

IMPACT OF SEED PRODUCTION PROGRAMME UNDER F.L.D. SOYBEAN IN VILLAGE BHAGORA - A CASE STUDY

Introduction:

India is a country of agriculture & its national economy depends partially or fully on agriculture. 70% population of India is engaged in agriculture & its related activities. The same story is related to the state of Madhya Pradesh where the main crops in Kharif are soybean, Maize, Jowar, Arhar, Cotton etc. & in Rabi are Gram, Wheat, Potato, Garlic, Onion etc. Indore is one of the main districts of M.P. in respect of agriculture & is advanced in soybean, Potato & Wheat production.

Krishi Vigyan Kendra, K.G.N.M.T., Kasturbagram, Indore is working since 1979 in the villages of the Indore district. A team of K.V.K. having experts in multi-disciplines works among the villagers to transfer improved agricultural technologies under the programme of Front Line Demonstration on oilseed & pulses, K.V.K. demonstrated latest technology related to the crops.

Under the F.L.D. on oilseed and pulse crops programme K.V.K., Kasturbagram demonstrated improved cultivation practices of soybean in village Bhagora of Block MHOW in district Indore. While conducting this F.L.D. programme K.V.K. has also organized many training programmes for the benefits of farmers viz. field preparation, improved varieties, seed treatment & seed inoculation with bio-fertilizer, intercultural operation, insect & pest management, seed production technology, harvesting & post-harvest technology for soybean crop.

Prior to conduct the demonstration farmers were facing the problem of improved seeds of various crops. Numbers of farmers were unable to get the variety of improved seed. Due to non-availability of improved seeds of soybean, farmers were using grains of old variety as seed thereby farmers were getting very less production of soybean. Keeping in view the above fact, K.V.K. decided to plan a programme of seed production of soybean & execute it on the fields of 25 selected farmers of the village for the period of three years. After successfully completion of this programme, it is realized that the assessment of the said programme should be carried out in other nearby village.

Objective

The main objective to conduct this study is to assess how the seed production programme has affected the farmers.

Methodology

1- Selection of village:

Among the five villages of K.V.K. operational area, village Bhagora of Mhow tehsil of Indore district was selected purposely for the study because village was easy to access for the researchers.

2- Selection of farmers:

On the fields of 25 farmers K.V.K., Indore had conducted the seed production programme & F.L.D. on soybean. Out of these 25 farmers, 5 farmers were selected at purposely taking into consideration their education, land holding, irrigation facilities & other available resources etc.

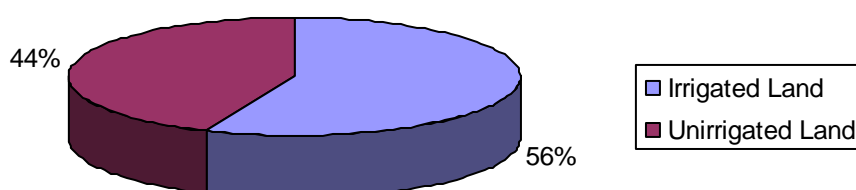
To fulfil the object of study one farmer namely Shri Karan Singh Anjana among the above 5 selected farmers, is selected purposively.

Data about cropping pattern, farming situation, available resources, source of technology, transfer of technology, yield, seed selling, earnings, socio-economy status, investment in other enterprise etc. were collected through interview schedule while secondary sources were used for data about pre-survey.

About the village

Village Bhagora is situated in Mhow block of Indore district. It is 27 K.M. away (in south west) from Indore city. The total land of the village is 2789 ha with 1368 ha cultivated land. The percentage of irrigated land is 56.28% (770 ha).

There are 624 families living in the village. The total population of the village is 7000. Out of these 624 families, 384 families belong to general category & 112 & 129 families belong to SC and ST categories respectively. The main occupation of the villagers is agriculture & farm labours.



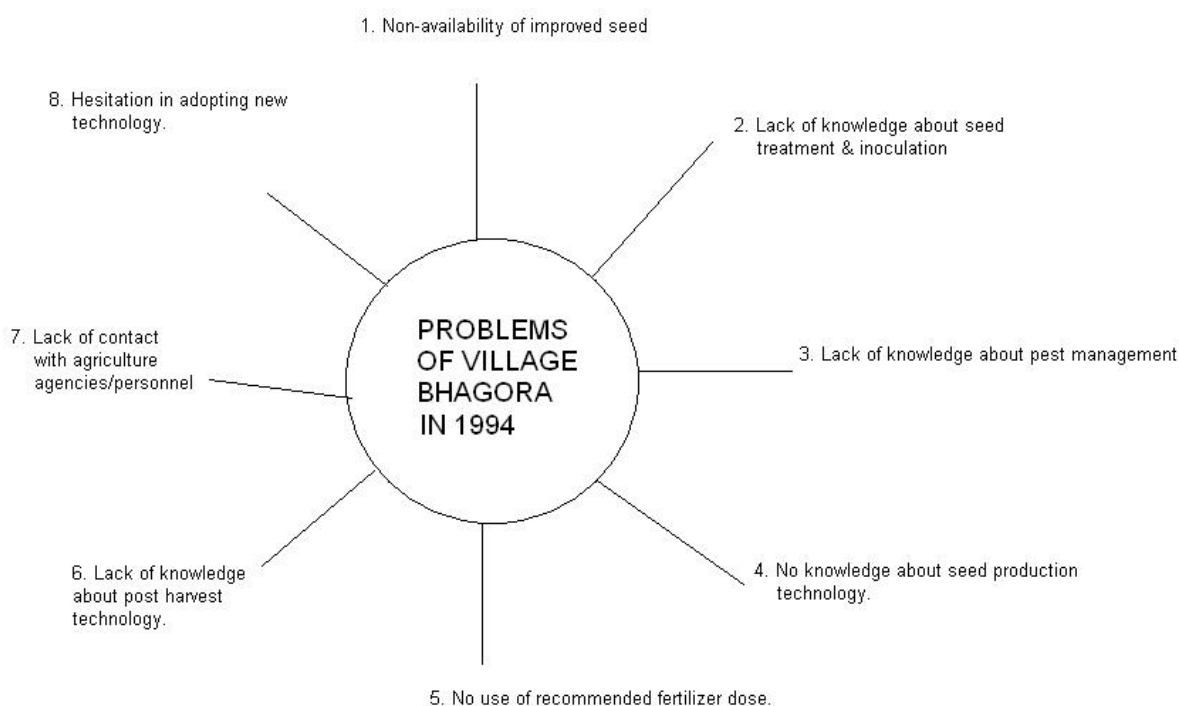
Irrigation facilities

The main source of irrigation is tube-well, open well & canal.

