

UNIVERSITY OF AGRICULTURAL SCIENCES, BANGALORE

DEPARTMENT OF AGRICULTURAL EXTENSION

SEMINAR REPORT ON

“Seed Village Programme-A Portfolio Analysis”



SUBMITTED TO :-

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I. Introduction:

Seed is a critical and basic input for attaining higher crop yield and sustained growth in agricultural production. Distribution of assured quality seed is as critical as the production of such seeds. Good quality seed alone increases the yield by 15-20 per cent. Quality seed is the key input for realizing potential productivity. Ideally seed should be replaced every year for hybrids and every three to four years for non-hybrids. The non-availability of quality seeds in oilseeds and pulses is one of the main reason for its lower seed replacement rate. Despite implementation of the organized seed programme since the mid 60s, the seed replacement rate has only reached the level of 15 per cent and remained 85 per cent of the seeds used are farm saved. It is, therefore, necessary to improve the stock of farm saved seeds for enhancing crop production/productivity. The Seed Village Programme (SVP) is one of the most important component of the Sub-mission on Seeds and Planting Materials (SMSP) under National Mission on Agriculture Extension and Technology (NMAET) being implemented by Government of India from 2014-15 onwards. To upgrade the quality of farmer-saved seed which is about 80-85 per cent of the total seed used for crop production and it is proposed to provide financial assistance for distribution of foundation/ certified seed at 50 per cent cost of the seed of crops for production of certified /quality seeds only and The seed produced in these seed villages will have to be preserved/stored till the next sowing season. The seed village programme includes the participation of different institutes and organizations in the implementation. The concept of seed village which advocates village self-sufficiency in production and distribution of quality seeds is getting momentum.

Objectives

1. To study and understand about the concept of Seed Village
2. To review the portfolio of Seed Village programme in India & its implementation experiences
3. To review the research /case studies

Concept

Seed: Seed is a fertilized mature ovule and consists of an embryo which develops into the future plant

‘Seed is a vehicle for delivery of improved technologies and is a mirror for portrayal of inherent genetic potential of a variety/hybrid.’

Basic factor of mankind’s most sought goal and Agricultural abundance.

Problems of Indian Agriculture

- Irrigation
- Manures, Fertilizers and Biocides
- Agricultural Marketing
- Inadequate storage facilities
- Scarcity of Capital
- Soil Erosion
- Lack of Mechanisation
- Inadequate transport
- Small and Fragmented Land-holdings
- Seeds Availability

Sources of Seed Material for farmers

1. Private sector
2. Public sector
3. Getting from the Neighbours
4. Some of the National Seed Companies
5. Own savings from the previous year crop

Overview of Seed Industry in India:-

Present Scenario of Seed Industry/Strength

- Total Market Size (Million INR) : 150,000
- Market Size of PSUs (Million INR) : 45,000
- Market Size of Pvt. Companies : 105,000 (Million INR)
- Number of PSUs including SSCs. : 17
- Number of Pvt. Companies : About 500
- AICRPs - released 8187 varieties and hybrids in different crops
- Strong research base and network of public and private stake holders
- Plant Genetic Resources (PGR) for trait development
- Well established seed regulatory and legislative frame work
- Seed quality assurance: 22 Seed Certification Agencies and 126 notified seed testing laboratories

Table 1. Top ten seed economies of world during 2014

Top 10 Seed Economies of the world (2014)

Sl. No	Country	Estimated value of Domestic Seed Market (USD million)
1.	USA	12,000.0
2.	China	9,034.0
3.	France	3,600.0
4.	Brazil	2,625.0
5.	India	2,000.0
6.	Japan	1,550.0
7.	Germany	1,170.0
8.	Argentina	754.0
9.	Italy	715.0
10.	Netherlands	585.0

Total World Seed Market - approximately USD 45 billion. India is fastest growing seed industry in the world is (CAGR of 12.5%) Source: International Seed Federation – 2014

Table 2. Annual Seed Requirement of Karnataka State

Sl. No.	Crop	Quantity (Qtls)
1	Paddy	2,51,629
2	Finger millet	25,080
3	Maize	1,76,249
4	Jowar	16,500
5	Bajra	14,195
6	Small millets	3,300
7	Arhar	50,750
8	Moong	23,430
9	Urd	7,740
10	Cowpea	7,210
11	Field bean	6,435
12	Horsegram	3,910
13	Groundnut	3,46,200
14	Sunflower	14,490
15	Castor	1,485
16	Sesame	1,980
17	Soybean	1,16,815
18	Niger	2,310
19	Linseed	1,235
20	Mustard	85
21	Cotton	6,945
	Total	10,77,994

