

# A FIELD BASED STUDY ON JATHROPHIA CONTRACT FARMING IN MAHARASHTRA

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Contract copy

## **Background**

Basically, the study is conducted for Focus on the Global South on the basis of assignment by vikas Sahyog Pratishthan. Based on discussions with the representatives of Focus on the Global South the perspective of the study is to find out scenario of Jathropha plantation through private cultivation and contract farming in Maharashtra, it is also keep in mind that to be assess the cost and benefits to the farmers, environmental impacts & concerns, water issues, impact on traditional cultivation systems and crop diversity etc.

As per the present agriculture scenario governments are promoting mono cropping cultivation systems through contract farming with private companies and corporations such as Jethropha plantation, number hectors are acquired for such purpose<sup>1</sup> the impact is needs to be understand for assessing benefits or threats therefore the study is conducted (for further information please visit [www.maharashtra.gov.in/data/tender/document/2007/09/12/20070912213631](http://www.maharashtra.gov.in/data/tender/document/2007/09/12/20070912213631) as a sample of land acquisition process)

### **Objectives of the study**

- 1) To assess the scenario of Jathropha plantation in rural part of Maharashtra and its impact on agriculture.
- 2) To find out cost- effectiveness of Jathropha contract farming.
- 3) To seek information about Company and Government's interest in promoting of Jathropa.

### **Methodology**

- Sample survey through farmer interview that is associated with the Jethropha plantation.
- Interviews with the representatives of companies/ corporations engaged in Jethropha plantation or processing.
- Analytical presentation based on secondary data i.e reports, paper clippings, booklets and websites.
- Interviews with social activities.

### **Study Area**

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<sup>1</sup> *In April 2006, Maharashtra state government announced a policy for Jatropha plantation through the horticulture program of state's Employment Guarantee Scheme (EGS). This report reviews the status of development of Jatropha-specific cultivation practices and factors affecting economics of Jatropha plantation. Based on this, the report also analyzes the economic feasibility of Jatropha plantation through EGS from the perspective of small farmers and also assesses the scale of employment generated through such an activity.*

Primary data was collected through an extensive field survey conducted in the state of Maharashtra.



### Selection of villages for the study

The area for the study was selection with the consultation with associated social activists and cultivation ratio of Jathropa, the villages were selected on the basis on following criterion.

- ❖ Where the cultivation is undertaken
- ❖ The villages covered under contract farming by the companies

### Detailed information of the area

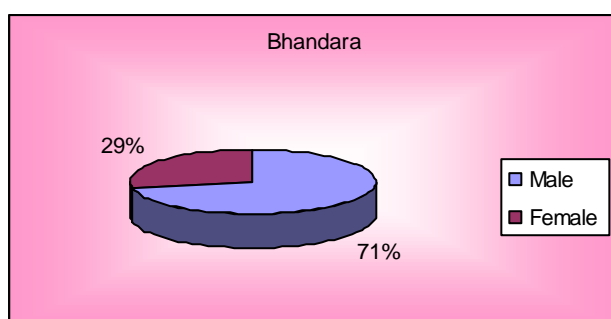
District	Name of the org.	Villages Covered	Organization Leader name
1. Buldhana	1. Priyadharshani Bhahuudheshiy Shikshan Sanstha 2. Mahatma Phule Sanstha	1. Dahigaon, 2. Vakul, 3. Persoda, 4. Malegoan, Takli, 5. Potli, Palsoda, Sangava, 6. Kolasar.	Mr. Rahul Khadse
2. Bhandara	Gramin Yuva Pragatic Mandal	1. Baudh nagar (Phulenagar), 2. Vadegoan, 3. Regepar, 4. Samath nagar, 5. Pathri, 6. Landur, 7. Kheri	Mr. Avil Borkar
3. Ratnagiri	Vikas Sahyog Pratishtan	1. Burmad, 2. Tanhale, 3. Karjuve, 4. Kalmudi,	Mr. Dinesh Malap

		5. Dugve, 6. Pathardi	
4. Raigad	Vikas sahyog Pratishthan	1. Jambhulpada, 2. Vavoshi 3. Parli.	Mrs. Sarika More
5. Satara	Samagik Nayay Pratishthan	1. Kukudvad, 2. Mahsvad 3. Gondvale.	Mr. Ashok Bhosale

