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Perianth

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D.A.V. CENTENARY COLLEGE
NH-3, N.I.T. FARIDABAD
(Accredited with 'A' Grade by NAAC)

Perianth

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Annual

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D.A.V. Centenary College, Faridabad

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Contents

<i>Vol.6</i>	<i>October 2022</i>	<i>No. 1</i>
--------------	---------------------	--------------

Chief Editor's Note

Editor's Note

1. डॉ. वीरेन्द्र कुमार अंलकार	वर्तमान तकनीकी युग में भाषा का महत्त्व	1-4
2. Dr Manjula Batra	Mythical Echoes of the Mahabharata In The Waste Land (A Reinterpretation)	5-21
3. डॉ. अमित शर्मा	प्राचीन संस्कृत नीतिग्रंथों में राज्य का 'सप्तांग सिद्धांत'	22-27
4. Dr. Rajesh Kumar Mr. Shikhar Kumar Dr. A K Sharan	India's Exports Juggernaut: An Outlier or Can India Continue It?	28-48
5. Dr. Usha	Shashi Deshpande's <i>A Matter of Time</i> : A Narrative of Resistance and Resilience	49-55
6. Meenakshi Ahuja	A Study of Gender Inequality in India	56-68
7. Dr. Renu Verma	An Analysis of Determinants of FDI in India	69-92

Perianth
A Refereed Research Journal of Humanities And Social Sciences
Annual
Contents

<i>Vol.6</i>	<i>Oct. 2022</i>	<i>No. 1</i>
8. Mr. Shikhar Kumar Dr. Rajesh Kumar Dr. A K Sharan	E-vehicles: Issues, Promises, and Challenges	93-108
9. Yesh Pal	Engaging with Modernity: The Rawther Experience in 19th And 20th Century Keralam	109-124
10. Dr. Sandeep Kumar	National Education Policy 2020: Features and Implications for the Indian Higher Education System	125-132
11. Dr. Anjusha Srivastava Dr. Suman Taneja	Agricultural Development in Haryana: A Special Study with Reference to Structural Variation	133-144
12. मीना देवी	'यायावरीयम्' गद्यकाव्य : एक अनुशीलन	145-155
13. राकेश ममगाई	वर्तमानकाले ज्योतिषशास्त्रस्योपादेयता	156-161

Dr . Savita Bhagat
Officiating Principal
D.A.V. Centenary College
Faridabad



From the Chief Editor...

Another issue of "Perianth" is in the hands of the academic fraternity with intellectually stimulating articles authored by scholars after doing in-depth study on the themes of their liking. The search for truth is a natural human tendency and truth remains ever elusive. That's why, whether we talk about the material world or the world beyond, research is carried out by people in all the areas of science, be it is pure science, social sciences or spirituality. The hunger and quest for knowing more and more has led human beings to try to reach the depths of the oceans and the heights of the mountains. The present issue of "Perianth", like the earlier ones, has elicited articles from diverse fields. In the field of economics and business, scholars have written on the role of foreign direct investment and the export scenario of India. Foreign investment and exports are in sync with each other for a developing country like India. The government has given varied incentives linked to manufacturing in India to make the Make in India movement successful as well to make India a hub for exports to other countries. The incentives given both to foreign investors and exporters are surely taking the country onwards on the path of progress and prosperity. Similar is the case of shifting from fossil fuels to electric vehicles. India is committed to reducing the import of crude oil and saving the environment by reducing the emission of greenhouse gases. That is why India is emerging as one of the largest markets for E-vehicles. The progress and prosperity of the country requires simultaneous focus on sustainability as well. So we have an article on e vehicles. Understanding the transformation in the

agricultural sector, whether we talk of the nation or the state of Haryana which is considered to be an agricultural state, has always been the theme of scholarly research. Policy initiatives are taken keeping in view the shifting trends in productivity, output and the area under cultivation etc. So we have a research article on agricultural development in Haryana. As for the New Education Policy 2020, scholars have found new dimensions to explore and present their perspectives regarding its implications. Dr Manjula finds echoes of the Mahabharat in T. S. Elliot's epic poem The Wasteland. Those who are fond of literature would find the comparison very interesting. Delving into the field of history, one article takes us on a fascinating journey into the past and the present of the Rawuthers of Kerala. Still another one is a cogent study of gender inequality in India. The editor of our journal, Dr. Amit Sharma, has tried to integrate in his paper the four essential components of a modern nation state with the seven factors mentioned in our scriptures. One scholar of Sanskrit from Shri Lal Bahadur Shastri Rashtriya Sanskrit Vishwvidyalya has contributed a paper on the relevance of astrology in modern times. We have another paper on the importance of language in the present age of technology. New technologies like Artificial Intelligence are really posing a challenge where human clones are being prepared which will take over the work of research and idea generation like human beings. In such a scenario, it is all the more important to keep our creative, innovative and out of box thinking and researching skills alive so as to keep abreast of technology driven intelligence.

Once again, my heartfelt thanks to all the contributors, the editorial team and the reviewers for putting on their thinking hats and sparing their precious time and energy for bringing out yet another issue of "Perianth"!

Savita Bhagat

डॉ. अमित शर्मा

सहायकाचार्य, संस्कृत विभाग
डी.ए.वी. शताब्दी महाविद्यालय
फरीदाबाद



सम्पादकीय

ओउम...

सभी को सादर नमस्ते।

वेद में कहा गया है—

ऋषी बोधप्रतीबोधावस्वप्नो यश्च जागृविः।

तौ ते प्राणस्य गोप्तारो दिवा नक्तं च जागृताम्।।

(अथर्ववेद ०५/३०/१०)

अर्थात् जिस मनुष्य के पास ऋषि बोध (बौद्धिक स्तर पर संज्ञान) तथा प्रतिबोध (आत्मिक स्तर पर संज्ञान) ये दो रहते हैं, वह मनुष्य सदैव प्रमाद रहित तथा जागरूक रहते हैं, उसके सभी प्राण (इन्द्रियाँ) सुरक्षित स्वस्थ रहते हैं, उसकी संपूर्ण जीवनचर्या दिन—रात जागरूकतामय होती है। अतः हमें बौद्धिक ज्ञान के साथ—साथ आत्मिक ज्ञान के लिए भी सदैव प्रयत्नशील रहना चाहिए।

आज सम्पूर्ण विश्व में महर्षि स्वामी दयानन्द सरस्वती की 200वीं जन्म जयंती बड़े ही हर्षोल्लास के साथ मनाई जा रही है। उन्हें सिर्फ उनकी जन्म जयंती पर स्मरण करना काफी नहीं है बल्कि वर्तमान में उनके दिखाए मार्ग को जीवन में आत्मसात कर ही सम्पूर्ण विश्व, देश और समाज को प्रगति के पथ पर बढ़ाया जा सकता है। महर्षि दयानन्द सरस्वती का जीवन मात्र जीवन न होकर सम्पूर्ण विश्व के लिए ऐसी प्रेरणारूपी प्रकाश का केंद्र है, जो विश्व के कल्याण की कामना में ही मानवता का अक्ष देखते थे। वे महान समाज सुधारक, राष्ट्र—निर्माता, प्रकाण्ड विद्वान, सच्चे संन्यासी, ओजस्वी सन्त और स्वराज के संस्थापक के रूप में जाने जाते हैं। बाल्यवस्था के दौरान कुछ ऐसी घटनाएं घटीं, जिन्होंने उन्हें ईश्वर, मृत्यु और मोक्ष का रहस्य जानने के लिए संन्यासी जीवन जीने को विवश कर दिया। उन्होंने इन रहस्यों को जानने के लिए पूरा

जीवन लगा दिया और फिर जो ज्ञान हासिल हुआ, उसे पूरे विश्व को अनेक सूत्रों के रूप में बताया और अनेक ग्रंथों की रचना की।

