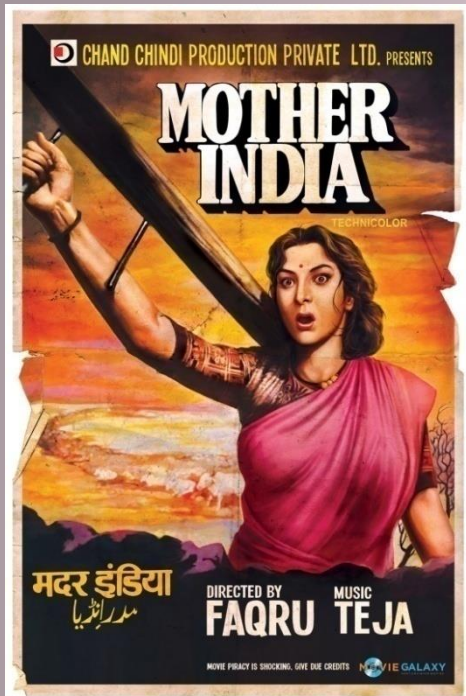


MOTHER INDIA – HINDI MOVIE



A POVERTY-STRICKEN VILLAGE WOMAN

FARM MECHANIZATION IN INDIA

OBJECTIVE

It has been the endeavour of the government and stakeholders alike to encourage and promote farm mechanization in India. It is critical to note that mechanization means more than just the sale of machinery and equipment to farmers; it includes:

- Accelerating sustainable mechanization and promoting social and economic upliftment because we believe that is not enough to just sell machines.
- Building a sustainable ecosystem around the machine by roping in existing facilitators like Business Correspondents to spread the technology rapidly.
- Transferring of technology and know-how in the true sense of the word.
- Targeting true stakeholders which also comprise 60% of the workforce – women.
- Accelerating the process of percolating the technology to the grassroots level.
- Creating specialized solutions and enhancing livelihoods and therefore helping eradicate rural poverty.

STRATEGIES

- **INNOVATE:** To innovate, develop critically needed solutions for Indian Agriculture.
- **TECHNOLOGY:** Evolve technologies that are reliable and affordable with frugal engineering to create the hitherto unavailable solutions.
- **MINIMIZE COST:** Develop a marketing and sales process, minimising the cost of putting the machine from the factory gate to the farm, at minimum cost.
- **DISTRIBUTION:** Develop a low-cost distribution network with the technical capability of customising machine and implement configurations for every need, for different crops and different regions across India as well as impart training to the user for the optimum usage and maintenance of the machine.
- **INFRASTRUCTURE:** Create a rural infrastructure for repair and maintenance, and stocking of spare parts to ensure continued consumer satisfaction.
- **INTENSIVE ENGINEERING:** Continue to develop new implements that can provide more solutions for crops and regions that remain unaddressed.

