

**Comparative Study on Hybrid seed versus Traditional Seed in
Salumber block, Udaipur Dist., Rajasthan: A Critical Assessment
of Farming Profitability**

**Internship Report
in
Prayatna Samiti, Gudli, Udaipur, Rajasthan**

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**Under the Guidance of
Dr. Susmit Jain**

**Post Graduate Diploma in Rural Management
2012-2014**



**School of Rural Management
Institute of Health Management Research,
Jaipur
2014**

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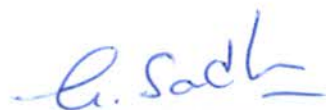
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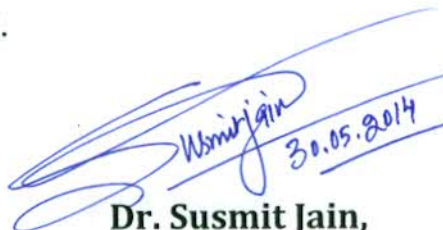
This is to certify that **Mr. Kuldeep Tailor** student of PGDRM, Batch 3rd School of Rural Management, Institute of Health Management Research; Jaipur has undergone his Dissertation on the topic entitled **Comparative Study on Hybrid seed versus Traditional Seed in Salumber block, Udaipur Dist., Rajasthan: A Critical Assessment of Farming Profitability.** From 12th March, 2014 to 21st May, 2014.

The Candidate has successfully carried out the study assigned to him during dissertation and his approach to study has been scientific and analytical. This dissertation is partial fulfillment of the course requirements for the award of Post Graduate Diploma in Rural Management.

I wish him all success in all his future endeavors.



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This is to certify that **Mr. Kuldeep Tailor**, from the Institute of Health Management Research (IIHMR), Jaipur has completed his Internship/Dissertation project from **12th March, 2014 to 21st May, 2014** with **Prayatna samiti, Gudli, Udaipur (Raj)**. This project is in partial fulfillment of the requirement of the Post-Graduate Diploma in Rural Management (PGDRM), 2012-14. He has submitted the project report to us titled **"Comparative Study on Hybrid Seed versus Traditional Seed in Salumber Block of Udaipur, Rajasthan"**. In this project he critically analyzed the impact of hybrid seed and traditional seed on the soil and quality of production, he tried to know the perception of the farmers towards both type of seeds,

Mr. Kuldeep Tailor has taken a keen interest in the project and has done extensive field work to answer his research questions. During the project, we found him seriously engaged with the issues related to the hybrid seed and traditional seed in a tribal area. Mr. Kuldeep enthusiastically participated in some other tasks entrusted to him by Prayatna Samiti, such as collection of Child's Message, technical assistance to field coordinators in collecting child's message, explaining child's message on message card, conducting training sessions for village level committees etc. He is deeply interested in the issues related to human development, right to education and Agriculture.

We wish him all the best for a bright future.


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This is to certify that the dissertation titled "**Comparative Study on Hybrid seed versus Traditional Seed in Salumber block, Udaipur Dist., Rajasthan: A Critical Assessment of Farming Profitability.**" submitted by Kuldeep Tailor Roll No.50 under the supervision of Dr. Susmit Jain for award of Post Graduate Diploma in Rural Management of the Institute carried out during the period from 12 March 2014 to 21 May 2014 embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other Institute or other similar institution of higher learning.



Signature of Student

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Acknowledgement

First and foremost I would like to thank **Mr. Trilok Gupta** (Sr. Programme Officer at Samaj Pragati Sahayog, Dewas) for recommending me to do dissertation at Prayatna Samiti, Udaipur and **Mr. Mohan Dangi** (Founder of PS) for giving me an opportunity to work freely with their esteemed organization.

I would also express my deep sense of gratitude to **Mr. Kuldeep Jain** (Project Coordinator, PS), for his able guidance and continuous supervision throughout the study. I would also thank **Dr. Goutam Sadhu** (Dean, SRM, IIHMR, Jaipur) for guiding and motivating me during the study.

My special thanks to **Dr. Susmit Jain** (Assistant Professor, IIHMR, Jaipur and Guide) for his continuous support, motivation and guidance in my entire dissertation period .

Last but not least, a special mention of my parents and entire team of **Prayatna Samiti**, for helping me every day in the field and for successful completion of my dissertation.

ABBREVIATION

PS	:	Prayatna Samiti
GGA	:	Gaon Ganrajya Abhiyan
KVK	:	Krishi Vigyan Kendra
AHD	:	Animal Husbandry Department
FD	:	Forest Department

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Executive Summary

This study describes the results of the comparative study between traditional seed and hybrid seed that critically analyzed the farm profitability. The study had multiple objectives: To know the impact of hybrid seed on the quality of soil and production. To know the perception of the farmers towards both type of seeds, to the priority of the farmer behind doing agriculture, to identify the factors that encourages farmers to use hybrid seed or traditional seed and To access the impact of Government intervention in traditional seed management.

Data for the study were collected by interviewing 50 farmers of seven villages of Salumber block in Udaipur, Rajasthan, who have used both type of seed.

Key Findings of the study included the following;

- It was found that 70% farmers were using hybrid seed just because they were getting it free of cost and they denied to purchase in future. 30% farmers said that yes they will purchase but only for selling purpose.
- All farmers said that they keep traditional seed's crop for their own food purpose. Farmers have very good knowledge about merits and demerits of both seeds.
- Many farmers grew equal amount of seed in one bigha but got more production than traditional seed. Farmers are using traditional seed, the seed that their grandfather has used many years ago, is still generating seed every year and they are getting equal yield every year in good rainfall. If it will be low rainfall than traditional seed crop would survive and hybrid would not give good output.

- If it will be high rainfall than hybrid seed crop would survive and crop of traditional seed will get destroyed. Traditional seed's major disadvantage is low yield and biggest advantage is that it is able to produce sufficient food grain for food security of farmer. Hybrid seed's biggest advantage is that it is able to produce high yield and it is good for business purpose. On the other hand it can't survive in low rain fall.

Chapter –1

Chapter-1 About the organization

1.1 Introduction

Prayatna Samiti is a voluntary organization registered in 1989 under Rajasthan State Societies Registration Act (1958). The organization initiated its work in Gudli-Bambora region of Girwa Tehsil of Udaipur District. At present it is working intensively in 12 panchayats of Girwa, Salumber and Bhinder Tehsil of Udaipur.

It has its headquarter in the Udaipur district of Rajasthan with field offices in Bambora and Salumber. PS is working to promote livelihood enhancement activities among tribal communities in rural areas outside of Udaipur. Under its programs in the block areas of Girwa and Salumber, PS aims to raise family level income through agriculture and livestock promotion. In addition, women have benefited from Prayatna Samiti's institutional building approach and other innovation activities. Prayatna Samiti believes in an institutional building approach, which promotes community participation in order to sustain livelihoods for lifelong benefits. Their institutional building approach includes: Kunwa Parivar (well families), Sustainable Livelihood Groups (SLGs), and Self Help Groups (SHGs). Both men and women benefit from livelihood promotional activities and play active roles in capacity building processes. By creating strong affinity through interactions at the panchayat and community level, Prayatna Samiti has increased the demand for improved animal husbandry and agricultural practices. Activities in pasture lands have generated avenues for self-governance. Alternative methods for enhancing livelihoods through pastureland development have fostered self-dependency and increased household incomes. Horticulture and fodder production have improved the cattle milk production sector.

Water conservation through trenches, gully plugs, and check dams has doubled the amount of water harvested. PS has also improved the capacity of land area for supporting grasses, crops and trees.

Prayatna Samiti believes in community participation for sustainable structures. Volunteers and cash contributions are being considered for the well being of the hardware development. An equal contribution is expected from the community to the funds granted by any agency. Community participation to contribute as in-kind for breed development, check dams, well lining, farm labour, etc. In cash contribution are sought for purchase activities like pipelines, seeds, livestock, etc.

1.2 Vision:

Prayatna Samiti aims to enhance self-reliant institutional building at the block level to address food insecurity.

