3.2.2 Number of books and chapters in edited volumes/books published and papers published in national/ international conference proceedings per teacher during the year

Sr. No.	Name of the Teacher	Title of the book/chapters published	Title of the paper	Title of the proceedings of the conference	Name of the conference	National / International	Year of publication	ISBN/ISSN number of the proceeding	Affiliating Institute at the time of publication	Name of the publisher
1.	Book- Dr. S.R. Rohamare, Dr. Gholap A.R, Mr. Shelke G. R	75 Years of Indian Economy: Opportunities and Problems	-	75 Years of Indian Economy: Opportunities and Problems	75 Years of Indian Economy: Opportunities and Problems	National	2024	978-81-969179-9-9	Arts, Commerce, Science and Computer Science College Ashvi kd	Arts, Commerce, Science and Computer Science College Ashvi kd
2.	Dr. S.D. Bhumkar, Mr. D.V. Lokhande, Mr. M. M. Patel, Mr. S.S. Varpe, Mr. V. P. Chaudhari, Mr. Salve V.A	Current Research Scenario in Science and Technology	-	Current Research Scenario In Science and Technology	Current Research Scenario In Science and Technology	National	2024	978-93-6128-406-9	Arts, Commerce, Science and Computer Science College Ashvi kd	Arts, Commerce, Science and Computer Science College Ashvi kd
3.	Dr. S. R. Jadhav		Gramin Kadambarituan Vyakt Honare Aarthik Paryavaran.	75 Years of Indian Economy: Opportunities and Problems	75 Years of Indian Economy: Opportunities and Problems	National	Jan-24	978-81-969179-9-9	Art's, Commerce, Science and Computer Science College Ashvi Kd.	Art's, Commerce, Science and Computer Science College

										Ashvi Kd.
4.	Mr. S.A Anap		Prachin Bharatatil paryatanach a Bhartiy Arthavyavth evar Zalela Parinam	75 Years of Indian Economy: Opportuniti es and Problems	75 Years of Indian Economy: Opportuniti es and Problems	National	Jan-24	978-81-969179-9-9	Art's, Commerce, Science and Computer Science College Ashvi Kd.	Art's, Commerce , Science and Computer Science College Ashvi Kd.
5.	Mr. N.S Parwat		Marathi Sahityatun Chitrit Honara Gramin Vikas	75 Years of Indian Economy: Opportuniti es and Problems	75 Years of Indian Economy: Opportuniti es and Problems	National	Jan-24	978-81-969179-9-9	Art's, Commerce, Science and Computer Science College Ashvi Kd.	Art's, Commerce , Science and Computer Science College Ashvi Kd.
6.	Dr. S.S. Rohmare		India's Service Sector-Shaping Future of Indian Retail Industry.	75 Years of Indian Economy: Opportuniti es and Problems	75 Years of Indian Economy: Opportuniti es and Problems	National	Jan-24	978-81-969179-9-9	Art's, Commerce, Science and Computer Science College Ashvi Kd.	Art's, Commerce , Science and Computer Science College Ashvi Kd.
7.	Ms. D.D. Tambe		Godan Upnyas me Chitrit Bhartiy Kisan Javan.	75 Years of Indian Economy: Opportuniti es and Problems	75 Years of Indian Economy: Opportuniti es and Problems	National	Jan-24	978-81-969179-9-9	Art's, Commerce, Science and Computer Science College Ashvi Kd.	Art's, Commerce , Science and Computer Science College Ashvi Kd.
8.	Ms. S.R. Pachore		Women Economic Empowerme nt depicted in the selected women characters by Indian English Novelist writer	75 Years of Indian Economy: Opportuniti es and Problems	75 Years of Indian Economy: Opportuniti es and Problems	National	Jan-24	978-81-969179-9-9	Art's, Commerce, Science and Computer Science College Ashvi Kd.	Art's, Commerce , Science and Computer Science College Ashvi Kd.

			Shashi Deshpande.							
9.	Mr. G.C. Khemner		Kisano ki Samsyanyo ka Mulyankan: Hindi Upnyas Sahitya Sandarbh Me	75 Years of Indian Economy: Opportuniti es and Problems	75 Years of Indian Economy: Opportuniti es and Problems	National	Jan-24	978-81-969179-9-9	Art's, Commerce, Science and Computer Science College Ashvi Kd.	Art's, Commerce , Science and Computer Science College Ashvi Kd.
10.	Dr. A. R. Gholap		E-Commerce: Role in Economic Developmen t	75 Years of Indian Economy: Opportuniti es and Problems	75 Years of Indian Economy: Opportuniti es and Problems	National	Jan-24	978-81-969179-9-9	Art's, Commerce, Science and Computer Science College Ashvi Kd.	Art's, Commerce , Science and Computer Science College Ashvi Kd.
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12.	Dr. S.A. Unde		An Analytical Study of Demonetizat ion	75 Years of Indian Economy: Opportuniti es and Problems	75 Years of Indian Economy: Opportuniti es and Problems	National	Jan-24	978-81-969179-9-9	Art's, Commerce, Science and Computer Science College Ashvi Kd.	Art's, Commerce , Science and Computer Science College Ashvi Kd.
13.	Ms. N.S. Mandhare		Bharatatil Krushikhetra chya Samsya ani Upayyojana	75 Years of Indian Economy: Opportuniti es and Problems	75 Years of Indian Economy: Opportuniti es and Problems	National	Jan-24	978-81-969179-9-9	Art's, Commerce, Science and Computer Science College Ashvi Kd.	Art's, Commerce , Science and Computer Science College Ashvi Kd.
14.	Ms. A.B. Aher		Challenges before Indian	75 Years of Indian Economy:	75 Years of Indian Economy:	National	Jan-24	978-81-969179-9-9	Art's, Commerce, Science and	Art's, Commerce , Science

			Economy	Opportunities and Problems	Opportunities and Problems				Computer Science College Ashvi Kd.	and Computer Science College Ashvi Kd.
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16.	Mr. G.R. Shelke		Demonetization and It's Impact on APMC PUNE	75 Years of Indian Economy: Opportunities and Problems	75 Years of Indian Economy: Opportunities and Problems	National	Jan-24	978-81-969179-9-9	Art's, Commerce, Science and Computer Science College Ashvi Kd.	Art's, Commerce, Science and Computer Science College Ashvi Kd.
17.	Mr. M.G. Autade		Role of Govt. sector banks towards financial inclusion during pre and post Introduction of Pradhan Mantri jan Dhan Yojana	75 Years of Indian Economy: Opportunities and Problems	75 Years of Indian Economy: Opportunities and Problems	National	Jan-24	978-81-969179-9-9	Art's, Commerce, Science and Computer Science College Ashvi Kd.	Art's, Commerce, Science and Computer Science College Ashvi Kd.
18.	Mr. G. C. Khemner		Rastriy kvi Dinkar kew Kavya me Rastriy Chetana	Hindi Aur Marathi Sahitya Me Rastriy Chetana	Rastriy kvi Dinkar kew Kavya me Rastriy Chetana	International	Mar-24	2582-5429	Art's, Commerce, Science and Computer Science College Ashvi Kd.	Akshara Publication
19.	Dr. S.R. Jadhav		Samaj Kalin Katha	B. Aadhar	B. Aadhar	International	Mar-24	2278-9308	Art's, Commerce, Science and Computer Science	Aadhar Publications

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20.	Mr. G.R. Shelke		Bhartatil Krushi Vidyan Kendranchi Bhumika.	Research Methodology	Research Methodology	International	Mar-24	2321-5488	Art's, Commerce, Science and Computer Science College Ashvi Kd.	ASM Digital Education
21.	Ms. D.D. Tambe		Samajik Env Loktantric Sarokar Aur Samkalin Hindi Kahani	Hindi Sahitya ki Samajik Env Loktantrik Bhumika Naye Sandarbh	Hindi Sahitya ki Samajik Env Loktantrik Bhumika Naye Sandarbh	International	Jan-24	2582-5429	Art's, Commerce, Science and Computer Science College Ashvi Kd.	Akshara Publication
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			Lithium-ion batteries.							
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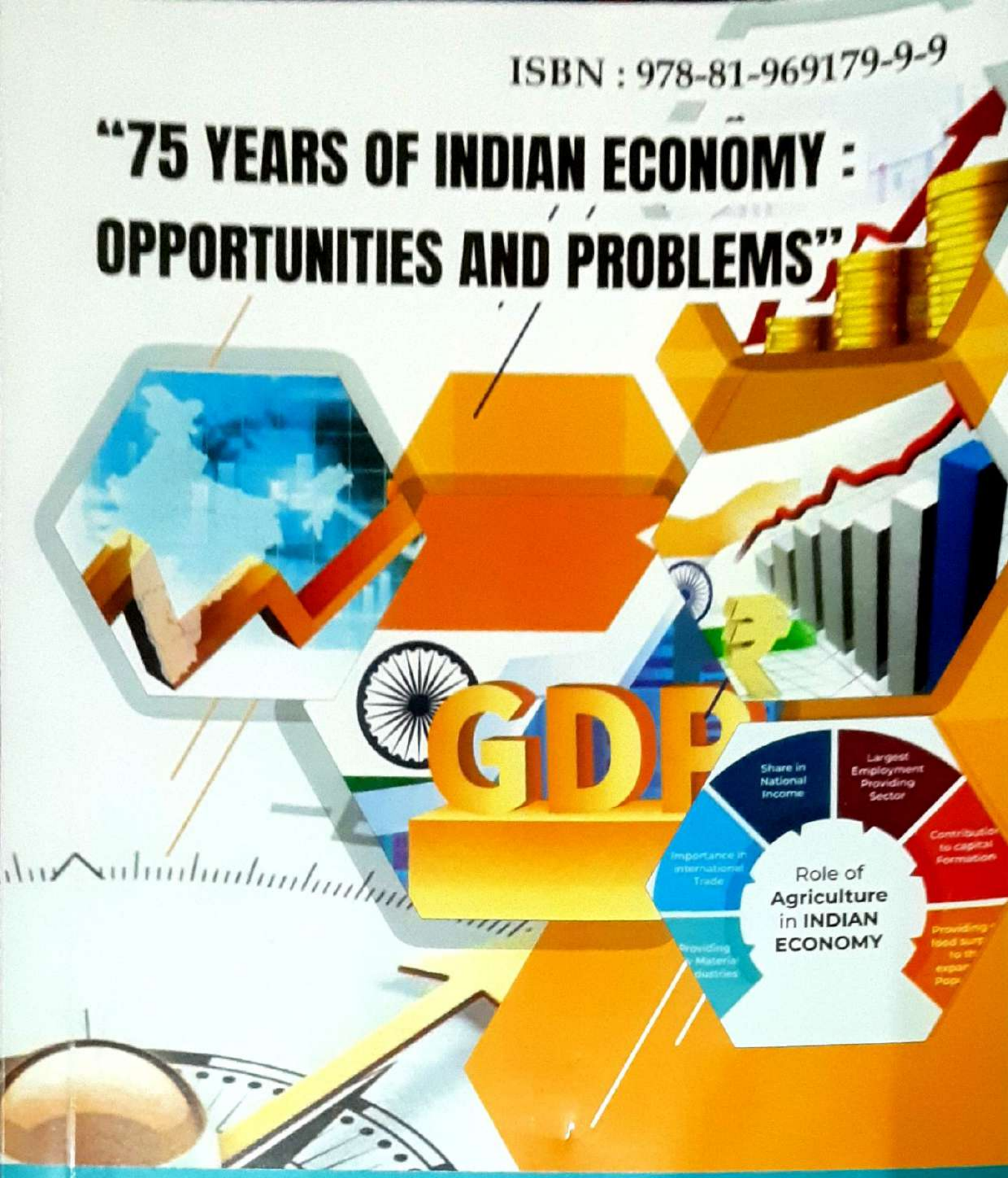

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PREFACE

This proceeding contains the contributed research presentation delivered at the National Seminar on "75 Years of Indian Economy: Opportunities and Problems" organized by the Department of Economics of Arts, Commerce, Science and Computer Science College, Ashvi Khurd and sponsored by Indian Council of Social Science Research (ICSSR), New Delhi held on 19th -20th January 2024.

The seminar particularly encouraged the interaction of researchers and developing academies with the more established academic community in an informal setting to present and discuss new and current work. This contribution helped to make the seminar as outstanding as it has been. More than 89 research papers are contributed by eminent researchers from across the country.

On the occasion of the 75th year of Independence, the entire country is celebrating the *'Azadi ka Amrit Mahotsav'*. In this background, while organizing a seminar on '75 Years of Indian Economy: Opportunities and Challenges', the main objective is to shed light on the ups and downs experienced by the Indian Economy in the last 75 years. The development sought by the nation and the possible opportunities in the future are endless. Thus, India is marching to become a global superpower in the next few years. The Indian Economy is staying ahead of many major economies though the challenges and downside risks cannot be ruled out. Gross Domestic Product (GDP) across the globe has been steadily improving while inflation is receding but India is doing better.

India is being looked as the next economic superpower and also is expected to lead the world as *Vishva Guru*, it is essential to evaluate the progress of the economy in a nutshell. However, there are plenty of challenges to this economy that it needs to overcome to become a global giant. There are problems related to population growth, regional imbalance, poverty, unemployment and slow growth rate, etc. This seminar has proved to be a very good platform for the researchers of Economics, Commerce and Management to share their research regarding the Indian Economy.

The main object of the seminar is to bring together eminent researchers of various fields of Economics and Commerce to exchange ideas relevant to the Opportunities and Problems in the Indian Economy. Most of the Research papers in this volume have been referred. The editors express their gratitude to all the management as well as staff, colleagues, research scholars and students, who helped in many ways for its success.

This academic event is being conducted with financial assistance from the Indian Council of Social Science Research (ICSSR), New Delhi. I am glad that the Department of Economics is also bringing out a research journal of the seminar that includes invited talks of the resource persons and the contributions of the participants. My sincere thanks and appreciation are due to the staff members for making great efforts in organizing this event and making it a grand success.

Thank You!

Dr. Sarika Rohamare

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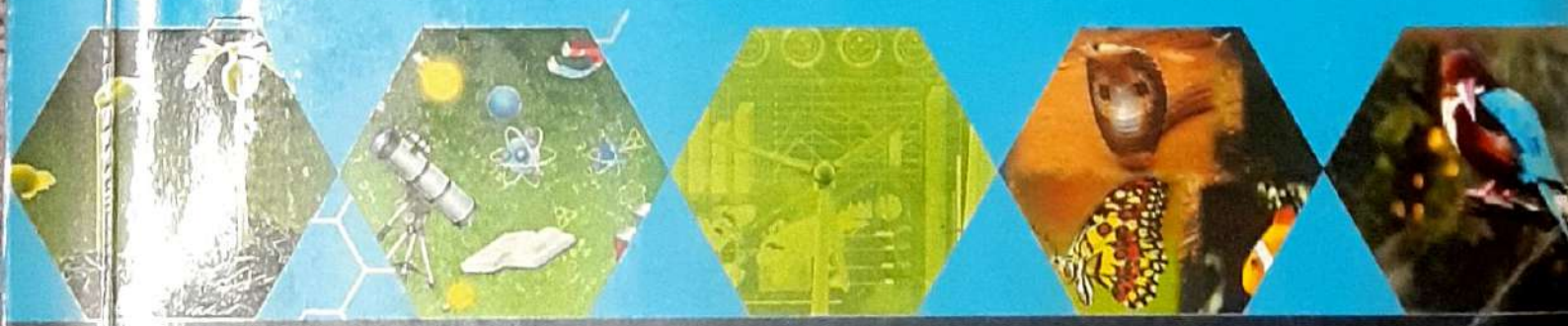

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Preface

This book represents the research papers contributed by teachers and research scholars on **Current Research Scenario in Science and Technology**. Economic growth and human development are largely fueled by science, technology, and innovation. Innovation is the process of nurturing new concepts into use that creates value. It opens the inventions from various aspects of science and technology for useful application in the society. Research plays vital role in socio-economic development and contributes significantly for the wellbeing of human beings. The growing population and rising demands limits the natural resources to support the life. Thus, it is important to overview current research scenario in science and technology to develop sustainable clean-energy technology and efforts should be taken to control climate change, achieve food security, reduce disaster risks, realize sustainable industrialization and solve the problems of poverty and unemployment.

Creating a sustainable future needs a critical thinking of how one can apply technology for the development of innovations within existing society. It is possible only when we create public awareness through a current research scenario. The goal of sustainable future can be achieved by the understanding the basics of scientific concepts like energy conservation reduce-reuse-recycle, water harvesting, organic farming, rooftop farming use of various technologies like solar, thermal, wind, rain, geothermal and biomass. Building knowledge based society having a significant impact on our lives to promote economic growth and environmental sustainability by exploring ideas and finding new feasible ways.

Chemistry plays a pivotal role in the strength of the Indian economy and the advancement of humankind. Chemist's achievements include life-saving pharmaceuticals, advanced energy solutions, improved agricultural productivity, and novel materials used in products from clothing to electronic devices. Current research in chemistry will help to better protect plants from pest infestations, improve food production and distribution channels, extend the shelf life of food through advances in packaging, and maintain food quality and safety. High-yield seeds in combination with new approaches to fertilization will increase food production and help to reduce soil erosion.

Medical breakthroughs and technologies made possible through advances in chemistry provide understanding of how human health is impacted by disease and hazardous chemicals in our food, water and the environment. Current research in science plays a critical role in medical diagnosis and drug development, enabling people to live healthier lives also offers new solutions for reducing pollution and its impacts on human health. Current research in chemistry can help eliminate or reduce hazardous chemical pollution. Chemistry will help meet the affordable and clean energy goal through the development of new materials for renewable energy, by being more energy efficient in the chemical processing industries, and by advancing cleaner fuel technologies.

Life science research contributes for delivering better outcomes for health, the environment and industrial, agricultural and energy production. Current research in Life Science also promises more effective and efficient products to provide better health that are based on understanding of the human body and its ailments and diseases and of the interventions required to deal with them. These products can deliver on two vital and inextricably linked goals - improved health.

The increasing energy demand in scarcity of electricity that affects education and healthcare in many areas of the world, are the vital problems faced by the contemporary civilization. Physics contributes in addressing these problems by the development of alternative energy sources. The scientific research is the foundation of progress in renewable energy technologies, fuel cells as well as the nuclear power, which is considered as alternative, clean energy source. Sustainable energetic that includes photovoltaic, solar thermal applications, biomass conversion, wind energy technology, hydrogen production and fuel cells requires novel solutions provided by physics.

Dr. M. N. Kharde

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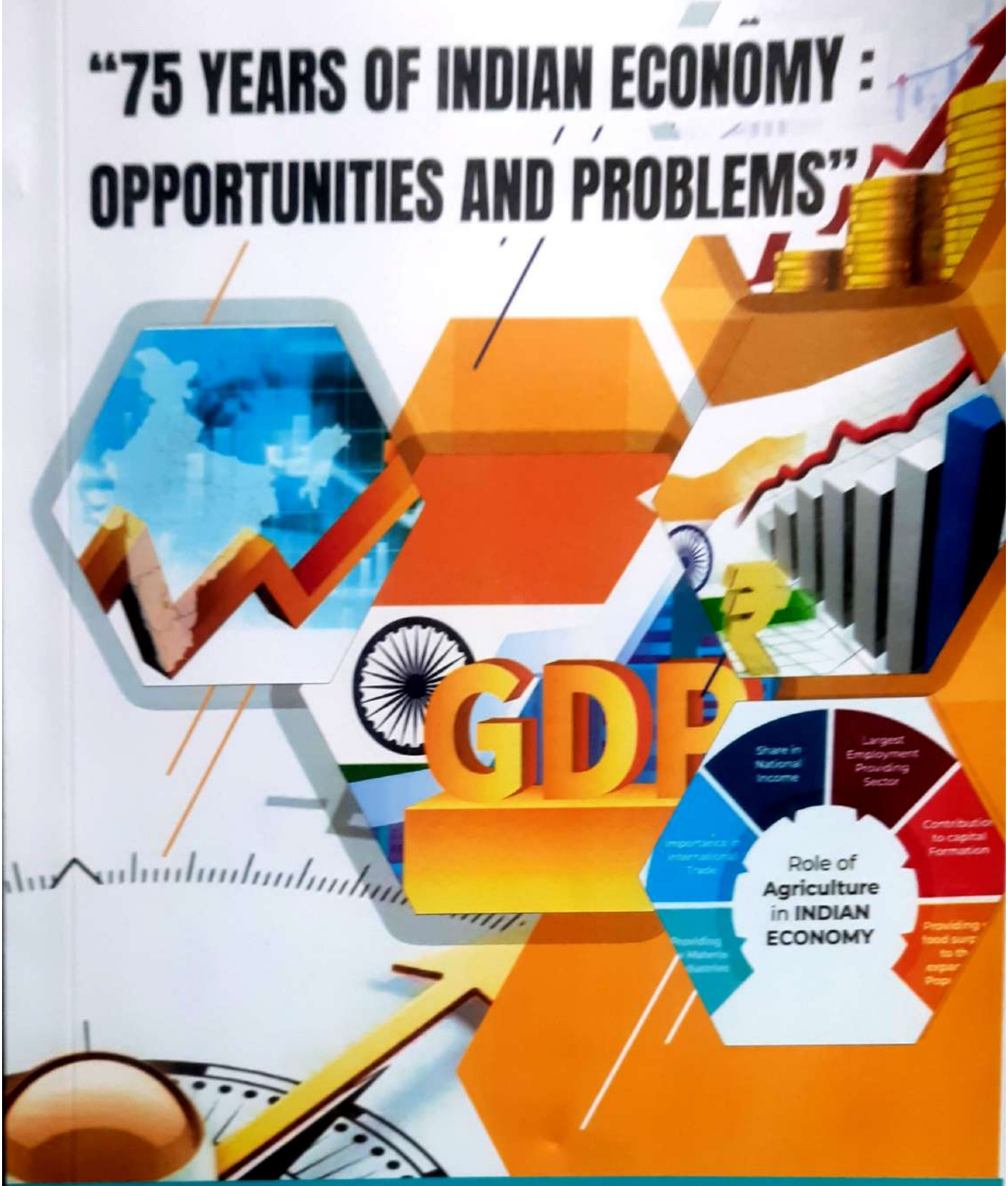

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ग्रामीण कादंबरीतून व्यक्त होणारे आर्थिक पर्यावरण

डॉ.सुवर्णा राजेश जाधव

मराठी विभाग प्रमुख

कला, वाणिज्य, विज्ञान व संगणकशास्त्र महाविद्यालय आष्टी खुर्द

१.प्रस्तावना

कोणत्याही वाङ्मयाचा त्या काळाशी असणारा संबंध हा एकरूप असल्याने काळाच्या गरजेनुसारच वाङ्मय हे आकारास येते. मराठी वाङ्मयाच्या इतिहासात काळानुरूप अनेक साहित्य प्रकारांची निर्मिती झालेली आहे. कथा ,कविता, नाटक, कादंबरी, चरित्र, ,आत्मचरित्र असे विविध वाङमय प्रकार त्यांच्या स्वरूपा नुसार पाहावयास मिळतात. यामध्ये कादंबरी हा वाङ्मय प्रकार आधुनिक काळातील सर्वात लोकप्रिय प्रकार म्हणून ओळखला जातो. थोडक्यात कादंबरी हा व्यापक वाङ्मय प्रकार आहे.

स्वातंत्र्यपूर्व काळात अर्थात इंग्रजी राजवटीत तत्कालीन स्थितीनुसार व सामाजिक गरजेनुसार कादंबरी लेखनाला सुरुवात झाली. इ.स.सन १९४६ म्हणजे स्वातंत्र्य आणि स्वातंत्र्योत्तर कालखंड होय .१५ ऑगस्ट १९४७ ला भारत देश स्वतंत्र झाला.देशाला स्वातंत्र्य मिळाल्या आनंदा बरोबरच हिंदुस्तानाच्या फाळणीमुळे भारत ,पाकिस्तान विभाजन करण्याचे दुःख यामुळे देशातील परिस्थिती अशांततेची परिस्थिती होती. सर्वत्र दंगली चे वातावरण होते. गांधीजी सारखे नेते हे थांबवण्याचा प्रयत्न करत होते. आर्थिक अस्थिरता अज्ञान, अस्पृश्यता या समस्यांनी तत्कालीन सामाजिक सुरक्षा केली जात होती.साहजिकच या सर्वांचे प्रतिबिंब तत्कालीत साहित्यातून पहावयास मिळते.

२.ग्रामीण कादंबरीतून व्यक्त होणारे आर्थिक पर्यावरण

स्वातंत्र्यप्राप्तीनंतर एक वेगळे चित्र समाजामध्ये डोळ्यासमोर येते. देश स्वतंत्र झाला होता स्वातंत्र्यप्राप्तीचे ध्येय पूर्ण झाले होते. जीवनातील एक सत्य पूर्ण झाल्याचा आनंद होता. स्वातंत्र्यपूर्व काळातील कलावंतांच्या डोळ्यासमोर स्वातंत्र्यप्राप्तीचे एकच ध्येय होते स्वतंत्र प्राप्तीनंतर मात्र चित्र वेगळे दिसते.आणि घटना आणि गोष्टी प्रकाशात येऊ लागले. राष्ट्रीय सामाजिक, सांस्कृतिक ,आर्थिक बदल घडताना दिसू लागली .राष्ट्रीय योजना आखल्या जाऊ लागल्या.डॉ. बाबासाहेब आंबेडकर यांनी स्वातंत्र्य भारताने लोकशाही राज्य प्रणाली स्वीकारली. जवाहरलाल नेहरू यांनी पंचवार्षिक योजना आखून देशाला विकासाची स्वप्न दाखविले. स्वातंत्र्य, समता ,बंधुता होणे या मूल्यांचा देशभर समाजात रुजू लागली. ती व्हावी अशी रस्ता अपेक्षा निर्माण झाली .ग्रामीण विकासाच्या योजना आखून कृषी क्षेत्राला प्रगतीच्या दिशा दाखवण्यात आल्या. एका बाजूला औद्योगीकरणाला महत्त्व दिले जाऊ लागले. यांत्रिकीकरणाचा प्रभाव वाढला शहरांनाही एक वेगळे महत्त्व प्राप्त येऊ लागली .समाजातील आणि समाज जीवनातील व त्यांच्याशी संबंधित असलेल्या सर्व क्षेत्रातील ठराविक वर्गांची अरेरावी संपुष्टात आली. या सगळ्याबरोबरच फाईड ,युग अशा शास्त्रज्ञांच्या विचारांचा प्रभाव पडून वरिष्ठ वर्गातील आणि सामान्य वर्गातील माणूस नव्याने निर्माण होऊ लागला.काळातील या सर्व घटना घडामोडींचा संबंध समाज जीवनात ढवळून निघाले होते. त्याचा परिणाम साहित्य क्षेत्रावर झाला. राजकीय आणि सामाजिक बदलाबरोबर सांस्कृतिक बदल व आर्थिक बदल घडणे. अपरिहार्यच होते .वाङ्मयीन परिवर्तनाने वेळ घेतला. जुने संकेत म्हणून नवकथा, नवकविता निर्माण झाली तर या कथेमध्य गंगाधर गाडगीळ यांनी बदल घडवून आणून नवकथा निर्माण केली .परंतु कादंबरी तसा ठळक बदल कोणी घडवला नसला तरी स्वातंत्र्योत्तर बदल झाला वरील वैशिष्ट्या मुळे स्वातंत्र प्राप्तीमुळे कादंबरी वाङ्मयात वेगळेपण आढळते. जीवनातील कुतहल तिच्यात निर्माण होऊ लागले. एखाद्या विषयावर कादंबरी लिहिण्यापेक्षा जीवन अनुभवास कलात्मक आविष्कार करण्याकडे तिचा जास्त कल दिसतो. माणसांचे स्वतःचे इतरांशी व निसर्गाशी संबंध नेमकेपणाने या कादंबरीत अवतरतात. जीवनातील गुंतागुंत मिश्रित तिची जाणीवही अधिक तीव्र दिसते. लेखक आणि वाचक यांच्यातील संबंध आजवरचा महत्त्वाचा मानला.

स्वातंत्र्यानंतर घटनेने दिलेल्या समानतेच्या, शिक्षणाच्या अधिकारामुळे ग्रामीण भागात जागृती निर्माण झाली. ही जागृती सर्व कशी होती असे मात्र म्हणता येत नाही. विकासाच्या काही साधने ग्रामीण भागापर्यंत पोहोचले. पण त्यातून कोणाचा आणि किती विकास झाला हे मात्र संशय स्वस्थ ठरले. एकीकडे शहरांचा विकास झाला तर तरीही शहरांमधील बकल दाखवते. पण जीव घेण्यास आत्मभान स्पर्धा वाढली गेली. खेड्यापेक्षा वाईट अवश्य शहरात लोकांना जगावे लागली

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.स्वातंत्र्यानंतर खेड्यात राहून शेती व्यवसाय किंवा व्यवसाय करणे कमीपणाचे समजले जाऊ लागली. खेड्यात राहणारे व्यक्ती म्हणजे मागासलेले असे समजले जाऊ लागले .त्यामुळे खेडी बकाल झाली ओस पडली. अर्थात खेड्यातला एक वर्ग शिकला शहरात जाऊन नोकरी व्यवसाय स्थिरावला या वर्गाने देखील ग्रामीण साहित्य निर्मितीत भर पडली. पण शिक्षण घेऊन त्यांच्या पदरी बेकारी आली अवस्था वाईट झाली. खेडे त्यांना शाप देऊ लागली. स्वातंत्र्यानंतर खेड्यांनी भरलेल्या आणि कृषीप्रधान असलेल्या भारतात खेडी आणि शेतकरी असा विकास झाला नाही. ते मोठ्या प्रमाणात दुर्लक्षित राहिली .भारतीय लोकशाहीतील ही कमतरता म्हणावी लागेल शेती आणि शेतकरी याकडे दुर्लक्ष झाले.

१९७५ नंतर खेड्यातील किंवा मूळ खेड्यातील पण नोकरी व्यवसायाच्या निमित्ताने शहरात राहणाऱ्या सुशिक्षित वर्गाची सृजनशील व सांस्कृतिक जागृत झाले. या वर्गाने ग्रामीण समाजाचे चित्रण आपल्या साहित्यातून केले.१९९० नंतर बदलते सामाजिक जीवन समजीवन निर्माण झालेली प्रश्न आणि आव्हानांना सामोरे जाण्यासाठी ग्रामीण समाजाची झालेली शक्ती असा एक अंतर्बाह्य भारतीय खेड्यामध्ये निर्माण झालेला दिसतो .एकीकडे विकासाची गती वाढलेले दिसते. जागतिकीकरण खाजगीकरण आणि उदातीकरण मुळे ग्रामीण भागातील नैसर्गिक साधन संपत्तीकडे भांडवलदारांचे लक्ष वेधले गेले. शेतकऱ्यांच्या जमिनी भांडवलदारांच्या आणि शासनाच्या ताब्यात येईल त्यामुळे विस्थापितांचे प्रश्न वाढलेत घरणे कालवे, बंधारे यामुळे शासनाच्या ताब्यात जमिनी त्या जमिनीचे मूळ मालक हरवले. यातच भ्रष्टाचाराचे प्रमाण प्रचंड वाढले त्यामुळे ग्रामीण भागाच्या विकासासाठी मजुरी झालेली निधी राजकीय नेते आणि प्रशासकीय अधिकारी यांच्या घशात गेली. त्यामुळे ग्रामीण जनतेची योजना वाढत गेली. बँका , पतसंस्था यांच्याकडून कर्ज घेणे सोपे झाले. असले तरी शेतीच्या बिन भरोशाच्या आणि निसर्गावर अवलंबून असलेल्या उत्पादन पद्धती वर कर्ज फेडणे शेतकऱ्यांना अवघड झाले .त्याची अवस्था बिकट झाली. शेतकरी मोठ्या प्रमाणात आत्महात्या साठी प्रवृत्त झाला. जगण्याचे प्रश्न आणि व्यवहारिकता यांच्या हाताबाहेर गेली. आणि जगण्यातला रस संपला. बाबुराव मुसळे यांच्या 'हल्या हल्या दूध दे' या कादंबरीत या प्रश्नांची चर्चा आहे भारतीय लोकशाही व्यवस्था आणि त्या अनुषंगाने निर्माण झालेली निवडणूक प्रक्रिया यामुळे ग्रामीण भागात वातावरण झाले असे म्हटल्यासारखे वावगे ठरणार नाही. ठाणे ,ग्रामपंचायत पासून पंचायत समिती, जिल्हा परिषद, विधानसभा आणि लोकसभा निवडणुकीपर्यंत निवडणुकीच्या मार्गाने ग्रामीण भागातील सामाजिक एकतेला धोका निर्माण झाला. विविध गटागटांमध्ये ग्रामीण भागात विकास होत गेला.
जातीपातीचे समीकरणे सक्रिय झाले.

१९९० नंतरच्या ग्रामीण समाजाचे अवलोकन केले तर अत्यंत धक्कादायक निष्कर्ष हाती येतो कृषी संस्कृतीच्या उगम पासून आज पर्यंत भारताची आर्थिक व्यवस्था शेतीवर अवलंबून आहे. पण शेतात शेती आणि शेतकरी यांचे कायम अपेक्षा झाली आहे. महात्मा फुले यांच्या 'शेतकऱ्यांचा असूड' या ग्रंथात चित्रीत केली. परिस्थिती आणि आजच्या शेतकऱ्यांची परिस्थिती याची तुलना केली तर फारसा फरक पडला आहे. तसे दिसत नाही. आवश्यक त्या मूलभूत सुविधा आजही खेड्यापर्यंत पोहोचलेल्या नाहीत .अज्ञान, दारिद्र्य, सामाजिक विषमता, लिंग सापेक्षता जातीयता या गोष्टी आहेत अशाच राहिल्या या सगळ्या परिस्थितीत अत्यंत वाईट परिणाम ग्रामीण समाजावर झाला. शेतीतील श्रमाचे अवमूल्यन झाले. सामाजिक जीवन आपल्या साहित्यातून मांडणारे महादेव मोरे दारिद्र्यरेषेखाली जगणाऱ्या ग्रामीण लोकांचे चित्र साहित्यातून करायच्या अशा निश्चयाने साहित्य निर्मिती करताना दिसले आपल्या 'झुंबड' या कलाकृती द्वारे त्यांनी ते स्पष्ट केले .

साधारणता; १९९० च्या शतकात खुल्या अर्थव्यवस्थेला चालना मिळाल्यानंतर देशातील बाजारपेठ सर्वांसाठी खुली झाली. त्याचा परिणाम भारतीय अर्थव्यवस्थेवर झालेला पाहायला मिळतो. जागतिकीकरणानंतर माहिती तंत्रज्ञानात झपाट्याने वाढ होत आहे. इंटरनेट मोबाईल यामुळे माहितीचा साठा सर्वांसाठी खुला झाला. लोकसंख्येने मोठ्या असलेल्या भारत देश प्रगत देशासाठी मोठी बाजारपेठ आहे. त्यामुळे जगभरातील अनेक कंपन्या आपला मोर्चा भारताकडे वळविला दिसतो. बाजारपेठेत भांडवलदारांची मक्तेदारी निर्माण झालेली आहे. जाहिरातीच्या परिमाणाने अनेक परकीय वस्तू भारतीयांच्या माथी मारल्या जात आहे .खुल्या अर्थव्यवस्थेचा स्वीकार यामुळे भारतीयांचे जीवनमानच कमालीचे बदलून गेले आहेत .आपल्या देशात प्रगतीसाठी खुली अर्थव्यवस्था स्वीकारली असली तरी त्याचा परिणाम भारतीय तील पारंपारिक व्यवसायावर झालेला दिसतो. अनेकांवर बेकाराची कुऱ्हाड कोसळली अनेकांचे संसार उध्वस्त झाले. जागतिकीकरणाच्या या जीव घेणे स्पर्धेत सर्वसामान्य माणूस मात्र मागे पडला. त्यामुळे देशात एकूणच कमालीची श्रीमंती वाढत गेली तर

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दुसरीकडे कमालीची गरिबी वाढत गेली. गरीब श्रीमंती मधील दरी दिवसेंदिवस वाढतच चाललेले आहेत. सामाजिक हिताच्या दृष्टिकोनातून ही बाब अत्यंत चिंतनीय स्वरूपाची आहे. जागतिकीकरणाच्या जनजातवादामुळे मुंबईमधील जवळपास सर्वच कापड गिरणी बंद पडले आहेत. या निर्णयामुळे अवलंबून असणारे अनेक कुटुंब बेकारीच्या खाईत लोटली गेली आहेत .या हजारो कुटुंबांचे पुढे काय या प्रश्नाकडतात सोयीस्कर त्या दुर्लक्ष केले आहे .जागतिकीकरणाच्या वाढत्या स्पर्धेमुळे तर ग्रामीण भागातील माणूस अधिकच अधिक उघडानागडा होत गेलाय .जागतिकीकरणामुळे सर्वसामान्य माणसांची ससे होलपट होत आहे. याचे अत्यंत प्रत्येकाची चित्र मराठी कादंबरीत केले आहेत.

जागतिकीकरणाचे धोरण स्वीकारले भारत देखील त्याला अपवाद नव्हता जागतिकीकरणामुळे औद्योगीकरण झपाट्याने वेऊ लागले. त्यामुळे एम.आय.डी.सी.ची स्थापना करण्यासाठी समस्या सोडवण्यासाठी शासनाने बहुराष्ट्रीय कंपन्यांशी करार करून त्यांना समुद्रकिनारी लगेच या जमिनी अशा प्रकल्पासाठी दिल्या जात आहेत. अनुवीज निर्मिती करण्यासाठी जयपूर जिल्हा रत्नागिरी येथील जमिनी हस्तगत करण्याचा प्रयत्न केल्यामुळे तेथील भूमिपुत्रांना लढा देण्याचे आपण आपणास न्यायात आहेत .श्रीराम कामत यांची 'भीष्माचा डोंगर' कादंबरी मध्ये कोकणातील डोंगर रांगाकडे भांडवलदारांचे लक्ष केंद्रित केले जाते .आणि तेथील डोंगराची डोंगर विकत घेऊन खान उद्योग निर्माण करतात यावर कधी पाहिला नाही एवढा पैसा स्थानिकांच्या हातात आला विकासाच्या नावाखाली देशात मोठमोठाली महाकाय अशी धरणे निर्माण झाली. परंतु ही धरणे निर्माण होत असताना तेथील भूमिपुत्रांना मात्र बेघर होण्याची वेळ आली. कारखानदारी निर्माण होण्यासाठी विशेष पाऊस कारखानदारी पाण्याचे आवश्यकता मोठ्या प्रमाणात असते मग त्यांच्यासाठी निसर्ग संपन्न अशा डोंगररांगा हटविल्या जातात दुर्गम भागातील आदिवासींच्या जमिनी बळकविल्या जातात. 'झाडीझडती' या कादंबरीतून विश्वास पाटील यांनी धरणग्रस्तांच्या वेदना ,व्यथा ,संघर्ष यावर एका वेगळ्या दृष्टिकोनातून प्रकाश टाकण्याचा प्रयत्न केलेला दिसतो. स्वातंत्र्यानंतर भारताचा विकास होत असताना अनेक विविध प्रकल्प उद्योग धरणे यांची निर्मिती होत गेली. मोठ्या धरणांमुळे विकास कामात गती मिळाली असली तरी पिण्याचा पाण्याचा प्रश्न मिटला असला तरी धरणामुळे मोठ्या ग्रामीण परिसराचे व तेथील माणसे तेथील लोक संस्कृती मुळापासून नष्ट झाली .या सर्वांचे प्रतिबिंब 'झाडाझडती' या कादंबरीत पाहावयास मिळते. आधुनिकीकरणाचा गाव, वाड्यावर, शेत शिवार, यावर श्रद्धा असणाऱ्या शेतकरी व्यक्तीचे भाव विश्वस्त होते. याचा प्रत्येक कार्य चित्र आनंद यादव यांच्या 'गोतावळा' कादंबरी आले आहे. ट्रॅक्टर आल्यामुळे नाऱ्या गावाचा शेतमजुराची झालेली जीवन व्यथा आनंद यादव यांनी गोतावळ्यातून मांडली आहे.

१९४७ ला ब्रिटिशांच्या गुलामगिरीतून स्वातंत्र्य मिळाले. आपल्या देशात भौतिक सुधारणांमुळे सांस्कृतिक, सामाजिक ,शैक्षणिक ,राजकीय ,आर्थिक क्षेत्रात अमुलाग्र बदल घडून आले. जागतिकीकरणामुळे तर सर्व क्षेत्रात प्रचार आणि प्रचार यामुळे भारतातील खेड्यापाड्यात ध्येय धोरणाविषयीचा दृष्टिकोन बदलला.औदिकीकरणामुळे औद्योगिक क्रांती मोठ्या प्रमाणात घडून आली .शहरांमध्ये व औद्योगिक क्षेत्रात छोट्या-मोठ्या कारखान्यांमुळे नवीन उद्योगांना चालना मिळाली रस्त्याच्या माध्यमातून खेडी व शहरी जोडल्यामुळे साहजिकच दळणवळणाची साधने वाढली खेडेगावातील सर्वसामान्य व्यक्तीपासून तर कष्टकरी शेतमजूर कामगार शेतकरी वर्गांच्या शहरांची नाळ जोडली गेली.

३.समारोप -

ग्रामीण कादंबरी ही लोक जीवनाच्या संस्काराने व्यापलेले आहे.कोणत्याही साहित्यामध्ये लोकांची कृतीयुक्तिचा आविष्कार साकार होत असतो. या कृतीयुक्ति बरोबरच मानवी वृत्ती प्रवृत्तीवर साहित्याच्या माध्यमातून प्रकाश पडतो. लोकजीवनातील विविध प्रादेशिक परंपरा रुढी लोकसभाचे देव, धर्मश्रद्धा अंधश्रद्धा इत्यादी गोष्टींचा परमशः ग्रामीण कादंबऱ्यांमध्ये येताना दिसून येतो. एकूण ग्रामीण साहित्यात शेती व खेडे तेथील व्यवसाय यांचे दर्शन घडत असते. ग्रामीण साहित्यात खेडे हे केंद्र असते. ग्रामीण जीवन आणि खेड्यातल्या माणसांच्या चरणाला ग्रामीण साहित्यात महत्व असते. ग्रामीण संस्कृतीचा तो साहित्य द्वारा झालेला अविष्कार असतो. ग्रामीण जीवनखेड्यांची रचना आणि संस्कृती शहरी संस्कृतीपेक्षा भिन्न असते. हजारो वर्षांपासून चालत आलेल्या ग्राम संस्कृतीच्या केंद्रस्थानी शेती असते. आलूतेदार ,बलुतेदार ,मानकरी कामकरी, पाटील कुलकर्णी या सर्वांचे जीवन शेतीवर अवलंबून असते. खेडे व त्यांच्या सभोवतांचे कृषी जीवन व संस्कृतीचा कणा असतो.यातील कथा, कादंबरी कविता अशा वाङ्मय प्रकारांमध्ये लोक जीवनाचा अविष्कार सामोरा येत असला तरी ग्रामीण कादंबरीच्या लेखनावर मोठा असल्याने जीवन सविस्तरपणे वाचकांसमोर येत असते.

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यातील पात्रांचे जीवन हे निसर्ग असते .त्यांचे जीवन हे निसर्गाशी एकरूप झालेली असते. निसर्ग कधी मर्यादाचा हात फिरवतो तर निसर्ग रोडधारण करतो या सर्व गोष्टींचा लोकमानसावर प्रभाव पडत असतो.

स्वतंत्रप्राप्ती ही अत्यंत महत्त्वाची घटना भारतीय समाज जीवनात घडले. स्वातंत्र्याचा इष्ट परिणाम सर्व क्षेत्रात जाणवला. तसा तो साहित्य क्षेत्रातही जाणवला अनेक कारणामुळे स्वातंत्र्य उत्तर काळातील मराठी साहित्यात चेहरामोरा बराच बदलला आहे. दुसऱ्या महायुद्धानंतर जागतिक परिस्थितीत झालेल्या बदलांचा ईस्टर्निष्ट परिणाम भारतीय समाज वस्तीवरील मोठ्या प्रमाणावर झाला. औद्योगीकरण वाढले, यंत्रयुगाचा परिणाम सामान्य माणसाच्या जीवनावर जाणवला. शहरी फुगू लागली त्याचे महानगरात रूपांतर होण्याची गती प्राप्त झाली. नवकथा आणि नवकविता यातून परिणाम आवश्यक एकूणच स्वातंत्र्योत्तर मराठी साहित्यावर गांधीवाद ,मार्क्सवाद ,क्रम सुधारणा दुसरे महायुद्ध भारतीय स्वातंत्र्य, सार्वजनिक शिक्षण प्रसार, पंडित नेहरूंच्या पंचवार्षिक योजना, पाश्चात्य वाङ्मय प्रवाहाचा वाढता परिचय ,बदलते समाजजीवन , औद्योगीकरण ,यंत्रयुग महानगरातील बक्कलपण इत्यादी घटकांचा प्रत्यक्ष-अप्रत्यक्षपणे मोठा प्रभाव पडला आहे. मराठी कादंबरी याला अपवाद नाही .

४.संदर्भ-

१.रवींद्र ठाकूर -मराठी कादंबरी, मेहता पब्लिकेशन १९९३

२. गो.मा. पवार, प्रतिष्ठान ,कादंबरी विशेषांक, जानेवारी १९९१

३. आनंद यादव- ग्रामीण साहित्य: स्वरूप व समस्या, मेहता पब्लिशिंग हाऊस, पुणे.

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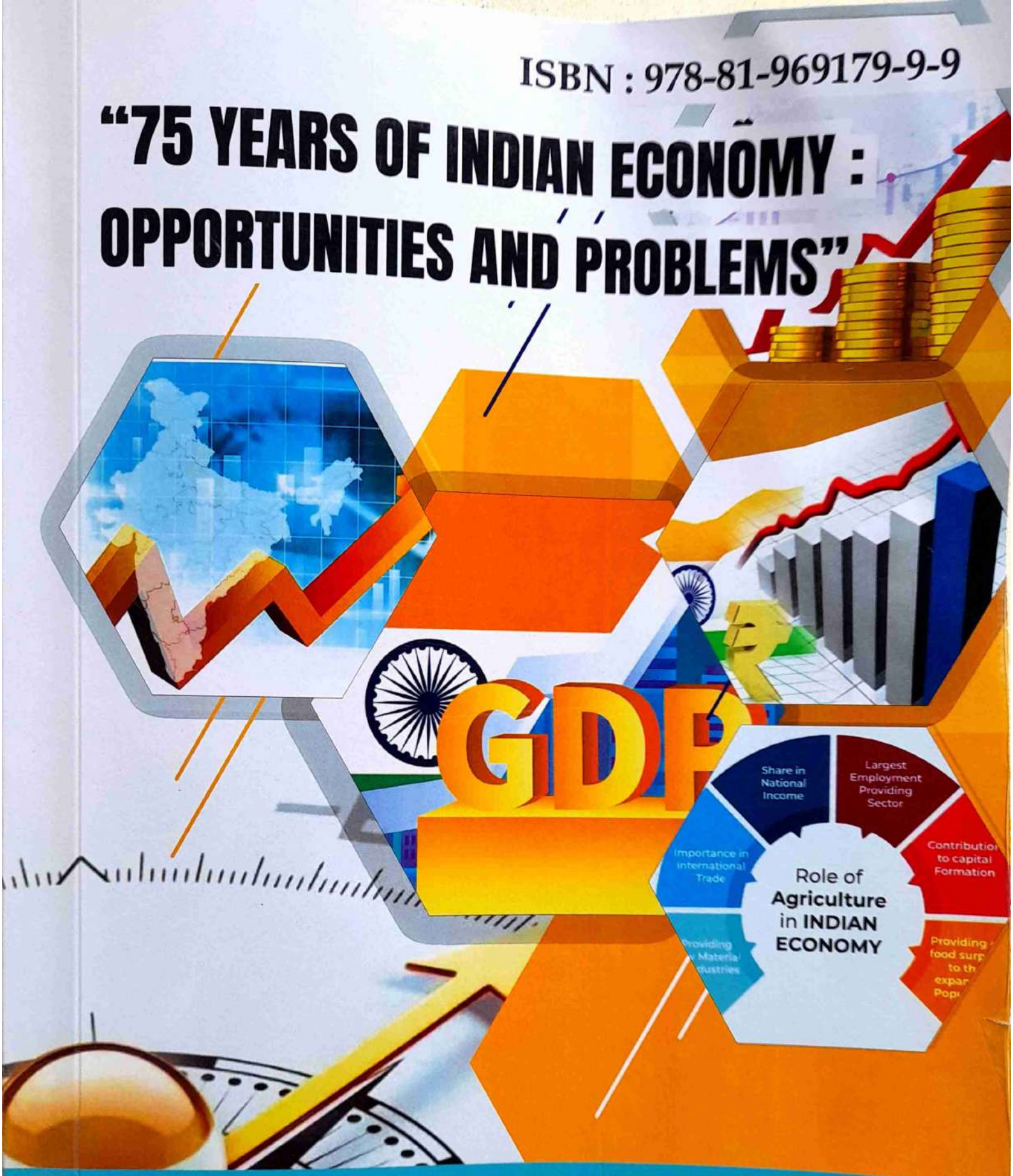

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प्रा . अनाप एस. ए .

