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CHANGE IN AGRICULTURE PATTERN OF CHARKHI DADRI DISTRICT DUE TO AGRICULTURE MODERNISATION

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Abstract

Agricultural pattern of Charkhi Dadri district mainly affected by new agricultural technology and population growth.Physical factors affect number of crops distribution and production. Major crops in Charkhi Dadri district are grown Rabi and Kharif crop.As a result of the change in the agricultural techniques, changes in the agriculturist characteristics have been studied.It is necessary to study the present state of the region when farm development strategies are to be formulated in a particular area.This research paper based on secondary data of seven years from 2011 to 2017.Study of Charkhi Dadri district of Haryana has been made a comparative study of crop intensity , crop combinations and crop sequence are displayed.

Introduction

Crop pattern is a proportionate area under deferent crops at a particular point of time .The major factor determining the crop format is soil fertility.Crop format depends on various factors such as surface nature, slope nature, temperature, rainfalls amount, soil nature, water availability for irrigation and new techniques.Crop diversification will also be found to be less present wherever there is natural diversity in the world are less. Such as Sindhu Ganga plain Wheat production in Punjab and Haryana.So the crop format depends on soil fertility. Agriculture format in Haryana changed primarily after the green revolution in 1965 - -66. After which consistent agriculture leads to modernization. Nanotechnology,GPS, information technology,new variety development, new irrigation techniques, advanced seed, chemical fertilizer and insecticide are used in crops and automatic machines are used in agriculture. Which reduces the dependencies of food on the other country.

Study region

Charkhi Dadri city was inhabited by king Bilhan Singh .It was carved out of Bhiwani and created a new district in 2016.It is located in southern Haryana.It is located on National Highway 148 B which goes from Narnaul to Bathinda . Chakhi Dadri is the second district of Haryana after Rohtak which does not seem to have a border of another state district.

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altitude extension is 28.5921°N & longitudinal extension is 76.2653° E . According to copen climates distribution this district has hot and semi arid zone that mainly sandy soil area. As per to census 2011 population of Charkhi Dadri district is approx 5 lakh.

Objective

The objective of the research paper is study of changing agriculture patterns in Charkhi Dadri district.

Database and Methodology

Based on statistics of District statistics summary Bhiwani and Charkhi Dadri form the year 2011 to 2016 have been created . Secondary data has been used to study the agricultural model of the district

Result and Discussion

Crop intensification-. The pattern of farming which is followed in an agricultural year in a particular area is called crop intension. Which includes gross crop area I.e. the frequency of crop produced which is expressed in percentage the higher percentage will be higher the crop intensity. The crop intensity will be 100% if produced one crop on the whole field in the whole year if crop produced two times the crop intensity is 200% if crop produced 3 times then crop intensity is 300%. Crop intensity is minimum 100 and maximum 300 percent. To take out crop intensity of Charkhi Dadri district use the secondary data of year 2011 to 2017.

Table – 1: Crop in Intensity in Charkhi Dadri District 2011 to 2017

Year	Gross sown area (in hectare)	Net sown area (in hectare)	Crop intensity
2011-12	226800	113400	200
2012-13	217900	122600	177.7
2013-14	216000	115000	187.8
2014-15	223000	115000	193.9
2015-16	232000	115000	201.7
2016-17	232000	115000	201.7

Source: Computed by Authors

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Formula to measure crop intensification

$$\text{Crop intensity index} = \frac{\text{gross sown area.}}{\text{Net sown area}} \times 100$$

The higher Crop intensity,the land use will more increase. Gross sown area in district is 226800 hectare in 2011-12and net sown area is 113400 hectare with its crop intensity found 200 percent. Like to be in 2016-17 gross sown area is 232000 hectare and net sown area is 115000 hectare that crop intensity is 201.7 percent recorded. The continuous increment is recorded in crop intensity after 2012.

Crop Order

The pattern of farming which is followed in an agricultural year in an agricultural field is called crop order. It is necessary to know the crop order of an area to study of agriculture patterns. In crop order in the study area at primary level, main crop , main crop at secondary levels, main crop at tertiary level and per hectares production is represented in table 2. It is clear from the table that in the year 2011, Mustard was the first order Millet 2nd order and Wheat 3rd grade crop. In 2012-13 Mustard was the 1st order crop, Wheat was the 2nd order crop and Millet was the 3rd order crop . Continue to year 2013 to 2017 retained Wheat first order crop , Mustard 2nd order crop , Millet 3rd order crop. That crop order are change by new irrigation technique and agriculture modernisation.Wheat in 2011 included 3rd order crop it got 2nd order crop in 2012 and it got 1st order crop continuously in 2013 to 2017.