1.3 Objectives of the Organization:

- To facilitate rural reconstruction through the efforts of village communities.
- To assist disadvantaged village communities to identify their problems and develop and implement solutions through collaborative group work.
- To encourage people from disadvantaged village communities to participate in local governing bodies, not just as representatives, but also as aware and concerned citizens.
- To set up alliances between peoples groups, the State and development agencies with a view to rural development..
- To encourage people to participate in local decision making processes

Biodiversity conservation, Breed upgradation, Improved crop varieties, Soil fertility ,Land upgradation, Ground water recharging systems, Pipelines, Water Tanks, Roof Rain Water Harvesting, Climate Change Adaptation, Microplanning, Sustainable Rural Enterprises, Gir cow Buffaloes, Sirohi Goats, Poultry, Horticulture and vegetable cultivation, Kirana Shops

1.4 Brief description of the organization's association with Action Aid.

Prayatna Samiti started partnership with Actionaid in January 2008 as part of the Tribal Self Rule Initiative Network. The long term partnership crystallized after successful appraisal for long term partnership in the year 2010. The long term Local Right Programme begun in the year 2011. With the support of Actionaid, Prayatna Samiti is currently working mainly focusing on: Empowerment through capacity building of the tribal peoples, Advocacy and lobby for protection and promotion of tribals rights, Empowerment for Self Rule, Institution building and campaign for solidarity of the Tribal People.

1.5 Programmes/Projects

1.5.1 Sawna Macro Watershed

Community Based Water and Livelihood Enhancement in Sawna Macro Watershed of Jaisamand Catchment Area

Funded by Wells for India (WFI), a UK based agency, the project aims to enhance livelihoods of poor communities in 10 villages near the Sawna Macro Watersheds in the Jaisamand catchment area, Udaipur, Rajasthan by 2013. PS and WFI have outlined the following objectives for the project is to:

- Provide safe drinking water to every human being and all livestock
- Optimize land and water productivity
- Apply and test groundwater recharge
- Develop water and livelihood based institutional programs

1.5.2 Makri River Basin

Livelihood and Ecological Security Based Approach for Revitalization of Makri River Basin In partnership with CEE and supported by the GEF UNDP Small Grants Program.

1.5.3 Agriculture and Livestock

Within the scope of milk and agricultural production, Prayatna Samiti is engaged in developing local resources for educating farmers.

Trainings provided by the experts from Krishi Vigyan Kendra (KVK), Animal Husbandry Department (AHD), Forest Department (Udaipur) are being implemented to harness good results.

Improved cow and goat rearing practices are being developed, as well as increased feed preparation and improved production of fodder. Shed management practices for cows and buffaloes are also being promoted.

Treatment of diseases in plants is being strengthened. The selection of productive varieties and new sowing and harvesting techniques are being adapted. Promotion of drip irrigation is now being promoted to save water and reduce manual labor.

Kunwa Parivar (Well Families): These are group of well dependent families. Every well has at least 5 to 8 dependent families, which form a group for one well i.e., Kunwa Parivar. A Kuna Parivar shares a common understanding as a common platform to address the diverse problems which may be related to agriculture, water, livestock and other non-farm activities. 28 Kunwa Parivars have benefitted the members from Rawatpura, Sulawas, and Karmal villages. Their livelihoods like backyard farming, crop growing and animal husbandry have been benefitted.

Sustainable Livelihood Group (SLG): SLG is a virtually existing group of SHGs and other community members which only focus on income generating livelihoods through discussion among group members with the NGO representatives and other experts to improve existing livelihoods practices. Unlike SHGs, this focuses only on livelihoods rather than on social programs. With impeccable decision making processes SLGs have the following objectives: increase the production from agriculture and animal husbandry practices, adapt good practices and advance technology, utilize the funds from SHGs and other projects for livelihoods, involve farmers in training and meetings, develop personality and inculcate decision making abilities.

CHAPTER-2

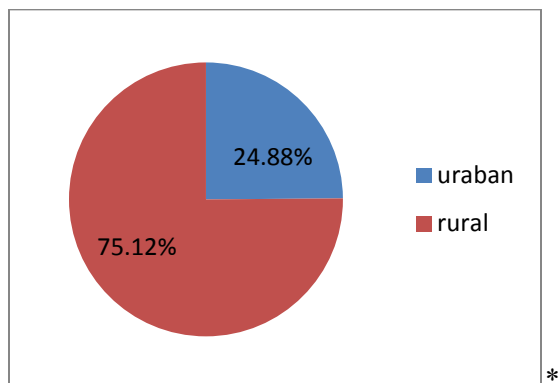
Chapter-2: Operational Area Profile

2.1 Introduction of Rajasthan

The Population of Rajasthan as per the 2011 census is about 68 million, making it the 8th most populated state in India. It makes up about 5.6% of the country's population a figure which was about 5.4% during the last census in 2001. The state is spread over an area of about 340000 sq. km. making it the largest state in the country in terms of area. The density of population per sq. Km. is about 200 and a lot below the national average. The state has a growth rate of about 21% percent which is the 11th highest growth rate in the country. The population of the state is rising considerably due to rapid efforts towards development and progress. The literacy rate in the state is about 67% which is a cause for concern and a statistic the authorities must take notice of and look to correct in the years to come. The sex ratio in Rajasthan also leaves a lot to be desired as it lags behind the national average by 10 points. The statistics in the Rajasthan Census 2011 reveal facts that can be taken into consideration by the government in a bid to further its development.

It is divided into 7 divisions, 32 districts, 241 Tehsils, 237 Panchayat Samities, 9,189 Gram Panchayats, 39,753 inhabited villages and 188 urban local bodies as of Census 2001. Recently, a new district has been carved out in the State namely Pratapgarh in 2008. Currently, there are 33 districts, 244 Tehsils, 249 Panchayat Samities and 9,166 Gram Panchayats. The State has a

Figure 3 Rajasthan rural urban ratio



Data source: census 2011

Table 1. RAJASTHAN- URBAN VERSUS RURAL

Description	Rural	Urban
Population (%)	75.12 %	24.88 %
Total Population	51,500,352	17,048,085
Male Population	26,641,747	8,909,250
Female Population	24,858,605	8,138,835
Population Growth	21.31%	28.33%
Sex Ratio	933	914
Child Sex Ratio (0-6)	892	874
Child Population (0-6)	8,414,883	2,234,621

Literates	26,471,786	11,803,496
Average Literacy	61.44 %	79.68 %
Male Literacy	76.16 %	87.91 %
Female Literacy	42.20 %	63.81 %

*Data source: census 2011

2.2 Introduction of Udaipur

2.2.1 Udaipur District Population 2011

In 2011, Udaipur had population of 3,068,420 of which male and female were 1,566,801 and 1,501,619 respectively. In 2001 census, Udaipur had a population of 2,480,657 of which males were 1,259,170 and remaining 1,221,487 were females. Udaipur District population constituted 4.48 percent of total Maharashtra population. In 2001 census, this figure for Udaipur District was at 4.39 percent of Maharashtra population.

2.2.2 Udaipur District Density 2011

The initial provisional data released by census India 2011, shows that density of Udaipur district for 2011 is 262 people per sq. km. In 2001, Udaipur district density was at 196 people per sq. km. Udaipur district administers 11,724 square kilometers of areas.

2.2.3 Udaipur Literacy Rate 2011

Average literacy rate of Udaipur in 2011 were 61.82 compared to 59.77 of 2001. If things are looked out at gender wise, male and female literacy were 74.74 and 48.45 respectively. For 2001 census, same figures stood at 74.66 and 44.49 in Udaipur District. Total literate in Udaipur District were 1,582,629 of which male and female were 973,444 and 609,185 respectively. In 2001, Udaipur District had 1,209,063 in its district.