स्वामी जी एक महान शिक्षाविद थे। शिक्षा के क्षेत्र में इनका योगदान अतुलनीय है। स्वामी दयानंद जी ने अपने प्रसिद्ध ग्रन्थ 'सत्यार्थ प्रकाश' में शिक्षार्थी के न केवल चरित्र निर्माण पर विशेष बल दिया है बल्कि उसके जीवन के समग्र विकास को केंद्र में रखते हुए एक विशद पाठ्यक्रम की रूपरेखा प्रस्तुत की है जिससे यह स्पष्ट होता है कि स्वामी दयानंद का उद्देश्य शिक्षा के माध्यम से शिक्षार्थी को मनुष्य की पूर्णता का साक्षात्कार कराना है। शिक्षार्थी के व्यक्तित्व के समग्र विकास को ध्यान रखते हुए प्रस्तुत विस्तृत पाठ्यक्रम कठोर अनुशासन और संयमित जीवन-शैली की अपेक्षा करता है और वर्तमान शिक्षा प्रणाली के दोषों के निराकरण का मार्गदर्शन करने में समर्थ प्रतीत होता है।

स्वामी जी के अनुसार "जीवन में शिक्षा का अत्यंत महत्त्व है, शिक्षा के बिना मनुष्य केवल नाम का आदमी होता है। यह मनुष्य का कर्तव्य है कि वह शिक्षा प्राप्त करे, सदाचारी बने, द्वेष से मुक्त हो और देश, धर्म तथा समाज के लिए कार्य करे। स्वामी दयानंद जी के विचार में शिक्षा मनुष्य को ज्ञान, संस्कृति, धार्मिकता, आत्मनियंत्रण, नैतिक मूल्यों और धारणीय गुणों को प्राप्त करने में मदद करती है और मनुष्य में विद्यमान अज्ञानता, कुटिलता तथा बुरी आदतों को समाप्त करती है।"

डी.ए.वी. शताब्दी महाविद्यालय फरीदाबाद स्वामी दयानंद जी के विचारों को आत्मसात कर भावी राष्ट्र निर्माण के पथ पर अग्रसर है। इसी कड़ी में महाविद्यालय द्वारा विगत कई वर्षों से अपनी वार्षिक पत्रिका 'पेरिहन्त' का सम्पादन किया जा रहा है। शोध के क्षेत्र में यह शोध पत्रिका अपना ही महत्वपूर्ण स्थान रखती है। आगामी वर्षों में भी शिक्षा और शोध के क्षेत्र में यह संस्था अपना विशिष्ट योगदान देती रहेगी ऐसी ईश्वर से कामना है। सभी गुरुजनों, विद्वानों, शोधानुत्सियों का हार्दिक आभार एवं धन्यवाद।

अमित शर्मा

प्राचीन संस्कृत नीतिग्रंथों में राज्य का 'सप्तांग सिद्धांत'

डॉ. अमित शर्मा

सहायकाचार्य, संस्कृत विभाग
डी.ए.वी. शताब्दी महाविद्यालय
फरीदाबाद, हरियाणा

सारांश

प्राचीन भारतीय नीतिशास्त्र या राजशास्त्र वेत्ताओं (मनु, याज्ञवल्क्य, बृहस्पति, भीष्म, कौटिल्य, कामन्दक, शुक्र, सोमदेव आदि) ने राज्य के सात तत्त्व या अंग स्वीकार किये हैं। ये सात प्रकृतियाँ स्वामी (राजा), अमात्य (मन्त्री), पुर (राजधानी) राष्ट्र, कोश, दण्ड (बल) तथा सुहृद (मित्र) हैं। आधुनिक प्लेटो, रूसो आदि राजशास्त्रवेत्ताओं ने राज्य के चार मूल तत्त्व बतलाये हैं। ये हैं जनसंख्या, भू-भाग, सरकार और सम्प्रभुता अथवा सर्वोच्च सत्ता। परन्तु अनुशीलन करने पर ज्ञात हो जाता है कि इन चारों तत्त्वों का अंतर्भाव प्राचीन राज्य के सात अंगों में ही हो जाता है। ये अंग आज भी किसी भी देश के लिए राष्ट्रीय तथा अंतर्राष्ट्रीय स्तर पर बहुत ही उपयोगी हैं।

बीज शब्द: राज्य, स्वामी, अमात्य, पुर, राष्ट्र, कोश, दण्ड, सुहृद, जनसंख्या, भू-भाग, सरकार तथा सम्प्रभुता।

मानव समाज के विकास और उत्कर्ष में राज्य का अत्यन्त महत्त्वपूर्ण स्थान है। राज्य त्रिवर्ग धर्म, अर्थ और काम प्राप्ति का साधन है। आचार्य मनु ने इस विषय में कहा है कि—

नमोऽस्तु राज्यवृक्षाय षाड्गुण्याय प्रशाखिने ।
सामादिचारुपुष्पाय त्रिवर्ग फलदायिने ॥¹

अर्थात् उस राज्य को नमस्कार है, जिसकी शाखाएँ षाड्गुण्य (सन्धि विग्रह, यान, आसन, संश्रय और द्वैधीभाव) हैं, जिसके पुष्प (साम, दान, भेद और दण्ड) हैं, तथा फूल त्रिवर्ग (धर्म, अर्थ और काम) हैं। नीतिवाक्यामृतम् में सोमदेव ने प्रथम सूत्र में ही राज्य को नमस्कार किया है— 'अथ धर्मार्थकामफलाय राज्याय नमः।' ² नीतिग्रन्थों के प्रारम्भ में राज्य की वन्दना बड़ी उपयुक्त और सुन्दर कल्पना है। राज्य का महत्त्व इस बात से भी

सहज समझा जा सकता है कि विभिन्न राजनीतिक नीतिग्रन्थों में अराजक—राजहीन दशा का भयावह रूप चित्रित है, जिससे रक्षण पाने के लिए संगठन और क्रमिक रूप से राज्य का विकास हुआ। प्राचीन तथा पाश्चात्य राजनीतिक विचारकों ने राज्य की उत्पत्ति के सम्बन्ध में चार सिद्धान्तों का प्रतिपादन किया है—

1. दैवी सिद्धान्त³
2. शक्ति अथवा युद्ध का सिद्धान्त
3. अनुबन्ध (संविदा) का सिद्धान्त
4. विकासवादी सिद्धान्त

इन चारों सिद्धान्तों का संस्कृत साहित्य में उल्लेख मिलता है।

राज्य के सप्तांग

प्राचीन भारतीय राजशास्त्रियों ने राज्य से ही धर्म, अर्थ और काम की प्राप्ति बतलाई है। किसी भी राज्य के निर्माण एवं पोषण हेतु सात अवयवों की चर्चा सभी राजशास्त्र प्रणेताओं ने की है, जिसे सप्तांग कहते हैं। ये सप्तांग हैं।

स्वामी — (शासक, सम्राट् या राजा)

अमात्य— (मन्त्री या पुरोहित)

जनपद या राष्ट्र— (राज्य की भूमि एवं प्रजा)

दुर्ग— (राजधानी अथवा पुर)

कोष— (राष्ट्रीय सम्पत्ति, आय के स्रोत एवं शासकीय कोष में द्रव्य राशि)

दण्ड— (सेना, बल, दण्डव्यवस्था)

मित्र— (सहयोगी राष्ट्र, कार्यपालिका एवं विधायिका के सदस्यगण)।

धर्मशास्त्रों, अर्थशास्त्रों तथा नीतिशास्त्रों में राज्य के इन्हीं सात अंगों का उल्लेख मिलता है। मनु, बृहस्पति, भीष्म, कौटिल्य, कामन्दक और आचार्य शुक्र ने इन्हीं सात अंगों को स्वीकार किया है। महाभारत के शान्तिपर्व के अनुसार आत्मा, अमात्य, कोश, दण्ड, मित्र, जनपद तथा पुर सप्तांग राज्य के अंग हैं।⁴ यहाँ पर राजा को राज्य की आत्मा माना