S. No.	Irrigation facility	Numbers
1.	Canal	01 (from Choral Dam)
2.	Tube-well	172
3.	Open-well	28

Problems of the farmer for soybean production (1994)

After conducting a survey, it was observed that farmers of the village were facing many problems. Main problems can be seen from the following map:



Land holding & farming situation of selected farmers (land in ha)

Name of the farmer	Land holding	Cultivated land		% of irrigated land
		Irrigated	Unirrigated	
1. Shri Karan Singh	3.5	3.5	-	100%
2. Shri Dev Karan	10.0	6.0	4.0	60%
3. Shri Ranchhod Singh	6.0	4.0	2.0	66%
4. Shri Chhogalal	6.0	5.0	1.0	75%
5. Shri Satyanarayan Mali	2.5	2.0	0.5	80%

The above data reveal that 70% of the total cultivated area is irrigated.

Cropping pattern

Typed cropping pattern is adopted by the farmers of the village Bhagora i.e. in Kharif soybean & Maize are grown whereas Potato, Garlic, Gram, Wheat, Onion, Coriander are grown in Rabi season. During Zaid they opt for Green-gram, Sponge-guard & Okra.

About the farmer

Shri Karan Singh Anjana, S/O Shri Hariram Anjana is a domicile of village Bhagora & educated up to Higher Secondary. There are 7 members in his family. They all are literate persons.

Land holding & agricultural implements

The farmer is holding 3.5 ha land & whole area is irrigated. All the necessary bullock & tractor drawn implements viz. tractor, trolley, cultivator, seed drill & duck foot (tractor drawn) & desi hal-bakhar, seed drill, duphan, dora etc. (bullock drawn) are available with him.

Irrigation facility

Since Shri Karan Singh Anjana is having a good facility of irrigation like two tube-wells & one open well with 3 submersible & one mono-block pump set, he is taking different crops in different seasons.

Crop distribution at the filed of farmer

Season	Year 1994-95	Year 2002-03
Kharif	soybean, Maize & Ground-nut	soybean, Maize & Coriander
Rabi	Wheat & Gram	Wheat, Gram, Potato, Garlic & Onion.
Zaid	-	Green-gram, Sponge-guard & Okra.

It is evident from the above table that the farmer has diversified with intensive cropping.

Seed production programme under F.L.D. soybean

In 1994-95 K.V.K., Indore introduced improved technology of soybean production. In this connection, the K.V.K. demonstrated the said technology on the farmer's field & trained him alongwith other farmers about the improved technology. Our centre motivated him for production soybean seed.

soybean seed production (in Qnt.)

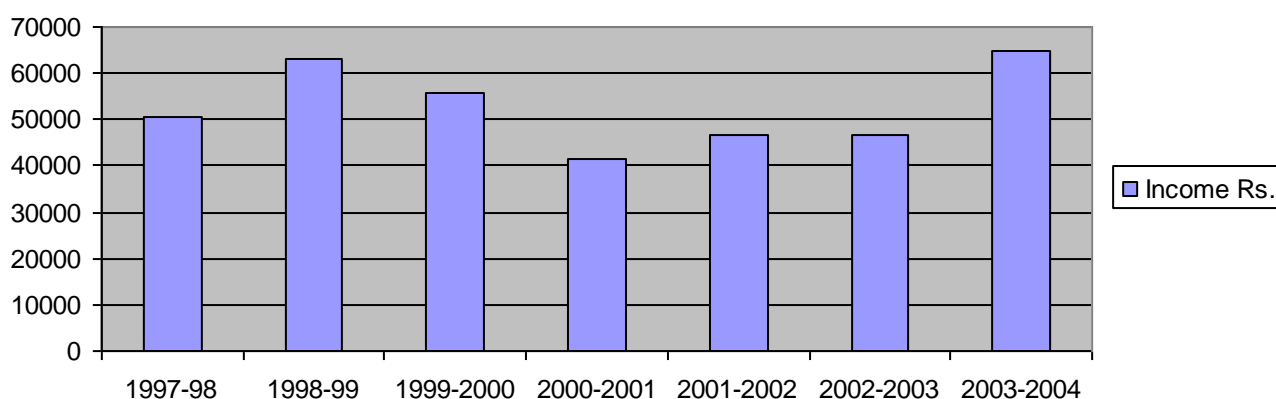
Year	Variety				
	JS 335	BS 2	SAMRAT	JS 93-05	MAUS-47
1996-97	28.00	-	13.00	-	-
1997-98	29.05	-	18.00	-	-
1998-99	27.00	-	16.00	-	-
1999-2000	24.00	-	11.00	-	-
2000-2001	24.00	-	15.00	-	-
2001-2002	15.00	10.00	8.00	-	13.00
2002-2003	12.00	12.00	10.00	6.00	11.00

Income from sell of soybean seed

Year	Quantity (in Qnt.)	Rate (in Rs.)	Total Rs.
1997-98	28.00	1800.00	50400.00
1998-99	35.00	1800.00	63000.00
1999-2000	31.00	1800.00	55800.00
2000-2001	23.00	1800.00	41400.00
2001-2002	26.00	1800.00	46800.00
2002-2003	26.00	1800.00	46800.00
2003-2004	36.00	1800.00	64800.00

From the above table, it can be observed that Shri Karan Singh sold a huge quantity of 36.00 Qnt. soybean seed in 2003-04 & earned Rs. 64800.00.