### Selection of farmers

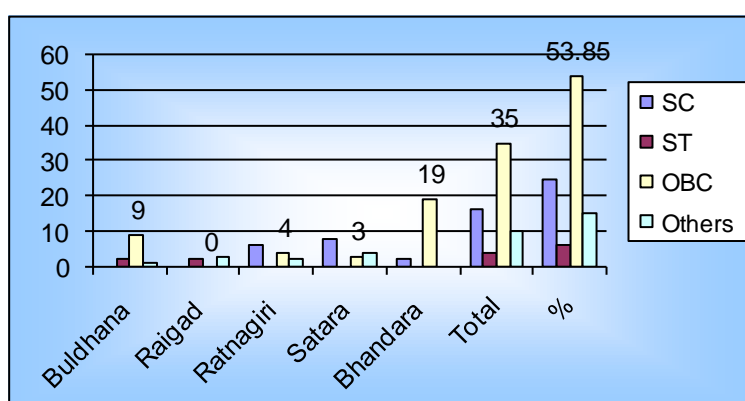
The local organizations and volunteers have helped to identify the respondents who are engaged in Jatropha plantation in each district. We focus in finding essential facts like nature of soil, the agreement pattern of land uses (whether it is taken through land acquisition or lease), involvement of government departments and other authorities, opinion of the farmers and their organization.

### Gender wise bifurcation of responders



In a view of understand gender based ratio in the agriculture information have been collected. The information analysis is we find the women farmers only in Bhandara 25% women farmers from Bhandara have been interviewed and 71 % cultivators are male farmers so the gender balance in agriculture is low. In other district we can't find the women cultivators.

### Caste wise bifurcation of responders



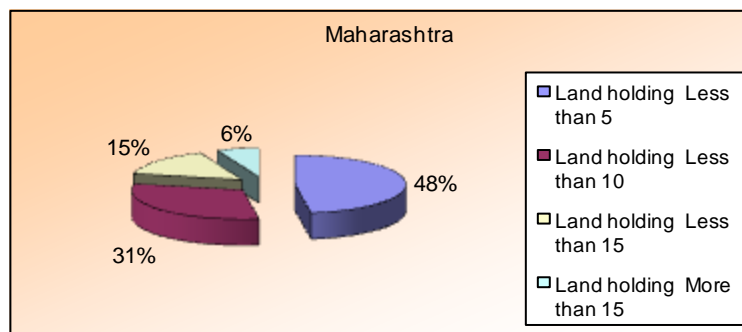
To caste wise involvement in developmental process especially in agriculture field we have assessed about caste wise involvement of farmers. Based on data analysis we find 53.85% farmers are from OBC communities, 24.62% farmers from SC communities & 6.15% from ST

communities are engaged in Jathropha cultivation, so the OBC communities are more engaged in Jathropha cultivation.

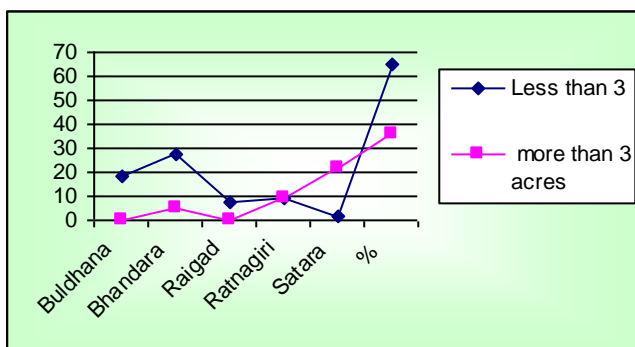
**Land holdings pattern of the farmers in the assessed district:**

Land is the basic asset for farmers for their livelihood therefore to assess the land holding and ratio of land has been used for Jathropha cultivation and for food grains cultivation by the farmers. After information collection and analysis we find that 48 percent farmers holding less than 5 acres land whereas only 6 percent farmers holding more than 15 acres land, 31 percent farmers having less than 10 acres & 15 percent farmers holding less than 10 acres. Thus the analysis is in Maharashtra is small farmers are more engaged in Jethropha cultivation.