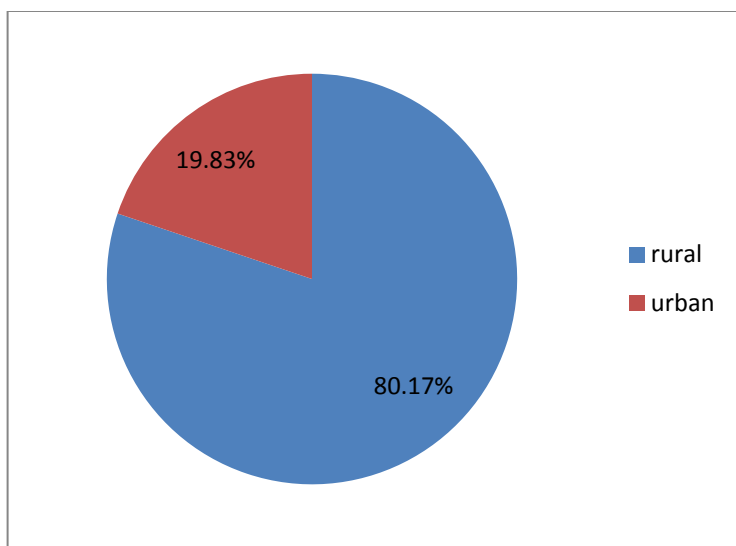
2.2.4 Udaipur Sex Ratio 2011

With regards to Sex Ratio in Udaipur, it stood at 958 per 1000 male compared to 2001 census figure of 970. The average national sex ratio in India is 940 as per latest reports of Census 2011 Directorate. In 2011 census, child sex ratio is 924 girls per 1000 boys compared to figure of 947 girls per 1000 boys of 2001 census data.

2.2.5 Udaipur Rural and Urban

Udaipur is having 80.17% rural population and 19.83% urban population, which is higher than county ratio.

Figure 4 Udaipur Rural Urban Ratio



*Data source: census 2011

2.2.6 The most prominent tribes of udaipur are:

- Bhils
- Minas
- Gaduliya lohars
- Sahariyas
- Damors

2.2.7 Geographical area

Table No. 2Geographical area of Udaipur

S.No.	Area	Year	In Hectares
1.	Total Reporting Area	2009-10	1388255

2.	Area Under Forest	2009-10	396979
3.	Land Unavailable for Cultivation	2009-10	471257
4.	Permanent Pastures and Other Grazing Lands	2009-10	83186
5.	Cultivable Wasteland Including Follow Land	2009-10	121853
6.	Net Area Sown	2009-10	231272
7.	Area Sown More Than Once	2009-10	72723
8.	Gross Cropped Area	2009-10	303486

*Data source: census 2011

2.2.8 Annual Rainfall in Udaipur

Table No. 3 Annual Rainfall in Udaipur

S.N.	Year	Estimated Rain	Actual Rain	Difference
1.	1998	62.45	66.73	(+) 4.28
2.	1999	62.45	43.42	(-) 19.03
3.	2000	62.45	39.99	(-) 22.46
4.	2001	62.45	63.33	(+) 0.88

5.	2002	62.45	38.77	(-)23.68
6.	2003	62.45	65.80	(+)3.35
7.	2004	62.45	63.45	(+)0.10
8.	2005	65.70	82.55	(+)16.85
9.	2006	65.70	127.23	(+)61.53
10.	2007	65.70	64.26	(-) 1.44
11.	2008	58.88	56.52	(-) 2.38
12.	2009	60.76	58.67	(-) 2.09

*Data Source Official Website of Udaipur

2.3 Introduction of Salumber (study area)

Salumber is one of the blocks of Udaipur district having a total population of 228,370 as per the census 2011. It consist 113315 male and 115055 female. Rural population of salumber is 212492 and having 15878 urban population. It has 111419 schedule tribe in rural area and 379 in urban area. Salumber has a literacy of 47.64% in rural area and 74.61% in urban area. It shows a very big gap between rural and urban. Salumber has 44425 households, in that 41329 are located in rural area and 3096 are located in urban area.

2.4 Name of the Study villages:

1. Morilaa
2. Panni ki Naal

3. Khajoori
4. Sarvani
5. Samarjhap
6. Selpur
7. Bedawal

CHAPTER-3

Chapter-3: Agriculture in India and Rajasthan

3.1 The Maize Economy of India

Among the cereals grown in India, maize ranks as one of the most important. Traditionally, maize was grown as a staple food destined primarily for home consumption. Farm household requirements, governed by quality and taste preferences, influenced production decisions. However, in recent years significant changes have occurred as the result of the increasing commercial orientation of the agricultural economy and rising demand for diversified end uses, especially feed and industrial uses. At the same time, substantial investment in maize research has

generated improved production technologies that have provided farmers with the means to respond to changes in demand.

3.2 Maize Production and Consumption Trends

Maize in India is grown in a wide range of production environments, ranging from the temperate hill zones in Himachal Pradesh in the North to the semiarid desert margins in Rajasthan in the West to the humid tropical zones in Karnataka in the South. Between 1955 and 1975, the total area planted to maize expanded at an average annual rate of more than 2.2%, causing national maize area to grow from 3.7 million hectares to almost 6 million hectares (Table 1). Beginning in the early 1970s, however, expansion in maize area abruptly ceased, as maize was forced to compete with other crops for increasingly scarce land.

Hybrid seed is the product of crossing inbred lines and hybrid seed does not produce seed for the next generation. Traditional seed is the seed where farmer keeps a part of her/his own crop for seed. It means that the crop is capable enough to produce a seed for the next generation. Seed is one of the fundamental inputs of technological intervention in agriculture. Seed security is the foundation of food security. Seed is the first link of food chain and ultimate symbol of food security.

3.3 Rajasthan

Rajasthan, the largest State in India is spread over an area of 3.42 lac sq. km, which is 10% of the area of the country. It's population as per the census of 2001 was 56 million, which is 5.5% of Country's population. 76% of its resides in the rural areas. Rajasthan has 342.66 lac hectare of area reported for land utilization purpose. Out of this, 7.76% (26.60 lac hectare) is under forest cover and 12.43% (42.59 lac hectare) is not available for cultivation consisting of 5.14% (17.60 lac hectare) under non-agricultural usage and 7.29% (24.98 lac hectare) of barren and uncultivated land. Fallow land is estimated 10.75% (36.82 lac hectare) which includes 3.72%

(12.75 lac hectare) current fallow and 7.02% (24.07 lac hectare) other fallow land. Other uncultivated lands excluding fallow land is estimated 18.35% (62.69 lac hectare) which includes 4.98% (17.08 lac hectare) under permanent pastures and grazing land, 0.04% (0.14 lac hectare) under miscellaneous tree crops and grooves and 13.27% (45.46 lac hectare) of culturable waste lands. Estimated net sown area is 50.76% (173.94 lac hectare) and the gross cropped area is 216.64 lac hectares.

Average farm size in Rajasthan is 3.96 ha, and total number of land holdings is 5.36 million. Small and marginal holders represent one-half of the total number of farm households, but they share just 16% of the cultivated land. The rain-fed crops on which they are so dependent were grown in an extremely hostile agro-climatic environment, with temperatures varying from a minimum of 5°C to a maximum of 45°C and more. Rainfall variations are large, both in space and in time, with annual precipitation ranging from 15 to 90 cm in different parts of the State.

While the State has over 10% of the country's geographical area, 5% of its population and 13% of the area under cultivation, it has only less than 1% share in the water resources. Water, clearly, is State's most precious resource. In absence of perennial sources, there has been overdependence over ground water, leading to mining of water in many parts of the State. Besides its quantity, the quality of water is another major concern. It is, therefore, not surprising that only about one third of the cropped area of 2 million hectares is under irrigation. What is even more disconcerting is that nearly two thirds of the irrigated area is dependent on underground water from wells and tube wells. Most of the area irrigated by the canal system is in the northern part of the State where the Indira Gandhi Nahar Project (IGNP), Gang and Bhakra Canals systems irrigate more than 1.2 million hectares. In recent years, reduction in the availability of water in the reservoirs has

resulted in either reduction in the cropped area or damage to crops, sometimes leading to agitation by farmers.

CHAPTER-4

Chapter-4; About Study

4.1 Introduction

Maize was the first major cereal crop in India to be affected by hybridization, but the impact of hybrid technology in the Indian maize sector was not immediately apparent. Following the release in 1961 of the first commercial maize hybrid, uptake of hybrid seed remained modest until the early 1980s. During this period, the production and distribution of seed of most staple food crops remained firmly in the hands of public organizations, as government policies limited the private sector's role to producing and selling the seed of selected vegetable crops and ornamental plants.

Hybrid seed is the product of crossing inbred lines and hybrid seed does not produce seed for the next generation. Traditional seed is the seed where farmer keeps a part of her/his own crop for seed. It means that the crop is capable enough to produce a seed for the next generation. Seed is one of the fundamental inputs of technological intervention in agriculture. Seed security is the foundation of food security. Seed is the first link of food chain and ultimate symbol of food security.