इतिहास विभाग प्रमुख

कला.वाणिज्य,विज्ञान व संगणकशा महाविद्यालय आश्वी खुर्द

प्रस्तावना:

सेवांच्या व्यावसायिक तरतूदीचा वापर करताना पर्यटन, अधिनियम आणि मनोरंजन, विश्रांती आणि आनंद यांच्या मागे लागून वेळ घालवण्याची ती प्रक्रिया आहे. अशाच प्रकारे, पर्यटन हे आधुनिक सामाजिक व्यवस्थेचे उत्पादन आहे, जे १७ व्या शतकात पश्चिम युरोपमध्ये सुरू होते, त्याचे शास्त्रीय पुरातन काळातील पूर्वज आहेत. पर्यटनाचे विविध प्रकार आहेत यामध्ये तीर्थयात्रा ,क्रिडाक्षेत्र, "वैद्यकीय पर्यटन" (वैद्यकीय सेवा मिळविण्याच्या उद्देशाने आंतरराष्ट्रीय प्रवास),थंड हवेचे ठिकाण, ऐतिहासिक वास्तू संग्रहालय,गड किल्ले,सागरी किनारे ,धबधबे ,धरण क्षेत्र इत्यादी ठिकाणी पर्यटन व्यवसाय प्राचीन भारतात चालत होता, यामधून भारताला परकीय चलन मोठ्या प्रमाणात मिळत होते.

भारतात पर्यटन व्यवसायाला खूप मोठी चालना मिळालेली आहे. आणि आपल्या अर्थव्यवस्थेत भर पडत आहे. अनेक व्यवसायांपैकी हासुद्धा एक महत्त्वाचा व्यवसाय आहे.

भारतीय पर्यटन व्यवसायाची वैशिष्ट्ये :-

1.भारतात पर्यावरणाशी निगडित पर्यटनाला महत्व दिले जात आहे. मंदिरे, अभयारण्य, ऐतिहासिक व सांस्कृतिक ठिकाणे, लेणी, स्वच्छ समुद्रकिनारे इत्यादी गोष्टींमुळे भारतीय पर्यटन व्यवसायाला खूप मोठा प्रतिसाद मिळत आहे.

2. आंतरराष्ट्रीय पर्यटक आपल्या ऐतिहासिक व सांस्कृतिक स्थळांना भेट देण्यास येत असतात.

3. आंतरराष्ट्रीय पर्यटकांची संख्या दिवसेंदिवस वाढत असल्यामुळे आपल्या अर्थव्यवस्थेत सुद्धा वाढ झालेली दिसून येते.

4. भारतातील बहुसंख्य लोक एकत्र कुटुंबाने सर्वांना आनंद साजरा करता येईल अशा ठिकाणी जाणे पसंत करतात. लहानांपासून मोठ्यांपर्यंत सर्व लोक त्या जागेचा आनंद घेऊ शकतील अशी जागा पर्यटन म्हणून लोक पसंत करता

पर्यटनाची उत्पत्ती :

२१ व्या शतकाच्या सुरूवातीस, आंतरराष्ट्रीय पर्यटन जगातील सर्वात महत्वाच्या आर्थिक क्रियाकलापांपैकी एक बनले होते आणि त्याचा परिणाम आर्कटिकपासून अंटार्क्टिकापर्यंत वाढत गेला. म्हणूनच पर्यटना च्या इतिहासाला खूप महत्त्व आहे. हा इतिहास १८ व्या शतकाच्या शेवटी पर्यटकांच्या शब्दाच्या नाण्याच्या आधीपासून सुरू होतो. पाश्चात्य परंपरेत, आधारभूत पायाभूत सुविधा, पर्यटन स्थळांसह संघटित प्रवास आणि आवश्यक गंत व्यवस्थावर आणि अनुभवांवर जोर देणे प्राचीन ग्रीस आणि रोममध्ये आढळू शकते, जे "हेरिटेज टूरिझम" या दोहोंच्या उत्पत्तीवर दावा करू शकते .मान्यताप्राप्त सांस्कृतिक महत्त्व असलेल्या ऐतिहासिक वास्तू आणि बीच रिसॉर्ट्स. ग्रीक आणि रोमसाठी पर्यटन स्थळे बनल्या.

तीर्थक्षेत्र समान पूर्वजांची ऑफर देते, जे पूर्व संस्कृती नाटकात आणते. त्याची धार्मिक उद्दीष्टे परिभाषित मार्ग, व्यावसायिक आदरातिथ्य आणि कुतूहल, साहस आणि सहभागींच्या हेतूंमध्ये आनंद यासह एकत्र राहतात. प्राचीन बौद्ध तीर्थयात्रा २,००० हून अधिक वर्षांपूर्वी सुरू झाली, जरी भिक्षूंच्या छोट्या गटांच्या तात्पुरत्या खासगीकरणापासून ते पर्यटकांच्या पद्धतींना ओळखले जाणे कठीण आहे. मक्काची तीर्थयात्रा पुरातन आहे. २१

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व्या शतकातही वाळवंटातून प्रवासात सहन करावा लागला. पर्यटन ही त्याच्या उत्पत्तीपासून जागतिक घटना आहे.

आधुनिक पर्यटन एक व्यावसायिकदृष्ट्या संघटित, व्यवसायभिमुख क्रियाकलापांचा संच आहे. ज्यांची मुळे औद्योगिक क्षेत्रात आढळू शकतात. फ्रान्स, जर्मनी आणि विशेषत: इटलीमधील सांस्कृतिक स्थळांचा खानदानी भव्य दौरा - शास्त्रीय रोमन पर्यटशी संबंधित असलेल्यांसह - १६ व्या शतकात त्याची मुळे आहेत.

तंत्रज्ञान आणि आंतरराष्ट्रीय पर्यटनाचे लोकशाहीकरण

वाहतूक व्यवस्था पर्यटनाचा प्रसार आणि लोकशाहीकरण आणि त्याचे अंतिम जागतिकीकरण यांचे एक आवश्यक उदहारण आहे. २१ व्या शतकाच्या मध्यापासून रेल्वेमार्गाने जास्त आराम आणि वेग आणि स्वस्त प्रवास आणला, कारण काही प्रमाणात रात्रभर आणि दरम्यानचे थांबे आवश्यक होते. सर्वात महत्त्वाचे म्हणजे, या नवकल्पनांनी विश्वासार्ह वेळ-शैलीसाठी परवानगी दिली, जे घड्याळ नसल्यास कॅलेंडरच्या शिस्तीशी जोडले गेले त्यांच्यासाठी आवश्यक आहे. २१व्या शतकात या परिवहन प्रणालींमध्ये प्रवेशयोग्यतेतील अंतर निरंतर बंद होत होते, तर स्टीमचे साम्राज्य जागतिक होत चालले होते. रेल्वेने देशांतर्गत तसेच आंतरराष्ट्रीय पर्यटनास प्रोत्साहन दिले, ज्यात किनारपट्टी, शहर आणि ग्रामीण भागातील छोट्या भेटींचा समावेश आहे जो कदाचित एका दिवसापेक्षा कमी काळ टिकेल परंतु स्पष्टपणे "पर्यटन" प्रकारात पडला. पर्यटकांमधील वर्ग आणि संस्कृती यांच्यात तणाव आणि संघर्षात योगदान देताना रेल्वे प्रवासामुळे ग्रँड टूर यांच्या मते अधिक व्यापकपणे प्रवेश करण्यायोग्य बनली, विद्यमान पर्यटन प्रवाहांना बळकटी दिली.

दुसऱ्या महायुद्धानंतर यूरोपीय देशांना आयात आणि मुत्सद्देगिरीचे साधन म्हणून पर्यटनामध्ये रस निर्माण झाला, परंतु यापूर्वी आंतरराष्ट्रीय ट्रॅव्हल एजन्सींनी पर्यटकांच्या प्रवासाची गुंतागुंत कमी करण्यासाठी पुढाकार घेतला. या एजन्सींपैकी सर्वात प्रसिद्ध म्हणजे ब्रिटनची थॉमस कुक आणि सोन संस्था, ज्यांचे कामकाज २१ व्या शतकाच्या उत्तरार्धात युरोप आणि मध्य पूर्व जगभरातून पसरले. इतर कंपन्यांनी (ब्रिटीश टूर ऑर्गनायझर्स फ्रेम आणि हेनरी टक लावून आणि सन्ससह) भूमिका साकारली ही भूमिका २१ व्या शतकातील निरीक्षकांना कमी दृश्यमान आहे, कारण या एजन्सींनी त्यांची नोंदी जपली नाही, परंतु ते तितकेच महत्त्वाचे होते. २१ व्या शतकाच्या उत्तरार्धात शिपिंग लाइनने आंतरराष्ट्रीय पर्यटनास प्रोत्साहन दिले. नॉर्वेजियन फजॉर्ड्सपासून ते कॅरिबियन पर्यंत, प्लेजर क्रूझ पहिल्या महायुद्धापूर्वी आधीच एक विशिष्ट पर्यटन अनुभव बनत होता आणि ट्रान्सॅटलांटिक कंपन्यांनी १९२० च्या दशकात मध्यमवर्गीय पर्यटनासाठी भाग घेतला. जागतिक युद्धांदरम्यान, श्रीमंत अमेरिकन लोक कॅरिबियन आणि लॅटिन अमेरिकेतील विविध प्रकारच्या ठिकाणी हवा आणि समुद्राद्वारे प्रवास करतात.

२० व्या शतकाच्या उत्तरार्धात आंतरराष्ट्रीय स्तरावर पर्यटन आणखी एक मोठा व्यवसाय बनला कारण हवाई प्रवास सुरु झाला . पॅसिफिकमधील आशियाई बाजारपेठांसह वाढत्या विविध प्रकारच्या गंतव्यस्थानांपर्यंत वाढविण्यापूर्वी आणि अखेरीस उत्तर-युरोपमधून भूमध्यसागराकडे जाणाऱ्या मोठ्या वार्षिक स्थलांतराचा आधार बनला आणि अखेरीस पोस्टसमुनिस्ट रशियन आणि पूर्व युरोपियन लोकांना आणले. अमेरिकेपासून मेक्सिको आणि कॅरिबियन पर्यंत प्रवास वाढला. प्रत्येक बाबतीत जुन्या रेल्वेमार्गावर, रस्ता- आणि समुद्री-प्रवासाच्या नमुन्यांवर बांधल्या गेलेल्या या घडामोडी. १९२०च्या दशकात भूमध्यसागरातील सर्वात पूर्वीचे पॅकेज टूर मोटर कोच (बस) यांनी केले होते.

पर्यटकांची उपस्थिती आकर्षित करण्यासाठी आणि पर्यटन उद्योग निर्माण करण्यासाठी समुद्रकिनारा महत्वाचा आहे, परंतु त्याचा इतिहास परंपरा, प्रसार, उत्परिवर्तन आणि संघर्ष याबद्दलचे बरेच सामान्य मुद्दे स्पष्ट करते. ऐतिहासिक स्थळे सांस्कृतिक पर्यटक आणि आयकॉनिक प्रतिमांचे कलेक्टर आकर्षित करतात म्हणून पर्यटनाने इतिहासाचा वापर देखील केला आहे. आदिवासी लोक कधीकधी त्यांच्या चालीरीतींच्या बाजारपेठेतून नफा

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मिळवू शकतात आणि ऐतिहासिकदृष्ट्या महत्त्वपूर्ण हॉटेल्स, परिवहन प्रणाली आणि मनोरंजन पार्क देखील लोकप्रिय गंतव्यस्थान बनून पर्यटनाचे औद्योगिक पुरातत्व देखील एक चांगला व्यवसाय बनत आहे. हेरिटेज आणि सत्यता हे अनेक आव्हानात्मक आणि तडजोड केलेल्या गुणांपैकी एक आहे जे पर्यटनाने विनियोग केलेल्या अमूर्त वस्तूंचे बाजारपेठ करण्यासाठी वापरते. २० व्या शतकाच्या सुरूवातीस हे आर्थिक, पर्यावरणीय, लोकसंख्याशास्त्र आणि सांस्कृतिक महत्त्व या पर्यटनाचे जागतिक पदचिन्ह आहे आणि ते वेगाने वाढत आहे. या महत्त्वपूर्ण उद्योगाचे परीक्षण करणाऱ्या साहित्याचे शरीर जसजसे वाढत आहे तसतसे ऐतिहासिक दृष्टीकोन आणखी विकसित होईल.

भारतातील पर्यटन हे देशातील अर्थव्यवस्थेसाठी महत्त्वाचे आहे आणि ते वेगाने वाढत आहे. वर्ल्ड ट्रॅव्हल अॅण्ड टुरिझम कौन्सिलने असे अनुमान काढले आहे की २०१८ मध्ये पर्यटनाने १६.९१ लाख कोटी रूपये (यूएस डॉलर २४० अब्ज) किंवा भारताच्या जीडीपीच्या ९.२% उत्पन्न कमावले.[१] पर्यटनाने ४२.६७३ दशलक्ष रोजगारांना पाठिंबा दिला, जे एकूण रोजगारातील ८.१% आहे. या क्षेत्राची वार्षिक वाढ ६.९% दराने होईल असा अंदाज आहे.[२] हैदराबाद आंतरराष्ट्रीय विमानतळ हे भारतातील एकमेव विमानतळ आहे जे जगातील पहिल्या दहा विमानतळांपैकी एक आहे.[३] ऑक्टोबर २०१५ मध्ये भारताच्या वैद्यकीय पर्यटन क्षेत्राची किंमत ३ अब्ज अमेरिकी डॉलर इतकी होती.[४] २०१४ मध्ये १.८ लाख परदेशी रुग्णांनी वैद्यकीय उपचार घेण्यासाठी भारतात प्रवास केला

About College

Loknete Dr. Balasaheb Vikhe Patil (Padmabhushan Awardee), Pravara Rural Education Society's Arts, Commerce, Science and Computer Science College, Ashvi, was established in 14th July 2001 by the great vision of Late Dr. Balasaheb Vitthalrao Vikhe Patil. The college is situated at Ashwi village, the heart of 22 villages generally known as Pravara region. The college has 2.5 acres campus with lush green trees and pollution free atmosphere. The college is permanently non grant, affiliated to the Savitribai Phule Pune University, Pune and is approved under section 2(f) of the U.G.C. act. The institution offers 3 years undergraduate degree programs viz., B. A. in Marathi, Hindi, English, Economics and Geography, B. Com and B.Sc. in Chemistry and three year post graduate degree program like M.Sc. (Organic Chemistry), M.Sc. (Analytical Chemistry) and M. Com. in (Business Administration).

Curriculum offered by the institution is highly relevant to the present needs of the society and aimed at overall personality and career development of students. The institution is committed to impart quality and value based education to the students, which help them in gaining knowledge and employment. The institution has highly qualified and experience teachers, well equipped laboratories, library, gymnasium and spacious playground. The institution has NSS unit conducts various extension activities. The Soft Skill Development program is conducted for overall development of the students. The institution has Earn and Learn Scheme, Book Bank Scheme and Poor Boys Fund for economically and socially backward students. For counseling and recognizing the needs of students the institution has Student-Teacher Guardian Scheme.

Faculties are actively engaged in research activity. The number of research papers published in national and international journals has been increasing. With an objective to equip students and teachers to compete in global knowledge based society, the institution has started restructuring every component of education i.e. learning, teaching, research and extension to make it more relevant and useful to the society.

The management and staff take efforts for quality enhancement and to achieve academic excellence to keep pace with future plans and execute its mission and goals successfully. It helps the students for their vertical and horizontal academic growth and gaining knowledge.

Under the dynamic leadership and guidance of Hon'ble Namdar Shri. Radhakrishna Eknathrao Vikhe Patil, (Chairman of PRES), Hon'ble Khasdar Dr. Sujay Vikhe Patil, and Hon'ble Sau, Shalinitai Vikhe Patil (Former President, Zilla Parishd Ahmednagar), the College achieved the B++ grade with CGPA 2.89 from NAAC Bangalore in accreditation process. It is proud moment for us.

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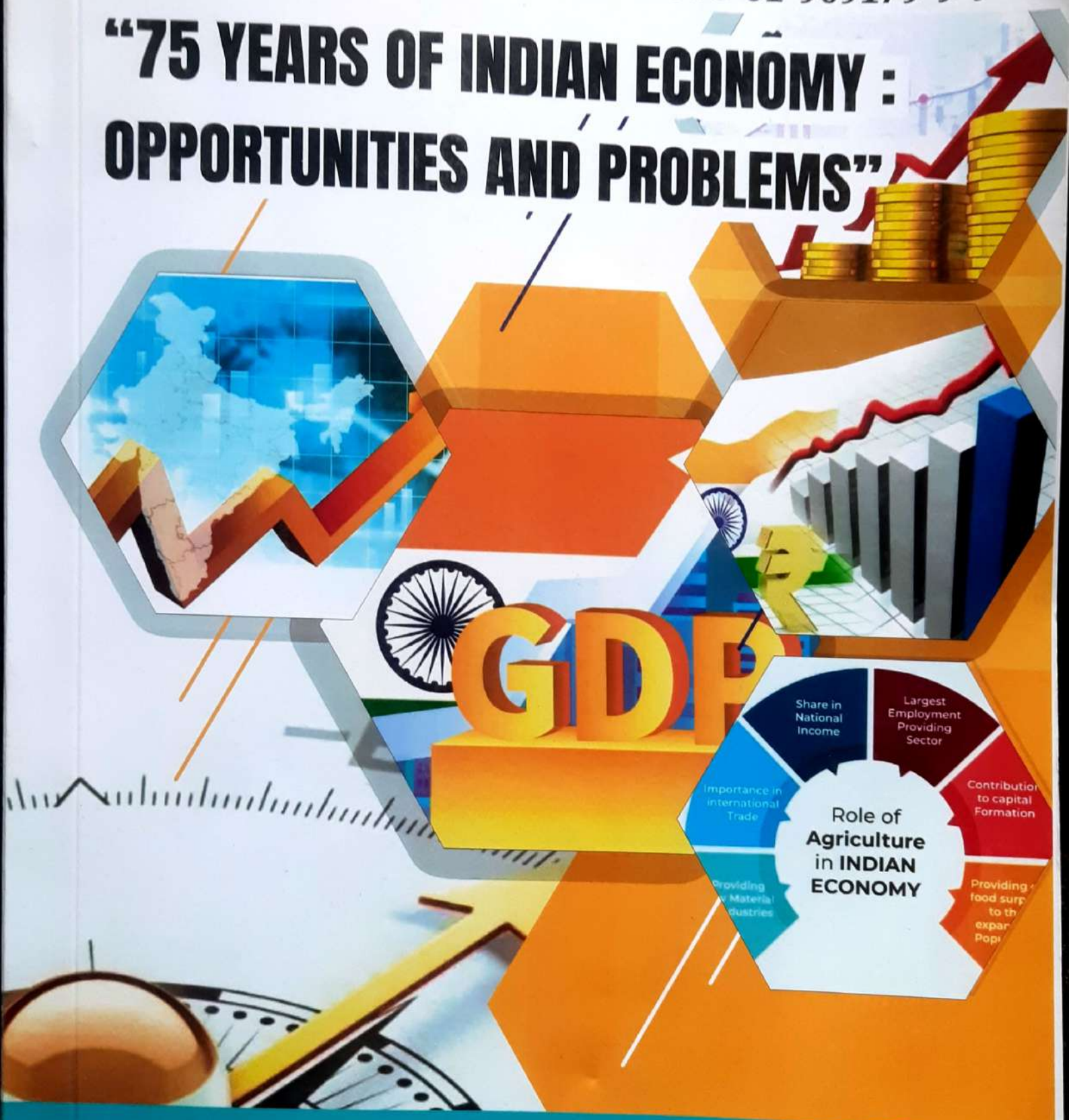
"75 YEARS OF INDIAN ECONOMY : OPPORTUNITIES AND PROBLEMS"



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मराठी साहित्यातून चित्रित होणारा ग्रामीण विकास

प्रा. निलेश सोमनाथ पर्वत

सहाय्यक प्राध्यापक, मराठी विभाग
कला, वाणिज्य, विज्ञान व संगणकशास्त्र महाविद्यालय,
आश्वी खु. ता. संगमनेर, जि. अहमदनगर.

प्रस्तावना-

जीवनव्यवहाराचे भावनिक, आध्यात्मिक, बौद्धिक अशा विविध अंगांनी घडविलेले सर्जनशील, वैचारिक, कल्पनात्मक, वास्तव अशा भिन्न-भिन्न स्तरांवरचे सर्वांगीण, सम्यक दर्शन साहित्यातून वाचकांस प्रतीत होते. मानवी जीवनव्यवहारविषयक चित्रण, विवरण, अर्थनिर्णयन, भाष्य अशा स्वरूपाच्या भाषिक अभिव्यक्तीस स्थूल मानाने 'साहित्य' असे संबोधिले जाते. 'लिटरेचर' या इंग्रजी शब्दाला मराठीमध्ये 'साहित्य' वा 'वाङ्मय' हे पर्याय सामान्यतः समानार्थी म्हणून वापरले जातात. 'Littera' या मूळ लॅटिन शब्दापासून 'लिटरेचर' हा शब्द निर्माण झाला. 'Littera' ही संज्ञा प्राचीन असून तिचा अर्थ वर्णमालेतील अक्षर वा अक्षरे, असा होतो. लिटरेचर ह्या संज्ञेला काळाच्या ओघात अनेक लेखक, समीक्षक, वाङ्मयेतिहासकार आदींनी साहित्याचा सर्वसमावेशक वा विवक्षित मर्यादित अर्थ विचारात घेऊन नानाविध अर्थ व अर्थच्छटा यांची परिमाणे बहाल केली. त्यांतून या संज्ञेचा अर्थविस्तार होऊन ती बहुआयामी व व्यापक, विस्तृत बनली. जे जे लिहिले जाते ते ते, म्हणजे सर्व लिखित मजकूर म्हणजे साहित्य, ही एक टोकाची व्याख्या काही तज्ज्ञांनी केली.

मराठीतील साहित्य व वाङ्मय या संज्ञांबाबतही हेच म्हणता येईल. उदा., एखाद्या विशिष्ट भाषेत निर्माण झालेले, विशिष्ट देशाचे साहित्य (अमेरिकन साहित्य, फ्रेंच साहित्य, भारतीय साहित्य इ.) विशिष्ट कालखंडात निर्माण झालेले साहित्य (एकोणिसाव्या शतकातील वाङ्मय, एकविसाव्या शतकातील वाङ्मय) विशिष्ट जमातीने, लोकसमूहाने निर्माण केलेले वा विशिष्ट प्रदेशातील साहित्य (अमेरिकन-इंडियन साहित्य, निग्रो साहित्य, दलित साहित्य, प्रादेशिक वाङ्मय इ.) विशिष्ट विषयाला वाहिलेले साहित्य (क्रीडा, बागकाम आदी विषयांवरील लिखाण) इत्यादी. साहित्य व वाङ्मय ह्या संज्ञा सामान्यतः जरी समानार्थी वापरल्या जात असल्या, तरी त्यांच्या अर्थात व उपयोजनात भेद काही समीक्षकांनी सुचविला आहे. वाङ्मय हा शब्द अधिक व्यापक अर्थाने वापरावा, असे रा. श्री. जोग यांनी सुचविले आहे. डॉ. अशोक रा. केळकरांच्या मते ललित वाङ्मयालाच 'साहित्य' म्हणावे. साहित्य ही संज्ञा अर्थदृष्ट्या सारस्वत, विदग्ध वाङ्मय या संज्ञांच्या जवळ जाणारी आहे.

ललित साहित्य हा शब्द विद्यमान मराठी साहित्य व्यवहारात जास्त रूळला आहे. 'सहित' या विशेषणापासून साहित्य हे भाववाचक नाम बनलेले आहे. एकत्र असणे, बरोबर असणे, असा त्याचा शब्दशः अर्थ. शब्द आणि अर्थ यांचे एकत्र अस्तित्व 'साहित्य' या शब्दामध्ये मानले गेले आहे. साहित्याच्या अभिप्रेत स्वरूपात शब्द आणि अर्थ हे एकमेकांत मिसळून गेलेले असतात किंवा एकजीव झालेले असतात. त्यांचे अभिन्नत्व वा एकजीवित्व हे साहित्याचे प्रधान लक्षण मानले जाते. साहित्याची विविध प्रकारात विभागणी देखील केली गेली आहे. त्यामध्ये ललित साहित्य, ललितेत्तर साहित्य असा विचार केला तर ललित साहित्य हे लेखकाच्या प्रतिभेतून, कल्पनाशक्तीतून निर्माण होते. त्याला वास्तवातील व्यक्ती, घटना, प्रसंग, तपशील ह्यांचा पायाभूत आधार असला, तरी त्यातून साकारणारे अनुभवविश्व ही लेखकाची कल्पक निर्मिती असते. ललित साहित्याचे लेखन हे मूलतः व्यक्तिनिष्ठ, भावप्रेरित, कल्पनानिर्मित म्हणजेच प्रतिभानिर्मित असते. सौंदर्यसिद्धीच्या तत्त्वांनुसार ते अवतरलेले असते. तदंतर्गत सुसंघटना ही प्रत्येक ललित साहित्यकृतिपरत्वे एक वेगळी, वैशिष्ट्यपूर्ण सुसंघटना असते. काव्य, कथा, कादंबरी, नाटक हे ललित साहित्याचे प्रमुख प्रकार होत. ललित वा लघुनिबंध, नाट्यछटा आदी प्रकारांचाही उल्लेख करता येईल.

तसेच ललितेतर वाङ्मयाचे मुख्य उद्दिष्ट वाचकाला माहिती व ज्ञान देणे, अशा स्वरूपाचे असते. त्यात प्रत्यक्ष वास्तवाला, त्यातील तथ्यालाच केवळ प्राधान्य असते. लेखकाच्या कल्पनाविलासाला त्यात अजिबात वाव नसतो. शब्द हेच माध्यम स्वीकारून विविध ज्ञानशाखांमधील ललितेतर वाङ्मय निर्माण होत असते. वैचारिक, शास्त्रीय, संशोधनपर, चर्चाचिकित्सात्मक, तत्त्वमीमांसक अशा विविध प्रकारच्या वाङ्मयाचा समावेश त्यात होतो. अर्थशास्त्र, मानवशास्त्र, समाजशास्त्र, मानसशास्त्र अशा विविध सामाजिक शास्त्रांवरील तसेच मानव्यविद्याविषयक ग्रंथ भौतिकी, रसायनशास्त्र, प्राणिविज्ञान, वनस्पतिविज्ञान इ. शास्त्रीय माहिती देणारे वा तत्संबंधी चर्चा करणारे ग्रंथ संशोधनपर, वैचारिक लिखाण

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आदींचा अंतर्भाव ललितेतर वाङ्मयात केला जातो. हे वाङ्मय वस्तुनिष्ठ, बुद्धिप्रेरित, तर्क-अनुमानादींवर आधारित असल्याने त्याची सुसंघटना तर्काधिष्ठित व ठरीव ठशाची असते.

साहित्याचा विचार हे जीवन व्यवहाराचे एक महत्त्वपूर्ण अंग आहे. स्थूलमानाने कथा, कविता, कादंबरी, नाटक, चरित्र, आत्मचरित्र, निबंध, ललित निबंध, वैचारिक साहित्य, अनुवादित साहित्य या सर्वांचा 'साहित्य' अथवा 'वाङ्मय' या प्रकारात समावेश केला जातो.

साहित्य आणि समाज –

साहित्यनिर्मितीमधील आणि साहित्यव्यवहारामधील समाज हा अत्यंत महत्वाचा अचल असा घटक असतो. त्या त्या काळातील समाज जसा असतो. त्या प्रमाणे त्या काळातील साहित्य आणि साहित्यव्यवहार आकार धारण करत असतो. समाजाचा आणि सामाजिकतेचा विचार केल्याशिवाय साहित्यनिर्मितीचा आणि साहित्य व्यवहाराचा अर्थ लागत नाही. समाज जीवनाचे, समाज मनाचे प्रतिबिंब साहित्यात उमटलेले असते. त्यातून समाजाचा चेहरा दिसणे स्वभाविक आहे. साहित्य समाजाचे प्रतिनिधित्व करते तसे समाजातील प्रत्येक घटकाचे चित्रण देखील वास्तवपणे करते.

दु. का. संत यांचे मते 'साहित्य आणि संस्कृती य्कन्च अन्योन्य संबंध असून साहित्य हा एक मानवी मन बुद्धीचा व पर्यायाने समजाचा, सांस्कृतिक अविष्कार आहे.' समाजातील विविध अंगांचे दर्शन साहित्य करत असते त्यामध्ये उद्योग, कला, क्रीडा, समाजकारण, अर्थकारण, राजकारण आदींचा समावेश असतोच पण या घटकांचे साहित्यावर कसे परिणाम होतात हे देखील बघणे या ठिकाणी महत्वाचे ठरणार आहे. साहित्य हे जीवनाला समृद्ध करते. समाजजीवनाच्या अभ्यासासाठी साहित्य आणि साहित्याच्या अभ्यासासंदर्भात समाजजीवन महत्वाचे ठरते. कोणतीही साहित्यकृती घेतली तर ती केवळ साहित्यकृती राहत नाही, साहित्य कृती लिहिणारा लेखक हा समाजाचा एक घटक असतो. समाजाच्या विविध पैलूंचा परिचय लेखक साहित्यकृतीतून करत असतो.

१. साहित्याचे समाजातले स्थान व व्याप्ती.
२. साहित्याचे समाजातले कार्य.
३. साहित्याचा समाजावर होणारा परिणाम.
४. साहित्याच्या संदर्भात उद्भवणारे नैतिकतेचे प्रश्न, लेखकाची जबाबदारी, अविष्कार स्वातंत्र्य नियमित करण्याची समाजाची यंत्रणा.
५. वाचकांची अभिरुची.
६. साहित्य हे सामाजिकतेचा दस्ताऐवज म्हणून कसे अभ्यासावे, याचा शास्त्रीय पद्धती, सर्वेक्षण, समूहमानस साहित्यकृतीद्वारे मांडण्याच्या पद्धती व तंत्र.

साहित्य आणि समाज यांच्यातील परस्पर संबंधांचा अभ्यास करताना भालचंद्र नेमाडे यांनी या वरील बाबीचा उल्लेख केला आहे. म्हणजेच समाजाकडे पाहण्याचा दृष्टीकोन, लेखकाला दिलेल्या स्वातंत्र्यामुळे प्राप्त झाला.

साहित्य आणि सामाजिक परिस्थिती -

साहित्य ही सामाजिक संस्था आहे. साहित्यिक हा समाजाचे प्रतिनिधित्व करत असतो. तो ज्या परिस्थितीत जगतो आणि वावरतो त्यानुसार साहित्यात त्याचे चित्रण येत असते. साहित्य हे सामाजिक परिस्थितीचे आपत्य मानले जाते. साहित्य निर्मितीची प्रेरणा समाजातूनच मिळत असते. साहित्यिकाची जडणघडण होण्यासाठी सामाजिक परिस्थिती, विचारप्रणाली, परंपरा, प्रदेश या सर्वच बाबी कारणीभूत ठरत असतात. मराठी साहित्याचा विचार करावयाचे झाल्यास मराठीमध्ये अनेक ग्रामीण साहित्यिक आहेत. त्यांनी जे अनुभवले ते ते सर्वच आपल्या साहित्यकृतीतून समाजासमोर आणले. आणि समाजाने देखील ते आदर्शवत मानून स्वीकारले असे आपणास दिसून येते.

साहित्य हे प्रवाही आहे असे म्हंटले जाते. औद्योगिकक्रांती, जागतिकीकरण आदि घटक विविध साहित्यकृतीतून आपल्याला बघावयास मिळत आहे. समाज जसा विकसित होत जातो तसे साहित्य सुधा विकसित जाते. पूर्वीची बारा बलुतेदारी पद्धती तत्कालीन साहित्यातून प्रकट झाली आहे. गावगाडा एकेकाळच्या साहित्याचा आत्मा होता. आजच्या काळात मात्र गावगाडा साहित्यातून पूर्वीसारखा प्रभावीपणे मनावर परिणाम करत नाही. या आणि अशा विविध बाबी काळानुरूप आज बदलत आहे. पूर्वीच्या साहित्यातून चित्रित होणारी परिस्थिती मन पिळवटून टाकणारी असायची त्यामध्ये दारिद्र्याच्या खुणा वास्तववादी वाटायच्या तशाच शेतकरी व मजूर यांचे होणारे शोषण अक्षरशः वाचकांना निशब्द करणारे होते. आज मात्र ही परिस्थिती राहिलेली नाही. आज असे चित्रण वरवरचे किंवा कृत्रिम वाटू शकते.

औद्योगीकरण आणि तंत्रज्ञान-

औद्योगिक क्रांतीमुळे भांडवलदार व कामगार असे दोन नवीन वर्ग निर्माण झाले. यातून भांडवलदार वर्ग कामगारांचे शोषण करत असल्याचे अनेक कथा कादंबऱ्यातून वाचनात येते. कामगार वर्गाची परिस्थिती मालक-मजूर तंटे आदि गोष्टी कथा कादंबऱ्याच्या मध्यवर्ती आशयाचा भाग बनल्या. संत काळापासून चालत आलेले धार्मिक आंदोलन, एकनाथ कालीन भाषिक संघर्ष, १९ व्या शतकातील सामाजिक सुधारणावादी आंदोलन, २० व्या शतकातील राजकीय आंदोलन, महात्मा गांधीनी प्रेरित केलेली ग्रामोधाराची चळवळ, संयुक्त महाराष्ट्राचे आंदोलन, १९६० नंतर उदयास आलेल्या ग्रामीण, दलित, आदिवासी, सांस्कृतिक चळवळी पासून आजच्या तंत्रज्ञानाच्या क्रांतीचा व जागतिकीकरणाचा मराठी साहित्यावर पडलेला प्रभाव आपण बघितलेलाच आहे. ऐकूणच साहित्याच्या निर्मितीमध्ये त्या त्या काळाचा आणि त्या त्या परिस्थितीचा संदर्भ आल्याचे दिसते.

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ग्रामीण कथा, कादंबरी हे ग्रामीण साहित्याचे मुख्य प्रवाह या काळात अतिशय वास्तवदर्शी, समृद्ध झालेले आहे. खाजगीकरण, जागतिकीकरण, उदारीकरण यांचे परिणाम ग्रामीण साहित्यावर झालेले आहे. त्याने समस्त ग्रामीण साहित्य ढवळून निघालेले आहे. याची धग ग्रामीण भागात पोहोचलेली आहे. ग्रामीण साहित्य पूर्वीसारखे एककेंद्री आज राहिलेले नाही आजचे साहित्य हे बहुकेंद्री बनत चाललेले आहे. जागतिकीकरणाच्या काळातील वास्तववादी चित्रण करणाऱ्या काही साहित्यकृतीचा विचार याठिकाणी करता येतो. रा. रं. बोराडे यांच्या 'पाचोळा' या कादंबरीत गंगाराम आणि पारबती हे मराठवाड्यातील शिंपी कुटुंबाची शोकांत कथा आहे.

गोतावळा कादंबरीच्या बाबतीत सांगायचे झाल्यास नारबा गेली वीस वर्षं मालकाच्या मळ्याची राखण करत तिथल्याच खोपटात एकटा राहतोय. ही वीस वर्ष त्याच्या आयुष्याच्या जडणघडणीची. कल्पनाशक्तीला, निरीक्षणशक्तीला, जाणीवांना आव्हान देणारी ही सारी वर्ष तो अगदी एकटा काढतो. हे एकटेपणच मग त्याची ताकद बनून त्याला सोबत करतं. कोणत्याही अडचणीला शरण न जाणारा निसर्ग त्याचा सोबती होतो आणि मालकाचा मळा सोन्यासारखा पिकवणारी गुरं त्याचं गणगोत. उभी वीस वर्ष त्याचा पाय काळ्या मातीत रुतलेला आणि हात गाईबैलाच्या तोंडाशी वैरण धरलेला. दोन शब्द बोलायला ज्याला माणूस नाही त्याचं भावविश्व कसं असेल? आपण कल्पनाही करु शकणार नाही असं अफाट मनोराज्य आपल्यासमोर विस्तारत जातं. निमित्त होतं मालकाच्या डोक्यात बदलाची चक्रं फिरु लागण्याचं, तीन महिन्याच्या कामासाठी गुरांना वर्षभर सांभाळा, दाणा वैरण् करा, दुखलं खुपलं पहा, औषधपाणी करा त्यापेक्षा तेच काम ट्याक्टर कधी पण, कवा पण, किती पण आन शिवाय कमी पैशात करतोय तेव्हा औंदा गोठा रिकामा करायचाच असा मालकाचा सरळ साधा हिशेब. जिथं मळ्याची राखण निगुतीनं, प्रामाणिकपणानं होणार नाही म्हणून मालकानं आपलं लगीन लावून दिलं नाही तिथं त्याला या मुक्या म्हाताऱ्या जनावरांचा कुठून कळवळा यायचा निसर्ग रोज कणाकणानं बदलत असतो, कालचा देखावा आज नसतो हे यादवांनी अत्यंत अलगदपणे आपल्यापुढे मांडले आहे. यांत्रिकीकरणामुळे नारबासारख्या अनेक सामान्य माणसांचे उध्वस्त होणारे संसार आणि कृषीसंस्कृतीचा ऱ्हास दिसून येतो.

राजन गावास यांच्या *'रिवणावायली मुंगी', 'आपण माणसात जमा नाही', 'ढव्ह आणि लख्ख ऊन'* ग्रामीण स्त्रीबद्दलच प्रागतिक भावचित्रे, तिचा बंडखोरपणा, शोषण दारिद्र्य, अंधश्रद्धा, परंपरा आणि प्रतिष्ठेच्या कृतक कल्पनांचे चित्रण त्यात आहे. कृषी संस्कृतीतील सामान्य माणसांच्या व्यथांचे चित्रण आहे. शहर आणि खेडे यातील द्वंद्वशीलता हा त्यांच्या कथाचित्रणाचा एक आयाम आहे. *'काचाकवड्या' 'कैफियत'* आणि *'लोकल ते ग्लोबल' या त्यांच्या ललितगद्य* लेखनातून त्यांनी जागतिकीकरणोत्तर काळातील सामाजिक वास्तवाचे आणि बदलत्या सांस्कृतिक मूल्यांचे चित्रण केले आहे. गावगाड्यातील वर्तमान चिंतन त्यामध्ये आहे. ग्रामजीवनातील एकसंधतेला गेलेले तडे, नैसर्गिक शेतीचा विनाश, खेड्यांचे शोषण करणारी शहरी मानसिकता, कृषिमूल्य परंपरा टिकवून ठेवणारी माणसे अशी अनेक सूत्रे *काचाकवड्या*मधील लेखनात आहेत. *कैफियत* मधील लेखनातही भोवताली घडणाऱ्या घटनांविषयीचे चिंतन आहे. हरवती मूल्यपरांपरा जपणारी माणसे आणि विनाशचक्रात गरगरणारी सृष्टीविषयीचे हे मूल्यात्मक लेखन आहे. जागतिकीकरणाच्या बहुमुखी आक्रमणाची नोंद *लोकल ते ग्लोबल* मधील लेखनात आलेले आहे.

साहित्यातून चित्रित होणारा भारतातील ग्रामीण विकास –

मराठी भाषेचा इतिहास फार मोठा आहे. दर्जेदार आणि कसदार साहित्य मराठीत फार पूर्वीपासून निर्माण झाले आहे. ज्ञानेश्वर महाराजांच्या 'पसायदाना' पासून, तुकारामांच्या ओव्या आणि पंडित, कवी यांची साहित्यनिर्मितीची वैभवशाली परंपरा मराठीला लाभली आहे. आधुनिक काळातही नवकथा, दलित साहित्यांच्या रूपाने ही परंपरा मराठीतील साहित्यिकांनी जपली आहे. आजही दर्जेदार नवनवीन विषयाच्या रूपाने वैविध्यपूर्ण साहित्याची हाताळणी होत आहे. असे असले तरी मानवी मनाला हेलावून टाकणारे चित्रण हे मराठी साहित्याचे एक अंग मानावे लागेल. साहित्य हे प्रवाही असल्याने जसजसा मानव विकसित होत चालला

तसतसा साहित्यातून तो प्रकट होऊ लागला. अनेक साहित्यिकांनी आपल्या साहित्यातून ग्रामीण, शहरी, स्त्रीवादी, आदिवासी, दलित आदी साहित्याच्या प्रवाहावर साहित्य लिहून समाजमनावर आपली छाप उमटविली आहे. ग्रामीण व शहरी अशा दोन गोष्टीचा जरी विचार केला तरी ग्रामीण म्हणजे ग्रामीण भागातील लोकांच्या जगण्याच्या पद्धती, रूढी – परंपरा, लोकश्रद्धा, शेती व निसर्गातील अनेकविध घटक, सणसमारंभ, समूहभावना, स्पृश्य- अस्पृश्य अशा घटकांना बरोबर घेऊन चाललेले साहित्य आज काळानुरूप बदललेले दिसून येते. अभंगातील मोट नाडा आजच्या कवितेतून हद्दपार झाल्याचीही खंत आज व्यक्त केली जात आहे. नवीन स्वीकारलेले बदल सहज साहित्यातून दिसू लागले आहे. नोकरी

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करणारी स्त्री, राजकारणात असलेली स्त्री, विज्ञान व तंत्रज्ञान याचा गावोगावी झालेला स्वीकार या सर्व बाबी या ठिकाणी अधोरेखित होतात.

साहित्यातून शहरीकरणाचा विचार झालेला आपण विविध साहित्य कृतीतून बघितला आहे. साधारण स्वातंत्रोत्तर काळानंतर बारा बलुतेदारी मागे पडली आणि कुठेतरी नवीन तंत्रज्ञान म्हणा किवा समाजाची मक्तेदारी म्हणा ती मोडीत निघाली. लोकशाही व्यवस्थेचा स्वीकार, शिक्षणाचा प्रचार प्रसार यंत्र युगाचे आगमन आणि औद्योगिकीकरण यामुळे शहर आणि ग्राम या सीमारेषा कुठेतरी पुसट होऊ लागल्या. सहारे म्हणजे निव्वळ गजबजलेली, मानुसाकीविरहित जगणे अशाच अर्थाने आपल्यासमोर येत असली तरी त्यांनी स्वीकारलेले बदल आज खेडोपाडी पोहचल्याचे साहित्याने आपल्याला निदर्शनास आणून दिले. हेही याठिकाणी आपणास मान्य करावे लागेल.

समारोप-

मराठी साहित्यातून अनेकविध साहित्य प्रवाह आपल्या समोर आले आहेत. त्यातून त्या त्या प्रवाहाचे अस्तित्व आपण स्वीकारले देखील आहे. या सर्वातून चित्रित होणारा ग्रामीण विकास हा या ठिकाणी महत्वाचा आहे. अगदी प्राचीन, अर्वाचीन, नवसाहित्य अशा विविध कालखंडांचा विचार केला तर पूर्वी मराठी साहित्य मानवी मनाला सुन्न करणारे घटना प्रसंगांनी भरलेले होते. सुधारणांचा अभाव, विचारांची घुसमट, शिक्षणाची मक्तेदारी अशा कितीतरी अडचणी साहित्यातून दिसून आल्या तरी परिवर्तन स्वीकारलेला समाज, खेड्याकडून शहरात आलेले लोक आणि स्वीकारलेली संस्कृती हे ही आजची साहित्यातून आपल्याला आज बघावयास मिळत आहे. नवे जुने यांचे मिश्रण आजच्या साहित्यातून आपणास दिसून येत आहे. शिकलेली तरुणाई, पुढारलेली आणि सुधारलेली खेडी, नोकरी- व्यवसाय करणारी महिला, अशा कितीतरी गोष्टीवरून ग्रामीण विकास आपल्या समोर साहित्यिक आपल्या साहित्यातून मांडत असल्याचे आपणास बघावयास मिळते.

संदर्भ –

१. भोसले द. ता.: ग्रामीण साहित्य एक चिंतन, मेहता पब्लिशिंग हाउस, १९८८.
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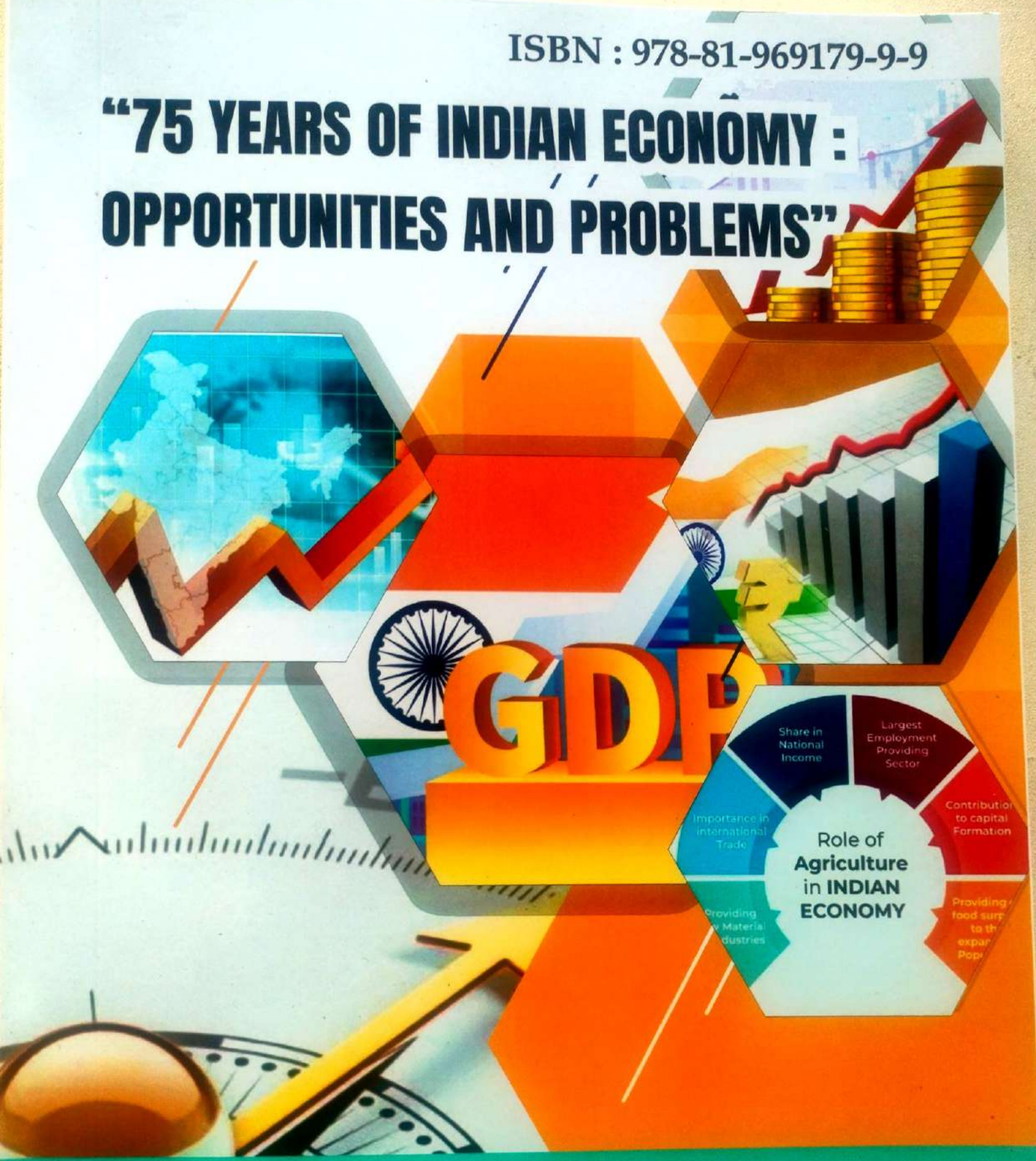
"75 YEARS OF INDIAN ECONOMY : OPPORTUNITIES AND PROBLEMS"



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India's Service Sector - Shaping Future of Indian Retail Industry

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Abstract

The Purpose of my Research Paper is to focus on potentiality and strength of India's Service Sector in shaping Business through Retail Sector. The distinct characteristics of services are intangibility, perishability, inseparability, variability, ownership, simultaneity; quality measurement etc. This study is to discover the remarkable changes in Service Sector and its overall impact in structuring Business through Retail Sector. As Service plays vital and crucial role in the pace growth of Indian Economy, this research paper also depict the role of services in Modern Economy, reasons for the growth of Services in India with addition of analyzing the transformation in this Sector. With its emerging nature it has become the fastest-growing sectors on the global landscape and hence it has made substantial contribution towards global output as well as employment generation. With around 1.2 billion population India's Services share to Total GDP for the year 2012-2013 is 59.29% and Retail sector contributes by 14 % to 15 % of its GDP for Indian Economy. My research paper will put emphasize on how Retail Industry get empowered by this "Tertiary Sector" and implication on FDI (Foreign Direct Investment) .The research also calls attention to the related case study in order to develop business in retail industry. The purpose of this paper is to examine the characteristics of the retail service sector in India and underlines its future prospects.