गया है और इसी कारण राजा के लिए आत्मा शब्द का प्रयोग किया गया है । मनुस्मृति में भी सप्तांग राज्य का वर्णन है ।⁵ आचार्य कौटिल्य ने राज्य को प्रत्यंगभूत कहा है । उन्होंने अंगों के लिए प्रकृति शब्द का प्रयोग किया है ।⁶ विष्णुधर्मसूत्र में राज्य को सप्तांग माना गया है, वहाँ जनपद के स्थान पर राष्ट्र शब्द का प्रयोग किया गया है ।⁷ याज्ञवल्क्यस्मृति में भी सप्तांग राज्य स्वीकार किया गया है ।⁸ आचार्य कामन्दक ने भी राज्य के सप्तांग रूप का वर्णन किया है ।⁹

शुक्रनीति में आचार्य शुक्र ने राज्यांगों का विशद विवेचन किया है । राज्य को सप्तांग राज्य से सम्बोधित करते हुए आचार्य शुक्र कहते हैं कि—

**स्वाम्यमात्यसुहृत्कोशराष्ट्रदुर्गबलानि च
सप्ताङ्गमुच्यते राज्यं तत्र मूर्धा नृपः स्मृतः ॥¹⁰**

अर्थात् राजा, मन्त्री, मित्र, कोश, राष्ट्र, दुर्ग और सेना ये राज्य के सात अंग कहलाते हैं और इनमें राजा को सर्वश्रेष्ठ अंग मस्तक माना गया है । वे राज्य के उपर्युक्त सात अंगों की तुलना मानव शरीर से करते हैं ।

**दृग्मात्यः सुहृच्छ्रोत्रं मुखं कोशो बलं मनः ।
हस्तौ पादौ दुर्गराष्ट्र राज्याङ्गानि स्मृतानि हि ॥¹¹**

अर्थात् राज्य रूपी शरीर के मन्त्री नेत्र है, मित्र कान, कोष मुख, सेना मन, दुर्ग दोनों हाथ और राष्ट्र दोनों पैर । राष्ट्र की उपमा पैरों से इसलिए की गई है, क्योंकि वह राज्य का मूलाधार है । उसी के साथ राज्य रूपी शरीर स्थिर रहता है । जिस प्रकार मन इन्द्रियों को किसी कार्य में प्रवृत्त करता है उसी प्रकार राज्य में यदि बल अथवा सेना न हो तो वह अरक्षित रहता है और कोई भी कार्य नहीं कर सकता । इसलिए बल को मन बतलाया है । कोष की तुलना मुख से की है, जिस प्रकार मुख से किया गया भोजन शरीर के सभी अंगों को शक्ति प्रदान कर उन्हें पुष्ट बनाता है, उसी प्रकार राजकोष में धन संचित होने से सभी अंगों की पुष्टि होती है । मन्त्री की उपमा नेत्रों से इसलिए दी गई है राज्य का प्रायः समस्त व्यवहार मन्त्रियों की देखरेख तथा परामर्श से ही चलता है । दुर्ग की तुलना हाथ से इसलिए की है, क्योंकि जब शरीर पर कोई प्रहार करता है, तो हाथ ही सर्वप्रथम उस प्रहार को रोकते हैं, उसी प्रकार राज्य पर जब आक्रमण होता है तो प्रथम प्रहार दुर्ग को ही सहन करना पड़ता है । इस प्रकार आचार्य शुक्र ने राज्य की तुलना मानव शरीर से की है ।

आचार्य मनु के अनुसार राज्यांगों का क्रम उनके महत्त्व के अनुसार रखा गया है।¹² उनके अनुसार विषम परिस्थितियों में कुछ अंगों का (राजा, अमात्य) का महत्त्व अवश्य है, साधारण स्थिति में सभी अंग राज्य के लिए आवश्यक हैं और अपने-अपने स्थान पर सभी का महत्त्व है। एक अंग के अभाव की पूर्ति दूसरा नहीं कर सकता।¹³ आचार्य कौटिल्य के अनुसार सप्तांगों पर विपत्ति आने पर अग्रिम की अपेक्षा पूर्व की विपत्ति आना अत्यन्त कष्टदायक है।¹⁴ कामन्दक का भी यही विचार है।¹⁵ जिस प्रकार शरीर के अंग अपना महत्त्व रखते हैं, उसीप्रकार राज्य के अंग हैं। यदि एक अंग भी विकारग्रस्त हो जाता है, तो सम्पूर्ण राज्यरूपी शरीर अस्वस्थ हो जाता है। रुग्णांगों से कोई भी अपने कार्य का भली-भांति सम्पादन नहीं कर सकता। कामन्दक के अनुसार राज्य के सभी अंग एक-दूसरे के पूरक हैं, यदि राज्यरूपी शरीर का कोई भी अंग विकृत हो जाए, तो राज्य का संचालन असम्भव हो जाता है।¹⁶ राज्यांगों की श्रेष्ठता पर ही राज्य की समृद्धि निर्भर है।

संक्षेपतः विश्लेषण करने पर आधुनिक राजनीतिज्ञों द्वारा बताये गये, जनसंख्या, भू-भाग शासन और सम्प्रभुता का अन्तर्भाव राज्य के सात अंगों में ही हो जाता है। सर्वप्रथम जनसंख्या को लें तो जनपद या राजधानी में इसका विचार सम्मिलित है। जनपद या राजधानी में इसका विचार सम्मिलित है। जनपद शब्द न केवल भू-भाग को प्रकट करता है, उस पर रहने वाली जनसंख्या को भी प्रकट करता है। इसलिए एक निश्चित भू-भाग पर बसी हुई जनसंख्या को भी जनपद कहते हैं। राजा या स्वामी के अन्तर्गत सम्प्रभुता का समावेश है, क्योंकि जिस भू-भाग का वह स्वामी है उसमें सार्वभौम है। शासन या सरकार से ऐसे संगठन का बोध होता है जिसमें कुछ लोग शासन करते हैं और अन्य उनकी आज्ञाओं का पालन करते हैं। राजा और अमात्य सरकार का निर्माण करते हैं और जनपद उसकी आज्ञा का पालन करता है। दुर्ग, सेना और कोश राजा की इच्छा को कार्यान्वित करने के साधन हैं। मित्र को आवश्यक तत्त्व इसलिए माना गया है, क्योंकि मित्रों की सहायता पर ही राज्य का अस्तित्व निर्भर है। प्राचीनकाल में प्रत्येक राज्य की सुरक्षा, शक्ति सन्तुलन से ही सम्भव थी अर्थात् राज्य इस प्रकार अपने मैत्रीपूर्ण सम्बन्ध स्थापित करे कि शक्तिशाली राज्य को उस पर आक्रमण करने का साहस ही न हो। इसलिए राज्य सुरक्षा के हित में प्राचीन आचार्यों ने मित्र को भी आवश्यक तत्त्व माना है।

उन्नीसवीं शताब्दी में पाश्चात्य देशों में राज्य के सावयव स्वरूप के जिस सिद्धान्त का विकास हुआ, उसके दर्शन भारत में महाभारत काल में भी होते हैं। सभी राजशास्त्र

वेत्ताओं ने सप्तांग स्वरूप स्थिर किया। अंग शब्द तथा आचार्यों के राज्यांग रूपक से राज्य के सावयव स्वरूप के सिद्धान्त की पुष्टि पूर्ण से हो जाती है। वे राज्य को सजीव प्राणि के अनुरूप ही मानते हैं। सप्तांग सिद्धान्त पाश्चात्य विद्वानों द्वारा दी गई राज्य की परिभाषाओं की सन्तोषजनक पूर्ति करता है।