From last 2-3 years Government of Rajasthan, in collaboration with some private seed companies, distributing hybrid maize seed free of cost to the farmers. Prior to the free distribution of the hybrid seed the farmers of the area were using traditional seed.

4.2 Literature Review

“Adoption, Management, and Impact of Hybrid Maize Seed in India” by R.P. Singh and Michael L. Morris.

Key Findings: The study highlights the facts of history during the 1994/95 cropping season; approximately 45% of India’s maize area was planted to improved OPVs and hybrids. Maize varietal preferences vary considerably from one production environment to the next. All things being equal, maize-growing households prefer OPVs and hybrids that yield well, but the characteristics associated with high yield vary according to each production environment. On the whole, the survey results confirm that India’s national maize seed industry is in a phase of rapid expansion. Since seed policy reforms were introduced in the late 1980s, the area planted to improved OPVs and hybrids has grown rapidly, and adoption of improved germplasm has stimulated important changes in farmers’ crop management practices.

“Losing Traditional Seed Management Systems: A Threat to Small Farmers’ Food Security in Nepal” by N. P Timsina and B. R. Upreti.

Key Findings: The study shows that the current seed situation in Nepal is not favourable for food security of poor and marginal farmers. The fast growing commercialisation of seed sector has created inequality among the rich and poor. The access to and control over seeds are shifted from poor and small

farmers to profit making companies. The extinction of local varieties is increasing. Farmers are alienated from their own seed production and protection systems. The government's legislation and policies are not supportive to poor and small farmers.

“Technology Transfer and the Seed Innovation System in India” by Mr. Bajrang Lal.

Key Findings: The analysis of seed innovation system and the technology transfer strategies in agricultural seed is relevant if, technology partnership in agriculture is to be encouraged as a core methodology. In this regard the analytical principle of Seed System of Innovation (SSI) has lot to offer. The innovation and technology, which is more socially-economically embedded, involves interplay of various factors and institutions as in case of food processing industry and agricultural biotechnology. The participatory approach in, an appropriate technology knowledge transfer and management context, will be key tool for increasing flow of technology knowledge among farmers and other parts of the innovation system.

4.3 Rational of the Study

From last 2-3 years Government of Rajasthan, in collaboration with some private seed companies, distributing hybrid maize seed free of cost to the farmers. Prior to the free distribution of the hybrid seed the farmers of the area were using traditional seed. The study will explore the impacts of using hybrid seed and traditional seed. During the study I have talked to the farmers;

- i. who have used hybrid seed and traditional seed and,
- ii. Who rejected to use hybrid seed and still using traditional seed.

The focus of this study is to reach on a conclusion that which seed is more suitable for agriculture in the area from the prospective of land fertility, input cost, nutritional contents, food security of the nation, profit margin of the farmer etc.

4.4 Research Questions:

1. What is the impact of using hybrid seed and traditional seed?
2. What is the experience of the farmers?
3. What factors motivate a farmer to use hybrid seed or traditional seed?

4.5 Aim:

To understand the effectiveness of both seeds in the life of small and marginal farmers.

4.6 Objectives:

1. To know the impact of hybrid seed on the soil quality and production.
2. To know the perception of the farmers towards both type of seeds.
3. To the purpose of the farmer behind doing agriculture.
4. To identify the factors that encourages farmers to use hybrid seed or traditional seed.
5. To access the impact of Government intervention in traditional seed management.

4.7 Research Methodology:

The research will be Descriptive and Exploratory, includes one-to-one interview, Focused Group Discussion, in depth discussion with farmers about their experience and fact-finding enquiries of different kinds and will explore new facts and findings.

Table-4 Research Methodology:

Research Type	Descriptive & Exploratory
Sampling Type	Judgmental & Convenient
Study Type	Qualitative and Quantitative
Study Area	Salumber block of Udaipur dist, Rajasthan
Data Type	Primary and Secondary
Target Group	Farmers who have used both type of seed
Sample size	50 farmers who have used both type of seed
Tool & Technique	Semi-structured Questionnaire, Face to Face interview

CHAPTER-5

Chapter-5: Findings

5.2 General Findings

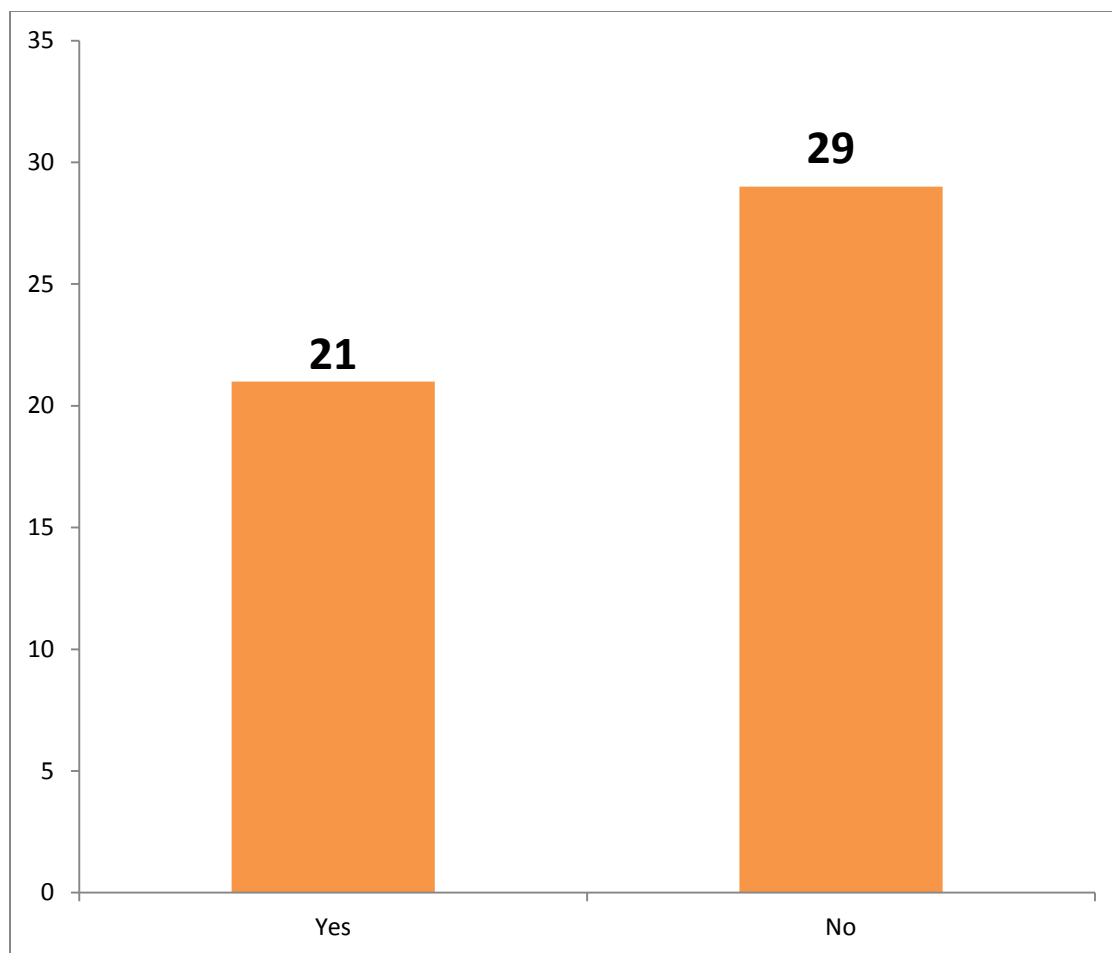
Table-5 General Findings

S.N.	Particular	Traditional	Hybrid
1	Average Typology of Land	Plain (6.6) per farmer	Sloppy (3.32) per farmer
2	Average seed used/Bigha	4.82 kg/bigha	4.92 kg/bigha
3	Average input cost	2194.5/ bigha	2472.8/bigha

4	Average output	4.5 q	5.3 q
5	Average net revenue	2075/bigha	2429/bigha
6	Average time taken by crop	96 Days	99 days
7	Devoted hours	5.48/day	6.24/day