Keywords: Service Sector; Indian Economy; Retail Sector; FDI (Foreign Direct Investment)

Introduction

A Service is a form of product that consists of activities, benefits, or satisfactions offered for sale that are essentially intangible and do not result in the ownership of anything. Philip Kotler and Bloom define services as, "any activity or benefit that one party can offer to another that is essentially intangible and does not result in the ownership of anything. Its production may or may not be tied to a physical product."

The distinct characteristics of services are intangibility, perishability, inseparability, variability, ownership, simultaneity, quality measurement etc.

Examples of Business Services

Table 1.1 ***Various example of Business Services***

Retailing	Courier Service	Hotel	Restaurant
Advertising	Education	Airlines	Consultancy
IT Service	Banking Services	Medical Services	R&D Services
Education	Legal Services	Maintenance	Investment Advising
Beauty Saloon	Theme Park	Marketing Research	Accounting & Tax

Various Business Sectors (Table 1.1) in India is growing at a faster rate and strengthens our Indian Economy by contributing 59.29 % to total GDP (Gross Domestic Product) (2012-2013). Post-Independence in the financial year of 1951-1952 it was about 29.63% share to total GDP which further accelerated by 43.91% during post liberalization period (1991-1992). Retail Industry accounts for 14 – 15 % GDP for Indian Economy and estimated to be US$ 500 billion

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and is expected to rise about US$ 2500 billion in 2016. Overall different Service Sectors in India generates employment and create stability in the market as well as in global economy.

Research Objectives

- To identify the role of Service Sector in Strengthen the Indian Economy.
- To evaluate the reasons for the remarkable growth of Service Sector.
- To observe the growth of Indian Retail Service Sector and the scenario of FDI in Retail Industry.
- To visualize future prospects of Services in India's Retail Sector.

Research Methodology

The data is primarily collected from secondary sources with the aid of books, newspaper, magazine, journals and internet.

Service Sector-The New Growth Engine of Indian Economy

Indians are undergoing a distinct change. Services play a dominant role in our lives. Services sector is the fastest growing sector of the Indian Economy. It clocked a growth rate of 8% in the 90s.One in two Indians earn their livingfrom services

Table 1.2 ***GDP Distribution of three sectors for 5 years***

Financial Year	Agriculture & Allied services to Total GDP (%)	Industry share to TotalGDP (%)	Services Share to TotalGDP (%)
1991-1992	28.54	27.33	43.91
2009-2010	14.64	28.27	57.09
2010-2011	14.45	28.23	57.32
2011-2012	14.10	27.51	58.39
2012-2013	13.68	27.03	59.29

We can interpret from the above data (Table1.2), that post liberalization has flourished the entrant of multinational companies in India with certain liberal policies and thus it rise the service share to total GDP with lots ofemployment opportunities as well. As we can observe (Table1.2) that the rate of contribution of GDP for Agriculture and as well as Industry is slowing down gradually, but certainly the Service Sector is on continuous fastest growing stage.

Remarkable growth Observe in India's Service Sector –International Comparison

India's services sector is still growing at much higher rate as compare to primary and secondary sectors of Indian Economy In 2011, service sectors contribute was 67.5 per cent in the world GDP of US $70.2 trillion. . Now India is fifth largest Economy in the world

Reasons for the growth of Services in India

- **Economic Affluence-**: The increase in per capita income (from Rupees 238.8 in 1950 to Rupees 11,934 in 1998) is an indicator of the increase in general affluence level. The increase in affluence has given rise to services like pest-control, personal security interior designer etc.
- **Changing Role of Women-**: As soon as more women have started working, the needs for day care for children have increased, and so is the case with packed food and home delivery.
- **Leisure Time-:** People do get some time to travel and holiday and therefore there is a need for travel agencies, resorts, hotels, tourism and entertainment. There are others who would like to utilize this time to improve their career prospects and therefore there is a need for adult education/distance learning/ part-time courses.
- **Life's Expectancy-:** The health programmes have significantly contributed to an increase in life expectancy, giving rise to services like old age homes, nursing homes, healthcare, growth of fitness clubs; diagnostic centres, medical counseling, and health related information sites

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are the reflection of the growing demands for health care services.

Future Prospects of Services in Retail Sector in India:

Post liberalization in Retail sector in India. Today within the booming service sector, retailing is the single biggest contributor in terms of GDP to nation income it can be further divide in to organize an unorganized sector.

- **Organized sector**

  As Organized Retail Sector constitutes to 8% and it is estimated to be 20% by the year 2020.Indian Corporate like Pantaloon, Reliance and ITC enter into segment along with various foreign brands. With greater purchasing power amongst the middle class, it has resulted in the establishment of departmental stores, supermarkets, rural retailing, e- retailing and luxury retailing. These different sectors have a unique advantage and the scale of operation depends upon factors like average footfalls, sales per sqftetc.However the process of acquiring license is still a bottleneck for the development of Indian Retailing.

- **Unorganized sector**

  The unorganized sector is still dominant in India with 92% in total retail market, since it has the advantage of low investment and pricing of products is very important and crucial for traditional retailer as well as for the consumer. Unorganized retailers play an important role in this regard and are a vital part of the supply chain. Flexible credit options and convenient shopping locations will help traditional retail to continue its dominance in retail sector.

- **Rural Retailing**

  India's huge rural market has also attracted retail investments and is seen as a viable opportunity for growth by corporate India.ITC launched the country's first rural mall "ChaupalSagar" with diverse products being offered ranging from FMCG to electronics appliance to automobiles, with a view to provide farmers a one stop centre for all their consumption requirements..

Findings

- The Indian service industry has emerged as one of the largest and fastest-growing sectors on the globallandscape with India ranked 9th in overall GDP and 10th in services GDP.
- Economic Liberalization, market orientation, changing the role of women, export potential, service tax etc are some of the reasons for the growth of India' Service Sector.
- Indian Service Sector shaping the business through retail sector which accounts for 14-15 per cent of thegross domestic product and the implication of FDI to different stakeholders.

Conclusions-:

India's Service Sector (Tertiary Sector) constitutes to 59.29% to total GDP as compare to Primary (13.68%) and Secondary (27.03%) Sector in Indian Economy. Retail Industry as a part of Indian Service Sector contributes about 14-15% GDP in the growth of Economy.FDI in Retail with 100% in single brand and 51% in multi-brand empowered the retail sector and to different stakeholders (Farmers, SME, Consumers, retailers, etc) by giving an opportunity to grow and prosper their business. Thus India's Service Sector is shaping the future of Business through Retail Industry.

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About College

Loknete Dr. Balasaheb Vikhe Patil (Padmabhushan Awardee), Pravara Rural Education Society's Arts, Commerce, Science and Computer Science College, Ashvi, was established in 14th July 2001 by the great vision of Late Dr. Balasaheb Vitthalrao Vikhe Patil. The college is situated at Ashwi village, the heart of 22 villages generally known as Pravara region. The college has 2.5 acres campus with lush green trees and pollution free atmosphere. The college is permanently non grant, affiliated to the Savitribai Phule Pune University, Pune and is approved under section 2(f) of the U.G.C. act. The institution offers 3 years undergraduate degree programs viz., B. A. in Marathi, Hindi, English, Economics and Geography, B. Com and B.Sc. in Chemistry and three year post graduate degree program like M.Sc. (Organic Chemistry), M.Sc. (Analytical Chemistry) and M. Com. in (Business Administration).

Curriculum offered by the institution is highly relevant to the present needs of the society and aimed at overall personality and career development of students. The institution is committed to impart quality and value based education to the students, which help them in gaining knowledge and employment. The institution has highly qualified and experience teachers, well equipped laboratories, library, gymnasium and spacious playground. The institution has NSS unit conducts various extension activities. The Soft Skill Development program is conducted for overall development of the students. The institution has Earn and Learn Scheme, Book Bank Scheme and Poor Boys Fund for economically and socially backward students. For counseling and recognizing the needs of students the institution has Student-Teacher Guardian Scheme.

Faculties are actively engaged in research activity. The number of research papers published in national and international journals has been increasing. With an objective to equip students and teachers to compete in global knowledge based society, the institution has started restructuring every component of education i.e. learning, teaching, research and extension to make it more relevant and useful to the society.

The management and staff take efforts for quality enhancement and to achieve academic excellence to keep pace with future plans and execute its mission and goals successfully. It helps the students for their vertical and horizontal academic growth and gaining knowledge.

Under the dynamic leadership and guidance of Hon'ble Namdar Shri. Radhakrishna Eknathrao Vikhe Patil, (Chairman of PRES), Hon'ble Khasdar Dr. Sujay Vikhe Patil, and Hon'ble Sau, Shalinitai Vikhe Patil (Former President, Zilla Parishd Ahmednagar), the College achieved the B++ grade with CGPA 2.89 from NAAC Bangalore in accreditation process. It is proud moment for us.

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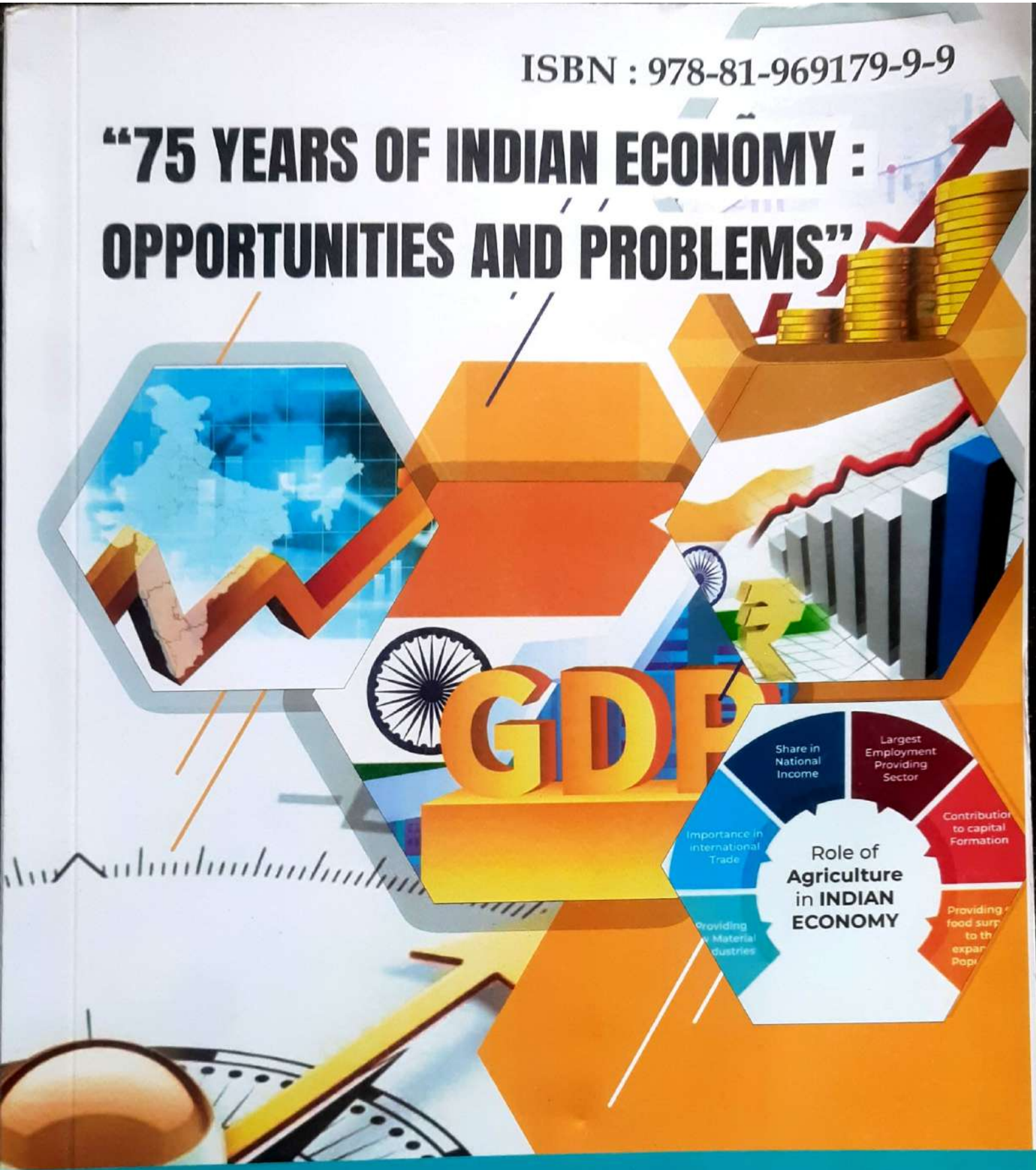

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प्रा.दिपाली दत्तात्रय तांबे

हिंदी विभाग प्रमुख

कला,वाणिज्य,विज्ञान एवं संगणकशास्त्र महाविद्यालय आष्टी खुर्द

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शोध सारांश

भारत हमेशा से एक कृषि प्रधान देश रहा है। यहाँ की आबादी गाँवों में निवास करती है और इन ग्राम वासियों का मुख्य कार्य खेती है, इनकी अजीविका का प्रमुख साधन खेती ही है। इसीलिए भारतीय अर्थव्यवस्था को कृषि प्रधान अर्थव्यवस्था कहा जाता है। कृषि प्राचीन काल से भारतीय अर्थव्यवस्था का आधार रही है, इसके प्रारंभिक प्रमाण हमें वेदों में वर्णित मिलते हैं। तब से लेकर आज तक की आधुनिक सभ्यता में भी खेती-किसानी एक बड़ा व्यवसाय है और इसका महत्व लगातार बढ रहा है। देश की जनसंख्या का एक बड़ा हिस्सा जिसे हम किसान कहते हैं, इस कार्य को करने में सदियों से लगा हुआ है I भारत की आत्मा किसान है और किसानों का जीवन हमेशा से साहित्यकारों, कलाकारों और बुद्धिजीवियों के अध्ययन, विवेचन, विश्लेषण और शोध का विषय रहा है। हिन्दी साहित्य में भी विभिन्न विधाओं में किसान जीवन का चित्रण मिलता है। कविता, उपन्यास और कहानी में इसका अधिक चित्रण मिलता है।

हिन्दी साहित्य में प्रेमचंद पहले लेखक हैं जिन्होने किसानों को केन्द्र में रखकर साहित्य की रचना की। इसलिए डॉ. रामविलास शर्मा जब प्रेमचंद को 'अद्वितीय उपन्यासकार' कहते हैं तो उसके पीछे ठोस कारण हैं। प्रेमचंद की एक बहुत बड़ी विशेषता है कि किसान को वह रंगमंच के केन्द्र में रखते हैं। प्रेमचंद का महत्वपूर्ण इस बात में है कि उन्होनें पहली बार किसानों के जीवन को भीतर से देखा और उनकी पीड़ा को, उनके हास्य-रूदन को, उनकी गरीबी, उनके सीधेपन को और चतुराई को अपने उपन्यासों में सजीव ढंग से चित्रित किया I तभी तो उन्होंने होरी को व्यक्ति चरित्र से 'वर्ग चरित्र' बना दिया। प्रेमचंद ने कृषक जीवन का चित्रण किया। प्रेमचंद की परंपरा को आगे ले जाने वाले उपन्यासकारों में नागार्जुन, भैरव प्रसाद गुप्ता, फणीश्वर नाथ रेणु, राही मासूम रजा, श्रीलाल शुक्ल, विवेकीराय, भगवानदास मोरवाल, वीरेन्द्र जैन, राजू शर्मा आदि प्रमुख हैं। इसके अतिरिक्त कहानीकारों और कवियों ने भी किसान, जीवन की त्रासदियों को अपनी रचनाओं में उकेरा है। आज स्थिति कुछ बदली हुई सी और भयावह है। आज खेती-किसानी और किसान, दोनों संकट के दौर से गुजर रहे हैं। किसान लगातार आत्महत्या करते जा रहे हैं। ऐसे समय में जब देश की जनसंख्या सामाजिक संरचना छिन्न भिन्न हो चुकी है। किसान बरबादी के कगार पर खड़ा है। साहित्य में किसानों की त्रासदी से दूरी आज चिंता का विषय है, आज साहित्य के ज्यादातर विषय शहरी वर्ग से लिए जाते हैं। वहाँ भूख और खेती किसानी का संकट कोई मायने नहीं रखता अर्थात आज धीरे-धीरे किसान सहित्य से गायब हो रहा है। ऐसे समय में हिन्दी साहित्य में किसान सपने, संघर्ष, चुनौतियाँ और 21 वीं सदी' विषय पर विमर्श की आवश्यकता है। वस्तुतः किसी भी महत्वपूर्ण विषय और मुद्दे को लगातार मूल्यांकन पुनर्मूल्यांकन होना चाहिए। प्रस्तुत राष्ट्रीय शोध संगोष्ठी 'हिन्दी साहित्य में किसान सपने, संघर्ष, चुनौतियाँ और 21वीं सदी हिन्दी साहित्य में किसान जीवन की स्थितियों की पड़ताल की दिशा में एक विनम्र प्रयास है।

मुख्य शब्द

किसान, जमींदार,गोदान शोषण,विडम्बना, 'ऋण' या कर्ज, कर्जदार, कृषक,साहूकार, लोक कल्याण, पूंजीवादी व्यवस्था,

'गोदान' उपन्यास मुंशी प्रेमचन्द द्वारा लिखा गया वह उपन्यास है जिसे कृषक जीवन का महाकाव्य कहा गया है। इस उपन्यास की रचना 1935 ई. में की गई थी। गोदान से पूर्व प्रेमचन्द जी 'प्रेमाश्रम' की रचना कर चुके थे जिसमें जमींदारों द्वारा किसानों के शोषण का उल्लेख था। 'प्रेमाश्रम' को गोदान की पूर्व पीठिका कहा जा सकता है। प्रेमचन्द के लेखन का सरोकार ग्रामीण जीवन विशेषकर कृषक वर्ग से था। वे उनकी पीड़ा, शोषण, कठिनाइयों से भली-भांति अवगत थे और चाहते थे कि जमींदारी प्रथा समाप्त हो जो किसानों के शोषण के लिए बहुत कुछ उत्तरदायी थी। अपने एक आलेख में प्रेमचन्द ने लिखा है। गोदान में प्रेमचंद ने 'होरी' के रूप में जिस चरित्र की परिकल्पना की है वह अपने 'वर्ग' का प्रतिनिधित्व करता है सभी किसानों की हालत कमोवेश होरी जैसी ही है। अवध क्षेत्र के 'बेलारी गांव का 'होरी' पांच बीघे जमीन का मालिक एक सामान्य कृषक है और सबका 'नरम चारा' है। जमींदार, पटवारी, सूदखोर महाजन, पुलिस, बिरादरी तथा धर्म के ठेकेदार सब उसका शोषण करते हैं और अन्ततः शोषण का शिकार होरी किसान से मजदूर बनने को विवश हो जाता है।

गोदान की रचना कृषक जीवन से जुड़ी समस्याओं का चित्रण करने के लिए की गई है। यह भी विडम्बना ही है कि अपने शोषकों के बारे में होरी जैसा किसान अच्छी तरह जानता है, फिर भी रूढ़ियों और संस्कारों से बंधा हुआ होने के कारण वह उनके प्रति क्रोधाभिभूत नहीं हो पाता और इस शोषण के लिए वह अपने भाग्य को दोषी मानता है। किसानों के शोषण का एक बहुत बड़ा कारण है उनकी रूढ़िवादिता और संगठन का अभाव। वे एक-दूसरे से ईर्ष्या करते हैं और इसलिए बैल की तरह जमींदारों के हल में काम करते रहते हैंडॉ. रामविलास शर्मा की मान्यता है कि गोदान की मुख्य समस्या 'ऋण' या कर्ज है। पूरे देश का किसान महाजनी सभ्यता में जकड़ा हुआ है जिसे गोदान में एक प्रहसन के माध्यम से अभिव्यक्ति दी गई है। किसान को अपनी मर्यादा और इज्जत की चिन्ता बहुत रहती है। इसका मोह वह त्याग नहीं पाता। भले ही किसानी से कुछ न मिलता हो फिर भी होरी से खेती नहीं छोड़ी जाती। होरी को 'बिरादरी' की चिन्ता भी

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है। वह बिरादरी से बाहर नहीं रह सकता। 'बिरादरी' का यह मोह पुराने रूढ़िवादी मूल्यों की जकड़ है जिसमें 'होरी' फंसा हुआ है। इसने उसे इतना भयभीत कर रखा है कि निरपराध होने पर भी 'झुनिया को अपनी पुत्रवधू के रूप में स्वीकारने पर वह बिरादरी द्वारा दिए गए दण्ड को स्वीकार कर लेता है।

भारत के किसान की विडम्बना है वह अपनी एक छोटी-सी इच्छा को पूरा नहीं कर पाता। होरी के मन में एक गाय की इच्छा थी। यह 'गाय' उसकी प्रतिष्ठा है। घर के द्वार पर गाय बंधी होगी तभी तो लड़के के ब्याह वाले आएंगे और लोग पूछेंगे कि यह किसका घर है। गाय से वह अपने मान-सम्मान की वृद्धि करना चाहता है। संयोग से उसे भोला की गाय उधार में मिल भी जाती है, किन्तु उसके भाई हीरा की ईर्ष्या भड़क उठती है और वह गाय को जहर दे देता है। गाय के मर जाने से होरी के जीवन का संघर्ष बढ़ है। इस गाय ने उसके जीवन को कई रूपों में प्रभावित किया था। इसके लिए वह कर्जदार बना, झुनिया और गोबर का मेल हुआ, जिससे उसे सामाजिक दण्ड भुगतना पड़ा, भोला उसके बैल खोल ले गया और उसे किसान से मजदूर बनना पड़ा। अन्त तक वह 'गाय' की अपनी इच्छा पूरी नहीं कर सका और अब जीवन की अन्तिम बेला में उससे 'गोदान' की अपेक्षा की जा रही है। धनिया आज मजदूरी में मिले पैसों को होरी के ठण्डे हाथ पर रखकर पण्डित दातादीन को देती हुई कहती है, "महाराज घर में गाय है न बछिया, न पैसा। यही पैसे हैं, यही इनका गोदान है।" (1) उक्त विवेचन के आधार पर यह कहा जा सकता है कि प्रेमचन्द ने गोदान कृषक जीवन का यथार्थ चित्रण किया है।

प्रेमचंद ऐसे प्रथम भारतीय उपन्यासकार हैं जिन्होंने उपन्यासों का उपयोग समाज और जीवन की आलोचना के लिए किया है। उन्होंने अपने उपन्यासों में उन समस्याओं को चित्रित किया है जो वर्तमान युग से जुड़ी हुई हैं और जिन्हें हर व्यक्ति अनुभव करता है। प्रेमचन्द एक ऐसे समाज का निर्माण करना चाहते थे जहां भेद-भाव के अभिशाप से मानवता पीड़ित न हो, किसी प्रकार का शोषण न हो और आदमी की पहचान सम्पत्ति और जाति के पैमाने से न हो। गोदान में उनका यही उद्देश्य प्रमुखता से व्यक्त हुआ है। इस उपन्यास का प्रधान उद्देश्य है कृषक जीवन की समस्याओं का चित्रण करना, उसके शोषण का चित्र प्रस्तुत करना और उसकी दीन-हीन स्थिति से समाज को परिचित कराना। किसान का शोषण कौन करता है। तथा उसका शोषण कितने मुहानों पर होता है और उस शोषण के लिए समाज के कौन-कौन लोग उत्तरदायी हैं इसका सजीव चित्रण गोदान में किया गया है। उपन्यास मनोरंजन की वस्तु नहीं है अपितु वह जीवन की सच्चाइयों को उजागर कर हमें सोचने-विचारने को विवश करता है और संघर्ष की प्रेरणा प्रदान करता है। अपने उपन्यासों के उद्देश्य पर प्रकाश डालते हुए प्रेमचंद लिखते हैं, "हम साहित्य को मनोरंजन और विलासिता की वस्तु नहीं समझते। हमारी कसौटी पर वही साहित्य खरा उतरेगा जिसमें चित्रण की स्वाधीनता का भाव हो, सौंदर्य का सार हो, सृजन की आत्मा हो, जीवन की सच्चाई का प्रकाश हो, जो हममें गति, संघर्ष और बेचैनी पैदा करे, सुलावे नहीं।"(2) कृषक जीवन की विसंगतियों का चित्रण-गोदान की रचना कृषक जीवन से जुड़ी हुई समस्याओं का चित्रण करने के लिए की गयी है। होरी, कृषक वर्ग का प्रतिनिधि पात्र है उसके जीवन की 'ट्रेजडी हर किसान के जीवन को प्रस्तुत करती है।

जब भारत में जमींदारी प्रथा थी तो किसान उनके शिकंजे में फसा हुआ था। जमींदार, कारकुन पटवारी, सूदखोर महाजन आदि तो उसका शोषण करते ही हैं, इनके अतिरिक्त पुलिस, व्यापारी, धर्म के ठेकेदार, समाज के ठेकेदार भी उसका शोषण करते हैं। यह कैसा विरोधाभास है कि जो किसान सारे संसार के लिए अन्न उपजाता है वही खुद भूखा है। यह भी विडम्बना ही है कि अपने शोषकों के बारे में होरी जैसा किसान अच्छी तरह जानता है फिर भी, रूढ़ियों और संस्कारों से बंधा हुआ होने के कारण वह उनके प्रति क्रोधाभिभूत नहीं हो पाता, इस शोषण के लिए वह अपने भाग्य को दोषी मानता है। गोबर को समझाता हुआ वह कहता है, छोटे-बड़े भगवान के घर से बन कर आते हैं। सम्पत्ति बड़ी तपस्या से मिलती है उन्होंने, पूर्वजन्म में जैसे कर्म किये. हैं उनका आनन्द भोग रहे हैं। हमने कुछ नहीं संचा तो भोगे क्या?" किन्तु, गोबर उसकी इस बात से सहमत नहीं है वह प्रगतिशील चेतना का प्रतीक है और इस बात को जानता है कि भगवान तो सबको बराबर बनाते हैं। यहां जिसके हाथ में लाठी है वह गरीबों को कुचलकर बड़ा आदमी बन जाता है।"किसानों के इस शोषण का कारण है उनके संस्कार, रूढ़िवादिता और संगठन का अभाव। वे एक दूसरे से ईर्ष्या करते हैं और इसीलिए बैल की तरह जमींदारों के हल में काम करते रहते हैं, भोला इस विषय में होरी से कहता है,"कौन कहता है हम तुम आदमी हैं। हममें आदमियत कहां। आदमी वह है जिसके पास धन है, अख्तियार है, इल्म है। हम लोग तो बैल हैं और जुतने के लिए पैदा हुए हैं। उस पर एक-दूसरे को देख नहीं सकते। एका का नाम नहीं। एक किसान दूसरे के खेत पर न चढ़े तो कोई जाफा कैसे करे, प्रेम तो संसार से उठ गया।"

जमींदार को किसान से लगान वसूल करने का हक है, किन्तु नजराना लेते हैं, जुर्माना वसूल करते हैं, लगान लेते हैं और किसानों से बेगार कराते हैं। शहर के मेहता और गांव के गोबर जैसे लोग ही इस शोषण के विरुद्ध आवाज उठाकर समाज को इस अभिशाप से मुक्ति दिला सकते है। किसान का शोषण जमींदार तो करता ही है किन्तु इस शोषण चक्र में और भी कई लोग शामिल हैं। गांव के महाजन और साहूकार भी किसान की मजबूरी का लाभ उठाकर ज्यादा दर पर ब्याज वसूल करते हैं। साहूकार के सूद की दर एक आना रुपया से लेकर दो आना रुपया तक है जो 75 प्रतिशत वार्षिक से 150 प्रतिशत तक जा पहुंचती है, किन्तु किसान मजबूर है कर्ज लेने को विवश है। कभी खाद के लिए, कभी वीज के लिए, कभी बैल के लिए तो कभी लगान चुकाने के लिए, तो कभी सामाजिक दण्ड की भरपाई के लिए। होरी कहता है, "कितना चाहता हूं कि किसी से एक पैसा कर्ज न लें लेकिन, हर तरह का कष्ट उठाने पर भी गला नहीं छूटता।"(4) सच तो यह है कि कर्ज वह मेहमान है जो एक बार आकर फिर जाने का नाम नहीं लेता। होरी को लगता है कि इसी तरह उस पर कर्ज का सूद बढ़ता जाएगा और एक दिन उसका घर द्वार सब नीलाम हो जाएगा और उसके बच्चे निराश्रित होकर भीख मांगते फिरेंगे। अगर सन्तोष था तो यही कि वह विपत्ति अकेले उसी तरह के सिर न थी प्रायः सभी किसानों का यही हाल था। जमींदार के कर्मचारी, कारकुन, तथा सरकार के पटवारी आदि भी किसान का शोषण करते हैं। पुलिस के गण्डासिंह जैसे थानेदारों की मिलीभगत से गांव के मुखिया भी किसान से मिली रिश्वत के पैसो में अपना हाथ बंटाते हैं।

समाज और धर्म भी किसान का शोषण करने में पीछे नहीं हैं। झुनिया को घर में आश्रय देने पर गांव के भाग्यविधाताओं ने 100 रु. दण्ड और तीस मन अनाज जुर्माने के रूप में वसूल किया। दातादीन जैसे धर्म के ठेकेदार भी किसान का शोषण करते हैं। मृत्यु के अवसर पर होरी से गोदान की अपेक्षा करने वाले ये तथाकथित धर्म के ठेकेदार समाज के मुंह पर तमाचा मारते हुए से प्रतीत होते हैं। जो व्यक्ति जीवन पर्यन्त एक गाय का जुगाड़ अपने लिए नहीं कर सका उससे मरते समय गोदान के लिए कहना कहां का न्याय है पर दातादीन को इससे क्या? गोदान में प्रेमचन्द जी ने पूंजीवादी व्यवस्था को समाप्त करने का संकल्प व्यक्त किया है। खन्ना पूंजीपतियों के प्रतिनिधि पात्र हैं। शोषण की प्रक्रिया नगर और गांव में समान्तर रूप से चलती है। गांव में जमींदार किसान का शोषण करता है तो नगर में मिल मालिक और पूंजीपति मजदूर का शोषण करके अपनी सोने की लंका खड़ी करते हैं।

प्रेमचन्द को यह स्पष्ट दीख रहा था कि शोषण अब अधिक दिनों तक चलने वाला नहीं। रायसाहब को भी इसका आभास हो गया था कि जमींदारी प्रथा अब समाप्त होने वाली है वे कहते हैं- "लक्षण कह रहे हैं कि बहुत जल्द हमारे वर्ग की हस्ती मिट जाने वाली है।"(5) मजदूर अपने पेट के अतिरिक्त और किसी बात पर ध्यान नहीं देता, परन्तु जब पर्याप्त परिश्रम के बाद भी उनका पेट खाली रहता है तो वे विद्रोह पर उतर आते हैं। मिल मालिक खन्ना अपने अहंकार में मजदूरों की उचित मांगों को भी ठुकरा देते हैं, परिणामतः हड़ताल होती है और मजदूर खन्ना की मिल में आग लगा देते हैं। शायद 'गोदान' तक आते-आते प्रेमचन्द यह समझने लगे थे कि गांधीवादी अंहिसा से शोषण को समाप्त नहीं किया जा सकता उसके लिए तो विद्रोही तेवर अपनाने ही पड़ेंगे। प्रेमचन्द जी ने यह भी सन्देश दिया है कि पूंजी पर अहंकार करना ठीक नहीं, क्योंकि पूंजी क्षणभंगुर होती है। खन्ना की पत्नी गोविन्दी खन्ना सात्विक विचारों की महिला है वह इस

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आर्थिक हानि पर दुखी नहीं रहती अपितु उसे वरदान मानती हुई कहती है। "जीवन का सुख दूसरों को सुखी करने में है, उन्हें लूटने में नहीं। मेरे विचार से तो पीड़क होने से पीड़ित होना कहीं श्रेष्ठ है। धन खोकर अगर हम अपनी आत्मा को पा सके तो यह कोई महंगा सौदा नहीं है।"(6)

निष्कर्ष

प्रेमचन्द जी ने गोदान में सेवा का आदर्श प्रस्तुत करते हुए जो विचार उपस्थित किए हैं वे लोक कल्याण की दृष्टि से अत्यन्त उपयोगी हैं। दौलत से आदमी को जो सम्मान मिलता है वह उसका सम्मान नहीं है, उसकी दौलत का सम्मान है। सच तो यह है कि दौलत व्यक्ति में अहंकार उत्पन्न करती है और उसके हृदय से सेवा, करुणा जैसी सदुवृत्तियां समाप्त हो जाती हैं। प्रेमचन्द जी ने गोदान के पात्रों के माध्यम से सेवा के महत्व को प्रतिपादित किया है। सेवा और परोपकार में मेहता जी का दृढ़ विश्वास है, मालती भी उन्हीं की प्रेरणा से अपने स्वभाव को बदल लेती है अब उसमें आश्चर्यजनक परिवर्तन आ गया है। गरीबों को बिना फीस लिए दवा देती है। वह सेवा का आदर्श प्रस्तुत करती है। प्रेमचन्द जी सेवा को कर्मयोग कहते हैं। मेहता जी के माध्यम से अपने विचार व्यक्त करते हुए वे कहते हैं "प्रवृत्ति और निवृत्ति दोनों के बीच में जो सेवा मार्ग है, चाहे उसे कर्म योग ही कहो, वही जीवन को सार्थक कर सकता है, वही जीवन को ऊंचा और पवित्र बना सकता है।"7 नारी को भी अपने व्यक्तिगत जीवन में सेवा धर्म अपनाने का सुझाव देते हुए वे कहते हैं- "सच्चा आनन्द, सच्ची शान्ति केवल सेवाव्रत में है। वही अधिकार का स्रोत है वही शक्ति का उद्गम है। सेवा ही वह सीमेन्ट है जो दम्पति को जीवन पर्यन्त स्नेह और साहचर्य से जोड़े रख सकता है, जिस पर बड़े-बड़े आघातों का कोई असर नहीं होता। जहां सेवा का अभाव है वहीं विवाह-विच्छेद है, परित्याग है, अविश्वास है।"(8)

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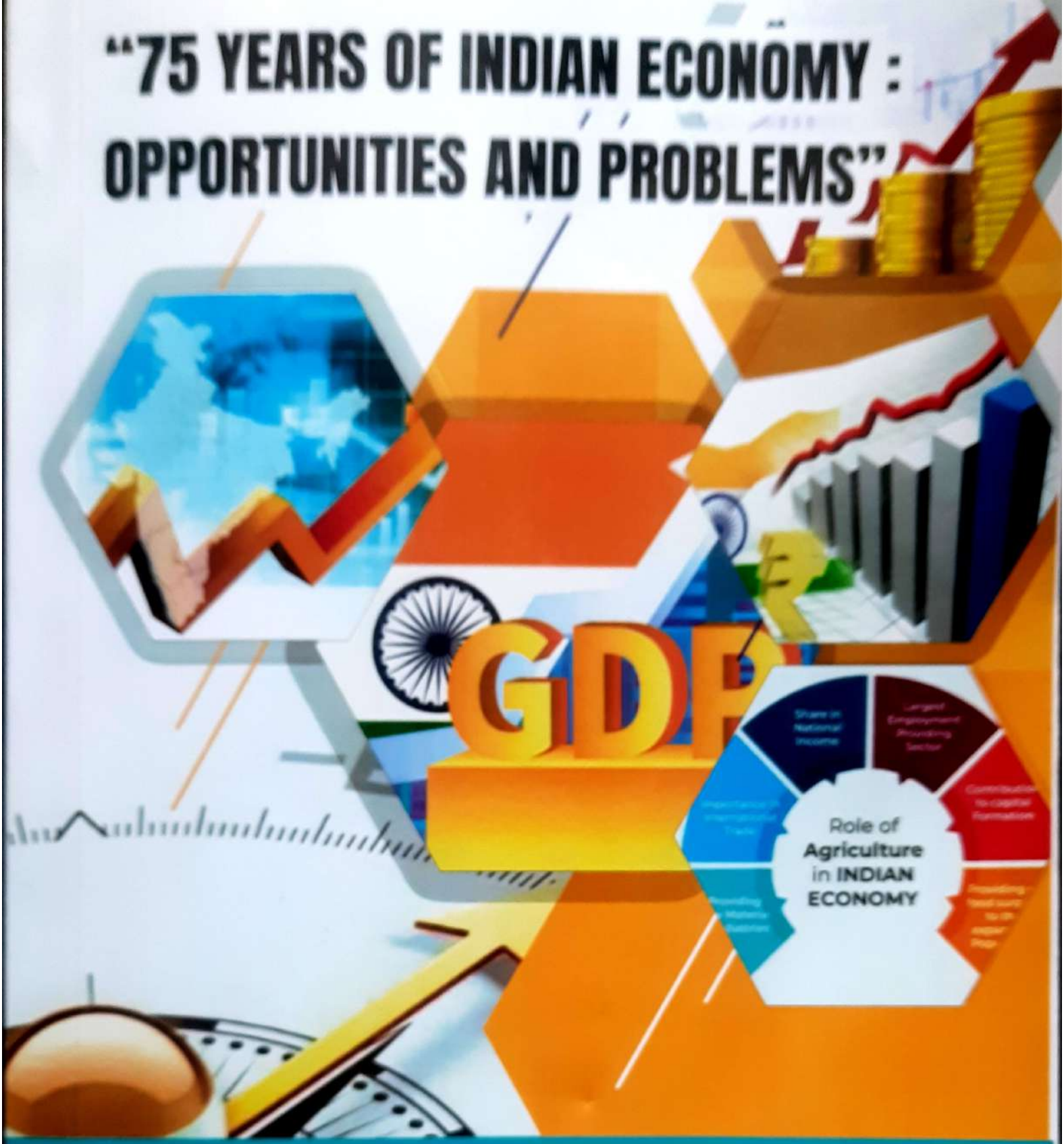

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Women Economic Empowerment depicted in the selected women characters by Indian English Novelist writer Shashi Deshpande.

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Introduction:

Women's economic empowerment in India has gained increasing attention now a day. It has become a key factor for promoting gender equality and sustainable development. Women empowerment is a general term originated in 1960 with the starting of civil rights movement in U.S.A. It covers wide range of ideologies and theories which focuses on women's position in society, their social, economic rights and culture. Literature plays an important role in women's empowerment from different angle such as social, political economic and helps them to create their own self existence in Indian Patriarchal society. In English Literature the idea of Women Empowerment incorporated with the idea of feminism. This is a ideology which is greatly influenced by western writers Mary Wollstonecraft, Simone de Beauvoir, Toril Moi, Kate Millett Elaine Showalter and Virginia woolf. They all favor the same idea and give voice to the voiceless women psyche. Verginia woolf in her essay *A Room of One's Own*, writes, "A woman must have money and a room of her own if she is to write fiction." In this quote she urges to the women who have caught themselves in the societal norms to break open and live independently. In India from Vedic period the ideology of women empowerment is existed. Women were highly regarded and had position in their society. They believe that God exists where women are valued. At that time women are allowed to take part in all activities that men could do. After Vedic period the status of women declined. They lost their social, political and religious status. The birth of daughter is unwelcomed and the birth of son was desired. The systems like child marriage, dowry, and sati started. All freedom that they had in Vedic period curtailed by the rigid patriarchal Indian society. However, over the past one and half decade, Indian society has witnessed transformative change in the status of Indian women. This change is attributed to both economic and non-economic factors.

In Indian literature, the theme of woman empowerment is most subtly handled by Indian female writers in post- independence period when most of the literary fields were male dominated. A number of women novelists such as Shashi Deshpande, Kamala Markandaya, Nayantara Sahgal, Ruth Prawar Jhabwala, Anita Desai mainly wrote about various female issues. They describe the lives of Indian women under the impact of patriarchy and simultaneously present the concept of new women who is strong, fully awakened about their rights and ready to fight against the patriarchal norms. They not only fight for their social status but also for their economic status which is very important to receive equal status to men. The present research paper will highlights how women's economic empowerment is depicted in the characters of Shashi Deshpande. Shashi Deshpande is a well known novelist in Indian Literature. Who represent Indian Middle class women and their struggle in her writing. Her writing focuses on the lives of women who are suffering and struggling under the patriarchal construct with their own strength.

The Dark Holds No Terror is a reflective novel of the feminist aspiration by Shashi Deshpande. It narrates the story of a successful lady doctor Sarita, the protagonist of the novel. The story is about her conflict that she has to face as doctor and as a wife. She is a popular doctor outside her home and inside her home she is trapped animal by her husband. Sarita has a better understanding of herself and others that gives her courage to face the reality. It is the story of a

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girl who is finding her inner self. She grows up as a victim of her mother's gender – based bias. As a daughter she has bad memories, Sarita still remembers her mother's bitter words utter when she was unable to save her younger brother from drowning. She put all blame on saru's head and she is not allowed to have any escape from this sense of guilt, which makes her more insecure in her relationships with others. Manoher who is unpaid teacher in a small college behaves very rudely with his wife and turns cruel when he realizes that his career is not having any future or hopes on the other hand his wife has overtaken him professional.

Initially she was spending her life with emotions and anxieties but gradually she realizes that there is more to life than dependency on husband and parents. And subsequently she decides to make her life better. Thus it is a tremendously powerful picture of a self sufficient woman who is aware of her professional and economic identity. The novel "The Dark Holds No Terrors" ends with the certainty that how women is no longer to be victim of male ego but a confident and economically empowered woman who has come out of all social evils with the help of economic independency.

In 'If I Die Today' presents fractured marital relationship of a couple Manju and Vijay. Manju has been as loving and understanding wife who later on turned out to be an emotional woman. She is neither satisfied nor confident and living her life in such miserable which makes her unable to see that her feelings of misery are not due to her faults. Her husnand Vijay depicts the traditional picture of hindu husband who desire a son; the sole heir of the family. Though an educated Dr. Kulkarni longs for a son and silently torturing his wife; making her fully dependent on him. She seems to have become a victim of passive aggressive husband who silently tortures his wife who neither hits nor says any angry word to his wife, but his behavior, actions and sly comments make her guilt. She hopes that second pregnancy will bring husband and wife closer but fails to get desire result. Here she realized that the problem does not lie in motherhood, wifehood and womanhood but in the attitude of Indian middle class males who take women granted as they become wife. At the end Anju is fed up with all this and decides to fight for her independence from the stronghold of female domination; became economically independent and frees herself from the patriarchal marriage institution.

Conclusion:

It is in this manner Shashi Deshpande exposes the lives of Indian women who are caught themselves between traditional patriarchy and modernity. Thus in both above selected novel, the novelist created such female characters who reconstructs women's experiences to voice for their oppressive living. In her works she is trying to free the women from their female psyche, male domination and patriarchal ideologies by transcending their boundaries. This is a changed new women represented in the both selected novel, who has become conscious of their destination. Now they are not worried about the fear of old age, fear of unloved, misjudged, misunderstood and failure that has been haunting her throughout the ages. Both are very fruitful novels in which Deshpande has shown female consciousness of her own rights, responsibilities and destination. In nutshell these two pieces of literature promotes that women's economic empowerment is the only way to get gender equality in Indian Society and will a help to enrich inclusive economic growth of India.