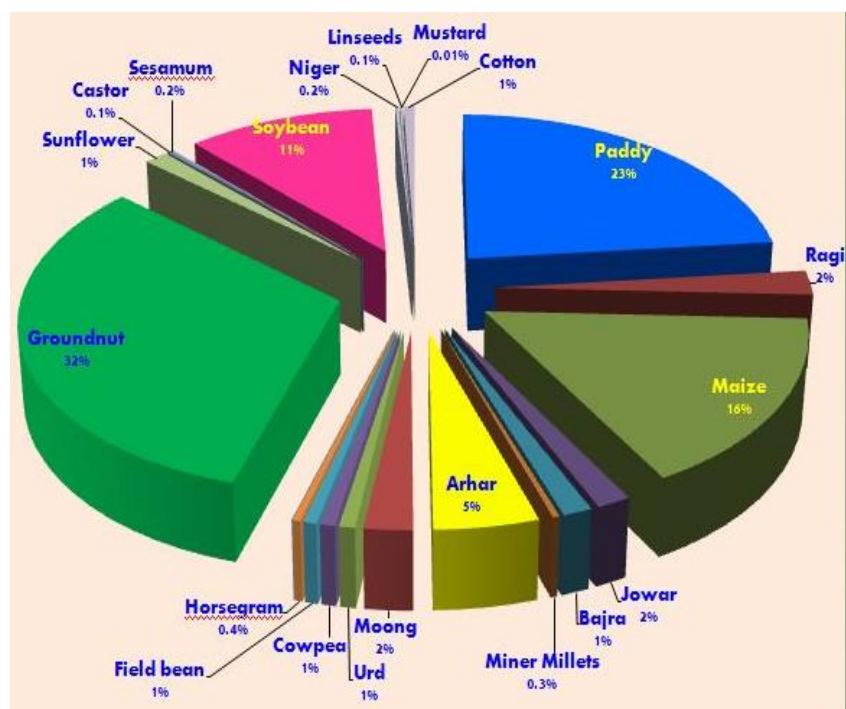


Figure 1. Annual Seed Requirement of Karnataka State

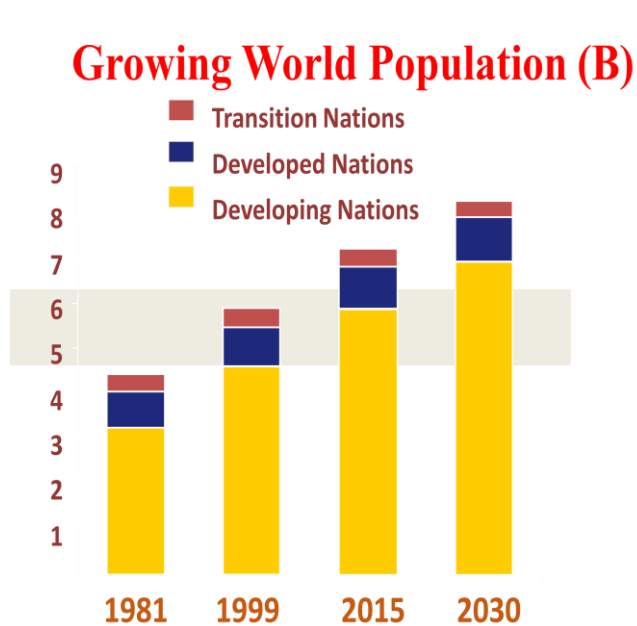


Figure 2. Growing World Population

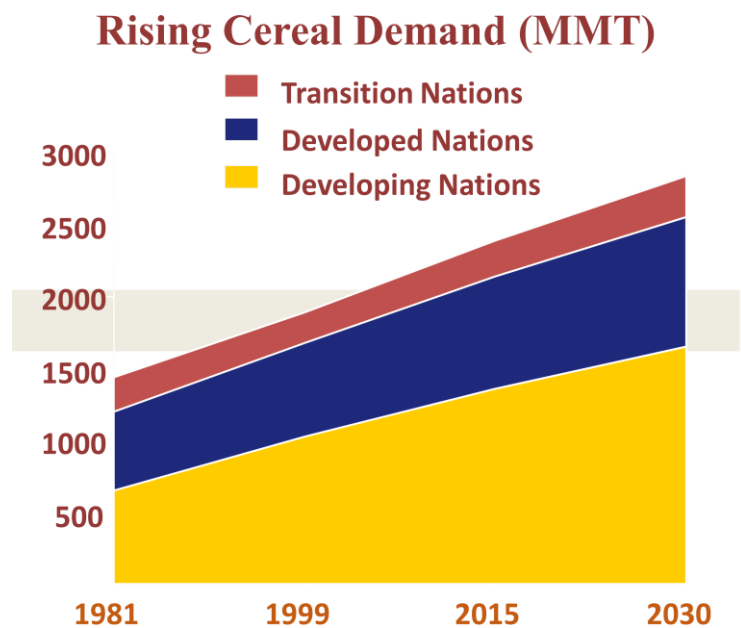


Figure 3. Rising Cereal Demand

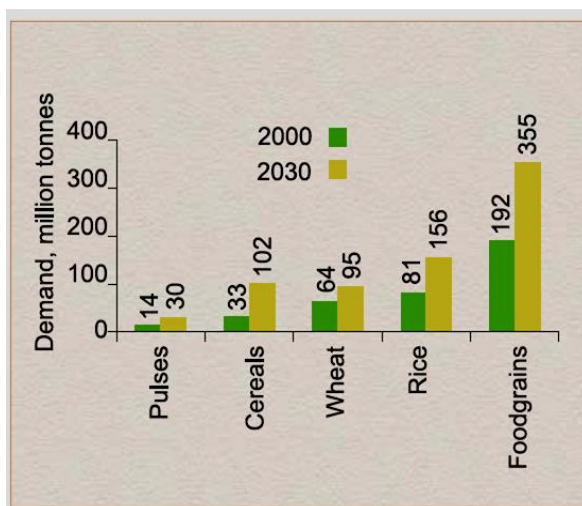


Figure 4. Demand of Seeds in 2030

By 2050 world's population will be 9 billion.
Urban population shall move up from 50 to 70 %.

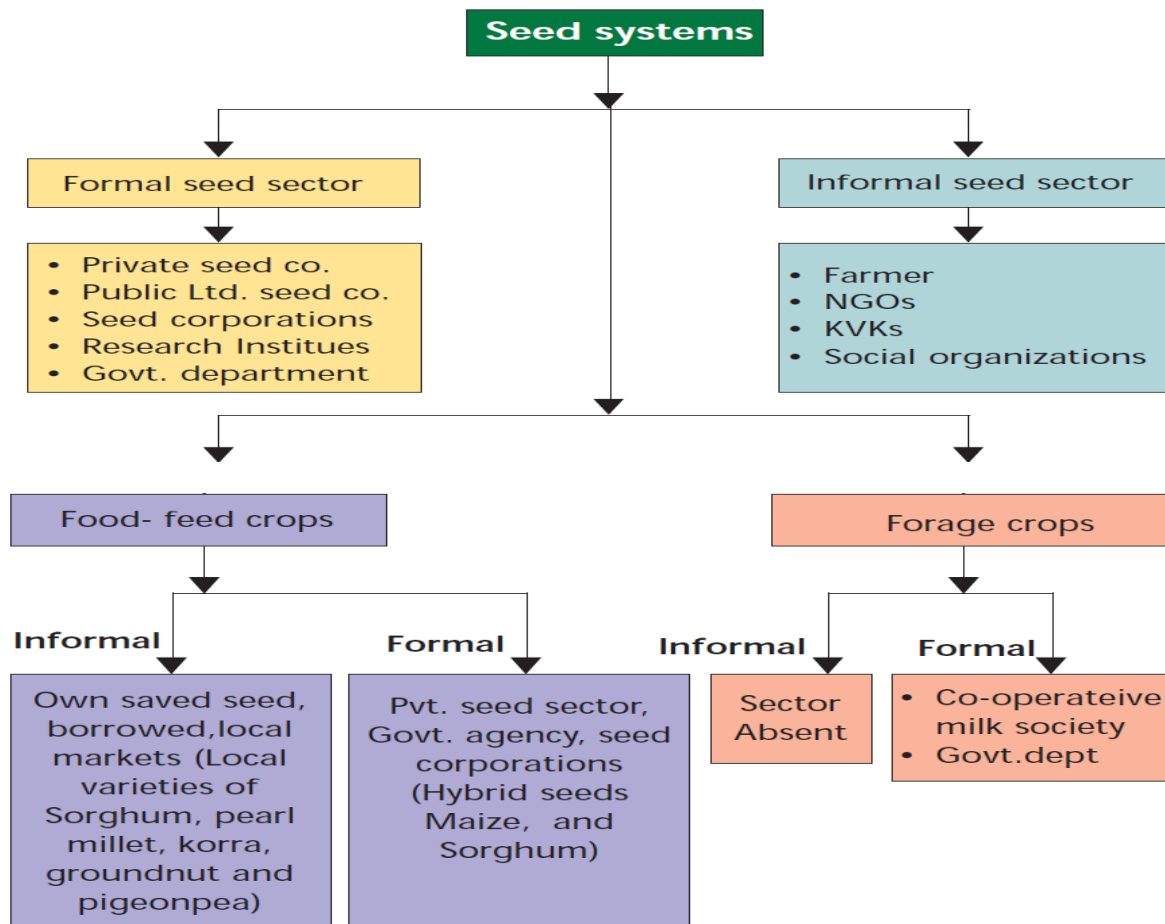
Arable acreage will not increase, i.e. same fields must produce 70 % more.

--- Hence at input level, one of the solution might be seed.

Figure 5. To 2050 Population growth estimate

Background of world status which shows need and demand of good quality Seed requirement to meet the growing population for the future years.