(Area in acres)



**Land use on contract basis for Jethropha plantation**

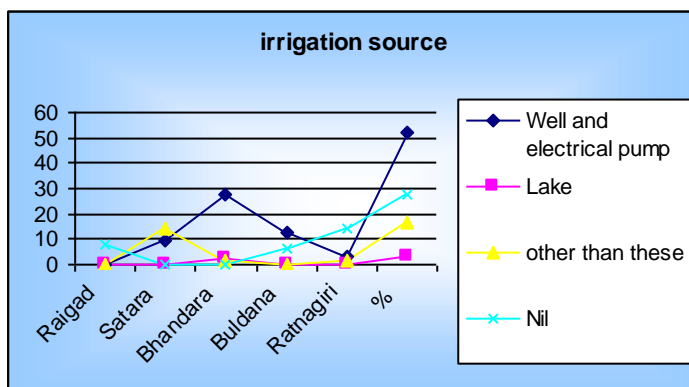


To assess the ratio of land use on contact basis we find that in Buldhana district 18.46% land is less than 3 acres, Bhandara it is 27.69% & 4.65 % land is more than 3 acres , Raigad 7.69%, satara 1.54% land is less than 3 acres whereas 21.54% land is more than 3 acres ,Ratnagiri District less than 3 acres & more than 3 acres land is 9.23% in Buldhana & Raigad there is no more than 3 acres land under jatropha plantation. total Maharashtra

64.61% land is less than 3 acres & 35.42% land is more than 3 acres.

In this land 91 percent farmers having their own land whereas 9 percent having leased land. 92 percent respondents are saying besides jatropha there is naught any crop under contract farming whereas 8 percent is saying yes.

**Source of irrigation**



The table is showing that 52.31 percent farmers are using well in this Bhandara district farmers are more depended on well they are 27.69% than Buldhana district farmers 12.3%, satara 9.23% & Ratnagiri 3.08% farmers depended in well & electrical pump. Whereas 3.08 percent farmers are using lake .16.92 percent farmers were depending on

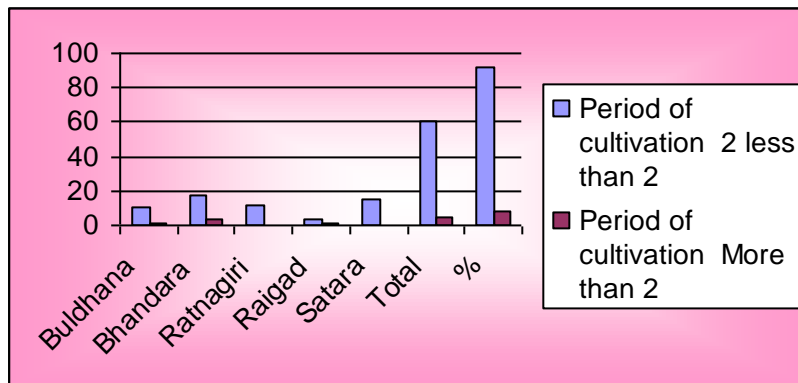
Nature/rain water. & 27.69 percent farmers are not responding .thus the analysis is that in Buldhana district 29.23% farmers depended on irrigation source. Satara 23.08%, Buldhana 12.3%, & Ratnagiri 5.34% districts farmers depend on Irrigation Facilities Whereas in Raigad district there is no irrigation facilities

**Possibilities of cultivating other crops**

when we ask question possibilities of other crop grow other than jatropa 86 percent farmers says no whereas 14 percent were saying yes wild trees , paddy, vegetables, grass It menace that there is no possibilities to grow a crop where Jatropa is planted.

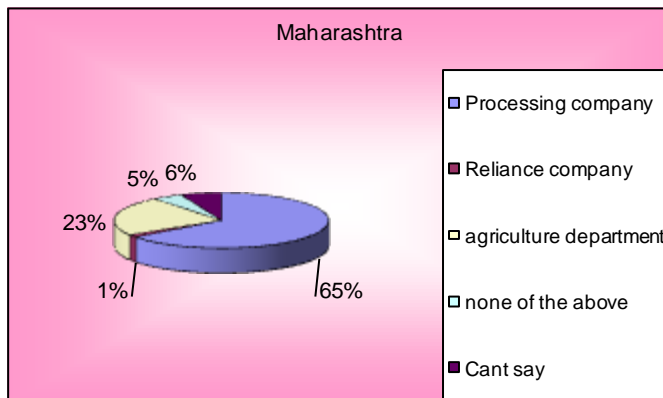
**Period of the cultivation**

The farmers started cultivation of jatropa last 2 years



It means the 92.31 percent farmers cultivating jatropa 2 & less than 2 years & 7.69 percent farmers are cultivating jatropa more than 2 years.