Year wise Income from sell of Soybean seed



The list of seed purchaser from him

Name	Village	District
Nathulal	Dhabala	Ujjain
Shankarlal	Dhabala	Ujjain
Padam Singh	Dhabala	Ujjain
Mohan Prasad	Khusarakhedi	Ujjain
Hakam Singh	Khusarakhedi	Ujjain
Shankarlal	Khusarakhedi	Ujjain
Narayan Singh	Kshipra	Dewas
Sujay Singh	Kshipra	Dewas
Bahadur Singh	Fatehabad	Indore
Narayan Singh	Fatehabad	Indore
Hariram	Khakla	Indore
Anter Singh	Khakla	Indore
Mohanlal	Kanwasa	Indore
Narayan Singh	Ralamandal (Fatehabad)	Indore
Hariram	Chourdia	Indore
Narayan Singh	Chourdia	Indore
Raghunath Singh	Bhagora	Indore
Babulal	Bhagora	Indore

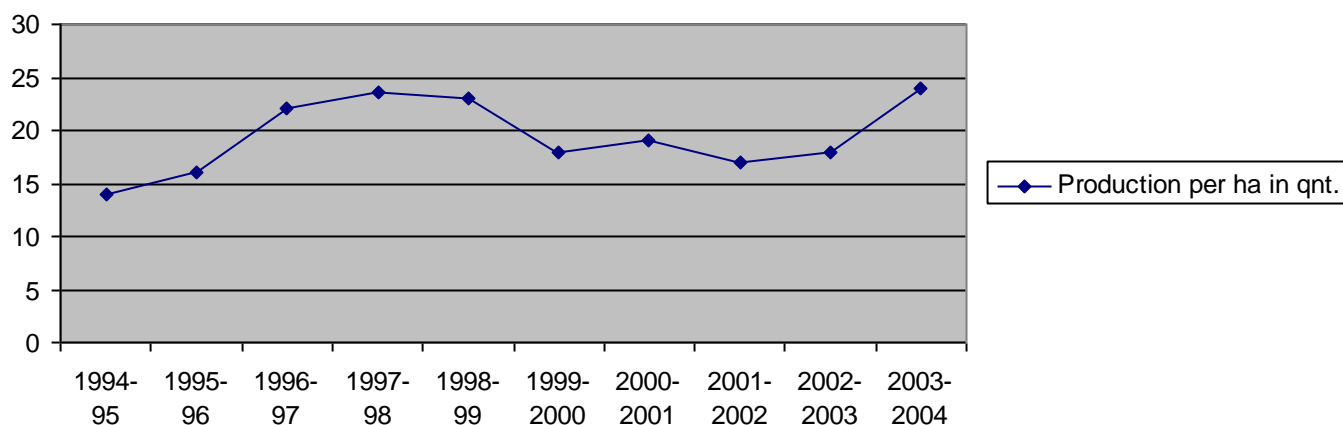
soybean production during 1994-95 to 2003-04

Year	Production per ha in qnt.	Increasing % (over 12 qnt. per ha in 1993-94)
1994-95	14.00	16.00
1995-96	16.00	33.33
1996-97	22.00	83.33
1997-98	23.50	95.83
1998-99	23.00	91.66
1999-2000	18.00	50.00
2000-2001	19.00	58.33
2001-2002	17.00	41.66
2002-2003	18.00	50.00
2003-2004	24.00	100.00

The above table shows that the highest production of soybean is obtained during 2003-04 & the rate of increasing percentage is also 100%.

The production of the crop was badly affected during the year 1999-2000 to 2002-2003 because of low rainfall.

Soybean production during 1994-95 to 2003-04



Change in economy & status (Investment of earnings)

The earnings from the sell of soybean seed made him enable to establish him in the society & village as well. With the help of this earning he has also purchased a tractor-trolley in 1999-2000 & other tractor drawn implements. Similarly during the year 2000-2001 he also purchased one Bigha land (0.22 ha). In addition to above he could able to fulfil the liabilities of his family by performing the marriages of his both the sons.

Source of technology

He obtained the improved technology mainly from our centre. He is still frequently visiting the K.V.K. centre & updating his technical knowledge.

Contact with extension agencies/personnel

Out of his busy schedule of farming, he also visits our centre frequently say once in a week, N.R.C.S. in fortnight & State Government Agriculture Department monthly.

Transfer of technology by him to nearby farmers

Shri Karan Singh of village Bhagora transferred the improved soybean cultivation technology to his nearby farmers. These farmers are also following his guidelines. Some of them are his relatives & good friends as follows:

Name & address of farmers who have received soybean production technology from Shri Karan Singh:

1. Shri Hariram Anjana: Village - Chourdia, Tehsil - Mhow, Distt. - Indore.
2. Shri Nathulal Patel: Village - Dhabala, Distt. Ujjain.
3. Shri Padam Singh: Village - Dhabala, Distt. Ujjain.

Loss of technology

Shri Padam Singh of Dhabala village is one of the farmers who have received improved technology from Shri Karan Singh. During the discussion with him, it is noticed that he is not able to maintain proper seed rate & spacing though he is managing weed & pest in proper manner, but neither he is spraying the pesticide properly nor he is contacting the expert authorities to get himself acquainted about the same thereby he is unable to get required/desired production.

Conclusion

The study conclusively indicates that the theme "Learning by doing" is essential for successful performance of seed production programme conduct F.L.D. soybean which was implemented by K.V.K., K.G.N.M.T., Indore. During the period of ten years Shri Karan Singh was very enthusiastic to stand in front line. Regular contact with extension personnel/agencies, his interest & awareness about agricultural innovation played a vital role in his progress.

The farmer earned more by selling soybean seed than other crops & made him economically sound. This study shows that the farmer created a local soybean seed market & motivated other farmers too to follow him. It could be possible only because of his courage & business thoughts. He utilised all available resources for getting better yield.

The K.V.K. motivated him to take right decision at right time about scientific advice by which he could make himself as a progressive farmer. It is not only the success of Shri Karan Singh but it is the success of our K.V.K. also because our scientist provided him all available information & improved soybean seed production technology.