Table – 2: Area and Production on the Basis of Crop Order and Agriculture Area

Year	1st order	Area (in hectare)	Production (tons)	2nd order	Area (in hectare)	Production (tons)	3rd order	Area (hectare)	Production (tons)
2011-12	Mustard	61900	74100	Millet	52600	94800	Wheat	51500	226400
2012-13	Mustard	39100	64100	Wheat	35300	138800	Millet	18300	24100
2013-14	Wheat	54200	220000	Mustard	53000	57000	Millet	34000	54000
2014-15	Wheat	63400	21000	Mustard	33900	51000	Millet	31400	36000

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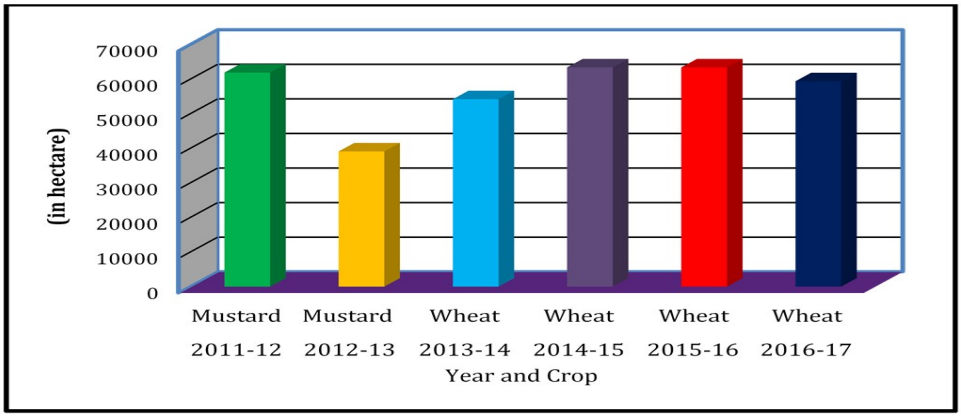
2015-16	Wheat	63400	210000	Mustard	33900	51000	Millet	31400	36000
2016-17	Wheat	59400	25670	Mustard	45700	___	Millet	38700	65790

Source : District Statistical Summary Bhiwani, Charkhi Dadri District.

Daigram-1 : 1st Order Crop Order and Agriculture Area



Crop combination

Crop combination is the number of crops sown in an agricultural year (Rabi, Kharif, Zayed). Agricultural planning and agricultural problems can be solved only through crop combination. Crop combination of any region is determined by physical and cultural factors.Crop combination is estimated based on the total agricultural area by taking out the actual percentage of crop area through crop combination.To determine the crop combination of Charkhi Dadri district. The statistical method of J.C. Weaver is used.

J. C. Weaver Minimum Deviation Method

This is theoretical basis of the J.C. Weaver model is that they allotted the same agricultural land to all crops.Such as: - If there is one crop in an area, then 100 percent of the agricultural land will be of the same crop. If there are two crops, each share will be 50 percent. If there are three crops, the share of each will be 33.3 percent area.If there are four crops, then the area of each is 25 percent, similarly if there are 10 crops, then the area of each crop will be 10 percent agricultural land. J. C.Weaver used the variance formula in place of the deviation formula to calculation of crop combination.

$\sigma^2 = £d^2/n$

' d ' = The difference between the percentage of theoretical and actual crops.

' n ' = Number of crops in crop combination

To get the variance of Charkhi Dadri district, J. C. Weaver readings were done in the following steps -

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(1) The percentage of the area of each crop divided by the total cropped area is determines which is the percentage of actual agricultural area of the crops.

(2) The percentage of the extracted has been kept in descending order, starting the first sequence, a group of first one crop, first two crops and first three and first four crops have been formed. These groups are called combinations , the number of crops in a combination is 'n' the same number of combination crops.

(3) J. C. Percentage of the actual agricultural area has been reduced to 'o' from the percentage of theoretical agriculture area i.e. 'p'. From which we have got the difference 'd'. The main thing from this is that the number of crops in the crop combination starts to decrease by a theoretical percentage on the grow.

(4) The class 'd²' of the difference between the percentage of theoretical and actual crops has been determined.Then all the combinations of the crop's difference squares have been added and the variance has gone out by dividing them by 'n'.

All these stages are repeated as many crops are combinated. In order to extract crop combination of crops for the year 2011-12 of Charkhi Dadri district, the sequence of crops has been determined on the basis of total cultivated area 226800 hectares.

