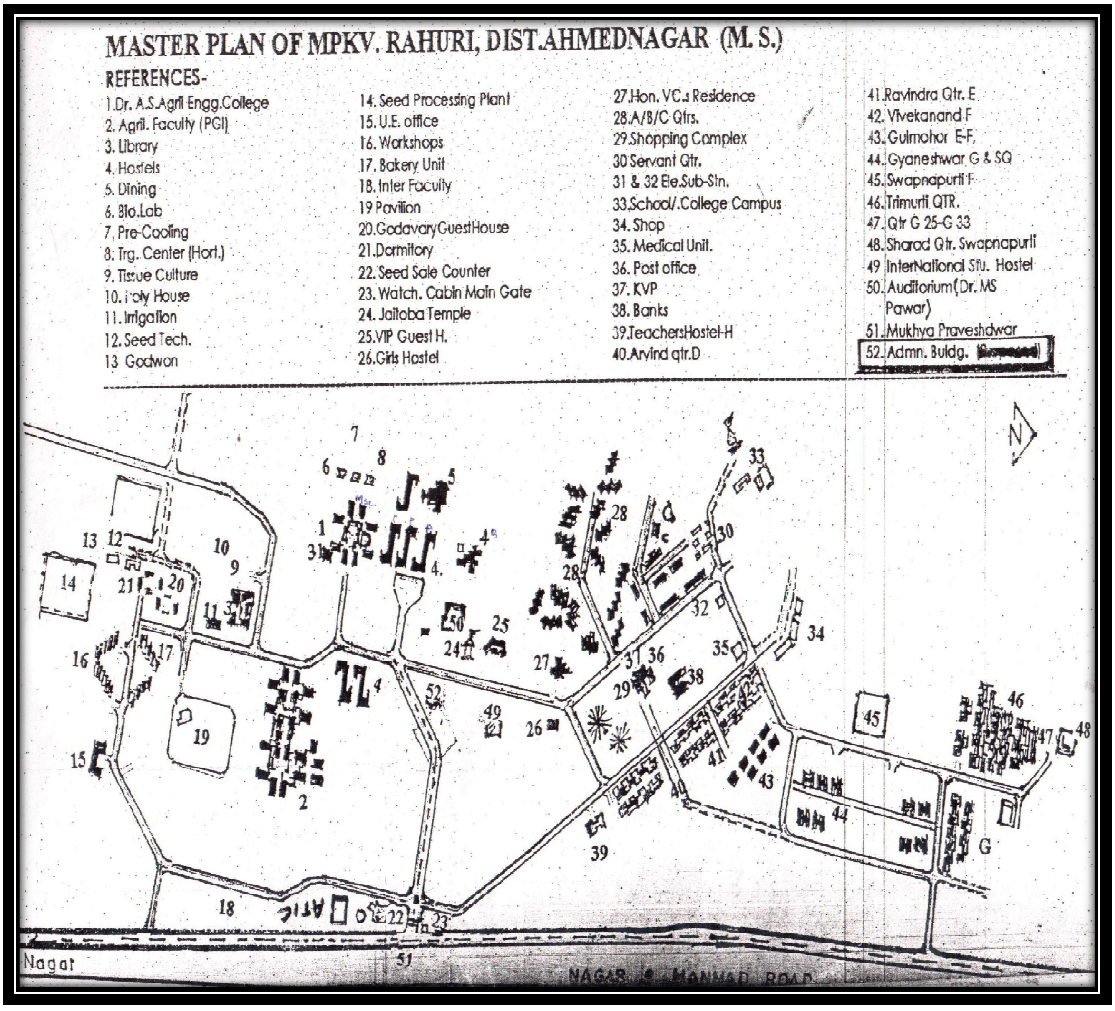
Western Maharashtra consists of 10 districts.3 HOLD FUNCTIONS:

1. Education

2. Research

3. Extension

SITE PLAN OF MPKV AT RAHURI



Dr. A.S. College of Agricultural Engineering, Rahuri

The College is named after late Dr. Annasaheb Shinde, former Union Minister of State for Agriculture. Dr. Shinde was one of the architects of Green Revolution in India and White Revolution in Maharashtra especially in Ahmednagar district.

AGRICULTURAL ENGINEERING:

Stone Construction Open planning Small Courtyards kept for plantations

G+2 Structure

- Parellal planning with projecting elements create one vision point

- 2 Blocks of building connected by bridge which allows ligth ventilation in mid part of the building
- Sharubs and small plantation used in the liner form to whole block at ground level which allows to direction of the way

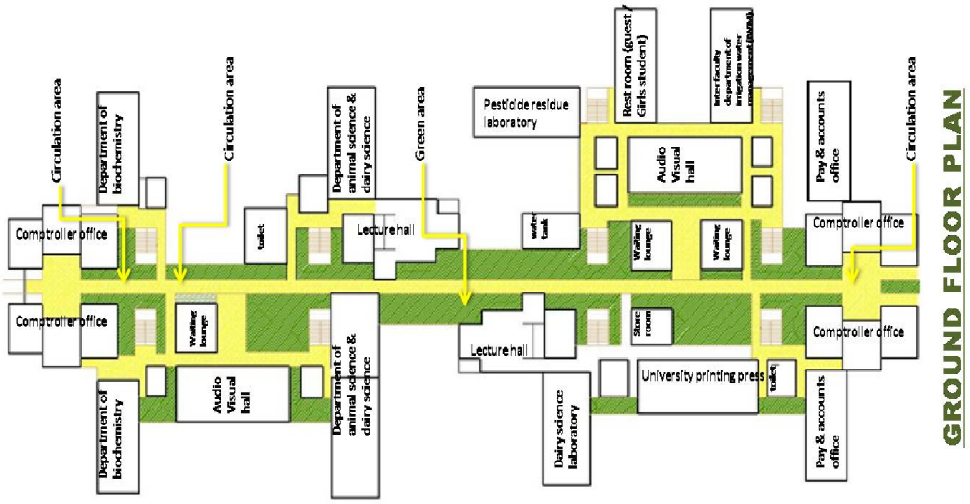
DISCIPLINES FOR M.TECH:

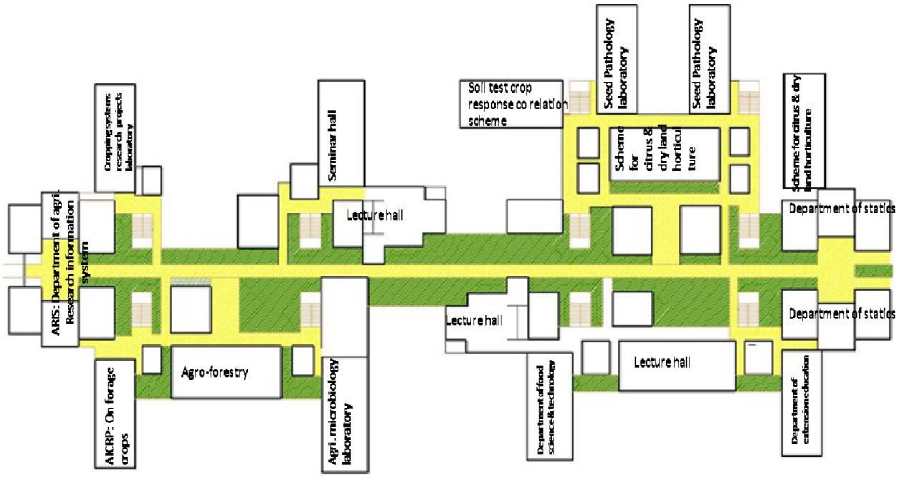
- Farm Machinery ,
- Soil and water Conservation,
- Irrigation and Drainage Egg,
- Agriculture Process Engg.
- Bothe the buildings (PGI and Agri engg) are designed by Ar. Kanvinde.
- They follow the same character, while the other buildings built later are quite different and do not follow same character

POST GRADUATE INSTITUTE:

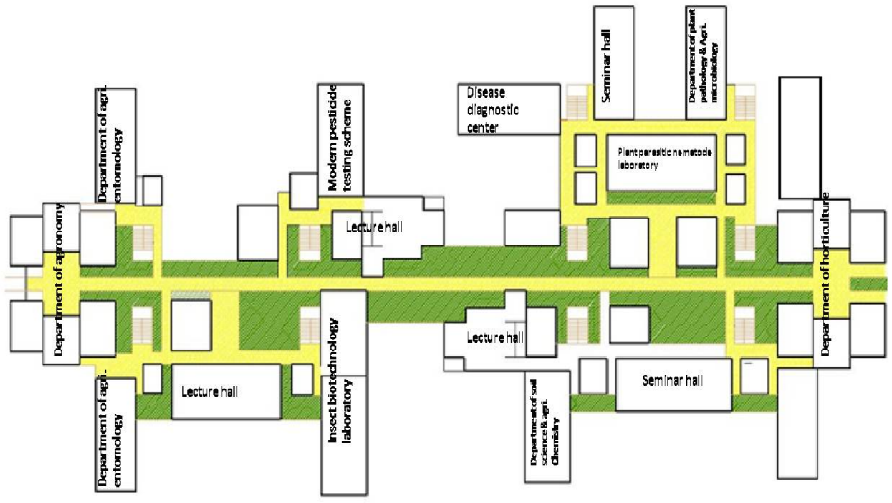
- Agronomy Cytogenetic
- Plant Breeding
- Plant Physiology
- Agriculture Entomology
- Agriculture Extension
- Plant Pathology
- Agriculture Microbiology
- Horticulture
- Animal Science And Dairy Science
- Seed Technology
- Food Science Technology
- Bio-Chemistry


POST GRADUATE INSTITUTE

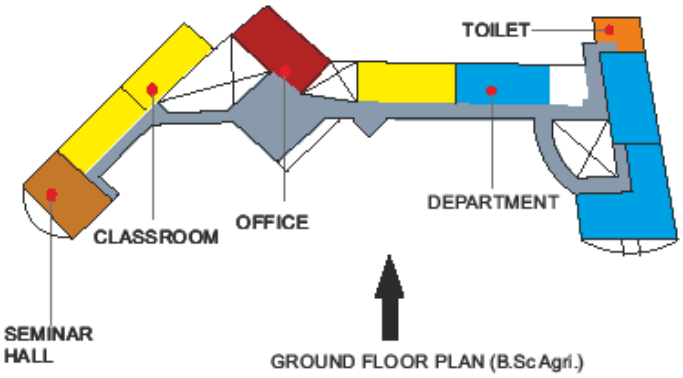

GROUND FLOOR PLAN
Circulation area
Department of biochemistry
Circulation area
Department of animal science & dairy science
Green area
Pesticide residue laboratory
Rest room (guest / Girls student)
Audio Visual hall
Pay & accounts office
Circulation area
Comptroller office
toilet
Lecture hall
Waiting lounge
Comptroller office
Comptroller office
Waiting lounge
Store room
Comptroller office
Department of biochemistry
Audio Visual hall
Department of animal science & dairy science
Lecture hall
University printing press
toilet
Dairy science laboratory
Pay & accounts office

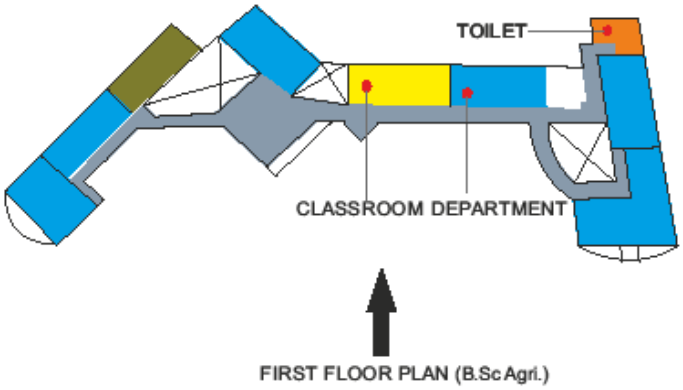


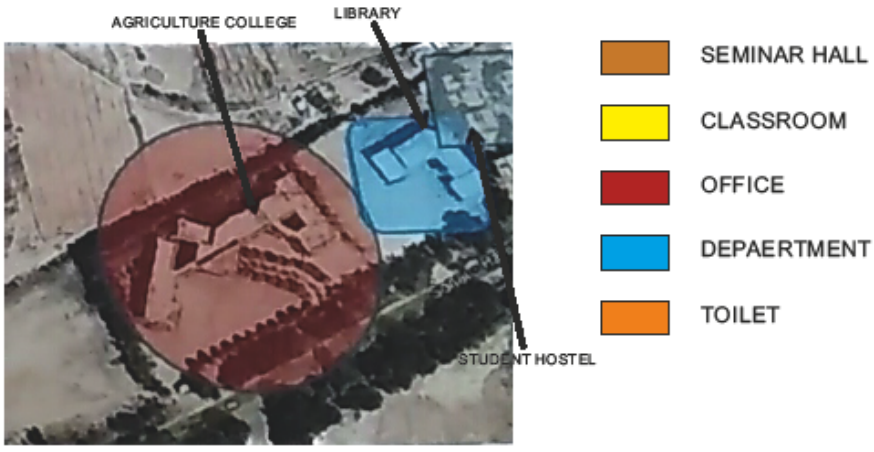
FIRST FLOOR PLAN



SECOND FLOOR PLAN


TOILET
DEPARTMENT
OFFICE
CLASSROOM
SEMINAR HALL
GROUND FLOOR PLAN (B.Sc Agri.)


TOILET
CLASSROOM DEPARTMENT
FIRST FLOOR PLAN (B.Sc Agri.)


AGRICULTURE COLLEGE
LIBRARY
STUDENT HOSTEL
SEMINAR HALL
CLASSROOM
OFFICE
DEPAERTMENT
TOILET

AGRICULTURE ENGINEERING

Farm Machinery And Power

Soil And Water Conservation

Irrigation And Drainage Engineering

Agriculture Process Engineering

Extension Education Department

To impart training to personal working and development of various above department. It has following rooms.

Class Rooms

Professors Rooms,

Conference Rooms

Store Rooms And

Demonstration.

LIBRARY

It is three storied having thesis books at ground floor PG and UG books in the first floor and reading room on second floor.

The Three-storied building is having length of 117 feet and width of 130 feet.

The carpet area of all four floors is about 35,640 sq.ft

The building has a capacity of stacking five lakh volumes and can accommodate 250 readers at a time.

Lighting: Indirect natural Light.

Structure: G+3

COMMUNICATION CENTRE

It provide technical information to farmers and extension personal.

HOSTEL

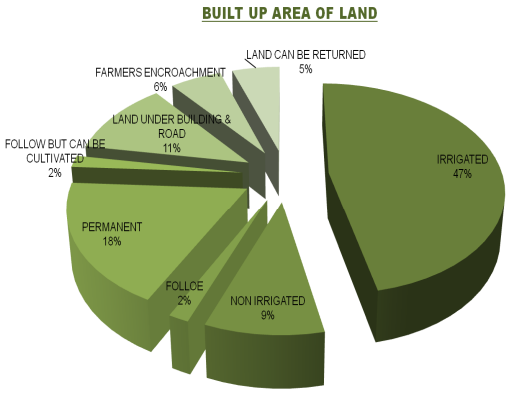
It is G+2 with two rooms attach to a common balcony intimate courtyards are create among the hostel.