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CASE STUDY

"Low Cost Technology of Goat Rearing for Additional Income in a Self Help Group"

Indiragram village is situated 5 KM. from Simrol (Khandwa Road) and 16 KM. from Krishi Vigyan Kendra, Indore. When KVK scientists came into contact with the village it was found that most of the farmers in the village are small farmers and landless labourers, belonging to schedule caste category. The farmers have very small land holdings (average 2 acre per farmer). The women of this category, work as agricultural labours in nearby villages, when the agricultural practices are on its peak.

Looking this KVK, Indore decided to form a Self Help Group of these women in the village in the year 2001-02. After discussing with women and telling them about concept of the S.H.G., several women were convinced. They took keen interest in small savings in the group. Thus a S.H.G. was formed with 20 women members, all of them scheduled caste. In the group, women started small savings and opened an account in Bank of India, branch Simrol with the help of KVK centre. Each member has to deposit Rs .50/- per month & withdraw money annually. The KVK scientists tell the members of the group about various small occupations which they can start with their small savings.

Thus after getting information, a woman Smt. Shardabai came forward and purchased two goats of Jamanapari breed from the local market worth Rs. 950/-. The goats when purchased aged 6 months and 0 lactation because it was not possible for her to purchase a sexually mature animal. Jamanapari breed of goat is known for its dual purpose, higher milk production and meat purpose. She gave proper attention and cares to the animal and bred it at proper age. The each goat delivered one male kid and come into lactation.

Now she gets 1.5 litre milk daily from a goat (worth Rs. 450/- per month). Since there is no market for goat milk, she feed the milk to her children as goat milk contains small fat globules so it is very good for children and adolescent. Thus her children are getting the complete food, i.e. milk, simultaneously she is saving Rs. 300/- month (Rs. 3600/- per annum), which she used to spend to purchase milk from market for daily consumption. Further she can earn Rs. 2000/- per kid by selling them at the age of 10 to 12 month. Hence Jamanapari goat kids once in a year, so she earns Rs. 2000/- per kid per annum (Rs. 4000/- for two kids). It is found that she does not invest more than Rs. 1600/- on feed (concentrate) and other miscellaneous items including health care etc. Thus she gains net profit of Rs. 6000/- per annum from two goats, she purchased from her saving in S.H.G. Additionally, and she is getting good quality manure for her agriculture field.

The idea of low cost technology of goat rearing is also spread to 10 other members of the group by KVK and Smt. Shardabai. These members also purchased different locally available breeds of goat from their savings of S.H.G. and are getting complete food for their children and family in the form of milk and earning additional income by saving the money spent on purchase of milk for home consumption, selling of kids for meat purpose and getting manure for their agriculture land. The number of members in the S.H.G. has also been increased to 31 this year. Further, the concept of S.H.G. is also spread to nearby village Jagjivanram and another village Nehruvanram. KVK made arrangements for the interaction of the women of these two villages with the S.H.G. of Indiragram. Thus two other S.H.G. have been formed in Jagjivanram & Nehruvanram with the help of interpersonal communication.

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CASE STUDY

DIVERSIFICATION OF CROPPING PATTERN AT VILLAGE NEHRUVANGRAM

Village Nehruvangram is situated 15 K.M. away from Indore at Patwari Halka No. 12, survey No. 372/391. This village was established by Govt. of M.P. in 1957 with 27 schedule cast family. On that time 9 acre land was provided to each of family, but now the holding of village is about 1 acre to 4 acre. In 1997 village Nehruvangram was adopted by K.V.K. Kasturbagram for changing their socio-economic status by transfer of technology.

Farming situation:

Village Nehruvangram is nearby Indore city and having well connection of transport facility. It is having medium black cotton soil. The average rainfall is about 900 mm. (Year 2002 noticed only 500 mm). Major resources of irrigation is well, 3 farmers are having tube-well also. Irrigation facility is available up to February end, few of them having irrigation facility round the year. Major crop grown in the village are Soybean, Gram & Wheat. Now it is Soybean, Marigold, Gram & Wheat.

Resource available:

The village is rain fed, previously they are growing rain fed crop like Soybean, Maize, Jowar, Arhar. But now they are having irrigation facility up to February end. Six farmers having irrigation facility round the year by which they can irrigate at least one acre land during summer. Village Nehruvangram is well connected to commercial city Indore which is only 15 KM. away. 30% farmers having their own primary implements like bullock pair, hal, dora, bakkhar etc. Other source of agriculture implement is by hiring by nearby farmers. Due to small holding major sources of labour from their own family. Women participation is up to grate extent.

Cropping pattern in 1997:

Soybean – Gram

Soybean – Wheat

Jowar –

Arhar –

Farmers' problem with Soybean based cropping pattern & their technical reasons:

Low income – All farmers of village Nehruvanagram belong to SC category & having round 2 to 25 acres land holding. From Soybean income per acre is hardly around Rs. 3,000/- which was scanty for survival & upliftment of their social & economic level.

High cost of cultivation – It is due to:

- Costly seed,
- Frequent requirement of weeding & spraying of insecticide & pesticide.

Low yield – It is due to:

- Local variety i.e. Samrat
- Improper nutrition
- Poor germination of seed
- Heavy infestation of insect pest
- Seed shattering

Crop failure – It is due to

- Continuous rain at the sowing time
- Non podding due to sterility
- Unavailability of quality seed
- Rain at the time of harvesting
- Insect pest attack

High Insect pest attack – The infestation of insect like girdle beetle, hairy caterpillar & semi-looper is major cause for reduction in yield & high cost input.

Selection of alternate crop:

After finding of different problems of the village K.V.K., Kasturbagram prepared an action plan for changing their cropping pattern from traditional crop like Soybean to commercial flower crop Marigold. Following reasons were noticed behind selecting Marigold as an alternate crop:

Reason for selecting Marigold:

1. High income compared to Soybean.
2. Lesser risk of insect pest.
3. Because of small land holding, their interest is to get more return in a small unit area.
4. Having better flower market at Indore which is nearby & better connection with road.
5. To enhance women participation in plucking flower crops, cleaning, grading & packing.

Intervention by K.V.K.