The percentage area of crops is shown in diagram

Daigram-2 : Distribution of Cultivated Area Under Major Crop in 2011-12 (in Percentage)

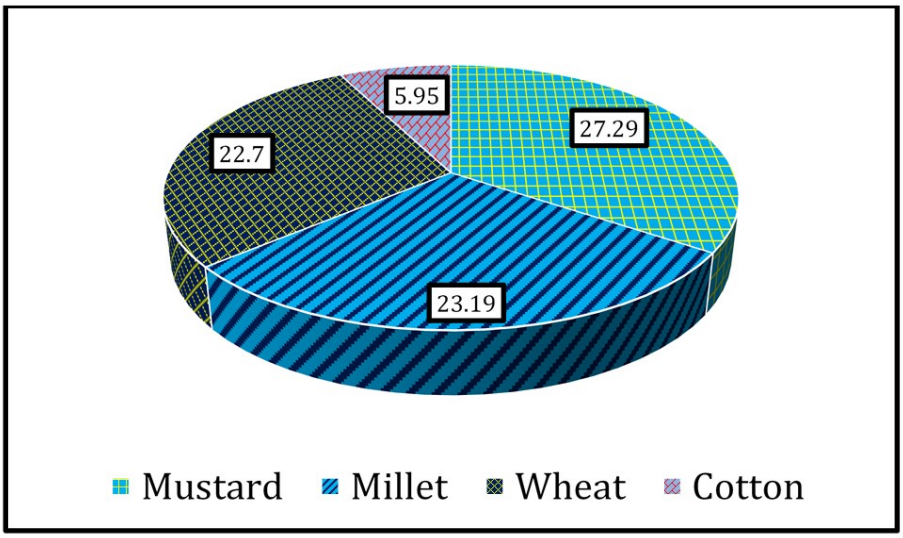

Table represents that in 2011-12 the first crop combination was Mustard, 2nd crop combination was Mustard and Millet, 3rd crop combination was Mustard Millet , Wheat and fourth crop combination was

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Mustard Millet Wheat and cotton. Similarly in 2011-12 has 4 crop combinations which show in the following table.

Table -3: Crop Combination by Weaver Method in 2011-12

Crop number in combination	Theoretical agriculture area (in %) "p"	Actually agriculture area (in %) "o"	Difference (p-o=d)	Square of difference "d^2"	Sum of difference Σd^2	Variance $\Sigma d^2/n$
One crop combination	100	27.29	72.71	5286.74	5286.74	5286.74
Two crop combination	50	27.29	22.71	515.74	1234.51	617.25
	50	23.19	26.81	718.77		
Three crop combination	33.3	27.29	6.01	36.72	251.29	83.76
	33.3	23.19	10.11	102.21		
	33.3	22.7	10.6	112.21		
Four Corp combination	25	27.29	-2.29	5.24	376.7	94.17
	25	23.19	1.81	3.27		
	25	22.7	2.3	5.29		
	25	5.95	19.05	362.9		

Source : Computed by Authors

According to Weaver method in 2011- 12 minimum variances is 83.76 which is a 3 crop combination of Mustard Millet and Wheat. To take out variance in 2016-17 on the basis of total agriculture area is 232000 hectare which represent in following daigram.

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Daigram-3 : Distribution of Total Agriculture Area Under Major crop in 2016- 17

(in Percentage)