सप्तांग सिद्धान्त की समसामयिक प्रासंगिकता प्राचीन नीतिग्रंथों द्वारा प्रदत्त राज्य का सप्तांग सिद्धान्त तत्कालीन प्रासंगिकता के साथ ही वर्तमान समय में भी अंतर्राष्ट्रीय स्तर पर प्रासंगिक बना हुआ है। प्राचीन आचार्यों ने सप्तांग सिद्धान्त के माध्यम से राज्य व प्रशासन का यथार्थवादी स्वरूप प्रस्तुत किया है। नीतिग्रंथों के राज्य का प्रधान अंग स्वामी आज भी सर्वाधिक महत्वपूर्ण है। आज भी देश के शासक से हम प्रजापालक होने की आशा करते हैं कि देश का प्रधान हर तरह से जनता के हितों की रक्षा करने वाला उच्च गुणों से युक्त नैतिक चरित्रवान व्यक्ति हो। अमात्य या मंत्रिपरिषद् के रूप में वर्तमान प्रशासनिक अधिकारियों को देखा जा सकता है जो सरकार की नीतियों को देश में सुचारू रूप से बिना किसी लाभ या पक्षपात के लागू करें तथा देश को एकसूत्र में बांधने का कार्य करें। जनपद या वर्तमान प्रादेशिक इकाइयों का भी वर्तमान में महत्वपूर्ण स्थान है। जनसंख्या व अन्य संसाधनों के आधार पर समय-समय पर इसका भी पुनर्गठन होते रहना चाहिए। दुर्ग या देश की भौगोलिक सीमायें सुरक्षित होनी चाहिए जिससे शत्रु आसानी से आक्रमण न कर सके। कोष या कोषागार हमेशा देशी, विदेशी मुद्राओं से भरा रहे। दूसरे देशों से कर्ज लेने व दिवालियेपन की स्थिति न आये तथा प्राकृतिक आपदा या अन्य वित्तीय संकट के समय सुचारू रूप से धन जनता के हितों के लिए खर्च हो सके। विकास से सम्बन्धित कार्य हो सके। अंतर्राष्ट्रीय स्तर पर देश विकासशील से विकसित स्तर पर पहुँच सके। दण्ड अथवा सेना जितनी पहले महत्वपूर्ण थी उससे कहीं अधिक वर्तमान समय में महत्वपूर्ण है। सैन्य बल के आधार पर आज के युग में अंतर्राष्ट्रीय स्तर पर देश की शक्ति का आंकलन होता है। सेना न सिर्फ देश की रक्षा ही करती है बल्कि शांति स्थापना हेतु भी आवश्यक है। सेना का बाह्य आक्रमण से रक्षा के साथ ही शांतिपूर्ण क्रियाकलापों में भी महत्वपूर्ण स्थान रहता है। मित्र की संकल्पना भी हमें अंतर्राष्ट्रीय स्तर पर शत्रुओं से भेद करना व संकट के समय सहयोग करना सिखाती है। आज पूरे विश्व में सभी देशों के मैत्री संगठन बन रहे हैं जिनका उद्देश्य शांति, सुरक्षा व विकास ही है।

इस प्रकार स्पष्ट है कि राज्य का 'सप्तांग सिद्धान्त' कोई सामान्य सिद्धान्त नहीं वरन् किसी भी देश का शासन चलाने का एक 'सर्वमान्य सिद्धान्त' है जिसे आज अंतर्राष्ट्रीय

स्तर पर स्वीकार किया जा चुका है। यह अंतर्राष्ट्रीय विधि व अंतर्राष्ट्रीय राष्ट्र या राज्य की अवधारणा के अस्तित्व का पूर्वाभास है। सुचारु रूप से शासन चलाने की कला से युक्त सावयव सिद्धांत की प्राचीन भारतीय आचार्यों की यह दूरदर्शी व यथार्थवादी सोच न सिर्फ तत्कालीन परिस्थितियों में सार्थक थी वरन् वर्तमान व आने वाले समय की जनतांत्रिक व्यवस्था में 'सुशासन' के दृष्टिकोण के साथ भी प्रासंगिक बनी रहेगी जिसमें राज्य के समस्त अंगों में समन्वय व एकता होना अनिवार्य पूर्वपेक्षा है तथा जिसमें देश की भूमिका प्रधान के रूप में निःसंदेह तथा सर्वविदित मानी गयी है।

सन्दर्भ सूची :

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2. नीतिवाक्यामृतम् – 1.1.
3. महाभारत शान्तिपर्व – 59.14–19
4. वही – 69.14.
5. मनुस्मृति – 9.294.
6. कौटिल्य अर्थशास्त्र – 6.1.
7. विष्णुधर्मसूत्र – 3.23.
8. याज्ञवल्क्यस्मृति – 1.353.
9. कामन्दकनीतिसार – 1.16.
10. शुक्रनीति: – 1.61.
11. वही –1.62
12. मनुस्मृति – 9.295.
13. वही – 9.297.
14. कौटिल्य अर्थशास्त्र – 8.1.
15. कामन्दकीय नीतिसार – 4.2.
16. शुक्रनीति: – 4.3.1.

A Study of Gender Inequality in India

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Abstract

Gender is an important aspect of social and economic stratification. The degree of gender inequality varies across countries and over time. The importance of gender equality, women's empowerment and the realization of women's rights in achieving development has been increasingly recognized in recent decades and it has also been realized in India. Women, who constitute one half of the nation in the present India, are still in social bondage and have suffered a lot. Women play an important role in every section of the society. A woman contributes as much to the development of a nation as a man does. Gender inequality is a major problem in India and it acts as a hindrance in the pace of development. In many parts of the world, women have few resources or rights and little opportunity to improve their lives. They are restricted in terms of education, ownership of property, monetary return for their work, financial opportunities, and opportunities to influence decision-making at the level of the family and society. In country after country, the lack of resources and opportunities open to women is strongly associated with society-wide poverty or lack of development.

Keywords : *Gender Inequality, discrimination, gender equality, women, development*

I. Introduction

1.1. Statement of the problem:

Gender Inequality, to a great extent, reflects the extent of socio-economic development. Over a period of time we have seen that

achievements in India's developmental process have been significant. But still a lot of things are yet to be achieved and one of the main things is Gender Equality. Gender inequality is not a new phenomenon. In India, discriminatory attitudes towards either sex have existed for generations and affect the lives of both the sexes. Although the constitution of India grants men and women equal rights, gender disparities remain.

1.2. Objectives:

The prime objectives of the study are as follows:

- To understand gender inequality in India.
- To study gender equality related barriers and bottlenecks
- To suggest ways to bring about gender equality in India.
- To link gender relations to the development of the nation.

1.3. Methodology

1.3.1. **Data Collection-** The data for this study have been collected from the Statistical Abstract of India and other related documents published by the Census of India, and from other world reports on India and from organisations which are continuously working for gender equality at the international level, for instance UNICEF .The method applied for the paper is Secondary Data Collection method.

1.3.2. **Study Area-** India is home to the second highest population of the world with a female population of 48.5%, according to the 2011 Census Report, India. In a developing nation like India, women's lower status is reflected not only in their work being underpaid, un-recognized, but also in their limited access to productive resources and support services such as health and education.

1.3. Review of Literature:

The World Survey on The Role of Women in Development (2014) - Gender Equality and Sustainable Development: The 2014 report focuses on gender equality and sustainable development, with chapters on the green

economy and care work, food security, population dynamics, and investments for gender-responsive sustainable development.

Another relevant abstract that was reviewed was *Development and Gender Equality: Consequences, Causes, Challenges and Cures* by Anne Mikkola of University of Helsinki and Carrie Miles of the Centre for the Economic Study of Religion at George Mason University & Institute for the Studies of Religion at Baylor University. This paper reviews Economics related literature on the relationship between gender equality and economic development.

'Gender' is a socio-cultural term referring to socially defined roles and behaviours assigned to 'males' and 'females' in a given society; Therefore, gender may be understood as a man-made concept, while 'sex' is a natural or biological characteristic of human beings.

Gender Inequality, in simple words, may be defined as discrimination against women based on their sex. It manifests as hierarchical gender relations, with men above women, and women being regarded as inferior and less valuable solely by virtue of their sex.

Discrimination against women and girls is a pervasive and long-running phenomenon that characterises the Indian society at every level. Discrimination affects many aspects in the lives of women from career development and progress to mental health disorders.

Nevertheless, it is widely accepted that India along with other developing countries has high gender inequality and lower women's empowerment than developed nations. Gender inequalities and their social causes impact India's sex ratio, women's health over their lifetimes, their educational attainment, and economic condition.

Gender Equality means that women and men and girls and boys enjoy the same rights, resources, opportunities and protections.