- International Students
- Girls Hostel
- Boys Hostel
- Teachers' Hostel
- Hostel
- Farmers' hostel
- Guest House
- VIP Guest House

WATER TANK FOR COLLEGE:

- Mullah dam water used for agriculture.

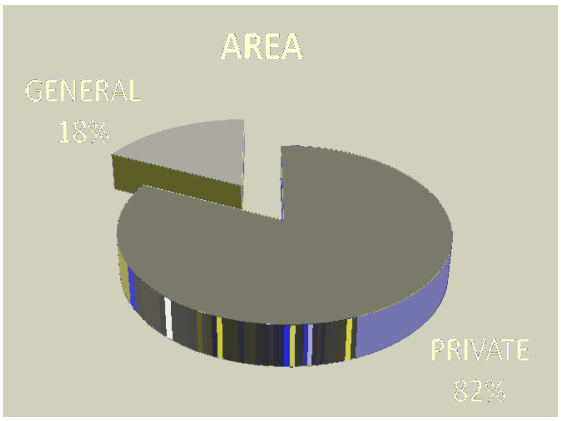
LAND USE



CROP	AREA (HA)
mango	**121**
Sapota	**15**
Ber	**26**
Tamarind	**58**
Jamun	**1**
Custard Apple	**6**
Guava	**7**
Forest Trees	**95**

AREA UNDER PLANTATION:

333 HA/ 822 Acres

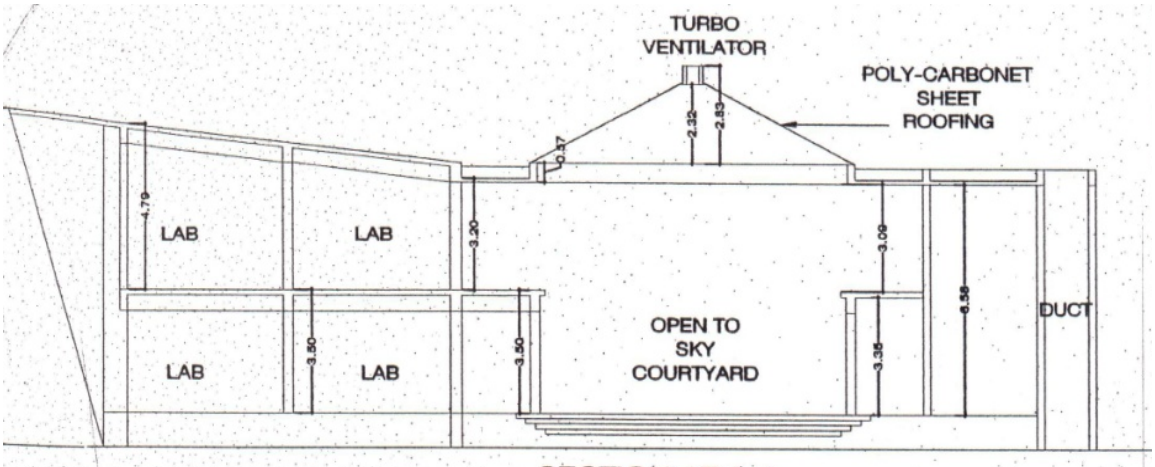


Farm Land HAVING Green Houses, The Land Is Used For Seed Processing Unit.

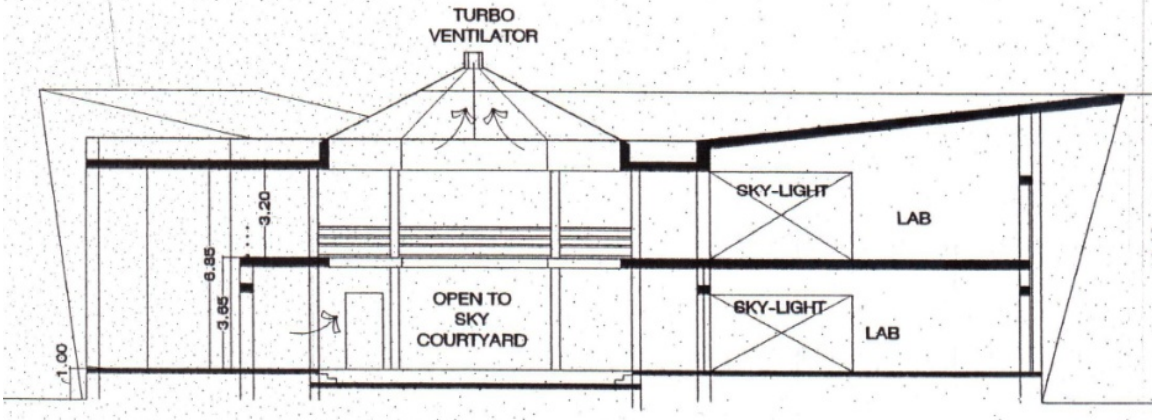
BIOCONTROL LABORATORY

(DEPARTMENT OF ENTOMOLOGY):

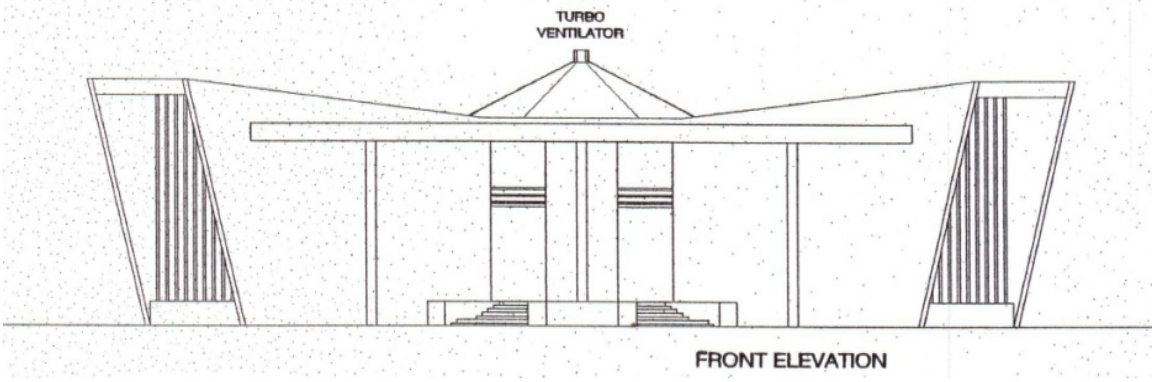
SECTION



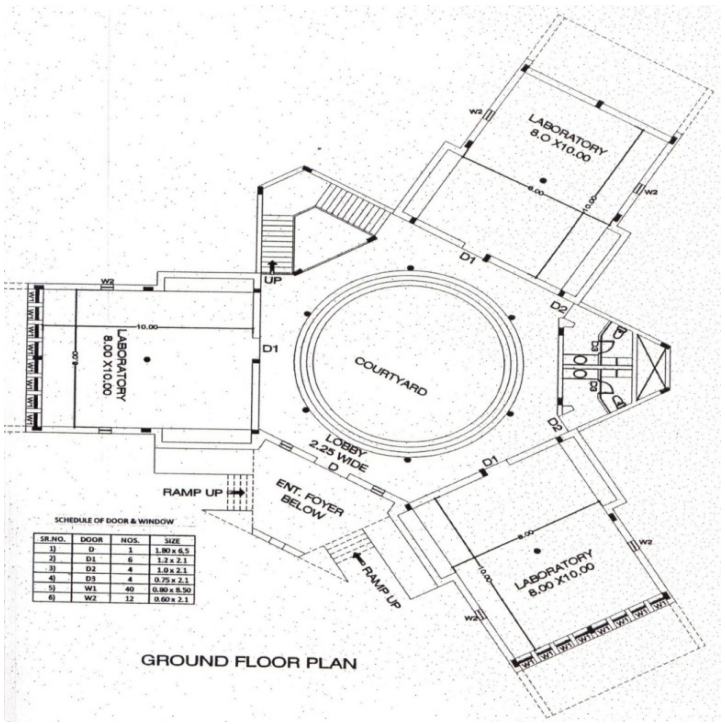
SECTION AT A-A



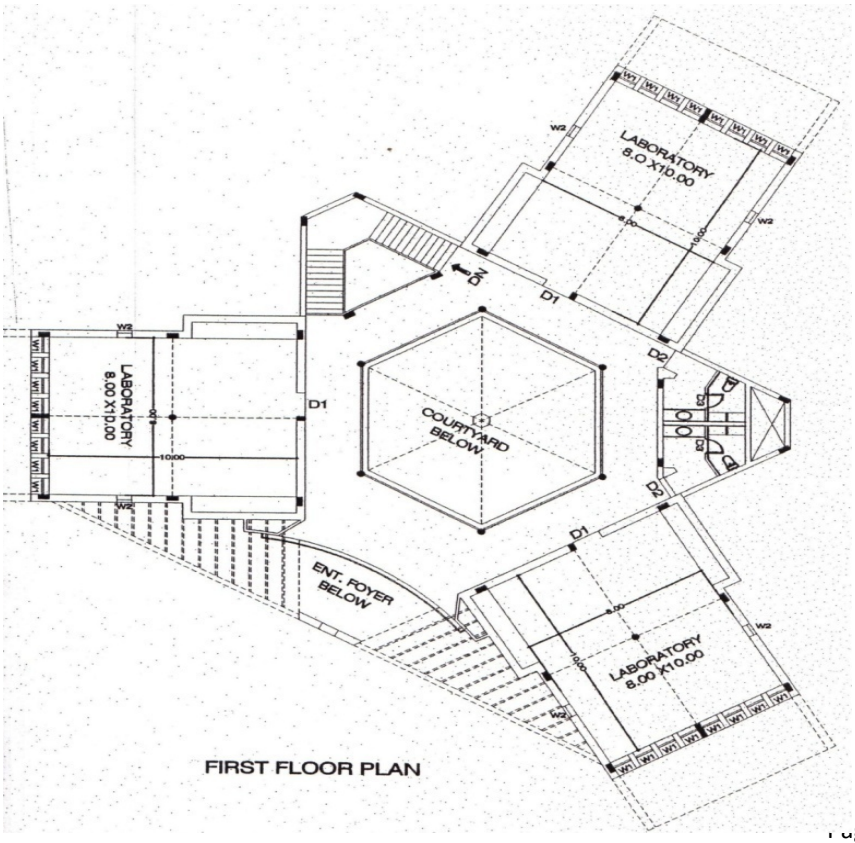
SECTION AT B-B



FRONT ELEVATION

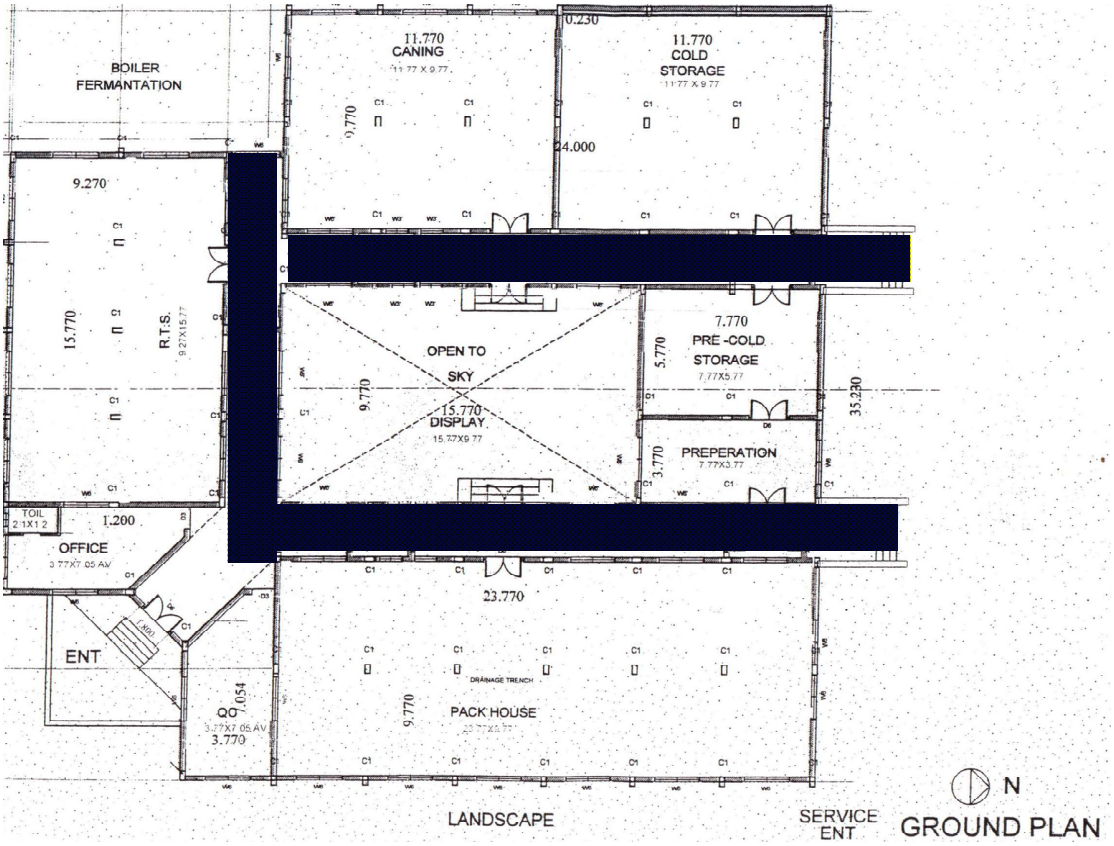


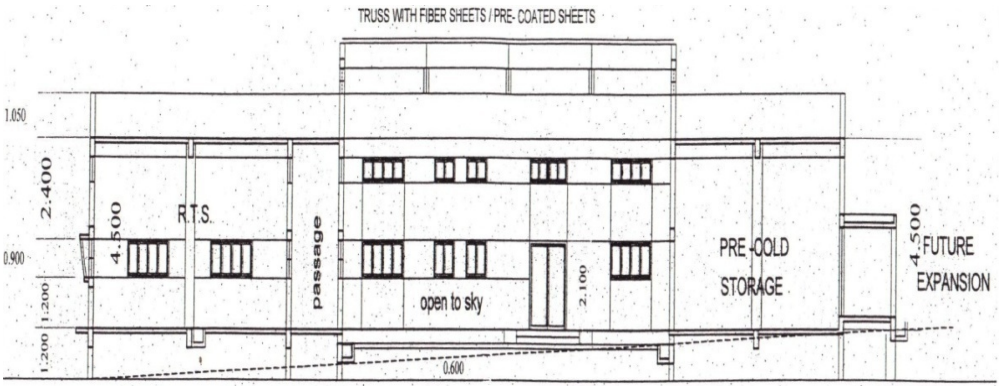
GROUND FLOOR PLAN



FIRST FLOOR PLAN

POST HARVEST TECHNOLOGY CENTRE:





PLANT TISSUE CULTURE LABORATORY:

Exhibition space different types of product

SWOT ANALYSIS

Strength

1. Proper site as per agricultural perspective.

2.Good orinetation and positions of academic buildings.