During 1997, K.V.K. Kasturbagram adopted this village for transfer of technology and changes their cropping pattern. In this village first of all three farmers were showed their interest to changing their cropping patterns and reducing to Soybean crop against Marigold which pave the way of crop diversification.

From K.V.K. following attempt were made for boosting the Marigold cultivation.

1. Front Line Demonstration of growing Marigold in village.
2. F.L.D. on Marigold nutrition.
3. F.L.D. on control of disease blight of Marigold.
4. On campus training and off campus training on different aspect of growing Marigold.
5. Providing skill as well as market opportunity for growing Marigold.
6. Providing seed and other planting material and chemical from reliable sources.

Impact of technical intervention by KVK:

Before commencing of intervention programme, it was observed that area under Marigold is negligible. Three farmers of village Mr. Kailash Puri, Mr. Subhash & Mr. Balram showed their keen interest & agreed to change their cropping pattern & adopting Marigold. Consequently on campus & off campus training programme were carried out by K.V.K, Indore in 1997. Another many training programmes F.L.D., farmer's farm visit, meetings with farmers were organized for boosting for cultivation of Marigold & changing their cropping pattern, resulting, in 1997 the total area in the village under marigold is 4 acre while in 1998 it was 10 acre. Consequently, it is observed that the area under Soybean being replaced by marigold from 4 acre in 1997 to 47 acre in 2001 while area under Soybean decreases from 210 acres in 1997 to 153 acres in 2001 in the village. After getting experience, Marigold the farmers of the village are growing another flower crops like Chrysanthemum, Aster, Rose & Gladiolus in small areas.

Crop Distribution

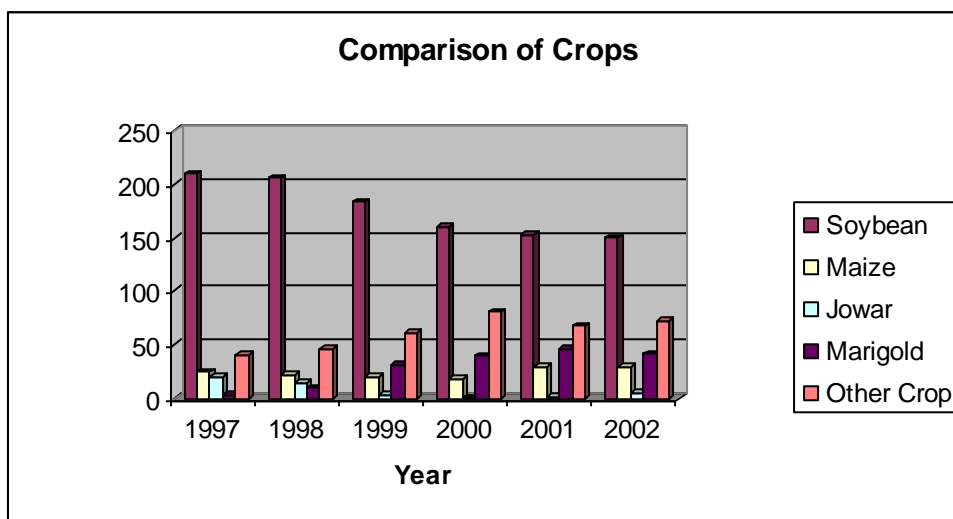
Kharif Season

From 1996 to 2002

Year	Crop area in Acre				
	Soybean	Maize	Jowar	Marigold	Other Crop
1997	210	25	20	4	41
1998	206	22	15	10	47
1999	184	20	3	32	61
2000	160	18	1	40	81
2001	153	30	2	47	68
2002	150	30	5	42	73

* Other crop including – Arhar, Groundnut, Fodder, Chrysanthemum Aster and Rose.

* The total cropped area of Marigold and other crop decreases during 2002 due to shortage of rainfall.

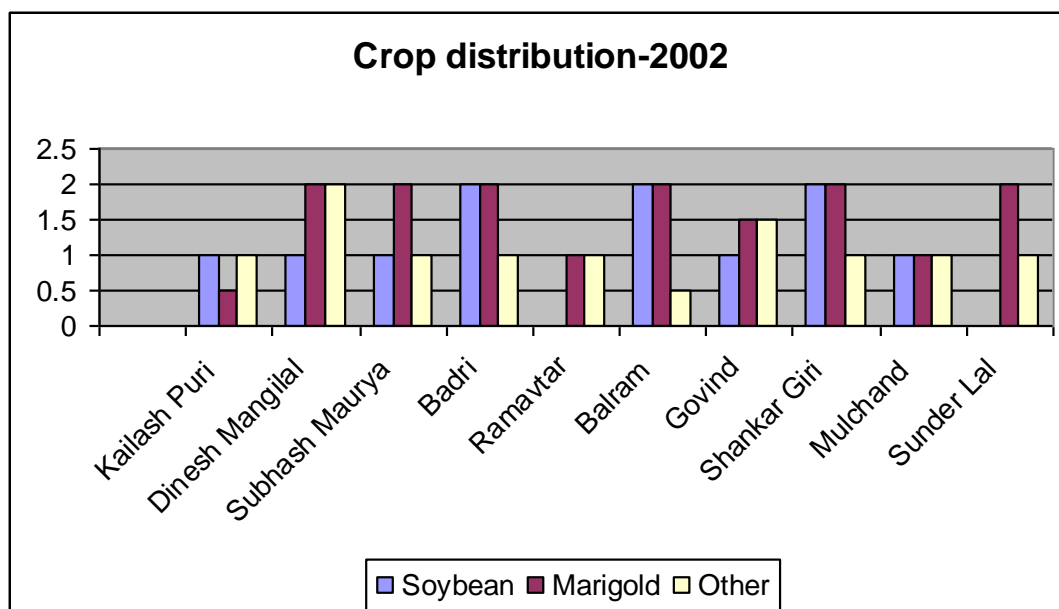
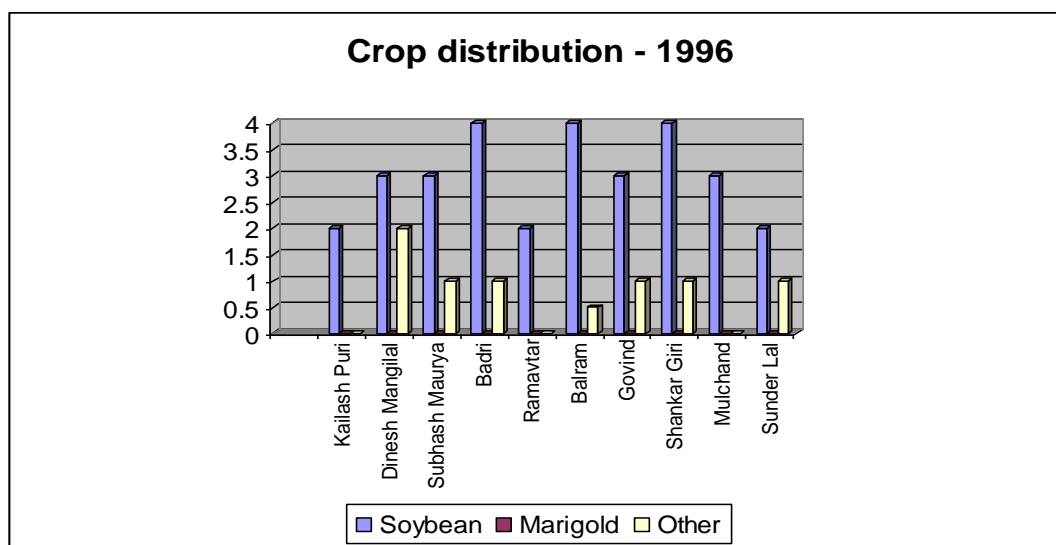