Gender Equality means accelerating progress and opportunities for everyone.

The Challenge

Every child deserves to reach her or his full potential, but gender inequality in their lives and in the lives of those who care for them hinders this reality. Girls and boys see gender inequality in their homes and communities every day – in textbooks, in the media and among the men and women who provide them care and support. Unequal responsibility for work in the home socializes children into thinking that these duties are only women's roles, thereby curtailing generational change and narrowing girls' ambitions. “We need to change attitudes towards it. We need to set our girls free.” Investments in gender equality contribute to lifelong positive outcomes. Gender equality is essential to ensure that every child – girl and boy – has a fair chance in life.

Common gender-related barriers and bottlenecks

Woman is traditionally considered by society as the weaker sex. She has been accorded a position subordinate to men. She is exploited, degraded, violated and discriminated against both at home and in the outside world.

The commonly found gender related barriers are:

- Masculine and feminine ideals & expectations
- Lack of resources and decision-making
- Limited access to knowledge, information and technology
- Lack of safety and mobility
- Excessive time burden and dual responsibilities for women and girls

Social discrimination of the girl child- The girl child often faces discrimination from the earliest stages of life, through childhood and into adulthood. The girl child in India is subjected to inequality, disparity and neglect. Born into indifference and reared on neglect, the girl child is caught in a web of cultural practices and prejudices that hamper her development both physically and mentally.

Discrimination against girls actually starts in the womb. The infant mortality rate of girls is higher than that of boys.

At the global level, relative to men, women's lives are more centred in the home, a fact which is immediately related to observed gender biases. On the other hand, men may be excluded from child care and the home sphere which is considered woman's territory.

A Preference for Sons - Cultural institutions in India play a central role in perpetuating gender inequality and ideas about gender-appropriate behaviour. We proud Indians of the 21st century rejoice when a boy is born, and if it is a girl, a muted or no celebrations is the norm. Love for a male child is so much so that from times immemorial we have been killing our daughters at birth or before birth, and if, fortunately, she is not killed, we find various ways to discriminate against her throughout her life. Though our religious beliefs make women goddesses, we fail to recognize her as a human being first; we worship goddesses but we exploit girls. We are a people with double standards as far as our attitude towards women is concerned; our thoughts and preaching are different from our actions.

A culturally ingrained parental preference for sons - emanating from their importance as caregivers for parents in the old age - is linked to poorer consequences for daughters.

Education- Over the past decades there have been large and successful efforts to extend primary education to all the children, including girls in India. But despite such efforts, gender inequality can be seen in matters of education. Although literacy rates are increasing, the female literacy rate lags behind the male literacy rate. A large number of girls in India have not even seen a school in their life. The incidence of dropout and stagnation for girls is much higher than that of boys at the primary and the upper primary stage. It is estimated that out of every 10 girls who enter Class 1, only 6 reach Class 5. Access to education continues to be a major problem, especially for rural girls.

Educating the girl child is still seen as a bad investment because she is bound to get married and leave her paternal home one day. Thus, without having good education women are found lacking in the present day requirement of job skills. The situation is much worse in rural and tribal areas

because of social attitudes, poor access to education and family-oriented role and responsibilities of the girl child. In India the literacy rate of women is much lower than that of men because boys receive more schooling than girls.

As per the Census of 2011, the effective literacy rate for men was 82.14% whereas for women it was 65.46%. 98 million girls who should be in secondary school are not there.

Health -Females experience more episodes of illness than males and are less likely to receive medical treatment before the illness is well advanced. Women, especially poor women, are often trapped in a cycle of ill health, exhausting child bearing and hard physical labour. In India, most women suffer from malnutrition. Malnutrition can be a factor in maternity-related complications and infant deaths. Undernourished mothers are more likely to have undernourished children. Indian women have high mortality rates, particularly during childhood and in their reproductive years. Unwanted pregnancies terminated by unsafe abortions also have negative consequences for women's health.

In a study conducted by *the National Family Health Survey (NFHS)*, it was found that 37% of all pregnant women in India received no prenatal care during their pregnancies. According to NFHS, Indian children, especially girls, are the most malnourished in the world.

Employment- Women in India are primarily responsible for child care and household responsibilities. A majority of women are to be found in the vast rural and urban unorganized sector. Employment in the unorganized sector is characterized by low pay, long hours of work and the absence of trade unions/organizations to facilitate the mobilization of workers and knit them into a conscious workforce. Since women have to bear the major burden of domestic chores, which in poor households are time-consuming and labour intensive, they do not have the time and opportunity to acquire skills and training for better jobs. On the other hand, the 'organized sector' accounts for approximately 10% of the female labour force. Discrimination against women has contributed to gender wage differentials, with Indian women on an average earning 64% of what their male counterparts earn for the same

occupation and level of qualification.

According to an Estimate by *the National Commission on Self-Employed Women*, 94% of the total female workforce operates within the highly exploited unorganized sector.

What barriers do female youth face in the transition to work?

1. Lack of Access to Quality Education and Skill Development
2. Impact of Gender Stereotypes on Girls' Subject Choices and Employment Prospects

Decision Making Power- It is the fundamental right of every citizen to contribute to the decision-making process. Barring a few exceptions here and there, women have no power to take independent decisions either inside their homes or in the outside world. Women do not own property under their own names and usually do not have any inheritance rights to obtain a share of the parental property. As the future of the people of the country lies in women's hands, their effective participation in the political matters of the country is extremely important. Gender equality is a prerequisite for effective participation of women in strengthening the institutional structure of democracy. At the political level also, women have less voice. Political parties seem uniformly reluctant to field women candidates. As a result of all these factors, women often remain suppressed.

In 2017, *UNICEF*, with Gucci as a founding partner, launched the Girls' Empowerment Initiative to improve the lives of 600 million adolescent girls across 7 regions of the world. Equipped with the right resources and opportunities, these girls can become the largest generation of female leaders, entrepreneurs and change-makers the world has ever seen.

Infanticide and Female Foeticide- Female foeticide is a practice of denying birth of a female child. Female foeticide and infanticide are the most hideous outcome of gender discrimination. Son preference, a deep-rooted social value, combined with poverty, illiteracy and low status of girls is among the factors associated with female mortality before and at birth. Female infanticide is leading to a serious imbalance in the sex ratio in the

country. The ratio of female to male population in India has been low. The demand for sons among wealthy parents is being satisfied by the medical community through the provision of illegal service of fetal sex-determination and sex-selective abortion. The financial incentive for physicians to undertake this illegal activity seems to be far greater than the penalties associated with breaking the law.

According to a recent report by the *UNICEF*, up to 50 million girls and women are missing from India's population as a result of systematic gender discrimination in India. In India, there are less than 93 women for every 100 men in the population. Worldwide, around 15 million adolescent girls aged 15 to 19 have experienced forced sex in their lifetime; 9 million of these girls were victimized within the past year. Nearly 7,000 adolescent girls aged 15 to 24 are infected with HIV every week.

Pregnancy and Family Responsibilities

Having children serves as a push factor towards employment for the male youth but has the opposite impact for the female youth. Early marriage and early pregnancy can result in interrupted schooling, social isolation, and girls' limited access to job and training opportunities.

Globally, girls aged 5–14 spend 550 million hours every day on household chores, 160 million more hours than boys their age. Every year, 12 million girls are married before their 18th birthday. Globally, 1 in 5 girls becomes a mother before that age.

Violence Against Women

We are talking about things like development, modernization etc. but still half of the women in India are going through different kinds of violence every day. All those women too have the right to contribute towards our economy but the only thing is that they are not getting the opportunity. They deserve to live a normal life but gender inequality is making their life hell. Violence against women in India is going side by side with the technological development in the country. Violence against women is of various types and can happen at any place, home, public place or office. It is a big issue related to women which cannot be ignored as it is hindering almost half the growth of

the country. From the origin of social life in the country, various centuries have come and gone and time has changed people's mind and the environment a lot, However, violence against women has seen no change.