**Contract farming**

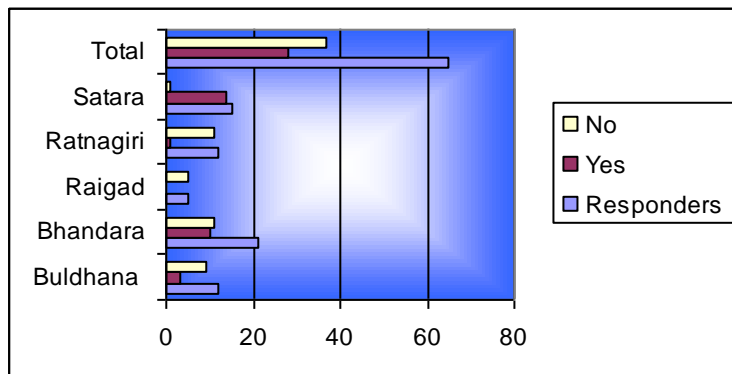


64 percent farmers doing contract farming for Processing company, 23 percent farmers doing contract farming for agriculture department 6 percent reliance company 5 percent farmers corporate company. 2 percent farmers cant say anything .thus the analysis is more farmers are doing contract farming with processing company. Farmers come in contact with company through company.

**Status of contract farming**

District	Total Villages	No village covered in contract farming	Year of contract
Buldhana	9	9	2007
Bhandara	7	7	2005
Raigad	3	3	2006
Ratnagiri	6	6	2007
Satara	3	3	2006

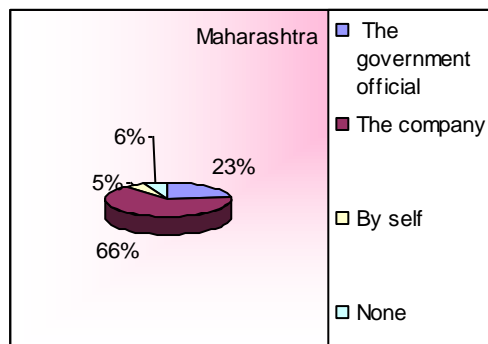
Information support of contact for Jathropha cultivation



In total 65 farmers were asked whether the company provided information about Jatropha, its use or its negative effect on environment, health, or on food production. At this 43.08 percent farmers said agreed of getting information whereas 56.92 percent disagreed for the same.

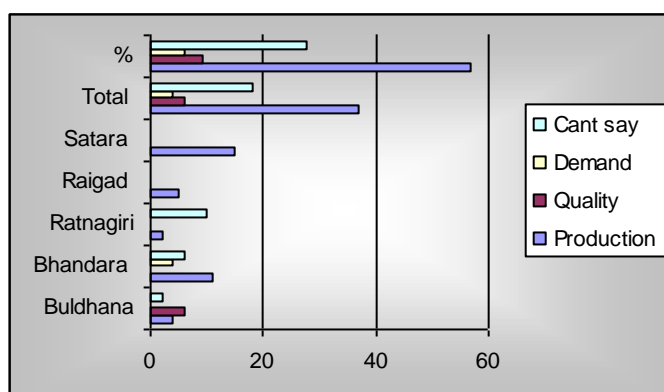
Source of information

23 percent of the farmers get the information about the Jatropha plantation from the government official, 66 percent farmers said they get contact with the Company whereas 5 percent farmers getting information through Newspapers, T.V. etc... by self.



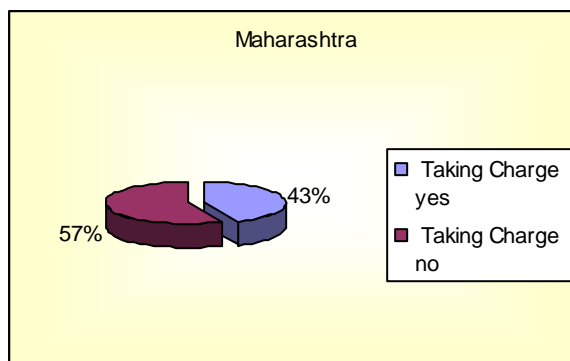
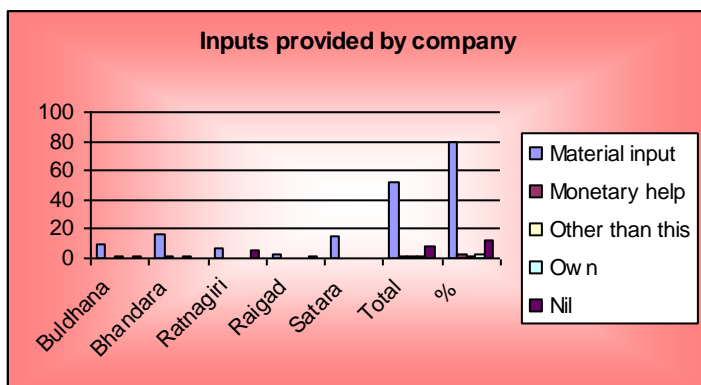
Status of agreement:

The Farmers doing agreement with company that is written kind of agreement & the prices of Crop fixed by Company says 56.92 percent farmer's .29.23 percent farmers said the agreement is oral, out of this 20 percent farmers said Government ( Agriculture Dep.) fixed the prices of Crop, 9.23 percent farmers said they own fixed the prices, 13.85 percent farmers can't respond. Thus the analysis is company own decided the prices of crop there is no involvement of Farmers when prices fixed .the prices fixed on Production of the crop said 56.92 percent farmers. 9.23 percent farmers said prices fixed on the Quality of crop, whereas 6.15 percent farmers said Demand. 27.69 percent farmers can't respond.



### The inputs provided by company

Company Provide the Material inputs like Crops, Jatropha seeds & Basic requirements 80 percent farmers said .3.8 percent farmers said Company Provide Monetary help whereas 3.8 percent farmers manage there own .12.31 percent farmers not responding.1.54 percent farmers uses other than this . Company supplies the seeds & Basic requirements of cultivation of the crop 57 percent farmers said yes they are taking Rs. 10 per crop. 43 percent farmers said it's free of charge.

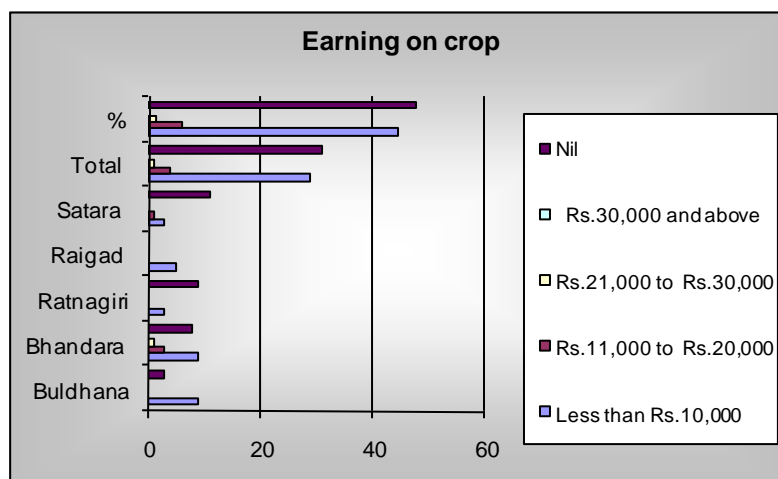


### Economics & Employment of the Farmer

#### History of cultivation

District	Crops
Buldhana	Cotton, groundnuts, Pigeon pea , Chana, Bamboo, Teak , Mango,chilis, Beans ,jawar, sunflower l, onion, black beans, Soya been., Turmeric
Bhandara	Beans , Pigeon Pea, Bamboo,
Ratnagiri	Paddy, wheat, Bamboo, vegetables, cotton
Raigad	Paddy, Cashew nut.
Satara	Onion, wheat, jawar, cotton, bajara, Mataka

The following table shows that 47.69 percent farmers were not earning because there land is waste land .whereas 44.62 percent farmers said they are earning less than Rs.10, 000. 6.15 percent farmers earning Rs.11,000 to Rs.20,000 & 1.54 percent farmers earning Rs.21,000 to Rs.30,000.



With the jatropha plantation 16.92 percent farmers notice change in soil fertility where

83.08 percent farmers did not find change in soil fertility

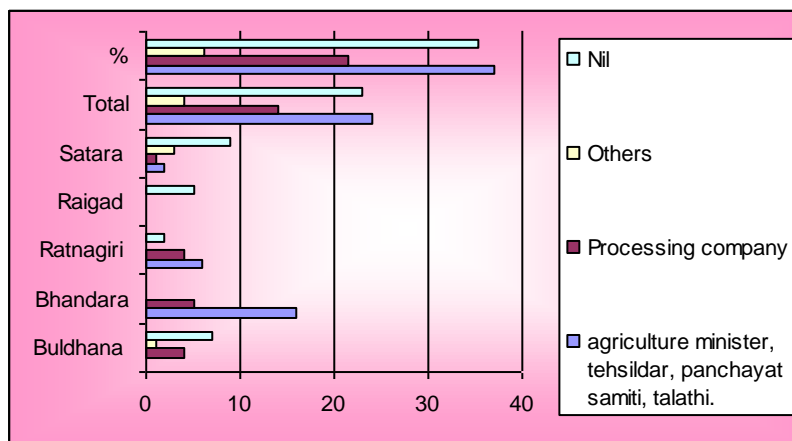
Products & the Market

So far no yield because jatropa produce after 3 years & the 92.31 percent farmers cultivating jatropa 2 & less than 2 years. So there is no produce.