The case study of 10 enthusiastic farmers of village was made on their acreage & income from Soybean & Marigold crops. After thorough survey it was found that Mr. Kailash Puri having 2 acres land in 1997 can earn hardly Rs. 4000/- in Kharif by growing Soybean while in 2002 his income grown up to Rs. 18000/-. Similarly another farmer's income grown up to Rs. 5000/- to Rs. 17000/- in the same period. A detail of their land & income is given below:

CROP AREA DISTRIBUTION DURING KHARIF, 1996 & KHARIF, 2002

Name of Farmer	Total Land Holding (Acre)		Soybean		Marigold		Other		Income (In Rs.)	
	1996	2002	1996	2002	1996	2002	1996	2002	1996	2002
Kailash Puri	2	2.5	2	1	-	0.5	-	1	4000	18000
Dinesh Mangilal	5	5	3	1	-	2	2	2	12000	34000
Subhash Maurya	4	4	3	1	-	2	1	1	10000	25000
Badri	5	5	4	2	-	2	1	1	15000	31000
Ramavtar	2	2	2	0	-	1	-	1	5000	17000
Balram	4.5	4.5	4	2	-	2	0.5	0.5	12000	29000
Govind	4	4	3	1	-	1.5	1	1.5	9000	27000
Shankar Giri	5	5	4	2	-	2	1	1	10000	16000
Mulchand	3	3	3	1	-	1	-	1	8000	18000
Sunder Lal	3	3	2	0	-	2	1	1	9000	25000

Other crops including Arhar, Ground Nut, Jowar, Maize etc.



Farmers Feeling:

After diversification of crops & adopting Marigold, farmers can get continuous return from flower yield at regular interval. Now they are growing Marigold to cash the festive season & they can earn more income during this period. After successful adoption & cultivation of Marigold, many farmers of village trying to grow another flower crop like Chrysanthemum, Aster & Desi Rose. Few of them are initiating growing these crops. Although the cultivation of flower crop is quite technical in comparison of cereals crops, even they are showing their interest to adopt more flower crops with the help of K.V.K. Since the income from the flower crop is more in comparison to other cereals farmers are now very much keen & started growing flower crop. Moreover they are interested in this crop because it requires little bit land with short period to grow with income there from on higher side.

Technology transfer by farmers

In village Nehruvanagram, maximum farmers are now growing Marigold after getting exposure & experience from nearby farmers' field. From this village marigold crop is being transferred to another nearby village by farmers' relative & good wishers. From the field of Kailash Puri of village Nehruvanagram, Marigold crop is diffused to the field of the Mr. Manshingh & Mr. Khuman Patel of village Morod. Similarly farmers of village Indiragram are now growing Marigold after getting experience of village Nehruvanagram.

Problem with diversification:

Inspite of adopting marigold cultivation farmers of the village Nehruvanagram are facing the problems of uncertainty of price of Marigold in the market. Sometimes, being a perishable crop, farmers have to sell their yield within a period of time at any cost. Pre-shower during harvesting create problems for picking & destroy the flowers which causes deterioration of quality. The prices of flower crops are mostly depend upon the quality, lustre & freshness hence sometimes they failed to maintain the above quality.

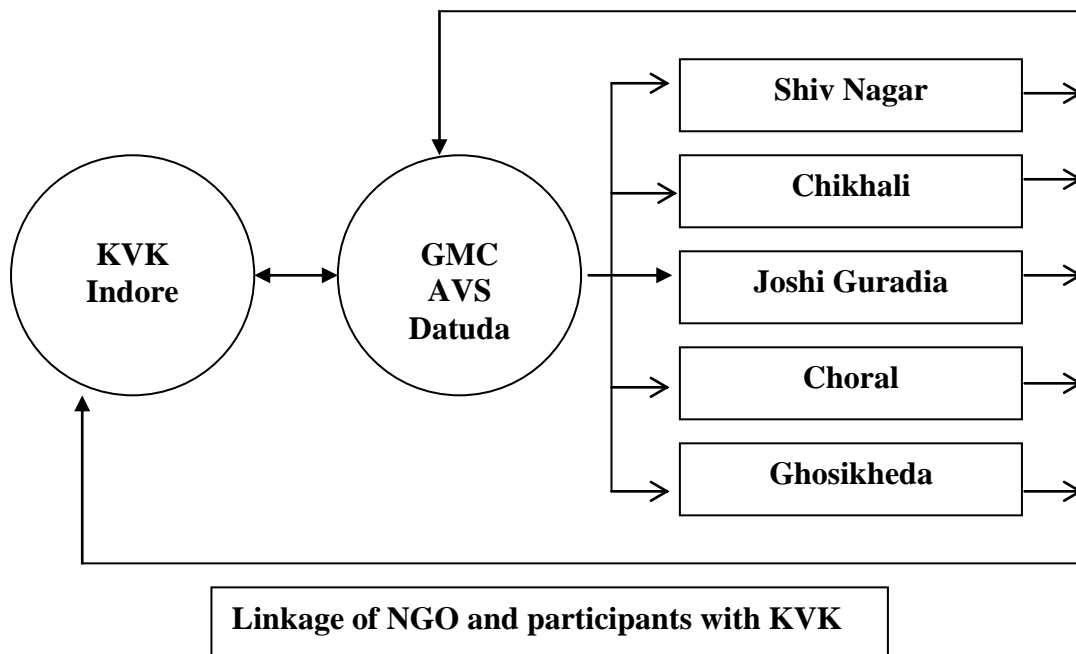
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Impact of Stitching Training - A case study