PRESENT SCENARIO



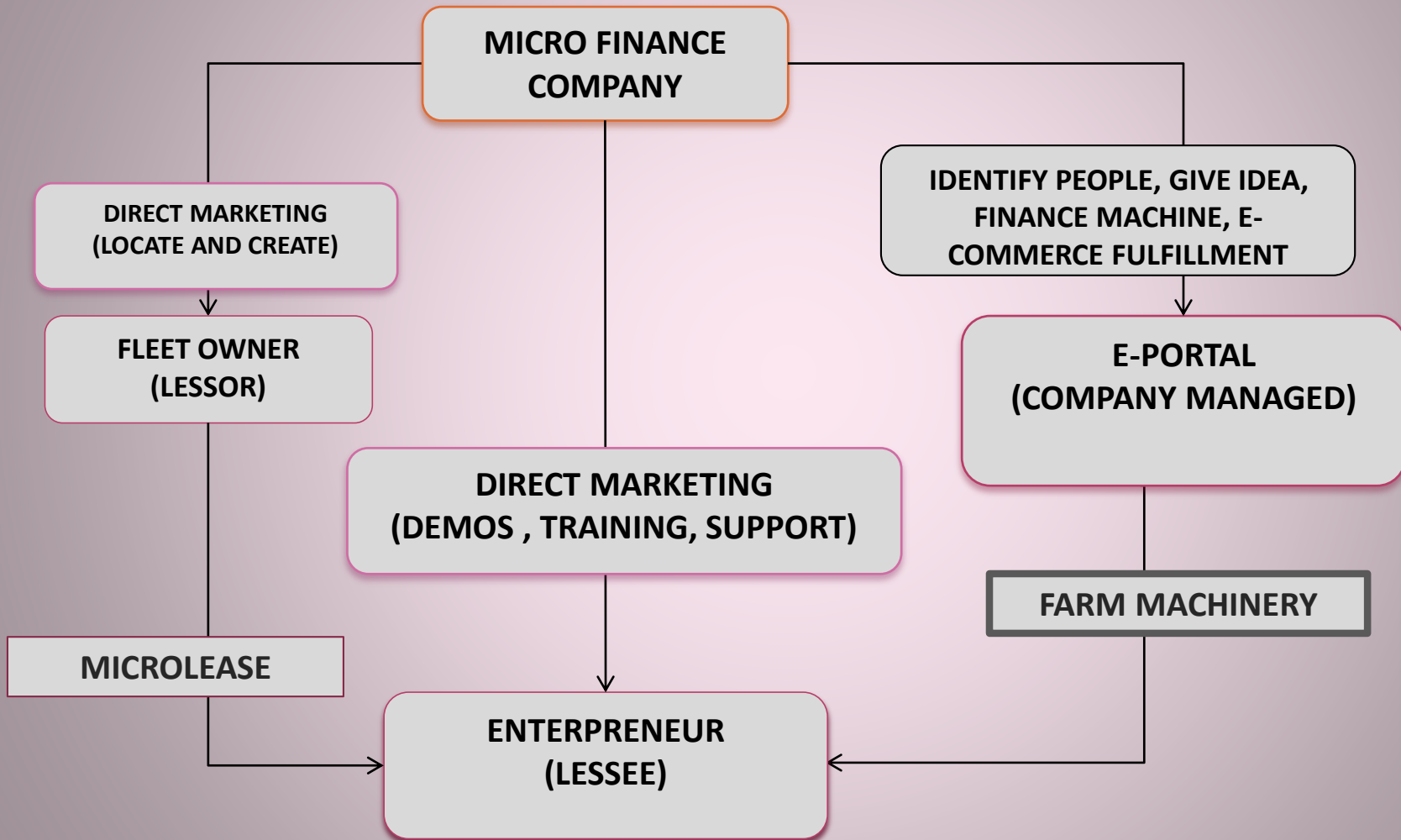
PROPOSED MECHANIZATION



[Video >>](#)

BUSINESS PROPOSITION AND OPTIONS

CREATING RURAL ENTREPRENEURS THROUGH DIRECT SALES OR MICRO-LEASE



UNDERSTANDING INDIAN AGRICULTURE

KEY CHALLENGES FACED BY THE FARMERS IN AGRICULTURE SECTOR IN INDIA :

- Low Productivity and Profitability
- Fragmented small land holdings and reducing farm size year after year.
- Scarcity of farm labour who have been migrating to other locations due to their low wages.
- Cropping patterns heavily skewed towards grain cultivation, which is unsustainable on small farms.
- Non-availability of gender-friendly, appropriate, affordable, multipurpose and self-propelled farm machinery.
- Decline in the availability of draught animals due to their financial non-viability.

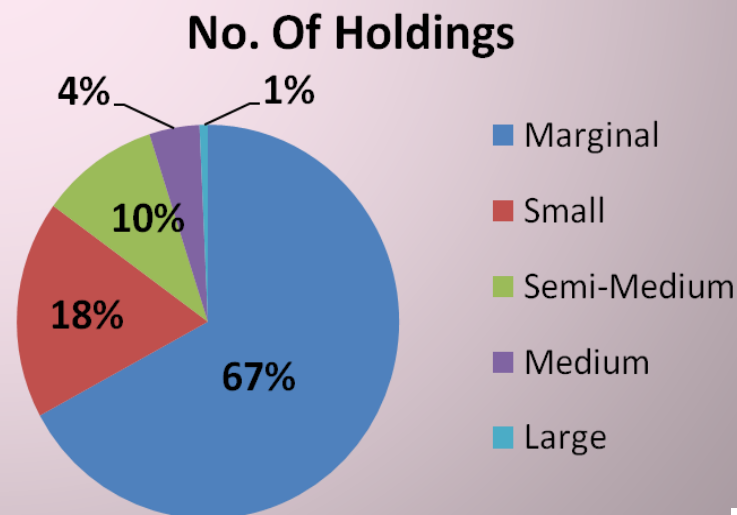


REDUCING AVERAGE FARM SIZE

LAND HOLDINGS ARE DIVIDED INTO THE FOLLOWING CATEGORIES:

- MARGINAL : Land holdings which are below one hectare in size.
- SMALL : Land holdings which are from one to two hectares in size.
- SEMI MEDIUM : Land holdings which are from two to four hectares in size.
- MEDIUM : Land holdings which are from four to ten hectares in size.
- LARGE : Land holdings which are ten hectares and above in size.