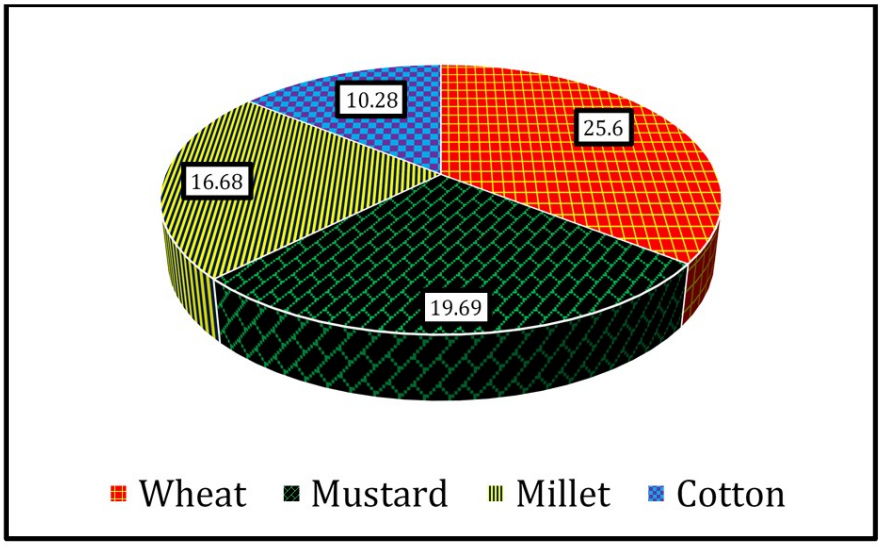

Diagram represents that the first crop combination is Wheat, the 2nd crop combination is Wheat and Mustard , 3rd crop combination Wheat,Mustard, Mille, fourth crop combination Wheat,Mustard, Millet, and cotton.likely to be 4 crop combinations is possible in Charkhi Dadri district.

Table -4: Crop Combination by Weaver Method. In 2016-17.s

Crop number in combination	Theoretical agriculture area (in %) "p"	Actually agriculture area (in %) "o"	Difference (p-o=d)	Square of difference "d^2"	Sum of difference Σd^2	Variance $\Sigma d^2/n$
One crop combination	100	25.6	74.4	5535.36	5535.36	5535.36
Two crop combination	50	25.6	24.4	595.36	1514.05	757.02
	50	19.69	30.31	918.69		
Three crop	33.3	25.6	7.7	59.29	1041.48	347.16

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combination	33.3	19.69	13.61	185.23		
	33.3	16.68	16.62	276.22		
Four Corp combination	25	25.6	-0.6	0.36	316.51	79.12
	25	19.69	5.31	28.19		
	25	16.68	8.31	69.22		
	25	10.21	14.79	218.74		

Source : Computed by Authors

According to Weaver method minimum variance is 79.12 in 2016-17 which has four crop combinations Wheat, Mustard, Millet and cotton. While on the basis of soil fertility in crop combination should be Mustard ,Millet ,Wheat and Gram because groundwater level has gone down in the area.

Conclusion

In the Charkhi Dadri district has 4 crop combinations of Wheat, Mustard ,Millet and cotton.District ground water level goes down 3 feet every year therefore low water demanding crops should be grown at the place of cotton such as groundnut, gwar, udad,etc. Natural protection cover is shed off by using chemicals and pesticides in cotton farming which make difficulty in control of insect in other crop. The growth is recorded in the crop intensity of Charkhi Dadri district due to agriculture modernization which increased by 201%. Wheat make 1st order crop due to change in crop pattern .Per hectare production of districts is declining or remain likely to be equal. Which predicts the same unfavorable status of land.

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ROLE OF EDUCATION IN ENHANCING AIDS AWARENESS

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Abstract

AIDS, acquired immune-deficiency syndrome is caused by a retrovirus called human immune-deficiency virus (HIV). It is a fatal illness and if a person is infected once there is no cure, a number of people die every day from this disease. This disease not only affects health but leaves its imprint on social, psychological and economic well being of infected person. The mode of transmission of the virus is by exchange of body fluids of infected person to health person. Adolescents who are in a transition stage of life are supposed to be most vulnerable to this disease. Educating the youth and creating awareness regarding their risky behaviour is helpful in preventing the spread of virus. Schools play a vital in modifying the behaviour of youth and providing guidelines to lead a healthy life. Education is cost effective and acts as vaccine against this disease. The awareness campaign of NACP with the formation of National Council on AIDS that has mainstreamed HIV prevention activities in different organizations. In order to control the spread of HIV/AIDS, the Government of India has been implementing various programs by involving several national and international agencies, and organizing workshops, seminars along with free services (laboratories, ART centers, free medicine) under National AIDS Control Program. The educational programs on HIV/AIDS awareness in schools will enhance the awareness; the teacher must give positive directions to the students by understanding the scientific basis of knowledge. It becomes important for the teacher to work in positive direction and bring desired changes in society.

Introduction

HIV/AIDS was first recognized in the year 1981 and had reported to kill 25 million people. As per historical record it has been considered as one of the most destructive epidemics. Every day the number of people infected by this disease is over 6800 and over 5700 die from this disease because of inadequate access to HIV treatment and prevention services.The impact of HIV/AIDS in society is to a great extent as an illness and as a source of discrimination. Economic impact to a large extent is also one of the factors of this disease .There are many misconceptions about HIV/AIDS, such as the belief that it can be transmitted by casual non-sexual contact. There are many controversies regarding this disease, also involving religion including the Catholic Church's position not to support the condom use as prevention. It has attracted international political as well as medical attention as a result large-scale funding has been allotted since it has been identified in 1980.