Seed System in India



Indian Seed Industry in India

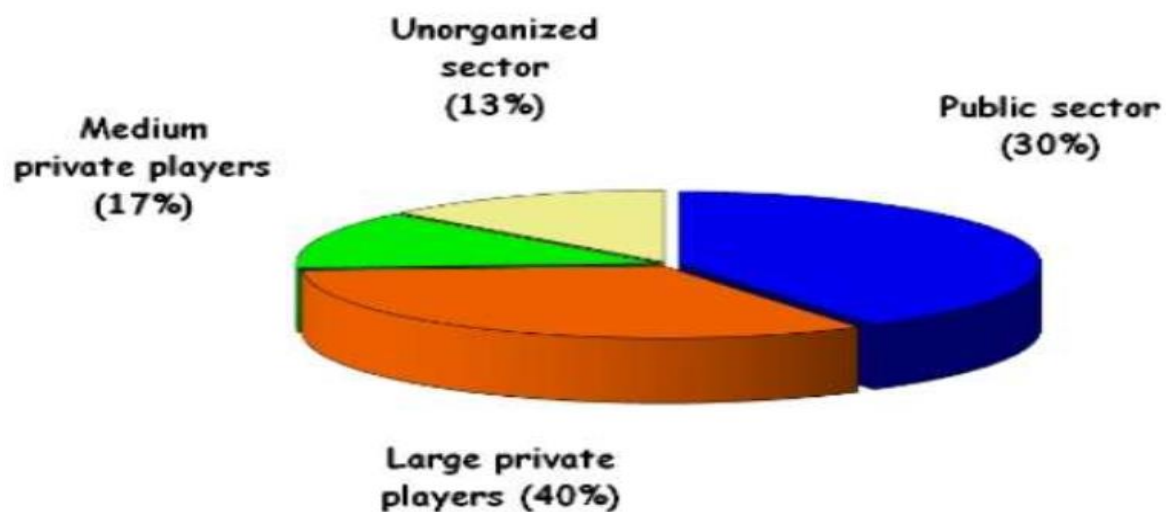


Figure 6.Share of different sectors of seed industry in India

Organized seed production and supply system operating in India

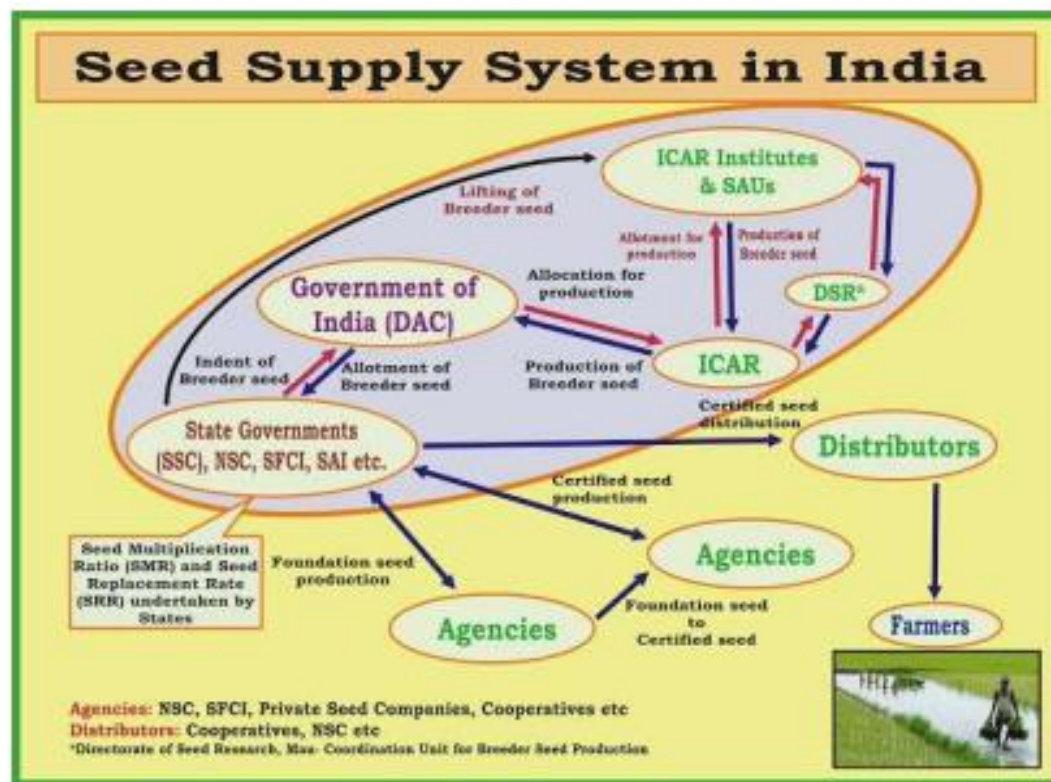


Figure 7. Seed supply system in India

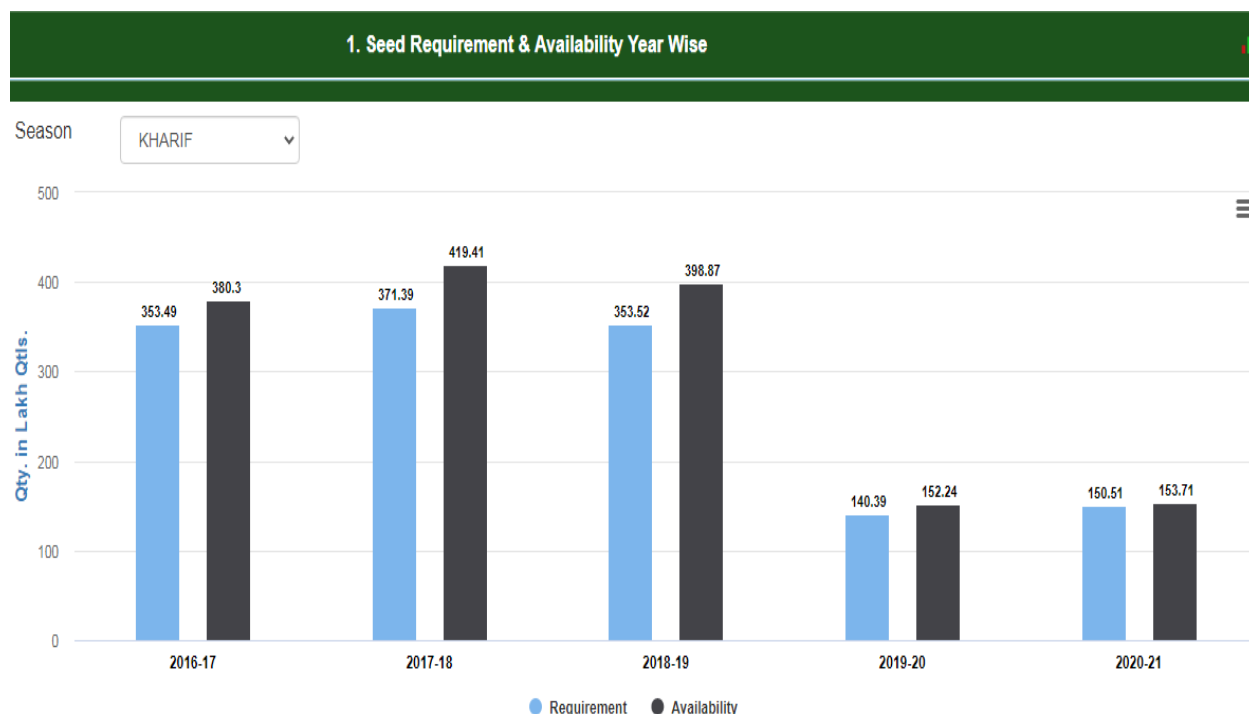


Figure 8. Seed requirement and availability in India

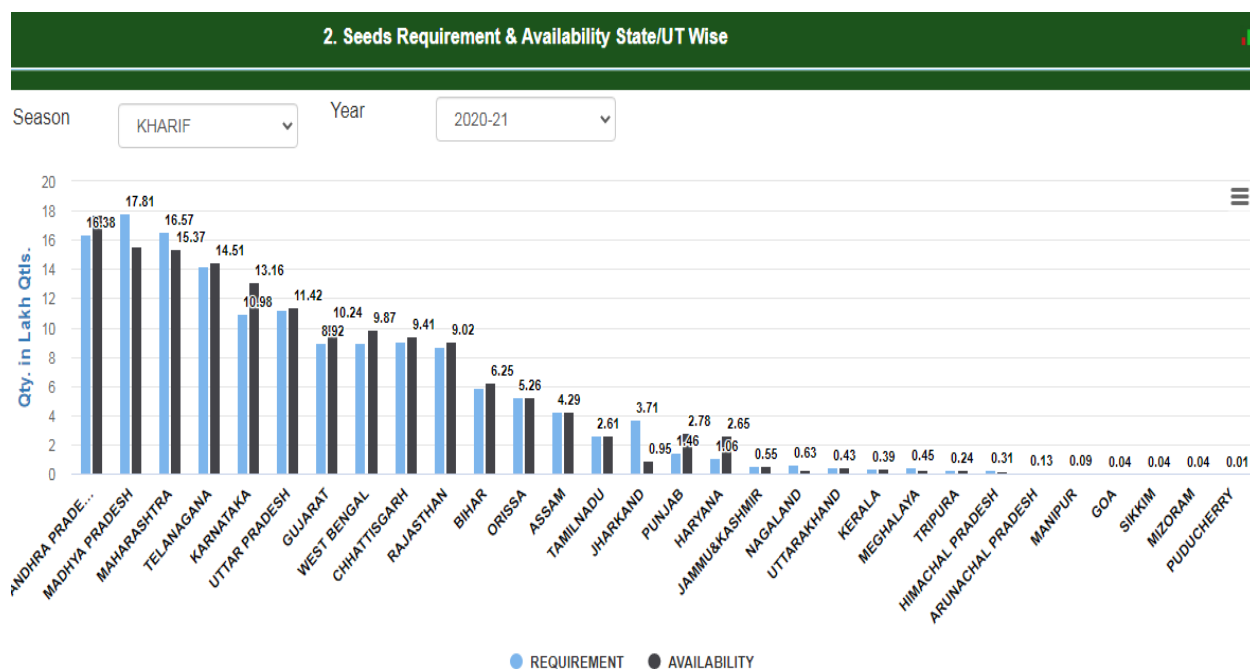


Figure 9. Seed requirement and availability state wise in India



Figure 10. Seed requirement and availability crop wise in India

Karnataka State Seeds Corporation Ltd.

Table 3. Marketed and sales turnover on year wise details of seeds by KSSC

YEAR	MARKETED QTY. IN QTLS.	SALES TURN-OVER (Rs. In Lakhs)	PROFIT BEFORE TAX (Rs. In Lakhs)
2006 – 2007	4,85,971	18,598.32	161.95
2007 – 2008	2,54,876	5,477.24	52.74
2008 – 2009	2,77,994	5,864.23	82.24
2009 – 2010	6,00,045	17,810.33	708.29
2010 – 2011	4,74,999	16,455.16	606.86
2011 – 2012	3,68,575	15013.68	659.51
2012 – 2013	3,96,194	20,583.89	993.32
2013 – 2014	2,89,133	16,382.85	365.39
2014 – 2015	3,72,172	15,329.74	65.37
2015 – 2016	3,52,610	15,114.17	408.62
2016 – 2017	2,96,036	15,759.39	179.63
2017 – 2018	3,54,120	17,152.09	125.53
2018 – 2019 (Provisional)	3,14,627	15,906.89	84.33
2019 – 20 (Budgeted)	4,20,495	20,245.00	150.06

Table 4. Seeds availability at Karnataka State Seeds Corporation Ltd.

SN	CROPS	VARIETIES
CEREALS		
1	HY. JOWAR	CSH-14, CSH-16,
2	RABI JOWAR	M-35-1, SPU-2217, BJV-44
3	HY. MAIZE	BRMH-1, COH(M)-8
4	FODDER MAIZE	African Tall
5	IMP. BAJRA	ICTP-8203, Dhanashakthi, ICMH-1301.
6	RAGI	GPU-28, GPU-48, GPU-67, MR-1, MR-6, ML-365, KMR-204, KMR-301, KMR-340, Indaf-7, Indaf-9, VL-352.
7	HY. PADDY	KRH-4
8	PADDY	Jaya, Jyothi, IR-64, Intan, Abhilash, Tellahamsa, BPT-5204, MTU-1001, MTU-1010, Uma, Tanu, MO-4, JGL-1798, JGL-11470, JGL-18047, IE KPR-1, KHP-10, KHP-11, GGV-05-01, RNR-15048.
9	NAVANE	DHFT-109-3, HMT-100-1.
10	SAME	DHLM-36-8.
11	WHEAT	DWR-162, UAS-304, UAS-415, UAS-428, GW-322, GW-273, MACS-6222, MACS-6478, DDK-1029, BHU-6, LOK-1.
PULSES		
12	COWPEA	C-152, DC-15,
13	GREENGRAM	BGS-9, DGGV-2, KKM-3, IPM-2-14.
14	BLACKGRAM	TAU-1, DU-1, DBGV-5, T-9, Rashmi
15	REDGRAM	BRG-1, BRG-2, BRG-4, BRG-5, ICP-8863(Maruthi), TS-3R, BSMR-736, WRP-1, GRG-811.