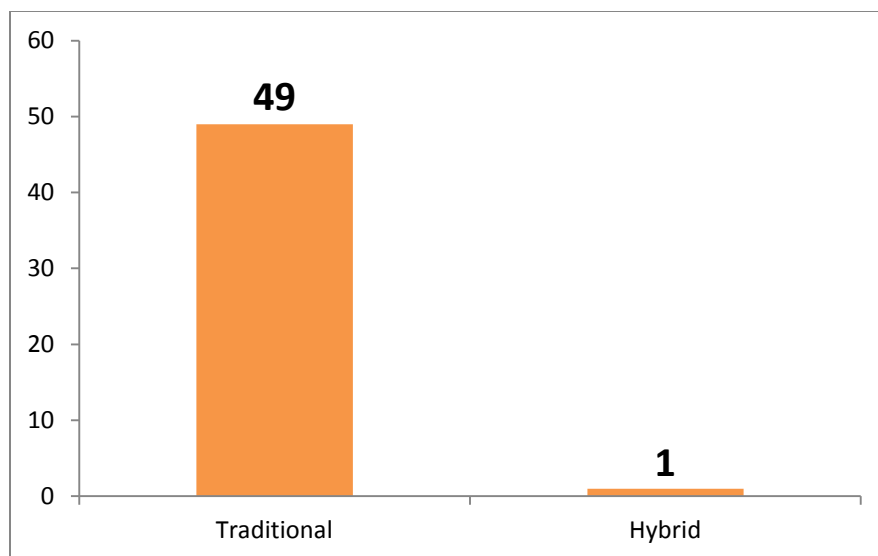
5.2 MAJOR FINDINGS

Figure 3 surpluses to sell



In the response to the question: Do you get any surplus to sell in the market from traditional seed, out of 50 farmer 21 farmer said that yes they get surplus and 29 farmer said no they do not get any surplus to sell in the market. It shows that majority of the farmers are not getting surplus to sell from traditional seed and the farmers who said yes, are also having very less quantity to sell. Few farmers were there who get good surplus and earn good profit by selling maize crop.

Figure 4 Keep for own food purpose



In response to the question that which seed's production you keep for your own food purpose, out of 50 farmers 49 said that they keep traditional seed's crop for their own food purpose and one farmer said that he keeps hybrid seed's output for own food purpose.

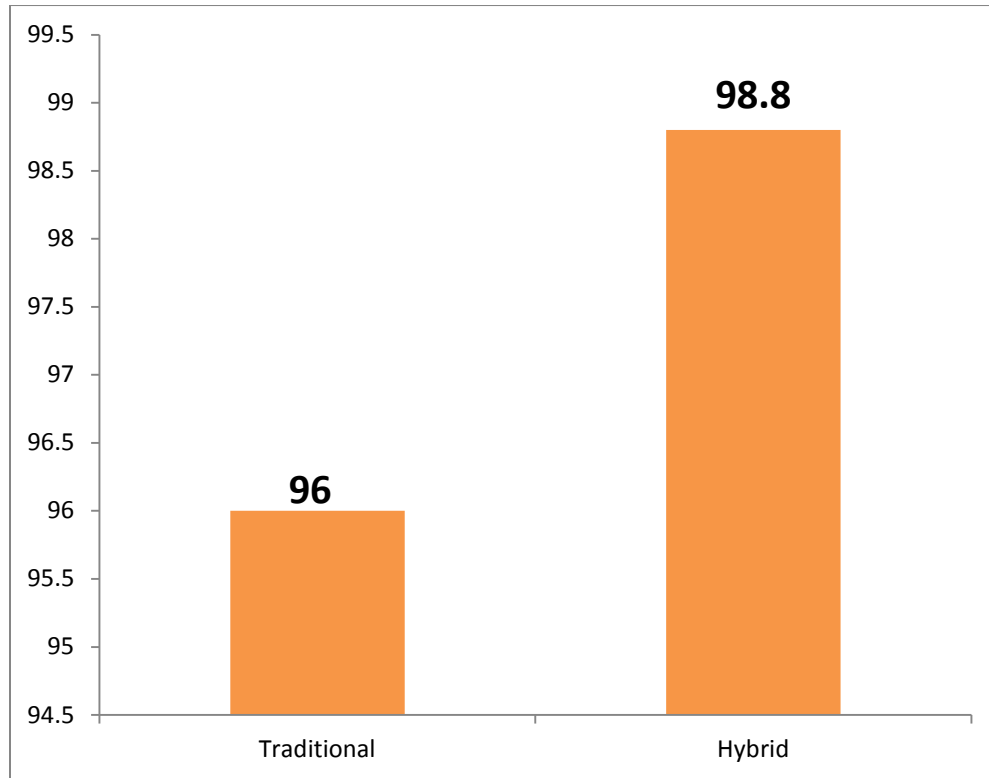
Reasons for keeping traditional seed's output:

- Good in taste.
- All family members like it.
- Does not get harmed by insects and can keep for more than one year.
- Good for health.
- Durable in the storage.
- Gives seed for next season every year.

Reasons for keeping hybrid seed's output:

- High yield compare to traditional seed.
- Better than traditional seed.

Figure 5 Average time taken

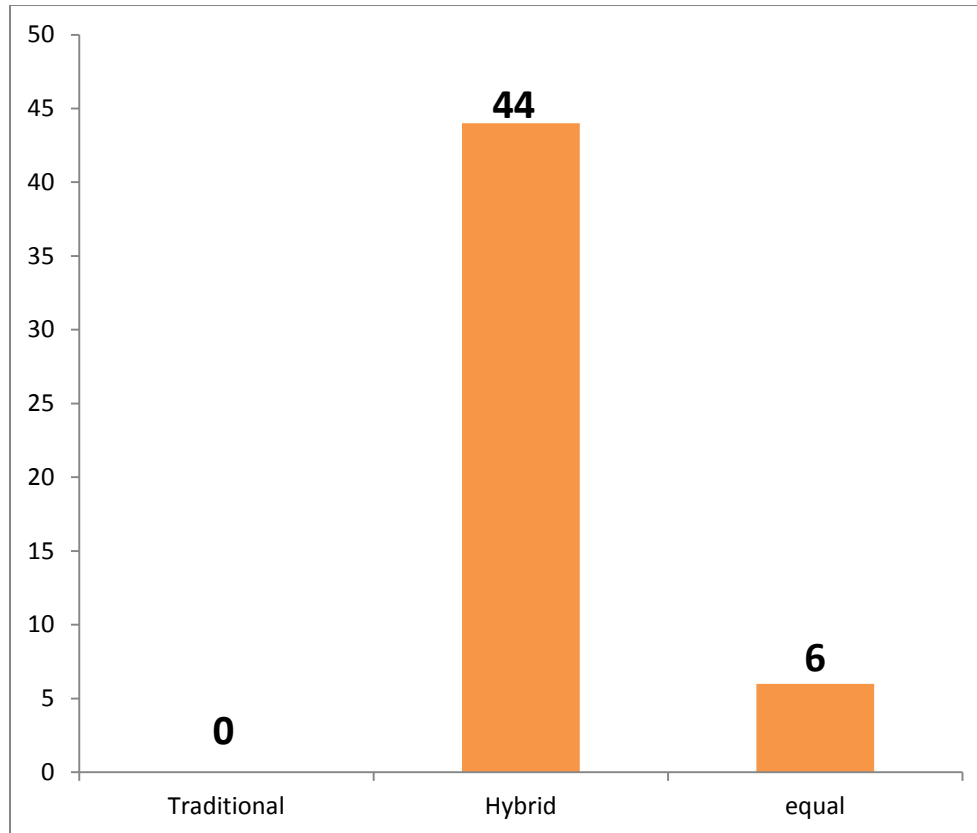


In the response to the question that what was the time taken by both crop. I found that average time taken by traditional crop is 96 days and 99 days in hybrid crop. It shows that there is a significant difference in the time taken by both crop and we can say that traditional seed's crop takes less time than hybrid seed. Farmers are able to get traditional seed's output earlier.

Reasons for less time taken by traditional;

- Require less water than hybrid seed.
- Require less fertilizer.
- Need less time in plugging.
- Less time in sowing.