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किसानो की समस्याओं का मूल्यांकन : हिंदी उपन्यास साहित्य संदर्भ में

प्रा.गणेश चिमाजी खेमनर

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कला,वाणिज्य,विज्ञान एवं संगणकशास्त्र महाविद्यालय आष्टी खुर्द

शोध सारांश

भारत एक कृषीप्रधान देश रहा है | भारत गाव का देश है और कृषी भारत की आत्मा है | लगभग 70 % आबादी गाव मे निवासीत है | किसानो का जीवन प्रारंभ से ही संघर्षों से भरा हुआ था | भारतीय संस्कृती में त्योहार, रीती, रिवाज, संस्कार, कर्मकांड आदि खेती से जुडे हुए है | खेती ही भारत के आत्मनिर्भर होने का मुल आधार थी | लेकिन पाश्चात्य देशो ने भारत की अर्थव्यवस्था को नष्ट करने के लिये भूमी व्यवस्था को बदल कर जमीन दारी प्रथा आरंभ करना शुरू किया था | इसके कारण वास्तविक मे किसान निरंतर गरीब होते रहे | भारत मे किसानो को कही नये प्रकार आंदोलन भी करने पडे | जिस देश की कृषी व्यवस्था के क्षेत्रों मे सुधार आया, उस देश की तरक्की रुक नही सकती कृषी का सीधा संबंध भारत के जीडीपी पर होता है |इस प्रकार भारत की अर्थव्यवस्था में कृषि की महत्वपूर्ण भूमिका रही है | कृषि हमारे आर्थिक, सामाजिक एवं आध्यात्मिक उन्नति का माध्यम रही है | भारत देश में किसानो की अवस्था दयानिय थी | भारतीय साहित्य में हिंदी उपन्यासकारों ने अपने अनुभव एवं आस पास के वातावरण का अध्ययन करके किसानों की आर्थिक और सामाजिक स्थिति का यथार्थ चित्रण किया है | हिंदी उपन्यासों में किसानों की स्थिति को सुधारित और उनकी समस्याओं पर विस्तृत चर्चा प्रस्तुत की है | भारतीय आर्थिक और सामाजिक की दृष्टि से उसका अध्ययन करना यहां न्याय संगत होगा |

विषाद- मठ ' उपन्यास द्वारा रांगेय राघव ने बंगाल के दुर्भिक्ष को चित्रित किया है | जमीन, घर लगान के कारण बिक गए और दूसरी तरफ महाजन सूद पर पैसा देकर गरीब किसानों की आर्थिक स्थिति को अधिक कमजोर कर रहे थे | इसका यथार्थ वर्णन किया है | विषार मठ में अकाल के कारण हरी-भरी धरती उजाड़ हो गई थी | गद्य लेखन की विधा में अन्य विधाओं की तुलना में उपन्यास चित्रण अत्यंत विस्तृत, व्यापक होता है | जिसके कारण किसानों के जीवन को उपन्यास के माध्यम से वास्तविक रूप में चित्रित किया गया है | जिसमें से कुछ प्रमुख उपन्यासों का यहां अध्ययन करेंगे |

प्रेमचंद ने गोदान उपन्यास में होरी नामक पत्र की सयता से उपन्यास को वास्तविकता प्रदान की है | इसमें किसान से संबंधित समस्या जैसे ऋण के दुष्चक्र को समाप्त न होना, किसानों पर लगान का दबाव और अन्याय पूर्ण सामाजिक प्रथाएं और आदि पर प्रकाश डाला गया है | जैसे होरी एक गाय पालना चाहता है ,और जीवन भर इसके लिए सश्रम संघर्ष भी करता है ,परंतु अंत में उसे मृत्यु ही मिलती है | इससे पता चलता है तत्कालीन समय की कृषी की क्या हालत थी ,इसलिए प्रेमचंद बूढ़े किसानो की मन स्थिति को समझाते हुए कहते ही की, बुढों के लिए अतीत के सुखो और वर्तमान में दूखो और भविष्य के सरवन नाथ से ज्यादा मनोरंजक और कोई प्रसंग नहीं होता |

अमरकांत इस प्रमुख पात्र के माध्यम से प्रेमचंद ने कर्मभूमि उपन्यास किसान किसान आंदोलन जमीन की समस्या लगान कम करने और खेतिहर मजदूरों की समस्या पर यथार्थ से वर्णन किया है | आंदोलन का समर्थन करने के कारण अमरकांत जेल में सजा काटता है | उपन्यास के पर्जो के जीवन की विविध घटनाओं द्वारा प्रेमचंद ने अपने उद्देश्यों को मूर्तरूप प्रदान किया है |

जगदीश चंद्र ने ' धरती धन ना अपना ' इस उपन्यास में काती नामक प्रमुख पात्र के माध्यम से एक दलित किसान की व्यथा का वर्णन किया है | जो अर्थ के रूप से जमीदारों पर निर्भर है | इस उपन्यास में एक ऐसी घटना का वर्णन है जिसमें बाढ़ आने पर दलितों के कुए का पानी पीने योग्य नहीं रहता परंतु तब भी जमीदारों द्वारा उनकी कोई सहायता नहीं की जाती |

'मैला आंचल ' इस आंचलिक उपन्यास में कपीश्वर नाथ रेषा ने ग्रामीण किसान के प्रत्येक पक्ष को उजागर किया है | जहां किसान या तो खेत में मजदूर है या बटाईदारी पर खेती करते हैं | उन्हें भरपेट भोजन और जीवन यापन कि सामान्य सुविधा भी नहीं मिलती है | जमीदारो, तहसीलदार द्वारा इनका शोषण किया जाता है | किसानों के लिए आशिशीन तथा अंधविश्वासी होना | कीतना हानिकारक हो सकता है, इस उपन्यास में साफ झलकता है |

डूब तीन तरफ पहाड़ों से और एक तरफ बेतवा नदी से घिरे लडई गांव का उपन्यास है | जहां सिर्फ सरकार बांध बनना चाहती है | माते इसका प्रमुख पात्र है जो अशिक्षित है | परंतु अनुभव संपन्न और रननीतिक दाव पेज को भली भाती समझता है | जहां किसानों को मुआबजे की आधी रक्कम भी नहीं मिलती तब इसी बात से क्षुब्ध होकर माते करता है - ' और जो दाम दिर उसमें से भी आधे झपट लिए देने वाली हथेली नीचे रख भाई और मांगने वाले तेरे ऊपर या उल्टा चलन चलो आया इसलिए तो ना देने वाले के हाथ में कुछ रह पाता है ना पानेवाले तक कुछ पहुंचा सका सब जा गिरा धरती पर | यह उपन्यास बांध बनाने के कारण किसानों और उनके ग्रामीण जीवन पर पढ़ने वाले दुष्परिणामोंपर प्रकाश डालता है |

' जिंदगीनामा ' उपन्यास में महिला उपन्यासकार कृष्णा सोबती ने पंजाब के किसानोंके जीवन का यथार्थ चित्रण किया है | किसानों के प्रति संवेदना रखते हुए उनकी समस्याओं को डकेरा जैसे प्रत्येक वर्ष मेहनत करने के पशछात भी भरपेट अनाज ना मिलना सूद के कुचक्र में फंसकर जमीन साहुकारोंके हाथो में चले जाना | कृष्णा सोती ने सामाजिक संघर्ष के चलते तत्कालीन देश में घटी घटनाओं को भी अपने पत्रों को भी अपने पत्रों के माध्यम से पाठकों के समक्ष वास्तविक रूप में प्रस्तुत किया है |

इस प्रकार किसान भारतीय अर्थव्यवस्था का आधार है, जो खाद्यान्न फासलोंसे लेकर वार्षिक फसलों तक उपजाता है , परंतु उसके जीवन में उतनी ही कठिनाइया और संघर्ष भी रहते है , जिसे दूर करने के प्रयास किए जा रहे है | भारत कृषिप्रधान देश है | यहां किसानों को महत्ता प्रत्यक्ष और अप्रत्यक्ष रूप में प्रदर्शित होती है | इसी उपन्यासों में कृषिव्यवस्था और किसानों के जीवनपर विस्तृत और यथार्थ चर्चा की गई है | बाढ़, सुखा, अकाल के समय किसानोंकी दयनीय स्थितिका यथार्थ चित्रण उपन्यासों में प्रदर्शित होता है | इसका सूक्ष्म अवलोकन कर किसान के जीवन से जुड़े पक्ष पर सुधारोंके सुझाव प्रस्तुत किए जा सकते है |

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संदर्भ ग्रंथ -
१) कर्मभूमि - प्रेमचंद, भूमिका प्रकाशन, राजस्थान
२) गोदान - प्रेमचंद, हिंदी ग्रंथ रत्नाकार कार्यालय, मुंबई
३) धरती धन न अपना - जगदीशचंद्र, राजकमल प्रकाशन
४) मैला आंचल - फणीश्वरनाथ 'रेणू', राजकमल प्रकाशन
५) जैन, वीरेंद्र, डूब - वाणी प्रकाशन, नई दिल्ली

About College

Loknete Dr. Balasaheb Vikhe Patil (Padmabhushan Awardee), Pravara Rural Education Society's Arts, Commerce, Science and Computer Science College, Ashvi, was established in 14th July 2001 by the great vision of Late Dr. Balasaheb Vitthalrao Vikhe Patil. The college is situated at Ashwi village, the heart of 22 villages generally known as Pravara region. The college has 2.5 acres campus with lush green trees and pollution free atmosphere. The college is permanently non grant, affiliated to the Savitribai Phule Pune University, Pune and is approved under section 2(f) of the U.G.C. act. The institution offers 3 years undergraduate degree programs viz., B. A. in Marathi, Hindi, English, Economics and Geography, B. Com and B.Sc. in Chemistry and three year post graduate degree program like M.Sc. (Organic Chemistry), M.Sc. (Analytical Chemistry) and M. Com. in (Business Administration).

Curriculum offered by the institution is highly relevant to the present needs of the society and aimed at overall personality and career development of students. The institution is committed to impart quality and value based education to the students, which help them in gaining knowledge and employment. The institution has highly qualified and experience teachers, well equipped laboratories, library, gymnasium and spacious playground. The institution has NSS unit conducts various extension activities. The Soft Skill Development program is conducted for overall development of the students. The institution has Earn and Learn Scheme, Book Bank Scheme and Poor Boys Fund for economically and socially backward students. For counseling and recognizing the needs of students the institution has Student-Teacher Guardian Scheme.

Faculties are actively engaged in research activity. The number of research papers published in national and international journals has been increasing. With an objective to equip students and teachers to compete in global knowledge based society, the institution has started restructuring every component of education i.e. learning, teaching, research and extension to make it more relevant and useful to the society.

The management and staff take efforts for quality enhancement and to achieve academic excellence to keep pace with future plans and execute its mission and goals successfully. It helps the students for their vertical and horizontal academic growth and gaining knowledge.

Under the dynamic leadership and guidance of Hon'ble Namdar Shri. Radhakrishna Eknathrao Vikhe Patil, (Chairman of PRES), Hon'ble Khasdar Dr. Sujay Vikhe Patil, and Hon'ble Sau, Shalinitai Vikhe Patil (Former President, Zilla Parishd Ahmednagar), the College achieved the B++ grade with CGPA 2.89 from NAAC Bangalore in accreditation process. It is proud moment for us.

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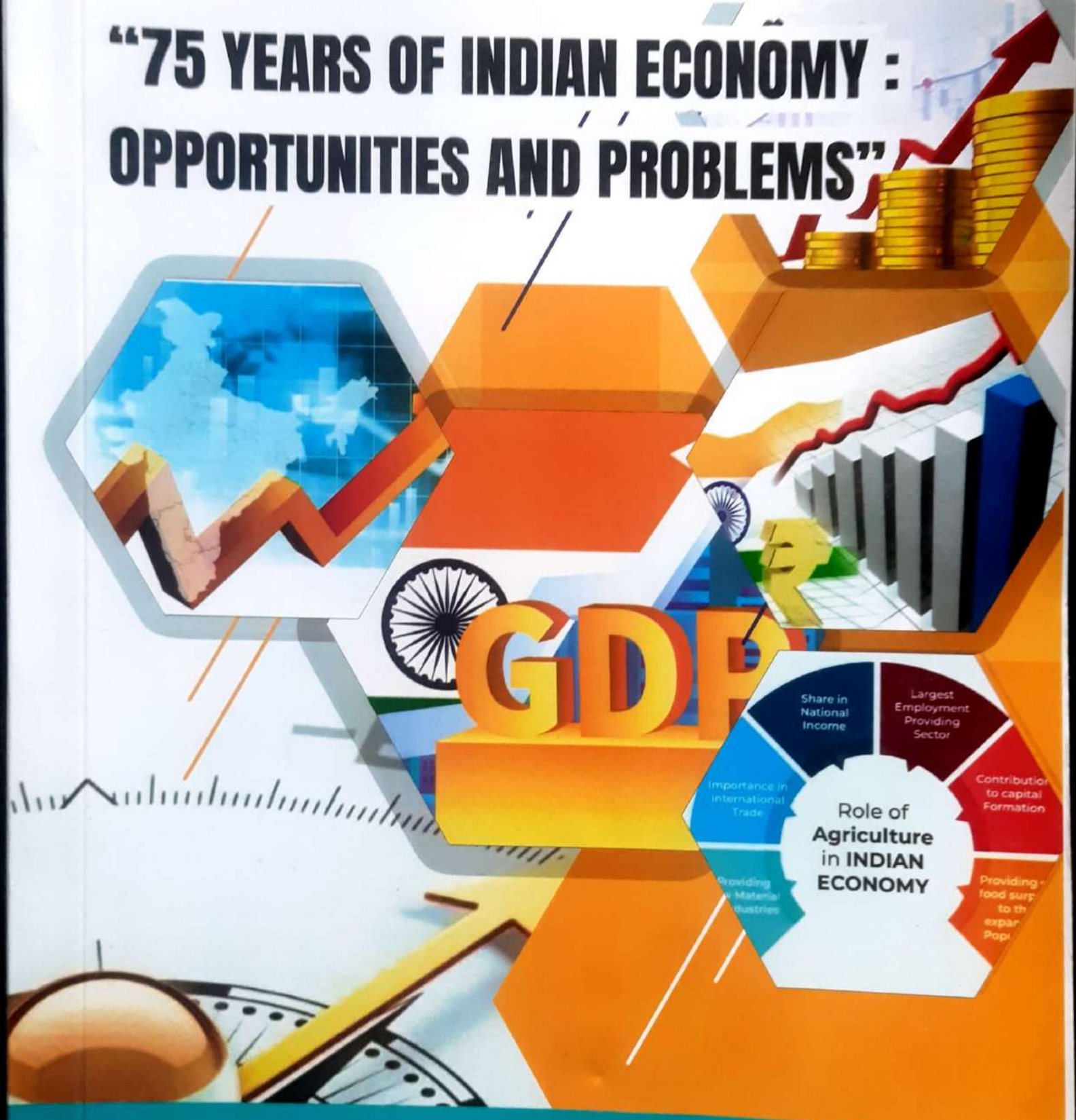
"75 YEARS OF INDIAN ECONOMY : OPPORTUNITIES AND PROBLEMS"



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75 YEARS OF INDIAN ECONOMY : OPPORTUNITIES & PROBLEMS

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E-commerce: Role in Economic Development

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Introduction :

India's economy is one of the world's fastest growing, as we all know, so it is crucial to having a government intervention and a significant increase in investment flow foreign investment in a developed country like India will maintain and accelerate the development of its e-commerce sector. According to statistics data, internet usage in India has climbed to 429.23 million users and is anticipated to reach over 1000 million by the year 2025 as a result of the country's strong expansion in digital penetration. E-commerce has the potential to help developing rural areas in nations like India leapfrog into the knowledge paradigm, which is one of the most significant benefits of the industry. E-commerce has integrated significantly into modern life. For the majority of individuals, especially those living in urban areas, having access to e-commerce platforms is not a luxury but rather a necessity. India has over 100 million internet users, and there are alternative ecommerce platforms available (instead of the traditional physical platforms) for practically every area of our lives, starting with the purchase of ordinary household items and ending with online brokerage. E-business is still not widely adopted compared to other established markets like the US and the UK, but it is expanding considerably more quickly now than it did in the past.

Key Words: e-commerce

Objective:-

1. To study the concept of *E-commerce*
2. ToStudy the Role of *E-commerce in Economic Development*

Data collection:-

The primary source of data collection in this research paper is the secondary data. The available information on E-commerce has been extensively used to complete the research report. All the available Journals, Related books, Web, Articles, Publish and unpublished information and Papers provided necessary information to the finalize the research paper.

Limitations of Study

This paper is based on secondary data so that this paper possesses all inherent limitation of secondary data. And in this paper no primary data is used. Time constrain is also one of the limitations of this study.

Meaning-

E-Commerce

E-Commerce, also known as electronic commerce or internet commerce, is an activity of buying and selling goods or services over the internet or open networks. So, any kind of transaction (whether money, funds, or data) is considered as E-commerce. So, E-commerce can be defined in many ways, some define E-Commerce as buying and selling goods and services over the Internet, others define E-Commerce as retail sales to consumers for which the transaction takes place on open networks. The buying and selling of products, services, and digital products through the Internet all fall under the umbrella of e-commerce.

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"E-commerce (electronic commerce) is the exchange of goods and services and the transmission of funds and data over the internet. E-commerce relies on technology and digital platforms, including websites, mobile apps and social media to make buying and selling possible".

"Electronic commerce is commerce via any electronic media, such as TV, fax, and online networks. Internet-based commerce makes use of any Internet facility and service. Web-based commerce focuses on the opportunity of the World Wide Web apparatus, in particular, its ubiquity and its ease of use".

Types of E-commerce:

1. **Business-to-Business (B2B)** – B2B e-commerce consists of all kinds of electronic transactions, dealings and business related to the goods and services that are conducted between two companies.
2. **Business-to-Consumer (B2C)** – It is the most common form of e-commerce, and it deals with electronic business relationships between businesses and consumers.
3. **Consumer-to-Consumer (C2C)** – This level of e-commerce consists of all electronic transactions that take place between consumers. This consists of electronic transactions of goods and services between two customers and is mainly conducted through a third party that provides an online platform for these transactions. C2C e-commerce consists of sites where old items are bought and sold, such as OLX, Quickr etc.
4. **Consumer-to-Business (C2B)** – In C2B e-commerce, a consumer or an individual makes their goods or services available online for companies to purchase, so, in this kind of e-commerce a complete reversal of the selling and buying process takes place.
5. **Business-to-Administration (B2A)** – This e-commerce consists of electronic transactions that takes place companies and bodies of public administration such as government.
6. **Consumer-to-Administration (C2A)** – This e-commerce consists of electronic transactions that takes place between people and bodies of public administration.

Role of E-Commerce in Economy Development

E-commerce in India is growing not just because of the internet penetration is increasing but also due to the favourable ecosystem developed by the market. E-commerce and electronic applications in automation has brought in tremendous growth in India. E-commerce is connecting rural India for the business hence develop village economy. Following points shows the vital role of e-commerce in Indian economic development.

1. The growth of the e-commerce industry has been rapid over the past few years, with no signs of slowing down. In a world that is becoming increasingly digitized, e-commerce has become a crucial component of the global economy. As technology continues to advance and consumers become more comfortable with online shopping, it is expected that the e-commerce industry will play a vital role in driving economic growth in the years to come.
2. One of the key factors contributing to the growth of e-commerce is the convenience it offers to consumers. With the ability to shop from the comfort of their own homes, customers can avoid the hassle of physically visiting stores and save time in the process. In addition, the wide selection of products available online has made it easier for customers to compare prices and find the best deals, further fueling the growth of e-commerce.
3. Another factor that has contributed to the rise of e-commerce is the increased availability of high-speed internet and mobile devices. With more and more people having access to the internet and smartphones, the number of people shopping online has increased dramatically. This trend is expected to continue in the coming years, as technology continues to improve and more people gain access to the internet.

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4. The growth of e-commerce has also had a significant impact on small businesses and entrepreneurs. By providing a low-cost platform for selling goods and services, e-commerce has made it easier for small businesses to reach a wider audience and compete with larger companies. This has helped to create new jobs and stimulate economic growth, as small businesses are able to invest in new products and services, hire new employees, and expand their operations.
5. E-commerce has also had a positive impact on the global economy by creating new markets and increasing cross-border trade. With the ability to sell products and services to customers all over the world, e-commerce has opened up new opportunities for businesses to reach new customers and expand their reach.
6. E-commerce has also played a crucial role in reducing the environmental impact of traditional retail. By reducing the need for physical stores and reducing the amount of waste generated by shipping and packaging, e-commerce has helped to reduce carbon emissions and promote sustainability.
7. E-commerce has already had a significant impact on the global economy, and its role in driving economic growth in the years to come is expected to be even greater. With its ability to offer convenience, create new markets, and promote sustainability, e-commerce will continue to play a vital role in shaping the future of the global economy

Conclusion

E-commerce has become an essential part of all of our lives. Apart from this, it helps in the economic development of the nation as well this development takes place via optimum utilization of resources, improved efficiency, enhanced customer services, and FDI. Since ecommerce is so important, the government should also take measures to improve e- commerce in the country for further growth and development. E-commerce has reached so many people and has impacted their lives in a much better way. People can now choose from a different range of products according to their needs and wants. Better technology and digitization have boosted the competition among firms and have ensured a healthy environment where firms can improve their overall working while contributing to economic development.

Reference

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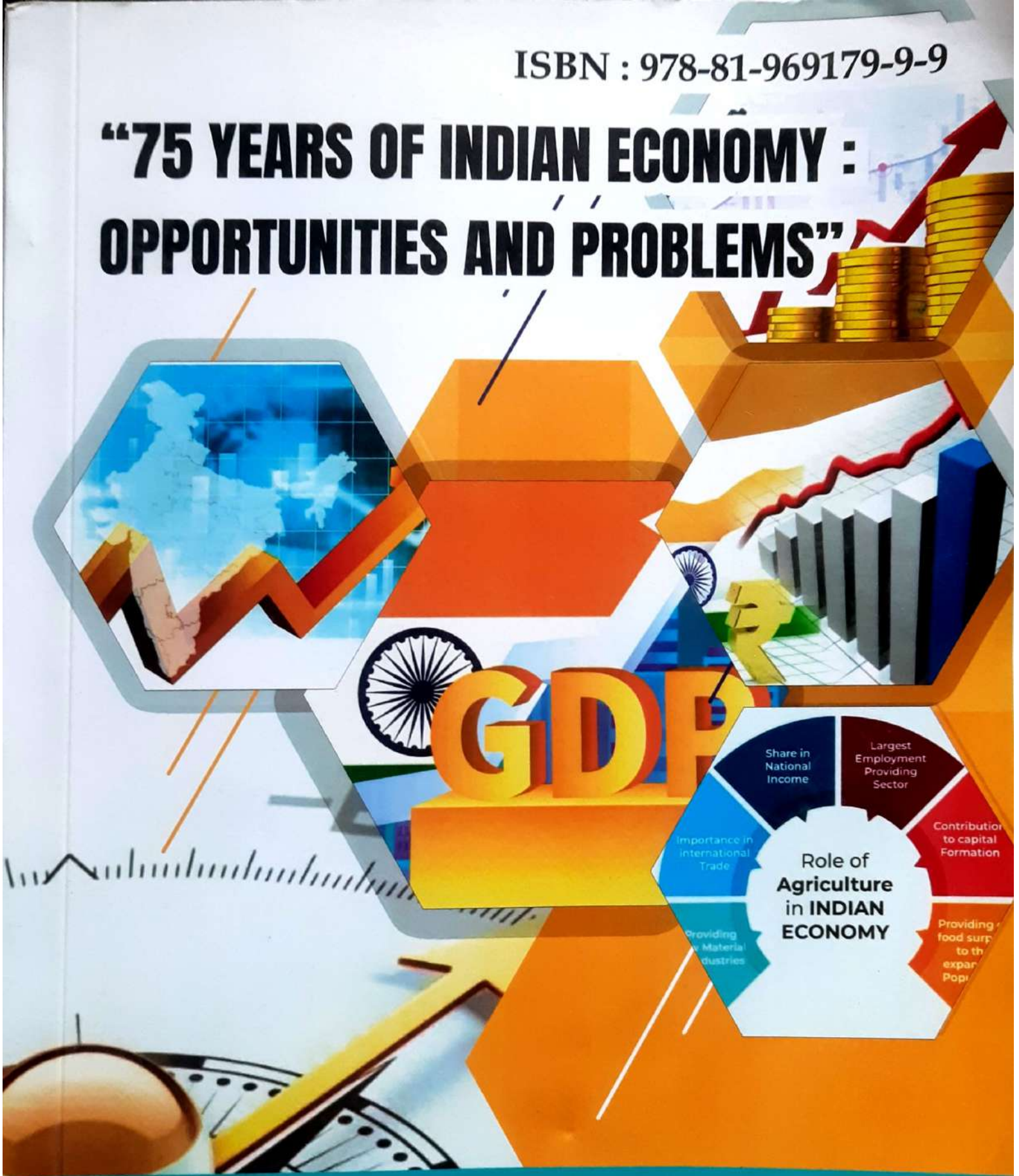
"75 YEARS OF INDIAN ECONOMY : OPPORTUNITIES AND PROBLEMS"



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Contents

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E-BANKING IN INDIA: OVERVIEW

Mr. Shaikh.L.M.
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Abstract

E-banking, also known as online banking or virtual banking or internet banking is a system that enables banking transactions like transfer of funds, payment of loans and EMIs, deposit, and withdrawal of cash virtually with the help of the internet.The purpose of the study is to emphasize the concept of e-banking. The research method of this study used the secondary data listed in different databases of books, research papers, and related articles of e-banking available on the Internet.The present study has been undertaken to describe the present status of e-banking in India and examine the challenges & opportunities of e-banking. With the help of e-banking, the banking sector is gaining customer satisfaction and loyalty. Banks should provide their customers with convenience, meaning offering service through several distributions channels and the availability of online services becomes easier for the customer.

Keywords: - E-banking, internet, electronic payment

I.INTRODUCTION

Banking today has become easier and it has led to a secure way for people to keep their hard-earned money in their bank accounts. There are numerous of options available to people ranging from debit cards, credit cards, e-wallets, internet banking,and mobile banking and so on which have replaced the traditional methods of transactions. Earlier the payment through electronic mode was restricted to making huge and lump sum payments for large value transactions and cheques were the main instruments of transactions for a long time before technical innovations took place. Now even petty payments become easier through e-banking making it more convenient for users to settle their payments. The adoption of e-banking services by customers enables banks to get returns on their investment and provide them with a competitive environment.

E-banking :

According to UNCTAD, (2002) stated that deployment of retail or wholesale banking services over the internet is often referred to as E-banking which involves individual and corporate clients, and includes bank transfers, payments and settlements, documentary collections and credits, corporate and household lending, card businesses, and some others.

RESEARCH METHODOLOGY

This research conducted research using second-hand data listed in different databases of books, research papers, and related articles on the Internet on e-banking.

OBJECTIVES OF THE STUDY

1. To know the concepts of e-banking.
2. To study the current status of financial innovations in the Indian banking sector.
3. To study the challenges faced in e-banking.
4. To study the various opportunities available in e-banking.

Challenges in E-banking:

E-banking is in its emerging stage of development in India. Most of them are basic services only the deregulation of the e-banking industry coupled with the emergence of new banking technology is enabling new competitors to enter the financial services markets quickly and efficiently. However, it needs to be recognized that perception norms and an improvement in the functioning of e-banking services.

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- **Security Risk:** The problem related to security has become one of the major concerns for banks. A large group of customers refuses to opt for e-banking facilities due to uncertainty and security concerns. According to the IAMAI Report (2006), 43% of internet users are not using internet banking in India because of security concerns. So it is a big challenge for marketers and makes consumers Satisfied regarding their security concerns, which may further increase online banking use.
- **Customer Awareness:** Awareness among consumers about the e-banking facilities and procedures is still on the lower side in the Indian scenario. Banks are not able to disseminate proper information about the use, benefits, and facility of internet banking. Less awareness of new technologies and their benefits is among one of the most ranked barriers in the development of e-banking.
- **Privacy risk:** The risk of disclosing private information & fear of identity theft is one of the major factors that inhibit consumers while opting for internet banking services. Most consumers believe that using online banking services makes them vulnerable to identity theft. According to the study consumers" worry about their privacy and feel that bank may invade their privacy by utilizing their information for marketing and other secondary purposes without the consent of consumers.
- **Implementation of global technology:** There is a need to have an adequate level of infrastructure and human capacity building before developing countries can adopt global technology for their local requirements. In developing countries, many consumers either do not trust or do not have access to the necessary infrastructure to be able to process e-payments.
- **Non- Performing Assets (NPA):** Nonperforming assets are another challenge to the banking sector. Vehicle loans and unsecured loans increase N.P.A. which terms 50% of banks retail portfolio was also hit due to upward movement in interest rates, restrictions on collection practices, and soaring real estate prices. So that every bank has to take care of regular repayment of loans.

Opportunities in E-banking

Despite various challenges that are prevailing in context with e-banking in India, the following opportunities are motivating the marketers for implementing e-banking:

- **Untapped Rural Markets:** Contributing to 70% of the total population in India is a largely untapped market for the banking sector. In all urban areas banking services entered but only a few big villages have the banks entered. So that the banks must reach in remaining all villages because the majority of Indians still living in rural areas.
- **Multiple Channels:** Banks can offer so many channels to access their banking and other services such as ATM, Local branches, Telephone/mobile banking, video banking, etc. to increase the bankingbusiness.
- **Competitive Advantage:** The benefit of adopting e-banking provides a competitive advantage to the banks over other players. The implementation of e-banking is beneficial for banks in many ways as it reduces costs to banks, improves customer relations, increases the geographical reach of the bank, etc. The benefits of e-banking have become opportunities for the banks to manage their banking business in a better way.

Conclusion and Suggestions

In today's world of globalization, e-banking is a significant aspect of the development of the banking sector by solving major issues, challenges faced by e-banking. The Indian banking industry can develop customer loyalty towards the banking sector. This can be done through training and development and by making the banking process easier and familiar to the customers. The Government of India and various government agencies are making an effort to make e-

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banking more safe, secure, and reliable with the convenience of digital channels. Most of the customers are visiting branches less often and they use online and mobile technology for their banking needs more often. Onlineand mobile banking are rapidly growing. Nowadays most of the people of India using e-banking for their transactions and make them stand with the current scenario of the country.

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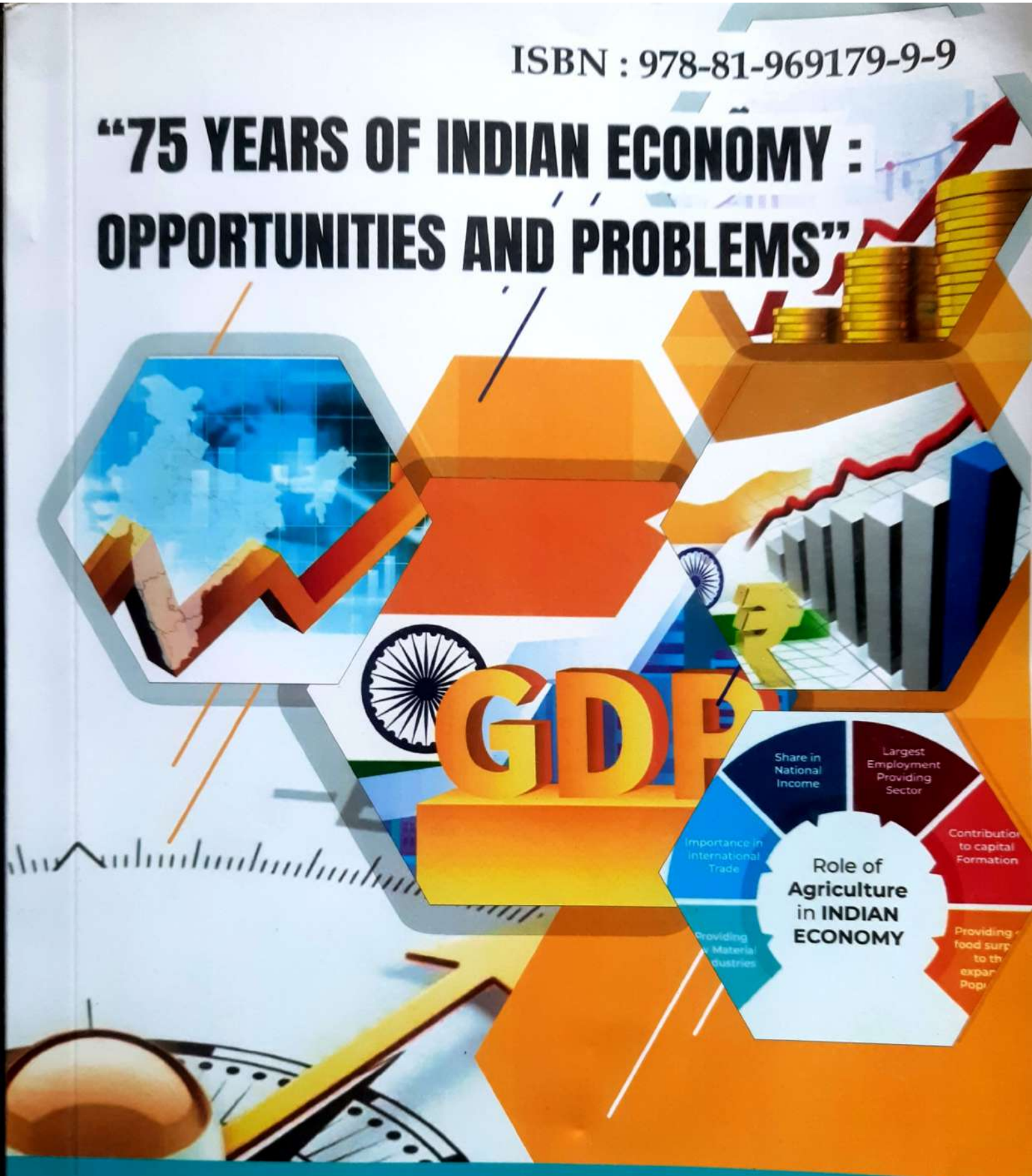

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An Analytical Study of Demonetization

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Abstract:

'Demonetization' is an important term in the affairs of currency and finance. It is the act of changing available currency and introducing new one or replacing available currency with new notes or coins. In simple language it means stopping available notes and coins officially. The act of Demonetization can stop old notes and coins and government can bring in use new and suitable currency for that particular era either in the form of notes or coins. In the world 'Demonetization' has been done by various countries several times. As we know change occurs in every country as far as time passes. There is no option for change and everyone has to change according to time. Nobody can get stuck into the old and outdated things forever. Demonetization is also one of the required activities for every country to maintain the finance affairs in well manner. The present paper aims at giving information about the term 'Demonetization' in simple language. It also takes review of 'Demonetization' happened in the world. Finally it talks about the impacts of it.

Key Words: Demonetization, Currency, Notes and coins, finance affairs, impacts etc.

Introduction:

Demonetization is one of the most talked topics of the past few years. The meaning of demonetization is to replace the existing currency with a new one and to ban the older currency in any type of financial circulation. Demonetization is not an unusual thing to Indian and the globe. Because of several reasons several countries have banned the existing currency notes and coins. Most of the time the main reason for demonetization given by various countries is to stop the printing of fake currency notes. So it becomes very important to keep the notes and coins unstable. By this act the possibility of making fake notes reduces though in these efforts the government can be successful or unsuccessful but it becomes prior to take step towards stopping the print of fake notes.

History of Demonetization:

In India the act of demonetization is not new the various Indian governments have taken the decision of demonetization several times. It was in the year 1946 and in the year 1970's the country for the first time had implemented the act of demonetization. In January 1946, 1000 Rs, 5000 Rs, and 10,000 Rs notes were banned although they were reintroduced in 1954.

On January 16, 1978, the currency of Rs 1,000, Rs 5,000 and Rs 10,000 became illegal for the second time after the government's order and Wanchoo committee's suggestion. Propose of demonetization at both of the times were to clamp down the black money.

In November 2016, when the Modi Government took the decision of demonetizing the notes of Rs 500 and 1000 were banned and the purpose of it was to clamp down the black money and to point out the tax thieves.

Aim:

The broad aim of the present research paper is to give brief information about the term 'Demonetization'

Objectives:

- To give information about emergence, definition, and development of 'Demonetization'
- To study the concept 'Demonetization' in detailed
- To spread literacy about the term 'Demonetization'

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- To catch attention of readers, researchers and teachers towards the act of 'Demonetization' in the world
- To highlight the impact of 'Demonetization' on various sectors

Research Methodology:

Since the research is application–oriented, the present study will follow the following methodology.

Using the concept 'Demonetization', available information about the concept will be collected and the data will then be analyzed to come to the conclusion. Considering the nature of the subject, the researcher found that the term 'Demonetization' is an important phenomenon in recent time and hence it is necessary to write about it. Library work and analysis of data will be followed as methodology of the research study.

Literature Review:

Many researchers have written on the term 'Demonetization' but very few researchers have given very important and valuable information about it in the form of Research Papers, Articles and Theses. The research Paper entitled "Demonetization and its Effects in India" written by Lokesh Uke and submitted to Dr. Hari Singh Gour University, Sagar MP. In this paper the researcher talks about the term demonetization and then it talks about the effects of it on various sectors. The research paper entitled "Impact of demonetization on Indian economy" written by Dr. G Ganesan and B Gajendranayagam deals with the negative impact of demonetization on Indian economy. Sukanta Sarkar (2010) conducted a study on the parallel economy in India: Causes, impacts & government initiatives in which he focused on the existence of causes and impacts of black money in India. According to him, the main reason behind the generation of black money is the Indian Political System i.e. Indian govt. just focused on making committees rather than to implement it. So, he concluded that laws should be implemented properly to control black money in our economy.

Scope and Limitations of the Study:

The nature and scope of the concept 'Demonetization' is a vast area of study. For practical purposes, the researcher has chosen to concentrate only on the study of Emergence, Definition and Impact of the term 'Demonetization' in present times.

The scope of this study is to highlight the term 'Demonetization' is an important term to the common readers, economists, researchers, teachers and various people related to economics. For the sake of conveniences, the researcher has bound himself only to the Emergence, Definition and Impact of 'Demonetization'. It does not provide any comparative study with any other terms related to economics.

Emergence of the term Demonetization:

The word *Demonetization* is derived from the French word *Demonetiser*. It means 'to legalize as money'.

Definition of the term Demonetization:

Throughout this Research Paper the term "Demonetization" is used and so there is a great need to define it. There are several definitions of the term Demonetization have been given by various scholars.

In the *Oxford English Dictionary* (1989) the term "Demonetization" is defined as

1) "It is the act of stripping a currency unit of its status as legal tender. It occurs whenever there is a change of national currency: The current form or forms of money is pulled from circulation and retired, often to be replaced with new notes or coins"
2) "Demonetization is an act of cancelling the legal tender status of a currency unit in circulation."

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Impact of Demonetization:

It can have various positive and negative impacts in every nations. The impacts can studies under the following heads.

1) Impact on industrial Sector
2) Impact on small scale business
3) Impact on stock market
4) Impact on currency valuation
5) Impact on agriculture sector
6) Impact on cottage industries
7) Impact on foreign trade and FDI
8) Impact on domestic employability
9) Impact on financial system
10) Impact on taxation
11) Impact on real estate

Conclusion:

The main reason behind demonetization in most of the countries is to control black money. Several countries have changed their currency in order to reduce corruption and to stop printing of fake notes. India has also witnessed demonetization several times but the demonetization happened in the year 2016 was striking one. The main reason shown by the government to change the currency was to control black money but unfortunately they didn't get what they were thinking. It had adverse effect than positive one, it has impact on several sectors in India like cottage industries, cotton industry, IT industry, real estate etc. So many small scale industries suffered a lot after demonetization. Most of the underdeveloped and less developed countries get affected by demonetization. The recent examples are of the nations like Zimbabwe, Venezuela, India etc..

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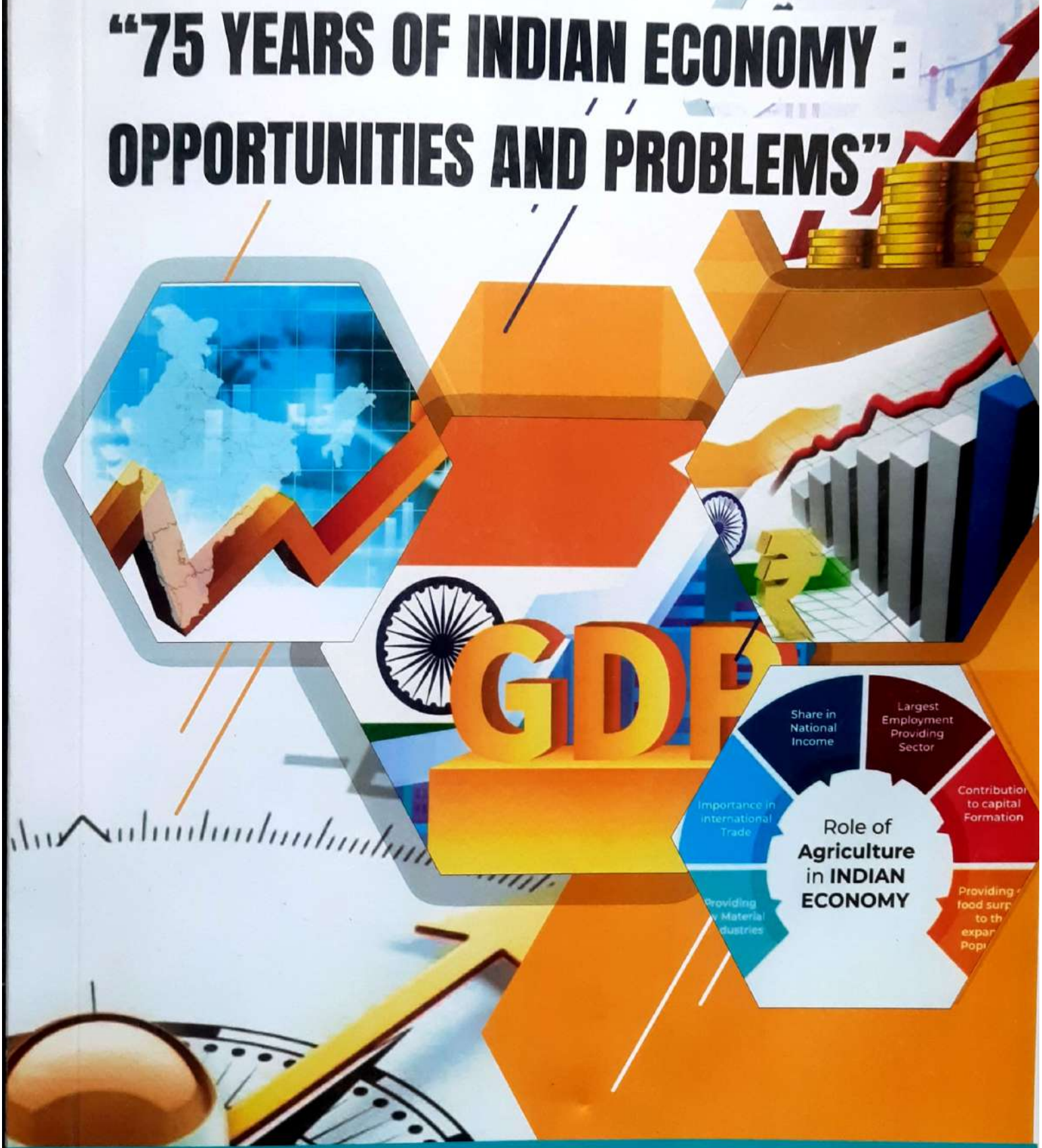

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भारतातील कृषी क्षेत्राच्या समस्या आणि उपाययोजना

प्रा. एन. एस .मांढरे.

सहाय्यक प्राध्यापक, वाणिज्य विभाग

कला, वाणिज्य, विज्ञान व संगणक शास्त्र महाविद्यालय, आष्टी खु

प्रस्तावना :

कृषी व्यवसाय हा जगातील अत्यंत पुरातन व्यवसाय असून आधुनिक काळातही तो व्यापक प्रमाणात केला जातो जगातील जवळजवळ दोन तृतीयांश लोकांचा प्रमुख व्यवसाय शेती हाच आहे कृषी क्षेत्र सर्व विकासाची जननी आहे जगातील विकसित राष्ट्रांनी अगोदर उपलब्ध संसाधनांचा सुयोग्य वापर करून कृषी उत्पादनात संख्यात्मक व त्यानंतर गुणात्मक सुधारणा केली आणि पुढे कालांतराने प्रगत व व्यापारी शेतीचा विकास करण्यासाठी त्यांनी सतत प्रयत्न केले .

संशोधनाची उद्दिष्टे :

1.भारतीय अर्थव्यवस्थेत कृषी क्षेत्रांच्या योगदानाचा अभ्यास करणे.

2.कृषी क्षेत्राच्या समस्यांचा अभ्यास करणे .

3.कृषी क्षेत्राच्या समस्यांवर उपाययोजना सुचविणे.

भारतीय अर्थव्यवस्थेत कृषी क्षेत्राचे योगदान: भारतात आजही 72.18 टक्के लोकसंख्या ग्रामीण भागात राहते त्यापैकी बहुसंख्य लोकांच्या उपजीविकेचे प्रमुख साधन शेती आहे म्हणून भारताच्या आर्थिक विकासाला खरा अर्थ प्राप्त होण्यासाठी कृषी क्षेत्राचा सर्वांगी विकास होणे आवश्यक आहे .

स्वातंत्र्याच्या 75 वर्षानंतर देखील भारतीय अर्थव्यवस्थेत शेतीची भूमिका सातत्याने महत्त्वपूर्ण राहत आली आहे जवळपास एक चतुर्थांश 25 स्थूल घरगुती उत्पादन शेतीपासून मिळते दोन तृतीयांश 60 लोकांच्या उपजीविकेचे ते साधन आहे शिवाय देशातील अन्नधान्याची टंचाई दूर करून स्वयंपूर्णता निर्माण करण्याबाबत शेती क्षेत्राची भूमिका महत्त्वाची ठरली आहे तसेच खाजगी व सार्वजनिक क्षेत्रातील गुंतवणूक वाढीसाठी शेती क्षेत्राच्या प्रगतीमुळे प्रेरणा मिळाली आहे अर्थात हरितक्रांती हा भारतीय शेतीच्या प्रगतीचा मुख्य आधार ठरला आहे भारतातील बेरोजगारी व दारिद्र्य निर्मूलनाच्या दृष्टीने शेती क्षेत्राचे मोठे योगदान राहत आले आहे भारतीय अर्थव्यवस्थेत रोजगारीचे मोठे क्षेत्र म्हणून कृषी क्षेत्राकडे पाहिले जाते विशेषता ग्रामीण भागाकरिता कृषी क्षेत्र वर्तन ठरले आहे राष्ट्रीय नमुना पाहणीनुसार सर्वसाधारणपणे 2001.2005 या कालावधीत कृषी क्षेत्रात 66 टक्के पुरुष व 84 टक्के महिलांना ग्रामीण भागात रोजगार उपलब्ध झाला होता 1999.2000 मध्ये 56 ते 57 टक्के श्रमशक्तीला प्राथमिक क्षेत्रात रोजगार उपलब्ध झाला तर 2006.2007 यावर्षी एकूण श्रमशक्ती पैकी 51 टक्के श्रमशक्ती कृषी क्षेत्रात गुंतलेली होती याचा अर्थ अलीकडील काळात कृषी क्षेत्रात समाज शक्तीचे अवलंबित व कमी होत असले तरी रोजगार प्राप्तीचे सर्वात मोठे क्षेत्र म्हणून आजही भारतीय शेतीकडे पाहिले जाते गव्हाचे उत्पादन वाढवण्यासाठी भारतात मोठे प्रयत्न झाले त्याचा परिणाम म्हणून मध्ये गव्हाच्या उत्पादनात खूप वाढ झाली गव्हाच्या उत्पादनातील या क्रांतिकारक बदलाची नोंद घेण्यासाठी डॉक्टर स्वामीनाथन यांच्या विनंतीवरून तत्कालीन पंतप्रधान इंदिरा गांधी यांनी पोस्टाचे एक खास तिकीट जारी केले ज्यावर गव्हाचे बोधचिन्ह होते यामुळे जगाला हरित क्रांती अवतरण्याची खून पटली व हरित क्रांती ही संज्ञा जगभर रुढ झाली यावरून शेती उत्पादनाचा क्रांतिकारक टप्पा लक्षात येतो.

भारतीय अर्थव्यवस्थेत कृषी क्षेत्राची भूमिका महत्त्वाची आहे.

एकूण भारतीय लोकसंख्येपैकी सुमारे 60% लोक शेतीमध्ये गुंतलेले आहेत, जे देशाच्या GDP मध्ये 18% योगदान देतात. शेतकरी अनेक समस्यांनी त्रस्त आहेत. याचा प्रत्यक्ष किंवा अप्रत्यक्षपणे शेतकऱ्यांच्या जीवनावर परिणाम होतो. निविष्ठांच्या खरेदीपासून ते विपणन आणि काढणीनंतरच्या क्रियाकलापांपर्यंत, शेतकऱ्यांना अनेक आव्हानांचा सामना करावा लागतो. मात्र, शेतकऱ्यांच्या समस्यांकडे अनेकदा लक्ष दिले जात नाही. भारतातील शेतकऱ्यांना भेडसावणाऱ्या काही प्रमुख समस्या येथे आहेत.

भारतीय शेतकऱ्यांना कृषी क्षेत्रातील प्रमुख समस्या भेडसावत आहेत त्यापुढीलप्रमाणे .

1.लहान आणि खंडित जमीन धारणा:

भारतीय शेतीमध्ये प्रामुख्याने लहान आणि तुकड्यांमध्ये जमीन आहे. त्यामुळे शेतकऱ्यांची क्षमता कमी होते. 2015-16 मधील 10 व्या कृषी जनगणनेनुसार, भारताची एकूण कार्यरत जमीन 146.45 दशलक्ष हेक्टर होती आणि एकूण संचालित क्षेत्र 157.82 दशलक्ष हेक्टर होते. त्यापैकी, किरकोळ आणि लहान ऑपरेशनल होल्डिंग्स मिळून (0 - 2 हेक्टर) एकूण ऑपरेशनल होल्डिंगच्या 86.2% आहेत. जमिनीच्या या तुकड्यामुळे शेतकऱ्यांना पुरेसे उत्पन्न मिळत नाही. याचे कारण म्हणजे यांत्रिकीकरण, नेहमीच्या शेती पद्धतींचा सराव करणे जसे की मोनोपीक आणि उत्पादने ज्यामुळे जमिनीची गुणवत्ता खराब होते. यामुळे उच्च उत्पादन खर्च आणि कमी उत्पादकता येते. या समस्येचे मूळ वारसा कायद्यामुळे सुरू झाले.

2. मार्केटिंग आणि स्टोरेज सुविधांचा अभाव:

कृषी विपणनामध्ये शेतकऱ्यांना भेडसावणाऱ्या समस्यांमध्ये वाहतूक खर्च, बाजारातील अपुरी पायाभूत सुविधा, किमतीतील चढ-उतार, बाजारातील योग्य माहितीचा अभाव आणि स्थानिक व्यापारी आणि मध्यस्थांचे शोषण करण्याची भूमिका यांचा समावेश होतो. ग्रामीण भागात साठवण सुविधांचा अभाव हा कापणीनंतरच्या नुकसानास मर्यादित घटक आहे. दरवर्षी जवळपास १६% फळे आणि भाजीपाला, १०% तेलबिया, ९% कडधान्ये आणि ६% तृणधान्ये साठवणुकीच्या सोयीअभावी वाया जात आहेत. बहुतांश शेतीमाल नाशवंत असल्याने कापणीनंतर लगेचच कमी

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भावातही शेतमाल विकण्यास शेतकरी त्रस्त आहेत. यातून त्यांना तुटपुंजे उत्पन्न मिळते. अपुऱ्या साठवण सुविधांमुळे शेतकऱ्यांना ऑफ सीझनमध्ये लोकांच्या मागण्या पूर्ण करणे कठीण होते.