16	BENGALGRAM	A-1, JG-11, JAKI-9218, VIJAY, GEM-2, BGD-111-1.
OILSEEDS		
17	GROUNDNUT	TMV-2, GPBD-4, K-6, G-2-52, GKVK-5, KCG-6.
18	HY. SUNFLOWER	KBSH-41, KBSH-44, KBSH-53, DSFH-3, RSFH-1887.
19	SOYABEAN	JS-335, DSB-21.
20	SAFFLOWER	A-1, A-2.
FIBRE CROPS		
21	GREENMANURE	Sunhemp, Diancha.
VEGETABLE SEEDS		

Concept of Seed Village

Seed Village: It is a village, wherein trained group of farmers are involved in production of seeds of various crops and cater to the needs of themselves, fellow farmers of the village and farmers of neighboring villages in appropriate time and at affordable cost is called Seed Village.

The concept of Seed Village (Beeja Grama) during 2004.

The Seed Village Programme (SVP) is one of the most important components of the Sub-mission on Seeds and Planting Materials (SMSP) under Nation Mission on Agriculture Extension & Technology (NMAET) being implemented by Government of India from 2014-15 onwards.

The basic objectives of the Seed Village Programme are :

1. To improve the quality of Farm Saved Seeds
2. To increase the Seed Replacement Rate (SRR)
3. To enhance the horizontal spread of high yielding varieties among farmers for improving the productivity of crops.

Concept

- Organizing seed production in cluster (or) compact area
- Increasing the seed production
- To meet the local demand, timely supply and at reasonable cost
- Self sufficiency and self reliance of the village

II. A portfolio analysis of Seed Village Programme in India

Table 5. Physical progress of Seed Village Programme in India

Physical Progress of Seed Village Programme in India (2006-2007 to 2019-2020-upto 27.12.2019)		
Year	No. of Seed Villages Organized	Quantity of Seed Produced (In Lakh Quintals)
2006-2007	10778.00	22.96
2007-2008	18121.00	40.07
2008-2009	35212.00	58.01
2009-2010	69127.00	79.56
2010-2011	101067.00	161.55
2011-2012	89244.00	199.28
2012-2013	78943.00	116.71
2013-2014	68101.00	144.48
2014-2015	48004.00	193.71
2015-2016	29249.00	91.82
2016-2017	24093.00	56.99
2017-2018	100735.00	126.65
2018-2019	102631.00	207.00
2019-2020-upto 27.12.2019	18740.00	39.88

Note : The progress from most implementing agencies is yet to be received after crop harvest.