Size Groups	No. of Holdings (in Millions) 2010-11
Marginal	92.82
Small	24.77
Semi-medium	13.89
Medium	5.87
Large	0.97



LABOUR SCARCITY

Labour Scarcity is mainly due to migration of male agricultural labourers from villages. In 2011, the percentage of female agricultural labourers was 37.2% which is expected to increase to 45% by 2020 and 60% by 2050. As most of the primitive tools and implements used for agriculture have been traditionally designed for males, the females are unable to substitute the male labourer for several operations on the fields.

OPTIONS TO ADDRESS LABOUR SCARCITY:

- Create well paying employment opportunities in the agricultural sector to arrest the migration of workforce.
- Increase productivity of female labour through innovated or re-engineered gender- friendly tools, implements and machines.
- Mechanization of small-sized farms by micro-mechanisation equipment using appropriate , affordable and frugal technologies.
- Aligning crop patterns with market demand by cultivating multiple crops intensively to make small farms more profitable and thereby halting/reducing migration of farm labour.
- Reducing cost of chemical inputs used for farming in the form of herbicides and insecticides and encouraging organic farming, the produce of which fetches better price in the market.

TRENDS OF AGRICULTURE MECHANISATION IN INDIA

MARKET OVERVIEW OF MAJOR FARM MACHINERY USED IN INDIA

NAME OF MACHINERY	ANNUAL MARKET (APPROX)
Tractor	6,00,000
Power Tiller (Conventional Type – Suitable for puddling only)	56,000
Combine Harvester	4,000-5,000
Thresher	1,00,000
Rotavator	60,000-80,000
Rice Transplanter	1,500-1,600
Self-propelled Vertical Conveyor Reaper	4,000-5,000
Zero-till Seed Drill	25,000-30,000
Multi-crop Planter	1,000-2,000
Laser Land Leveller	3,000-4,000
Multi-purpose Power Tiller	Potential 70 million

There is high growth in the Tractor segment due to a tractor's rural transport applications for agro commodities and cash crops like sugarcane. Also the policy framework allows wealthy farmers to add an additional source of income by renting out tractors for road construction and infrastructure building.

The tractor segment with an annual market size of Rs 36,000 crore is cornering most of the financial assistance and allocation from the financial sector and subsidy from the Central and State governments.

MAIN USE OF TRACTORS:

1. Transportation of goods; sugarcane and other farm produce and agri-inputs.
2. Infrastructure related works; construction and road building, etc.
3. Rural transportation.
4. Land preparation for cultivation.

ROAD MAP

- Scale of profits for the Agriculture practices can be improved by optimising the technology for **functionality, versatility and affordability for the Acquisition** as well as Maintenance. A “**Swiss Knife**” for Agriculture Sector in India.
- Multiplying the productivity of farm labour by training in conjunction with making modern micro-mechanisation machinery available, like a “Swiss Knife” that leverages human efforts mechanically.
- Increasing the productivity of land and its cultivation by intensive cultivation and multi-cropping on small land holdings. The cumulative effect would contribute to higher incomes for farm labour and higher profit for the farmer.
- The synergies of multi-cropping and optimised mechanisation would make it possible to shift from traditional grain farming to more profitable vegetable cultivation and horticulture, which is highly labour-intensive without the optimised suitable, affordable machinery.