3. यांत्रिकीकरणाचा चुकीचा अवलंब:

भारतात यांत्रिकीकरणाचा विस्तार कितीही झाला असला तरी, बहुतांश शेतीची कामे अजूनही मजुरांकडून केली जातात. नांगरणी, कापणी, मळणी आणि सिंचनामध्ये भारतातील यांत्रिकीकरणाची सर्वोच्च पातळी सुमारे 60-70% दिसून येते. बियाणे, तण काढणे आणि इतर कृषी कार्यांत यंत्रांचा शोध लागला असला, तरी काही शेतकरीच त्याचा वापर पीक उत्पादनासाठी करतात. अल्प भूधारणेमुळे छोट्या शेतकऱ्यांना यांत्रिकीकरणाचा अवलंब करणे कठीण जाते. ग्रामीण भागातील शेतकऱ्यांमध्ये जागृतीचा अभाव आणि भांडवलाची कमतरता यामुळे ही समस्या निर्माण होते.

4. क्रेडिट उपलब्धता:

कृषी क्षेत्रात, वित्तीय संस्थात्मक स्रोतांकडून वेळेवर, पुरेशा आणि कमी किमतीच्या कर्जाची उपलब्धता आणि उपलब्धता अधिक महत्त्वाची आहे, विशेषत: अल्पभूधारक आणि लहान शेतकऱ्यांसाठी. इतर सर्व निविष्टांसोबत, कृषी उत्पादन वाढवण्यासाठी भांडवल हे सर्वात महत्त्वाचे निविष्टांपैकी एक आहे. कर्जाची उपलब्धता हा शेतीच्या उत्पादकतेवर परिणाम करणारा एक घटक आहे. भांडवलाच्या अडचणींचा सामना करणारे शेतकरी त्यांच्या उत्पादन क्रियाकलापांमध्ये चांगले तंत्रज्ञान, यंत्रसामग्री आणि उपकरणे यामध्ये गुंतवणूक न केल्याने कमी इनपुट वापरतील. याचा परिणाम केवळ उत्पादकतेवरच नाही तर उत्पादनाच्या गुणवत्तेवरही होतो.

सुधारित क्रेडिट ऍक्सेसमुळे निविष्टांचा इष्टतम वापर सुलभ होऊ शकतो आणि पीक उत्पादकतेवर मोठा परिणाम होतो. कर्जाची उपलब्धता शेतकऱ्यांना कृषी उत्पादन चक्र आणि उपभोगाच्या गरजांद्वारे प्रेरित त्यांच्या रोख गरजा भागवू शकते. जरी सरकार कृषी पत धोरणांमध्ये सुधारणा करत असले तरी, कर्ज वितरणातील प्रादेशिक असमतोल अजूनही अनेक वर्षांपासून कायम आहे.

5. खराब सिंचन सुविधा:

भारतातील 80% पाण्याचा वापर हा शेतीसाठी सिंचनासाठी होतो. भूजल पातळी कमी होणे हा शेतीवर परिणाम करणारा एक प्रमुख घटक आहे. चांगल्या सिंचनामुळे शेतकऱ्यांना वेळेवर शेतीची कामे करण्यास मदत होते. अलिकडच्या काळात भूजल तक्त्यामध्ये सातत्याने होणारी घट त्याच्या अति-शोषणामुळे लक्षात येते कारण 65% सिंचन भूजल स्रोत वापरतात. भारतात सिंचनाच्या सुविधा मर्यादित आहेत आणि बहुतांश शेतकरी अजूनही पावसावर अवलंबून आहेत. आपल्या देशातील निव्वळ पेरणी क्षेत्रापैकी 51% पावसावर आधारित शेती आहे आणि एकूण उत्पादनाच्या जवळपास 40% व्यापते.

सिंचनाखालील भागात शेतकरी प्रामुख्याने पूर सिंचन पद्धतीचा अवलंब करतात. जरी आजकाल सूक्ष्मसिंचन प्रणालीला महत्त्व प्राप्त होत असले तरी त्यांचे बहुतेक अवलंब करणारे मोठे शेतकरी आहेत. गरीब शेतकऱ्यांना ते परवडत नाही. सन 2021 मध्ये एकूण पेरणी झालेल्या क्षेत्रापैकी निव्वळ सिंचनाखालील क्षेत्र सुमारे 68.38 दशलक्ष हेक्टर आहे. त्यापैकी सूक्ष्म सिंचनाखालील क्षेत्र केवळ 12.90 दशलक्ष हेक्टर आहे जे निव्वळ सिंचन क्षेत्राच्या केवळ 18.8% आहे.

6. जमिनीची सुपीकता कमी होणे:

1960 च्या हरित क्रांतीनंतर रासायनिक खतांचा वापर वाढला आहे. लवकर निकाल मिळावा म्हणून शेतकऱ्यांनी खतांचा अतिवापर सुरू केला आहे. रासायनिक खताच्या अतिवापरामुळे सेंद्रिय पदार्थांचे प्रमाण आणि बुरशीचे प्रमाण कमी होते, फायदेशीर कीटकांची संख्या कमी होते, खराब वाढ होते, कीटकांचे वाढते आक्रमण आणि मातीचे पीएच बदलते ज्यामुळे शेवटी उत्पादन कमी होते.

युरियाच्या असमतोल वापरामुळे ठराविक कालावधीत जमिनीची सुपीकता कमी होते. 2022-23 मध्ये, एकूण खत उत्पादनाच्या (58.4%) एकूण वापराच्या (57.9%) निम्म्याहून अधिक आणि आयातीच्या 35.9% युरियाचा वाटा आहे. माती कमी होण्याच्या इतर कारणांमध्ये योग्य पीक पद्धतीचा अभाव आणि सतत मशागत यांचा समावेश होतो. भारतात, 2015-16 या वर्षात मोनोपीक पद्धतीखालील एकूण क्षेत्र अंदाजे 52.8 दशलक्ष हेक्टर होते, जे एकूण पीक क्षेत्राच्या सुमारे 47% आहे.

7. पीक विमा योजनांची अपुरी सोय.

पीक विमा योजनांबाबत शेतकऱ्यांना भेडसावणाऱ्या प्रमुख समस्यांमध्ये विमा योजनांची योग्य जाणीव नसणे, पिकांच्या नुकसानीमुळे झालेल्या नुकसानीच्या विस्ताराचे मूल्यांकन, विमा योजनांचे अपुरे कव्हरेज आणि दाव्यांची रक्कम न मिळणे/विलंबाने निकाली काढणे यांचा समावेश होतो.

8. हवामान बदलाचा प्रभाव:

हवामानातील बदलामुळे हवामानाच्या नमुन्यांमध्ये बदल होऊ शकतात, जसे की दुष्काळ, पूर आणि वादळ यांसारख्या तीव्र हवामानाच्या घटनांची वारंवारता आणि तीव्रता. हे बदल जमिनीची सुपीकता, पीक उत्पादन आणि पशुधन उत्पादनावर परिणाम करू शकतात, ज्यामुळे शेतकऱ्यांची उत्पादकता आणि उत्पन्न कमी होते. शेतकऱ्यांना कीड आणि रोग व्यवस्थापन पद्धतींमध्ये अधिक गुंतवणूक करण्याची आवश्यकता असू शकते, ज्यामुळे त्यांचा खर्च वाढू शकतो आणि त्यांचा नफा कमी होऊ शकतो. उष्णतेच्या लाटांमुळे पिकांमध्ये उष्णतेचा ताण येऊ शकतो, ज्यामुळे उत्पादनावर परिणाम होतो, विशेषत: जेव्हा ते परागण, शेंगा किंवा फळांच्या सेट दरम्यान होतात. हवामान बदलामुळे काही प्रदेशात पाणी टंचाई निर्माण होऊ शकते ज्यामुळे

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सिंचनावर परिणाम होऊ शकतो आणि उत्पादन कमी होऊ शकते. शेतकऱ्यांना पावसावर अवलंबून असलेल्या शेतीवर अवलंबून राहण्याची सक्ती केली जाऊ शकते, जी हवामान बदलाच्या प्रभावांना अधिक अप्रत्याशित आणि असुरक्षित असू शकते.

अप्रत्याशित पावसाचा अनेक कृषी कार्यांवर परिणाम होतो आणि कापणीच्या वेळी अनपेक्षित पावसामुळे पिकांचे संपूर्ण नुकसान होते. मुसळधार पाऊस ज्यामुळे पूर येतो तो पिकांना आणि मातीसाठी हानिकारक ठरू शकतो. भारतात, 2015-16 आणि 2021-22 दरम्यान अतिवृष्टी आणि पूर यांसह जल-हवामानशास्त्रीय आपत्तींमुळे सुमारे 33.9 दशलक्ष हेक्टर पीक क्षेत्राचे नुकसान झाले आहे.

9. किमत अस्थिरता:

किमतीतील अस्थिरतेचा शेतकऱ्यांच्या जीवनमानावर लक्षणीय परिणाम होऊ शकतो, विशेषत: लहान शेतकरी जे बाजारातील चढउतारांना अधिक असुरक्षित असतात. किमतीतील अस्थिरतेमुळे शेतकऱ्यांसाठी उत्पन्न अस्थिरता निर्माण होऊ शकते कारण किमतीत अचानक घट झाल्याने त्यांचे उत्पन्न आणि नफा कमी होऊ शकतो. यामुळे शेतकऱ्यांना त्यांच्या शेतात नियोजन करणे आणि गुंतवणूक करणे कठीण होऊ शकते, ज्यामुळे गरीबी आणि कमी उत्पादकता यांचे दुष्टचक्र निर्माण होते. ही परिस्थिती शेतकऱ्यांसाठी अनिश्चितता निर्माण करते कारण त्यांना भविष्यात त्यांच्या उत्पादनाला किती भाव मिळेल याची खात्री नसते. त्यामुळे कोणते पीक घ्यायचे, किती उत्पादन घ्यायचे, उत्पादन केव्हा विकायचे याबद्दल माहितीपूर्ण निर्णय घेणे शेतकऱ्यांना कठीण होते.

10. खराब प्रशिक्षण आणि विस्तार सुविधा:

कृषी विस्तार कार्यक्रम शेतकऱ्यांना तंत्रज्ञानाच्या हस्तांतरणाद्वारे मदत करतात, शेतकऱ्यांना समस्या सोडवण्यासाठी मदत करतात आणि ग्रामीण विकासात योगदान देतात. पण भारतातील विस्तार व्यवस्था तितकीच संतुलित नाही. पुरेशा प्रशिक्षणाशिवाय आणि विस्तार सेवांच्या प्रवेशाशिवाय, शेतकऱ्यांना नवीनतम शेती पद्धती, तंत्रे आणि तंत्रज्ञानाची माहिती नसते जी त्यांना पीक उत्पादन वाढविण्यात मदत करू शकतात. यामुळे उत्पन्न कमी होते, ज्यामुळे शेतकऱ्यांच्या उत्पन्नावर परिणाम होतो.

प्रशिक्षण आणि विस्तार सेवांचा अभाव शेतकरी कीटक आणि रोगांना असुरक्षित बनवू शकतो ज्यामुळे उत्पादन कमी होऊ शकते. या जोखमींना प्रतिबंध किंवा कमी कसे करावे यावरील माहितीच्या प्रवेशाशिवाय, नुकसान झाले आहे. प्रशिक्षण आणि विस्तारित क्रियाकलापांच्या अभावामुळे शेतकऱ्यांना अलीकडील योजना, आर्थिक सहाय्य आणि गुंतवणूक करण्यासाठी आणि त्यांचे उत्पन्न वाढवण्यासाठी आर्थिक स्रोत कसे मिळवायचे याचे ज्ञान नसावे.

11. सरकारद्वारे संशोधन आणि विकासावर मर्यादित खर्च:

सरकारने संशोधन आणि विकास (R&D) वर मर्यादित खर्च केल्याने कमी उत्पादकता, वाढलेला खर्च आणि कमी नफा यासह कृषी क्षेत्रातील शेतकऱ्यांवर नकारात्मक परिणाम होतो. जर R&D वर सरकारचा खर्च मर्यादित असेल, तर शेतकऱ्यांना नवीन तंत्रज्ञान आणि पद्धती, सुधारित पीक वाण उपलब्ध नसतील, ज्यामुळे बाजारपेठेतील उत्पादकता आणि स्पर्धात्मकता कमी होईल. सरकारने R&D मध्ये कमी गुंतवणूक केल्याने शेतकऱ्यांना बदलत्या परिस्थितीशी जुळवून घेण्यासाठी स्वतःच्या संसाधनांची गुंतवणूक करण्यास भाग पाडले जाऊ शकते जे महाग असू शकते. यामुळे उत्पादन खर्च वाढू शकतो, ज्यामुळे शेतकऱ्यांना बाजारपेठेत स्पर्धा करणे कठीण होईल.

कृषी क्षेत्रातील उत्पादकता वाढवण्यासाठी उपाय -

आज कृषी क्षेत्राची आवश्यकता आज कृषी क्षेत्राची आवश्यकता वाढवणे ही काळाची गरज आहे कारण लोकसंख्येत भरमसाठ वाढ होत असताना भूमीपुरवठा मात्र स्थिर आहे त्यामुळे आहे. त्याच भूमीत वाढत्या लोकसंख्येला पुरेल एवढी साधनसामुग्री अन्नधान्य वगैरे मिळणे अपेक्षित आहे. लोकसंख्येचा बहुतांशी हिस्सा कृषी क्षेत्रात समाविष्ट असल्यामुळे कृषी क्षेत्र प्रामुख्याने आर्थिक विकासास मोठा हातभार लावू शकते . राष्ट्रीय उत्पन्नात कृषी क्षेत्राचा वाटा कमी होणे हे जरी आर्थिक विकासाचे लक्षण मानले जात असे तरीही जोपर्यंत लोकसंख्येचा एक मोठा हिस्सा कृषी क्षेत्रात कार्यरत आहे. तोपर्यंत कृषी उत्पादकतेत सतत वाढ होणे अपरिहार्य ठरते यासाठी पुढील उपाय महत्त्वपूर्ण ठरू शकतात .

1.जमीन सुधारणांची कार्यवाही:

स्वातंत्र्योत्तर काळात जमीन सुधारणा करण्याकरता जमीनदारी निर्मूलन कायदा, कुळसुधारणा कायदा, कमाल जमीन धारणा कायदा, व तुकड्यांच्या एकत्रीकरणाचा कायदा, इत्यादी वेगवेगळे कायदे भारतात सर्व राज्यात अस्तित्वात आले. तसेच सहकारी चळवळ ही प्रगत झाली पण तरीही या कायद्यांची कार्यवाही समाधानकारक झाली नाही, म्हणून राज्य सरकारांनी कायद्यांची प्रभावी कार्यवाही करण्याकरिता विशेष प्रयत्न करण्याची गरज आहे व या द्वारे कसे त्याची जमीन ही घोषणा प्रत्यक्षात आणण्याची गरज आहे जोपर्यंत असे होत नाही तोपर्यंत शेतकऱ्यास शेती व गुंतवणूक करण्यास नवीन शेती तंत्राचा उपयोग करण्यास प्रेरणा राहणार नाही म्हणून जमीन सुधारणा ही सर्वात तातडीची आवश्यकता आहे

2.सुधारित बियाणांचा वापर:

शेतीची उत्पादकता वाढवण्यासाठी सुधारित बियाण्यांचा वापर करणे आवश्यक आहे शेतीतील पिके वाढवण्यासाठी विविध प्रकारच्या संकरित जाती शोधल्या गेल्या पाहिजेत त्यामध्ये गहू कापूस तांदूळ मका तेलबिया इत्यादी पिकांच्या अधिक उत्पादन देणाऱ्या जाती निर्माण होणे आवश्यक आहे त्यामुळे सुधारित बियाणाच्या वापराखाली शेती क्षेत्राचे उत्पादन वाढत आहे अशा उत्पादनात10 ते 20 टक्के वाढ झाली आहे.

3.आधुनिक शेती करण्यावर भर देण्यात यावा :

पारंपारिक पद्धतीने शेती करण्यामुळे कृषी क्षेत्रातील गुणवत्तेचा परिपूर्ण वापर होत नाही तथापि शेती करण्याच्या पारंपारिक पद्धती ऐवजी आधुनिक शेती तंत्रावर भर देण्यात यावा यंत्राच्या साह्याने शेती करण्यामुळे कमी श्रमात व कमी वेळेत कृषी कार्य पूर्ण करता येते कृषी क्षेत्रातील श्रमिकांना इतर ठिकाणी काम देऊन उत्पन्न वाढीचे प्रयत्न करता येतात त्याचप्रमाणे शेती कार्यासाठी सुधारित अवजारांचा वापर करण्यावरही भर दिला पाहिजे सुधारित अवजारे कमी किमतीत मिळत असूनही शेतकऱ्यांना त्यांची माहिती नसल्याकारणाने त्याची खरेदी करता येत नाही उदाहरणार्थ पिकाला खत

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देण्यासाठी द्रवरूप खत देण्याचे यंत्र शेंगा फोडणीचे यंत्र आंतरमशागतीसाठी व पेरणीच्या कामासाठी अवजार वाहक यंत्र इत्यादी त्यामुळे शेती उत्पादकता वाढवण्यासाठी आधुनिक शेती करण्यास प्रोत्साहन दिली पाहिजे

4.जलसिंचन सुविधांचा विकास :

सुधारित बी बियाणे व खते यांना योग्य सिंचन सोयी आवश्यक आहेत जलसिंचनामुळे अनेक क्षेत्रांना बहुविध पिकांना पाणी मिळते व उत्पादकता वाढते याकरिता क्रमाक्रमाने जलसिंचन व्यवस्थेचे आधुनिकीकरण करावयास हवे सध्याच्या व्यवस्थेचे अधिक चांगले व्यवस्थापन करावे. कार्यक्षम जल व्यवस्थापन कालव्यांची पुरेशी देखभाल व वितरण व्यवस्था तपशीलवार पाहणे व नवीन प्रकल्पांच्या तयारी करिता अन्वेषण या गोष्टी आवश्यक आहे विकसित करावी यामुळे शिलकीचे पाणी असणाऱ्या क्षेत्राकडून पाण्याची कमतरता असणाऱ्या क्षेत्राला पाण्याचा पुरवठा करता येईल.

5.पत व बाजारपेठ सोयींची तरतूद:

सुधारित बी बियाणे खते कीटकनाशके शेती यंत्रे व जलसिंचन सोयी यांना भरपूर पैसा लागतो म्हणून सहकारी पतपुरवठाक्षेत्र मजबूत करावयास हवे व लहान शेतकऱ्यांना याची लाभ व्हावेत व्यापारी बँका आणि प्रादेशिक ग्रामीण बँका यांनी लहान शेतकऱ्यांना अधिक पतपुरवठा करावा म्हणून त्यांना प्रेरित केली पाहिजे लहान व सीमांत शेतकऱ्यांना अधिक चांगल्या प्रकारे सेवा देण्याकरिता शेतीमाल बाजारपेठेत सुधारणा करावयास हव्या लहान शेतकऱ्यांना अधिक चांगले भाव मिळावेत म्हणून सहकारी विपरण संस्था प्रवर्तित केल्या पाहिजे.

6.उत्पादकांना प्रेरणा:

शेतकरी उत्पादकांना खालील प्रकारे प्रेरणा देता येतील जमीन सुधारणांची काटेखोरपणे कार्यवाही करणे शेती आदानांची वेळेवर उपलब्धता करणे शेतकऱ्याला त्यांच्या विक्रीय मालाच्या चांगल्या भावाची हमी देणे पिकांच्या नुकसान भरपाई करिता पिक विमा योजना अमलात आणणे शेतकऱ्यांना सामाजिक प्रतिष्ठा पारितोषिक व वैपुण्य प्रमाणपत्रे देणे इत्यादी.

7.शेती संशोधन:

राष्ट्रीय शेती संशोधन समितीमार्फत तसेच कृषी विद्यापीठे व इतर संस्था यांच्यामार्फत शेती संशोधन केले जाते वेगवेगळ्या पिकांकरिता उच्च उत्पादन देणाऱ्या विविध जातींची बी बियाणे यावरही संशोधन केले जाते गावाबाबत चांगले यश प्राप्त झाले आहे इतर पिकांबाबतही असे प्रयत्न आवश्यक आहेत मातीची गुणवत्ता, मृदा संधारण, पिकांना पडणारी कीड, पिकांचे रोग व शेती, इत्यादींबाबत वेगवेगळे प्रादेशिक केंद्रात मोठ्या प्रमाणात संशोधनात्मक चाचण्या होणे आवश्यक आहे थोडक्यात लोकसंख्येचा शेती क्षेत्रावरील ताण कमी करण्याच्या दृष्टीने देशाच्या अर्थव्यवस्थेतील द्वितीय म्हणजे (औद्योगिक क्षेत्र) व तृतीय क्षेत्र म्हणजे (सेवा क्षेत्र) यांचा जलद गतीने विकास घडवून आणणे आवश्यक आहे.

निष्कर्ष:

भारतीय शेतकरी समुदायामध्ये प्रामुख्याने लहान आणि अल्पभूधारक शेतकऱ्यांचा समावेश आहे ज्यांना कृषी क्षेत्रातील वरील सर्व आव्हानांचा सामना करावा लागतो. निसर्गाच्या कृतींपासून ते मानवनिर्मित कामांपर्यंत शेतीमध्ये शेतकऱ्यांना अनेक समस्यांचा सामना करावा लागतो ज्यात हवामान बदल, मातीची धूप, जैवविविधतेची हानी, जलस्रोतांचा ऱ्हास, भांडवल, श्रम आणि इतर निविष्ठांचा अभाव इ. या समस्यांचे मुख्य कारण म्हणजे योग्य जागरुकतेचा अभाव, आधुनिक तंत्रज्ञानाचा कमी अवलंब, भांडवलाचा अभाव किंवा शेतकरी आणि सरकारी संस्थांमधील अंतर. या समस्या पूर्णपणे सोडवल्या जाऊ शकत नाहीत परंतु ज्ञानी कृषी पद्धती, संसाधनांचा शाश्वत वापर आणि ग्रामीण शेतकरी, सरकार आणि वित्तीय संस्था यांच्यातील दरी कमी करून काही प्रमाणात ते कमी केले जाऊ शकतात.

संदर्भ :

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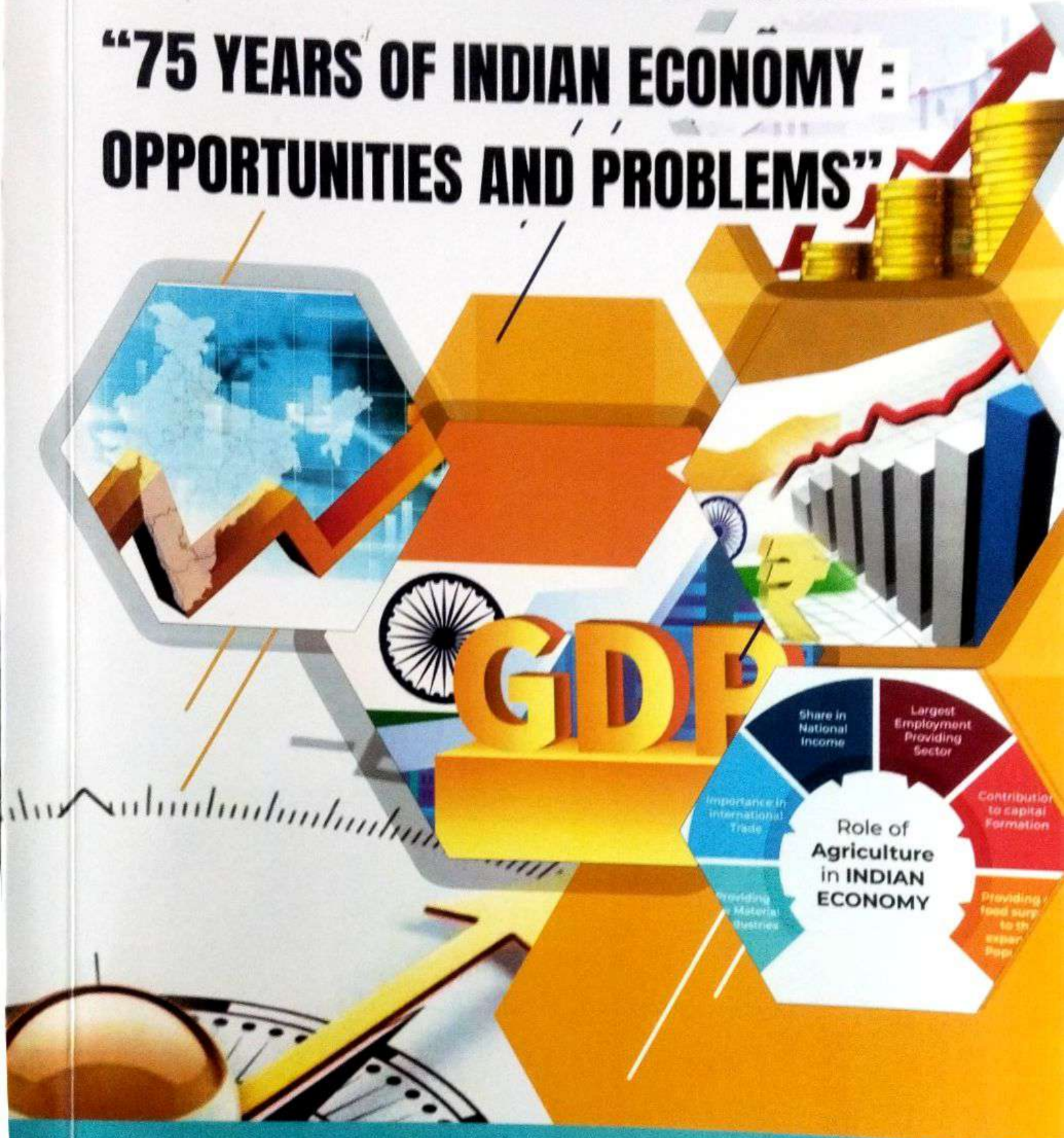

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Contents

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Challenges before Indian Economy

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Introduction :

Every economy in the world has its own characteristics or features by which it is known or identified. Economies are compared with each other on the basis of these features. India as a distinct nation came into existence on 15th August 1947, called the independence day of India which marked the end of British rule over India. After that, Independent India has completed 76 years of self rule on 15th August 2023. This period is long enough to evaluate the position and performance of the country to enable comparison with other countries in the world as well as evaluate its own progress over the years. With this view in mind the current lesson provides the features of Indian economy.

In India, most of the labour force is employed in the agriculture and industry sectors. The service sector contributes to more than 50% of GDP. The service sector is the fastest-growing sector in India. The IT service sector in India earns almost $191 billion in revenue.

India is also a leading manufacturer of pharmaceutical products like generic medicines and vaccines. Due to its natural beauty, the tourism sector has grown significantly in the past few decades. This industry contributes to 9.2% of the GDP.

Objective:-

1. To study the concept of *Economy*
2. ToStudy the challenges before Indian *Economic*

Data collection:-

The primary source of data collection in this research paper is the secondary data. The available information on Indian economy has been extensively used to complete the research report. All the available Journals, Related books, Web, Articles, Publish and unpublished information and Papers provided necessary information to the finalize the research paper.

Limitations of Study

This paper is based on secondary data so that this paper possesses all inherent limitation of secondary data and in this paper no primary data is used.

Meaning-

Economy :

The economy is the total of all activities related to the production, sale, distribution,exchange, and consumption of limited resources by a group of people living and operating within it.

An economy encompasses all activity related to the production, consumption, trade, and distribution of available goods and services. The management of those resources is used to satisfy the needs of the people, businesses, organizations, and governments in a specific area.

Challenges before Indian Economy

Economic challenges in India delve into the nation's complex financial landscape, highlighting key issues, potential solutions, and their impact on the country's growth and development. Following are the major challenges before Indian economy

1. Weak Demand:

The demand for goods and services in India has been stagnant or declining due to various factors, **such as** low income growth, high **inflation, unemployment, and the impact of the** Covid-19 pandemic. **This has** affected the consumption and investment levels **in the economy, and** reduced the tax revenue for the government.

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2. Unemployment:

Despite rapid economic growth, unemployment remains a serious issue in both rural and urban areas. The Covid-19 pandemic has worsened the situation, as many businesses have shut down or reduced their operations, leading to job losses. According to the Centre for Monitoring Indian Economy (CMIE), over 1.8 crore salaried jobs were lost between April and July 2020. The **unemployment rate was 7.4% in August 2020,** compared to 5.4% in August 2019. According to the **National Statistical Office's** (NSO) **Periodic Labour Force Survey (PLFS) report** for the year **2021-22**, the unemployment rate for **2021-22 was 4.1%.**

3. Poor Infrastructure:

India lacks adequate infrastructure, such as roads, railways, ports, power, water, and sanitation, which hampers its economic development and competitiveness. According to the **World Bank,** India's **infrastructure gap is estimated to be around $1.5 trillion.** Poor infrastructure also affects the quality of life and health of the people, especially in rural areas.

4. Balance of Payments Deteriorate

India has been running a **persistent** current account deficit, which means that its imports exceed its exports. This reflects its dependence on foreign goods and services, especially oil and gold, and its low export competitiveness. India's **exports and imports decreased by 6.59% and 3.63%,** respectively, in 2022.

5. High Levels of Private Debt:

India has witnessed a **surge in private debt,** especially in the corporate and household sectors, due to easy credit availability and low interest rates. However, this **also poses a risk of default and financial instability**, especially if the income growth slows down or interest rates rise. According to the Reserve Bank of India **(RBI),** the total non-financial sector debt was 167% of GDP in March 2020, up from 151% in March 2016.

6. Inequality:

India has a high level of income and wealth inequality, which has increased over time. According to the **World Inequality Database**, the top 10% of income earners accounted for 56% of national income in 2019, up from 37% in 1980. Similarly, the **top 10% of wealth holders owned 77% of total wealth in 2019,** up from 66% in 2000. High inequality can lead to social unrest, political instability, and lower economic growth.

Conclusion

The Indian government is steadfast in its commitment to addressing different economic concerns and fostering nationwide sustainable growth. The focus lies on fostering inclusive development and implementing innovative solutions. Consequently, the administration has launched several initiatives geared toward combating unemployment, poverty, and other economic obstacles. The primary objective of these endeavors is to fortify the economy, promote entrepreneurship, and elevate the living standards of all citizens. Below are some noteworthy government initiatives that have been implemented to overcome India's economic challenges.

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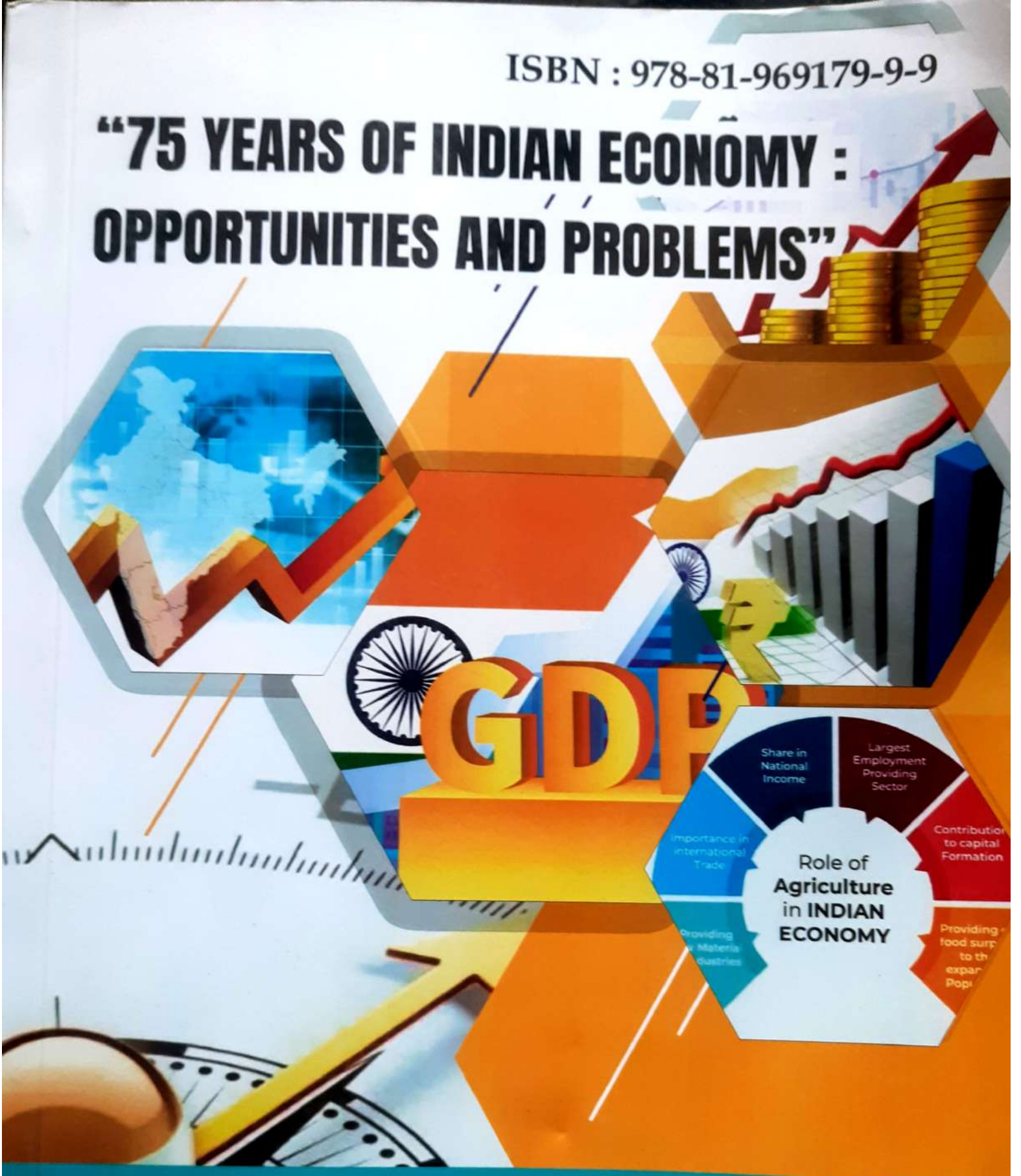

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The Impact Of Covid – 19 In Economics In Government Of India

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ABSTRACT

India started with the wind of COVID 19. Due to this COVID 19, the Indian economy had to face many small and big problems. The current pandemic circumstance has un-favorable profound effect on Indian business. Locally, the effect of the COVID pandemic COVID-19 could prompt log jam in homegrown interest. This will bring about disintegration of buying power because of occupation misfortunes or pay chops and hinder impact of conceded request will have a more drawn out enduring effect on various areas, particularly where request is optional in nature. India's genuine GDP exhausted to its base in more than six years during 2019-20. India's development for one year from now 2020-21 is gauge in the middle of 5.3% to 5.7%. The COVID-19, or COVID, pandemic has uncovered numerous shortcomings in the worldwide framework. In spite of our aggregated involvement with emergency the board, this infection has had the option to seclude us all in our homes. Corona virus has caused serious interruption for the Indian economy. All such approaches of the Government of India had both positive and negative effects on the lives of the people and the economy of the country as a whole.

The supply-demand chain was disrupted due to loss of employment and production. And it has affected the growth rate of the economy and various important sectors.

KEY WORD :-

Covid-19,Pandemic,Economic downturn,Supply chain,Informal sector, Economic Theory, financial Market and institutions

INTRODUCTION :-

The flare- up of COVID-19 has affected countries in a huge manner, particularly the cross country lockdowns which have carried social and monetary life to a halt. A world which everlastingly hummed with exercises has fallen quiet and all the assets have been redirected to meeting the never-experienced emergency. There is a multi-sectoral effect of the infection as the monetary exercises of countries have eased back down. What is astounding and important is an alert which was rung in 2019 by the World Health Organization (WHO) about the world's power lessness to battle a worldwide pandemic. A 2019 joint report from the WHO and the World Bank assessed the effect of such a pandemic at 2.2 percent to 4.8 percent of worldwide GDP. That expectation appears to have materialized, as we see the world getting overwhelmed by this emergency. In another report entitled' COVID-19 and the universe of work: Impact and strategy reactions' by International Labor Organization,itwas clarified that the emergency has just changed into a monetary and work market stun, affecting gracefully (creation of products and ventures) yet in addition interest (utilization and speculation). World wide Monetary Fund's (IMF) boss said that,

World is confronted with remarkable vulnerability about the profundity and term of this emergency, and it was the most noticeably terrible financial aftermath since the Great Depression'. The IMF assessed the outer financing requirements for developing business sectors and creating economies in trillions of dollars. India also is moaning under the burden of the pandemic and according to news reports in Economic Times distributed on 23 March 2020, the

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business analysts are pegging the expense of the COVID-19 lockdown at US$120 billion or 4 percent of the GDP (The Economist, 2020). This COVID-19 pandemic influenced the assembling and the administrations area friendliness, visits and voyages, medical care, retail, banks, inns, land, training, wellbeing, IT, entertainment, media and others. The financial pressure has begun and will develop quickly. While lockdown and social separating bring about efficiency misfortune from one viewpoint, they cause a sharp decrease sought after for merchandise and enterprises by the customers in the market on the other, in this way prompting a breakdown in monetary action. Nonetheless, lockdown and social separating arethe main practical instruments accessible to forestall the spread of COVID-19. Governments are learning by doing, as it was on account of achievement of control technique in Bhilwara region, Rajasthan, India, the monetary dangers of shutting the economy stay in any case. Likewise, complimenting the caseload bend is basic for economy everywhere, except it accompanies a monetary expense.

Objectives :-

I) To Study the Impact of Covid-19 on India Economy

II) To Study the Benefits by Covid-19 to India Economy

Methodology :-

The methodology is incredibly needed to construct the analysis work equally qualitative and quantitative ways in which were used within the study. This text has required secondary data, secondary data has been collected from written offer, like varies periodicals, articles, reports, books, journals, and literatures, on the subject. For the aim of gathering the most recent updated information's on the topic e-sources to boot sharp-eyed

Informal sector :-

India has a vast informal sector, the largest in the world, employing close to 90% of its working population and contributing more than 45% to its overall GDP. This sector was hit by two consecutive shocks in a short span of time, from 2016 to 2019. The first shock was Demonetisation in November 2016 when 86% of the money in the economy became unusable overnight owing to a government decree, followed by the haphazard introduction of the Goods and Services tax in 2017.7 While demonetisation was a big enough monetary shock, it did not fundamentally disrupt demand and supply mechanisms for too long. There was a temporary lack of means of payment.8 We now know in hindsight that people found work-arounds in the forms of electronic payments, informal credit, converting black money into white, using old notes etc. In the case of the current crisis, the demand is not there, the supply is not there, and hence the underlying revenues are not there. This is therefore much more problematic. With the Covid-19 outbreak, the already struggling informal sector has been disproportionately affected (Ray and Subramanian, 2020).

SECTOR'S PERFORMANCE :-

Covid-19 has created several opportunities for their growth and development. There many industries which are growing at the fast pace during the COVID-19. Pharmaceutical industry has grown up exponentially during this virus and certain drugs are more in demand. India has exported. Pharmaceutical companies are spending a lot on the research and development to create medicine to avoid the negative effects of COVID-19. The demand for sanitizers and masks has increased exponentially. Chemical sectors will also see the high demand for its products due to rising demand of disinfectants and medicines. Online education and online training will also be into high demand.

CONCLUSION :-

After analyzing the various reports, it is concluded that Indian economy has not been affected as badly as the other economies impacted. However, some industries have been affected badly

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and hit the financial performance of the companies badly. On the other hand, some industries are performing good and expected to perform well in the coming few quarters.

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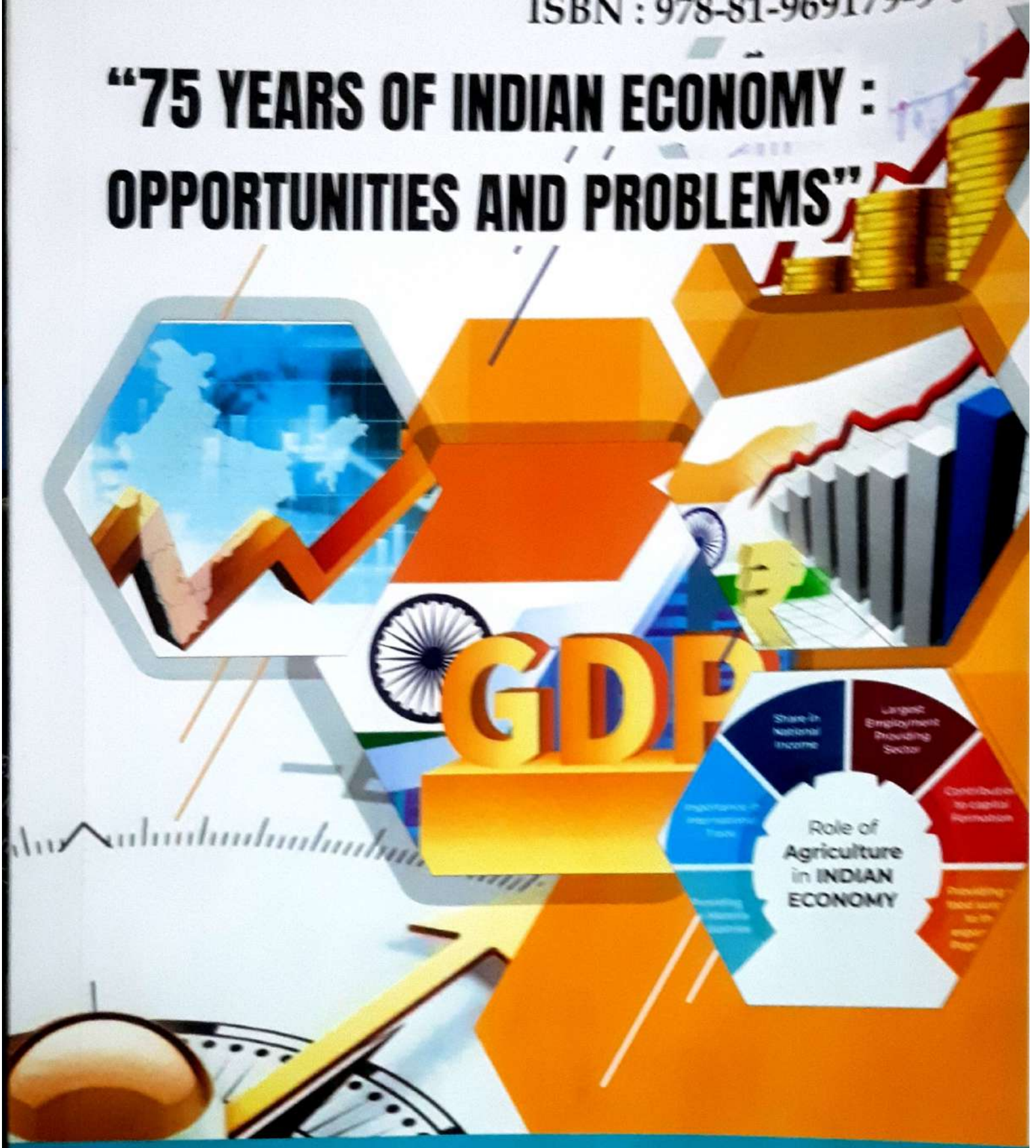

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Demonetization and Its Impact on APMC PUNE

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Abstract:

The French were the first to use the world Demonetize in the years between 1850 to 1855 since then many countries have used the world and the policy with immense restriction and discomfort, for it disrupts economics and Population at large.India has demonetized before: - First time on 12 Jan 1946 Saturday, second time on 8th Nov 2016. In January 1946 Banknotes of 1000 and 10,000 Rupee were withdrawn and new notes of 1000, 5000 &10,000 rupee were introduced in 1954. The Janata party coalition Govt had again demonetized banknotes of 1000,5000, and 10,000 Rupee on 16 Jan 1978 as a means to curb counterfeit money black money. In 2012, the central Board of Direct taxes had recommended against demonetization, saying in a report that "demonetization may not be a solution for tacking black money or Economy, which is largely held in the Form of 'Benami' properties, bullion and jewellery.

In the second time the finance minister H.M. Patel in his budget speech on 28 feb 1978 remarked:The demonetized of high denomination bank notes was a step Primarily aimed at controlling illegal transactions. It is a part of a Series of measures which Govt has taken and is determined to take against anti –Social elements.In the short term, the Sector has to brave several storms before it realises the true fruits of demonetization. In the transitional Phase, farm produce will, limited shelf – life like fruits and vegetables, which Significantly contribute to overall farm output, will be hit due to cash crunch, Similarly, Payment of Wages to Farm labours and rentals for Farm implements will too become difficult considering the limited access of Service providers to the banking system.

The steep decline in transaction at various States APMC's (up to >0 per cent as per report) in the aftermath of the decision is a testimony to this fact.Farming communities across India have been very Supportive to the cause. Despite inconveniences, Farmer are willing to play their part for countries development. Demonetization can potentially address the perennial problem of Credit in farm Sector.

PUNE APMC

APMC Pune was establishment on 1 May 1957, but working on 1 April 1959. The APMC was established by the state Govt. for regulating the marketing of different kinds of agriculture and pisciculture produce for the same market area or any part thereof.

Research Methodology

Research Problem-

"Demonetization was impact on APMC Pune.

Data source- Secondary data collected on APMC website (www.puneapmc.org) related incoming goods in quintal and average price per quintal

Sample method- we are selected 4 Agriculture goods

1. Onion
2. Potato
3. Garlic
4. Ginger

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Statistical tool- we used some statistical method like Arithmetic mean, Moving Average, charts and tables also.

Data Analysis –

Following data table showing inward agriculture goods and its prices during July 2016 to Jan 2017.

Table No-1

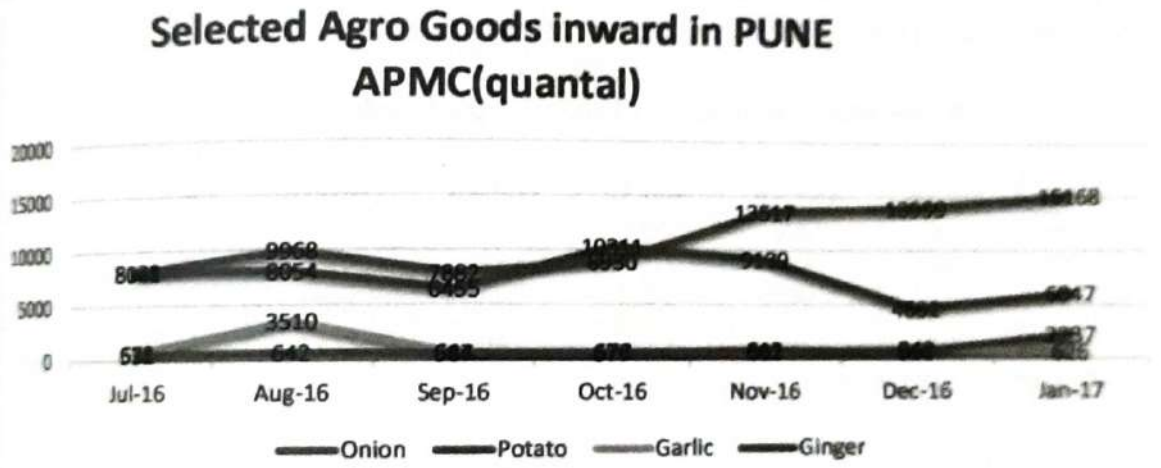
Selected Agro Goods inward in PUNE APMC (quantal)

	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17
Onion	8041	9968	7882	8930	13517	13959	15168
Potato	8123	8054	6455	10311	9139	4652	6047
Garlic	673	3510	644	676	662	949	626
Ginger	531	642	587	577	812	651	2237

Source- www.puneapmc.org

On table onion quantity increasing with months, because onion is high production in Nov-April every year in India (Pune). That's why no special impact on onion of demonetization. In Potato more impact of demonetization than Onion. But other two goods also same impact of demonetization.

Graph no 1



Source- table no.1

Above graph showing how impact of demonetization on Agro goods. In this graph highlight potato impact in red colour. Its impact on inward quantity in Pune APMC during Jul 2016 to Jan 2017.

Nov 2016- A Special Case-

Narendra Modi announced demonetization on 8 Nov 2016. After 8th Nov strong impact of demonetization on inward agro goods in Pune APMC. In that types situation also visible in all APMCs in India.