Source : Ministry of Agriculture & Farmers' Welfare, Govt. of India. (ON2298) & Past Issues

Table6.Statewise Funds Released, Utilised and Number of seed Villages Organised under Seed Village Programme in India (2011-2012 to 2014-2015)

Statewise Funds Released, Utilised and Number of seed Villages Organised under Seed Village Programme in India (2011-2012 to 2014-2015)												
(Rs. in Lakh)												
States/UT	2011-2012			2012-2013			2013-2014			2014-2015		
	Released	Utilised	No. of Seed Villages Organised	Released	Utilised	No. of Seed Villages Organised	Released	Utilised	No. of Seed Villages Organised	Released	Utilised	No. of Seed Villages Organised
Andhra Pradesh	3198.62	3941.77	12235.00	-	2176.55	8315.00	2951.64	2432.68	9277.00	821.00	1202.42	2535.00
Arunachal Pradesh	-	286.42	321.00	-	-	-	152.14	152.14	-	36.53	-	-
Assam	989.07	989.07	3202.00	-	-	1786.00	258.24	151.61	416.00	1855.96	586.86	1830.00
Bihar	1998.93	1296.85	6288.00	-	1000.12	2836.00	2061.33	1143.46	4491.00	638.83	483.28	2731.00
Chhattisgarh	200.00	149.17	1188.00	498.32	368.06	1375.00	266.59	443.84	869.00	626.85	364.05	706.00
Gujarat	5616.07	4112.95	8797.00	2177.35	2670.03	7638.00	751.05	816.69	2919.00	7.54	2.14	168.00
Haryana	961.81	379.71	939.00	0.92	161.95	470.00	1.32	35.11	115.00	1.52	-	-
Himachal Pradesh	342.15	342.15	956.00	525.00	523.01	1876.00	326.51	328.50	817.00	90.00	-	-
Jammu and Kashmir	183.06	249.08	1065.00	243.97	217.54	1297.00	598.96	488.63	2831.00	170.09	135.41	-
Karnataka	379.33	379.33	2051.00	293.89	266.44	1485.00	594.79	385.81	1365.00	-	68.86	766.00
Kerala	-	-	-	-	-	-	100.00	100.00	152.00	156.00	156.00	200.00
Madhya Pradesh	2869.30	4033.95	9402.00	3660.58	3778.19	9113.00	4421.08	4421.08	7127.00	975.05	862.29	1545.00
Maharashtra	-	280.73	1162.00	-	289.38	1108.00	185.18	164.00	266.00	954.18	-	695.00
Manipur	276.72	276.72	1936.00	-	-	-	-	-	-	0.00	-	-
Meghalaya	-	-	-	83.00	83.00	350.00	59.75	59.75	275.00	34.22	-	-
Mizoram	-	-	-	60.36	60.36	210.00	62.53	-	-	0.00	-	-
Nagaland	-	-	-	-	-	-	-	-	-	100.00	-	-
Odisha	-	-	755.00	1090.54	574.48	810.00	483.95	566.38	755.00	1668.41	-	-
Puducherry	-	-	-	-	-	-	-	-	-	0.00	-	-
Punjab	774.26	768.76	2000.00	750.26	754.69	1713.00	735.00	736.51	1577.00	270.00	-	2020.00
Rajasthan	-	58.24	380.00	-	50.64	558.00	1390.39	461.38	1589.00	659.89	929.01	2248.00
Sikkim	-	-	-	-	-	-	30.00	-	-	-	-	-
Tamil Nadu	2922.26	2863.74	4000.00	2843.74	2791.33	3726.00	1511.33	1905.74	2617.00	1288.24	1559.42	1925.00
Telangana	-	-	-	-	-	-	-	-	-	393.13	-	1363.00
Uttar Pradesh	919.82	844.91	24791.00	1380.91	945.56	23040.00	1681.61	1293.26	25141.00	1047.40	676.20	4628.00
Uttarakhand	-	-	6750.00	301.57	334.64	11957.00	-	234.34	5502.00	221.88	-	6507.00
NSC	-	-	-	-	-	-	-	-	-	0.00	-	-
India	21631.39	21253.53	88218.00	13910.42	17045.94	79663.00	18623.36	16320.89	68101.00	12016.72	7025.95	29867.00

Table 7. Selected State-wise Funds Released/Spent for Farmers Training and Number of Farmers Benefited/Trained on Seed Production and Technology under Seed Village Programme in India (2012-2013 to 2015-2016-upto 31.03.2016)

Selected State-wise Funds Released/Spent for Farmers Training and Number of Farmers Benefited/Trained on Seed Production and Technology under Seed Village Programme in India (2012-2013 to 2015-2016-upto 31.03.2016)							
(Rs. in Lakh)							
States/UT	2012-2013	2013-2014		2014-2015		2015-2016-upto 31.03.2016	
	Funds Released/Spent for Farmers Training	Funds Released/Spent for Farmers Training	No. of Farmers Benefited/Trained on Seed Production and Seed Technology	Funds Released/Spent for Farmers Training	No. of Farmers Benefited/Trained on Seed Production and Seed Technology	Funds Released/Spent for Farmers Training	No. of Farmers Benefited/Trained on Seed Production and Seed Technology
Andhra Pradesh	-	1103.67	70200	100.00	63375	90.53	24922
Arunachal Pradesh	-	19.50	6490	-	-	-	-
Assam	-	138.75	20860	690.00	596550	-	165300
Bihar	-	640.30	422560	49.00	429803	80.00	64750
Chhattisgarh	40.50	29.85	4646	31.20	184190	29.05	1361
Gujarat	420.00	247.43	79143	3.15	10581	-	-
Haryana	0.53	0.57	7844	0.62	208	0.41	96
Himachal Pradesh	45.00	27.51	9572	1.00	350	8.00	15000
Jammu and Kashmir	32.20	237.31	89350	67.50	48550	41.40	35000
Karnataka	23.14	27.03	53510	-	16148	3.00	6099
Kerala	-	-	-	-	30400	-	404
Madhya Pradesh	1415.56	1751.75	932235	221.55	522196	124.44	223150
Maharashtra	-	41.25	21015	50.00	52030	-	2406
Manipur	-	-	-	-	-	0.45	180
Meghalaya	1.65	1.65	1650	0.50	600	1.50	1650
Mizoram	9.00	9.00	30000	-	-	-	-
Nagaland	-	-	-	8.85	1110	4.50	3700
Odisha	137.55	223.50	75075	144.00	96000	-	-
Puducherry	-	-	-	-	-	0.15	100
Punjab	277.50	275.25	157700	54.00	92880	37.48	75000
Rajasthan	-	496.20	103948	170.73	132745	11.52	6113
Sikkim	-	6.00	2000	-	-	-	-
Tamil Nadu	363.74	200.00	200000	202.50	92400	202.35	243523
Telangana	-	-	-	196.80	48138	69.60	44575
Uttar Pradesh	466.70	494.55	409681	101.20	256822	179.98	22651
Uttarakhand	75.00	-	31027	30.72	13031	17.55	35100
India	3308.06	5971.06	2728506	2123.33	2688107	1107.22	971080

SEED VILLAGE PROGRAMME

To upgrade the quality of farmer's saved seeds (which is about 60-65%)

- ▶ Financial assistance for distribution of Foundation/Certified Seed available @ 50% for cereal crops and 60% of seed cost for oilseeds, pulses, green manure and fodder crops.
- ▶ Assistance on Farmers Training on seed production available @ Rs. 15000/group each of 50-150 farmers.
- ▶ Financial assistance is available for purchase of seed drums from Rs. 3500 to 5000 and on Seed Storage bins of 10 to 20 quintals capacity from Rs. 1000 to 3000.