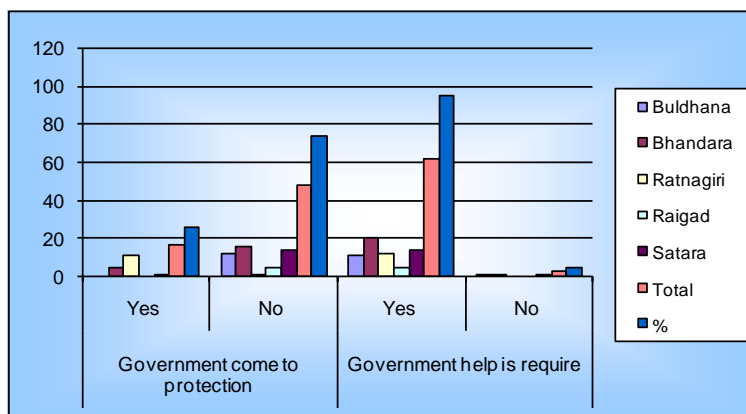
Grievances & the role of Government

1. The farmers are facing the grievance are:
2. .Lake of technical guidance & information about Jatropa
3. Lack of Suitable plantation Schedule
4. Lake of scientific knowledge about scientific cultivation of Jatropa
5. No water no capital
6. After Production price less .

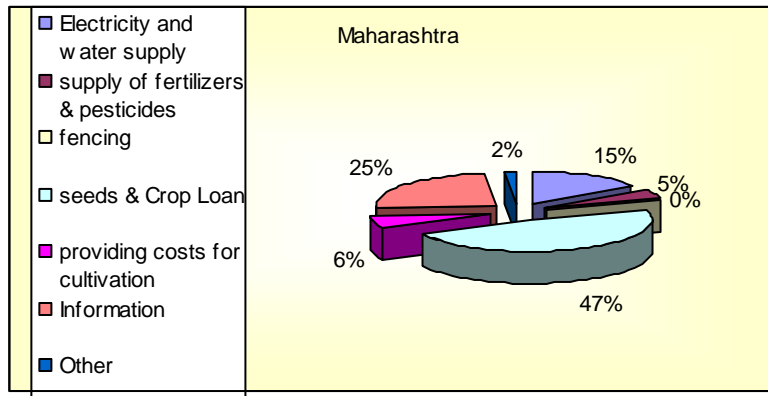
36.92 percent farmers go to agriculture minister, tehsildar, panchayat samiti, talathi. For readdress of the problem, 21.54 percent farmers go to Processing Company. Whereas 6.15 percent farmers solve there problems own.



73.85 percent farmers said government can't come for protection whenever it's required. 26.15 percent farmers said yes .when we ask the important question to farmer is the government help is required that time 95.38 percent farmers said yes. Only 4.62 percent farmers said not required.

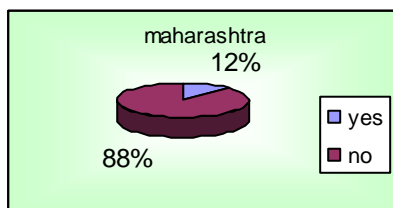


Seeds & Crop Loan 47.69 percent Farmers want this kind of support from government. 24.61 percent farmers want information regarding jatropa. 15.38 percent farmers want Electricity and water supply .supply of fertilizers& pesticides 4.62 percent want. Providing costs for cultivation 6.15 farmers want this kind of help. & Other 1.54



### Health & environment Concerns

Jethropha is not an edible product and also animals have not eaten the plants therefore major responders have said that there are no side effects on the human body. But 12% of responders said that there are issues with pest control. Due to the heavy attraction of the pest to Jethropha, other crops are being affected more, and expenses on pesticides are high for other crops.



### Opinion of Company Representatives which are engaged in Jethropha Plantation:

1. Name of the Company : Grow diesel: Dadar Mumbai -14 (11<sup>th</sup> sep07)

We met Mr. Lavesh Jadhav & team. The company is implementing a project called "Grow Diesel", which is monitored by the Climate Core Council. The chief office is in Mumbai and the company has 6 factories in Maharashtra; they also have their own nurseries in rural parts of Maharashtra.