According to research, it is found that violence against women begins at home at an early age, especially in the rural areas, by family members, relatives, neighbours, and friends. Crimes against women are showing an upward trend, in particular brutal crimes such as

- Wife battering (domestic violence)
- Sexual harassment at the workplace
- Dowry deaths
- Rape
- Acid attacks
- Honour killings

These practices create incentives for parents not to have girl children or to invest less in girls' health and education. This reinforces the inferior status of Indian women and puts them at risk of violence in their marital households. And for many girls, further disadvantages based on disability, location, race, and ethnicity or migration status compound the challenges of building a fulfilling future.

In 2011, there were 919 girls under age six per 1000 boys, despite sex determination being outlawed in India. The situation of women varies all over the country according to place, culture and tradition of the people. According to the National Crime Records Bureau, women in India are very much unsafe in their marital homes.

How can we eliminate or reduce gender inequality?

What is needed is a movement for women's empowerment where women can become economically independent and self-reliant; where women have good education, a good career, ownership of property and above all where they have freedom of choice and also the freedom to make their own decisions without any bondage.

Investing in girls' skills for employability. What skills are needed?

A quality education coupled with changes in gender norms can improve the ability of young women to find decent work, start a business, or access further training to be employable in today's workforce.

1. **Foundational Skills** consist of literacy, numeracy and increasingly, digital literacy. These are essential for further learning, employment and civic engagement. Digital literacy includes the ability to use technology as well as the social and emotional skills needed to safely navigate the digital space.
2. **Transferable Skills** include critical thinking, problem-solving, communication and confidence. Increasingly demanded by employers in today's fast-changing economic and social landscapes, transferable skills help young people adapt to change, and improve their chances of finding and keeping decent work.
3. **Technical and Vocational Skills** are associated with one or more occupations. The wider the application of a skill set, the more flexible and responsive to change the holder of these skills can be in the labour market. Technical and vocational skills need to be constantly updated to keep up with the pace of automation and innovation today.

CONCLUSION

Gender inequality normally has undesirable effects on all facets of socioeconomic development. Education is the main factor that contributes to the overall development of a nation. Low female literacy rate means an overall sluggish growth of India, as it impacts every arena of development. India is struggling hard to stabilize its growing population through family planning programs. But if females are illiterate, this has a direct and negative impact on these initiatives. Many societies think that girls are not meant to go to school. According to them, they are only meant to do household work. With such thinking, how can we think that our country will become developed? When a girl or a woman is not educated, it is not only she who suffers but the entire family has to bear the consequences of her illiteracy.

She, who does not know the importance of education in life, does not emphasize the same for her kids. This hampers the family's as well as the nation's progress as a whole. Lack of education means lack of awareness. Illiterate women are not aware of their rights. They know nothing about initiatives taken by the government for their welfare

Supporting girls to stay in school and be involved in sports and other leisure and asset-building activities – and investing in infrastructure, technology and childcare to ease uneven burdens – can help put girls on the path to empowerment and the world on the course to greater gender equality.

And finally, we look for innovative solutions – such as digital technology and exciting new partnerships – to achieve our vision for gender equality at scale. We tap into the power and promise of youth to guide and shape what works for their generation.

Recommendations

The global community should work to:

- Deliver large-scale public and private sector programmes for girls' education, skills and market-adapted training.
- Improve the quality and relevance of teaching and learning to enable girls to develop the foundational, transferable and technical/vocational skills needed for life and work.
- Challenge gender stereotypes, social norms and dispense with the unconscious bias in relation to gender roles to enable girls to have the same learning and career opportunities as boys.
- Provide the poorest girls, and single and young mothers, with financial incentives to stay in school or to participate in youth employment or skill development programs.
- Empower, motivate, encourage and create space for girls and young women to consider careers in the growing digital world.
- Increase girls' participation in Science, Technology, Engineering and Math (STEM) learning.

- Create initiatives to support girls' school-to-work transition, such as career guidance, apprenticeships, and work experience programmes.
- Enable access to training, finance and enterprise development for female entrepreneurs.
- Empower adolescent girls at risk of child marriage, or who are already married, by providing them with information and fundamental life skills while helping them build support networks and remain in school.
- Educate and mobilize parents to invest in girls as parents and community members are often the primary decision-makers on child marriage, female genital mutilation (FGM) and girls' access to social networks.
- Help countries advance adolescent girls' health and wellbeing, especially in nutrition as well as HIV/AIDS and pregnancy care.
- Ensure that female health workers give iron folic tablets to adolescent girls at outreach sessions.

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Agricultural Development in Haryana: A Special Study with Reference to Structural Variation

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Abstract

The goal of the current study is to determine how Haryana's degree of agricultural development varies geographically. The research is supported by secondary data. The average data over three years, from 2017 to 2020, has been utilized to gauge agricultural development. Six indicators (input factors) have been employed. In order to determine the outcome, the Z score and composite score techniques were applied. District wise development has been divided into four categories, high, medium, low, and extremely poor, based on the composite score. Six of the 21 districts fell within the category of high agricultural development. The state's southern and southwestern regions had little agricultural growth.

Keywords: *Agricultural Development, Regional Disparity, Average Data, Composite Z score*

Introduction

Haryana's population relies heavily on agriculture which is also the main driver of the state's wealth. In addition to being a significant economic industry, agriculture also provides resources for the other economic sectors. Because of a rise in per capita income, agricultural development improves social and cultural development (Kazma Khan and Lubna Khalil 2013). In a state like Haryana, agricultural development is a crucial component of the

total economic growth. It is a well known fact that increased inputs like irrigation, fertilizers, and other sophisticated technology assets are required for agricultural development. Such agricultural inputs are not widely spread from the village level to the national level which leads to regional disparities in agricultural development.

The state of Haryana is dominated by agriculture. But at the district level, there can be seen much variation. Some neighborhoods have experienced a high rate of development while others have seen less. Therefore, it is crucial to identify the less developed areas (districts), and particular development policies need to be implemented there. The goal of the current research is to emphasize regional differences in agricultural growth at the district level.

Review of literature

In the past three decades, Haryana has experienced phenomenal economic growth. In Haryana, the average economic growth has stayed higher than the national average. In keeping with the national trends, the service sector has been the main driver of economic growth in Haryana, and the real estate boom has been a significant contributor over the past ten years.

As for Indian studies, Chaudhury (1966), Nair (1971), Majumdar and Kapur (1980), Rao (1985), and Ghuman and Kaur (1993) are a few of the earlier researches. These researches all look into the various trends or developments in income when the states' ranking is done taking into account the different criteria. But they are independent of any type of theoretical framework.

RAO, S. K. (1973) assessed regional disparities in India; the analysis showed that the states' levels of development did not significantly alter over time as long as their groupings included largely the same states. Although Verma, B.N., and Das, H. (1995) 4 and Singh, D. (1982) 2 and Rao, H. (1977) 3 agreed with this conclusion, they argued that "Since agriculture is the main source of income for the rural population, imbalance in its growth in different regions has led to the imbalances in the income and levels of living." Bhalla, G.S. Gurmail Singh (1997) 5 examined the agricultural development in India

between 1962-1965 and 1995-1995 and came to the conclusion that there was a substantial difference in the way agricultural inputs were absorbed in the various states.

Numerous researches have been carried out at the global, national, and district levels. It is common knowledge that there are areas of underdevelopment in even developed states, counties, and districts, and that there is no such thing as perfect equality. It follows that ideal regional economic development balancing is neither economically possible nor desirable. Studies that examine economic inequities in the development sector are also available. Studies examining inequities in the agriculture sector, which is the cornerstone of the Indian economy, are extremely rare. Laxmi Narayan (2011) has used Principal Component Analysis (PCA) to examine the extent of inter-district disparities in Haryana with the help of various indicators of development. Various indicators point to wide inter-district disparities across the state. B.K. Hooda and Ekta Hooda studied the regional disparities in the economic development of Haryana over the period 1991-92 to 2011-12. They used forty indicators for their study. Out of 40, 19 were directly concerned with agriculture development. They found that the districts of Faridabad and Gurugram lagged behind in agricultural development in all the three periods.