3. Use of local material.

4. Landscaped pockets.

5. No water problem as Mula dam is hardly 5 kms away from the site.

6. The Site Is On Main Highway Of Ahmednagar So It Is Suitable For Transportation.

Weakness

High maintenance required as stone, structure are inconvenient to maintain.

Opportunities

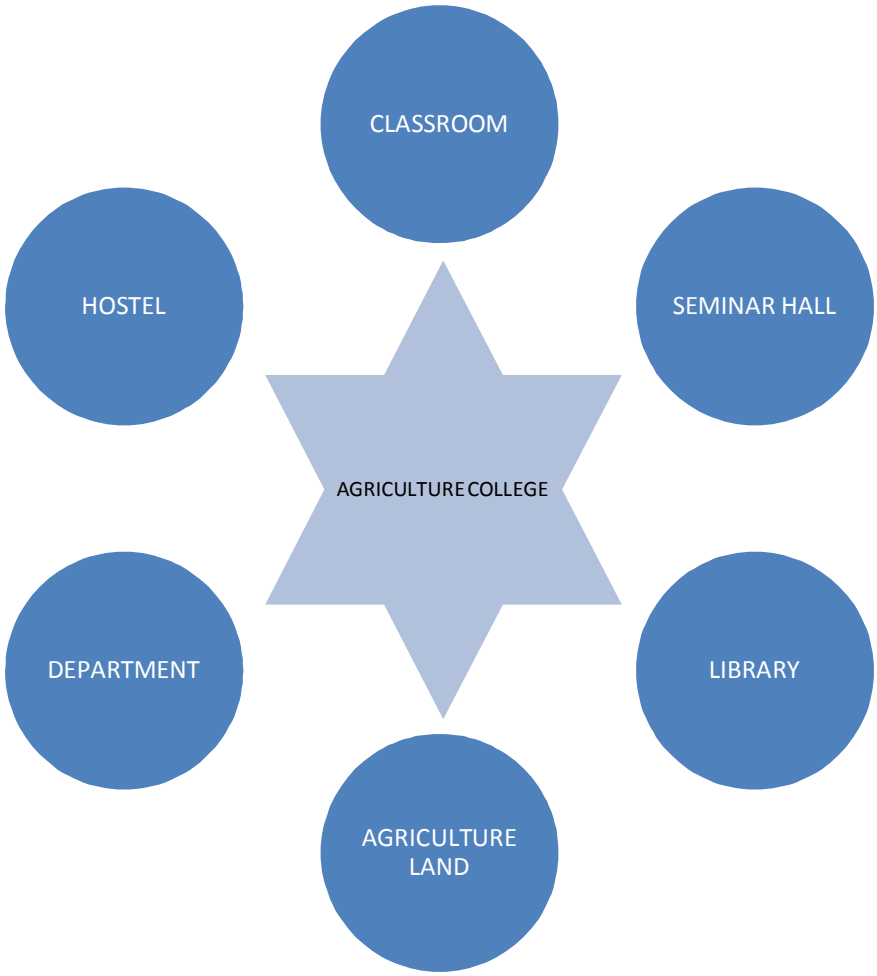
Structure has expansion possibilities.

Threat

No precautions against earthquake

Due to material, stones in case of damage it is difficult to replace it.

ANALYSIS



- Need of agriculture college in base of design.
- Parking of college is properly designed in front of college campus.
- Material used for college constructions on base of nature.
- Half circular form is used in concept of design, where light and ventilation coming in properly.

D. TARPA ECO-AGRO TOURISM,CASE STUDY

INTRODUCTION:

Location: Located at post gholvad, village Rampur, Dahanu Maharashtra

How to reach: About 130 kms from Mumbai and Surat

(google map)

"As said, with every 12 miles we cross the water changes, the culture change and food habit change in India. So at every 12 miles there can be an Agro-tourism project"

- Pandurang Taware[Father of Agro-tourism in India]

Agricultural tourism is the holiday concept of visiting a working farm or any agricultural, horticultural, or agribusiness operations for the purpose of enjoyment, education, or active

involvement in the activities of the farm. In general Agri-tourism is the practice of attracting travelers or visitors to an area having an agricultural importance.

The Tarpa eco-agro tourism was started in 2004 on the agricultural owned land of 30 acres. This land was owned by Mr. Prabhakar Save, he is a farmer, the irregular climate, losses in farm leads him to go for the allied option of tourism. The property is full of green orchards of chicku, mangoes, lichi, awakado, medicinal plants and many different different spices.

The property is having various programs to entertain the tourist or visitors with various activities and cultural things, the farm also has the accomodation facility for the visitors to stay, on the basis of the package that visitors choose to, such as the packages are:

1. One Day package	rs. 800/-
2. 1 day 1 night package	rs. 2200/-
3. 2 day 1 night package	rs. 2500/-
4. 2 day 2 night package	rs. 4000/-
5. 3 day 3 night package	rs. 4400/-

PROGRAMS/ACTIVITIES THAT ATTRACT TOURIST:

RURAL SKILLS:

Rural skills like Basket weaving, warli painting, coconut leaf weaving, etc this skill are though by the local/villagers.

FARM TOUR :

Farm tour with the guide over the 30 acres of land, blunded with the orcchands of chicku and mangoes. During the tour they introduce the visitors with various farm activities like, Produce Harvesting, Plant propogation, Solar dehydration, etc that takes place on the farm

ZIP LINE CROSSING:

Zip line crossing / River Crossing over a 25 feet deep lake, for entertainment purpose but with all the safety measure.

FISHING:

Experience Fishing on a shaded deck with all the professional equipments used for fishing.

ROPE COURSE: Rope course is series of play in ground around the trees, consisiting eight different stages including tree climbing, walking on rope, etc for family or group to have a competition within, and again all this has been designed with respect to the safety measures

MUSEUM:

The museum is having the collections of various plants, herbs and spicies which is grown in their land, including the awakadu and other herbs also which is not grown in india such as red seed most probably found in Brazil, used as a medium to give colour to the foods e.g jalebi, zarda rice, etc. Apple which is again next to impossible to be grown in the climatic conditions of maharashtra.

It also consists of natural things such as birds nest, Snake skin, honey bee colony, EMU eggs, beautiful carved models by the local in wood, a 1:1 scale model showing the vernacular architecture with warli painting,etc.

MEDICINAL PLANTS:

A large number of medicinal plants has been planted with its botanical names and uses, which also invites the medical students and schools to have a visit with their student to get knowledge and interest in science, nature and studies.

HYGENIC MEALS / ORGANIC FOOD:

The meals which is been offered are purely yields in the farm with totally natural process and no chemical intervention in their growth, which results in Nutrient-Denser Food, Its better in taste, safe from dangerous pesticides, stronger and more energetic body.

REAR PLANTS:

They had also produced the plants which are not usually grows in indian climatic conditions, such as red seed, awakadu, lichi and apple, which is obviously been the reasons to attract the tourist.

NURSERY PLANT SAPLINGS:

They also had the sapling of chiku plants grafted with rhino roots inorder to increase the life of chiku tree from 20 years to 80-90 years.

BEE HIVING:

Bee hiving demo farm, keeping of honeybees for honey production and for cross pollination purpose.

EMU/OSTRICH BIRDS FARM

RAIN WATER HARVESTING

LOCAL SIGHTSEEING:

BEACH : Renowned Bordi beach is just 3 kms from Save Farm and Dahanu Beach is about 10kms.

TREKKING: Wide variety of trails can be found within 20kms from Save Farm.

RELIGIOUS PLACE: Many famous Temples; including Mahalaxmi, SaiBaba, Santoshi Maa, Jain Mandir are in vicinity

GRAM BAAL SHIKSHA KENDRA: The place where the concept of 'Angan Wadi' (school right in your court yard) and 'Kuran Shala' (the meadow school) was born and practiced with dedication till today, is just two km away from us. The concept was introduced by two visionary ladies, Padmabhushan Smt. Tarabai and Padmashri Smt. Anutai some 80 years ago.

ADVANTAGES:

A strong supplementary source of income not only for them but also for the localites

Most of the produced good are selled directly to the tourist at handsome amount, hence middle man is executed

Get to learn many things from the tourist also in terms of culture, regions, technologies, etc.

Agro-tourism is like win win situation for both the farmers as well as the tourist

Its very much connected to the nature.

One can feel relax in the calm and organic environment

They had excavated the lake for aquaculture, between two tree, hence the smart and wise use of land

They use the water from lake to the orchand of chikus and mangoes in order to make the complete use of amonia present in water released from the fish skin.

The whole side is planned with the drip irrigation techiques, hence reduced the man power and wastage of water.

Rooms has been maintained in well condition.

Presence of first aid in emergency/injury.

Well educated Tour Guides

Its functioning as a platform for urban tourist to escape from his hectic routine and allows him to go back to his roots

The most of the waste has been used to produce the fertilizers, which can again be sell in market

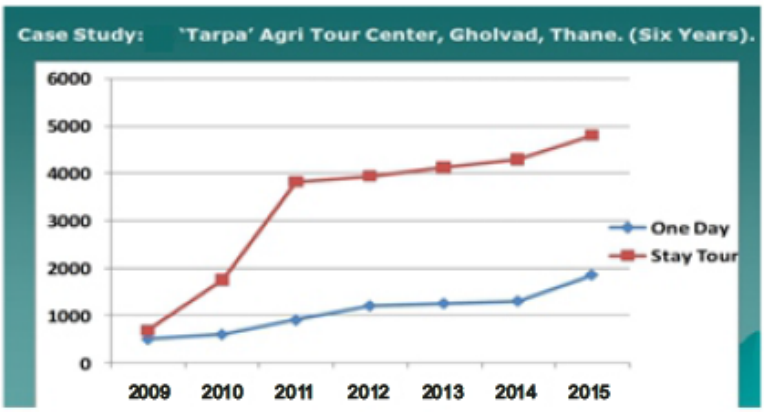
DIS-ADVANTAGES:

They should upgrade the farm in terms of security and maintenance, as most of the activities are not carried out in the monsoon season because they are not in a well condition to be get used.

Talking about eco-agro, TARPA farm lacks here, as they use diesel generator for generating electricity then of producing it from solar or wind mills, etc.

Not enough equip to handle the more numbers of tourist, only 8-10 tourists can be entertained at a time

RESULTS IN INCOME OF LAST FEW YEARS



Income from Project:

	Year I	Year II	Year III	Year IV-VII
Occupancy	20%	25%	30%	35%
Tour with Stay	5,11,000.00	6,38,750.00	7,66500.00	8,94,250.00
Day Tour	2,62,500.00	3,42,189.00	4,10,625.00	4,79,062.00
Gross Receipts	7,73,500.00	9,80,939.00	11,77,125.00	13,73,312.00
Net Profit 50%*	3,86,750.00	4,90,470.00	5,88,562.00	6,86,656.00

SURVEY AND ANALYSIS:

The comprehensive and widespread survey conducted by CSDS on the state of Indian farmers (Centre for the Study of Developing Societies) (CSDS), Delhi conducted between December 2013 and January 2014. The survey was conducted in 274 villages spread over 137 district of the country.

- 80 per cent of the farmers were found to be non-literate. 14 per cent have passed matric(Class X), and only 6 per cent entered for a college degree.
- Overall 83 per cent of the farmers consider agriculture to be their main occupation but are still helpless in terms of information, And awareness about new schemes and policies offered by government.
- Most farmer households (61 per cent) have two meals a day.
- 75 per cent of the farmers said they are engaged in farming for more than ten years.
- 86 per cent of the farmers or their family owns land.
- The survey also reveals that 90 per cent of the farmers are doing farming because it is theirancestral occupation

SECTION 1

1. Distribution of land ownership

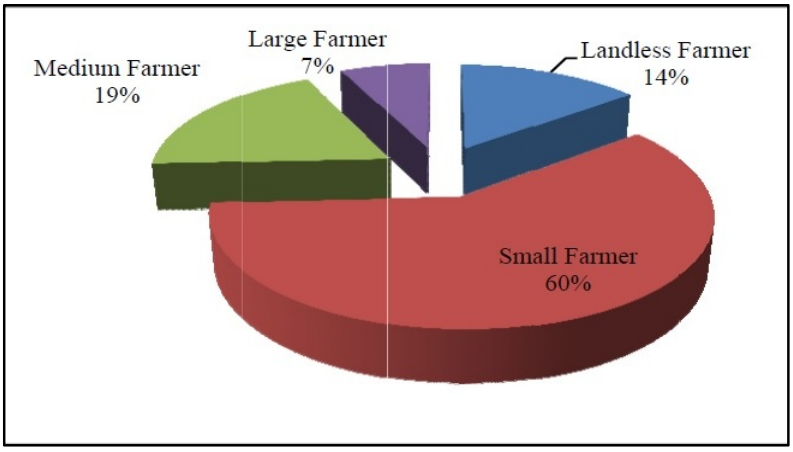
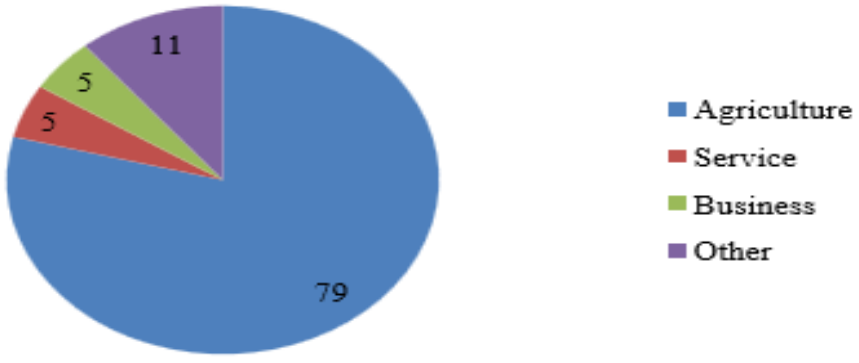


Figure 6: Distribution of land ownership

2. Main source of income for the farmer:

As mentioned earlier, overall 83 per cent of the farmers interviewed consider agriculture to be their main occupation. Moreover, 79 per cent said that agriculture is the main source of income of their household. For others a large part of their household's income came from nonagricultural works



Note: All the figures are in percentage; N=5294.
Question asked: What is the main source of income in your household?