ANGAD DIESEL HAL – A CASE STUDY

FEATURES:





- Gender Friendly
- Low cost
- Highly affordable – low operation and maintenance cost
- Can operate on steep inclines for terrace cultivation
- Stable on uneven fields
- Suitable for different crops and farming operations
- Light weight – advanced hi-speed state-of-the-art powerful engines
- Air cooled engines – less prone to failure due to overheating
- No belt or chain – direct transmission
- Self -propelled with multiple speed options
- 6 speed gear box giving a great range of speed to reduce fatigue
- MADE IN INDIA



ANGAD DIESEL HAL – A CASE STUDY

- ‘Angad Diesel Hal’ is an ideal machine for small land holdings, horticulture zones, orchards and for inter-cropping (sugarcane and cotton). The machine can enter and operate even in an isle of 16 inches. It can also do proper weeding which in today’s time is labour-intensive and costly, considering labour shortage.
- Ideal for small land holdings, can replace a pair of bullocks. The expenditure on a pair of bullocks is approx Rs. **5000-6000**/month, for five years whether they work or not. The Hal does not attract expenditure when it is not working. The cost of operation is cheaper than the pair of bullocks considering the speed at which it works and its fuel economy.
- Can be used for normal cultivation, inter-cropping, ploughing, cultivator and tiller operations, irrigation, pesticides spraying and power generation.
- The weight of the machine is around 110 kgs. Even a lady can operate it easily.
- The price is reasonable and has a sound ROI.
- Farmers can even rent it out after completing their own field preparation.
- High horse power tractors are becoming unviable for farmers that have irrigated land below 10-12 acres and most tractors are own construction sites doing rental jobs to level costs.

OPERATIONAL SOLUTIONS WITH CUSTOMISED IMPLEMENTS

Implements	Rotavator	Reversible MB Plough	Cultivator	Leveler
				
Operations	Weeding Tilling Inter-cultivation Mulch Preparation Field Preparation	Cutting Soil Bed Shuffling top & lower layers of soil Ridge making	Breaking Hard Soil Bed Field Preparation Weeding Inter-cultivation	Leveling Scraping
Advantages	<ul style="list-style-type: none"> > Cutting and mixing of top and lower layer of soils, without pressing or hardening the bottom of soil. > Helps in reviving the soil nutrition > Aerates the soil > Easy Pin lock system to attach and detach 	<ul style="list-style-type: none"> > It not only cuts/breaks soil but also can turn/shuffle top & bottom layer > Reversible option helps in saving time, fuel & effort in preparing field > Mould board with depth wheel, helps in preparing small ridges or bunds for suitable crops/plants 	<ul style="list-style-type: none"> > Breaking the soil bed > Making lines/rows in the field for sowing of crops > Weeding operation between crop/plants which have small gaps between them, without damaging plant or root. > Adjustable width, gives a multi purpose advantage to do inter cultivation with ease. 	<ul style="list-style-type: none"> > Levels prepared field > Leveled field helps in even distribution





[Rotavator Orchard Video](#)
[Vegetable Video](#)

[Reversible MB Plough Video](#)

[Cultivator Video](#)

[Leveler Video](#)

OPERATIONAL SOLUTIONS WITH CUSTOMISED IMPLEMENTS

Implements	Water Pump	Spray Pump	Reaper	Puddling Rotavator
				
Operations	Irrigation	Spraying of: Fertilizers, Pesticides, Weedicides	Harvesting	Puddling
Advantages	<ul style="list-style-type: none"> > Non priming, so can operate even on varying rpms > Easy to install and run 	<ul style="list-style-type: none"> > Effective & Efficient, with strong 1500 rpm, 3 piston pump > Easy to install and run 	<ul style="list-style-type: none"> > Designed for harvesting multiple type of crops 	<ul style="list-style-type: none"> > Specially designed for paddy field preparation. > Cylinder shape do not allow Diesel Hal to sink or get stuck in mud (water logged field)




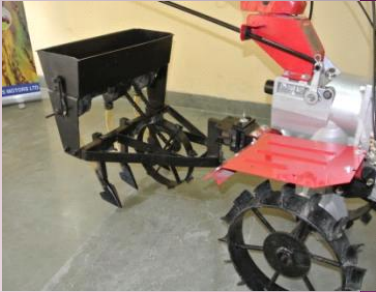
Water Pump
[Video](#)

Spray Pump
[Video](#)

Reaper
[Video](#)

Puddling Rotavator
[Video](#)

OPERATIONAL SOLUTIONS WITH CUSTOMISED IMPLEMENTS

Implements	Paddy Tyne	Potato Digger	Ridger	Seed Drill
				
Operations	Puddling	Digging Potatoes	Ridge / Bund Making	Sowing Row Crops
Advantages	<ul style="list-style-type: none"> > Installed on the same rotavator shaft > Specially designed for paddy field preparation. > Duck foot blades control machine 	<ul style="list-style-type: none"> > Used for potato harvesting/digging > 8 tyne comb clears off potatoes from soil 	<ul style="list-style-type: none"> > Used in preparing bunds/ridges > Popular in Vegetable, Cash Crop, etc. farming practices 	<ul style="list-style-type: none"> > Easy, fast, efficient and convenient way of sowing, row crops mainly > Gear size adjustment