We asked them to provide detailed information, but they said that if you are doing a contract of cultivation, we can provide more information. There is no transparency in the business, even though they told us about the difference between Jatropha & Karanj, which is not useful to us. There is no example of success given by the representatives we have asked again and again to get information about the kind of contract you are doing with farmers and what is the proof of success of Jatropha plantation, but no one has given a proper answer to our expectations. The representative has diverted the discussion towards their benefits and contracting in favor of farmers. So the analysis is that private companies are not keeping transparency at all levels.

#### **2. Buldhana :**

Here we met one company that couldn't give its name; they said that Jatropha is an optional bio-diesel. That's why they promote it to farmers for cultivating Jatropha. Jatropha plants raised from seeds take 3 to 4 years to yield seeds; it can withstand long periods of drought.

## Farmers Views on Jatropha Plantation

The surveys which we have conduct in Maharashtra state the views of the District coordinators, Farmers are as follow:

There was a gender wise bifurcation of respondents in order to know the positioning of gender differences in the cultivation of Jatropha was nothing different but disappointing with a wide gender gap. Here the farmers from OBC community were maximum in number engaged in farming of the crop. Small farmers are seemingly enthusiastic on undertaking Jatropha as per the Land holding pattern in the district cause they make up the majority engaged in cultivation on their own land.

### Ratnagiri District

In the prevailing condition of our country there is a great wave of Privatization. Therefore, the livelihood of farmers is at stake. Although India is an agriculture based economy, the farmers are least considered as per the development. When overviewed on the numerous governmental schemes for policies regarding agriculture, there is no such effective implementation & policies planned. This has only resulted in worsening the situation of the poor farmers. Due to pressure created by the World Bank, the Government of India is also falling with same force through cutting off the subsidies in agriculture.

In context to Maharashtra, where number of suicide rate is high, the farmers of Vidarbha & Maharashtra are in a dead lock situation are simply forced to commit suicide./ in the economy market the state is well known for its sugarcane, cotton & paddy crops. Apart from the Konkan region farmers are facing the harsh situation due to the inadequate loan facility & the poor price over the produce. Even though there are no suicide cases from the Konkan region the situation ahead seem as to be changing g in difficult future.

According to the present situation of Indian farmers, are completely dependent on agriculture for their livelihood. Right from the Adil Shaha colonial rule the people have aggressively fought over Khoti tradition & were successful in getting their land rights. Even today there exists the Khoti's who hold the lands of the farmers & this is simply but truth of Konkan. In order to degrade the environment & the farms in region there is a steady rise of industries for example SEZ. This is nothing but breaking of the farmers backbone the agricultural lands into piece. Experiencing the affection of inhabitants towards nature; some of the Capitalists here have agreed here for Jatropha bio-diesel Park & Jatropha contract farming. This followed bethought forced cultivation of Jatropha by providing attractive packages/assurances.

### **The psychology of the Konkan people & there present situation**

Jatropha is a well known crop in the region calls as Mougli –Yerand or Ranti –Yerand which is nature crop. The traditional healers also use this plant for various treatments and thus are public property. This plant is majority seen on the open land. Irrespective of the fertility of land. But where there provided there is sunshine. Jatropha grows vertically unto 2 meters. In Ratnagiri Kadoo- Yerand (Bitter jatropha ) & God-Yerand ( Sweet Jatropha ) are found in miniscule. Understanding the people of Konkan the businessman has strategically forced the farmers to cultivate jatropha .

Sr. No.	Promises of the farmers	Current situation
1	There are nearly 200 types	1)in Konkan only 4 types are found namely Man-