Figure 7: Main Source Of Income For The Farmers

3. Interest in farming

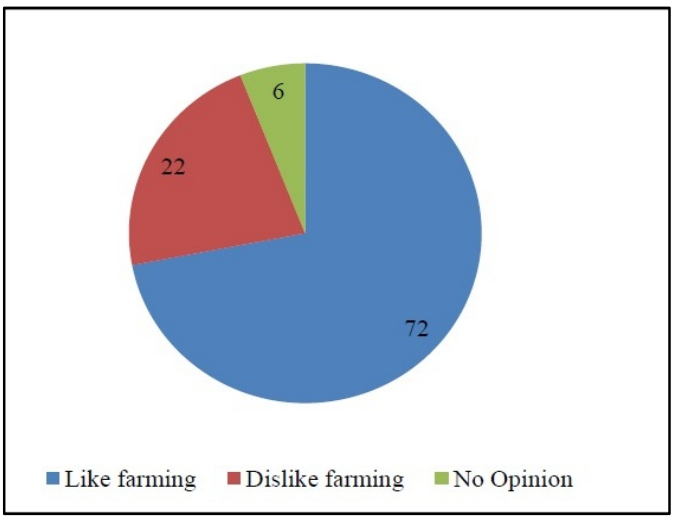


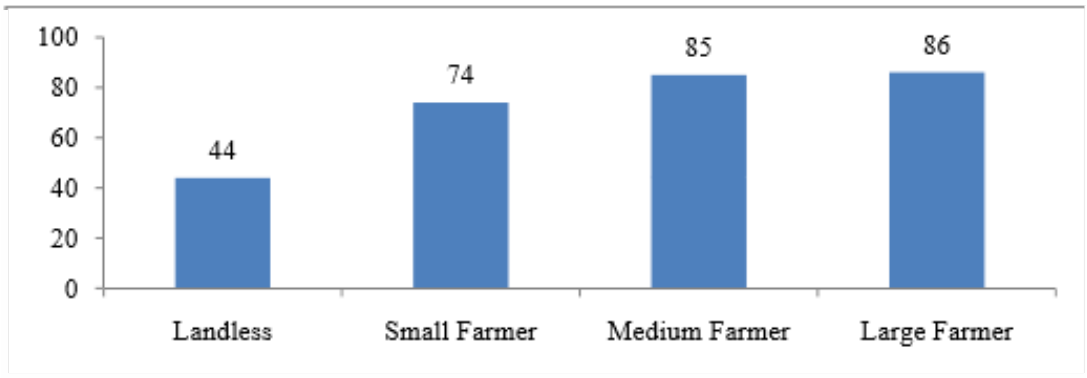
Figure 8: Interest In Farming

What are their reasons for liking farming as an occupation? Among those who said they like farming,

- 60 per cent like it as it is their ancestral occupation, 15 per cent feel a sense of pride in being a farmer.
- Another 10 per cent said they just simply enjoy doing farming

This shows that they have interest in farming but due to severe losses they opt out of this profession.

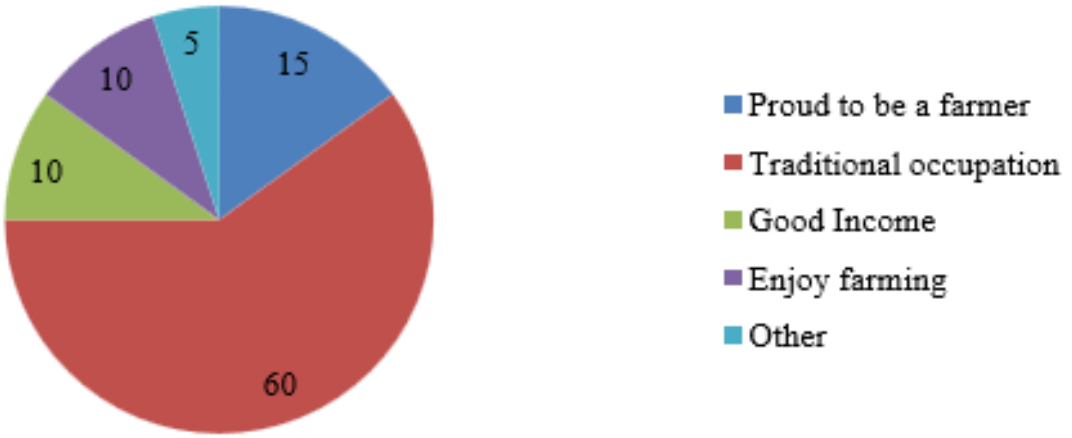
a. Interest in farming on the basis of Social class of the farmers



Note: All the figures are in percentage
Question asked: Do you like farming?

Figure 9: Interest In Farming On The Basis Of Social Class Of The Farmers

b. Reasons for liking farming

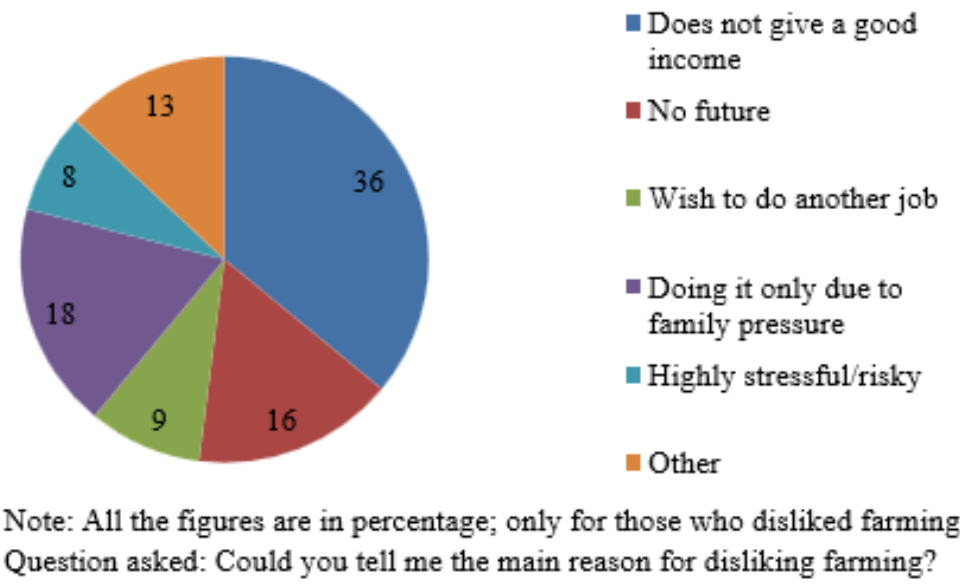


Note: All the figures are in percentage; only among those who liked farming.
Question asked: Could you tell me the main reason for liking farming?

Figure 10: Reasons For Liking Farming

c. Reasons for disliking farming

What are the reasons of the 22 per cent who dislike farming? Lack of a good income is the main reason for their dislike of farming. 36 per cent of the farmers cited this as the reason. 18 per cent of those who dislike farming said they are doing it only because of family pressure. 16 per cent say that they see no future in this sector. 9 per cent said that they wish to do another job, while 8 per cent consider farming stressful or risky and hence do not like doing it

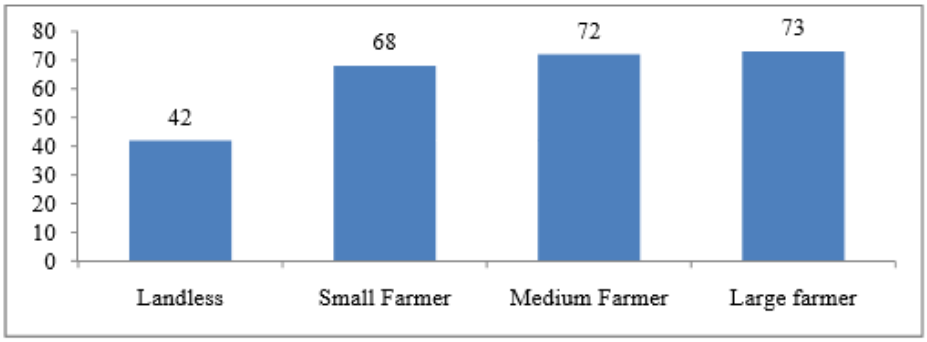


Note: All the figures are in percentage; only for those who disliked farming
Question asked: Could you tell me the main reason for disliking farming?

Figure 11: Reasons For Disliking Farming

4. Participation of Other Family Members in Farming

Over two-thirds (66 per cent) of the farmers said that women from their household are also engaged in farming. Among large farmers the figure was much higher at 73 per cent. Among landless farmers it was quite low at 42 per cent. Interestingly, one-fifth of all the farmers interviewed said that school going children from their household are also involved in farming.



Note: All the figures are in percentage; the rest said that women of their household do not take part in farming
Question asked: Are the following members of your household involved in farming? A. Women, B. School going children

Figure 12: Participation Of Other Family Members In Farming

a. Opinion of Women and Youth from Farmer Households

Apart from interviewing the farmers, the survey investigators also interviewed (wherever it was possible) one female and one young member of the respondents household on the issue of farming. Here are some of the key findings from what they had to say –

• As mentioned above, 66 per cent of the women belonging to farmer households are involved in farming.

• 18 per cent women of the farmer households do other non-farming work to contribute financially to the family income.

• 67 per cent women say that the income from agriculture is not sufficient to fulfill the livelihood needs of their family. Only 20 per cent found it to be sufficient.

• 43 per cent women believe that if the main earner of their family would have been doing some other work rather than agriculture, their quality of life would have been better.

• 21 per cent women belonging to farmer households said that price rice was the biggest problem being faced by their household and 13 per cent said poverty is their biggest problem.

• 63 per cent youth belonging to farmer households help the family in farming.

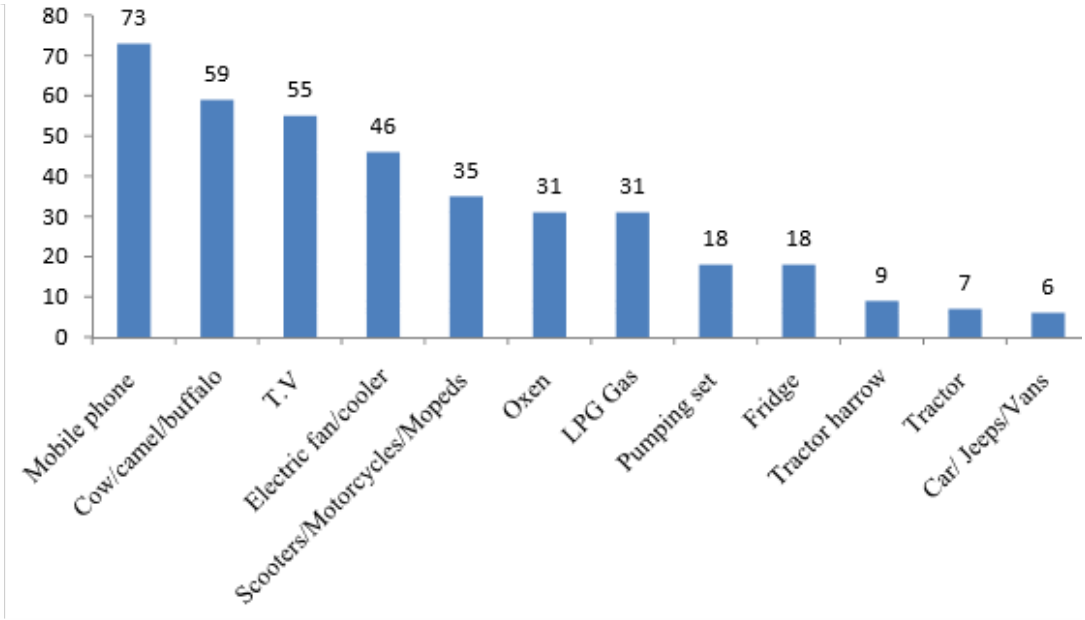
• Only 24 per cent youth belonging to farmer households are interested in continuing farming while 76 per cent would prefer to do some other work rather than farming.

• Among the youth who are interested in continuing farming, most said it is their traditional occupation and they wanted to take it forward.

5. Economic Profile of Indian Farmers

In terms of assets, seven out of ten farmers said they have a mobile phone and more than one in two farmer households have a TV. Proportion of farmers with mobile phones and TV sets was found to be lowest in the Eastern part of the country. North India has the highest penetration of mobile phones whereas South India has the highest proportion of TV owning farmer households

Assets owned by farmers



Note: All figures in percentage; the rest do not have these assets.

Figure 13: Economic Profile of Indian Farmers

The survey shows that 92 per cent of the farmers have a ration card. While 45 per cent of the farmers said they have a BPL ration card, 42 per cent have an APL card

Farmers with Ration cards

Ration card	Per cent
Above poverty line	42
Below poverty line	45
Antyodaya	4
Annapurna	1
Do not have any card	8

Question asked: Which ration card do you have?

Table 3: Farmers With Ration Card

SECTION 2

Prevailing Farming Practices:

These are some of the questions that this section will try to answer based on survey data

Q. What are the different practices that are being adopted by farmers?

Q. What kind of agricultural inputs do farmers use for farming?

Q. Which crops do they produce and how many times in a year?

Q. Are they producing the same crop throughout the year or do they produce different types of crops?

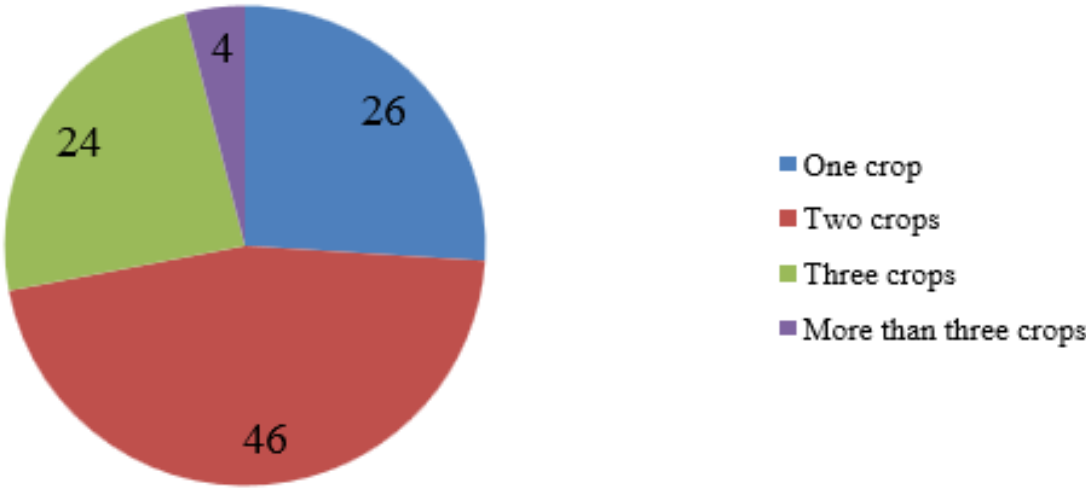
Q.How varied is the production from region to region?.

Crops

The findings of the survey suggest that nearly half the farmers (46 per cent) grow up to two crops in a year while 28 per cent said they produce more than two crops annually. 26 per cent

of the farmers who were interviewed said they are able to produce only one crop in a year. These figures however differ from region to region due to quality of soil, irrigation facilities, climatic conditions and the fact that some regions are more prone to floods and droughts than others. The survey finds that 96 per cent of the farmers in North India grow two or more crops in year. In East and South India however this figure falls to 62 and 58 per cent respectively

Number of crops grown by farmers in a year as per survey



Note: All figures are in percentage
Question asked: How many crops do you grow in a year?