Objectives

1. To study the unique pattern of expansion of agriculture in Haryana.
2. To study the district-level availability of infrastructure meant for agricultural development.
3. To study the differences in agricultural development between regions.

Study Area

The Indian state of Haryana is located in the country's northwest. The state has a total size of 44212 square kilometers. It is located between latitudes 27°39'N and 30°55'N and longitudes 74°27'E and 77°36'. On November 1, 1966, Haryana came to be recognized as a State. It is bordered by Rajasthan in the south, Himachal Pradesh in the north, Punjab in the west,

and Uttar Pradesh in the east.

Currently, the state has twenty-two districts. Haryana is one of India's more developed states. And the state's agricultural sector is highly advanced. Agriculture here has a more advanced infrastructure including irrigation systems.

Data Base and Approach

The secondary source of data is the foundation of the current paper. The Statistics Abstract of Haryana for the years 2017-18, 2018-19 and 2019-20 is from where the secondary data has been gathered. All the information was properly transformed into tables for analysis of the study area's agricultural development. The district and state as a whole serve as the primary units of investigation. In the study, statistical tools like percentage and average were used. Six variables, mostly input variables because the basis for the result (output) is the input facility, have been used to determine the level of agricultural development. We have measured the level of agricultural development on the basis of the following six variables:

X_1 = is the cropping intensity (Percentage ratio of TCA to NSA)

X_2 = is the percentage of Net Area Irrigated

X_3 = Consumption of chemical fertilizers (In Tonnes)

X_4 = No. of Tube wells and Pumping Sets per hundred hectares of NSA

X_5 = No. of Tractors per hundred hectares of NSA

X_6 = Consumption of Pesticides (Technical Grade) (In Tonnes)

A composite index based on the six agricultural input variables was used to calculate the structural pattern of agricultural development in Haryana. The following formula has been used to calculate the Z score:

$$Z \text{ score } (Z_i) = \frac{X_i - X}{SD}$$

Where

Z_i = Standard Score for the i^{th} observation.

X_i = Original value of the observation.

X = Mean for all the values of X .

SD = Standard Deviation of X .

The Composite Z-score has been calculated after the Z score has been found to measure agricultural development. The values of composite score which are positive imply a high level of agricultural development and the negative values imply a low level of agricultural development. Very low, low, medium, and high are the four categories into which the values have been separated.

Indicators of the Structural Pattern of Development

1. Cropping Intensity: The quantity of crops grown in a particular field of agriculture over the course of a given year is referred to as cropping intensity. It is a reliable indication of agricultural development.

During the study period 2017-20, the cropping intensity of the state was 93.5 percent but there are lots of disparities at the district level. The highest cropping intensity has been found in Kaithal district (100 percent) followed by Kurukshetra (99.53 percent) and Jind (99.46). Fatehabad has the cropping intensity of 99.1 percent. The lowest cropping intensity is recorded in Panchkula district (50.36 percent). 14 districts are seen to have a higher cropping intensity than the state average. The geographical conditions and irrigational facilities have a crucial effect on the cropping intensity and the awareness of the farmers has also an important role to play.

2. Irrigation: Irrigation increases agricultural production and improves productivity. It is necessary for agricultural development and the farmers' income stability. It is also necessary for a more reliable food supply. In Haryana, irrigation facility is much more than in the rest of India. In the study period of 2017 to 2020, the average percentage of the net irrigated area is 92.89%. But there is a large variation in the distribution of irrigation facility in Haryana. The most developed district in Haryana for irrigation is Kaithal with the average percentage of 101.56 of Net irrigated area, followed by Faridabad, Fatehabad, Karnal, and Panipat. The lowest average percentage of net irrigated area is found in Mahendergarh where this percentage is only 65.31

3. Fertilizer Consumption (in tonnes): Because they supply agricultural nutrients, fertilizers are crucial to the development of agriculture. The application of fertilizers is a crucial indicator of agricultural

development. This is the best input for raising agricultural output. Fertilizers are one of the three key components of the green revolution, along with water and high yielding varieties of seeds.

Between 2017 and 2020, the average consumption of fertilizers in the state is 1,176,324.66 tonne. There is a large variation within the state. The highest consumption is found in Sirsa which is 1,75,861 tonnes followed by Karnal, Hisar, Fatehabad and Jind. The lowest consumption of fertilizers has been found in Panchkula which is only 9104.33 tonne. The districts which have been found to have average consumption of fertilizers less than 50,000 tonne are Faridabad, Jhajjar, Mahendergarh and Rewari.

4. No. of Tube Wells and Pumping Sets Per Hundred Hectares of NSA: Tube wells and pumping sets are used to enhance agricultural productivity. They also reduce the dependence on monsoons. The state average is 7.33 per hundred hectares of NSA, but there are large variations within the state. The highest number of tube wells and pumping sets are found in Kurukshetra (1,12,460) followed by Jind (75,534) Sirsa (73,564) Hisar (71721) and Sonipat (64586). The lowest average value of this indicator is found in Faridabad (3124) followed by Panchkula (3524.66)

5. No. of Tractors Per Hundred Hectares of NSA: From 2017 to 2020, the average number of tractors per hundred hectare of NSA in Haryana is 11357.66. The highest number of tractors are found in Hisar (27035) and the lowest number of tractors are found in Panchkula where the figure is only 2976.33 per 100 hectares of NSA. Other top districts in number of tractors are Karnal (20419.66), Sonipat (19410.00) and Jhajjar (18607.00). A very low number of tractors are found in Panchkula (2976.33) and Faridabad (3876). This shows a large variation in the number of tractors in Haryana.

6. Consumption of Pesticides (Technical Grade) (In Tonnes): Pesticides are an important input for agricultural production. Their use can control weeds and insects. They increase productivity and a farmer's income. In the study period, the average consumption of pesticides is 4052 tonne per 100 hectares of NSA. Consumption of pesticides varies from 468.33 tonne per 100 hectares to only 10 tonne per 100 hectares of NSA. The highest value

is found in Karnal and the lowest value is found in Rewari. This figure shows a huge disparity in consumption of pesticides within the state. This variation leads to disparity in agricultural production.

Structural Pattern of Agricultural Development

Development in agriculture is a multifaceted process. The growth of rural areas depends on it. The people who live in rural areas have a legitimate desire to raise their standard of living and partake of the benefits of development. Increasing the growth of agricultural output is often the main goal of agricultural development. It is necessary for economic expansion. On the basis of the composite score of six indicators, however, the utilization of agricultural potential and the level of development achieved vary from district to district.

1. Very Low Level of Agricultural Development (-1.604to-.50):

Three districts are found in this category. These are Panchkula (-1.04), Rohtak (-0.973), and Mahendergarh (-0.871). The lowest level of agricultural development is found in Panchkula where the Z score for all the six indicators is negative.

2. Low Level of Agricultural Development (-0.5to 000): There are seven district at this level of agricultural development. These are Palwal (-0.532), Rewari (-.438), Nuh (-0.397) Bhiwani (-0.343), Faridabad (-0.25), Gurugram (-0.199)and Panipat (0.014).

3. Medium Level of Agricultural Development (0.00 to 0.50): Five districts are found in this category. These are Jhajjar (0.453), Jind (0.36), Ambala (0.26), Fatehabad (0.118) and Yamuna Nagar (0.034).

4. High Level of Agricultural Development (0.50 and above): Six districts out of 21 fall in this high level of agricultural development category. These are Kurukshetra (0.70)), Sonipat (1.05), Hisar (0.78), Kaithal (0.77), Sirsa (1.72) and Karnal (0.87). Sirsa district is found to have the highest agricultural development followed by Sonipat.

