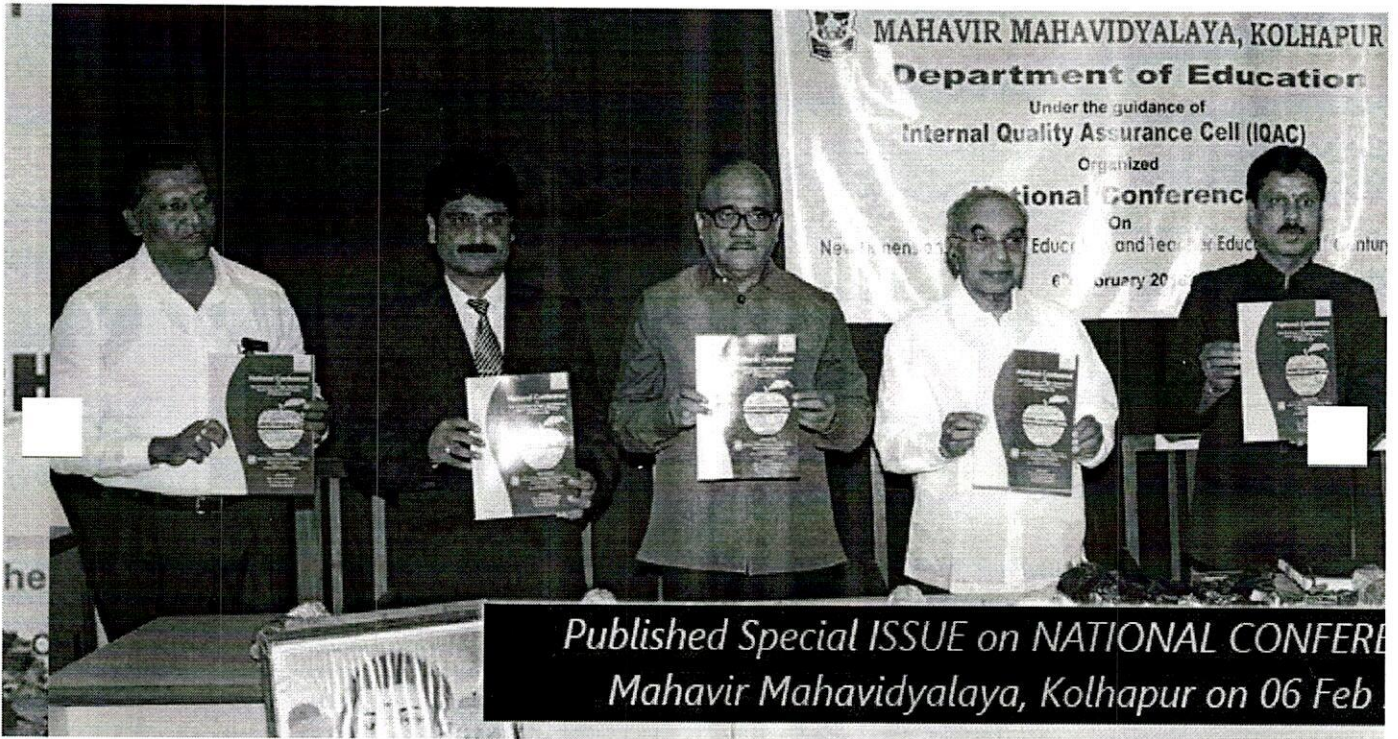
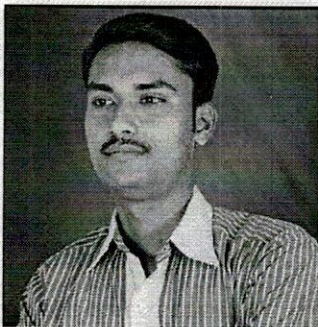




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**Impact Of Climate Change On Agricultural Productivity Productivity In Kadegaon Tehsil Of Sangli District (M.S.) India.****Dr.Pore Sanjay Vishnu**