Figure 14: Number Of Crops Grown By Farmers In A Year As Per Survey

Which crops do farmers mainly grow?

Crop type	Per cent
Paddy	41
Wheat	21
Bajra	5
Maize	4
Gram	4
Sugarcane	2
Soyabeen	2
Cotton	3
Other	18

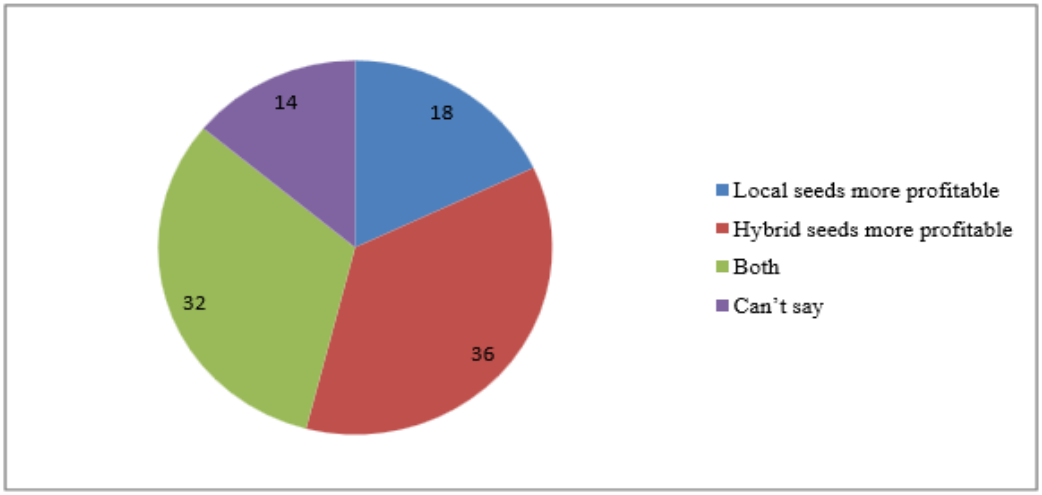
Note: All figures are in percentage;
Question asked: Mainly which crops do you grow?

Table 4: Which Crops Do Farmers Mainly Grow?

Seeds:

Most farmers (36 per cent) were of the opinion that Hybrid seeds are more profitable than local seeds. 18 per cent felt otherwise while 32 per cent were of the opinion that both Hybrid and local seeds were profitable

Hybrid seed viewed as being more profitable



Note: All figures are in percentage;
Question asked: Some farmers believe that usage of local seeds lead to higher profitability whereas others say that Hybrid seeds are more profitable? In your opinion which type of seed is more profitable?

Figure 15: Profit From Seeds

On being asked a separate question on GM seeds and whether they were good for profitability, only 20 per cent of the farmers were of the opinion that GM seeds should be used in farming for higher profitability, whereas 42 per cent were of the opinion that they should not be used and 38 per cent did not have opinion on the issue.

Fertilizers:

Most farmers use both organic and chemical fertilizers for their farming. 40 per cent of the respondents said that they use both chemical and organic fertilizers. 35 per cent said they use only chemical fertilizers and 16 per cent said that they use only organic fertilizers (Table 2.4). A region wise analysis on the use of fertilizers reveals that Chemical fertilizers are being used most in Eastern India. Farmers in South India seem to be using organic fertilizer more than the rest of India.

Types of Fertilizers used by Farmers

Type of Fertilizers	Percent
Use Organic fertilizers	16
Use Chemical fertilizers	35
Use Both fertilizers	40
Can't say	9

Question asked: Which kind of fertilizer do you use for farming- Organic or Chemical/Urea?

Table 5: Types Of Fertilizers Used By Farmers

Pesticides :

The use of pesticides seems to be occasional. When asked how often they used pesticides, only 18 per cent farmers said they use it regularly. 28 per cent said they use it occasionally, while 30 per cent use pesticides only when the need arises. 13 per cent farmers never use pesticides in their farming.Use of pesticides by farmers

Use of pesticides	Per cent
Regular	18
Occasional	28
Rare	10
If need arises	30
Never	13

Note: All figures are in percentage;
Question asked: How often do you use pesticides in your farming- regularly, occasionally, rarely or never?

Table 6: Use of Pesticides In Farming

Small farmers are using pesticides more often than others. 54 per cent of the small farmers said they use pesticides regularly. The figure among medium and large farmers is much less at 27 per cent and 10 per cent respectively (Table 2.6). One-fourth of the farmers who use pesticides use it for all their crops. 32 per cent use it for some crops and an equal proportion use it whenever the need arises.

Pesticide Usage by Social Class

Social class	Regularly use pesticides
Small farmers	54
Medium farmers	27
Large farmers	10

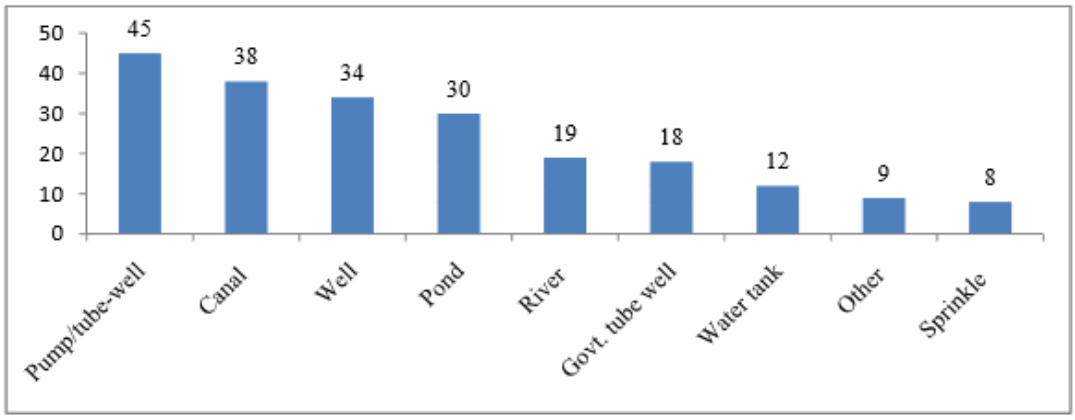
Note: All figures are in percentage; among those who use pesticides.
Question asked: How often do you use pesticides in your farming- regularly, occasionally, rarely or never?

Table 7: Pesticide Usage By Social Class

Irrigation:

Only 40 per cent of the farmers said that irrigation facilities were available for their entire farming land. The most common sources for irrigation are private pumps, bore wells/boring and tube wells. 45 per cent of the farmers cited these as their main source of irrigation. 38 per cent of the farmers have access to canals in their villages for irrigation. Traditional sources of irrigation like pond and well continue to be important. 34 per cent of the farmers depend on wells while 30 per cent of the farmers said they depend on the pond to irrigate their land. Only 18 per cent of farmers said that they have the facility of Govt. tube wells for irrigation

Most important sources of Irrigation



Note: All figure in per cent.
Question asked: Which of the following means of irrigation are present in your area?

Figure 16: Irrigation

Electricity :

Irrigation facilities are largely dependent on the availability of electricity. However, more than half the farmers said that there had been no electricity for farming (51 per cent) in their area in the week prior to the survey. If we see the region wise distribution, 87 per cent of the farmers in East India complained about not getting electricity for farming. North India comes next with 46 per cent followed by Central India with 42 per cent

Regional picture for no electricity for farming

Region	No electricity for farming
North	46
East	87
Central	42
South	39
West	40

Note: All figure in per cent.

Question asked: In the last seven days, for how many hours did you get electricity for Farming?

Table 8: Electricity For Farming

When asked if in order to receive uninterrupted power supply they were ready to pay more for it than what they pay today, 46 per cent of farmers rejected the idea, while 31 per cent said that they are willing to pay more for uninterrupted electricity supply. Rest had no opinion on this question. Most farmers say that in the absence of electricity, they depend on rainfall (35 per cent) followed by generator/engine (25 per cent) and canals (14 per cent) to irrigate their fields.

SECTION 3

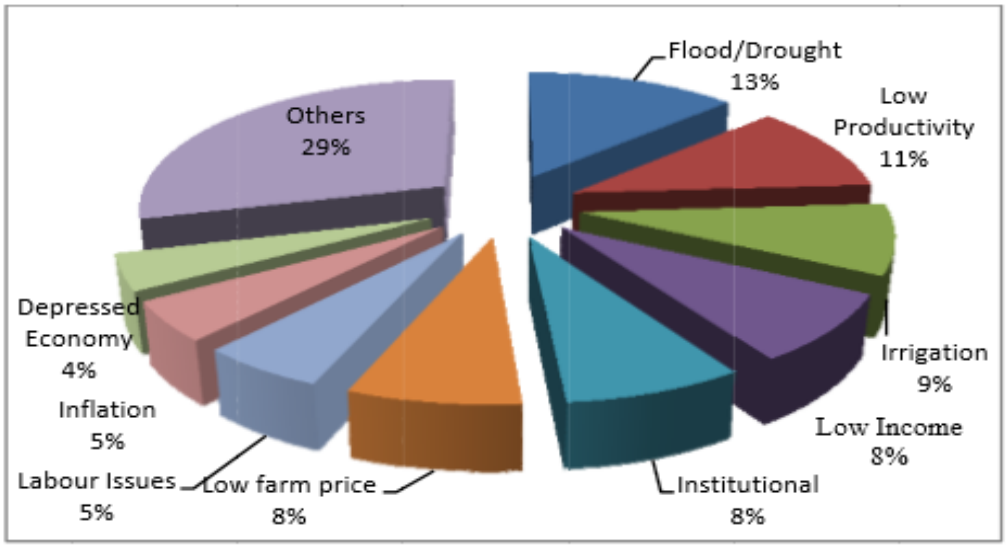
Challenges and Problems faced by Indian Farmer:

This section describes the overall condition of Indian farmers; the challenges and problems they face. It also delves into the incidence and reasons of crop failure and suicide. it also covers the issues related to housing, marriage, education, employment health, and loan. How do Indian farmers view the overall condition of their counterparts? Around 47 per cent of farmers said that the overall condition of farmers in the country is bad, whereas only 15 per cent of them reported good condition.

Problem faced by Indian farmer:

Indian farmers perceive natural calamities as one of the biggest problem followed by low productivity

Biggest Problem Of The Farmers



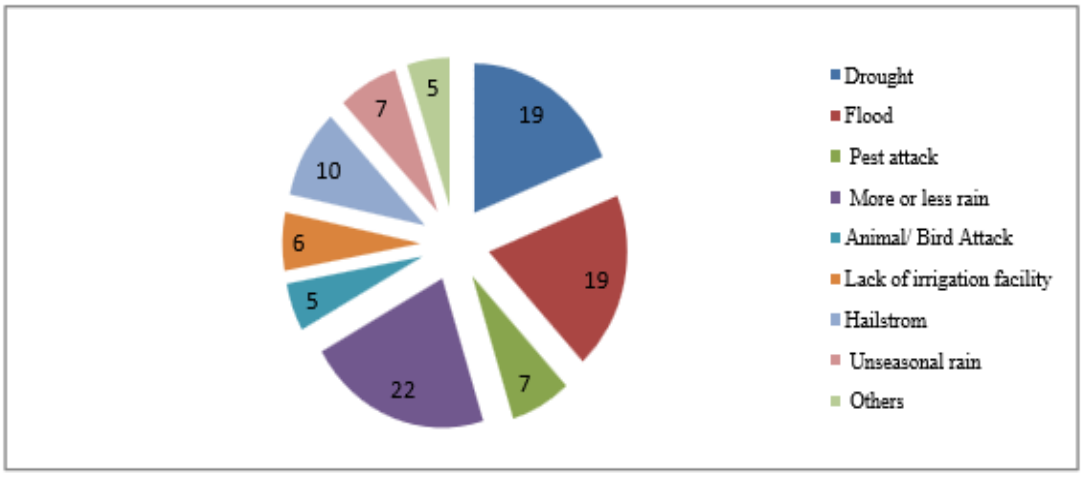
Question asked: In your opinion what is the biggest problem faced by Indian farmers today?

Figure 17: Challenges and Problems faced by Indian Farmer:

Crop destruction and Suicide

Approximately 70 per cent farmers said that their crops got destroyed in the last three years. Figure 3.3 suggests that the main reasons for crop destruction are uncertain rainfall, drought and flood, destruction of crop by diseases and birds/animal, and lack of irrigation.

Reasons for Crop Destruction

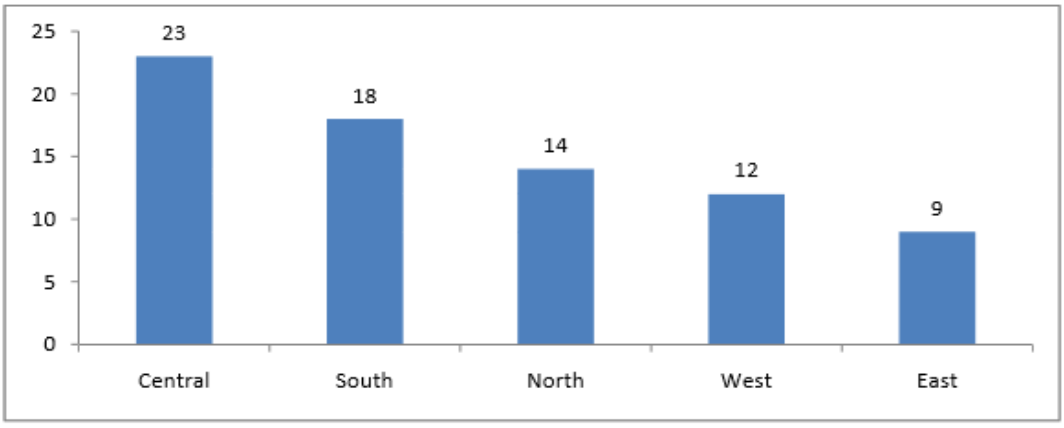


Note: All figures are in percentage.
Question asked: If Crops destroyed, then what was the main reason for the destruction of the crop?

Figure 18: Crop Destruction And Suicide

Knowledge of Someone Committing Suicide in the Area by Region

The survey also probed whether the farmers have any knowledge about anyone committing suicides in the last 5 years in their locality. Approximately one in every seven respondent (15 per cent) said they have heard about suicides in their area. A large chunk of respondents reports domestic problems (41 per cent) as most important reason for suicide cases followed by credit/loan (35 per cent) and crop failure (14 per cent).



Note: All figures are in percentage.
Question asked: In your knowledge has anybody in your village or area committed suicide in the last five years?

Figure 19: Knowledge Of Some Committing Suicide In The Area By Region

Life Worries of Farmers :

Basic minimum requirements like education, health and employment emerged as major responsibilities that worry Indian farmers. Housing and marriage in the household also seem to be a reason for worry among Indian farmers.