Education: A cost-effective way to prevent the spread of HIV/AIDS:

Providing requisite education and knowledge to students, protects them as they reach vulnerable age. Educating the youth about the mode of spread of disease is also helpful in checking the risky practices of transmission. Educating adolescent girls and young women also minimizes the spread. Thus, education is the cost-effective of prevention and yields maximum return on its investment.

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Role of education in fighting HIV/AIDS

Adolescents living with AIDS do not get proper care and also do not receive adequate support, many young people do not know how to protect themselves and lack Awareness. The World AIDS Day was a mark to look into education for creating AIDS awareness in youth especially of girls. Girl's education will help in saving lives of many by improving their knowledge of HIV/AIDS.

Educations help Adolescents to know more about HIV/AIDS and are more likely to get themselves tested. Education is also helpful in removing discrimination against HIV positive patients which can prevent them from dropping from school.

Role of Schools in Preventing HIV

Growing disregard and rejection of traditional values, the young adolescent are setting up their own code of ethics and a new set of morals in matters of sex, love, dating and life in general. It becomes the duty of schools, educators to study such behaviour patterns and find solution. Schools are the places which can help and provide solutions by modifying behaviour of students. Schools are the centres that not only promote education but also play a crucial role in promoting the safety of the youth as well as their health. Schools promote healthy lifestyles of the students by making them learn about the dangers of unhealthy behaviour and to practice skills that promote healthy lifestyle of the students by making them learn about the dangers of unhealthy behaviours and to practice skills that promote a healthy lifestyle. Students of all grades in large numbers go to schools every day; the adolescents are helped by the school in a unique way which reduces their risk for HIV by adopting appropriate behaviour.

Awareness Rising

HIV infection is preventable through awareness rising, awareness rising about its occurrence and speed is very significant in protecting the people from the epidemic. It is for this reason that the National AIDS Control Programme lays maximum emphasis on the widespread reach of information, education and communication on HIV/AIDS prevention. A key thrust area of the National AIDS Control Programme is a prevention strategy by changing the behaviour enhancing knowledge and modifying attitude by laying emphasis on widespread reach of information, education and communication.

Focusing on the Vulnerable

Addressing the vulnerable section, awareness rising brings positive modification of attitude and crafted behaviour. Awareness enhancing programmes promotes prevention and reaches to 80 percent of the high risk group and also 95 percent of the young people. A big magnification has been received to the awareness campaign of NACP with the formation of National Council on AIDS that has mainstreamed HIV prevention activities in different organizations.

The Programme focuses on covering about four million high risk groups(commercial sex workers, injecting drug users, homosexuals) vulnerable population also covers truck drivers, migrants and large number of women and men in general with sound information on various aspects of vulnerability of HIV infection.

School Programmes to Enhance AIDS Awareness

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In Indian society and culture it becomes difficult to talk about sex outside marriage and in schools as such talks are not accepted. It becomes important to include educational programmes that encourage developing life skills which help youth in making healthy life choices.

Integrated Approach of School Subjects and Sex Education

It is often based on approach that Sex Education can be dealt only in a Biology Class. If the need for AIDS Awareness to be developed in schools and class-rooms, it is imperative that sexual learning becomes the responsibility of every teacher. It can be integrated will different school subjects such as Science, Social Studies, and Languages. In addition to this basic knowledge of STD can be given to students in a simple way.

Significance and need of education in HIV/AIDS awareness:

HIV/AIDS epidemic can only be reversed by taking sustainable measures for preventing HIV infection. Preventive interventions, based on various behaviour change theories and models are a key component in the education system. In order to control the spread of HIV/AIDS, the Government of India has been implementing various programs by involving several national and international agencies, and organizing workshops, seminars along with free services (laboratories, ART centres, free medicine) under National AIDS Control Program. It is important to understand the importance of awareness of HIV/AIDS and its education programs with various stakeholders by conducting diverse assessments. Role of teachers, Anganwadi Services and ASHA workers has been important as they bring about awareness.

Conclusion:

The educational programs on HIV/AIDS awareness in schools will enhance the awareness in school students. It will be helpful in understanding the nature and spread of disease in a scientific way. The acquired knowledge about the disease and its nature will be helpful for the students in developing healthy behaviour and values. In every society and in every period, the aim of education is to develop good and useful citizens who positively contribute to welfare and progress of the society. In this regard the most important contribution is that of the teacher, the teacher must make innovations, give positive directions to the students by understanding the scientific basis of knowledge. It becomes important for the teacher to understand the psychological developmental demands of students and give ideal solutions for specific situations.

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