



AN ANALYSIS OF DIVERSIFICATION OF AGRICULTURAL CROPS IN HARYANA

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Haryana has been playing a very leading role in the agricultural prosperity of the country since its inception. Haryana alongwith Punjab spearheaded the Green Revolution, used high-yielding varieties of seeds and thus, enabled to cope with the acute food deficit from 1960. With the ushering in of high level technology, seeds of high-yielding varieties, research and development alongwith the active cooperation of the govt., Haryana attained agricultural prosperity. In the coming years, state registered a remarkable hike in per hectare production, thus, played a vital role in making India a self-sufficient country in wheat and rice. Presently more than 80% of the total land is under sustainable cultivation and 83% is sown more than one time.

The present paper is undertaken to ascertain the prospects and challenges posed by the diversification of agricultural crops in Haryana and how much success it has achieved. This paper envisioned the following objectives, considering that the changing cropping pattern is decided by the interactive effects of several factors.

1. To determine the status and the extent of crop diversification in the state.
2. To make an analysis of the effects of physical, socio-economic and technological factors on crop diversification.
3. To assess the status of the utilization of cropping intensity and crop diversification schemes.
4. To examine the farmer's perception about challenges emanating from infrastructure and institutional factors in the process of diversification of crops.



5. To examine critically the viability of cropping diversification in the context of household requirements including self-sufficiency, investment capacity, training of farmers.
6. To enable the policymakers to focus upon specific issues and challenges and take some necessary and solid steps to make crop diversification in Haryana viable and successful.

Realizing the necessity and importance of the diversification of agricultural crops in recent years, the Govt. of Haryana has framed a number of schemes and programmes to address the ongoing market insecurities among the farming community and to promote crop diversification. The state govt. has boosted maize production to reduce the area under water guzzling paddy crop. Under the State Agriculture Policy, the state initiates to acquire value based additions and to ensure sustainable plan in its operation to restrict the negative consequences of mono-cropping in the state.

The Haryana KisanAyog was constituted to address the problems being faced by farmers. The Commission supplies seeds, fertilizers, farming equipment at subsidized prices to farmers to raise productivity and fertility and to ensure handsome returns to farmers.

Moreover, farmers are motivated by the Haryana Kisan Aayog in the form of cash prizes, by organizing training camps, exhibitions, Krishi Melas and educational tours for farmers. The state agriculture commission helps the farmers through research and development by launching awareness drives, by organizing farm trainings and also through crop insurance.

Under the State Agriculture Policy, farmers are provided uninterrupted power supply for eight hours a day to improve the overall condition of farming, promote horticulture and animal husbandry in the state. The policy aims to affect major reforms in agricultural economy by improving credit systems and introducing safety nets to help the farmers growing vulnerable crops.

In the early 2016, Agriculture and Farmers' Welfare Dept. Haryana notified that 10 crops will be insured under the Prime Minister Crop Insurance Plan.

Modern equipment such as smart phone and remote sensing technique will be deployed to facilitate the proper working of the plan. The plan covers all the districts. The scheme is effective and operative in case of the following four situations.



- i. If sowing is not carried out due to adverse seasonal conditions, for instance, due to poor rainfall.
- ii. If the standing crop is considerably damaged due to unavoidable events such as drought, floods, pest and diseases, landslides, natural fire and lightening, storms, hailstorms, cyclones etc.
- iii. If harvested crop is damaged due to cyclone, cyclonic rain and unseasonal rain.
- iv. Even if individual farms are affected due to hailstorm, landslides and flood.

It was expected that rural poor people would try for institutional loans instead of taking very expensive loans from the local money lenders if their accounts are opened in banks and they have access to banking facilities.

Soil samples collected from different districts are listed to ascertain their mineral composition. On the basis of the scientific analysis of the soil, experts make suitable suggestions to augment the overall yield. Crop diversification is facilitated if the nature of the soil is understood properly and it also help in enhancing the overall yield of pulses, maize and oil seeds.

TABLE:1
TREND OF CROP INTENSITY IN HARYANA (000 hectares)

Year	Net area sown	Area sown more than once	Total cropped area ¹ (includes double cropping)
1980-81	3602	1860	5462
1985-86	3613	1988	5601
1990-91	3575	2344	5619
1995-96	3586	2388	5974
2000-01	3526	2589	6115
2005-06	3566	2943	6509
2007-08	3594	2864	6458
2008-09	3576	2924	6500
2009-10	3550	2801	6351
2010-11	3518	2987	6505
2011-12	3512	2976	6489
2012-13	3513	2863	6376
2013-14	3497	2974	6471
2014-15	3522	3014	6536

Source: Statistical Analysis of Haryana (various years)

Table 1 shows the trend of crop intensity in Haryana. In 1980-81 there was total cropped area 5462 in which 3602 and 1860 respectively net area sown and area sown more than once. In 2000-01 there was total cropped area 6115 in which 3526 and 2589 respectively net area sown and area sown more than once. In 2010-11 there was 6505 in which 3518 and 2987 respectively net area sown and area sown more than once. In 2014-15 there was 6536 in which 3522 and 3014 respectively net area sown and area sown more than once.