Worried over Major Responsibilities in Life

Life Responsibilities	Very Much	Some Extent	Not at all
Education of children	60	30	10
Farming	59	33	8
Employment	58	35	8
Health	53	39	7
Marriage in household	47	40	14
Buying a house	33	39	28
Repayment of Loan	31	30	39

Note: All figures are in percentage. Rest did not express their opinion on this question.
Question asked: Now I will read some important responsibilities of a human life. You tell me how much you worry about major life responsibilities

Table 9: Life Worries Of Farmers

SECTION 4

Indian Farmers: Their Economic Outlook:

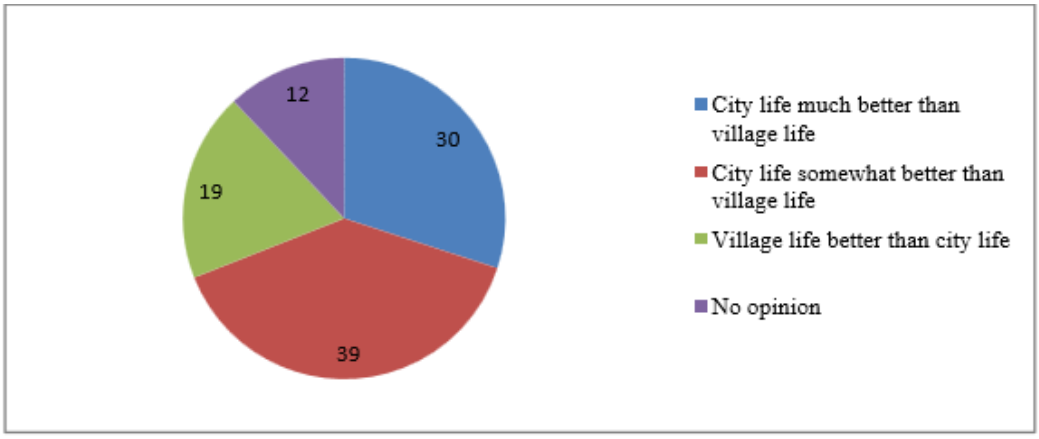
The conditions of farmers in India seem to be very unpleasant and therefore farmers do not want their children to continue farming. Low income and productivity, irregular weather cycles, and low levels of support from the government seem to be the most important reasons among farmers for such dissatisfaction. The farmers' present economic condition, Around 50 per cent of the farmers are satisfied and 40 per cent were dissatisfied with their present economic condition.

The conditions of farmers in India seem to be very unpleasant and therefore farmers do not want their children to continue farming. Low income and productivity, irregular weather cycles, and low levels of support from the government seem to be the most important

reasons among farmers for such dissatisfaction. We asked farmers' about their present economic condition. Around 50 per cent of the farmers are satisfied and 40 per cent were dissatisfied with their present economic condition.

1. Most farmers think that City Life is Better than Village Life:

The dissatisfaction with economic condition lies at the heart of why majority of farmers (69 per cent) think that city life is much better than village life. Very few farmers (19 per cent) were of the opinion that village life was better than city life.

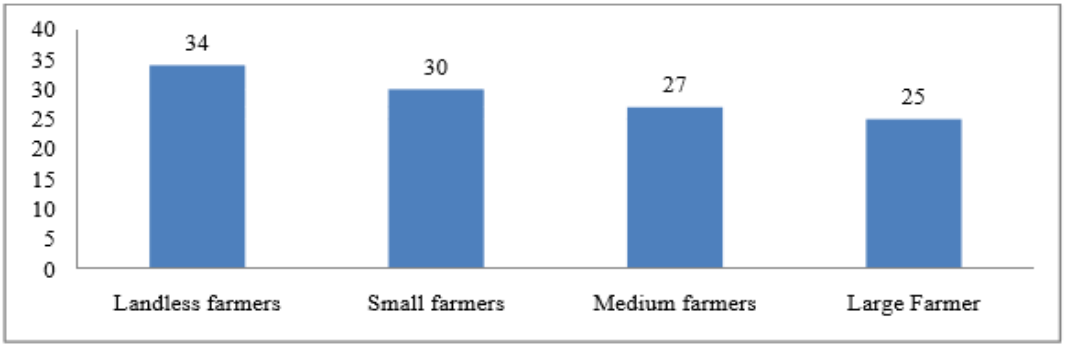


Note: All figures are in per cent.
Question asked: In your opinion how good is city life in comparison with village life. Is it very good, somewha good or not good at all?

Figure 20: Most Farmers Think That City Life Is Better Than Village Life:

The survey reveals that farmers who have no land (landless farmers) show a much stronger preference for city life over village life (Figure 4.3). One possible explanation could be that there are more employment opportunities in cities in comparison to villages.

Preference for City Life by Social Class of Farmers

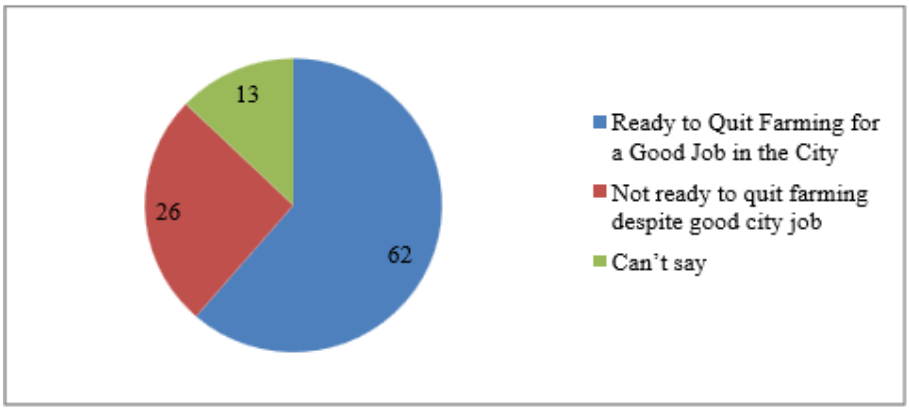


Note: All figures are in percentage; only for those who said that city life is very good.
Question asked: In your opinion how good is city life in comparison with village life. Is it very good, somewhat good or not good at all?

Figure 21: Most Farmers Think That City Life Is Better Than Village Life:

2. Would You Quit Farming if You Get Employed in the City?

As per the survey the farmers would leave farming if they get an employment opportunity in the city, 61 per cent of the farmers answered in the affirmative and 26 per cent said they would not. Half the farmers who said they are ready to quit farming if given an employment opportunity in the city said that they would do so only if the city job was a good one (Figure 4.4). Farmers who have no land or a small piece of land are more open to the idea of quitting farming and migrating to cities for jobs that give a higher income. On the other hand, large farmers (those with big landholdings) are much less willing to quit farming for a city job.

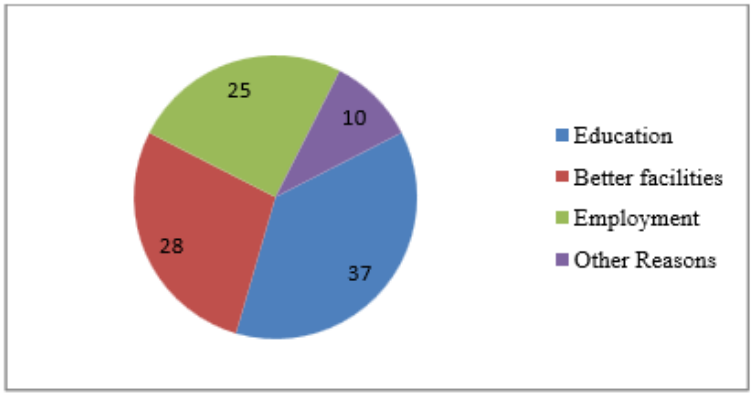


Note: All figures are in percentage;
Question asked: Suppose you get an employment opportunity in a city, would you leave farming and take that opportunity for a better income?

Figure 22: Would You Quit Farming if You Get Employed in the City?

3. Why do farmers want their children to settle in the city?

The survey reveals that most farmers do not see a future for their children in farming and would like to see them settle in the city. When farmers were asked whether they want their children to settle in the city, as many as 60 per cent said they want their children to settle in the city. Another 14 per cent do not want their children to settle in the city, whereas 19 per cent said they will prefer their children's choice on this matter. Better education was cited as one of the most important reason of why farmers want their children to settle in cities, followed by better facilities, and employment opportunities.



Note: All figures are in percentage; only among those who said that they want their children to settle in the city
Question asked: What is the main reason for which you would want your children to settle in the city?

Figure 23: Why Do Farmers Want Their Children To Settle In The City?

4. Why do the Young not want to pursue farming?

	Per cent
Interested in other job or work	36
Earning is not good	22
I am highly educated so this work is not for me	8
Risky/mental tension	7
Agriculture is a ruined area	5
Others	6

Note: The rest of the respondents had no opinion; this question was only asked to a young member of the household
Question asked: What is your main reason for not opting for farming?

5. Economic Hardships

In the survey, only 5 per cent respondents said that in last five years they had to sell their land. Poor financial condition (27 per cent) seems to be the most important reason followed by money required for a marriage in the family. Some farmers also had to sell their land due to the pressure of land acquisition

Reasons for selling the land

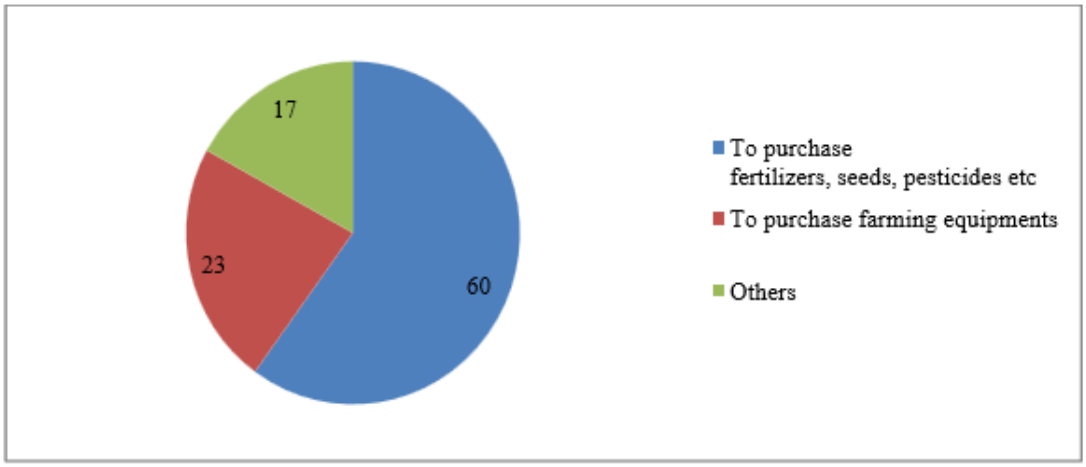
	Per cent
Poor financial condition	27
Money required for family marriage	15
Pressure of land acquisition	9
For business/education of son/daughter	9
Had to return money to the money Lender	7
Got a Good Deal	7
For medical expenditure/Treatment	6
Property was disputed and there was pressure to sell	4
Other Reasons	

Note: Figures above are only for those who had to sell their land.
Question asked: Why did you sell your land?

Table 10: Reasons For Selling The Land

6. Why do Farmers Take a Loan?

Likewise, only two out of ten farmers said that in last five years they had take loan for farming related activity. The loans were primarily taken for purchasing fertilizers, seeds, pesticides etc. or buying farming equipments like tractor, thrasher etc.



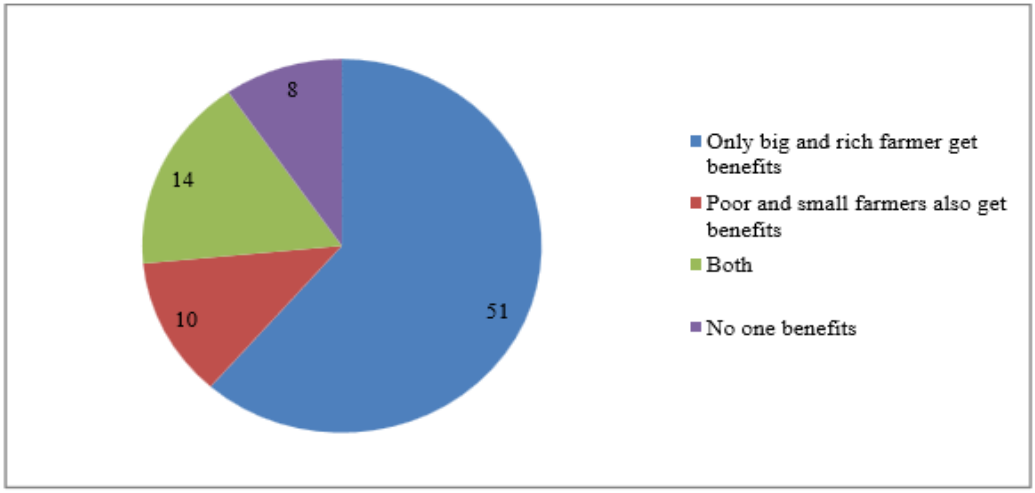
Note: All figures are in per cent.
Question asked: If taken loan, then the loan you took for farming was used mainly for which purpose?

Figure 24: Why Do Farmers Take A Loan?

SECTION 5

Awareness and Opinion on Issues Related to Politics and Government:

1. Opinion on who Benefits from Governments' Schemes?



Note: All figures are in percentage; rest did not express any opinion on this question.
Question asked: People have different opinion about agriculture related policies of the government. Some people believe only rich and large farmers have benefited from these policies while others say that poor and marginal farmers have also benefited. What is your opinion?

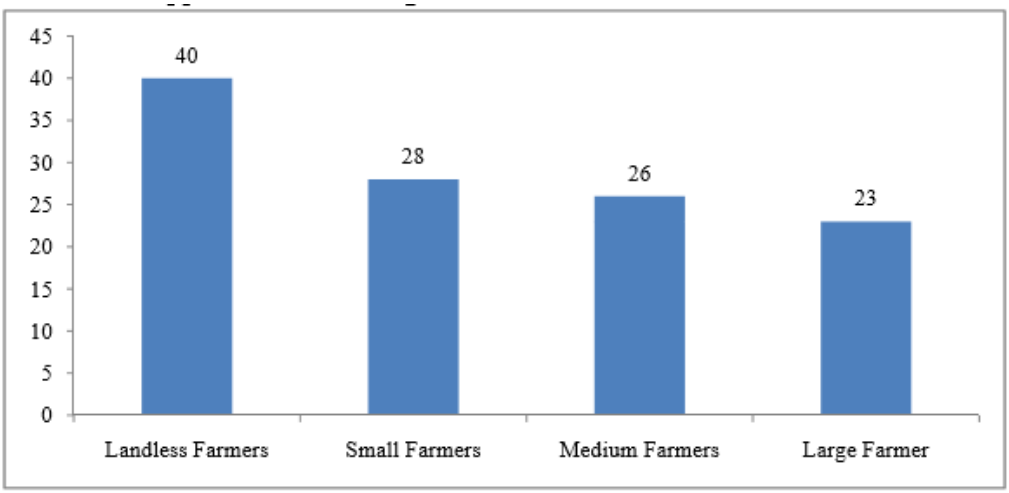
Figure 25: Opinion On Who Benefits From Governments' Schemes?