KVK organizes many training programmes on different topics related to Agriculture and Income generation for farmers, farmwomen and rural youth. During training programmes our scientist give them complete technology in form of theory and practical. KVK conducts training programmes on drafting, cutting and stitching of ladies and children garments from time to time. And after learning this work many women and young girls are earning enough.

Methodology

With the objective of developing income generating skill among rural youth, KVK organized a training programme on drafting, cutting and stitching of ladies and children garments for school dropout girls of village Joshi Guradia, Chikhali, Shivnagar, Birdari, Ralamandal and choural in 2003-04. To assess the impact of this training we selected all 20 participants from the above villages. We developed a questionnaire and collected all the information required for the purpose of this study.



Discussion

Tailoring trainings are conducted by KVK for School dropout girls. The object of which is that they should stitch their own cloths and also to generate income to some extent.

Candidates are sent here for training by the self-help groups of the KVK, Balwadi workers and other NGOs. 20 girls from Datuada, Shivnagar, Joshi Guradia, Ralamandal, Choral, Chikhali villages, adopted by the Gramin Majdoor Chetna Avam Vikas Sangthan (NGO) are

given tailoring training. These trainees, after completing training successfully, started tailoring work in their respective villages in the year 2003-04. After observing their work and due to self-motivation, 50 girls shown their willingness to take the training of tailoring.

Out of these 50 girls, 30 girls were given training during 2004-05. Similarly Smt. Sudha Dhanera who had taken tailoring training in 2003-04, was given the training of trainer, who then started tailoring classes in her village Shivnagar with the help of KVK. 12 to 15 girls are taking training in her class and thereby she is earning Rs. 1200- Rs. 1500 per month.

TV interview of Smt. Sudha Dhanera and Sangeeta of Shivnagar village was also arranged in Gram Mangal Programme in which they informed that how they took training from KVK and thereby how much they are benefited and how there living being is changed. After seeing this programme, a good number of girls of nearby villages are approaching KVK for such vocational training.

Adoption percentage

No. of trainees	Working	Adoption % (During2003-04)
20	16	80%

Conclusion

The training on drafting, cutting and stitching of ladies and children garments have increased the economic status of the trainees and also their families. The positive change in their living status was also visible. Hence it may be included that the training programmes organized by KVK specially for rural youth and school dropout girls on income generating skill are very useful for them.



SUCCESS STORY (Drafting, Cutting, and Stitching of Children & ladies Garments)

KVK, Kasturbagram, Indore organizes many training programmes on different topics related to Agriculture and Income generation for farmers, farmwomen and rural youth. During training programmes our scientist give them complete technology in form of theory and practical. KVK conducts training programmes on drafting, cutting and stitching of ladies and children garments from time to time. And after learning this work many women and young girls are earning enough.

KVK, Indore was conducted 40 days (On Campus) training programme on " Drafting, Cutting, and Stitching of Children & Ladies Garments" (02-07 September, 06) for school dropout girls of village Datouda, Asrawad, Morod, Ralamandal, and Kailod. 25 trinees were actively participated in this training programme.

During the training programme the participants has learned about drafting, cutting, and stitching of Frock, Jhabla, Shirt, and Underwear for children and Blouse, Petticoat, Salwar, Kurta, and Shameej for ladies. Out of 25 participants, 12 participants are doing tailoring job but Miss Maneesha Chandel D/O Shri Laxminarayan Chandel of Village Datouda is doing this job better than the others.

After completion of this training Miss Maneesha has started her job by tailoring of Blouse, Petticoat, and Frock with the help of hand operated Sewing Machine. In the six month she earned Rs. 1100/- and purchased a foot and electric operated system for sewing purpose. Right now she is doing this job very perfectly. The data related to garments and income are given below:

Sl. No.	Name of Garment	Number/ Month	Rate/Garment (in rupees)	Total Income	Cost of input	Net Profit
01	Blouse	10	15	150	30	120
02	Petticoat	10	15	150	30	120
03	Salwar	05	25	125	18	107
04	Kurta	05	25	125	18	107
06	Frock	08	15	120	24	96
Total				620	120	500

The data of above table shows that Miss Maneesha Chandel is earning approx. Rs. 450-500/ month from this job. The success of Maneesha is the success of KVK, Indore.

1. Popularisation of Vermicompost in Indore - A case study

Introduction

Manure and fertilizer are important in Agriculture. This thing has also important in context of improve high yield varieties. Majority of farmers using imbalance fertilizer doses, in result it affects adversely the soil health.

After having meetings, group discussions with farmers & through PRA, it was decided by KVK to transfer technology regarding construction of unit of preparation of Vermicompost & its importance to them.

Farming community of the district is very busy. They are growing Soybean in Kharif, Potato in early Rabi and Wheat in Rabi season & Cucurbits in Zaid. Simultaneously they do not have enough animal for making FYM, labour & time problem for composting. Vermiculture is suitable for the area because it requires relatively less time. It can be made by the weeds, leafs & other green matter easily and it is easy technology.