Paddy Tyne

[Video](#)

Potato Digger

[Video](#)

Ridger

[Video](#)

Seed Drill

[Video](#)

SOLUTIONS FOR DIFFERENT CROPS

☐ SUGARCANE

CROP	STEPS	BRIEF	USE OF ANGAD HAL IMPLEMENTS
SUGARCANE	Field preparation	Churning of soil and mixing the nutrients	Angad Rotavator and Reversible Mb plough
	Digging of furrow	Making bunds	Angad Ridger
	Weeding	To remove unwanted weeds	Angad Rotavator and Cultivator
	Irrigation	To apply water to the fields	Angad Water Pump

☐ POTATO

CROP	STEPS	BRIEF	USE OF ANGAD HAL IMPLEMENTS
POTATO	Field preparation	Churning of soil and mixing the nutrients	Angad Rotavator and Reversible Mb Plough
	Digging of furrow	To create furrow to plant the potato plantlets	Angad Ridger
	Spraying	To spray various micro/macro nutrients, pesticides, insecticides or weedicides	Angad Spray Pump
	Harvesting	To dig out the potatoes from the soil	Angad Potato Digger

SOLUTIONS FOR DIFFERENT CROPS

❑ BANANA

CROP	STEPS	BRIEF	USE OF ANGAD HAL IMPLEMENTS
BANANA	Field preparation	Churning of soil and mixing the nutrients	Angad Rotavator and Reversible Mb Plough
	Digging of furrow	To create furrow to plant the banana plantlets	Angad Ridger
	Furrow irrigation	To irrigate the fields so that plantlets get ample water to grow	Angad Water Pump
	Weeding	To remove unwanted weeds and to pulverise the soil	Angad Rotavator

❑ GUAVA

CROP	STEPS	BRIEF	USE OF ANGAD HAL IMPLEMENTS
GUAVA	Cultivation		Angad Cultivator
	Field Preparation	Forested areas should be cleared of all shrubs and trees and the ground ploughed in. In areas where the earth is extremely firm, deep cultivation using plough is recommended to break up the subsoil. Drains have to be constructed where the water table is high.	Angad Plough/ Rotavator
	Irrigation	Making the soil wet so that the roots penetrate well	Angad Water Pump
	Weeding	To remove unwanted plants and weeds	Angad Rotavator and Cultivator
	Spraying	To spray various micro/macro nutrients, pesticides or insecticides	Angad Spray Pump

SOLUTIONS FOR DIFFERENT CROPS

☐ COTTON

CROP	STEPS	BRIEF	USE OF ANGAD HAL IMPLEMENTS
COTTON	Field preparation	Tillage and levelling	Angad Rotavator and Reversible Mb Plough and leveller
	Seedbed preparation	The row in which the cotton seed will be planted is prepared	Angad Ridger
	Seeds planting	Planting may be done by hand, but in the more advanced regions of the world, mechanical planters are used. These implements will place the seeds in the soil, usually 1-2 inches deep, depending on soil type	Seed Drill
	Irrigation	As the plants demand it, when available, additional water is delivered to the fields.	Angad Water Pump
	Sprinkler Irrigation	Sprinkler irrigation is much like lawn sprinklers where pressurised water is sprayed out over an area	Angad Spray Pump
	Weeding	To remove unwanted weeds	Angad Rotavator and Cultivator
	Spraying	to spray various micro/macro nutrients, pesticides, insecticides or weedicides.	Angad Spray Pump

SOLUTIONS FOR DIFFERENT CROPS

❑ MANGO

CROP	STEPS	BRIEF	USE OF ANGAD HAL IMPLEMENTS
MANGO	Field preparation	Churning of soil and mixing the nutrients	Angad Rotavator and Reversible Mb Plough, Cultivator and Leveller
	Irrigation	As the plants demand it, when available, additional water is delivered to the fields.	Angad Water Pump
	Spraying	To spray various micro/macro nutrients, pesticides, insecticides or weedicides to prevent the mango from mango pests and diseases	Angad Spray
	Weeding	To remove unwanted weeds and plants	Angad Rotavator