The level of development is also depicted through the following map:

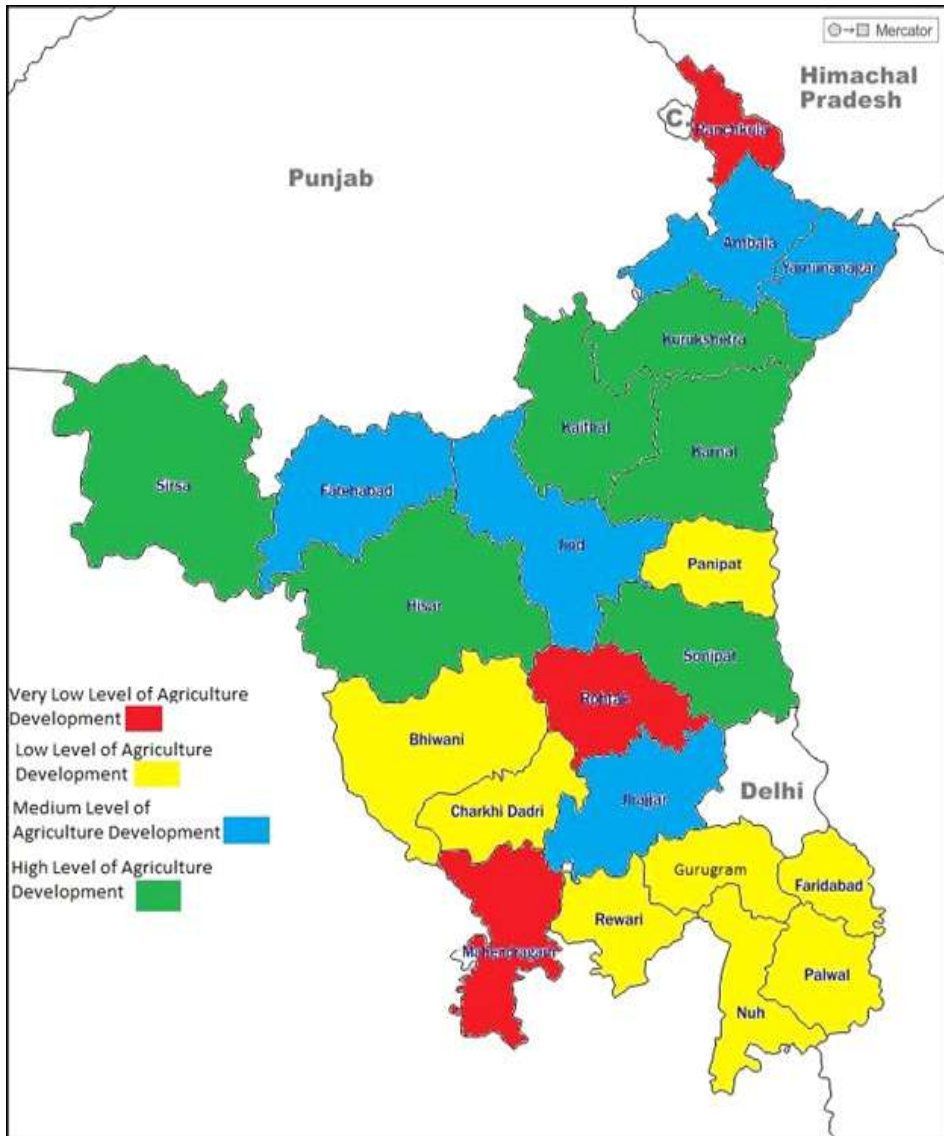


TABLE-1 Level of Agricultural Development in Haryana

	District	X1	X2	X3	X4	X5	X6
1	Ambala	98.6	96.53	58535.66	21342.66	10453	306
2	Bhiwani	98.53	82.65	96279	52343	17850.33	299.33
3	Charkhi Dadri						
4	Faridabad	97.53	100	9761	3124	3816.66	100
5	Fatehabad	99.1	98.64	113162.3	41691.33	17286	117
6	Gurugram	81.93	100	15693	18663.66	5957.33	40
7	Hisar	93.76	91.14	115854.3	71721.33	27035	434.66
8	Jhajjar	71.6	94.85	35201.33	40569.33	18607.33	64.66
9	Jind	99.46	99.73	123874	75534.33	15947	186
10	Kaithal	100	101.56	99930	56926.33	1505	304
11	Karnal	98.13	100	136815	55274	20419	468.33
12	Kurukshetra	99.53	98.63	99392.66	112460	1516.66	242
13	Mahendergarh	98.13	65.31	41403	24021.33	8501	35
14	Nuh	91.53	74.49	25277.66	16510	5852	324.6
15	Palwal	87.46	97.06	60608	26955.33	14277.66	100
16	Panchkula	50.36	70.46	9104.33	3524.66	2976.33	40
17	Panipat	86	100	55287	33546.66	10446.33	324.6
18	Rewari	97.63	87.83	42903.66	12911.66	8260.33	10
19	Rohtak	90.5	96.1	55363	27670.66	11953	44.3
20	Sirsa	97.03	97.76	175861	73564.66	3133	347
21	Sonipat	98.26	99.76	88440	64586.66	19410	276
22	Yamuna Nagar	95.53	96.93	93919.33	38494.66	13308	293

Source- Statistical Abstract of Haryana 2018-19, 2019-20, 2020-21

*average of three years (2017-18,2018-19,2019-20)

**Charkhi Dadri data not available

TABLE-2 Agricultural Development on the Basis of Composite Z score

	District	X1	X2	X3	X4	X5	X6	Composite Z Score
1	Ambala	0.585	0.405	-0.339	-0.729	0.907	0.687	0.26
2	Bhiwani	0.579	-0.866	0.491	0.392	-1.587	0.641	-0.343
3	Charkhi Dadri							
4	Faridabad	0.493	0.723	-1.412	-1.388	0.828	-0.749	-0.25
5	Fatehabad	0.628	0.598	0.863	0.007	-0.754	-0.631	0.1185
6	Gurugram	-0.844	0.723	-1.282	-0.826	2.191	-1.168	-0.199
7	Hisar	0.170	-0.088	0.922	1.093	1.013	1.585	0.782
8	Jhajjar	-1.731	0.251	-0.852	-0.033	0.641	-0.996	0.453
9	Jind	0.659	0.698	1.099	1.231	-1.377	-0.149	0.36
10	Kaithal	0.705	0.866	0.572	0.558	1.266	0.673	0.773
11	Karnal	0.545	0.723	1.384	0.498	-1.375	1.820	0.599
12	Kurukshetra	0.665	0.597	0.560	2.567	-0.399	0.241	0.705
13	Mahendragarh	0.545	-2.455	-0.716	-0.632	-0.769	-1.203	-0.871
14	Nuh	-0.021	-1.614	-1.071	-0.904	0.408	0.817	-0.397
15	Palwal	-0.370	0.454	-0.293	-0.526	-1.171	-0.749	-0.532
16	Panchkul	-3.553	-	-1.427	-1.373	-0.127	-1.168	-1.604

SOURCE- Computed by Authors

TABLE-3 Ranking of Districts According to Composite Z score

Rank	District	Composite Z Score
1	Sirsa	1.72
2	Sonipat	1.05
3	Hisar	0.782
4	Kaithal	0.773
5	Kurukshetra	0.705
6	Karnal	0.599
7	Jhajjar	0.453
8	Jind	0.36
9	Ambala	0.26
10	Fatehabad	0.118
11	Yamuna Nagar	0.034
12	Panipat	-0.014
13	Gurugram	-0.199
14	Faridabad	-0.25
15	Bhiwani	-0.343
16	Nuh	-0.397
17	Rewari	-0.483
18	Palwal	-0.532
19	Mahendergarh	-0.871
20	Rohtak	-0.973
21	Panchkula	-1.604

SOURCE-Computed By Authors

Conclusion

From Table 3 we find that Sirsa has the highest Composite Z score that is 1.72 which shows the highest development in agriculture in the district. It is followed by Sonipat (1.05), Hisar (0.782), Kaithal (0.77) and Kurukshetra (0.70). These districts also show a high level of development in agriculture in the State since the Z score is positive, meaning thereby that the inputs used are high in number in these districts. The backward districts in terms of agriculture are Panchkula, Rohtak, Mahendergarh and Palwal.

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We should remain in the company of scholars.
May we acquire wisdom and the desire to
perform good deeds so as to be blessed with the
strength and bliss of divinity!