Background of Area

Indore district is situated in the western part of M.P. located in Wheat-Soybean zone of Malwa Plateau agro-climatic zone. The district has deep fertile black cotton soil. After harvesting Soybean in Kharif, farmers sown potato, onion and garlic and then wheat, gram (these crops require higher doses of fertilizer due to the continuous cropping and also the cash crops in cropping system). The farmers apply higher doze of chemical fertilizer in field. These higher dozes of chemical fertilizer affects the soil health adversely and steadiness in production. Hence, there was urgent to search for a proper method for providing nutrient of plants without affecting the soil health with increment in yield. The vermicompost was sought to meet out all the requirements of soil and to increase its water holding capacity. It can be easily prepared and used by farmers to increase the productivity and soil fertility.

The specific objective of the study were as follows:

- a) To reduce the excess use of inorganic fertilizers.
- b) To minimize the cost of production and to make farmer self-dependent.
- c) To improve the soil health and minimize soil and water pollution.
- d) To generate extra income from worms and vermicompost.

Methodology

For popularising the vermiculture, on campus and off campus training programmes were organized at adopted villages. Practical classes were also conducted during the on campus training besides that visit programmes were also conducted by KVK to innovative farmers' vermicompost units and KVK farm, where vermicompost was being used in crop.

In-service Training programmes were conducted by KVK for RAEO & RHEO. Similarly on and off campus trainings and advisory services were also given to Kasturba Rural Institute, Govt. Degree College, NGOs and gardeners of cantonment area of MHOW. A programme was also recorded at KVK and telecasted by DD-1.

S. No.	Year	Off Campus Training	On Campus Training	In-service Training	Advisory Services
1-	2002-03	2	7	1	10
2-	2003-04	3	5	1	18
3-	2004-05	4	8	2	21

Results

The results of the study are presented below:

A. Spread of Vermicompost unit in adopted villages

S. No.	Name of Village	No. of Vermicompost
1-	Chikhali	10
2-	Mendal	05
3-	Asrawad	07
4-	Machala	08
5-	Morod	06
6-	Bhagora	05

B. Effects of the Vermicompost on yield

Crop	Before training (Q/ha)	After training (Q/ha)
Soybean	18	21
Potato	210	245
Onion	215	240

C. Vermicompost unit as a source of income

S. No.	Name of the Farmer	Village	Income from worms (Rs./year)	Income from Vermicompost (Rs./year)
1.	Bagat Singh	Bhagora	20000.00	55000.00
2.	Deepak	Morod	16000.00	31000.00
3.	Chatarbai	Mendal	3000.00	7000.00
4.	Hukum Singh	Asrawad	5000.00	11000.00
5.	Mahesh	Hatod	3000.00	5000.00

Technology adoption (in percentage)

Activity	Adoption %
Off campus Training	50%
On Campus Training	70%
Advisory Services	65%

Conclusion

Technologies regarding construction of Vermicompost units, preparation & use of vermicompost given by KVK to the farmer have become popular in the district. Since it is a simple technology and farmers received good crop yield with quality produce this practice is being spread in nearby areas more rapidly. Now farmers have known the benefits of vermicompost and adopting it with interest.

Success story: Prosperity through protected cultivation



Shri Anil Patel s/o Shri Babulal Patel
Village: Budi Barlai, The. & Distt. – Indore (M.P.)
Mob. No. :- 9893033264

Introduction:

Shri Anil Patel s/o Shri Babulal Patel is an educated (Agril. Graduate) and progressive farmer of Budi Barlai. He has 10 Acres of land and was getting Rs. 2.5-3 lacks of income before 3-4 years from different crops like soybean, wheat, chickpea, potato and garlic which is low to fulfill his family requirements. He is in the contact of KVK and discussed with scientists of the KVK and asked suggestion for increasing income. KVK scientists suggested him to cultivate horticultural crops under protected condition and provided desired information & technical knowledge.

In the year of 2014-15 he constructed a poly house with a cost of Rs. 75 lacks on an area of 1 acre with financial assistance of NHB. At present He is earning of Rs. 8-9 lacks per annum from protected cultivation.

KVK intervention-

Technical guidance and solution of timely problems are being provided to him time to time by the scientist of the KVK.

Income-

He is growing capsicum, liliun, rose and gerbera in the poly house. Details are as follows:-

Crop	Net income (Rs. in lacks.)	
	2014-15	2015-16
Capsicum	2.0	2.3
Lilium	2.5	2.8
Rose	1.0	1.3
Gerbera	2.5	2.6
Total	8.00	9.00

Outcome/Output

Shri Anil Patel who was earning Rs. 2.5-3 lacks only from 10 acres of land in 2014-15 while at present he is earning Rs. 8.5 lacks (average) from 1 acre of poly house. He is getting training and other technical advise time to time from the KVK and gives credit to the centre for his success. After seeing his success some farmers are attracted towards protected cultivation.



Farmer's discussion with KVK scientists

Water saving through Tap irrigation system



Farmers Name: Shri Sitaram Chouhan
Village: Mirzapur, The & Distt. Indore

Introduction:

Farmers of village Mirzapur are facing the problem of irrigation water and they get lower income. Mr. Sitaram Chouhan was also facing the same problem and not getting enough production from Rabi crops like Marigold and potato. Later he prepared a system of irrigation by his own efforts for irrigating marigold and potato etc.

He purchased 5 HDPE pipe and plastic taps. He fixed taps on the pipe on 24 inch interval and used it for irrigating potato.

KVK intervention:

KVK supported and provided technical knowledge to him.

Output:

After using this system he got a very good production of potato (180 q/ha) over the previous yield of potato (150 q/ha) and got good quality of crop. He got 22% increased yield of potato and also saved 35-40% of irrigation water. He saved time and labour also by using this method. He observed that this irrigation system also helped to prevent soil erosion.

Impact:

After seeing the system of irrigation 6-7 farmers of this village and nearby village have started the same practice at their own field.



Mr. Sitaram Chouhan (Mirzapur) at his Marigold Field.