❑ PEPPERMINT

CROP	STEPS	BRIEF	USE OF ANGAD HAL IMPLEMENTS
PEPPERMINT	Field preparation and levelling	Churning of soil and mixing the nutrients	Angad Rotavator and Reversible Mb Plough and Leveller
	Seeds planting	Place the seeds in the soil	Seed Drill
	Fungicide spray	Fungicide spray is used if it gets infected by rust	Angad Spray
	Irrigation	As the plants demand it, when available, additional water is delivered to the plants.	Angad Water Pump

SOLUTIONS FOR DIFFERENT CROPS

☐ APPLE

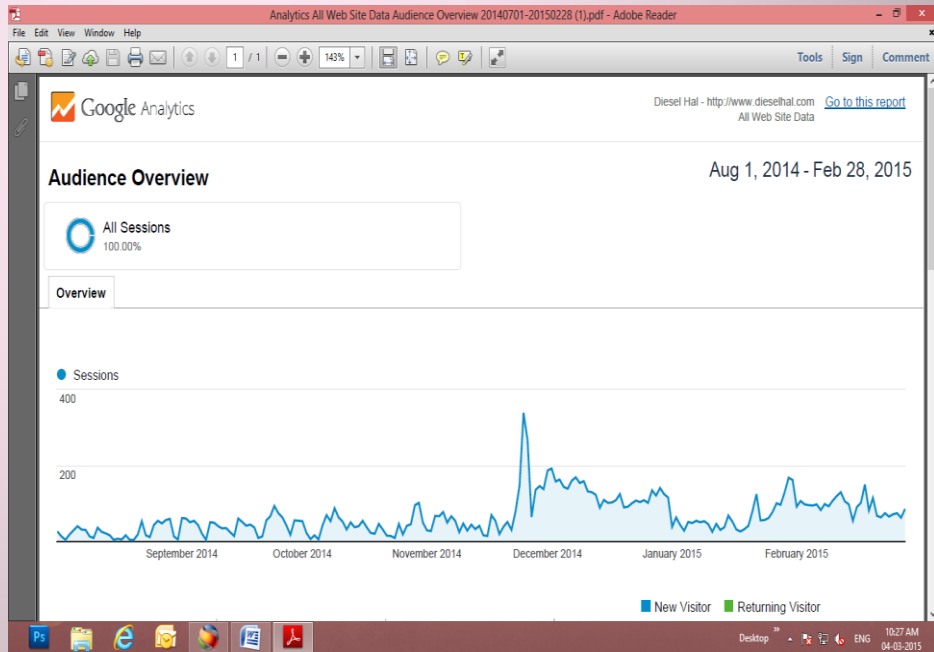
CROP	STEPS	BRIEF	USE OF ANGAD HAL IMPLEMENTS
APPLE	Field Preparation	Churning of soil and mixing the nutrients	Angad Rotavator and Reversible Mb Plough and Leveller
	Moisture Preparation	To maintain the required moisture,	Angad Spray
	Seeds Planting	place the seeds in the soil.	Seed Drill
	Irrigation	As the plants demand it, when available, additional water is delivered to the plants.	Angad Water Pump
	Weeding	To remove unwanted weeds and plants	Angad Rotavator
	Spraying	To spray various micro/macro nutrients, pesticides, insecticides or weedicides to prevent the apple fruits and tree	Angad Spray