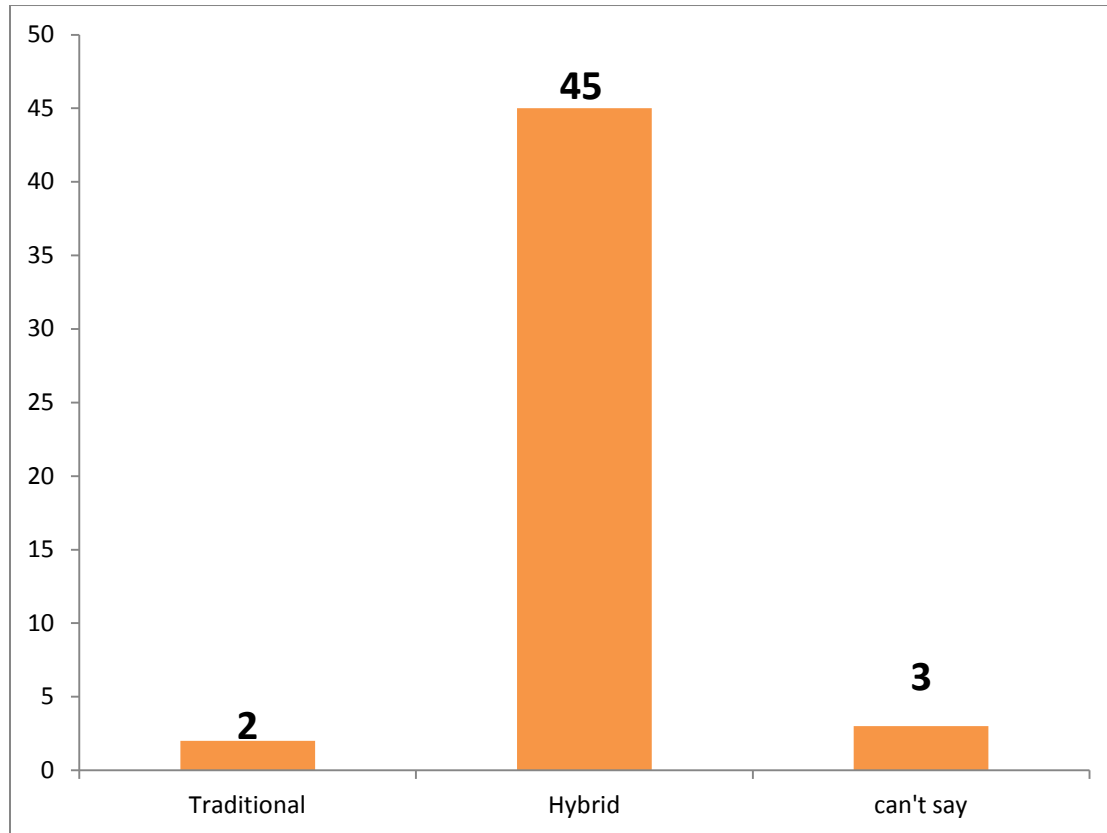
Figure 6 require more water



In the response to the question which seed require more water, out of 50 farmers 44 said that hybrid seed require more water, 6 said that both and none of them said that traditional seed. One interesting fact found that if it will be low rainfall than traditional seed is able to produce enough yield to fulfill own food purpose and in the same situation hybrid seed will get destroyed.

The rainfall in the Udaipur area is very low so as of the traditional seed would be better for agriculture.

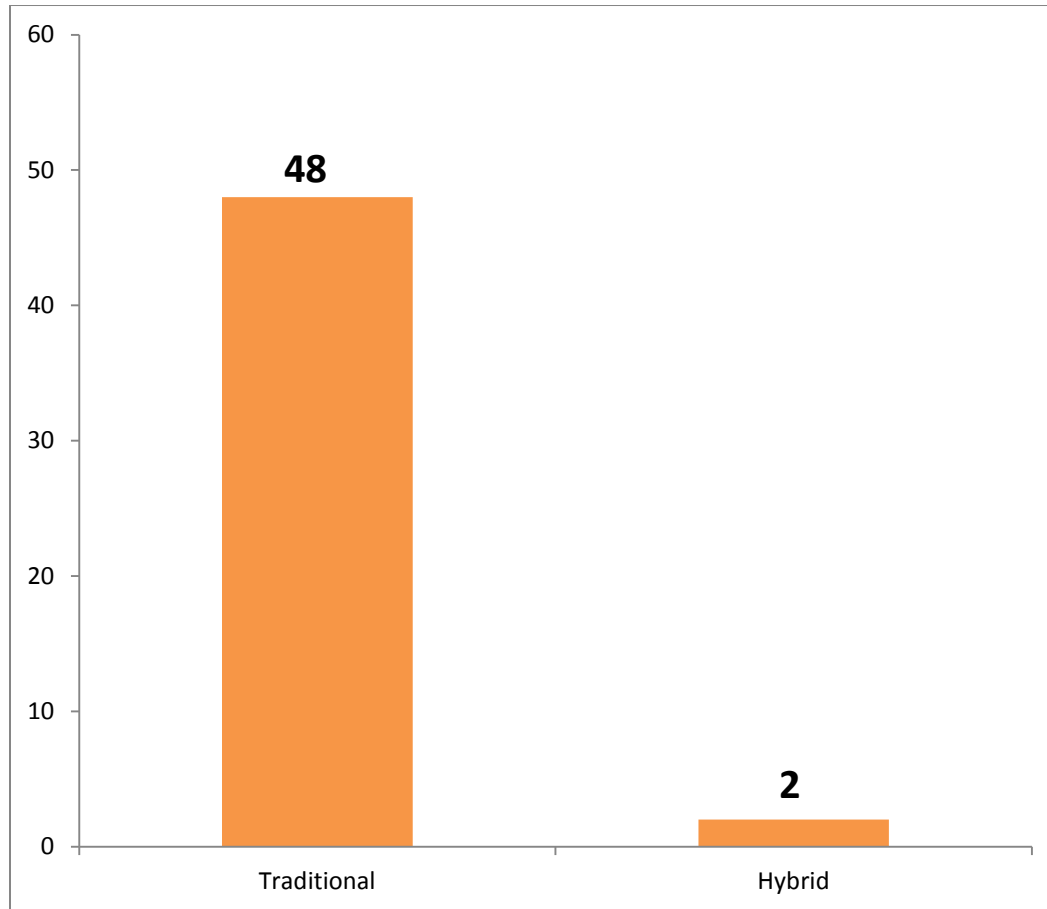
Figure 7 require more fertilizer



In the response to the question that which seed require more fertilizer out of 50 farmer 45 said that hybrid seed require more fertilizer, 3 said that they can't say anything and 2 farmers said that traditional seed. Fertilizer is the major input which is directly related to input cost. So if a seed require more fertilizer, it means that the overall cost of the crop will also increase and it will reduce the profit margin of the farmer.

It shows that if a farmer is sowing traditional seed than overall cost of the crop would also be less than hybrid seed.

Figure 8 Best in Storage



In the response to the question which seed is best in storage out of 50 farmers 48 said that traditional seed is best in the storage and two farmers said that hybrid seed is best. Farmers who response in the favor of traditional seed said that it does not need any medical treatment to keep safe storage and we can keep it for more than one year.