CERTIFIED SEED PRODUCTION THROUGH SEED VILLAGE

Encouraging Certified Seed production of Pulses, Oilseeds, Fodder and Green Manure crops.

- ▶ Financial assistance for distribution of Foundation/Certified seeds @ 75% cost of the seeds.
- ▶ Assistance for training of farmers on seed production @ Rs.15000/ group.
- ▶ Assistance for 50% Seed Certification upto Rs. 600/ha.
- ▶ Assistance for seed storage godowns @ Rs.10,000 per sqm.

- The Seed Village Programme ensures supply of quality certified seed of notified varieties to the farmers in time at their places at affordable prices besides ensuring quick multiplication of new seed varieties in a shorter time in that Gram panchayath/Taluka /District level based on the crop situation.
- Compact area approach needs to be followed under this scheme. The number of farmers to be benefitted is minimum of 25 and also subject to a maximum of 150 for a unit of 10 ha.

Features:

- Organizing seed production in cluster (or) compact area
- Replacing existing local varieties with new high yielding varieties.
- Increasing the seed production
- To meet the local demand, timely supply and reasonable cost
- Self sufficiency and self reliance of the village
- Increasing the seed replacement rate

Benefits:

- ❖ Seed is available at the door steps of farms at an appropriate time
- ❖ Seed availability at affordable cost even lesser than market price
- ❖ Increased confidence among the farmers about the quality because of known source of production
- ❖ Producer and consumer are mutually benefited
- ❖ Facilitates fast spread of new cultivars of different kinds

Implementation of Seed Village Programme

The seed village scheme programme is having two phases

I. Seed production of different crops

II. Establishing seed processing unit

I. Seed Production of Different Crops

Seed village concept is to promote the quality seed production of foundation and certified seed classes.

The area which is suitable for raising a particular crop will be selected and raised with single variety of a kind.

Selection of Area:

1. Irrigation facilities
2. Suitability of climatic conditions to raise the crop for more than one season
3. Labour availability and Knowledge of local farmers on that particular crop
4. Occurrence or out break of pest and diseases
5. Past history of the area for suitability to raise seed crop
6. Average rainfall and distribution
7. Closeness to a urban area for easy movement of seed and other inputs

Seed Supply:

1. Suitable area for seed production will be identified by the Scientists.
2. The foundation/ certified seeds or University labeled seeds will be supplied by the University through Krishi Vigyan Kendras (KVKs) and Research Stations at 50% subsidy cost to the identified farmers in the area
3. The farmers will use these quality seeds and take up their own seed production in a small area (1 acre) for their own use
4. The crops are Rice, Pulses and Oilseeds

Capacity building:

Training to the farmers:

First one day training: At the time of sowing

Training on: Isolation distance, sowing practices, seed treatment and other agronomic practices.

Second one day training: During flowering

Training on: Identifying off types and removal, maintenance of seed plots, plant protection measures, maturity status and harvesting methods.

Third one day training: After harvest

Training on: Seed cleaning, grading, seed treating, bagging and storage aspects, seed sampling and sending to seed testing laboratory for analysis.

A seed grower forum will be organized for further empowerment of technology and marketing

II. Establishing Seed Processing Unit

- Post-harvest seed handling
- Marketing of available good quality seeds of improved varieties
- Seed processing and packaging is very important aspect in seed production
- Location of seed processing centers is based on the available infrastructure and convenience
- Well connected with roads and transportation facilities

Infrastructure need for seed processing unit

- Seed garden cum clearer
- Bag closer, trolleys, scales and furniture
- Building to house equipment
- Seed storage structure
- Seed threshing and drying yard
- Information centre

Storage structure used by farmers to save seeds

- Wooden structure
- On farm storage
- Drum storage
- Bamboo mat bins
- seed storage huts
- Moshti is a seed storage container made out of bamboo
- Onions stored in a cool area near the house.
- Kothi storage bin it is used in Gujarat
- Under ground storage
- Mankattai (Mud house)
- Kulukkai (Earthen bin)
- Thallpai (Straw bin)
- Thombai (Bamboo bin)

Implementing Agencies

- ✓ State Departments of Agriculture
- ✓ State Agriculture Universities
- ✓ Krishi Vigyan Kendras
- ✓ State Seeds Corporation
- ✓ National Seeds Corporation
- ✓ State Farms Corporation of India (SFIC)
- ✓ State Seeds Certification Agencies
- ✓ Department of Seed Certification

One implementing agency will be identified for the area/locality and is to be authorized by the State Government.

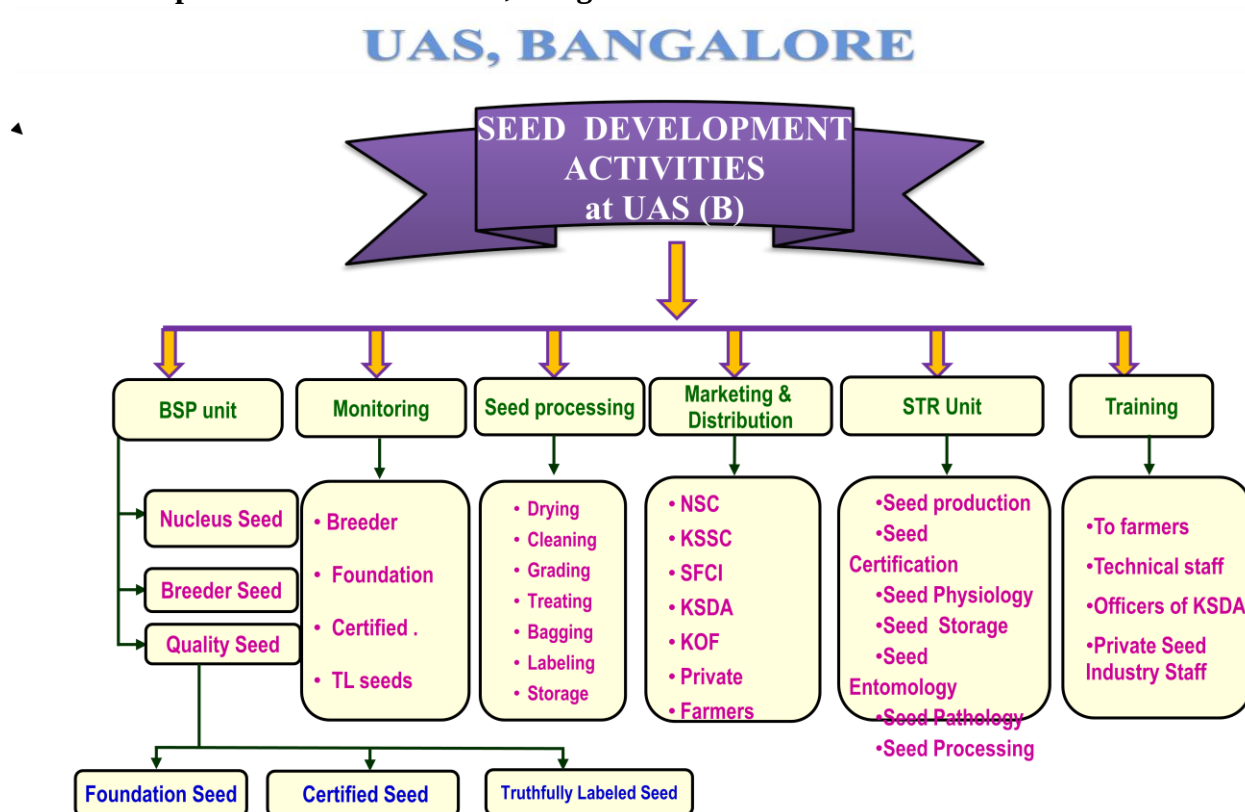
Constraints Faced by the beneficiaries in obtaining benefit of the programme

1. Inadequate supply of seeds,
2. Lack of regular guidance and training programme,
3. Lack of extension services,
4. Lack of knowledge about the programme,
5. Lack of knowledge about seed production,
6. Lack storage facility,
7. No cooperation with neighbours,
8. Lack of sufficient finance for programme,
9. Lack of information about loan and subsidy and
10. Lack of soil testing information.