Table no 2

Selected Agro Goods inward in PUNE APMC (quantal in Nov 2016)

	5 Nov	15 Nov	25 Nov
Onion	15795	10356	14399
Potato	13217	6423	7778
Garlic	934	658	393
Ginger	1037	438	961

Source- www.puneapmc.org

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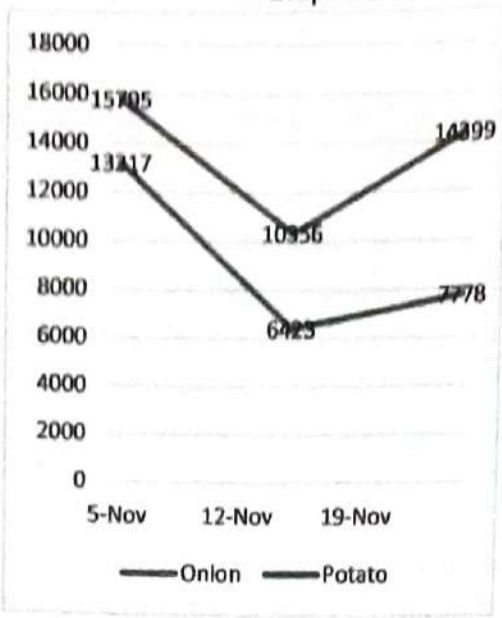
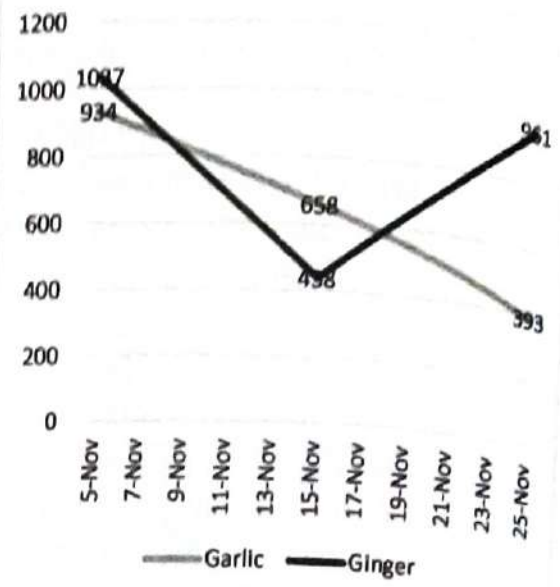
Graph no. 2A



Source-Table no 2

Graph no.2B



Source- no 2

Above statistical tools showing after demonetization almost 50 % reduced inward quantity of agricultural goods on 15 Nov 2016. Then some days APMC mkt. automatically stable.

Demonetization impact on Agriculture goods prices-

Table no 3

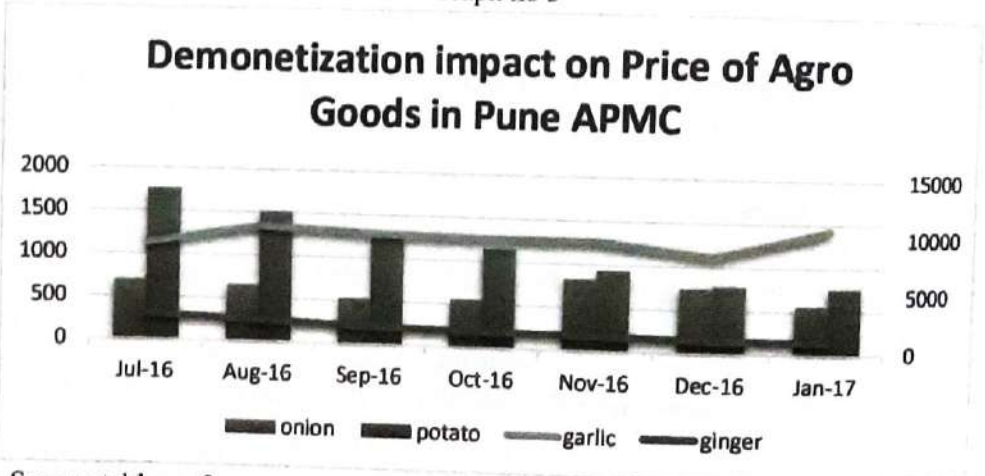
Demonetization impact on Price of Agro Goods in Pune APMC

(price per quantal)

	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17
Onion	700	658	533	558	833	750	567
Potato	1767	1516	1233	1150	933	783	767
Garlic	8500	10083	9666	9500	9500	8333	10750
Ginger	2300	1900	1550	1400	1333	1133	1117

Source-www.puneapmc.org

Graph no 3



Source-table no 3

Above figure indicating that Onion not more flexible. Demonetization was negative effect, potato price always decreasing trends. After demonetization (Dec-16) all prices decreasing almost 10-15 % Approximately. That's why Pune APMC mkt. was collapsed during demonetization periods.

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Finding and Conclusion

1) In Economics terms its **deadweight loss** of society after demonetization. The farmer and consumer both were losses and they faced many problems related **cash money transaction** in during periods of demonetization.
2) Agriculture goods (Onion, Potato, Garlic and Ginger) were **arrived quantity decreased 50 %** during Nov 2016 in Pune APMC.
3) Agriculture goods (Onion, Potato, Garlic and Ginger) **prices also decreased 10-12%** approximately.
4) In APMC Pune the same condition Faced **Other Fruits and vegetable** with quantity as well prices also.
5) Demonetization was **impact on other APMCs** in India.

Suggestions-

1) Govt must open economy for agriculture export.
2) Govt should some changes in APMC Act as well as MSP pattern.
3) Govt should provide agriculture warehouses for farmers.
4) We should use less cash transaction and not force for cash less economy.
5) Govt should provide some basic financial infrastructures in rural area.

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Abbreviations

1) APMC-Agriculture Product Market Committee..
2) MSP-Minimum Support Price.

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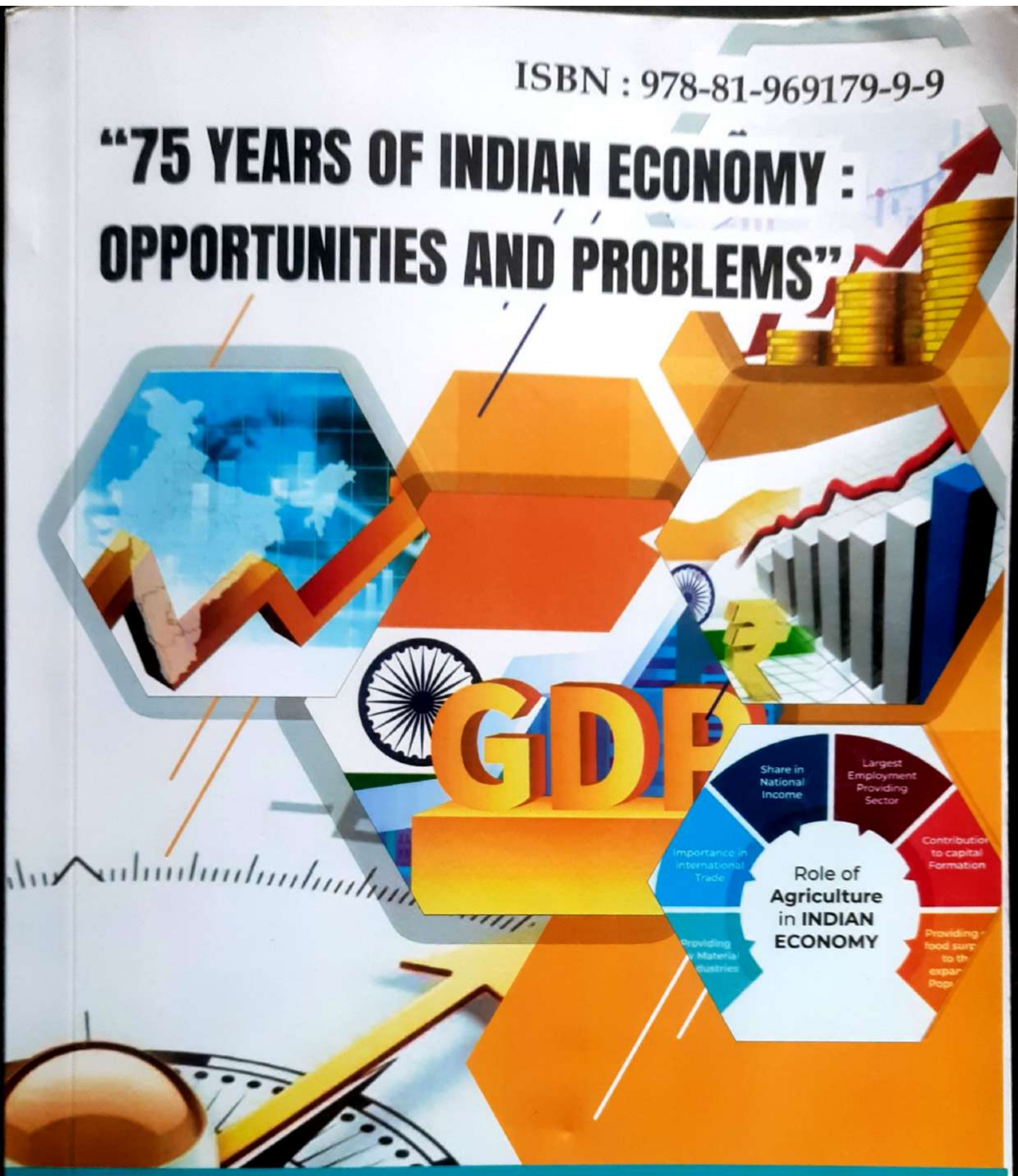

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Role of Govt. Sector banks towards financial inclusion during Pre and Post Introduction of Pradhan Mantri Jan Dhan Yojana

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Abstract

Purpose

An inclusive financial system is essential to develop the country's economy. A massive shift in financial inclusion was observed by the initiative of government to include financially excluded into the formal financial system by launching Pradhan Mantri Jan Dhan Yojana (PMJDY) in 2014. This paper aims to attempt to examine the efficiency of public sector banks in financial inclusion during pre and post introduction of PMJDY.

Design/methodology/approach

The data envelopment analysis is used to measure the efficiency of the banks towards financial inclusion for the periods, 2010–2011 to 2013–2014 as pre-introduction and 2014–2015 to 2017–2018 as post-introduction phase. For this study, supply-side parameters of financial inclusion considered as input variables and demand-side parameters as output variables.

Findings

The study finds that overall average efficiency towards financial inclusion increases significantly during post-phase, though all the public sector banks are not performing equally. There is a significant variation in efficiency level between them and even between the two periods. Further, there is a huge opportunity to enhance technical efficiency with the same quantity of input which will help to achieve the target of financial inclusion.

Originality/value

A comparative study between the two phases has taken place to analyse the impact of the scheme on the technical efficiency of banks. One of the notable innovativeness of this study is that, unlike most of the previous studies which are mostly theoretical and conceptual, the present study may place itself as a unique inquiry in the domain of efficiency review of public sector banks during pre and post introduction of PMJDY.

Introduction

The study on financial inclusion is extremely momentous for society, as outcomes of financial exclusion have quite a negative impact on the economic development of a country. People who are unable to obtain services from mainstream financial service providers are thus regarded as the financially excluded, not only because there are no branches of the bank or other financial institution in their community but also because they are excluded or unable to use services offered by different financial institutions. Financial

Inclusion implies bringing low income and disadvantaged groups under the coverage of banking by providing them access to banking services at an affordable cost. Banking industry plays an important role in the growth and development of an economy. It is very much essential in the Indian economy, which comprises rural, semi-urban and urban zones. Among these, villages dominate the nation geographically

The Objective of the Study:

- The main objective of this study is to examine TE of PSBs in fulfilling financial inclusion. Following objectives have been framed to accomplish the aim of the present study:
- To examine the technical efficiency of Indian PSBs in fulfilling financial inclusion; and

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- To assess the comparative technical efficiency of PSBs during pre and post introduction phase of PMJDY.

Data and research Methodology

The entire research is exclusively based on secondary data collected from Database on Indian Economy (2020), RBI and the annual reports of the individual banks. The study covers for eight years from 2010–2011 to 2017–2018 with 2010–2011 to 2013–2014 as pre-introduction phase and 2014–2015 to 2017–2018 as post introduction phase of PMJDY scheme. This study covers all the PSBs as of March 2018. Based on the PSBs a conclusion has been drawn, as these banks hold the majority business share of the Indian banking industry.

Variables of the study

The present study considers two output and four input variables to analyses the data using DEA. After a careful review of earlier literature and considering present research objectives the study considered fixed assets, operating expenses, branch and automated teller machine (ATM) as input and deposit and credit which measure financial inclusion as output variables.

Research methodology

Efficiency is the ratio between an output and the factors that made it possible. It is very easy to compute this ratio if the decision-making unit (DMU) uses a single input to produce a single output, i.e. Efficiency = output/input. To measures, the efficiency with many inputs and many outputs, the researchers have applied DEA of the selected 21 banks. DEA is defined as a nonparametric method for efficiency measurement of a DMU by comparing it to other homogenous units with multiple inputs and multiple outputs. It has two models: CCR model under constant returns to scale (CRS) assumption and BCC model under variable returns to scale (VRS) assumption. The study intends to apply the technique of DEA for measures of OTE, PTE and SE for the individual PSBs. The measure of efficiency provided by CCR model is known as OTE under CRS assumptions and efficiency provided by BCC model is known as PTE under VRS assumptions. Also, the SE can be derived by the ratio of OTE to PTE.

Summary of the findings

While comparing their performance by applying DEA with the two financial parameters of deposit penetration and credit penetration with four input variables this study finds that, among the selected banks, four banks, i.e. Allahabad Bank, Corporation Bank, IDBI Bank Ltd. and UCO Bank are technically efficient during pre-introduction period and five banks, i.e. Allahabad Bank, Corporation Bank, IDBI Bank Ltd., OBC and SBI are technically efficient during the post-introduction period under CCR model. The result is something different under BCC model. Under BCC model during pre-introduction period in addition to four efficient banks under CCR model, eight more banks are technically efficient. During post-introduction period, in addition to five efficient banks under CCR model, six more banks are technically efficient. The analysis reveals, during pre-introduction period output can be increased to 1.165 times, whereas during post-introduction period output can be increased to 1.090 times. This result is consistent with Bhattacharyya *et al.* (1997) during the study period 1986–1991; Kumar and Gulati (2008) during the study period 2004–2005. Further, Das and Ghosh (2006) have found medium size PSBs are performing at higher TE. Saha and Ravisankar (2000) in their study conclude that PSBs have improved their efficiency. Sathye (2003) shows Indian banks compares well with the world mean efficiency score.

Conclusion:

The idea behind financial inclusion is not new since 2005 many new policies have been framed to make financial service base stronger for all the unbanked. We face several challenges in the implementation of financial inclusion policies. The initiative of opening PMJDY account got an excellent response all over India to bring banking within the reach of the masses of the Indian

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population. Average efficiency scores for the two periods also reflect the same results. The average OTE score during pre-introduction period of PMJDY is 0.8587 which increased to 0.9175 during post-introduction period. The results of higher growth of efficiency of PSBs during 2014–2015 to 2017–2018 may be due to the introduction of PMJDY scheme which leads to an opening of more accounts and more amounts of deposits and disbursement of loan to more accounts holders.

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हिंदी और मराठी साहित्य में राष्ट्रीय चेतना

कार्यकारी संपादक
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हिंदी विभाग
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सह - संपादक

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राष्ट्रीय कवि दिनकर के काव्य में राष्ट्रीय चेतना

प्रा.गणेश चिमाजी खेमनर
सहायक प्राध्यापक हिंदी विभाग
कला, वाणिज्य, विज्ञान एवं संगणकशास्त्र महाविद्यालय आश्वी खुर्द

सारांश

राजनीति समाज का एक महत्वपूर्ण घटक हैं। समाज के निर्माण में राजनीति का महत्वपूर्ण योगदान होता है। साहित्यकार जिस समाज में जीता हैं और जिस राजनीति में अपने व्यक्तित्व का विकास करता है, उसकी प्रतिच्दाया उसके साहित्य में परिलक्षित हो उठती है। युग के प्रति जागरूक और सामाजिक परिवेश का चितेरा कवि राजनीतिक परिस्थितियों के प्रभाव से अपने को मुक्त नहीं रख सकता, आधुनिक युग के कवि दिनकर ने तत्कालिन युग में प्रचलित सभी सामाजिक और राजनीतिक विचारधाराओं पर चिंतन-मनन किया हैंi किन्तु अभिव्यक्ति केवल उन्हे ही दी हैं जिन्हे युग ने ग्रहण किया हैं, युग की जो राजनीतिक सामाजिक चेतना रही है, उन्हे तटस्थ भाव से अभिव्यक्त कर दिया है, दिनकर पर किसी वाद विशेष का स्थायी प्रभाव नहीं पड़ता हैं, समय पड़ने पर और आवश्यकता अनुभव करने पर वे उसी राजनीतिक धारा का खुलकर विरोध करते हैं, जिसे कभी उन्होने बड़ी श्रद्धा से सराहा था। दिनकर की राजनीतिक चेतना क्रांतिधर्मा युवकों को तेजस्विता देती हैं।

"साहित्य में यह नहीं होता कि कवि ने सड़क पर एक थप्पड़ खाया और घर में आकर वह उसकी कविता बनाने लगा। जिन घटनाओं से कवि का जीवन-दर्शन बदलता हैं, जो आदमी के देखने की दिशा बदल देती उसे कविता बनने के पूर्व कवि के रक्त में घुलने के लिए समय चाहिए"। दिनकर का कवि व्यक्तित्व जिस काल में निर्मित होता हैं, उस काल की पृष्ठभूमि में जो नयी राजनीतिक चेतना उदबुद्ध होती हैं, उसमें अनेक विचारकों ने नींव के पत्थर की तरह अपने विचारों का योगदान दिया। यह सच है कि भारतीय राष्ट्रीय आंदोलन ने बृहत राष्ट्रीय चेतना का विकास किया, इस आंदोलन ने तेजी से उभरते नव शिक्षित वर्ग में राष्ट्रीय गौरव और राष्ट्रीय चेतना को जन्म दिया। आशा-निराशा पूर्ण राष्ट्रीय एवं अंतर्राष्ट्रीय गतिविधियों के बीच दिनकर का कवि अपना प्रभाव ग्रहण करता हैं और राजनीतिक चेतना को नव् आयाम प्रदान करता हैं। दिनकर ने अपनी एक कविता में लिखा हैं।"ऋण-शोधन के लिए दूध-घी बेच-बेच धन जोडेंगे बूंद-बूंद बेचेगे, अपने लिए नहीं कुछ छोडेंगे। शिशु मचलेंगे, दूध देख, जननी उनको बहलाएगी, मैं फाडूंगा हृदय, लाज से आंख नहीं रो पाएगी।

हजारी प्रसाद द्विवेदी दिनकर जी के बारे में लिखा हैं की - उसका मन व्यक्त रूप में मस्ती और मौज का उपासक हैं, शहर की चिंता में दुबले होने वालों से अलग रहना पसंद करता हैं किन्तु उसके भीतर अव्यक्त और अलक्षित रूप से सामाजिक चेतना का वेग हैं। इन द्विविध वृतियों के संधर्ष से दिनकर के काव्य में वह प्रवाह उत्पन्न हुआ हैं जो अन्य कवियों में नहीं मिलता"i अंग्रेज भारत जैसे देशों को गुलाम बनाकर अपने घृणित कृत्य को यह कहकर उचित ठहराते थे कि वे अधिक सभ्य हैं, इसलिए असभ्यों पर शासन करने का उनका सहज अधिकार हैं। दिनकर इसे अस्वीकर करते हैं और ताण्डव कविता में कहते हैं।

"गिरे विभव का दर्प चूर्ण हो, लगे आग इस आडम्बर में,
स्वामिन, अंधड़-आग बुला दो
ज्ले पाप जग का क्षण भर में

इन पंक्तियों से स्पष्ट हो जाता हैं कि दिनकर की राजनीतिक चेतना में एक समतावादी सामाजिक, सांस्कृतिक दृष्टि लगातार सक्रिय है। दरिद्रजन निरीह निर्बल दल के प्रति पक्षधर का स्वर तीव्र हैं दिनकर ने दिल्ली और मास्को कविता में कम्युनिस्टों से बहस करते हुए उन्हे अपनी चंचलता दिखाई है |

दिनकर की राष्ट्रवादिता अंधी नहीं, वह गहराई से मानव-मुक्ति के मूल्य मे जुड़ी हैं, अपनी कविता किसको नमन करूं मैं ? में वे भारतीय राष्ट्र की कल्पना करते हुए उसे अत्यंत विस्तृत भावना में बदल देते हैं-

"भारत नहीं स्थान का वाचक,
गुण विशेष नर का हैं,
एक देश का नहीं, शील
यह भूमंडल भर का है।"

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कवि दिनकर की कविता राष्ट्रीय स्वतंत्रता संग्राम से भी जुडी हुई हैं और इस संग्राम के साथ ऐतिहासिक एवं सामाजिक पहल भी जुड़े रहे हैं। भारत देश ब्रिटिश साम्राज्य के अधीन था और साम्राज्यवाद दुनिया में आर्थिक-राजनीतिक विकास की एक विशिष्ट अवस्था का नाम हैं। अतः व्यापक सामाजिक परिवर्तन को लक्ष्य करके लिखी गई कविताओं में इतिहास-दृष्टि का होना स्वाभाविक है, ऐसी कविताओं में इतिहास-दृष्टि की दिशा भविष्य की ओर निर्दिष्ट होती है। दिनकर असल में देश की राजनीतिक स्थिति ही नहीं, आम जनता यानि किसानो और मेहनतकशों के जीवन की हालत भी बदलना चाहते हैं। भले ही उनकी कविताओं में इस बड़े बदलाव के लिए चले जन-संघर्ष या जन-आंदोलन का चित्रण नहीं मिलता, दिनकर की कविताओं में ऐसे बदलाव की भावना अवश्य अभिव्यक्त हुई हैं।

कवि दिनकर जिस युग में रचना करते थे उस युग की सबसे बड़ी विशेषता थी की- 'स्वतन्त्रता पाने के लिए युद्धा स्वतंत्रता संग्राम की आवश्यकता है- युद्ध में आहुति देने के लिए तत्परता की इसी आवश्यकता का प्रभाव हैं कि दिनकर 'हिमालय' में कहते हैं -"रे, रोक युधिष्ठिर को न यहां, जने दे उनको स्वर्ग धीर, पर फिरा हम गाडी व गदा, लौटा दे अर्जुन-भम वीर"राजनीतिक चेतना के लिहाज से दिनकर का कुरूक्षेत्र महत्वपूर्ण काव्य बन गया है क्योकि इस काव्य में सबसे बड़ा प्रश्न युद्ध और शक्ति का हिंसा और अहिंसा का न्याय और अन्याय का मनुष्यता और बर्बरता का बन गया था और ऐतिहासिक रूप से देखते हैं तो उसके पहले और आज भी ये प्रश्न मनुष्य को समाज को परेशान कर रहे हैं। दिनकर जी नवजागरण के अग्रदूत के रूप में हिन्दी कविता में आते है। दिनकर की कविताओं में अपने पूर्ववर्ती मैथिलीशरण गुप्त, माखनलाल चतुर्वेदी, बालकृष्ण शर्मा, नवीन की समस्त चेतना एक साथ साकार होती हैं। वे अतीत की उज्जवल परम्परा को मथते हैं, उनमें सांस्कृतिक परम्पराओं की गहरी सोच और समझ विधमान हैं, इसी कारण दिनकरजी की कविताए वर्तमान की पुकार से सचेत क्रांति का स्वागत करती हैं।

कवि दिनकर भारतीय बाल मन का कितना सहजता और उदात्त पूर्ण भाव से चित्रण करते है, यह उनकी `चांद का कुर्ता` कविता से पता चलता है| निष्कर्षता दिनकर भारतीय राजनीतिक चेतना की सरवर वाणी हैं और अपने युग की समस्त अभिव्यक्ति भी राष्ट्रहित के लिए बांसुरी छोड़कर पांचजन्य उठाने का उनमे भरपूर साहंस था। उनकी राजनीतिक चेतना की पहचाल देश के स्थूल सुख-दुख और आक्रोश मात्र के चित्राण से नहीं, अपितु राष्ट्र की आत्मा की पहचान से हैं, जिसके मूल में भारतीय संस्कृति इतिहास के रूप में प्रेरणा और पृष्ठभूमि बनी है, तथा वर्तमान चेतना से स्पंदित होकर मुख्य जीवनधारा बन गई हैं। वास्तव में दिनकर क्रांतिदर्शी कवि थे। स्वतंत्रता से लेकर समतामूलक समाज की संस्थापना तक समग्र क्रांति की आवाज वो उठाते रहे। अपने को युगधर्म का हुहार कहने वाला कवि र्सनात्मक स्तर पर अपना युगबोध प्रसतुत करता हैं। स्वतंत्रतापूर्व से सवतंत्रता प्राप्ति के बाद तक वैचारिक फैलाव उनकी कृतियों में विद्यमान हैं।

इस प्रकार कवि दिनकर सच में राष्ट्रीय कवि है | क्योंकी वह पहले भारतीय है, भारतीय लोक के है, भारतीय जन के है |

सन्दर्भ ग्रन्थ

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समकालीन मराठी कथा

डॉ .सुवर्णा राजेश जाधव
कला ,वाणिज्य ,विज्ञान व संगणकशास्त्र महाविद्यालय आष्वी खुर्द मराठी विभाग प्रमुख

1 .प्रस्तावना

कथा सांगणे आणि ऐकणे ही एक महत्त्वाची सहज प्रवृत्ती आहे. किंबहुना लहान मोठ्या सर्वांना कथा सांगायला आणि ऐकायला आवडते. मानवाने आपले अनुभव नेहमी गोष्टी रूपाने सांगण्याचा प्रयत्न केलेला आहे .या प्रयत्नांना शतकाची नव्हे तर हजारो वर्षांची परंपरा आहे. भाषेच्या मौखिक आणि लिखित अशा दीर्घ परंपरेतून कथेची रूपे पाहता येतात.

मराठी कथा गोष्ट, कहानी लघुकथा, नवकथा अशा क्रमाने विकसित झाली कथेचे अनुभवी विश्व समृद्ध आहे .कथेला कोणताही विषय मर्यादा नाही. अंतर बाह्य विश्व शक्ती समाज निसर्ग महानगर असे अनेक विविध विषय कथेने अविस्कृत केलेले आहे. थोडक्यात भाषाशैली, तंत्रज्ञान ,विचार ,व्यवहार यांना सुरुवात कथा या साहित्य प्रकाराचा विकास झालेला आहे. त्यामुळे कथेचे स्वरूप व्यामिश्र झाले.कमीत कमी पात्रे आणि कमीत कमी प्रसंग वापरून थोड्यावेळात परिणामकारक रीतीने सांगितलेली व ऐकणाऱ्यांच्या मनावर एकच एक ठसा उमटविणारी हाकिकत म्हणजे लघुकथा. कथा , पात्र, वातावरण , निवेदन पद्धती व भाषा हे कथेचे मूलभूत घटक आहे. त्यांच्या आशयाने कथाकार कथा निर्मिती करत असतो.

2.समकालीन मराठी कथा

समकालीन या शब्दातून काळाचा निर्देश होतो. हे साहित्य आपल्या काळातील परिस्थितीशी जवळचे नाते सांगते. या काळातील घटना स्थिती, वृत्ती प्रवृत्ती यांचे आकलन करून काळाच्या.गाभेशी जाऊन भिडते. या काळातील मानवी भावभावना प्रश्न जीवन जाणीव यांचे प्रभावी दर्शन अशा साहित्यातून होते .आपल्या आणि आपल्या आसपासच्या बदलत्या कालखंडातील व्यक्ती, घटना प्रसंग, जीवन जाणीव व विचार प्रणाली सांभाळून ज्या साहित्यात केलेले असे ते साहित्य म्हणजे या काळातील विशेष महत्त्व देऊन समकानतेची व्याख्या करतात . साहित्य आपल्या काळाबरोबर आहे ज्या काळात ते निर्माण होत असते. त्या काळाचे प्रतिबिंब त्यात आहे. त्या काळातील विचार ,जाणीव, मते ज्या साहित्यातून व्यक्त होतात असे साहित्य व साहित्य आणि नव साहित्य.

1945 नंतर सांस्कृतिक, सामाजिक, राजकीय, धार्मिक क्षेत्रातील अनुभव, दुसरे महायुद्ध भांडवलशाही व साम्राज्यवादाचे दुष्परिणाम मूल्यांचा रास, यंत्र व विज्ञानाचे परिणाम, पाश्चात्य संस्कृतीचा परिचय यामुळे समाज जीवनात अमलाग्र बदल झाला. या नवजीवनाचे चित्र अत्यंत संवेदनशीलतेने नव साहित्यातून होऊ लागले. त्यानंतर मराठीत आजही तितक्याच प्रत्येकारीकपणे घडते आहे. ही आवश्यक गोष्ट आहे.

भास्कर चंदनशिव हे ग्रामीण चळवळीतून पुढे आलेले 1980 नंतरच्या काळातील एक महत्त्वाचे लेखक आहेत. शेतकऱ्यांचे जीवन त्यांचे पीकपाणी त्यातून उभ्या राहिलेल्या समस्या यावर चंदनशिव यांची कथा भाष्य करते .त्यांची 'लाल चिखल 'ही उत्कृष्ट कथा मानली जाते. या कथेतून किशोरवयीन शाळकरी मुलाचे भाविश्व आणि शेतीमालाचे बाजारभाव या चीर परिच्छेद विश्वातून एक दहाक वास्तव पुढे येते .अवघ्या एक दिवसाच्या कालचक्रमातून ही कथा शेतकऱ्यांचे दुःख साकार करते .या कथेतील बापू हा दहावीतील मुलगा आहे. त्याचे शेतकरी आई वडील भाजीपाला बाजारात विक्रीला आणतात मालाची आवक अधिक झाल्याने भाव पडतात आणि सोन्यासारख्या मालाची माती होती.

शेतकऱ्याला योग्य भाव न मिळाल्यामुळे आपला रस्त्यावर फेकून द्यावा लागतो सोन्यासारख्या टमाट्याचे लाल चिखल होतो शेतकऱ्यांची कष्ट त्यांचे श्रम अश्रूमध्ये परिवर्तित होत त्याचा लाल चिखल होतो. या त्याच्या वास्तवा मागील भावनिक व्यवहारिक सत्य ही कथा प्रभावीपणे मांडते. शेतकरी हमीभाव ,दुष्काळ , सावकार शासकीय योजना, आणि शेतकऱ्यांच्या आत्महत्या या वास्तवाला ही कथा अधोरेखित करते .म्हणून ती समकालीन ठरते .एक दिवसाचा कार्यक्रम, कमी पात्रे मोजके घटना प्रसंग, आणि तीव्र होत जाणारा संघर्ष यामुळे ही कथा वाचकाची पकड घेते.

'उठावण' ही सदानंद देशमुख यांची कथा या कथेतून कापूस विकविणारे शेतकऱ्याची व्यथा ,शब्दबद्ध झाली आहे. शासनाच्या वतीने फेडरेशन मार्फत विशिष्ट मुदतीच्या आत शेतकऱ्याने कापूस विकला तर पन्नास रुपये बोनस जाहीर केल्या जातो .शेषराव आपला सात क्विंटल कापूस मोठी कसरत करीत विक्रीसाठी जिनिंग सेंटरला आणतो. पण नवी सरकारी चतुरवर्ण व्यवस्था आडवी येते. या नव्या वर्गात पुढारी, व्यापारी ,नोकरदार आणि शेतकरी आहेत .यातील बरचे तिघे तळातील शेतकऱ्यांना छळवत आहेत. नोकरदार वर्ग वाचमेन शेतकऱ्याची लूट पाहतो .उशीर झाल्याचे कारण देत गेटचे आत गाड्या घ्यायला नकार देतो. मात्र पुढाऱ्यांचे आणि व्यापाऱ्यांचे ट्रॅक्टर आत घेतो. शेषराव त्याला भजे खाऊ घालून गाडी आत घेण्याची विनंती करून बघतो. पण तो गाडीचा नंबर लावण्यासाठी प्रत्येक शेतकऱ्याकडे पन्नास रुपयाची मागणी करतो .त्याचीही मागणी शेषरावांचा चा संयम सुटतो .तो वॉचमनला मारहाण करतो. त्यामध्ये इतरही शेतकरी सहभागी होतात. ग्रामीण कथेच्या अभावानेच आढळणारा विद्रोह या कथेतील प्रकटलेला आहे असे दिसून येते.

हा विषय समकालीन येतो.

गौरी देशपांडे यांच्या 'आहे हे असं आहे 'या कथासंग्रहातील 'पाऊस आला मोठा 'ही कथा आहे. सावित्रीची वडील आणि .सावत्र आई आम्ही यांच्या परस्पर नाते संबंधावर ही कथा आहे. आम्मी म्हणजे अमला आणि सवी म्हणजे सावित्री या दोघींच्या नातेतील गुंतून ही कथा साकार होती. या दोघांची मानसिक स्थिती आणि घरातील परिस्थितीसारखी आहे. पण त्यांचे स्वभाव परस्परविरुद्ध आहे. ही अतिशय वस्तूनिष्ठ तर आम्ही भावनिक आहे .आम्ही कडे व्यवहारिक शहाणपण आणि अनुभवतुन आलेला संबंधच बनाये या दोघींचा प्रवास एकाच दिशेने घडतो. फक्त त्याचा परिणाम भिन्न आहेत. विदुर वडील उतार वयात आम्मी विवाह करतात. त्यामुळे मनात वडिलांविषयी काहीसा दुरावा निर्माण होतो. परंतु सावित्रीला जीवनातील जेव्हा सत्य कळते. तेव्हाआम्मी बरोबर तिची मैत्री होते.

उषाकिरण अत्राम आदिवासी साहित्याच्या प्रवाहातील कथा लेखन ,करणारे मराठीतील महिला कथाकार मानल्या जातात. त्यांच्या 'बाजा' ही कथा आदिवासी जीवनावर आधारित आहेत. जन्मताच मुका असलेला बाजा त्याची पत्नी लक्ष्मी मुलगा पेंढा आणि रामाया सावकार या पात्रातून ही कथा उलगडते. बाजारामाया सावकाराच्या अत्याचाराला बळी पडतो .या अत्याचाराचा प्रतिकार पेंटा करतो. शिक्षणामुळे पेंटाला आत्मभान येऊ लागले आहे. या कथेतून आदिवासी शोषित व्यथा वेदना व संघर्ष प्रकट होतो. भारत स्वतंत्र झाला तरी वेठबिगारीची प्रथा शोषणाच्या तरा बदललेल्या नाही. अक्षरशत्रू असलेल्या आदिवासींची पिढीजात शोषण केले जाते. त्यांच्यावर अत्याचार केले जातात .याचा प्रत्यय ही कथा देते. आदिवासी जीवनातील वेगळे आणि सच्चा अनुभव विश्वाच्या प्रत्ययामुळे ही कथा वाचकांना घेऊन ठेवते .एक वेगळा अनुभव विश्वाचा प्रत्यय देण्यात यशस्वी होते.

संजय कळमकर यांच्या 'शुभमंगल सावधान' या कथेतील विवाह जीवनातील एक महत्त्वाचा संस्कार आहे. सध्याच्या विवाह सोहळ्यात पारंपारिक रितेरी वाजांबरोबर लग्न प्रसिद्धी, लग्न पत्रिका, नवरा नवरीचा मेकअप अतिरिकम डीजेवरील तरुणाईची थी करणे वऱ्हाडी मंडळीची सुशिक्षित्ता राजकीय पुढाऱ्यांची सही , यांची भर पडलेली आहे. आज युवातील मूळ हेतू हे सोपस्कार ठरले आहेत. यासोबत कारण ऐवजी युवा मध्ये भव्य दिव्यता उत्सवी

रूप श्रीमंतीचा बडेच्या कोटी प्रतिष्ठा व अवाप खर्च यांना महत्त्व दिले आहे. या कथेमध्ये युवातील सर्व सोपस्कार त्यातील संती विसंगती गमती जमती प्रत्येकारी कृपाने प्रकट झाले आहे.

सचिन वसंत पाटील यांच्या कष्टाची भाकरी ही श्रम प्रतिष्ठा आणि ध्येयवाद जागविणारी व जपणारी कथा आहे. विनायक पाटील या h पदवीधर तरुणाला खूप प्रयत्न करूनही नोकरी मिळत नाही .त्याच्या वाट्याला मानहानी येते. वडिलोपार्जित शेतीत राबवे लागते. त्याच्या कडे ऊस शेतीमुळे आर्थिक सुबत्ता असते. पण त्याच्या डोक्यात द्राक्ष शेतीचे खुळशिरते द्राक्ष लागवडीनंतर दुसऱ्या व तिसऱ्या वर्षी रोग राहील भावातील घसरण काढणे आलेला. अवकाळी पाऊस यामुळे शेती तोट्यात येते. वाढलेल्या कर्ज व्याजामुळे बँकेकडून जप्तीची नोटीस येते. चुलत्याकडे शेती ग गवंड्याच्या हाण ठेवूनही प्रश्न सुटत नाही .त्यावर पत्नी गड्या हाताखाली काम करण्याचा सल्ला देते .पण पदवीधर असल्याने हा सल्ला रुचत नाही कामधंदा न मिळाल्याने विनायकला पत्नीचे आग लावा तुमच्या शिक्षणाला काय उपयोग त्याचा पैशासाठी तुमचं शिक्षण हे उद्गार निवृत्त करतात तत्काळ पैशाच्या अमिषातून तो व्यसनाच्या आहारी जातो व्यसनामुळे प्रपंचाची वात आहात निराश विनायक आत्महत्या करू पाहतो त्यावेळी त्याच्या डोळ्यासमोर कुटुंबाचे चित्र तराळते हे चित्र त्याला जगण्याचे बळ देते. पाश्चात्यपा पासून तो काष्टाचा मार्ग निवडतो व्यसन, दारिद्र्य ,कर्जबाजारीपणा दुःख शोषण निराशा यावर्ष घाम आणि मात करता येते पारंपारिक असो, वा आधुनिक शेती ,असो बदलते अर्थकारण आसमानी व सुलताने संकटे यामुळे शेतकऱ्यांची उपेक्षा संपत नाही. अशा परिस्थितीत आत्मभान जागे ठेवून श्रम या मूल्याचा दीप प्रज्वलित केल्यास जगण्याचा मार्ग सापडतो .असा संदेश ही कथा देते हे घटना प्रधान कथेचे प्रवाही कथा .नगmmअर्थपूर्ण शेवट आणि ग्रामीण बोली मुळे कथेला उंची प्राप्त करून देते

3.समारोप-

कमीत कमी पात्रे आणि कमीत कमी प्रसंग वापरून थोड्या वेळात परिणामकारक रीतीने सांगितलेली व ऐकणाऱ्यांच्या मनावर एकच एक ठसा उमटविणारी वितळणारी हकीकत म्हणजे लघुकथा होय. स्वतंत्र वागणे प्रकार म्हणून कथेचे अस्तित्व अबाधित आहे कथेचे लघुरूप व तिच्या संस्काराचे एकता यामुळे तिच्या रचनेत संघटनेत काही विशेष स्वभाव होतात येतात एककेंद्रिता , संक्षिप्तपणा ,नेमकेपणा हा कथेच्या कालतंत्राचा खास विशेष म्हणता येईल .अनुभव अर्थ असे सूत्र कथा न पात्र , वातावरण , निवेदन आणि भाषा अशी घटक अंगे मिळून कथेची रचना होत असते. माणसाने आपले अनुभव व कल्पना इतरांना सांगण्यासाठी कथा वाङ्मय प्रकाराचा अवलंब केला. आहे गोष्ट का आणि अशा प्रकारातून मराठी कथेच्या प्रारंभीचे रूप पाहायला मिळते.त्यानंतर आधुनिक काळामध्ये 1890 मध्ये करमणूक या नियतकालिकेच्या माध्यमातून कथेला स्वतःचा चेहरा दिसला

थोडक्यात 1990 नंतर कथा समकालीन गतिमान दुभंगलेले भव्य, मिश्र जीवन सर्वव्यापी राजकारण शोषणाच्या नव्या रीती अस्तित्व संघर्ष बदलते वर्तमान माणूस पण भूमिहीन शेतकऱ्यांच्या व्यथा ,वेदना जगन्यातील पेज महानगरीय जगातील हिंसा,

मानवी नाते ,संबंधातील ताण तणाव, आधी विषय घेऊन कथा गतिमान होत आहेत. समकालीन या शब्दातून काळाचा निर्देश होतो. आपल्या व आपल्या आस्वाच्या बदलत्या कालखंडातील व्यक्ती ,घटना, प्रसंग जीवन जाणिवा विचारप्रणाली यांचे चित्र सांभाळून साहित्यात केले जाते. त्याला समकालीन असे म्हणतात या पार्श्वभूमीवर समकालीन जीवन अनुभव प्रकट करणाऱ्या मराठी साहित्यात ग्रामीण दलित,आदिवासी मुस्लिम, ग्रामीण महानगरीय, विनोदी अशा प्रवाहातील कथा समकालीन मराठी कथेची ओळख करून देतात.

यासाठी समकालीन जीवन व्यवहाराशी नाते सांगणाऱ्या कथांची निवड केलेली आहे. यासाठी ग्रामीण दलित, आदिवासी स्त्रीवादी महानगरीय अशा काही प्रवाहातील निवडक कथांचा निवड केली शेतकरी, हमीभाव, दुष्काळ

,सावकार शासकीय योजना आणि शेतकऱ्यांच्या आत्महत्या अशा वास्तवाला समकालीन कथा अधोरेखित करते. म्हणून ती समकालीन ठरते.

4.संदर्भ ग्रंथ -

4.1 कथा संकल्पना आणि समीक्षा- प्रा. सुधा जोशी मौज प्रकाश

4.2 टीका स्वयंवर -भालचंद्र नेमाडे ,साकेत प्रकाशन

4.3 मराठी वाङ्मय तंत्र आणि आस्वाद समीक्षा संपादन प्रा. संदीप सांगळे ,डायमंड प्रकाशन

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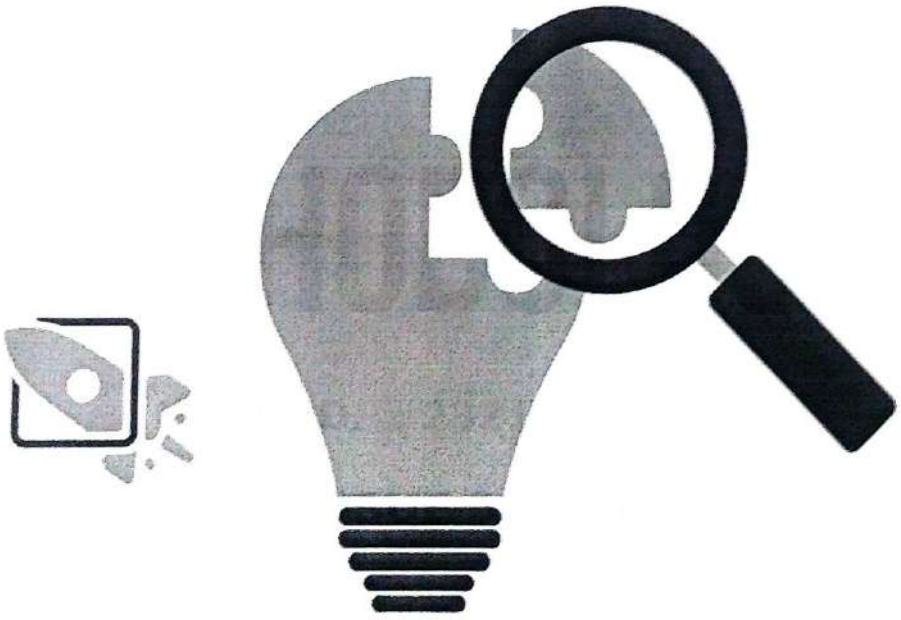

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गोषवारा - कृषी क्षेत्रातील कृषी विज्ञान केंद्र हा एक नाविन्यपूर्ण उपक्रम असून त्याव्दारे शेतकरी व कृषी उद्योजकांना मार्गदर्शन केले जाते. तळागाळातील शेतकऱ्यांना त्यांच्या गरजेनुसार प्रशिक्षण देऊन ग्राम विकास साधण्याचा हा प्रकल्प आहे. शास्त्र शुद्ध मार्गदर्शनासाठी कृषी विज्ञान केंद्राने एका 'आदर्श शेता'ची निर्मिती केली आहे. कृषी विज्ञान केंद्राच्या प्रशासकीय इमारतीत माती व पाणी परीक्षण प्रयोग शाळा, फायटो डायग्नोस्टिक्स, पोस्ट हार्वेस्ट टेक. प्रयोगशाळा आणि कृषी तंत्रज्ञान माहिती केंद्र आहे. 30 शेतकऱ्यांची निवास व्यवस्था या ठिकाणी आहे. या केंद्रात अत्याधुनिक शेतीचे प्रशिक्षण देण्या बरोबरच कीड नियंत्रण, रोग नियंत्रण याचेही प्रशिक्षण दिले जाते. गांडूळखत तयार करण्याचे प्रशिक्षणही दिले जाते. बहुसंख्य शेतकऱ्यांच्या सहभागाने ग्राम दत्तक योजनेव्दारे मोठ्या प्रमाणावर आधुनिक शेतीचे प्रशिक्षण दिले जाते.

शोधनिबंधातील मुलभूत शब्द - कृषी विज्ञान केंद्र, आय.सी.ए.आर.

प्रस्तावना – 1951 पासून पंचवार्षिक योजनेच्या माध्यमातून कृषी क्षेत्राकडे लक्ष देण्यात आले. कृषी क्षेत्राची उत्पादकता वाढविण्यासाठी वेगवेगळे प्रयोग करण्यात आले. यातून काही ठिकाणी सकारात्मक बदल झाले. मात्र काळाच्या ओघात काही आव्हाने निर्माण झाली. आज दिवसेंदिवस शेती क्षेत्रात समस्या वाढत आहे. नवीन संशोधनास मर्यादा येत आहेत. या पार्श्वभूमीवर कृषी विज्ञान केंद्रांचा अभ्यास व संशोधन करणे गरजेचे आहे. कृषी विज्ञान केंद्राच्या स्थापनेस 50 वर्षापेक्षा जास्त काळ होऊन गेले आहे. या 50 वर्षात शेती क्षेत्रावर काय परिणाम झाला ? या काळात शेती क्षेत्राची प्रगती योग्य झाली किवा नाही ? या प्रश्नांची उत्तरे मिळविण्यासाठी कृषी विज्ञान केंद्रांचा अभय महत्वाचा आहे. तसेच कृषी विज्ञान केंद्राने जे कार्यक्रम राबविलेले आहेत त्यांची प्रत्यक्ष परिणामकारकता तपासण्यासाठी महाराष्ट्रातील निवडक चार विभागातील सात जिल्ह्यातील कृषी विज्ञान केंद्रांचा कृषी पूरक विकासावर झालेल्या परिणामाचा अभ्यास हा विषय संशोधनासाठी निवडलेला आहे.

संकल्पना - भारत आजही कृषी प्रदान देश म्हणून ओळखला जातो. भारतात सर्वाधिक लोकसंख्या ग्रामीण भागात राहते. भारतीय अर्थव्यवस्थेत शेतीचे स्थान अत्यंत महत्वाचे आहे. उद्योग आणि सेवा क्षेत्र या दोन क्षेत्रांना मदत करण्याचे काम शेतीक्षेत्रातून केले जाते. असे असले तरीही या शेती क्षेत्रात अनेक समस्या उभ्या आहेत. देशाला स्वातंत्र्य मिळाल्यानंतर शेती आणि शेतकरी यांच्यासाठी अनेक योजना आणि कार्यक्रम राबविण्यात

आले. त्यात महत्वाचे म्हणजे कृषी विज्ञान केंद्र होय. या कृषी विज्ञान केंद्रांना भारतीय संशोधन परिषदेकडून मंजुरी दिले जाते. कृषी विज्ञान केंद्र हे खाजगी स्वयंसेवी संस्था म्हणून उल्लेखनीय कामे करत आहे. भारतीय कृषी अनुसंधान परिषेदेच्या संस्था, कृषी विद्यापीठाने आणि इतर संशोधन संस्था यांनी कृषी व सलग्न क्षेत्रात केलेले संशोधन शेतकऱ्यांच्या बांधापर्यंत पोचविण्यासाठी भारतात सर्वप्रथम 1962 साली पॉन्डेचेरी येथे कृषी विज्ञान केंद्राची सर्वप्रथम स्थापना झाली. महाराष्ट्रात 44 कृषी विज्ञान केंद्रे आहेत. त्यापैकी अहमदनगर जिल्हात राहाता तालुक्यात बाभळेश्वर येथे 1992 साली कृषी विज्ञान केंद्र स्थापन झाले तर शेवगाव तालुक्यात दहेगाव येथे 2011 साली कृषी विज्ञान केंद्र स्थापन झाले. तर पुणे जिल्ह्यात बारामती येथे 1992 साली स्थापना झाली. 2010 साली नारायण गाव येथे कृषी विज्ञान केंद्र स्थापन झाली. 1992 साली अंबाजोगाई (बीड), 1984 साली जळगाव, 1992 साली सांगली, 1976 साली ठाणे, 2016साली यवतमाळ अश्या प्रकारची काही महत्वाची कृषी विज्ञान केंद्रे महत्वाची कामगिरी बजावत आहे.ही सर्व केंद्रे खाजगी स्वयंसेवी संस्थेमार्फत चालविली जातात आणि याचा मुख्य उद्देश शेतकर्यांना शेतीविषयक आधुनिक पद्धतीने शिक्षण देणे हा होता.