	of Jatropha & 1000 types of hybrid Jatropha.	Yerand, Mougli-Yerand, God-Yerand, Kadu-Yerand. 2) Whereas the cultivation undertaken by farmers does not include the above types for the growth of hybrid Jatropha water is required. Therefore the crops planted in year 2005 are found dried.
2	Land under paddy cultivation must be left plain. Jatropha can be cultivated on the barren land.	In order to get produce over the barren lands the wild plants are required to be cut. This further does not give any produce. There is soil erosion & also affects the rainfall.
3	Maintenance not required	1) Twice in a year the Jatropha plant sprouts green leaves which is cleared by the animals, demands for water, fencing is required. 2) In the summer each crop requires 2 liters of water. 3) Cannot sustain in forest fire.
4	From the time of plantation produce can be availed in 2 years. A single crop provides 2-5 kg seeds. The price of 1 kg is Rs. 5 & the price of crop is Rs. 10	1) in the year 2005 the planted Jatropha has been dried only due to insufficiency of water. 2) In taluka Chiplun year 2002 due to insufficiency of water, nurturance & animal grazing the crop could not grow properly. 3) The crop grows up to 2-2 half meters in 2 years but the seeds can be only gained after 2-3 years. Therefore the company has provided for planting of Karanj as an alternative to Jatropha. But there is also a requirement for fertilizers, pesticides & water .
5	Generating employment	1) The Company will be providing employment to the farmers cultivating Jatropha at first. 2) Loan without interest will be provided by company therefore to understand the income generating activity & also to get produce from the barren land the farmers cultivate Jatropha.
6	Facilities in village	1) Without the support of village police, village head the Company get in contact with the farmers. 2) In order to have the village approval the Company has provided with temples, roads, etc.,
7	Participation of Government machinery.	There is encouragement to Jatropha plantation but the farmers hold land in gunthas therefore availing of faculties is at question.

### Satara District:

Satara district has its own characteristics, some of the part is heavy rain fall and some of the talukas are permanent drought prone. In satara district we chose 15 farmers those who cultivating jatropha plant The district of Satara is a drought prone region where there are widespread barren lands & therefore the plantation of Jatropha is in large scale . According to the prevailing harsh conditions of w. Maharashtra are forced to cultivate Jatropha . as also the crop does not require the fertilizers , minimum of water & can be grown on the infertile land . This plant provides seeds from the concluding second year & sustain for 40- 50 years. The

seeds are not edible but provides for few bio-diesel i.e 30-40% of oil can be availed from the seeds.

The Indian scientist has researched on the potentiality of Jatropha as a bio-diesel plant as the fuel obtained from it can be used to run railway has been proved. Our country is compelled to import 70% of petroleum due to lack of reserves making the government spending huge amount of international exchange. Bio- diesel is 100% natural & clean fuel & the cultivation is carried out on a large scale in south India.

Yield per hecter in year is as follow:

Productivity Yield / hectare	Barren land	Irrigated
1 <sup>st</sup> year	-	250
2 <sup>nd</sup> year	250	1000
3 <sup>rd</sup> year	1000	2500
4 <sup>th</sup> year	2000	5000
5 <sup>th</sup> year	3000	8000
6 <sup>th</sup> year	4000	12000

#### **Raigad District:**

When we asked to the farmers about their experiences on Jethropha but farmers were non – cooperative in giving the information about Jatropha plantation.

- 1) The farmers cultivating the crops have sold their lands at present.
- 2) Because they could not get a satisfying yield from the crop.
- 3) For the loan, farmers gave 7/12 ( satbara ) photographs to the bank.
- 4) The loan given by bank was Rs. 10,000 on per acre.
- 5) On plantation the yield can gained after 2 years.
- 6) Behind one crop half kg yield can be gained.
- 7) The agent's commission is Rs. 500 over one acre.
- 8) The earnings are Rs.1500 per acre.
- 9) The farmers sold their yield to Deshmukh Company of Karjat

#### **Buldhana District.**

In the district the Jatropha plantation has been for a year. Earlier this crop was only known in the region but there was no plantation. As per the present financial assistance provided by the government/ company there has been increase in the cultivation of Jatropha. Also the land in Buldhana does not provide with satisfying produce, therefore the farmers as an alternative has chosen for Jatropha. In the contract farming Hindustan lever & one of the companies are jointly involved. Buldhana Urban Bank buy the produce Jatropha from the farmer. The farmers have given the copy of the contract that is attached.

#### **Bhandara District:**

In the Bhandara district the cultivation of Jethropha are with the government agencies there is no big contract at the level of companies. It is started early in last year therefore, the yield, production cost marketing aspects not reflected in the interview of the cultivators.

## **Jatropha Oil Production**

Jatropha Bio-Diesel oil is extracted from Jatropha oil-seeds and the level of Jatropha Oil production depends equally on the yield of oil-seeds and the concentration of oil-seeds per Jatropha tree. The yield of oil-seeds from each tree is strongly reflected by type of seedling stock used. Jatropha trees are tolerant to drought, and can be grown in a variety of soils, from stony clays to infertile sands. Standard Jatropha trees are generally propagated by seed, requiring 3-4 months to germinate and up to 3 years of growth before the trees bear fruit. By cloning Jatropha we are able to circumvent this process to create genetically consistent, high yielding trees capable of bearing fruit after only a few months instead of several years using this biotechnology platform.

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