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**Abstract:**

*Climate change induced especially challenging influence on agricultural productivity. Agricultural productivity is measured as the ratio of agricultural outputs to its inputs. Impact of climate change on five important crops: Triticum aestivum variety of wheat & Zea mays variety of Maize, ( Both the from family Poaceae) have been studied. The results show that agriculture and human well-being is negatively affected by climate change. Crop yields are declined, production is affected and consumption of cereals is falling down, leading to reduction in calorie intake and increase in child malnutrition. The greenhouse gas emissions are raising the earth's temperature. The consequences include melting glaciers, more precipitation, more and more extreme weather events, and shifting seasons. The accelerating pace of climate change, combined with global population and income growth, threatens food security everywhere. Agriculture is extremely vulnerable to climate change. Higher temperatures eventually reduce yields of desirable crops while encouraging weed and pest proliferation. Changes in precipitation patterns increase the likelihood of short-run crop failures and long-run production declines. Although there will be gains in some crops in some regions of the kadegaon tehsil, the overall impacts of climate change on agriculture are expected to be negative, threatening global food security.*

**Keywords:** Climate Change, Agricultural productivity, Environmental pollution, Average rain fall

**Introduction:**

Environmental pollution is a wide spread expression for which we have become acquainted. Environment over the decades is fast changing mainly due to anthropogenic activities. Today's era of industrialization and commercialization exploit natural resources on large scale which is contamination of our surrounding. Climate change is really posing serious threat to the existence of life for animal, plant and human being also on the earth. There challenges have become a matter of serious concern to all of us.

Climate change is natural disaster, which are harmfully affects nature as well as humans. Drought is a part of it frightens of large scale in livelihood, livestock and has a negative impact on local, regional economies. Dry situation affected by the nature, animal and human structure, huge loss of the natural topography on earth surface. The shortage period of rainfall is occurred leads to decrease in high water level. Basin catchment areas receive very low rainfall in a short period. Dry Nandani and Yerala rivers usually result from abnormally shortage rainfall and high temperature. The small amount of release of rainfall, water was insufficient to fulfill the water storage networks in affected study region. Drought of the study area depends on number of cause and its impact on the basic of the human and natural life. Constructions structure of nature its worst effect on the human life cycle in the study area. The basic pattern of the study area is dry basins, naturally loss of streams, open pattern of soil low canopy of vegetation and scarcity rainfall due to drought and dry regimes. During the drought year 2016-2017 was affected in Nandani and Yerala basins in kadegaon Tehsil of Sangli district.

**Material and Method:**

**Study Area:** Agriculture is an important activity in kadegaon tehsil of Sangli District. More than 65% population of it depends directly or in directly on the agriculture. The agriculture sector plays a significant role in the overall socio-economic development in kadegaon tehsil of sangli district. Kadegaon is a taluka place with dry and arid climate and is located in rural and hilly area of Sangli district in Maharashtra. It is rapidly growing city on account of trade and agricultural practices located at 17°18' N. latitude and 74°21' E longitudes. The majority of population lives in rural area and most of the peoples in these villages are economically dependent on agricultural practices. The majority of the farmer cultivates various crops like wheat, maize, soybeans, and groundnuts other than sugarcane and grapes etc. due to scarcity of water and according to the economical point of view by using excess various Chemical fertilizers and pesticides in their field which affects agricultural profile, which is very harmful to the proper vegetation of the crops under cultivation. Farmers from in and around kadegaon tehsil are no exception to this.

**Objectives:** To Study impact of climate change that is drought on primary productivity of village wise agriculture area in kadegaon tehsil.

**Methodology:** The methodology consists of data collection of average rainfall and comparative average agricultural production by mock interview with major farmers from all villages under study. Monthly average rainfall data from 58 Gram Panchayat offices were used.