भारतीय कृषी संशोधन परिषद (आय.सी.ए.आर.) यांनी 1994 मध्ये या विद्यापीठात कृषी विज्ञान केंद्राची स्थापना केली.कृषी विज्ञान केंद्र हे भारतातील एक कृषी विस्तार केंद्र आहे. केंद्रे स्थानिक कृषी विद्यापीठाशी निगडीत आहेत, आणि भारतीय कृषी संशोधन परिषद आणि शेतकरी यांच्यात कृषी संशोधन व्यावहारिक, स्थानिक परिसरामध्ये लागू करण्यासाठी दुवे म्हणून काम करतात. सर्व कृषी विज्ञान केंद्र संपूर्ण भारतातील 11 कृषी तंत्रज्ञान अनुप्रयोग संशोधन संस्थापैकी एकाच्या अधिकारक्षेत्रात येतात. मे 2021 पर्यंत, संपूर्ण भारतात अंदाजे 725 कृषी विज्ञान केंद्र आहेत.

संशोधन विषयाची उद्दिष्टे –

1. कृषी विज्ञान केंद्रांचे कृषी विकासातील महत्व अभ्यासणे.
2. महाराष्ट्रातील निवडक सात कृषी विज्ञान केंद्रांच्या कामगिरीचा अभ्यास करणे.
3. कृषी विज्ञान केंद्रामार्फत राबविण्यात येणाऱ्या विविध कार्यक्रमाचा चार विभागातील पिक रचनेवर झालेल्या बदलाचा अभ्यास करणे.
4. कृषी विज्ञान केंद्राद्वारे प्रशिक्षण दिलेल्या शेतकर्यांच्या शेती उत्पादनात राहणीमानात आणि रोजगारात झालेल्या बदलत अभ्यास करणे.
5. कृषी विज्ञान केंद्राच्या कार्यपद्धतीमध्ये समस्या आणि दोष याचा शोध घेऊन त्या सोडविण्यासाठी आवश्यक उपाययोजना सुचविणे.

संशोधन विषयाची गृहीतके –

1. कृषी विज्ञान केंद्राने केलेले संशोधन शेतकऱ्यांपर्यंत पोहोचले आहे.
2. कृषी विज्ञान केंद्रामुळे शेतकऱ्यांच्या राहणीमानात सुधारणा झाली आहे.

संशोधन पद्धती -

प्रस्तुत संशोधनात प्राप्त तथ्याच्या आधारे सखोल अध्ययन करण्यासाठी सामाजिक शास्त्राच्या संशोधन पद्धतीपैकी तथ्य संकलन व मूल्यांकनात्मक संशोधन पद्धतीचा वापर केला जाणार आहे. यात माहिती संकलनासाठी प्राथमिक व दुय्यम सामुग्रीचा वापर केला आहे .

तथ्य संकलन -

संशोधन पद्धतीच्या स्रोतापैकी प्राथमिक माहिती संकलन करण्यासाठी निरीक्षण, प्रश्नावली, मुलाखत या पद्धतीचा वापर केला आहे . दुय्यम माहितीसाठी संशोधन विषयाशी संबंधीत संदर्भ ग्रंथ व पुस्तके, अहवाल, संशोधन प्रबंध मासिके, साप्ताहिके, वर्तमानपत्रे इत्यादी माध्यमातून विषयाशी संबंधीत तथ्य व आकडेवारी गोळा केली आहे.

संशोधन साहित्याचा आढावा - कृषी विज्ञान केंद्र यांची कृषी विकासातील भूमिका, योगदान व परिणामकारकता तपासण्यासाठी अनेक संशोधकांनी सखोल अभ्यास केलेला आहे. या संदर्भातील संशोधन साहित्याचा आढावा या प्रकरणात घेतला आहे.

1. **डॉ. भास्कर गायकवाड (2005) -** यांनी "ॲग्रीकल्चरल कम्युनिकेशन थ्रू आय टी : अ केस स्टडी" या विषयावरील अध्ययन कृषी विज्ञान केंद्र बाभळेश्वर जि अहमदनगर यांच्या द्वारे कृषी विषयक माहिती शेतकऱ्यांपर्यंत पोहचवण्यासाठी थेट इंटरनेटचा वापर केलेला आहे.
2. **जितेंद्र सिंग व सुजान डी के (2006) -** जून 2006 मध्ये यांनी "रोल ऑफ कृषी विज्ञान केंद्र इन रुरल ॲड ॲग्रीकल्चरल डेव्हलपमेंट"या शीर्षकाचा प्रबंध संशोधकाने कुरुक्षेत्र या मासिकातून प्रकाशित केला. त्यांनी या संशोधन लेखात कृषी विद्यान केंद्राद्वारे राबवले जाणारे नवनवीन तंत्रज्ञान व उपक्रमामुळे पिकांची विविधता निर्माण झाली आहे.
3. **डॉ सिताराम उत्तमराव अनपट (2008) -** यांनी जालना कृषी विज्ञान केंद्राची कृषी विकासातील भूमिका एक चिकित्सक अभ्यास या शीर्षकाचा प्रबंध 2008 मध्ये डॉ. बाबासाहेब आंबेडकर मराठवाडा विद्यापीठ औरंगाबादला सादर केला होता. या अध्ययनात त्यांना असे दिसून आले कि कृषी विज्ञान केंद्राने पाणलोट क्षेत्र व्यवस्थापन कार्यक्रम राबविल्यामुळे लाभार्थ्यांच्या एकूण लागवडीखालील क्षेत्रापैकी (201.2 हेक्टर) बारमाही बागायती क्षेत्र 25.6 हेक्टर (12.8%) असल्याचे दिसून आले म्हणजेच नमुना लाभार्थ्यांचे सिंचन क्षेत्र लक्षणीय वाढले आहे.
4. **www.kvk.pravara.com (2007) -** कृषी विद्यान केंद्र बाभळेश्वर च्या संकेत संकेत स्थळावर कृषी विज्ञान केंद्राची स्थापना, कार्यपद्धती, स्वरूप याविषयी माहिती दिलेली असून शेतकरी गट या लेखात कृषी विज्ञान केंद्रांतर्गत शेतकरी मंडळ योजनेची भूमिका स्पष्ट केलेली आहे.
5. **एम आर दत्तात्रय के. सुधाकर एन, (2004) -**या संशोधकाने रोल ॲड एम्पॅक्ट ऑफ कृषी विद्यान केंद्र इन वाटरशेड डेवेलपमेंट या विषावर आपले विचार मांडले आहे यात त्यांनी महाराष्ट्र व आंध्रप्रदेश या

राज्यात पाणलोट क्षेत्रात केलेल्या विकासाची परिणामकारकता शोधण्याचा संशोधकाने प्रयत्न केला आहे.

6. **डॉ. सय्यद अहमद (1994)** - यांनी 1994 साली आपला बिगर सरकारी संस्था ग्रामीण आर्थिक परिवर्तनासाठी साहाय्य करी प्रारूप हा प्रबंध पुणे विद्यापीठात सादर केला या विषयाचा अभ्यास करताना असे दिसून आले कि बिगर शासकीय संस्था या शासकीय संस्थांच्या तुलनेत अधिक प्रभावशाली आहे.

निकष-

कृषी विद्यापीठे, राज्य विभाग, ICAR संस्था, इतर शैक्षणिक संस्था किंवा स्वयंसेवी संस्थांसह विविध यजमान संस्थांच्या अंतर्गत कृषी विज्ञान केंद्र स्थापना केली जाऊ शकते. ICAR वेबसाइटवर कार्यरत असलेले 700 कृषी विज्ञान केंद्र आहेत. 458 राज्य कृषी विद्यापीठांतर्गत, 18 केंद्रीय कृषी विद्यापीठांतर्गत, 64 ICAR संस्थांतर्गत, 105 NGO अंतर्गत, 39 राज्य विभाग किंवा इतर सार्वजनिक उपक्रमांतर्गत, आणि 16 इतर विविध शैक्षणिक अंतर्गत संस्था नवीन कृषी तंत्रज्ञानाची चाचणी घेण्यासाठी कृषी विज्ञानकेंद्राकडे सुमारे 20 हेक्टर जमीन असणे आवश्यक आहे.

जबाबदाऱ्या - प्रत्येक कृषी विज्ञानकेंद्राकडे ICAR संस्थांनी विकसित केलेल्या बियाण्याच्या जाती किंवा नाविन्यपूर्ण शेती पद्धती यासारख्या नवीन तंत्रज्ञानाची चाचणी घेण्यासाठी एक लहान शेत चालवते. यामुळे नवीन तंत्रज्ञान शेतकऱ्यांना हस्तांतरित करण्यापूर्वी स्थानिक पातळीवर तपासले जाऊ शकते.कृषी विज्ञानकेंद्राकडे शेत आणि आजूबाजूच्या गावांच्या जवळ असल्यामुळे, ते शेतकऱ्यांच्या शेतात नवीन तंत्रज्ञानाची परिणामकारकता दर्शविण्यासाठी कार्यक्रम आयोजित करते.क्षमता वाढवणे, नवीन तंत्रज्ञानाचे प्रदर्शन जबाबदाऱ्या आहेत.

सर्वसाधारणपणे पुढील समस्या भेडसावतात

1. आर्थिक समस्या
2. कमी प्रतीचे राहणीमान
3. वाढता उत्पादन खर्च
4. घटते उत्पादन

शेती हा एक महत्वाचा घटक आहे कृषी संस्कृती महान आहे .त्यामुळे कृषी विज्ञान केंद्राचा शेती विकासावर झालेल्या परिणामाचा सविस्तर अभ्यास करणे आवश्यक आहे.

सारांश - भारतातील अर्थव्यवस्था शेती क्षेत्रावर मोठ्या प्रमाणात अवलंबून आहे. मात्र शेती क्षेत्राचा विकास हा औद्योगिक क्षेत्राएवढा झालेला दिसत नाही त्याचे प्रमुख कारण म्हणजे भारतीय शेती अजूनही परंपरागत पद्धतीने केली जाते. भारतीय शेतकरी असंघटीत असल्यामुळे त्याच्या शेतमालाला योग्य ती किंमत न मिळाल्यामुळे त्याचे आर्थिक उत्पन्नाचे प्रमाण नेहमी जेमतेम राहते. सध्याच्या राष्ट्रीय सरकारच्या कार्यक्रम " 2022 पर्यंत शेतकऱ्यांचे उत्पन्न दुप्पट करणे" मध्ये कृषी उत्पादकता वाढवणे, प्रधानमंत्री कृषी सिंचाई योजना आणि प्रधानमंत्री फसल

विमा योजना यासारखे विकास उपक्रम तसेच तांत्रिक नवोपक्रमावर अधिक लक्ष केंद्रित करणे आवश्यक आहे. कृषी विज्ञान केंद्र या नवीन सरकारी उपक्रमांबद्दल माहिती आणि पद्धतींचा प्रसार करण्यासाठी मदत करावी अशी सरकारची अपेक्षा आहे.

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सामाजिक एवं लोकतांत्रिक सरोकार और समकालीन हिन्दी कहानी

प्रा.दिपाली दत्तात्रय तांबे
हिंदी विभाग प्रमुख
कला,वाणिज्य,विज्ञान एवं संगणकशास्त्र महाविद्यालय आश्वी खुर्द

शोध सारांश-- हिन्दी गद्य की विधाओं में कहानी एक अत्यंत सशक्त एवं लोकप्रिय विधाओं में से एक है । बदले हुए समाज के साथ यह हमेशा अपने को नये रूप में खडा कर रही है। स्वातंत्र्योत्तर काल में सामाजिक, आर्थिक, राजनीतिक परिवर्तन के कारण कहानी विधा में अनेक आन्दोलन हुए जिसमें नयी कहानी, सहज कहानी, समान्तर कहानी, सचेतन कहानी , जनवादी कहानी आदि विकसित हुई। समकालीन कहानी में वर्तमान यथार्थ, बदलता परिवेश, बदलते जीवन मूल्य को विभिन्न कोणों से देखा और अपनी अनुभूति के आधार पर अभिव्यक्त करने का प्रयास किया। समकालीन कहानी जीवन के यथार्थ को व्यक्त करती है। वह जीवन के भोगे हुए सत्यों को ईमानदारी के साथ अभिव्यक्त करती हुई आगे बढ़ती है। समकालीन कहानी में जो कुछ है, वह मनुष्य ही है। भूमण्डलीकरण के दौर ने इक्कीसवीं सदी के वर्षों में सामाजिक,राजनीतिक,आर्थिक एवं सांस्कृतिक परिवेश को बहुत प्रभावित किया है। पारिवारिक संबंध बिखरने लगे है। संबंध अर्थ तक सीमित हो गई है। मानवीय एवं आत्मीय रिश्ते अर्थ केंद्रित हो गये हैं। संस्कृती एवं परम्परा से दूर मध्यम वर्ग भ्रमित हो रहा है। भ्रष्टाचार, भाई भतीजावाद, जातिवाद , प्रांतवाद के आधार पर राजनीतिक व्यवहार हो गया है। धरती,पैसा शक्ति और प्रतिष्ठा कुछ वर्ग विशेष का आधार बन रहा है। गरीबी, महामारी, कुपोषण,बेरोजगारी, सामाजिक अन्याय आदि बुनियादी प्रश्नों से अधिक महत्वपूर्ण मंदिर - मस्जिद हो गए हैं। समकालीन कहानीकारों ने सामाजिक एवं लोकतांत्रिक सरोकारों के सवालों का बढा ही सुंदर चित्रण किया है और कहानियों का विषय बनाया है।

मुख्य शब्द - समतावादी ,अर्थवता, लोकतांत्रिक, बाजारवाद, उदारीकरण ,मूल्यहीनता ,समकालीन, भूमण्डलीकरण, अमानवीय।

प्रस्तावना

हिन्दी गद्य की विधाओं में कहानी अत्यंत सशक्त एवं लोकप्रिय विधाओं में से एक है । बदले हुए समाज के साथ हमेशा अपने को नये रूप में खडा कर रही है। स्वातंत्र्योत्तर काल में सामाजिक, आर्थिक, राजनीतिक परिवर्तन के कारण कहानी विधा में अनेक आन्दोलन हुए । नयी कहानी, सहज कहानी, समान्तर कहानी, सचेतन कहानी , जनवादी कहानी आदि विकसित हुई । समकालीन कहानी में वर्तमान यथार्थ, बदलता परिवेश, बदलते जीवन मूल्य को विभिन्न कोणों से देखा और अपनी अनुभूति के आधार पर अभिव्यक्त करने का प्रयास किया। समकालीन कहानी जीवन के यथार्थ को व्यक्त करती है। वह जीवन के भोगे हुए सत्यों को ईमानदारी के साथ अभिव्यक्त करती हुई आगे बढ़ती है। समकालीन कहानी में जो कुछ है, वह मनुष्य ही है।

आज के परिवेश में व्याप्त अनास्था , अकेलापन , अस्तित्वबोध , राग - द्वेष , घुटन , संत्रास आदि ने कहानी के कथ्य को नये प्रतिमान दिये । जिससे यथार्थ रूप में अनेक आयाम उभरकर सामने आए। वस्तुतः समकालीन हिन्दी कहानी की अवधारणा में भूमण्डलीकरण, वैश्वीकरण, औद्योगिकीकरण और वैज्ञानिक तथा तकनीकी सूचना का विकास है, जिससे मनुष्य की सोच अर्थ केन्द्रित हो चुकी है। समाज में में व्याप्त आर्थिक विषमता, मूल्यों का विघटन, भय ,कुण्ठा ,निराशा, अकेलेपन एवं अजनबीपन के दर्द की कडवाहट को समकालीन कहानी चित्रित कर रही है। हिन्दी कहानी आज स्वयं को समकालीन होने का अर्थ प्रदान कराती है। इस बारे में डॉ. मधुरेश विचार व्यक्त करते हुए लिखते हैं कि ''समकालीन हाने का अर्थ सिर्फ समय के बीच होने से नहीं है। समकालीन होने का अर्थ है समय के वैचारिक और रचनात्मक दबावों को झेलते हुए , उनसे उत्पन्न तनाओं और टकराहटों के बीच अपनी सर्जनशीलता द्वारा अपने होने को प्रमाणित करना । ''(1)

कोई भी साहित्य तभी शाश्वत कहलाता है, जब वह अपने सामाजिक दृष्टीकोन एवं जीवन की समस्याओं जागृत करने का सामर्थ्य रखता हो । समाज,व्यक्ति और परिवार के मध्य होने वाली आपसी सम्बन्धो से सामाजिक सरोकारों की सृष्टि होती है। साहित्यिक संदर्भ में इसका तात्पर्य कोई रचना समाज के जिन - पक्षों रूपों ,आयामों,मुद्दों को विभिन्न रूपों में चित्रित करना है। इस संबंध में विश्वनाथ तिवारी का वक्तव्य है कि '' लेखक का रचना दायित्व दोनों एक - दूसरे में घुले - मिले होते हैं। वह अपनी रचना के प्रति जितना प्रतिबद्ध होता है उतना ही अपने चारों ओर की जिंदगी के प्रति भी प्रतिबद्ध होता हैं। अंदर एवं बाहर के दोनों ही संसार उसके भीतर एक हो जाते हैं। '' (2) आज समकालीन कहानीकार सामाजिक एवं लोकतांत्रिक सरोकारों के प्रति सजग है। समकालीन परिस्थितियों एवं परिवेश बदलाव के जीवन संघर्ष का चित्रण आज समकालीन कहानीकार कर रहा है।

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समाज की दयनीय अवस्था है कि एक वर्ग के पास अतिरिक्त धन - सम्पदा है तो दूसरे वर्ग के पास एक रोटी भी नहीं हो पाती। वे दीन -हीन , शोषित , दलित, आँसू व पीड़ा से बुनियादी जरूरतों से वंचित है। औद्योगिकीकरण के कारण समाज में अनेकानेक समस्याएं तथा, वर्ग संघर्ष में अभिवृद्धि , बेकारी , औद्योगिक झगड़े , अपराध और अनैतिकता में वृद्धि , श्रमिक समस्याएं इत्यादि का प्रसार हुआ है। सहज स्वाभाविक जीवन - शैली से दूर सर्वत्र कृत्रिम जीवन का खोखलापन हावी है। इस पर डॉ . धीरजभाई वणकार अपने विचार प्रकट करते हैं की - ''मूल्य समाज के आधार बिन्दु हैं। जिनके द्वारा किसी समाज या देश की संस्कृति व सभ्यता निर्मित होती रहती है। आज भिन्न परिस्थितियों ने जीवन मूल्यों को विशेष रूप में परिवर्तित किया है मुख्यतः शिक्षा , आबादी , वैज्ञानिक प्रगति , भौतिकवादी अवधारणा , नगरीकरण , औद्योगिकरण , राजनीति , व्यक्तिवाद तथा व्यक्तिक चेतना व पाश्चात्य सभ्यता ने प्रभावित किया जिसके कारण भारतीय जीवन मूल्यों के संक्रमण की जो स्थिति आई वह पिछले दशकों में नहीं थी। इन प्रवृतियों के कारण हमारे आचार - विचार , आदर्श व व्यवहार में अंतर आने लगा। ''(3)

समकालीन हिंदी कहानी साहित्य में स्त्री समस्या को उठाया है। चित्रा मुद्गल, उषा प्रियवंदा , मन्नू भण्डारी , अनामिका , मैत्रेयी पुष्पा , ममता कालिया आदि अनेक कहानीकारों ने वर्ग तथा वर्ग की विसंगतियों में स्त्री के संत्रास, उसके अमानवीय शोषण का मार्मिक चित्रण कर समतावादी सोच को आगे बढ़ाया है। ममता कालिया द्वारा लिखित 'फर्क नहीं' कहानी में बिमला के पिता वर पक्ष की माँगे पूरी नहीं कर पाने के कारण शादी करने में असमर्थ होते हैं - '' पहली बार उसके पिता ने कहा था वह पाँच हजार नकद दे सकेंगे। लड़के के पिता ने दस हजार की माँग रखी। मजबूर होकर उसके पिता आठ हजार पर आ गए थे , लेकिन लड़के वाले अब सोलह हजार माँगते थे। आठ हजार में ऊँची नौकरी वाला लड़का नहीं मिलता था , अध्ययनरत लड़का मिलता। बिमला के पिता नहीं चाहते थे कि दामाद और लड़की दोनों का खर्च विवाह के बाद भी वह उठाएँ। ''(4) ममता कालिया की कहानी 'जाँच अभी जारी है' में अपर्णा बैंक से मिले स्पष्टीकरण को बहाल कराते हुए दुनिया की नजरों में अपराधी हो जाती है। सच्ची एवं ईमानदार होने के बावजूद समाज की नजर में गुन्हेगार बन जाती है। समाज के प्रत्येक व्यक्ति की नजर उसके प्रति टेढ़ी हो जाती है। ''अब उसे उसका कुछ कुछ अंदाजा था कि इसका नतीजा क्या होगा ? उसके निर्दोष साबित होने के पूरे आसार थे ,पर इस सम्भावना के बावजूद अपर्णा के चेहरे की मनहूसियत घट नहीं बढ़ रही थी। उसे लग रहा था कि असली सजा तो वह पा चुकी है। दुनिया की नजरों में गुनहगार की हैसियत से जी लेना उसके लिए एक भयंकर अनुभव रहा था , जिसे जांच अधिकारी के दिलासे भी कम नहीं कर सके थे। '' (5)

समकालीन कहानी लेखको ने आज की समस्याओ को गंभीरता के साथ पकड़ा और उस विचार किया है। आम जनता की समस्याओ को सामाजिक - आर्थिक व्यवस्था में बदलते चिंताओं को अभिव्यक्त किया है। नौकरी करनेवाली महिलाओं की हर महीने मिलने वाला पेसे का मोह परिवारजन नहीं छोड़ पाते। चित्रा मुद्गल की कहानी 'स्टेपनी' में यह यथार्थ चित्रित हुआ है - नौकरी कर रही आभा जब गर्भावस्था के दौरान नौकरी छोड़ने की सोच रहीं होती है तभी उसका पति विनोद ऐसा करने से मना करता है। गर्भावस्था के आखिरी महीनों में उसने सोचा था - '' बच्चा पालना और नौकरी करना साथ - साथ संभव नहीं। नौकरी छोड़ देगी। बच्चा जब स्कूल जाने लगेगा , तब पुनः विचार करेगी नौकरी के विषय में। लेकिन निश्चय दृढ़ होने से पूर्व ही आर्थिक दबाव और आत्मनिर्भरता की कचोट के चलते विवश हो उठा। तभी पति विनोद ने कहा '' नौकरी आसानी से नहीं मिलती, संभल जाएगा सब। दीदी आ रही है। जचगी के लिए , आगे - पीछे नौकरानी भी ढ़ंग की मिल जायेगी। पूरे समय के लिए न सही। अभी तो तुम्हारे हाथ में दो - दो आय आ रही हैं , खुलकर खर्च कर पाती हो,फिर पैसे - पैसे के लिए सोचना होगा। ''(6)

अंधे मोड़ से आगे' राजी सेठ की कहानी में कहानीकार ने नारी मन के भीतर की उथल – पुथल, पीड़ा तथा छटपटाहट का गहराई से चित्रण किया है। कहानी की नायिका दो पुरूषों के बीच अपने अर्थ को खोजती हुई ऐसे अंधे मोड़ पर पहुंच जाती है जहां पर उसे अपने जीवन की सार्थकता नजर नहीं आती है। सुरजीत कई कई दिनों तक बाहर काम करता है। यहां तक कि वह रात को भी घर नहीं लौटता। वह सुरजीत की हिंसा का शिकार होती रहती थी। सुरजीत की यही उदासीनता के कारण बॉस की ओर आकर्षित होने के लिए मजबूर कर देती है ''(7) महिलाओं की विभिन्न भूमिकाओं के अलग - अलग क्षेत्र में निर्वहन में उनके अपने अनुभव हैं। पुष्पपाल सिंह लिखते हैं –''घर परिवार की मध्यवर्गीय दिनचर्या के बीच नारी ने अपनी नौकरी का समीकरण किस तरह बिठा रखा है ,नौकरी पेशा नारी का संघर्ष कितना जटिल है , नौकरी करते हुए उसे भावात्मक संघर्ष की किन - किन स्थितियों से गुजरना होता है , यह सब प्रामाणिक रूप से जानने के लिए हमें महिला कहानिकारों की कहानियों को पढ़ना चाहिए। ''(8)

इन महिला कहानीकारों ने नारी जीवन की समस्याओं को वैचारिक मानसिकताओं के साथ उजागर करने का प्रयास हैं। वैवाहिक जीवन से जुड़ी समस्याएं जिसमें दहेज , अनमेल विवाह , प्रेम विवाह ,विवाहपूर्व के आकर्षण ,विवाहेत्तर आकर्षण , काम - यौन सम्बन्ध आदी का चित्रण किया हैं। पारिवारिक एवं सामाजिक जीवन की समस्याएं को रेखांकित किया हैं। विवाह - विच्छेद , वेश्या ,

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शिक्षा , कामकाजी महिला इत्यादि की समस्या हो समकालीन कहानियों उद्देश हैं। इन महिला कहानीकारों में मन्नू भण्डारी , उषा प्रियवंदा , कृष्णा सोबती , मृदुला गर्ग , पुष्पा मैत्रयी , ममता कालिया , चित्रा मुद्गल , प्रभा खेतान , सुधा अरोड़ा , नासिरा शर्मा , पुखरी सिन्हा , मणिका मोहिनी , निरूपमा सेवती , मंजुल भगत , राजी सेठ , मेहरून्निसा परवेज , सूर्यबाला , मालती सिंह , प्रत्यक्षा , जया जादवानी , चंद्रकांता , मनीषा कुलश्रेष्ठ , आदि का समावेश हैं।

साहित्य और समाज संबंध बहुत गहरा है। सामाजिक परिवर्तन में साहित्य की महत्वपूर्ण भूमिका होती है। स्वतंत्रता से पूर्व साहित्य में मुख्य स्वर आजादी का था l आज के युग में लोकतंत्र के नारों एवं राजनीतिक चुनावी घोषणा पत्र के बीच अस्मिता, घुटती सांसे, आम आदमी भावनाएं एवं आकांक्षाएं, निराशाजनक है। दलित ,पिछड़ी जातिया , अल्पसंख्यक - बहुसंख्यक , अमीर - गरीब वर्ग संघर्ष चल रहा हैं। समकालीन कहानीकारों के कल्पना केन्द्र में देशकाल की स्थिति में सामाजिक एवं लोकतांत्रिक सरोकार सदैव मौजूद हैं। व्यक्ति एवं समाज के लोकमंगल में राजनीति का योगदान सर्वाधिक होता है। राजनीति आज व्यवसाय के रूप में नियंत्रित एवं संचालित हो रही है । आज राजनीति राजनेताओं की आजीविका का साधन बन गई है। भ्रष्टाचार , कूटनीति, लोभ ,लालच को समकालीन कथाकारों ने यथार्थता से चित्रित किया है।

भारत में राजनीतिक सत्ता को देश का पर्याय माना जाने लगा है। लोकतांत्रिक दिखने वाला सत्तातंत्र अंदर से बेहद अलोकतांत्रिक एवं जन विरोधी है। अखिलेश ने अपनी ' श्रृंखला ' कहानी में धन , भ्रष्टाचार राजनीति की पोल खोलने का प्रयास किया है। उन्होंने लोकतांत्रिक प्रवृतियों के विरूद्ध आवाज उठायी हैं। समकालीन परिवेश की कहानियों में किसान , मजदूर , दलित , शोषित , स्त्री ,आदिवासी ,आदि का चित्रण हुआ हैं। हरनोट की कहानी 'जीनकाठी' में एक स्त्री के वर्तमान संघर्ष से भरी जिन्दगी का चित्र प्रस्तुत करती है। यह कहानी सावित्री के माध्यम से अतीत को तथा सुषमा के माध्यम से वर्तमान पीढ़ी के मूल्यों को सशक्त रूप में उजागर करती हैं। समकालीन राजनीति की झलक अरविन्द कुमार सिंह की कहानी ' विषपाठ ' में देखने को मिलती है। विषपाठ कहानी का रमाकान्त अपने मित्र यादव के साथ कॉलेज के ग्राउंड में आयोजित महासम्मेलन में पहुंचता है। यादव जाति के नाम पर जहर उगला जा रहा था l उस समय रमाकान्त को दूसरे मित्र तिमिर घोष का वह वाक्य याद आता है जिसमें उसका कथन था कि '' एक साजिश हो रही है - दुखी लोगों को बांट देने की। पहले हिन्दू - मुस्लिम बँटे। अब जातियाँ बँट रही हैं। एक दिन हिन्दुस्तान का हर घर और आदमी भी बँट जाएगा। गाँव शहर बन जाएगा। किसी को फुर्सत नहीं होगी दूसरों के बारे में सोचने की। संवेदना और विश्वास की नींव टूट जाएगी। साजिश करने वाले ऐश करेंगे। "(9)

भूमण्डलीकरण के दौर ने इक्कीसवीं सदी में सामाजिक , राजनीतिक , आर्थिक एवं सांस्कृतिक परिवेश को बहुत गहराई से प्रभावित किया है। पारिवारिक संबंध बिखरने लगे है। संबंधों बुनियाद अर्थ तक सीमित हो गई है। मानवीय एवं आत्मीय रिश्ते सिर्फ अर्थ केंद्रित हो गए हैं। संस्कुती ,परम्परा एवं परिवेश से दूर मध्यम वर्ग भयभीत हो रहा है। भ्रष्टाचार , भाई भतीजावाद , जातिवाद , प्रांतवाद के आधार पर राजनीति का व्यवहार हो गया है। नीचे से ऊपर तक भ्रष्टाचार का खेल चलने लगा है। धरती ,पैसा शक्ति और प्रतिष्ठा कुछ वर्ग विशेष के हात की कठपुटली बन रहा है। गरीबी , महामारी , कुपोषण , बेरोजगारी , सामाजिक अन्याय आदि प्रश्नों से महत्वपूर्ण मंदिर - मस्जिद के मसले हो गए हैं। समकालीन कहानीकारों ने सामाजिक एवं लोकतांत्रिक सरोकारों के सवालों को बखूबी चित्रित किया है l उसे अपनी कहानियों का विषय बनाया है। इन कहानियों का मानवीय बोध सकारात्मक विचार की पृष्ठभूमि बन सकता है।

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8. पुष्पपाल सिंह , समकालीन कहानी , युगबोध का संदर्भ , पृष्ठ - 117
9. अरविन्द कुमार सिंह , उसका सच , पृष्ठ - 46-47

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A Review On Phytochemistry and Pharmacology of Medicinal Plant Rhynchosia

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I. INTRODUCTION

Rynchosia is commonly known as Teen Pani is a pharmacologically diverse medicinal plant.(H.M. Burkul et al 1985 [1] Various parts of this plant, specifically Leaf , have an immense range of medicinal uses in folk medicine directed for a number of ailments (L.M. Bakshiet al 2002 [2]. A plethora of active phytochemical constituents of this plant have been revealed so far, namely, Steroids, Flavonoids, terpenoids several studies demonstrated the exploration of pharmacological potential of various parts such as leaves (Jeevan Ram et al 2004 [3]. It is used to treat skin diseases, particularly india. Rynchosia is used to treat upper respiratory ailments, swelling and joint pains. According to ethno medicinal reports provided by a South African traditional healer, the leaves are used to treat and prevent heart or chest pain and diseases. The seeds extract was found to have agglutinating effects against human red blood cells.(C.C.Blyth et al 2007[4] Rynchosia used to treat some of the symptoms observed in IFI patients; hence this research sought to isolate and screen the identified compounds from the leaves against *C. albicans* and *C. neoformans*. (R. Di et al 2010[5] In our search for essential oils for the medical, cosmetics, perfumery, fragrance or flavors industries, The pulmonary form often presents in patients with symptoms such as coughing, chest pains, fatigue, skin rash and even bruises.

Taxonomic Classification and Common name:

Familia: Fabaceae
Subfamilia: Faboideae
Tribus: Phaseoleae
Subtribus: Cajaninae
Genus: Rhynchosia
Species: Rhynchosia aurea

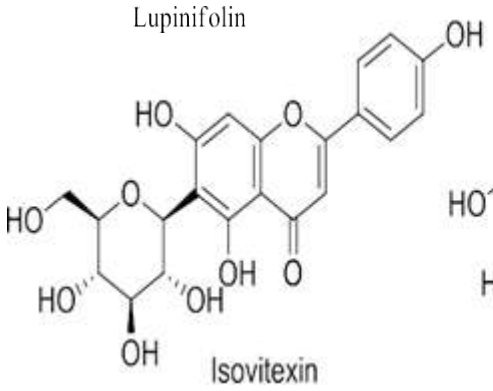
Method:

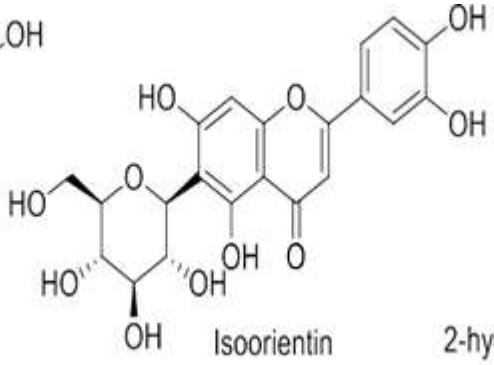
The present review covered the literature published prior to the year 2023. The information about Phytochemicals from *Rynchosia* and its pharmacological properties was gathered from search engines like

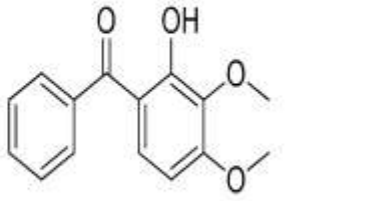
Google Scholar, NCBI, Scientific Research and Science Direct. Literature abstracts and full-text articles available from scientific revues were analyzed and bioactive compounds extracted from *Rynchosia* were included in this review.(Y.S. Lee et al 2011[6])

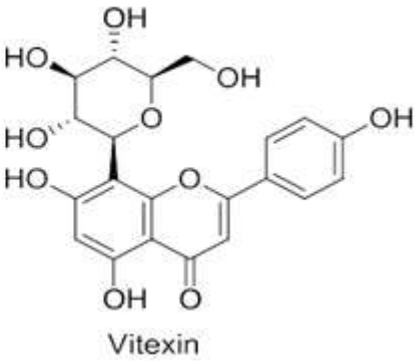
Phytochemical studies:

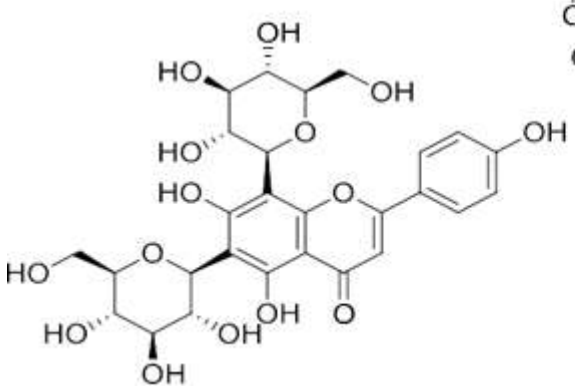
The phytochemical studies revealed that extracts of Rynchosia species s have been reported several Chemicals as isovitexin , Isoorientin , 2 hydoxy 3,4 dimethoxybenzophenone , orientin , vitexin, (M.A. pfailer 2012[7]

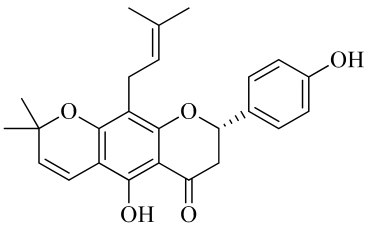


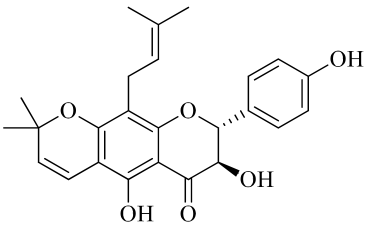


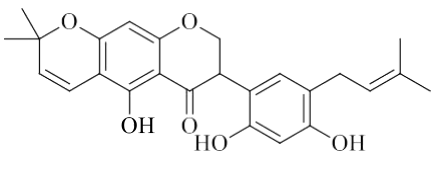


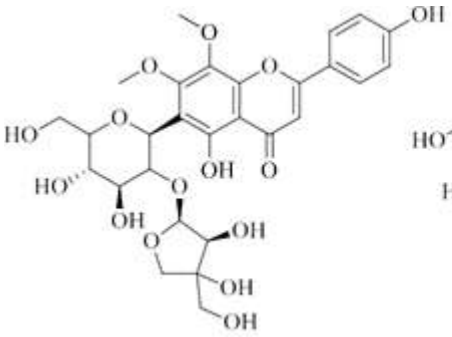




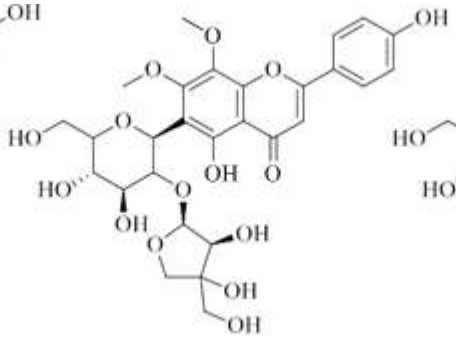




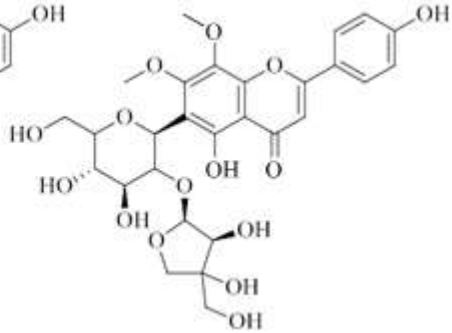




Precatorin C



Precatorin A



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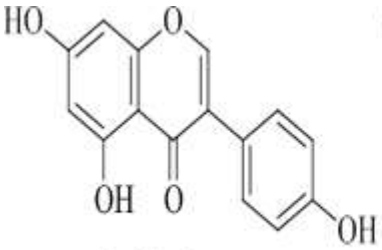
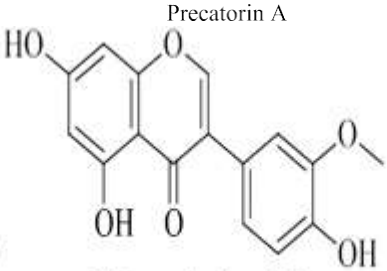
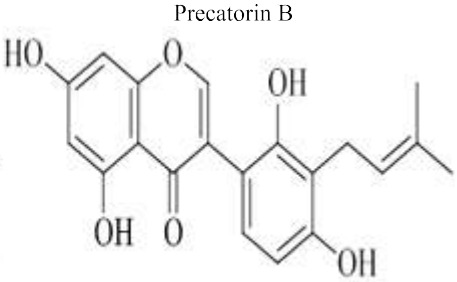


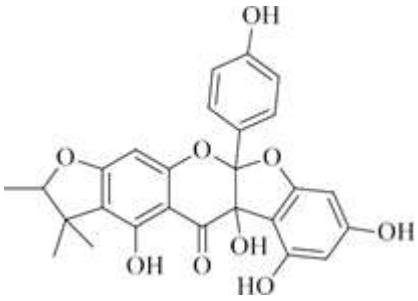
Genistein



3'-O-methylorobol



Licoisoflavone A



Sophoraisoflavone A

Pharmacology:

Most of the reports are either isolation of chemical constituents or preliminary pharmacological screening of plant extracts of Rhynchosia species. There are very few reports are on the bioassay guided isolation of natural compounds and their biological activity studies.(Coronado 2017) In the above section, under traditional uses, we have summarized the activity studies of plant extracts of Rhynchosia members and in the current section, the study focusing mostly on stated biological activities of isolated compounds of Rhynchosia members. Most of the reported activities are antibacterial, allelopathic activity, anti-angiogenic activity (D. Gozalbo et al 2014[8]

Antioxidant studies:

Flavonoids make up the largest category of secondary metabolites that can be found in plants. They exhibit a diverse array of medicinal uses, including antioxidant properties, and are the most abundant of these metabolites. The Isovitexin, isoorientin, mangiferin, and 2-hydroxy-3,4-dimethoxybenzophenone were the four flavonoids that were isolated from the flowers of *Rhynchosia* using a bioassay as a guide. These flavonoids were then put through tests to determine whether or not they had 1,1-diphenyl-2- picrylhydrazyl (DPPH) radical scavenging activity. Mangiferin and isoorientin had significant antioxidant activity. (Z. Jiang et al 2015[9]

Antimycobacterial activity:

The bacterial organisms used in the present study included: Acenotobacter calcoacetilus (NCIB 8250), Bacillus subtilis (NCIB 3610), Citrobacter freundii (NCIB 11490), Clostridium perfringens, Clostridium sporogenes (NCIB 10696), Escherichia coli (NCIB 8879), Klebsielia pneumoniae (NCIB 4184), Proteus vulgaris (NCIB 4175), Pseudomonas aeruginosa (NCIB 950), Salmonella typhii, Staphylococcus aureus (NCIB 6751) and Yersinia enterocolitica (NCIB 10460). The Antimycobacterial Activity.Isovitexin, isoorientin, quercetin-7-O-methylether, and biochanin A are the names of the four flavonoids that were recently identified from the flowers of *Rhynchosia* . Using the disc diffusion technique, each chemical was examined to see whether or not it has any antibacterial activity against gram-positive and gram-negative bacteria as well as fungi. (A.N. Moteetee et al 2016[10]

Anti-inflammatory and anti-angiogenic activities:

The compounds include genistein, 3′-O- methylorobol, licoisoflavone A, sophoraisoflavone A, and Rhynchoviscin, a completely new chemical. In addition, the isolated compounds were put through an LPS-enhanced leukocyte migration experiment to determine whether or not they have anti- inflammatory properties. Licoisofavone A, one of the other two 3′-O-methylorobols, did not demonstrate any substantial inhibition. Additionally, a Zebrafish-based vascular outgrowth assay was used to test the angiogenic activity of the extracts and compounds. (R. Rajashingham et al 2017[11]

Antibacterial activity:

A pour plate method was adopted for anti-petriplates and allowed to solidify. Wells (6mm) were made with sterile gel puncture and 10 mL of plant extract was aseptically added to each well. A control drug, ampicillin (10 mg/mL), was used as standard positive antibacterial agent along with plant extract samples.

These nutrient agar plates were incubated at 37° C for 24 h. The diameter of zone inhibition was measured in mm using a Himedia zone reader. The minimum inhibitor concentration (MIC) was determined by an agar diffusion method. The extracts were incorporated into nutrient agar at concentrations from 1 mL to 10 mL. A control plate without the extract was also set up. The lowest concentration of extract that inhibited the grow The antimicrobial activity of the four solvent extracts of Rynchosia was evaluated using the Zone Inhibition Test on MHA for bacteria and SDA for fungi [18]. In brief, Sterile filter paper discs (6 mm diameter) were impregnated with different concentrations loaded (125, 250, 500, and 1000 µg/disk for bacteria and 125 to 5000 µg/disk for fungi) and were placed on the agar plates previously inoculated with test microorganisms (Staphylococcus aureus, Escherichia coli, Pseudomonas aeruginosa, Bacillus subtilis, Candida albicans, and Aspergillus niger). Ciprofloxacin (10 µg/disk) and fluconazole (25 µg/disk) were used as positive controls for bacteria and fungi, respectively. The plates were kept in an incubator at 37 degrees Celsius for 24 hours to grow bacteria and at 30 degrees Celsius for 48 hours to grow yeast. The diameter of the inhibition zone around each disc was measured in millimeters (mm) and recorded as the mean of three replicates (D. G. Pappas et al 2018[12]

Anticancer activity:

Fresh tissue specimens were taken from cancer patients undergoing therapeutic debulking procedures. All tissue specimens were washed several times with Leibovitz (L15) medium, minced, and subjected to enzymatic proteolysis for 2 h at 37°C with gentle shaking in Leibovitz medium containing collagenase type I (200 units/mL), hyaluronidase (100 units/mL) (Sigma-Aldrich), penicillin (1000 units/mL), streptomycin (1 mg/mL), and amphotericin B (2.5 μg/mL). Tissue preparations were centrifuged for 10 min at 200 g, and the pellets were suspended in RPMI 1640 medium containing all supplements and plated in 100 mm petri dishes. After 1–3

weeks, when the cultures had reached a density of cells/plate, histopathological diagnoses and cell viability assays (see below) were performed. The chemicals include lupinifolin, lupinifolinol, cajanone, precatorin C, precatorin A, and precatorin B. In addition, the roots of Rhynchosia as well as its separated chemicals (with the exception of lupinifolinol) were tested for their potential cytotoxic action against murine macrophage cells.(C.firacative et al 2020[13]

II. RESULT AND DISCUSSION:

This survey of writing features one of the significance of certain plants of variety Rhynchosia having a place with the family Fabaceae. The presence of compounds such as isovitexin , Isoorientin , 2 hydoxy 3,4 dimethoxybenzophenone , orientin , vitexin, Lupinofoline etc. its most use in medicine and traditional medicines. It gives a scope for further studies of in vitro and in vivo activities like antiulcer activity, hypertension, rheumatic pains, anticonvulsant, anti-nociceptive activity.This study may thus provide a bird's eye perspective for the future experimental research that will be conducted in the search for novel medication

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18 To Study Allelopathic Effect of Cyperus rotundusL. on Germination Percentage and Growth of Tomato (Solanum lycopersicumL.)

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Abstract

The effect of different concentration (i.e. 10%, 20% and 30%) of aqueous Leaf extract of *Cyperus rotundus* L. at higher concentration has more pronounced inhibitory effect on germination and seedling growth of *Solanum lycopersicum* L.compared with control. The effect of various concentration of leaf extracts of *Cyperus rotundus* L.Inhibit the seed germination and Vigour index of *Solanum lycopersicum* L. Hence the result indicate that the *Cyperus rotundus* L. Treatment are harmful to the seed germination and early seedling growth hence the result concluded that the effect of *Cyperus rotundus*L.may decrease the yield of tomato.

Key words: Allelopathy, weed, seed germination, *Solanum lycopersicum*L.

Introduction

Allelopathic is defined as any direct or indirect, harmful or

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beneficial effect ofplant on another plant through release of chemical into the environment (B. K. Avchar et.al., 2012). A plant is capable of this by releasing chemicals it produces into the surrounding environment, by its root exudates, leaching, decomposition or volatilization. Put in other words, allelopathy could be said to be a natural biological defense mechanism of plants for their growth, reproduction, and survival, which they try to achieve by producing some biochemicals (Adeleke, Martina T. V 2022). Most of the weed sp. has inhibitory effect on crops however; some do exhibitstimulatory effects on crop by influencing germination, root shoot length and other growthparameter. (Chaubal S.S.).It was first used in 1937 by Austrian professor Hans Molish, causing inhibition of seed germination and seedling growth in angiosperm, especially in the dicotyledons variousplant exhibiting allelopathic effect (Kumbhar B. et.al, 2005). The allelopathic effect ofdifferent weed sp. on the germination and growth of many agronomic important crops somevegetable crops of allelopathic. Plant leaf residues often contain a variety of toxins that areknown inhibitors of seed germination growth. Leachates from plants have been shown tosuppress seed germination and vegetative propagules and early growth and decrease radicalgrowth. (Baziar M. R. 2015).