2. Land Acquisition and FDI

Only 27 per cent of the farmers have heard about the Land Acquisition law. Among those who had heard about this law, only 21 per cent said that farmers stand to benefit from the law, and 57 per cent of the respondents said that farmers stands to lose from this law, whereas 22 per cent did not express their opinion on this issue. The survey also finds that 83 per cent of the farmers have not heard about Foreign Direct Investment (FDI). Among those who have heard of FDI, a majority (51 per cent) said that FDI should not be allowed in the agriculture sector since farmers may not be able to bargain, whereas 28 per cent said that FDI should be allowed in the agriculture sector so that farmers can sell their crops directly to the big companies. Another 21 per cent expressed no opinion on this question. Interestingly, the landless farmers are more in support of foreign direct investment in agriculture because they believe that it will allow farmers to sell their agricultural produce directly to the big

companies. 40 per cent of the landless farmers supported the idea of FDI in agriculture. On the contrary, the large farmers with big landholdings do not support FDI in the agriculture sector because they believe that it would harm the bargaining capacity of the farmers.

Support for FDI among Landless Farmers



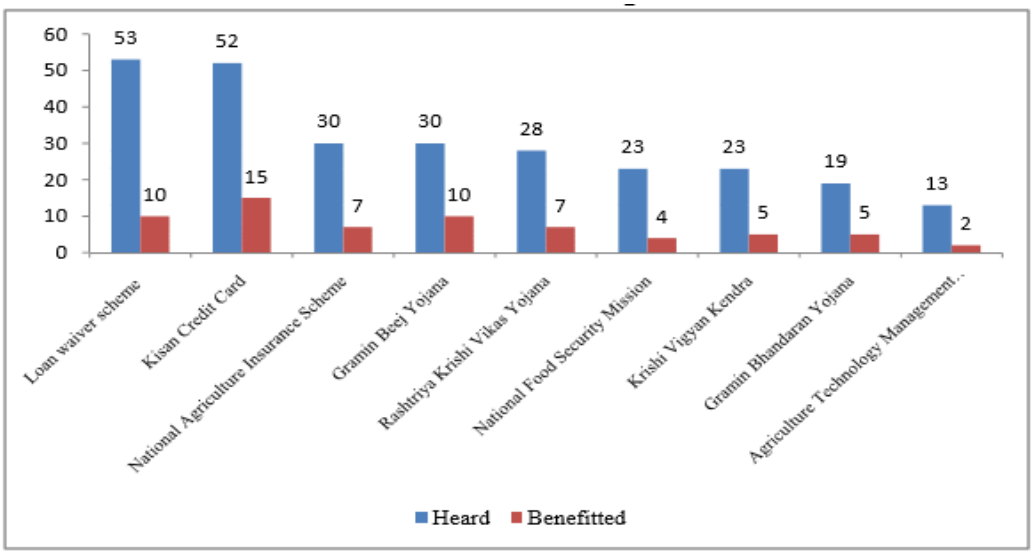
Note: All figures are in percentage; the rest did not express any opinion on this question. Responses above are of those who are aware of FDI.
Question asked: (If heard) Now I will read out two statements relating to FDI. Please tell me whether you agree with statement one or statement two. (1) FDI should be allowed in the agriculture sector so that farmers can sell their crops directly to the big companies; (2) FDI should not be allowed in the agriculture sector since farmers may not be able to bargain

Figure 26: Support For FDI Among Landless Farmers

3. Awareness about Agricultural Schemes

We also asked whether farmers have heard or benefitted from government schemes like Rashtriya Krishi Vikas Yojana, Gramin Bhandaran Yojana, National Food Security Mission, National Agriculture Insurance Scheme, Agriculture Technology Management Agency, Gramin Beej Yojana, Krishi Vigyan Kendra, Kisan Credit Card and the Loan waiver scheme. Following Fig. suggest that farmers are unaware of most issues and thus have not been able to take benefit of these schemes.

Lack of awareness about farmer related government scheme



Note: All figures are in per centage. Rest had not heard and not Benefitted.
Question asked: Now I will read out some of the schemes which are related to farming. Please tell me, have you heard or read about these schemes? (If heard/read)Have you or your family benefitted from any of these schemes?

Figure 27: Awareness About Agricultural Schemes

4. Minimum Support Price

Similarly, awareness about Minimum Support Price (MSP), under which purchases are made from the farmers at the rates declared by the Government of India, is also low. Approximately 62 per cent of the interviewed farmers were not aware about MSP, whereas 38 per cent had heard about MSP. Among those who had heard about MSP, most (64 per cent) said that they were not satisfied with the rates of crops decided by the government and only 27 per cent are satisfied with the rates of crops decided by the Government. The survey findings clearly indicate that farmers are not well informed about the schemes aimed for them and about the provisions made under those schemes. What's more, the facility provided to farmers whereby they can get information or help related to agricultural matters like soil test, use of fertilizers etc. from officers of the agricultural department does not seem to be working well either. Three-fourths of the farmers said that they did not get any information or help from the agricultural department on these matters.

CHAPTER 4: SITE ANALYSIS

About Dahanu, Palghar

District:

Palghar.

Area:

The total geographic area of Palghar district 517634 ha.

Distance from Mumbai:130

Means of Transport:

Dahanu railway station WR

ST Busses

Population:

a.Total: 29.90 lakh

b. Population Density/Sq. Km. 1400

c. Scheduled Caste Population 0.87

d. Scheduled Tribe Population 11.18

e. Female to Male ratio 977

Literacy:

The literacy percentage of Palghar district is 59.25. The male literacy is 70.22 % while female literacy percentage is 48.28%.

Climate

1. Minimum Temperature 10 ° c
2. Maximum Temperature 33 ° c
3. Agro-climate
    a. Rainfall (mm) Normal 2537.8
    b. Actual (mm) 2325.4

Classification of farmers

	TOTAL
1. Cultivators	146852
2. Marginal farmers	87754
3. Small farmers	28551
4. Medium Farmers	28472
5. Large Farmers	2075

Tribal Communities in the district:

1. Warli
2. Thakur
3. Malhar Koli
4. Kokana
5. Katkari

Major Fruits and Crops Grown

Name of Crops	Area in Ha.	Productions (M. Ton.)
Mango	28618	71545
Saputa	9368	72694
Cashew	7434	8996
Coconut	2011	87.69 lakh nuts
Vegetables	4230	59220
Total	51661	

Sr. No.	Crops	Area in Ha.
1.	Paddy	76430
2.	Tur	2665
3.	Mung	573
4.	Udid	3642
5.	Sesamum	454
6.	Vegetable	4230
7.	Fruit Crop	53400
8.	Flowers	513
	Total	**141907**

Talukas:

A. Geographical area (sq. kms.)517634

B. No. of Talukas 08

C. No. of Panchyat samities 08

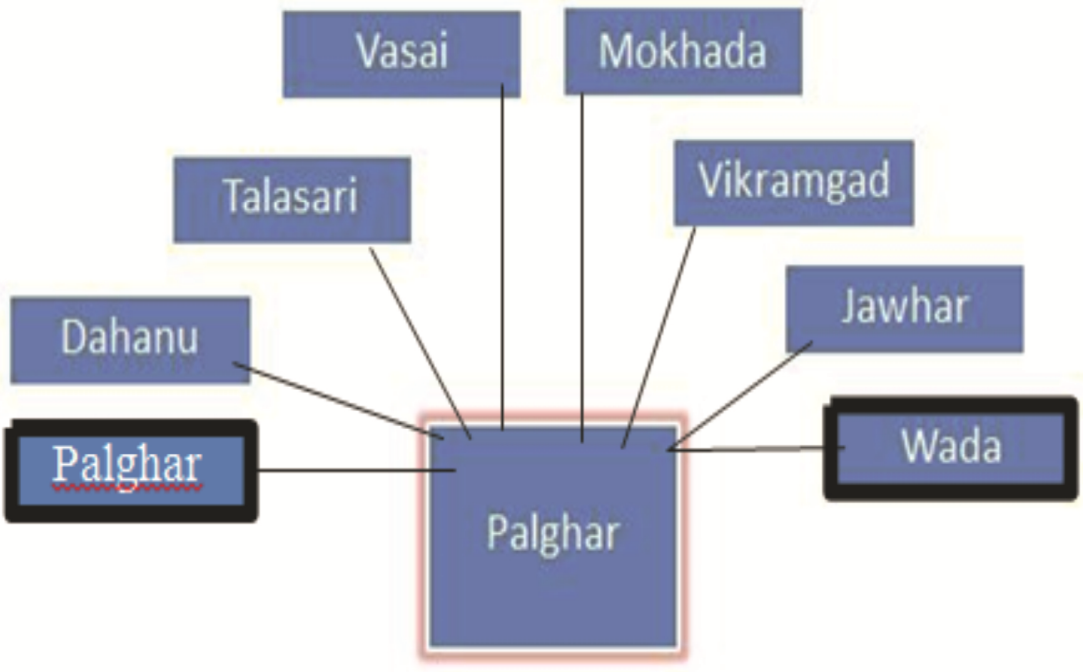
D. a. No. of villages (inhabited) 1016

b . No. of Revenue villages 975

E. City areas 3

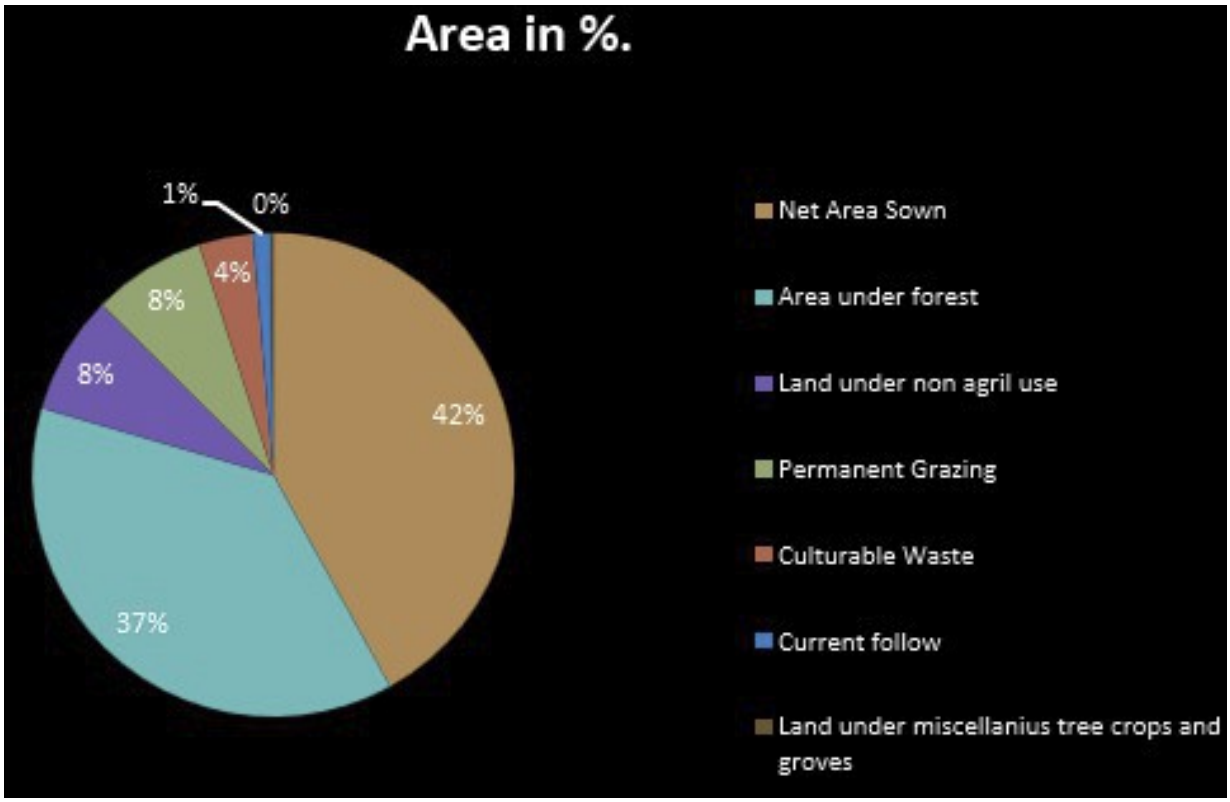
F. Gram Panchyat (Includes Block Grampanchyat) 518

Talukas:

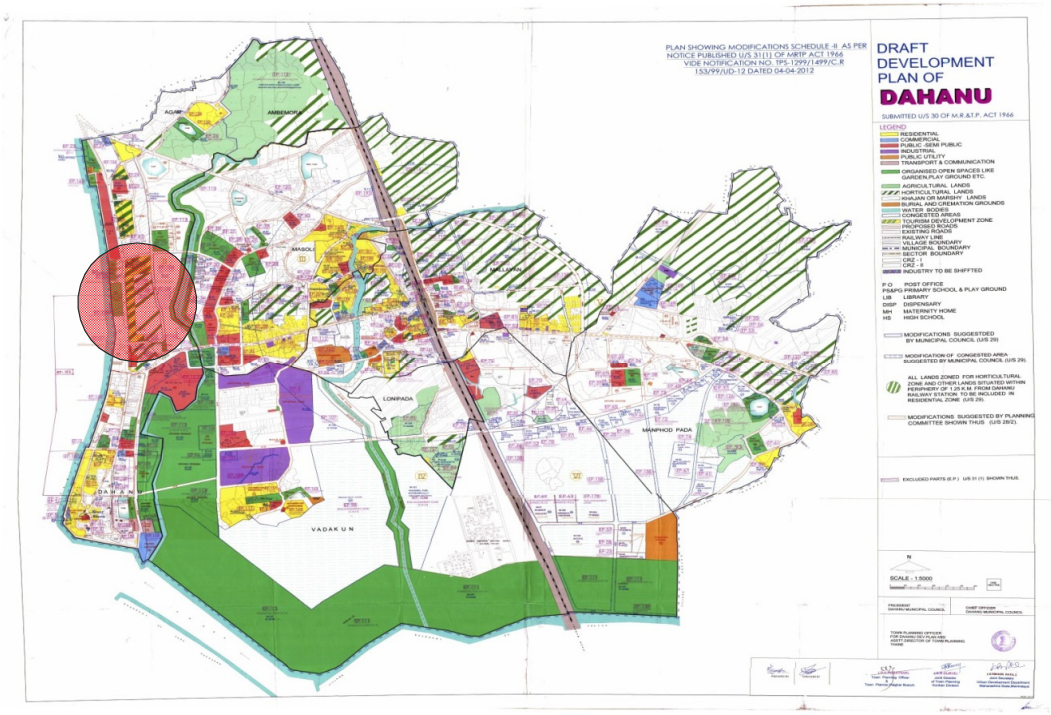


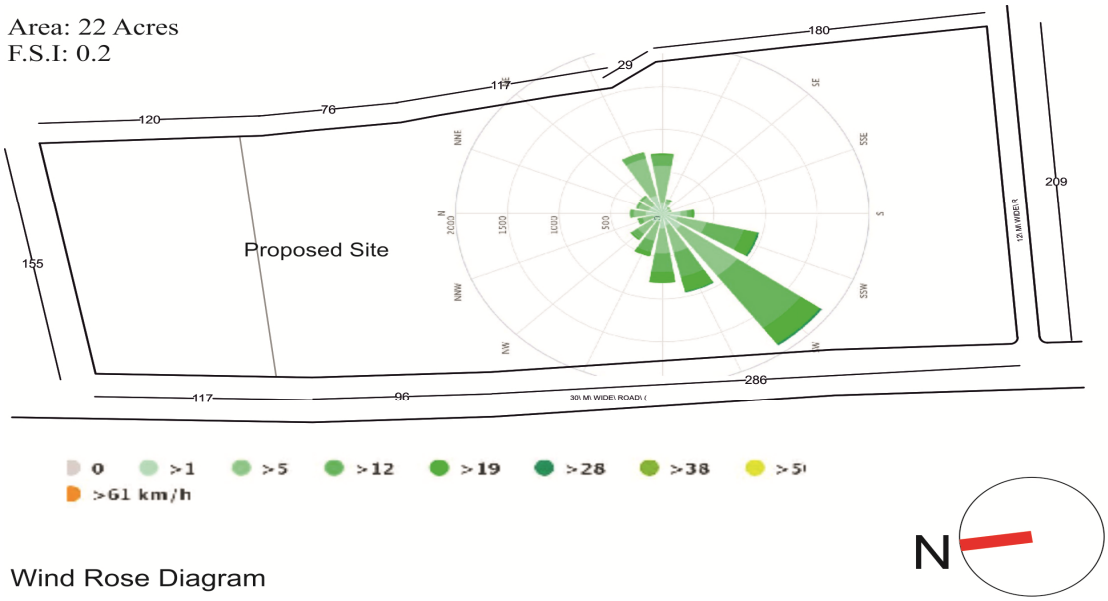
Land Use Pattern:

The Land use pattern indicate that 42.00 % is under cultivation while 37.00%. is under forest.. The 4.00 % is cultivable waste land. While 1.00 % is current fallow land of the total geographical area. Area sown more than once is 1.90 % and the cropping .intensity of the district is 101.90%.



Location of the site





Wind Rose Diagram

The site selected is located in Narpad village in Dahanu Taluka, a part of Palghar district which is north most district of Konkan in the northwest coast of state of Maharashtra.

• Narpad village has a population of approx one lakh,whereby only 50% of total population is continuing with agriculture. since industrial development is taking place around the village the importance of
agriculture has gradually reduced.

- **SOIL CONDITION**: Availability of black alluvial soil.
- **ANNUAL RAINFALL**: 481 - 529 mm.

This place has a surplus of water resources and land resources.Quality of land is also good.

• **OCCCUPATION**: Farming and Small Scale industry.

• **VEGETATION**: Saputa (chiku), Banana, Guava,Coconut, Papaya and mango are the major fruit crops of the region.

Jack fruit, custard apple, litchi, jamun are also under cultivation on smaller scale

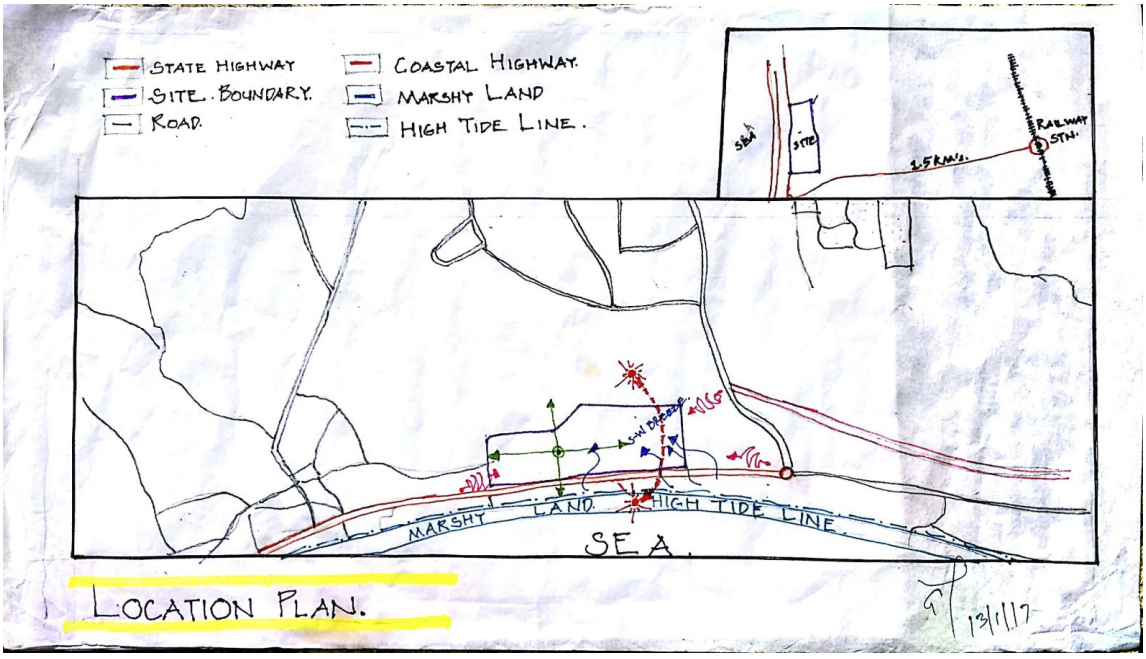
Vegetables like cabbage, tomato, brinjal, onion, garlic, ladies fingers and cluster beans are commonly and commercially grown

- There is no other research centre for fruits in maharashtra other than one in shindhudurg and distance from sindhudurg to the proposed site is around 671.9 kms.

Access to site:

Access to site is directly from state highway (Sh4), site is just 1.5 kms away from Dahanu railway station, Hence well connected from Mumbai. The coastal highway is also just next to the site. Hence site is well connected from Dahanu and others district of alghars and surroundings.

Location Of The Site

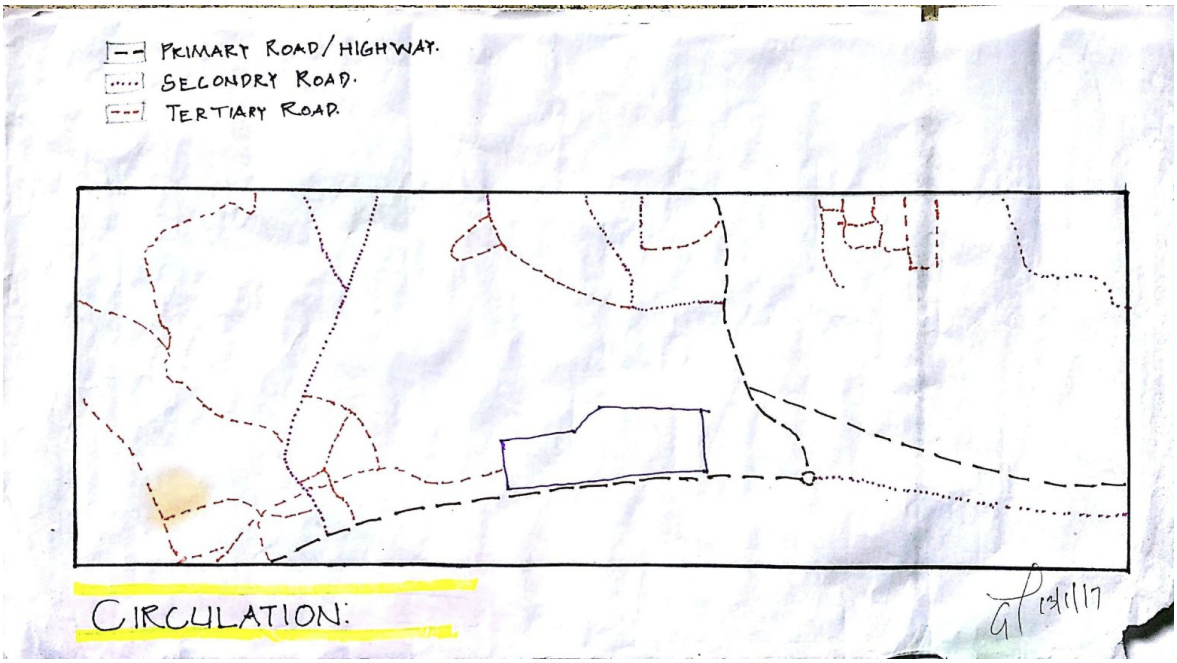


Surroundings, Utilities and Drainage:

Surrounding and Utilities

Natural and Man-Made features around the site

Circulations



SWOT Analysis:

Strength:

1. Proximity to Mumbai, Ahmedabad and other Corporation area for Agril Marketing and also interms of tourism.

2. Availability Most fertile soil.

3. Assured rainfall area.

4. Access to site is vary easy as it is well connected via National Highway, Coastal Highway and Railway station.

5. Principal held crops of Dahanu is Saputa (chiccku) and it is also famous for its rose garden which is cultivated with traditional approach greater scope of organic farming, and hence promoting it.

6. The site is just next to the Dahanu beach, hence calm, relax and refreshing view from site and also attract tourists

Weakness:

1. There is no under ground drainage line in Dahanu, draining of site is challenge.

2. Research station may produce noise as well as may produce pollution which will disturb the nature.

3. Poor availability of electricity for agricultural production.

Opportunities:

1. Scope for agro-eco tourism.

2. Market for flowers and vegetables not properly developed.

3. Can aware the farmers about technologies avial for agriculture.

4. Can attract the peoples towards farming by awaring them about the scope in agriculture.

Threats:

1. The village atmosphere may get distrub.

2. The local may take objections on the services of the village like water supply, electricity, etc.

Site Justification:

• The site selected is located in Narpad village in Dahanu Taluka, a part of Palghar district which is north most district of Konkan in the northwest coast of state of Maharashtra.

• Narpad village has a population of approx one lakh,whereby only 50% of total populationis continuing with agriculture. since industrial development is taking place around the village the importance of agriculture has gradually reduced.

• **SOIL CONDITION**: Availability of black alluvial soil.

• **ANNUAL RAINFALL**: 481 - 529 mm.

• This place has a surplus of water resources and land resources. Quality of land is also good.

• **OCCCUPATION**: Farming and Small Scale industry.

• **VEGETATION**: Saputa (chiku), Banana, Guava, Coconut, Papaya and mango are the major fruit crops of the region.

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Vegetables like cabbage, tomato, brinjal, onion, garlic, ladies fingers and cluster beans

are commonly and commercially grown

• There is no other research centre for fruits in maharashtra other than one in shindhudurg

and distance from sindhudurg to the proposed site is around 671.9 kms.

Tourist Attractions:

Dahanu Beachis among the major tourist attractions of Dahanu, which is visited by tourists for its peaceful surroundings.

Bordi Beachis one of the prime tourist spots, which contains numerous Casuarinas. It is popularly known as the Dahanu Bordi Beach and is known for its polluon free surroundings.

Dahanu Forttraces a history spanning 400 years, when the Portuguese took over the west coast and segregated the Thane region into two divisions. The fort was under the Brish and was converted to a jail aer independence.

Asavli Damlike the Great Pyramids of Egypt was constructed manually. It is situated on the green lake that has waste weir fields on one side and mountains on the other.

Bahrot Cavesis around 1,500 in height and hold historical significance. It is believed that in 1351, Zarathosti ancestors hid themselves in these caves. They concealed themselves in these caves for about 13 years.

WARLI CULTURE : The location has a strong culture to it the warli culture

CHAPTER 5: AREA STATEMENT

Research Lab

Horticulture Lab	Researchers	125 Sq.M
Botany Lab	Researchers	125 Sq.M
Agri. Chemistry Lab	Researchers	125 Sq.M
Entomology Lab	Researchers	125 Sq.M
Soil Testing Lab	Researchers	125 Sq.M
Plant Pathology Lab	Researchers	125 Sq.M
Tissue Culture Lab	Researchers	125 Sq.M
Pesticides Residue Testing Lab	Researchers	125 Sq.M
Farm Office For Records	Researchers	25 Sq.M
Rest Room / Staff Dining Area	Researchers	45 Sq.M
Scientists Changing Room	Researchers	45 Sq.M
Conference Room	Researchers	45 Sq.M
Equipment Storage	Researchers	25 Sq.M

Agriculture Technology Information Centre

Climatology Department	Staff And Farmers	150 Sq.M
Banking Facility	Staff And Farmers	150 Sq.M
Insurance Facilty	Staff And Farmers	150 Sq.M
Waiting Area	Staff And Farmers	100 Sq.M
Admin	Staff And Farmers	400 Sq.M
Crop Management Dept.	Staff And Farmers	250 Sq.M
Marketing Sales	Staff And Farmers	150 Sq.M
General Manager Cabin	Staff And Farmers	15 Sq.M

Tourist House

Living Room	Visitors	18 Sq.M
Bed Room	Visitors	20 Sq.M
Toilet	Visitors	3 Sq.M
Dining	Visitors	9 Sq.M
Kitchen	Visitors	14 Sq.M

Staff Quarters

Living Room	Staff	23 Sq.M
Kitchen	Staff	14 Sq.M
Dining Area	Staff	9 Sq.M
Toilet	Staff	3 Sq.M

Farm Lands

Agromate Observatory	Staff And Visitors	420 Sq.M
Greenhouse	Staff And Visitors	600 Sq.M
Polyhouse	Staff And Visitors	600 Sq.M
Glasshouse	Staff And Visitors	600 Sq.M
Experimental Lands	Staff And Visitors	55000 Sq.M
Rein Water Harvesting Tank	Staff And Visitors	2000 Sq.M
Garage, Tools Room	Staff And Visitors	2000 Sq.M
Godown	Staff And Visitors	2000 Sq.M
Tourist Activity Area	Staff And Visitors	8000 Sq.M

Admin Block

Director's cabin		20 sq.m
General Managers cabin		20 sq.m
Conference Room		40 sq.m
Acounts dept.		50 sq.m
Lobby		60 sq.m
Waiting Area		40 sq.m
Staff Rest Room		70 sq.m
Toilet		20 sq.m

Common Area

Parking	Public	200 Sq.M
Shop And Market	Public	500 Sq.M
First Aid Room	Public	36 Sq.M
Recreation Area / Multipurpose Hall	Public	300 Sq.M
Canteen	Public	200 Sq.M
Exhibition Hall	Public	200 Sq.M
Auditorium	Public	300 Sq.M

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3. Dr. A. S Dalvi (Agronomy)
4. Dr. M.B Dalvi (Pathlogy)
5. Dr. Vilas Jadhav (Rice Breeder)
6. Mahesh kumar (Lab Incharge)
7. Save Farm (Prabhakar save)