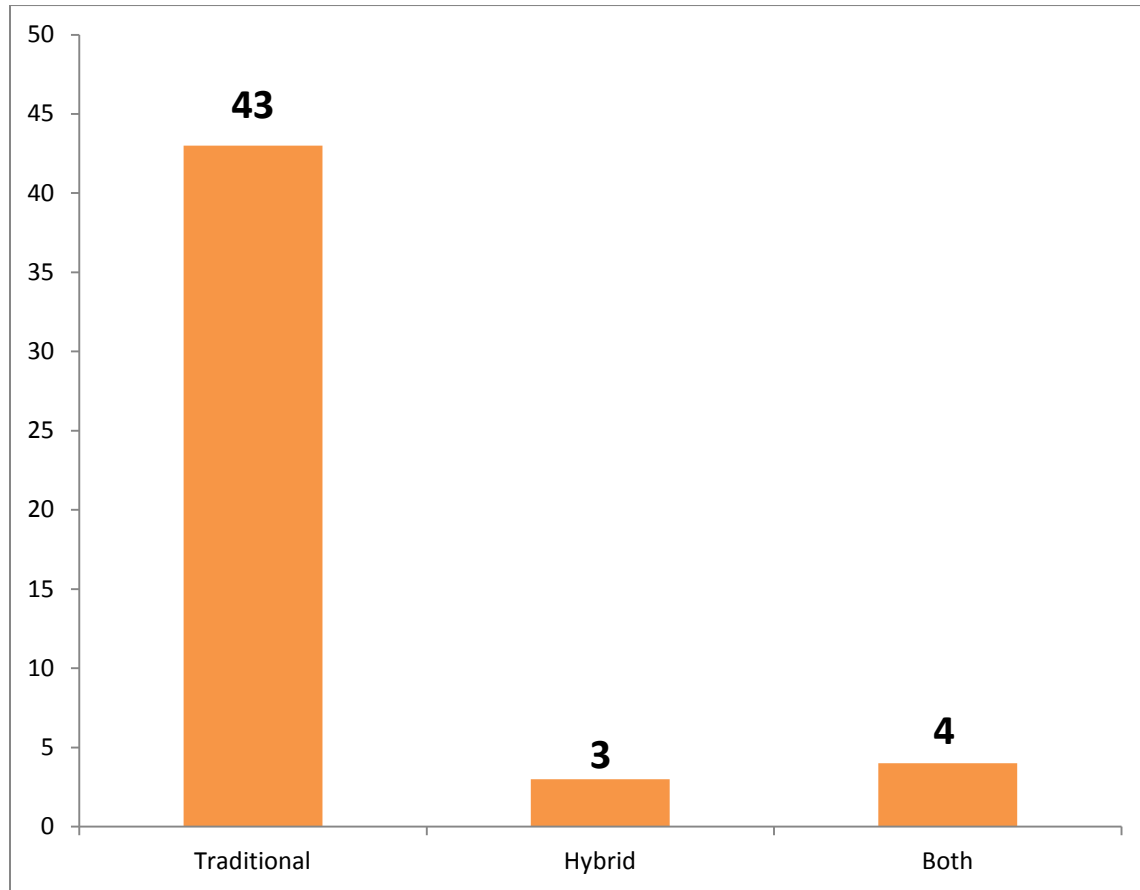
The farmers who answer in the favor of hybrid seed said that we can keep hybrid seed's production safe for approximate eight to nine months.

Figure 9; Sample picture of hybrid crop



Out of 50 farmers only one farmer had crop of hybrid seed. I saw the sample, it was only eight months old and it got harmed from fungicide. Farmer was also saying that crop from traditional seed do not get harmed like this. He told me that the traditional seed's crop do not get harm approximate one year.

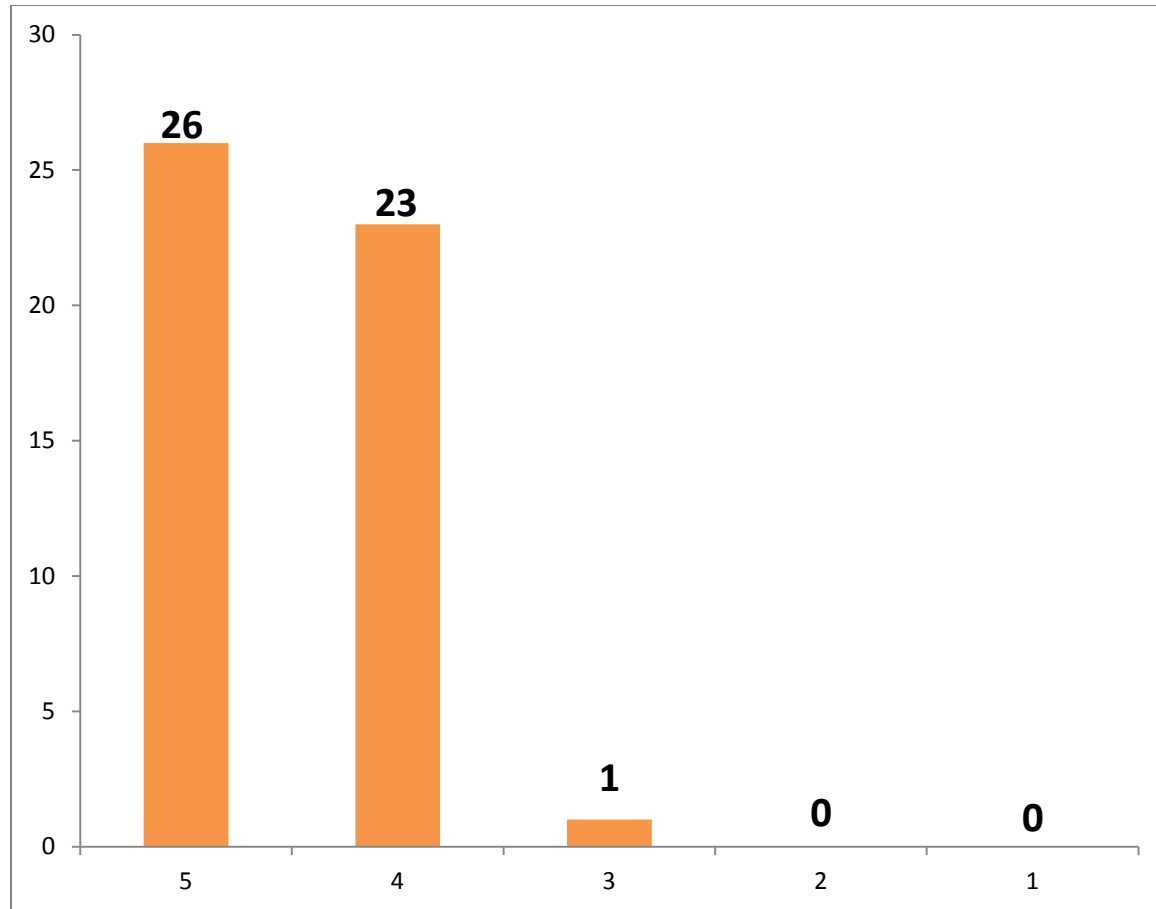
Figure 10 Best for Agriculture in this Area



In the response to the question that which seed is better for agriculture in this area out of 50 farmers 43 said that traditional seed, 3 farmers said that hybrid seed and 4 farmers said that both seeds are better for a farmer to do agriculture in this area, Majority of responses were in the favor of traditional seed because it can survive in low rainfall, good for marginal farmers, durable in storage etc.

So we can say that traditional seed is better than hybrid seed for a farmer of Salumber area.