### Causes Of Drought In Study Area:

Drought in kadegaon tehsil of Sangli district is mainly due to the failure of rainfall and dry regimes. In the study area, both natural and anthropogenic activities are mainly responsible. The main naturally causes are long time failure of rainfall, short period of rainy-days, increasing the high temperature and evaporation, topography pattern, water imbalances and desiccating winds etc., Major human activities are deforestation. Wrong performances in land use more sand take on river beds, continuous same cropping pattern. Farming on the river channel, houe range of construction etc. To the parallel natural as well as human accident earth climatic evidence to change the long period resulted Nandani and Yerala river basin decreasing rainfall pattern.

Kadegaon tehsil of Sangli district suffers in the four month monsoon climate, i.e. June to September. In the Sangli district climatic phenomena particularly rainfall was very confusion. In the district parallel situation occurred in both side in west heavy flooding and in east high drought. Studied over the last few decades, there have been many experiments in nature. Some of the other factors which have directly of indirectly contridibution of occurrence of dry condition.

The fundamental of scarcity precipitations is the basis of the drought hazard. Very low rainfall in the catchment areas of Nandani and Yerala basin. Worried basin cause to regular insufficient of water to whole stream of Nandani and Yerala river in Study region Scarcity rainfall, during the year 2012-13and 2013-14 for long period in continuation is the origin cause of drought. A dry river due to complete low rainfall and large scale temperature and evaporation is the essential condition for drought. That condition creates the basin of Nandani and Yerala from year. 2016-17and 2017-18

**TABLE: 1** The sample coding for cluster of five neighboring villages under study area in Kadegaon tahsil of Sangli district.

**Fig.1.** Shows Cluster wise average rainfall for monsoon period between 1<sup>st</sup> June to 31<sup>st</sup> September 2016-17.

**Fig.2.** shows Cluster wise average rainfall for monsoon period between 1<sup>st</sup> June to 31<sup>st</sup> September 2017-18.

### Impact Of Drought In Primary Productivity Of Agriculture:

The climate ambitious water scarcity and increases in the severity of droughts which is affected on crop production. Small scale and marginal landholders and number of dependent on related to primary agricultural field. The climate calamities drought is the most common hazards. In the eastern part of study area in cluster of villages from A to D and east part of study area in cluster of villages from I to L have a high affected the dryness and drought prone regions. The massive effected was agriculture crop growing live stokes, human health and drinking water etc., Impact on numbers of villages the growing incidence of drought disasters is highly correlated to the increasing vulnerability of the local economy. Affected famous crops are wheat, maize, soybeans, and groundnuts, some patches of Groundnuts, Maize, sugarcanes etc. whole crops was damaged in the drought Monsoon whether gated the cloudy but no rainfall start in this region results availability for crop growing process stopped and the sun to reduces the humidity of atmosphere in this region.

In drought year 2016 to 2018 in the tehsil affected primary productivity agricultural land more affected farmers in study area. During the two years drought situation on agriculture land affected more than 50% farmers. More than 90 per cent loss on the crops by drought and then occurred high heat on crop viral influences end of day result was the remaining crop only stay to chars. Farmers not get the crop production in any kind of condition

### Result and Discussion

In the study area eastern part having a drought impact in cluster of villages from A to D and western part of study area in cluster of villages from I to L have affected the dryness and drought prone regions. The investigation of the randomly surveys (2016-2018), observation, mock interview and number of references to found drought high affected on the entire family and number of farmers depending only on the farms.