DIGITAL MARKETING

GOING DIGITAL

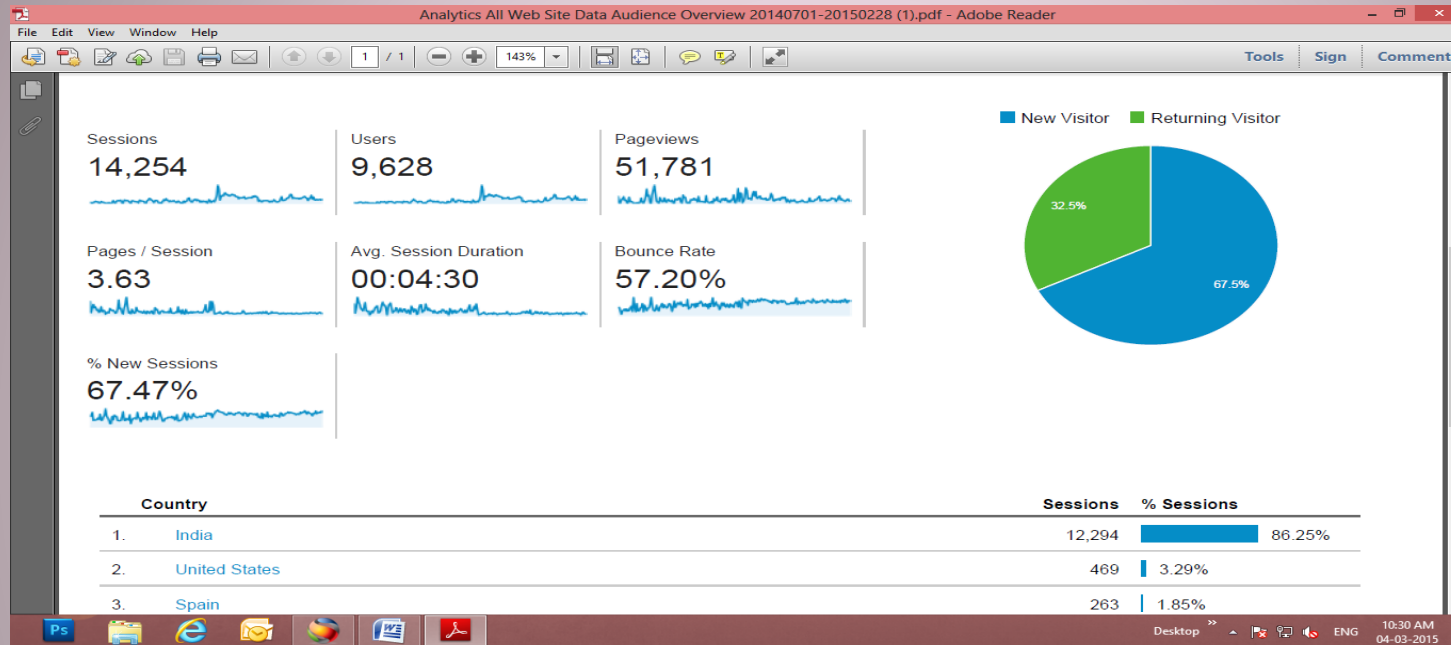
Over the last decade, a new generation of farming community has come into existence which is digitally connected to the world wide web through smart phones, computers, cyber hubs and this offers a unique opportunity to reduce the cost of placing the machine from the factory to the farm which could be as high as 50% of the retail price.

In August 2014, SAS Communications launched the multilingual website of Angad Diesel Hal with the aim of educating small farmers on how they could increase their productivity manifold with the use of Angad Diesel Hal and implements that can be attached to it. Google analysis shows the response to the website.



DIGITAL MARKETING

Within a time span of seven months, the traffic on the website picked up significantly with genuine visitors as per data below .



Since our focus was on Indian farmers 86.25% of the visitors were Indian farmers out of which 32.5% were returning visitors. Total 9628 visitors viewed 51,781 pages on the website spread over 14,254 sessions. The average time spent by each visitor was 4.30 minutes and 3.63 pages were viewed on an average by each visitor.

The above analysis shows that rural population in India is now aware of the benefits of internet as a source to gather information and knowledge

DIGITAL MARKETING

SOCIAL MEDIA MARKETING

For bringing traffic to the website, the facebook page of "Angad Diesel Hal" was created and posts were aimed to attract farmers and to create awareness about the product.

The screenshot shows the Facebook page for 'Angad Diesel Hal'. The page is set to 'Page' mode. The cover photo shows a red tractor with a trailer. The trailer has text in Hindi: 'जिस गाडय को मरुप के, तल जले अला वदवी है फिलोसोफी तल तल न मरुप है।' and 'करो न बी ट्रीप तले काल न जे जो है।' and 'मिसे से कलन है।' Below the cover photo, the page name 'Angad Diesel Hal Tools/Equipment' is visible. The page has 2,538 likes and 16,569 post reaches. The timeline shows a post from Angad Tractors dated February 20 at 4:18pm. The right sidebar shows a list of friends and a 'THIS WEEK' summary.