Figure 11 Five point Likert scale for traditional seed

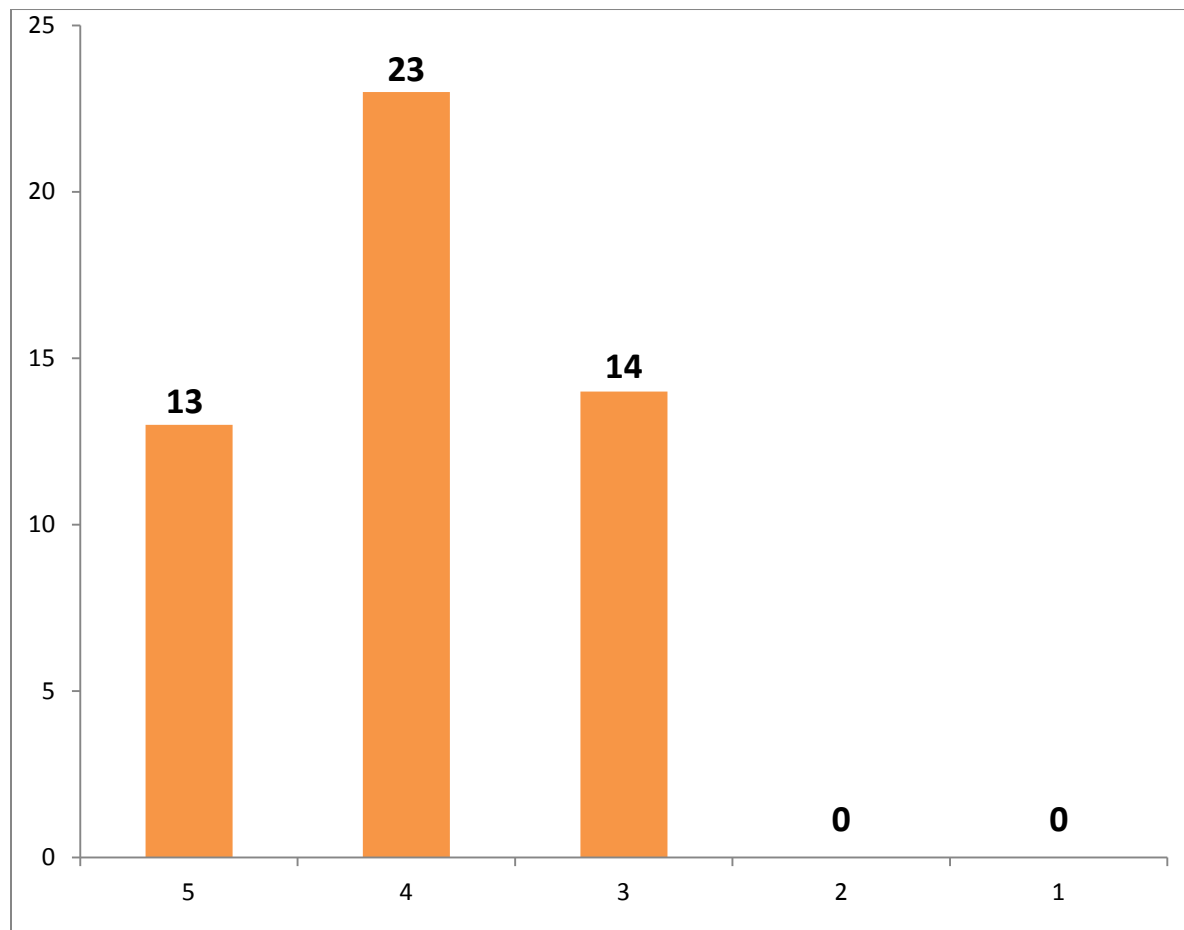


In the response to the question how will rate the traditional seed out of 50 farmers 26 rated excellent, 23 farmers rated good, 1 farmer rated average and none of them rated poor and very poor.

5	Excellent
4	Good
3	Average
2	Poor
1	Very Poor

Rating Scale

Figure 12 Five point Likert scale for traditional seed



In the response to the question how will rate the hybrid seed out of 50 farmers 13 rated excellent, 23 farmers rated good, 14 farmers rated average and none of them rated poor and very poor.

5	Excellent
4	Good
3	Average
2	Poor
1	Very Poor

Rating Scale

5.3 Qualitative Findings

- The yield from traditional seed gets less effect by disease than hybrid.
- The animal/birds/cattle like the byproducts of traditional seed rather than hybrid.
- Many farmers grew equal amount of seed in one bigha but got more production than traditional seed.
- Farmers were able to grow more numbers of traditional plants per bigha.
- In some cases urea is good for land; it kills many pests like “anchi.”
- The maize crop takes 60 to 70 days to complete in summer season and 120 days in winter season.
- The farmers devote more hours at the time of growing and cutting but give less time in middle time of the crop.
- Crop from hybrid will get harm in less than one year but farmer use to keep crop of traditional seed two years without any medicine.
- Farmers are using traditional seed, the seed that their grandfather has used many years ago, is still generating seed every year and they are getting equal yield every year in good rainfall.
- Traditional seed doesn't need to much care and manure as compare to hybrid. One farmer said “desi beej mai agar accha desi khad dalo fir bar-bar sambhalna nai padta, lekin sarkari beej(hybrid seed) ko bar-bar khad dena padta hor dekhrekh bhi jyada karni padti h.

- In case if farmer doesn't have traditional seed, they borrow it from other farmer by promising him/her to return double amount of seed from crop.
- If it will be low rainfall than traditional seed crop would survive and hybrid would not give good output.
- If it will be high rainfall than hybrid seed crop would survive and crop of traditional seed will get destroyed.

5.4 Conclusion

- Farmers have very good knowledge about merits and demerits of both seeds.
- Traditional seed's major disadvantage is low yield and biggest advantage is that it is able to produce sufficient food grain for food security of farmer.
- Hybrid seed's biggest advantage is that it is able to produce high yield and it is good for business purpose. On the other hand it can't survive in low rain fall.

5.5 Suggestions:

- Instead of distributing free hybrid seed govt. must promote good quality of traditional seed and organic farming.
- There must be a strong supply chain management, so that farmer can be benefited.

CHAPTER-6

Chapter-6: Questionnaire of the Study

General information			
Name of interviewer	Kuldeep Tailor		
Respondent name			
Total no. of Family Members			
Name of village		Sex	
Block	Salumber	District	Udaipur, (Raj)
Age of respondent		Date of interview	/ 04 / 2014

Namaskar, My name is Kuldeep Tailor and I am here on behalf of Prayatna Samiti, Udaipur. We are conducting a comparative study between Hybrid seed and Traditional seed. Your village is under purposive selection and your contribution to this study will enhance our understanding about how both seed are different from the view point of a farmer. We would appreciate if you would participate in this survey which will take approximate 30 minute.

Your participation in the study is voluntary, and you are the sole authority to decide for and against your participation in this study. You will not receive any compensation for your participation in this study. You would also be able to withdraw your participation any time during the interview.

We do hereby affirm that privacy, anonymity and confidentiality of data/information identifying you as participant will strictly be maintained. Any personal identifiable information will be withheld and processed under secured conditions. Dissemination of the results will be done after the data has been analyzed and conclusions drawn and will not identify any of the participants in the study. Data will be stored for future research purpose but confidentiality of individual responses will be protected.

At this time, do you want to ask me anything about the survey?

I have read / (has been read to me) the consent form. I have had the opportunity to ask questions about it, and any question I have asked has been answered to my satisfaction. I consent voluntarily to participate in the study.

Signature or left thumb impression of respondent

1. How much land you own?

..... (In Bigha)

2. What is the typology of your land?

☐ Plain ☐ Sloppy Total..... (Unit in bigha)

3. How is the nature of your land? (multiple responses possible)

☐ Irrigated ☐ Non-Irrigated
☐ Dry land ☐ Waste Land

4. Which seed you have used in last maize crop? (Per Bigha)

☐ Hybrid, how much..... ☐ Traditional, how much..... Total.....

5. What are the major inputs you gave to maize crop? (per bigha)

Traditional			Hybrid		
Particular	Quantity	Cost	Particular	Quantity	Cost
Urea			Urea		
DAP			DAP		
Total			Total		

Questions	Traditional	Hybrid
6. How would you rate that seed?*		
7. How much yield you got from last maize crop? (per bigha)		
8. How much net revenue/profit (per bigha) you have earned from the last crop?		
9. Do you get any Surplus		

to sell? How much?		
10. Which seed's production you keep for your own food purpose and why?		
11. Which seed's production you sell in market?		
12. How much time the maize crop took to grow?		
13. What was the total input cost of maize crop?		
14. How many hours per day you devoted?		
15. Which seed require more water?		
16. Which seed is best in context of climate change and why?		
17. Which seed is best in the sense of durability (time)? How long?		
18. Which seed is more tasteful? How?		
19. Which seed requires more fertilizer?		
20. Which seed is good in the view of storage and how long?		

21. According to you which crop is good for health?

☐ Traditional

☐ Hybrid

22. What do you think, which seed is best for agriculture in your area?

☐

Traditional

☐

Hybrid

23. Tell me the advantages and disadvantages of the Hybrid and traditional maize seed that grown in last season?

S.N.	Advantages	Disadvantages
Traditional		
1.		
2.		
Hybrid		
1.		
2.		

24. Is there any difference in the weight of hybrid seed and traditional seed

If yes then how much more weight from hybrid seeds..... (in %)

25. Have you used traditional seeds for reproduction

If yes then what was your experience.....

26. Have you used Hybrid seeds for reproduction

If yes then what was your experience

27. Have you seen any changes on land fertility after use hybrid seeds in your land
..... If yes, what
changes.....

28. Are your cattle like byproducts of farming by hybrid seeds.....

29. In future if you require to buy hybrid seed. Will you purchase it?

☐ Yes, If yes then why

☐ No, If no then why

*1. A. excellent. B. good. C. average. D. poor. E. very poor.

*4. 1-Yes, 2-No