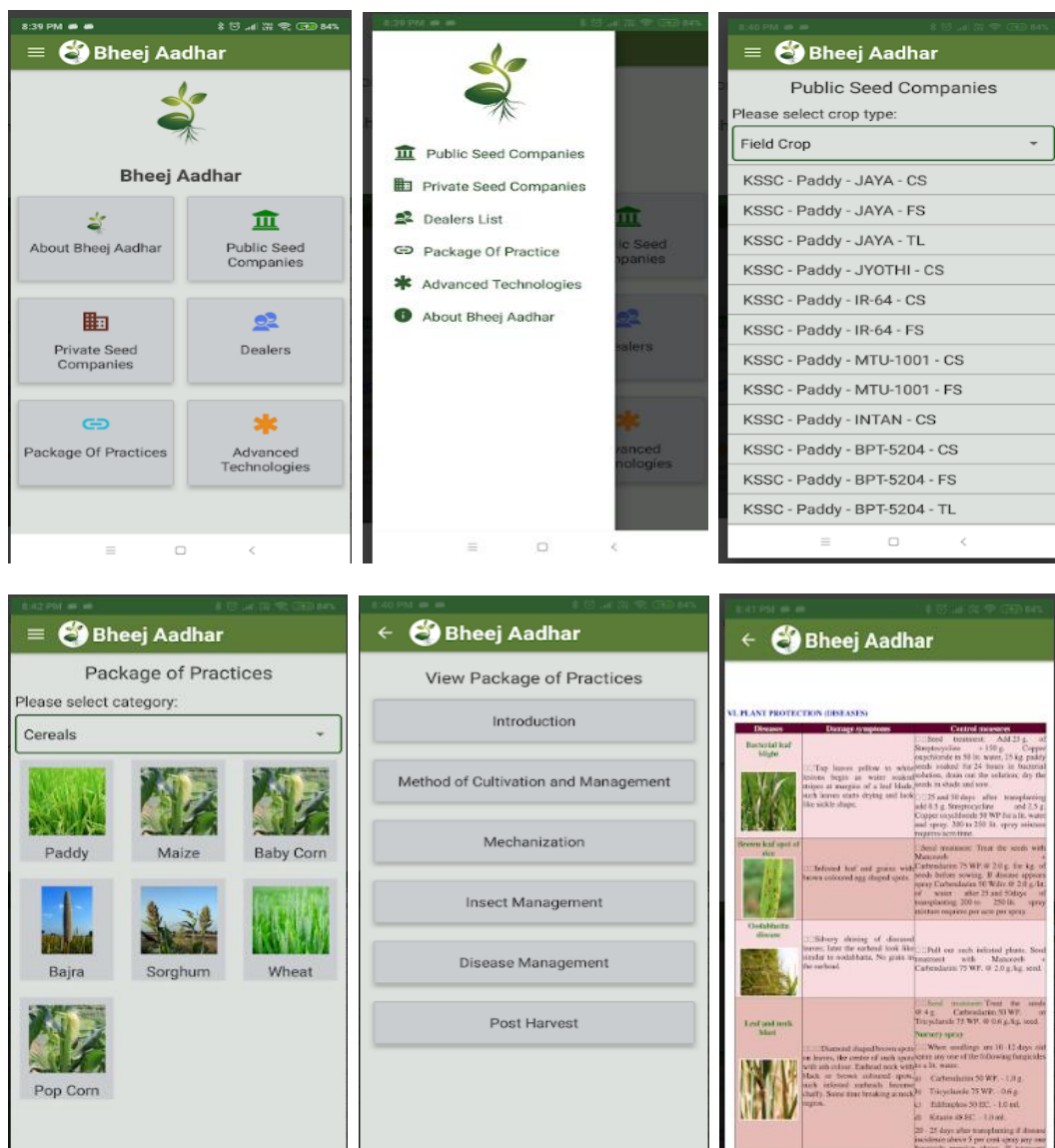
Extension Interventions for effective implementation of Seed Village Programme

- Crop Based Extension
- Institution Based Agricultural Extension
- Project Based Extension
- Training and technical guidance
- Cost sharing Extension
- Participatory Extension

Seed Development Activities of UAS, Bangalore



Bheej Aadhar App



UAS , BANGALORE SEED PROJECTS

National Seed Project

National Seed project (NSP) was started during the year 1979-80 with the financial assistance from World Bank of Rs.1.68 crores with a grant-in-aid of Rs.45 lakhs from GOI. With this assistance, the University has established two seed processing units, one at GKV, Bangalore and another at ARS, Kathalagere with a seed processing capacity of 5 and 10 qtls/hour respectively. In addition, the storage facilities were also established to accommodate around 15,000-20,000 qtls of seeds. Further, NSP was strengthened under Mega Project by providing additional seed processing plant, storage and production facilities with the following objectives.

- Production and supply of Breeder seeds as per the indent of GOK, GOI and Private Seed Agencies.
- Production and supply of quality seeds under Scientists-Farmers Participatory Seed Production Programme on Seed Village Concept.
- To conduct Research on Seed Technology aspects.
- To conduct training programmes on seed production, processing, testing and storage

The university is organizing seed production in large scale since three years and planned to produce 36,000 quintals during the year 2007-08.

Objective of BSP

1. Production and supply of Breeder seeds as per the indent of GOK, GOI and Private Seed Agencies.
2. Monitoring of Breeder seed production

Different Schemes operating under NSP:

Breeder Seed Project: The Breeder Seed Project funded by Govt. of India 75% and 25% from state Govt. Its main mandate is to produce quality Breeder Seed as per the indent received from the Govt. of India for national varieties and from Govt. of Karnataka for state varieties. The Breeder seeds are being produced at main and other satellite centres of the university.

Seed Technology Research:

The centre established during the year 1980 with the financial assistance from Govt. of India 75% and 25% from state Govt. The mandate of the centre is to conduct research on seed technological aspects like seed production & certification, seed physiology and storage, seed pathology, seed entomology, seed processing, and seed marketing.

III. To review the research studies related to Seed Village Programme of India

1. “Impact of Seed Village Programme on soybean among the beneficiary farmers of Bhainsdehi block of Betul district of Madhya Pradesh” Varsha More (2016)

He found that, the data obtained from the Department of Farmers welfare and Agriculture Development, Betul that the Seed Replacement Rate of Soyabean was 11.50 per cent before the Seed Village Programme. However, after that Seed Village Programme was started the Seed Replacement Rate of Soyabean in Bhainsdehi block of Betul district is 30.12 per cent as compare to old Seed Replacement Rate.

2. “A study on Impact of Seed Village Programme among the beneficiary farmers of Chhagoan Makhan block of Khandwad district of Madhya Pradesh “ Shayamlal Hoshale(2015)

She has reported that, the productivity of wheat crop is absolute changed after the implementation of the programme. The absolute change of wheat crop is 8.10 q/ha. During the year 2010-11 in Khandwad the Seed Replacement Rate of wheat was 14.50 per cent, but after that Seed Village Programme was started, the seed replacement rate has improved. The current Seed Replacement Rate of wheat in Chhagaon Makhan block of Khandwad district is 30.12 per cent, which is better than old Seed Replacement Rate.