TABLE – 2**TOTAL CROPPED AREA (000 hectares)**

Year	Rice	Wheat	Maize	Barley	Bajra	Oilseeds	Cotton	Pulses
1980-81	483.9	1479	71.3	124.5	870.3	311.2	316.2	794.8
1985-86	584	1701.3	54.9	87.7	649.5	380.1	344.1	846.3
1990-91	661.2	1850.1	34.8	50.5	608.6	488.5	490.6	742
1995-96	830	1972.1	26	40.6	575.2	611.0	651.8	449.8
2000-01	1054	2354.8	15.4	44.1	608.3	414	555.4	157
2005-06	1046.6	2302.7	17.5	28.2	631	735.8	583.8	195.3
2006-07	1042	2377.1	13.4	37.7	619	616.2	527.7	169.3
2007-08	1072.5	2460.7	13.8	39.5	628	511.3	482.5	172
2008-09	1211.2	2461.4	11.8	53	612.9	527.6	456.1	184.1
2009-10	1206.4	2487.7	12.2	42.1	583.8	523	505.1	131.6
2010-11	1243.3	2504	9.6	37.3	659.6	521	493.3	175.6
2011-12	1234.1	2531.3	11	41.2	576.2	754.8	601.8	123
2012-13	1206.3	2496.9	9.9	47.7	410.7	567.6	592.6	75.3
2013-14	1244.6	2499.1	8.5	38.6	403.6	548.5	567.8	105.3
2014-15	1277.9	2628.1	8.8	35.3	393.8	495.4	647.2	83.8

Source: Statistical Analysis of Haryana (various years)

Table 2 shows total cropped area. In 1980-81, 2000-01, 2010-11 and 2014-15 there was 483.9, 1054, 1243.3 and 1277.9 respectively total cropped area under rice. In 1980-81, 2000-01, 2010-11 and 2014-15 there was 1479, 2354.8, 2504 and 2628.1 respectively total cropped area under wheat.

In 1980-81, 2000-01, 2010-11 and 2014-15 there was 71.3, 15.4, 9.6 and 8.8 respectively total cropped area under maize.

In 1981-81, 2000-01, 2010-11 and 2014-15 there was 124.5, 44.1, 37.3 and 35.3 respectively total cropped area under barely.



In 1981-81, 2000-01, 2010-11 and 2014-15 there was 870.3, 608.3, 659.6 and 393.8 respectively total cropped area under bajra.

In 1981-81, 2000-01, 2010-11 and 2014-15 there was 311.2, 414, 521 and 495.4 respectively total cropped area under oilseeds.

In 1981-81, 2000-01, 2010-11 and 2014-15 there was 316.2, 555.4, 493.3 and 647.2 respectively total cropped area under Cotton.

In 1981-81, 2000-01, 2010-11 and 2014-15 there was 794.8, 157, 175.6 and 83.8 respectively total cropped area under pulses.

In 2014-15 the Government of Haryana initiated schemes to facilitate diversification for the first time. The Plan of Action 2016-17 fixes the target to replace paddy with other crops such as maize, cotton, wheat, and agro-forestry by the end of 2017. Replacement of paddy by maize is being promoted in a big way. For this purpose maize seeds are to be distributed free among the farmers.

To facilitate crop diversification, in the state, cotton and agro-forestry based seeds are given to farmers at subsidized rates and financial aid is also given to farmers to purchase mechanized farming equipment.

Conclusion And Policy Implications:

Alternative crops must be procured on time and rejection should be negligible. Violent fluctuations of market prices for pulses should be minimized. There should be MSP for all those crops which are intended to be promoted against paddy. MSP should be revised frequently. Rational and controlled demand driven cultivation should be encouraged so that farmers may be able to reap profits easily. Various schemes must be scrutinized collectively by various depts. to avoid unnecessary repetitions and wastage of scarce resources.

An inter-departmental panel/committee should be set up to improve inter-depart communications. It should convene a meeting every six months to discuss the various schemes and programs at length to ensure smooth and well-co-ordinated implementation of all schemes.



Contract farming needs to be implemented properly, safeguarding the interests of the farming-community. Co-operative groups like farmer, producer organizations should take steps to protect the interests of farmers on the basis of the principles of co-operative movement.

Farmers need to be provided adequate guidance regarding progressive agricultural practices based on contract and co-operative farming by organizing Kisan Mela at district and block levels.

An Area Specific Agricultural plan should be prepared to encourage area specific cropping and also processing units. If this is done, the problem of procurement and MSP will ease considerably. Specialized agricultural zones for specific crops should be developed. Farmers can compete with big players by having a collective approach by forming Farmers/Producers Organization or co-operatives.

Investments made by farmers on farm inputs should be reimbursed immediately. Computer sets with internet facility should be given to agriculture extension officers to facilitate online registration under various agricultural schemes. Educated Village Youths should take active interest in such plans.

Agricultural implements needed for sowing operations are used for a short-period of almost a month. Purchasing of such implements by each farmer is unviable.

Block level crop demonstration targets instead of district level targets should be set up to promote diversification programmes more effectively.

Ground level agricultural officers should be provided adequate infrastructural support in terms of proper office space, vehicles, support staff, computer sets etc. to improve their efficiency and performance. Better procurement system and adequately enhanced MSP can help the state to implement an inclusive and holistic Action Plan.

Strict action must be taken against those who indulge in stubble burning as it damages the fertility of the soil and causes air pollution. Agro industries have tremendous scope in the state. Such industries should be promoted to generate employment opportunities and to increased farmers income. The promotion of allied sectors such as dairy, fishery and piggery could also help promote crop diversification.



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