THIS WEEK
129 Page Likes
16,569 Post Reach
UNREAD
0 Notifications
0 Messages

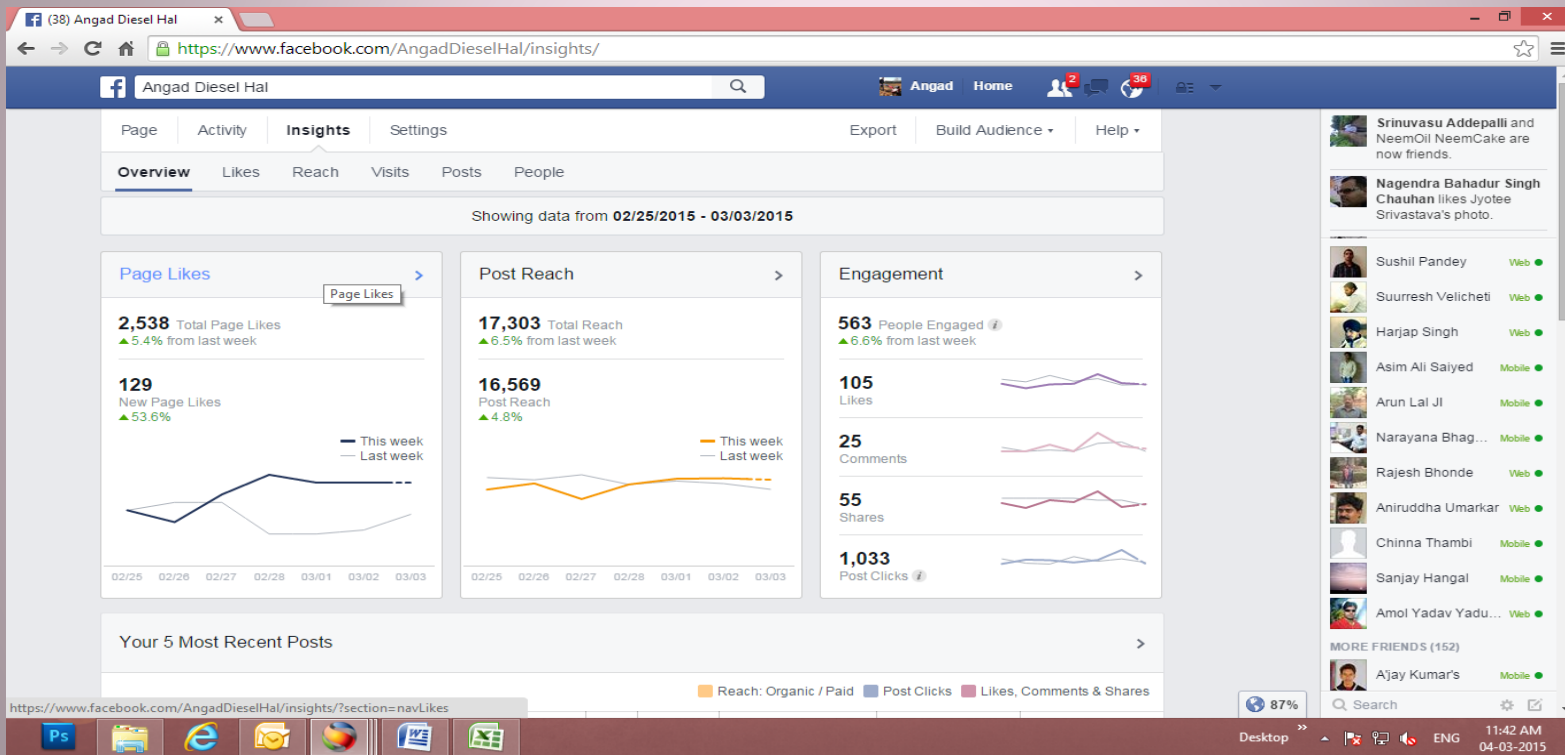
Recent friends list:

- Srinivasu Addepalli and NeemOil NeemCake are now friends.
- Nagendra Bahadur Singh Chauhan likes Jyotee Srivastava's photo.
- Sushil Pandey Web
- Suuresh Velicheti Web
- Jay Patel Web
- Vikas Kakade Mobile
- Chinna Thambi Mobile
- Krishnan Mangalan 24m
- Som Nath Mishra
- Dharmendra Yadav
- Vrc Mohan
- Swapnil Kshatriya 6m
- Shanks Xu
- MORE FRIENDS (5)
- Alagarsamy Samy Mobile

DIGITAL MARKETING

SOCIAL MEDIA MARKETING

The insight of the page below shows the popularity of the page among farmers and they visit our page at regular intervals to read the posts which are relevant to them.



Thank You