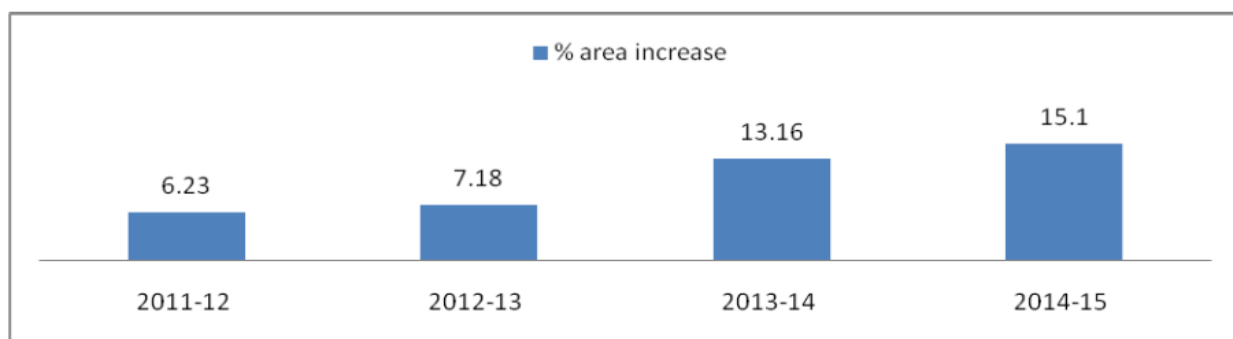
3. “Seed Village Programme - A Boon to the Rice Growing Farmers for Variety Replacement with Economic Stability” G. Narappa *et. al.*(2018)

Table 8. Distribution of Gangavatisona variety from 2011 to 2015 under SVP

Sl. No.	Year	Name of the District	Number of Villages	Qty (q)	Total No. of Farmers
	2011-12				
1		Koppal	16	271.5	1086
2		Raichur	2	25.75	103
3		Bellary	2	28	112
		Total	20	325.25	1301
	2012-13				
1		Koppal	1	12.5	50
2		Raichur	2	28	112
3		Bellary	1	10	40
		Total	4	50.5	202
	2013-14				
1		Koppal	8	64.5	258
2		Raichur	15	190.75	893
3		Bellary	4	76.5	186
4		Yadgir	1	12.5	50
5		Davanagere	1	5	20
		Total	29	319.25	1407
	2014-15				
1		Koppal	1	7.5	30
2		Raichur	7	75	300
3		Bellary	2	21.25	85
		Total	10	103.75	415

Table 9. Horizontal spread and economics of Gangavatisona variety under SVP

Year	Qty of seed distributed (q)	Seed spread farmers To Farmers Approx. q x 2 season	Total seed Spread /distributed (q)	Total Area coverage (ha)	Cumulative Area coverage	Variety replacement rate (out of 3.5 lakh ha of TBP area) (%)	Average grain yield of 72 q/ha	Average rate per q. (Rs.) of Paddy	Anticipated economic benefit to the farming community (Rs) Value realized (Rs)
2011-12	325.25	13315	13640	21824	21824	6.23	1571328	1300	2042726400
2012-13	50.5	2020	2070	3312	25136	7.18	238464	1400	333849600
2013-14	319.25	12770	13089	20942	46078	13.16	1507824	1400	2110953600
2014-15	103.75	4150	4254	6806	52884	15.10	490032	1400	686044800
Total	798.75	32255	33053	52884			3807648	5500	5173574400

**Figure 11. Cumulative area coverage of Gangavatisona over the year**

They revealed that the Seed Village Programme revealed that out of 3.50 lakh ha in TBP rice cultivable area, the new variety Gangavathisona (GGV-0501) occupies 15.10 per cent area during 2014-15 as nil during 2011-12 and a substantial increase in the yield of improved rice variety GGV-0501 yielded 25 to 30 q/ha in salinity stress area as compared to predominant prevailing variety BPT 5204 with yield of 15 to 20 q/ha. The results also showed that high rate of horizontal spread of new variety seeds to more farmers and farmer's willingness to adopt new technologies. And new variety gave financial confidence to the farmers also good to produce twice as it is dual as it grow both in kharif as well as in summer season.

IV. Conclusion:

The seed village programme is best for better production and use of locally available seeds by farmers at village level by reducing cost of cultivation and reducing the dependency on outsource. The farmers produced seeds can be stored scientifically and better channelization of excess seed produced through proper marketing linkage through group and area approach. The public-private partnership mode can also be explored in encouraging the seed production at village level and in making seed village programme as an enterprise for economically viable for the farming community.

V. References:

G. NARAPPA, R.B. NEGALUR, D.H. ROOPASHREE AND G.S. GURUPRASAD.,2018,Seed Village Programme - A Boon to the Rice Growing Farmers for Variety Replacement Economic Stability, *International Journal of Current Microbiology and Applied Sciences* 7(4): 3862-3868.

SHAYAMLAL HOSHALE., 2015, A study on Impact of Seed Village Programme among the beneficiary farmers of Chhagoan Makhan block of Khandwad district of Madhya Pradesh, *M.Sc.Thesis(unpub.)*, Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur.

VARSHA MORE., 2016, Impact of Seed Village Programme on soybean among the beneficiary farmers of Bhainsdehi block of Betul district of Madhya Pradesh, *M.Sc.Thesis (unpub.)*,Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur.

<https://seednet.gov.in/>

www.indiastat.com

VI. Questions Asked in the Seminar

1. In the UAS, Bangalore who is the person worked on seed village concept?

In the UAS, Bangalore Dr.Pillegowda , Professor of Agriculture Extension is being worked on Seed Village concept.

2. What are the tag colours of seed bags of different seeds produced by the UAS, Bangalore?

It is been explained about for breeder seed-golden yellow colour, foundation seeds-white colour, registered seeds-purple colour and certified seeds-blue colour and for truthfull label seeds-pale green colour are being tagged for better identification and the indication of genetically purity and physical purity.

3. How many seed villages are in Karnataka?

The total seed villages in Karnataka are nearly of 18500 as per the data is available and in India it is of 794045 total villages covered under seed village programme.

4. How the seed village programme minimizes the demand of seeds during sowing season?

As the seed village programme is mainly focused on quality seeds production at local levels and the self sufficiency and self reliance is the prime motto of seed village concept and minimizing the dependency about seeds on out source. Hence this will help to minimize the demand of seeds during sowing season.

5. Different extension Interventions for better implementation of seed village programme?

The different extension interventions may be followed like Crop Based Extension, Institution Based Agricultural Extension, Project Based Extension, Training and technical guidance, Cost sharing Extension and Participatory Extension are better for better implementation of the programme.

6. Which is the source of data presented about the seed status in India?

The seed status in India was collected from the online source from the web seednet.gov and Indiatat.com which is published by the Ministry of Agriculture and Farmers Welfare.

7. How the seed village programme is helping the potato farmers in getting quality seeds?

The seed village programme is helping the farmers by producing them self quality seeds under better assistance from government and the officials and will inturn it will help the farmers to depend less on outsource by paying more price to seed tubers.

8. What are the different activities of UAS, Bangalore with respect to seed ?

As UAS, Bangalore is doing wide range of activities in seed production, marketing ,training, certification, development of bheej aadhar mobile app for better use and producing various kinds of breeder, nucleous, foundation seed, certified seeds, truthful labeled seeds and also other activities. These aspects covered in the presentation.