### Conclusion:

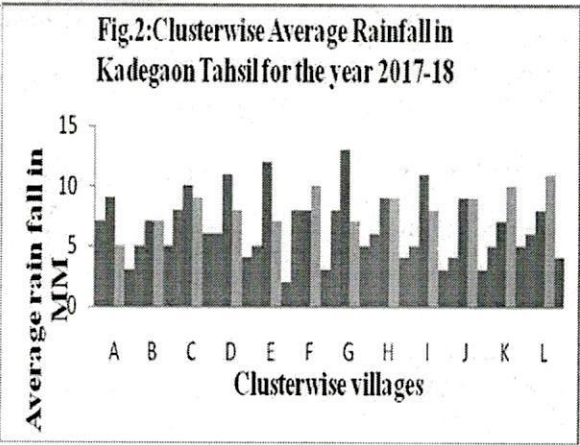
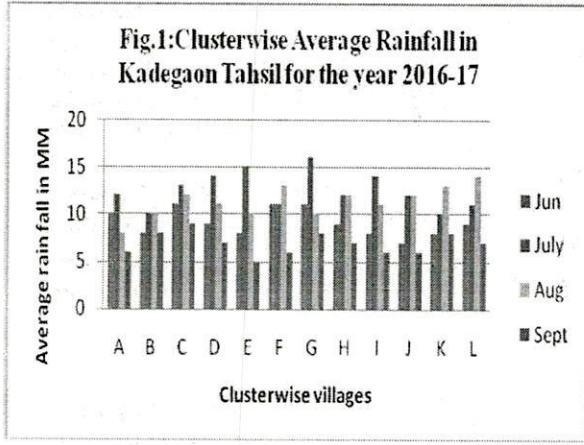
Climate change places new and more challenging demands on agricultural productivity. Crop and livestock productivity-enhancing research, including biotechnology, will be essential to help overcome stresses due to climate change. is that improved agricultural productivity, even if not targeted to the poorest of the poor, can be a powerful mechanism for alleviating poverty indirectly by creating jobs and lowering food prices. Productivity enhancements that increase farmers' resilience in the face of climate-change pressures will likely have similar poverty-reducing effects. Rural infrastructure is essential if farmers are to take advantage of improved crop varieties and management techniques. Higher yields and more cropped area

require maintaining and increasing the density of rural road networks to increase access to markets and reduce transaction costs. Investments in irrigation infrastructure are also needed, especially to improve the efficiency of water use, but care must be taken to avoid investments in places where water availability is likely to decline.

**Acknowledgement:** Author is very much thankful to the principal of Bharati Vidyapeeth's Matoshri Bayanai Shripatrao kadam Kanya Mahavidyalaya kadegaon and to the village officers and farmers of all the villages from kadegaon tehsil during the course of this investigation.

**TABLE: 1** The sample coding for cluster of five neighboring villages under study area in Kadegaon tehsil of Sangli district

Sr.	Sampling Place Cluster of Villages	Sample Code	Sr.	Sampling Place Cluster of Villages	Sample Code	Sr.	Sampling Place Cluster of Villages	Sample Code
1	Raygaon	A	21	Kotij	E	41	Shirgaon	I
2	Bombalewadi		22	Kherade (vita)		42	Shirasgaon	
3	Hingangaon (BK.)		23	Tupewadi(Kh)		43	Sonsal	
4	Shalgaon		24	Bhikawadi(kh)		44	Sonkire	
5	Yede		25	Hanmant vadiye		45	padali	
6	Karandewadi	B	26	Shivaji nagar	F	46	Vajegaon	J
7	Belawade		27	Kadegaon		47	Chinchani	
8	Vihapur		28	Kadepur		48	Ambak	
9	Renushewadi		29	Chikhali		49	Asad	
10	Nimsod		30	Amarapur		50	Vadgaon (Mohite)	
11	Upale (wangi)	C	31	Nevari	G	51	Ramapur	K
12	Upale(mayani)		32	Ambegaon		52	Deorashtre(E)	
13	Saspase		33	Yevlewadi		53	Deorashtre(W)	
14	Tondoli		34	Shivani		54	Kumbhargaon	
15	Soholi		35	Vadiye raibaag				
16	Dhanewadi	D	36	Hingangaon(kh)	H	55	Apshinge	L
17	Kherade(wangi)		37	Shelakbao		56	Khambale(A)	
18	Kanherwadi		38	Tadsar		57	Kotaweade	
19	Yetgaon		39	Wangi-East		58	Nerli	
20	Tupewadi(y)		40	Wangi-West				



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