Material and Methods:

Collection and Drying of Plant Material

Plants were collected from nearby area. The entire healthy plant collected of the weeds. This entire plant given further experiment was conducted in the laboratory of botany department for experimental use and identification of weeds. That plant identify by using standard flora of the presidency of Botany by T. Cooke. This leaf material collected and stored in paper bags. (*Arafat et.al,* 2015).

Drying of plant leaves

For the experiment the collected materials is clean with the help of tap water followed by distilled water and remove the soil and dust material. This leaves were dried in blotting paper under shade air

dry condition in 2-3 days and ground by grinder to fine powder. The acquired leaf powder was kept. (*Arafat et.al,* 2015).

Methods

Aqueous extract laboratory bioassay method was used to evaluate the allelopathic activity of leaves plant in aqueous form.

Plant Aqueous Extract Method

In this method, the dried powder of plant was used or the preparation of aqueous extract of plant material. The aqueous extract of leaf was prepared air dried powder of weeds, (*Dhole et.al.,* 2013)., 10gm of shade dried powder of plant material was weighted by using electronic digital balance and was mixed with in 100ml distilled water and the mixture was soak for 24hr in a clean beaker (*Babu et.al.,* 2014). After that mixture was homogenized and solution was filtered through muslin cloth filtrate and then filtered through Whatman No.1 filter paper. These filtrates were considered as the stock solution. That stock solution. That stock solution was diluted with distilled water for preparing different concentration of leaf extracts. 10%, 20%, 30% and pure distilled water served as control. (*Shiksha R. and Jha. A K* 2016).

Selection of crop

The healthy seeds of tomato (*Solanum lycopersicum* L.) of uniform size were surface sterilized by dipping in 0.01% $Hgcl_2$ solution for 30 second and repeatedly washed three times in distilled water and blotted in filter paper for drying seeds. (*Shrivastavaet.al,* 2011 and *Dadar A.* 2014). This seed obtained from Krishi Sewa Kendra, Ashwi.

Laboratory treatment

Seed Treatment

The 30 seeds of *Solanum lycopersicum* L. (Tomato)were soaked for 24hr in extract of concentration of 10%, 20% and 30% separately control was maintained by soaking another set of 30 seeds

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in distilled water was also include for comparison each treatment was 3 replicated were kept containing 10 seeds each respectively.

Germination of seeds

Germination tests aqueous solutions were carried out with the weeds extract. The germination papers were sterilized in 1% solution of M45 fungicides for 3 minutes. The treated chilli seeds placed on germination paper. Between papers method was used for seed germination in quantity of 10 seeds per paper using double layer of germination paper. 3 replicates were set with same procedure for each concentration of weed extracts. Paper 30 seeds were arranged in three rows in per paper. The germination paper was rolled up lightly and the placed into transparent plastics bags to avoid the excessive evaporation of water and the germination paper rolls were placed in laboratory at room temperature. Observation and evolution of result were carried out at final count at 14 days by taking into account the percentage of normal seedlings in accordance to the criteria established in rules. First count of normal seedlings was considered as vigor indicative and final count as total percentage of seeds germination. Measurement of radicle and plumule length, fresh weight and dry weight were carried out using standard method. (*Mkula N P* .2006, *Behera S* 2016 and *Kadiogiu I* 2004).

Result and Discussion

In present experiment result showed that is a negative effect of allelopathic concentration on seed germination and germination indices of chilli. The highest germination percentage was observed in control treatment and the lowest was observed in concentration of weed leaf extract.

Table no. 1 Allelopathic Effect of *Cyperus rotundus*L. Leaf extract on seed germination percent of Tomato.

Effect of different concentration of *Cyperus rotundus*L. Leaf extract on seed germination percent in tomato has been presented.

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Concentration	Germination
Control	50%
10%	46.66%
20%	43.33%
30%	30%

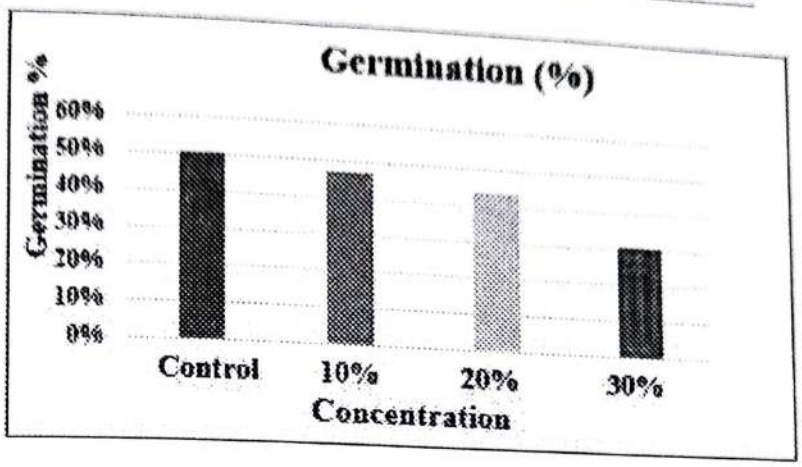

Figure – Effect of different concentration of *Cyperus rotundus* L. Leaf extract on seed germination percent in Tomato.

Result indices that, seed germination percent in tomato seeds shows with various concentration. The maximum seed germination 50% was in control as compared to various concentrations of *Cyperus rotundus* L. Leaf extracts. The minimum seed germination 30% was reported at 30% concentration Graph No.1 also proves that, control of *Cyperus rotundus*L. Leaf extract is more effective in increasing the seed germination percent than any other concentration under, study. The increasingof leaf extract with decreased the seed germination percent of tomato.

Vermaet.al, 2006 reported that the seed germination (%) was decreased in all the varieties of Soyabean with *S. nigrum,* and it was in four in both *C. dactylon* and *P. hysterophorus*, and three in *A. conyzoides*.

Table no. 2 Allelopathic Effect of *Cyperus rotundus* L. Leaf extract on Seedling vigour index in tomatoon Seedling vigour index in tomato.

Figure No.2 – Effect of different concentration of *Cyperus rotundus*L. Leaf extract on seedling vigour index in tomato.

The extracts not only decreased the shoot and root length of *Capsicum annum* L. seedling but also vigour index. The vigour index was best criteria to study the seed germination and early seedling growth. The different concentration (10%, 20% and 30%) of leaf

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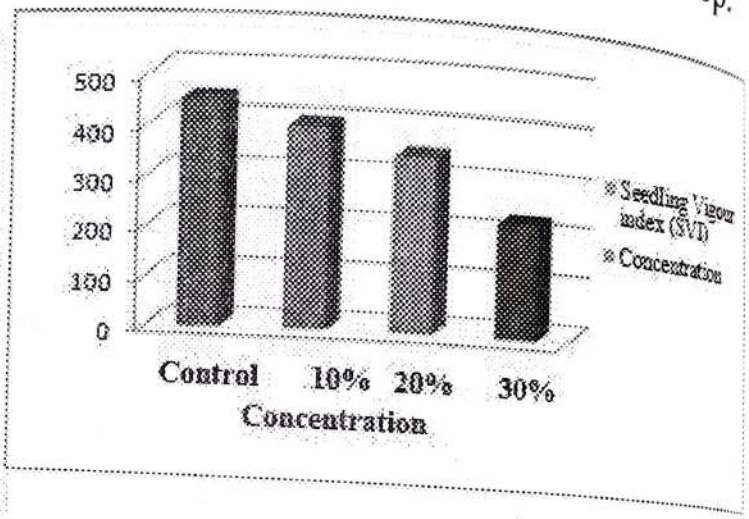
extract with decreased the seed vigour index was compared to the control. The maximum seed vigour was observed in control with 449.5 and the minimum seed vigour index was reported at 30% concentration 231. The concentration increased with the seed vigour index decreased. The leaf extracts of *Cyperus rotundus* L. Is inhibited the root length, shoot length and vigour index than any other concentration under study. Gupta A. and M. Chabbi. (2012). The aqueous extracts of all weeds under study caused inhibitory effects on seed germination; Seedling length and seedling dry weight of crop.

Concentration	Seedling Vigour index (SVI)
Control	449.5
10%	401.27
20%	350.97
30%	231



Conclusion

The effect of different concentration (i.e. 10%, 20% and 30%) of aqueous Leaf extracts of *Cyperus rotundus* L.The effect of various concentration of leaf extracts of *Cyperus rotundus* L. Inhibit the seed germination and Vigour index of *Solanum lycopersicum* L.Hence the result indicate that the *Cyperus rotundus* L. Treatment are harmful to the seed germination and early seedling growth hence the result concluded that the effect of *Cyperus rotundus* L.may decrease the yield of tomato.

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Preface

This book represents the research papers contributed by teachers and research scholars on **Current Research Scenario in Science and Technology**. Economic growth and human development are largely fueled by science, technology, and innovation. Innovation is the process of nurturing new concepts into use that creates value. It opens the inventions from various aspects of science and technology for useful application in the society. Research plays vital role in socio-economic development and contributes significantly for the wellbeing of human beings. The growing population and rising demands limits the natural resources to support the life. Thus, it is important to overview current research scenario in science and technology to develop sustainable clean-energy technology and efforts should be taken to control climate change, achieve food security, reduce disaster risks, realize sustainable industrialization and solve the problems of poverty and unemployment.

Creating a sustainable future needs a critical thinking of how one can apply technology for the developmentof innovations within existing society. It is possible only when we create public awareness through a current research scenario. The goal of sustainable future can be achieved by the understanding the basics of scientific concepts like energy conservation reduce-reuse-recycle, water harvesting, organic farming, rooftop farming use of various technologies like solar, thermal, wind, rain, geothermal and biomass. Building knowledge based society having a significant impact on our lives to promote economic growth and environmental sustainability by exploring ideas andfinding new feasible ways.

Chemistry plays a pivotal role in the strength of the Indian economy and the advancement of humankind. Chemist's achievements include life-saving pharmaceuticals, advanced energy solutions, improved agricultural productivity, and novel materials used in products from clothing to electronic devices. Current research in chemistry will help to better protect plants from pest infestations, improve food production and distribution channels, extend the shelf life of food through advances in packaging, and maintain food quality and safety. High-yield seeds in combination with new approaches to fertilization will increase food production and helpto reduce soil erosion.

Medical breakthroughs and technologies made possible through advances in chemistry provide understanding of how human health is impacted by disease and hazardous chemicals in our food, water and the environment. Current research in science plays a critical role in medical diagnosis and drug development, enabling people to live healthier lives also offers new solutions for reducing pollution and its impacts on human health. Current research in chemistry can help eliminate or reduce hazardous chemical pollution. Chemistry will help meet the affordable and clean energy goal through the development of new materials for renewable energy, by beingmore energy efficient in the chemical processing industries, and by advancing cleaner fuel technologies.

Life science research contributes for delivering better outcomes for health, the environment and industrial, agricultural and energy production. Current research in Life Science also promises more effective and efficient products to provide better health that are based on understanding of the human body and its ailments and diseases and of the interventions required to deal with them. These products can deliver on two vital and inextricably linked goals - improved health.

The increasing energy demand in scarcity of electricity that affects education and healthcare in many areas of the world, are the vital problems faced by the contemporary civilization. Physics contributes in addressing these problems by the development of alternative energy sources. The scientific research is the foundation of progress in renewable energy technologies, fuel cells as well as the nuclear power, which is considered as alternative, clean energy source. Sustainable energetic that includes photovoltaic, solar thermal applications, biomass conversion, wind energy technology, hydrogen production and fuel cells requires novel solutions provided by physics.

Dr. M. N. Kharde

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A Review of Methods for Determination of Palladium (II)

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ABSTRACT

Precious metals have increasing demand for technological applications due to their exceptional physical and chemical properties. Palladium is a lustrous silver-white platinum group metal. It has extensive applications in different fields. Hence Development of the method for the extraction, isolation and determination of palladium is important. The present article reviews the methods available for determination of palladium.

INTRODUCTION

Palladium along with other platinum group metals is found in different geological samples such as rocks, ores, concentrates, minerals, soils, and sediments with low abundance (approx. ng g^{-1}). Palladium has low density and lower melting point than other platinum group metals. peridotiote, pyroxenites and dunites. Sperrylite ($PtAs_2$), copperite ((Pt,Pd)S), braggite ((Pt,Pd,Ni)S), stibiopalladinite (Pd_3Sb) and stanopalladinite ($(Pd,Pt)_3Sn_2$) are important minerals of palladium. Palladium has high corrosion resistance. For using the palladium for different applications like jewellery, dentistry, fine instruments such as watches and some surgical tools, for electrical contacts and for the purification of hydrogen gas it is alloyed with associated metals[1]. Palladium is widely used in electrical appliances like wide screen televisions, mobiles and computers as electrodes in small multilayer ceramic capacitors. Salts of palladium are used in electroplating. Some palladium compounds causes asthma, allergy, rhino conjunctivitis and other serious health problems and known as potential health risk for human beings[2]. Biological role of Palladium is not reported. Moreover almost all palladium compounds are found to be highly toxic and carcinogenic. The largest application of palladium is as a catalyst in automobile, chemical and petroleum industries[3–5]. The most important application of palladium together with platinum and rhodium during the last 20 years is three-way catalytic converters for car engines[6]. Palladium metal electrodes are used for precipitation and acid–base analysis in aqueous and non-aqueous media[7]

METHODS FOR DETERMINATION OF PALLADIUM

Solvent Extraction and Spectrophotometric Determination Methods

Solvent extraction and spectrophotometric determination of platinum group metals finds wide application in quantitative determination of these metals[8–11]. Solvent extraction followed by spectrophotometric determination of palladium as Pd-biacetylmonoxime 2-pyridylhydrozone complex was reported. Few applications of method were reported [12]. Cefixime was found to be chelating agent for spectrophotometric determination of palladium from synthetic mixture and automobile workshop area samples. Palladium forms 2:1 Pd(II)-cefixime complex which shows maximum absorbance at 352 nm at pH 2.6[13]. L-Cystine forms a 1:2 yellow coloured complex with Pd (II) at pH 4, showed maximum absorbance at 369 nm. The method was applicable for determination of palladium(II) from alloys and catalyst samples[14]. The Pd(II) formed 1:2, a yellow colored complex with 2-mercaptoethanol in a buffer(potassium hydrogen phthalate-hydrochloric acid) of pH 4[15]. Extractive Spectrophotometric Determination of Pd(II) with sodium salt of

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Hexamethyleneiminecarbodithioate has been reported[16]. Spectrophotometric Determination of Palladium by the Colouration with 2-(2-Quinolylazo)-5-diethylaminobenzoic Acid is reported. Methods requires 10 minutes standing time[17]. 2-thiobarbituric acid was reported as a masking agent for selective and quantitative determination of palladium(II) in pH range 5-6[18]. Pytidoxal-4-phenyl-3-thiosemi-carbazone is used as an analytical reagent for rapid determination of palladium from synthetic mixtures and hydrogenation catalysts. Co(II), Ni(II), Fe(II), Fe(III), Cd(II) and Zn(II) interferes in the method[19]. 4-(N,N-diethylamino) benzaldehyde thiosemicarbazone (DEABT) forms yellow colored complex with palladium(II) and measured at 498 nm. Cu(II) and Pt(IV) interferes in determination of Pd(II)[20]. Selective spectrophotometric determination of palladium(II) ion following its preconcentration using modified magnetite nanoparticles and 3- phasic back extraction[21]. N,N,N- ,N-tetra(2-ethylhexyl) thiodiglycolamide T(2EH)TDGA is employed as extractant for spectrophotometric determination of palladium(II). The method requires extraction time of 15 minutes[22]. Benzildithiosemecarbazone forms reddish- brown coloured complex with palladium(II) which is measured spectrophotometrically at 395 nm[23]. Investigation of the complexation behaviour of palladium(II) with chloride and bromide is investigated by spectrophotometric method[24]. Extractive spectrophotometric determination of palladium(II) with o-methyl phenyl thiourea from synthetic mixtures[25]

A method for the determination of Pd by online preconcentration, separation by ion chromatography and spectrophotometric detection has been proposed in which palladium is separated as $PdCl^{2-}_4$ by anion exchange and detected spectrophotometrically at a wavelength of 407 nm[1]. Palladium is determined by using flow-through spectrophotometric sensing phase 2,2-bis-[3-(2-thiazolylazo)-4-4-hydroxy-phenyl-propane] (TAPHP)[26].

Solid Phase Extraction

Solid-liquid Extraction of palladium using 1-(2-Pyridylazo)-2-naphthol[27] and 4-(2-Pyridylazo)-resorcinol[28].Solid phase extraction is found to be useful for selective determination of metal ions. Pd(II)-imprinted amino-functionalized silica gel sorbent is prepared with the help of a surface-imprinting technique for the preconcentration and separation of Pd(II) prior to its determination by inductively coupled plasma atomic emission spectrometry[29]. [$(Fe_3O_4$Pyridine$)/Cu_3(BTC)_2$] is applied as magnetic metal-organic framework for preconcentration of Pd(II) and its determination by flame atomic absorption spectrometry (FAAS) is reported[30].

Cloud Point Extraction

The Cloud point extraction is used for the extraction of organic and inorganic compounds from various matrices using extractants like non-ionic surfactants where separation is carried from bulk solution by formation of clouds when heated to cloud point[31]. Rapid Preconcentration and spectrophotometric determination of palladium in water and soil samples using cloud point extraction technique is reported[32]. The cloud point temperature is 40^oC. A cloud-point preconcentration process to extract Pd(II) from aqueous solutions is studied. Micelle of the cationic surfactant cetyltrimethylammonium bromide is used for this purpose. The cloud point temperature is 45^oC[33]. Thio-Michler's Ketone (TMK), 4, 40-bis(dimethylamino) thiobenzophenone, for palladium(II) concentration by micellar extraction at the cloud-point temperature, and spectrophotometric determination is reported[34].

Electrothermal Vaporization

Electrothermal Vaporization method is extensively for the determination of metal ions. In electrothermal vaporization (ETV) the sample should is vaporized (not atomized). Sample is pipetted on to graphite or modified graphite surface. The passage of current through the

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graphite causes heating which is recorded as a temperature. The temperature a graphite surface can be controlled to preferentially allow destruction and removal of sample matrix. After ashing, the current is rapidly increased to allow vaporization of the analyte directly into the plasma source[35]. Electrothermal atomic absorption spectrometry is used as preconcentration method for determination of palladium using magnesium and tungsten sheets[36].

Method simultaneous determination of trace amounts of Pt(II), Pd(II) and Rh(III) using inductively coupled plasma atomic emission spectrometry as their diethyldithiocarbamate complexes by electrothermal vaporization (ETV) is reported[37]. Palladium and platinum are determined by electrothermal atomic absorption spectrometry after deposition on a graphite tube[38]. Simultaneous extraction and preconcentration of copper, silver and palladium using modified alumina followed by their determination using electrothermal atomic absorption spectrometry is carried out[39]. In-situ separation of Palladium from sample containing platinum and determination of trace amount of palladium based on different vaporization temperatures by electrothermal vaporization inductively coupled plasma optical emission spectrometry with the use of polythioether backbone modified with a diaminoisopropylmercaptane chelating group, both as solid phase extractant and chemical modifier is reported[40].

CONCLUSION

The determination of Palladium in various industrial, pharmaceutical and environmental matrices has gained increasing attention. The importance of the appearance and monitoring its concentrations and considering its environmental relevance has been generally accepted. Hence increasing demand for accurate, simple and reliable procedures for determination of palladium in many different matrices will continuously rise in the future. The comprehensive review of various analytical methods available for separation and determination of palladium have been discussed in this review.

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Preface

This book represents the research papers contributed by teachers and research scholars on **Current Research Scenario in Science and Technology**. Economic growth and human development are largely fueled by science, technology, and innovation. Innovation is the process of nurturing new concepts into use that creates value. It opens the inventions from various aspects of science and technology for useful application in the society. Research plays vital role in socio-economic development and contributes significantly for the wellbeing of human beings. The growing population and rising demands limits the natural resources to support the life. Thus, it is important to overview current research scenario in science and technology to develop sustainable clean-energy technology and efforts should be taken to control climate change, achieve food security, reduce disaster risks, realize sustainable industrialization and solve the problems of poverty and unemployment.

Creating a sustainable future needs a critical thinking of how one can apply technology for the development of innovations within existing society. It is possible only when we create public awareness through a current research scenario. The goal of sustainable future can be achieved by the understanding the basics of scientific concepts like energy conservation reduce-reuse-recycle, water harvesting, organic farming, rooftop farming use of various technologies like solar, thermal, wind, rain, geothermal and biomass. Building knowledge based society having a significant impact on our lives to promote economic growth and environmental sustainability by exploring ideas and finding new feasible ways.

Chemistry plays a pivotal role in the strength of the Indian economy and the advancement of humankind. Chemist's achievements include life-saving pharmaceuticals, advanced energy solutions, improved agricultural productivity, and novel materials used in products from clothing to electronic devices. Current research in chemistry will help to better protect plants from pest infestations, improve food production and distribution channels, extend the shelf life of food through advances in packaging, and maintain food quality and safety. High-yield seeds in combination with new approaches to fertilization will increase food production and help to reduce soil erosion.

Medical breakthroughs and technologies made possible through advances in chemistry provide understanding of how human health is impacted by disease and hazardous chemicals in our food, water and the environment. Current research in science plays a critical role in medical diagnosis and drug development, enabling people to live healthier lives also offers new solutions for reducing pollution and its impacts on human health. Current research in chemistry can help eliminate or reduce hazardous chemical pollution. Chemistry will help meet the affordable and clean energy goal through the development of new materials for renewable energy, by being more energy efficient in the chemical processing industries, and by advancing cleaner fuel technologies.

Life science research contributes for delivering better outcomes for health, the environment and industrial, agricultural and energy production. Current research in Life Science also promises more effective and efficient products to provide better health that are based on understanding of the human body and its ailments and diseases and of the interventions required to deal with them. These products can deliver on two vital and inextricably linked goals - improved health.

The increasing energy demand in scarcity of electricity that affects education and healthcare in many areas of the world, are the vital problems faced by the contemporary civilization. Physics contributes in addressing these problems by the development of alternative energy sources. The scientific research is the foundation of progress in renewable energy technologies, fuel cells as well as the nuclear power, which is considered as alternative, clean energy source. Sustainable energetic that includes photovoltaic, solar thermal applications, biomass conversion, wind energy technology, hydrogen production and fuel cells requires novel solutions provided by physics.

Dr. M. N. Kharde

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Evaluation of *Eisenia foetida* in Vermicomposting: A Sustainable Approach for Waste Transformation

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ABSTRACT

This study investigated the potential of the epigeic earthworm, Eisenia foetida, in transforming various waste materials into compost within a 16-week period. The objective was to assess the efficacy of vermicomposting in producing a more useful product with significant changes in physico-chemical properties. The results indicated a substantial reduction in Moisture (46.1%), pH (7.2), electrical conductivity (0.15), total organic carbon (36%), and Temperature (38). Furthermore, there was a decrease in sodium (NA) content (1.6%).Conversely, the study observed an increase in available macro and micronutrients. The concentrations of phosphorus (P) rose by 0.9%, copper (Cu) by 14%, zinc (Zn) by 46%, calcium (Ca) by 1.85%, and magnesium (Mg) by 1.68%. These findings suggest that Vermicompost, produced using Eisenia foetida, has the potential to be considered as an alternative technology for recycling waste materials, providing environmentally safe waste management solutions.

Keywords: Vermicomposting, physico-chemical changes, Eisenia foetida, waste transformation, sustainable agriculture.

INTRODUCTION

This study investigated the potential of the epigeic earthworm provided a comprehensive overview of the importance, especially Eudrilus eugenae, in soil ecosystems and their role in vermicomposting. Let me summarize the key points:

Earthworms as Bioidicators. Earthworms constitute over 80% of the biomass of terrestrial invertebrates. They play a crucial role in structuring and enriching soil nutrients. Earthworms can serve as bioindicators of chemical contamination in soil, offering an early warning of soil quality deterioration.Earthworms ingest large quantities of decomposed litter, manure, and organic matter, converting them into nutrient-rich topsoil. The skin of earthworms is a significant route for contaminant uptake.Earthworm biomarkers can be used in ecological risk assessments (ERA) for soil toxicity. Vermicomposting is a process where worms, particularly Eisenia foetida, convert organic materials into humus-like Vermicompost. Vermicompost has higher nutrient content per kg compared to the original organic substrate. Earthworms' biological activity produces nutrient-rich Vermicompost, facilitating nutrient transfer to plants. Eisenia foetida is a prolific earthworm species with wide temperature tolerance.

It can efficiently grow and reproduce in various organic wastes with a broad range of moisture content. The main objectives of experiments are to determine the physico-chemical changes in Eisenia foetida during a 16-week period.

Correlation analyses have been conducted on various physicochemical parameters, including earthworm population, soil moisture, soil temperature, nitrogen, and soil organic carbon. Eisenia foetida has been found effective in reducing pH, electrical conductivity (EC), and organic carbon, while increasing micronutrients and macronutrients in the Vermicompost. This work aims to contribute to the understanding of physico-chemical changes in Eisenia foetida during vermicomposting, with potential implications for waste management and plant growth.

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MATERIAL AND METHODS

Earthworms Eisenia foetida were collected from a culture reservoir and identified using various books and expert knowledge. A vermiculture house was constructed for rearing earthworms and producing vermiculture and vermicompost.

Organic waste such as agricultural residues, raw vegetable, sugar cane trash, coir pith, leaf litter, kitchen waste, and cow dung were used as feed for the earthworms.

Two separate brick constructed vermi beds (8x4x2.5 L, W, H) were prepared to adapt worms to the substrate environment.

Adaptation process involved soaking cow dung and other organic waste separately in the beds. Matured worms and cocoons were introduced into the beds after three weeks.

Substrates were mixed, maintaining moisture content between 45-55%.

After four months, worms matured and adapted to the environment. Moisture content of the feed was kept at 40-50% by sprinkling adequate water. Beds were covered with a gunny bag to maintain moisture. Temperature and pH were monitored regularly, with pH measured weekly.

Whole Study period divided into weeks 0, 4, 8, 12, and 16.Worms were hand-sorted and vermicompost was well-stirred at the end of each interval. The initial substrate and the final products were taken at 0, 4,8,12 and 16 weeks intervals the changes in the proposed physicochemical properties. The entire samples were analyzed in twice and results were averaged. The pH was determined using a doubled distilled water suspension of each vermicompost in the ratio of 1:10(w/v). Total organic carbon was measured using the method of Nelson and Sommers (1982). Total N by Kajeldahl method (Theroux et al., 2001) total P determined by means of spectrophotometer. Total Cu, Zn were determined by means of atomic absorption spectrophotometer.

RESULTS

Initial physico-chemical characteristics of the used organic waste and change in the physico-chemical properties of vermicompost obtain from the (week 4, 8, 12, and 16).the physico-chemical parameters like moisture, PH, temperature, electrical conductivity, nitrate, phosphate of Eudrilus eugenae were.

Sr.No.	physic-chemical parameters	*Eudrilus eugenae*
1.	Moisture (%)	46.1
2.	pH,	7.2
3.	Temperature	38
4.	EC	0.15
5	Na	1.6
6.	Nitrate	1.7
7.	Phosphate	0.9
8.	Cu ppm	13
9.	Zn ppm	44
10.	Ca ppm	1.85
11.	Mg ppm	1.86

DISCUSSION

This study provides a comprehensive approach to vermicomposting, including detailed methods, experimental setup, and chemical analysis, with promising results for the use of Eudrilus eugenae vermicompost in improving organic waste.

CONCLUSION

Vermicomposting emerges as a promising and sustainable solution for converting organic waste into a valuable resource with significant benefits for agriculture and the

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environment. The Vermicompost produced in this study demonstrated richness in essential micronutrients and macronutrients crucial for plant growth. Additionally, its favorable physical properties, low conductivity, and optimal stability and maturity further enhance its effectiveness as a soil amendment. The low C: N ratio observed in the Vermicompost signifies its advanced decomposition and nutrient availability, making it an ideal organic fertilizer for promoting plant health and vitality. By harnessing the power of vermicomposting, not only can organic waste be efficiently managed, but the resultant Vermicompost can also play a pivotal role in sustainable agriculture practices.

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Antioxidant Screening of Fractions Isolated from Methanolic Leaf Extract of *Pogostemon Benghalensis* (Burm. F.) O.Kuntze

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ABSTRACT

Natural antioxidants significantly contribute in preventions of many pathological consequences caused by free radicle. Furthermore plant derived antioxidant are safer and cheaper than their synthetic counterparts. The results obtained in the present investigation indicated that the *Pogostemon Benghalensis* (Burm. F.) O.Kuntze possesses strong antioxidant potential that may be due the contribution of its phenolic content and it would be advantageous to use the plant antioxidant in therapeutic drugs for the implication of human health. Moreover it could be a good source of natural antioxidant for nutraceutical industry.

Keywords: Antioxidant, *Pogostemon Benghalensis*, Phenolic content

INTRODUCTION

Extract from plants have been reported to be effective in testing febrile illnesses, sleeping sickness, wounds, diarrhea, reproductive and liver problems, circulatory and respiratory problems and parasitic infections(Chah et.al, 2006). These are continuously produced in the human body, as they are essential for energy supply, detoxification, chemical signaling and immune function. ROS are regulated by endogenous superoxide dismutase, glutathione peroxidase and catalase but due to over- production of reactive species, induced by exposure to external oxidant substances or a failure in the defence mechanism, damage to cell structure, DNA, lipids and proteins (Valko et.al, 2006). The use of medicinal plants has always been part of human culture. In some countries, governments encourage the use of indigenous forms of medicine rather than expensive imported drugs (Fasola et.al, 2005). The world Health Organization estimates that up to 80% of the world population relies on traditional medicinal system for some aspect of primary health care (Farnworth et.al, 1985). The great increase of interest in natural antioxidant of plant origin since they are viewed as promising therapeutic agent for their radical pathologies and also found to be useful as nutraceutical due to their impact on the status of human health and disease prevention (Jayaprakasha and Rao et.al., 2000). The protection afforded by plants has been attributed to various phenolic compounds which are increasingly becoming of interest in the food industry because they retard oxidative degradation of lipids and there by improve food quality (Kahkonen et.al. 1999).

MATERIAL AND METHODS:

1. Sample collection and Drying

The fresh leaves of plant specimen under present were collected from local areas lies in local area. The collected plant material was washed with tap water and air dried on the laboratory bench for 15 days and then ground to fine powder using an electric mill.

2. Extraction and Fractionation

Dried and coarsely powdered leaves (600g) were extracted with methanol by cold extraction method (Harborne, 1984; Mahida and Mohan 2006). The mixture was kept for 24 hours with frequent shaking at room temperature to allow the extraction of compounds. Extract thus obtained was passed through filter paper and respective solvent was removed using rotavapor (at 40°C). The crude extract was further fractionated with increasing polar

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solvents as prescribed by Jamil et al., (2011). The extract was solubilized in water and sequential partition with petroleum ether (3 x 200mL), ethyl acetate (3×200mL), chloroform (3 × 200mL), acetone (3 × 200mL) and ethanol (3 × 200mL) as indicated in Figure 1. Each fraction thus obtained was evaporated to dryness and subjected to polyphenolic determination and antioxidant activity.

3. Determination of Polyphenols

1. Quantification of total Phenolics

The total phenol content of the extracts was analyzed using Folin-Ciocalteu method (Cliffe et al., 1994). In brief, the extracts (0.2 ml of 1 mg/ml) were mixed with 2.5 ml of distilled water, 0.5 ml of the Folin-Ciocalteu reagent and 1.0 ml of Na,CO, reagent were added to the mixture. They were then incubated at room temperature for 30 min. The absorbance the mixture was measured spectrophotometrically (Systronic UV-VIS India) at wavelength 765 nm. The total phenol content was expressed in microgram gallic acid equivalents per milligram of extract. Triplicate measurements were taken and data were presented as mean standard deviation (Mean±SD).

4. In vitro Antioxidant Activity

1. Reducing power assay

The reducing power of extracts was evaluated according to the method described by Yen and Chen (1995) with slight modification. Briefly, different amounts of extracts (100-700µg/ml) were incubated with 2.5ml of phosphate buffer (0.2 M. pH 6.6) and 2.5 ml of 1% potassium ferricyanide [K_1 Fe (CN) 6] at 50°C for 20 min. The reaction was terminated by adding 2.5 ml of 10% TCA solution and the mixture was centrifuged at 3000 rpm for 10 min. The supernatant(1.0 ml) was mixed with 2.5 ml of distilled water and 1.0 ml of 0.1% ferric chloride ($FeCl_1$) solution and absorbance was measured at 700 nm after incubation at room temperature for 10 min. Quercetin and Butyrate Hydroxy Toluene (5-50 µg/ml) were used as positive control and experiments were performed in triplicate.

$$\text{Percentage scavenging activity} = \frac{\text{Acontrol} - \text{Atest}}{\text{Acontrol}} \times 100$$

Where $A_{control}$ is the absorbance of the control. A_{test} is the absorbance in the presence of the sample.

2. Total Antioxidant Capacity

0.4 ml of extract (1mg/ml) dissolved in water was combined in test tube with 4 ml of the reagent solution (0.6 M sulphuric acid, 28 mm sodium phosphate and 4 mm ammonium molybdate). The tubes were capped and incubated at 95°C for 90 min. After cooling to room temperature, the absorbance was measured at 695 nm. The antioxidant activity was expressed as the number of equivalents of ascorbic acid (Preito et al., 1999; Shirwaikar et al., 2004).

5. Statistical analysis

All assays were carried out in triplicates and results were analyzed statistically using one way analysis of variance (ANOVA) followed by Dennett's multiple comparison test and expressed as Mean ±SD. Statistical analysis was performed using Graph Pad (Graph Pad prism 5.00 for Windows, San Diego California USA).

RESULT AND DISCUSSION

1. Fractions yield:

The percentage yield of different fractions of methanol leaf extract of Pogostemon benghalensis are given in Tables 1 and figure 1. The fractions isolated from the leaves in the following order Ethyl acetate>Ethanol > Chloroform>Petroleum ether>Acetone. The high amount fraction is isolated in acetone fraction of the leaves.Table.1 Percentage yield of different solvent fractions.

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Fraction	Initial wt. (gm)	Final wt. (gm)	Difference (gm)	Percentage (gm)
Pet ether fraction (PBPEF)	44.678	48.531	3.853	1.92
Chloroform fraction (PBCF)	44.768	45.931	1.163	0.58
Ethyl Acetate fraction (PBEAF)	44.609	45.531	0.922	0.46
Acetone fraction (PBAF)	44.788	48.678	3.890	1.94
Ethanol fraction (PBEF)	43.242	44.350	1.108	0.59

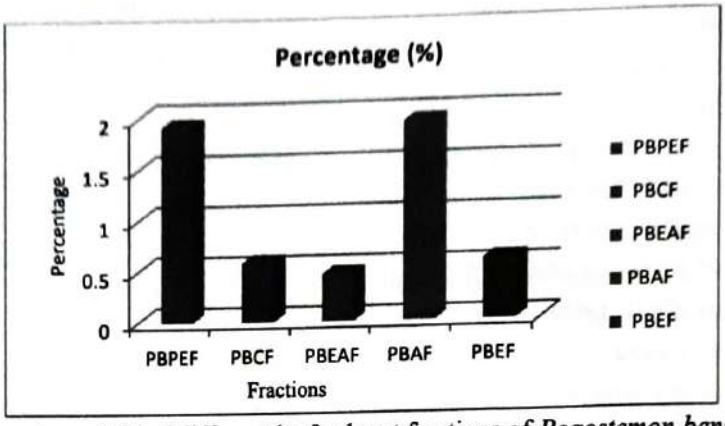

Fig.1: Percentage yield of different leaf solvent fractions of *Pogostemon benghalensis*.

2. Total phenolic content

Total phenolic contents were solvent dependent. Highest Phenolics contents were found in acetone fraction whereas Pet ether fraction reflected small quantity of Phenolics.

Table 2. Total phenolic content in different fractions of methanolic extracts of leaves *P. benghalensis*.

Fractions	Absorbance (765 nm)	Concentration per 100 µg
PBPEF	0.051	2.42
PBCF	0.092	4.38
PBEAF	0.279	13.28
PBAF	0.732	34.85
PBEF	0.599	28.52

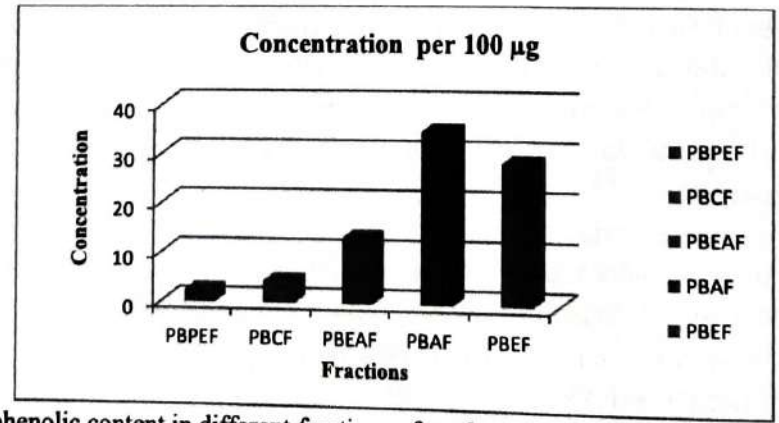

Fig.2: Total phenolic content in different fractions of methanolic extracts of leaves *P. benghalensis*.

3. Antioxidant activity

As reducing power is a significant marker to mea sure the antioxidant capability so it was determined that increase in reducing power was actually the mea sure of antioxidant manifestations of the plant. Reducing power was also concentration dependent. Reducing power activity was not significant at low doses as compared to ascorbic acid but gradual increasing concentrations of fractions increased the reducing power capability.

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Table 3. Reducing power absorbance of all the fractions for different concentrations.

Concentration (µg)	PBPEF	PBPEF	PBPEF	PBPEF	PBPEF
0	0	0	0	0	0
100	0.053	0.036	0.111	0.423	0.135
200	0.087	0.108	0.206	0.579	0.195
300	0.105	0.138	0.336	0.681	0.216
400	0.134	0.164	0.442	0.842	0.235
500	0.158	0.205	0.572	0.928	0.301

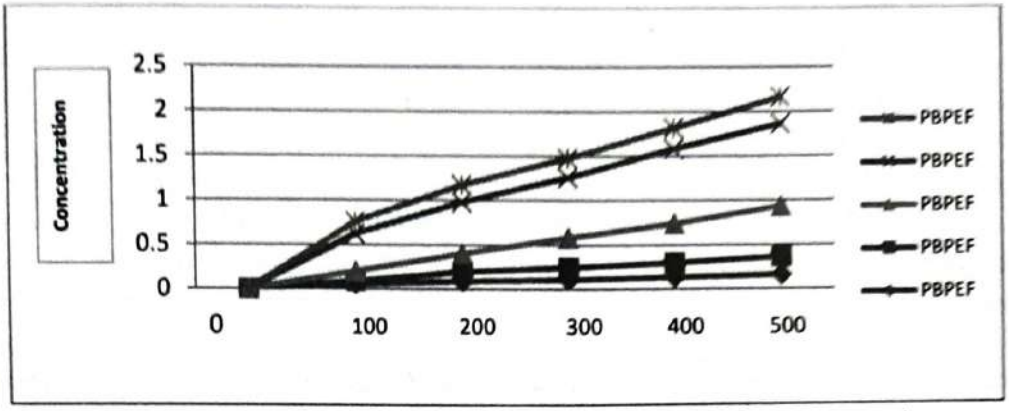

Fig. 3: Reducing power absorbance of all the fractions for different concentrations.

CONCLUSION

Natural antioxidants significantly contribute in preventions of many pathological consequences caused by free radicals. Furthermore plant derived antioxidant are safer and cheaper than their synthetic counterparts. The results obtained in the present investigation indicated that the *Pogostemon benghalensis* possesses strong antioxidant potential that may be due to the contribution of its phenolic contents and it would be advantageous to use the plant antioxidant in therapeutic drugs for the implications of human health. Moreover it could be a good source of natural antioxidant for nutraceutical industry.

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Preface

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Creating a sustainable future needs a critical thinking of how one can apply technology for the development of innovations within existing society. It is possible only when we create public awareness through a current research scenario. The goal of sustainable future can be achieved by the understanding the basics of scientific concepts like energy conservation reduce-reuse-recycle, water harvesting, organic farming, rooftop farming use of various technologies like solar, thermal, wind, rain, geothermal and biomass. Building knowledge based society having a significant impact on our lives to promote economic growth and environmental sustainability by exploring ideas and finding new feasible ways.

Chemistry plays a pivotal role in the strength of the Indian economy and the advancement of humankind. Chemist's achievements include life-saving pharmaceuticals, advanced energy solutions, improved agricultural productivity, and novel materials used in products from clothing to electronic devices. Current research in chemistry will help to better protect plants from pest infestations, improve food production and distribution channels, extend the shelf life of food through advances in packaging, and maintain food quality and safety. High-yield seeds in combination with new approaches to fertilization will increase food production and help to reduce soil erosion.

Medical breakthroughs and technologies made possible through advances in chemistry provide understanding of how human health is impacted by disease and hazardous chemicals in our food, water and the environment. Current research in science plays a critical role in medical diagnosis and drug development, enabling people to live healthier lives also offers new solutions for reducing pollution and its impacts on human health. Current research in chemistry can help eliminate or reduce hazardous chemical pollution. Chemistry will help meet the affordable and clean energy goal through the development of new materials for renewable energy, by being more energy efficient in the chemical processing industries, and by advancing cleaner fuel technologies.

Life science research contributes for delivering better outcomes for health, the environment and industrial, agricultural and energy production. Current research in Life Science also promises more effective and efficient products to provide better health that are based on understanding of the human body and its ailments and diseases and of the interventions required to deal with them. These products can deliver on two vital and inextricably linked goals - improved health.

The increasing energy demand in scarcity of electricity that affects education and healthcare in many areas of the world, are the vital problems faced by the contemporary civilization. Physics contributes in addressing these problems by the development of alternative energy sources. The scientific research is the foundation of progress in renewable energy technologies, fuel cells as well as the nuclear power, which is considered as alternative, clean energy source. Sustainable energetic that includes photovoltaic, solar thermal applications, biomass conversion, wind energy technology, hydrogen production and fuel cells requires novel solutions provided by physics.

Dr. M. N. Kharde

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Green Synthesis of Silver Nanoparticles Using Plant Extracts: A Comprehensive Review on Methods and Applications

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ABSTRACT

Silver nanoparticles (AgNPs) have garnered significant attention in recent years due to their unique physicochemical properties and wide-ranging applications. Among various synthesis methods, the use of plant extracts has emerged as a sustainable and environmentally friendly approach. Research proves their Various significance that is Ag NPs have medicinal, plasmonic, and catalytic properties. Eco-friendly synthesis approach for NPs is becoming more common in nanobiotechnology, and the demand for biological synthesis methods is growing, with the goal of eliminating hazardous and polluting agents. This review provides a comprehensive overview of the synthesis of silver nanoparticles utilizing plant extracts and explores their diverse applications.

Keywords: Plant extract, Silver Nanoparticles, Applications.

INTRODUCTION

The introduction provides a brief background on the significance of silver nanoparticles, highlighting their antimicrobial [1], catalytic and optical properties [2]. The focus then shifts to the drawbacks of conventional synthesis methods, paving the way for the exploration of green synthesis using plant extracts [3].

This section delves into the various plant extracts employed in the synthesis of silver nanoparticles. It discusses the diverse phytochemicals present in extracts, such as flavonoids, terpenoids, and phenolic compounds, which act as reducing and stabilizing agents during the synthesis process. Different plant species and parts utilized for nanoparticle synthesis are highlighted, emphasizing the wide array of bioresources available for green synthesis [4]. The synthesis of metal nanoparticles using plant extracts deliver beneficial over other biological synthesis methods which are associated with very difficult procedures such as maintaining microbial cultures [5]. After synthesis, AgNPs characterisation is essential to investigate their characteristic features such as surface area, morphology, size, shape, aggregation and solubility, etc. Since the physical and chemical properties of a nanoparticles might have a substantial influence on their biological properties, Characterisation of synthesised AgNPs is necessary before evaluating their toxicity [6]. AgNPs have distinct characteristics and broad range of applications, particularly in agriculture and plant biotechnology. They have been shown to enhance seed germination, plant growth, and photosynthetic efficiency, whereas also acting as safe and effective nano-pesticides and fertilizers. The antibacterial, antifungal, and antiviral properties of AgNPs have been widely utilized in various industries, including healthcare, textiles, building materials, medical devices, food services, cosmetics, and household materials. They are beneficial in these industries because of their ability to protect against harmful microorganisms and provide a safer and healthier environment [7].

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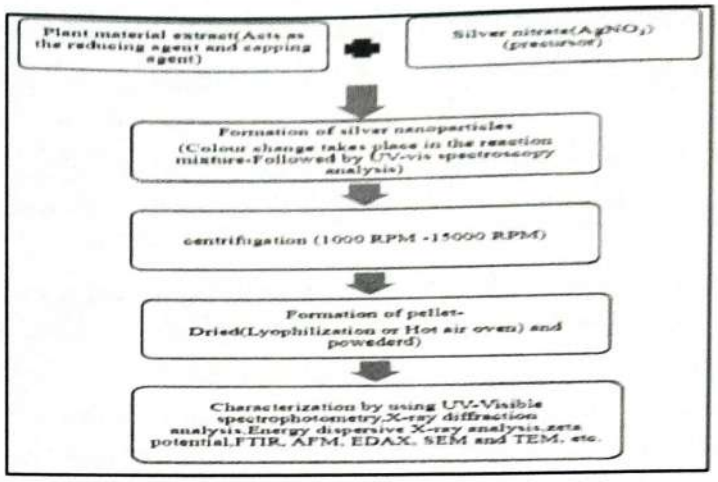

Steps associated with Plant-mediated synthesis of AgNPs.

"Top-down" and "Bottom-up" are the two approaches for synthesis of NPs as shown in. In top-down approach, suitable bulk material splits into fine particles by size reduction with different techniques i.e., Pulse laser ablation, evaporation– condensation, ball milling, pulse wire discharge method etc. In bottom-up approach, NPs can be synthesized using chemical and biological methods by self-assembly phenomenon of atoms to new nuclei which grow into a particle of nanoscale. In top-down approach, evaporation–condensation is the most general method for synthesis of metal NPs [8]. Characterization using various techniques such as spectroscopy (UV–vis, FTIR), microscopy (TEM, SEM), X-Ray diffraction (XRD), and other particle analysis [9].

Synthesis of Silver Nanoparticle using plant extracts:

Plants	Applications	Size(nm)	Plant's Parts	Shape	References
Alternanthera dentate *Tea extract*	*Antimicrobial* *Antimicrobial*	50–100 nm 20–90nm	Leaves Leaves	Spherical Spherical	10
Terminalia chebula	*antibacterial activity*	22 nm	fruit	Spherical	11
Artemisia nilagirica	*Anti-bacterial*	70–90 nm	Leaves	Spherical	12
Drimia indica	*Anti-bacterial*	50-80 nm	Leaves	spherical	13
Delonix regia	Water Treatment	20-50 nm	Seed Vessel (Pods)	Spherical	14
Rumex dentatus	Antimicrobial activity	5 and 18 nm	aerial parts	spherical	15
Cissus quadrangularis	Antibacterial activity	58 nm	stems	cubic and hexagonal	16
Mentha pulegium	Anticancer, Antimicrobial	5–50nm	Leaf Extract	Anisotropic	17
Haliclona exigua	Anticancer, Antimicrobial	100–120nm	Marine sponge Extract	Flower like	17
Cucumis prophetarum	Antibacterial activity and Antiproliferative	90nm-150nm	Leaf	polymorphic	18
Carica papaya L. cultivar Honey	Antibacterial	15nm	fruits	cubic and hexagonal	19

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Dew	activity				
Momordica cymbalaria	Antibacterial activity	15.5 nm.	fruit	spherical	20
Micrargeria wightii (M. wightii)	Antibacterial activity	30 to 70 nm	leaf	spherical	21
Pedalium murex	Antibacterial activity	20–50 nm.	leaves	spherical and uniform	22
Viola serpens	Antimicrobial	80–90nm	leaves	spherical	23
Acalypha indica	Antibacterial activity	20-30nm	leaf	-	24
Abutilon indicum	Antioxidant Activity Antibacterial Activity	5-25nm	leaf	-	25
Lepidium Sativum Plant	Anti-cancer	65 to 80 nm.	plant	semispherical	26
Crescentia cujete L.	Antimicrobial Activity	250 ± 3 and 460 ± 6 nm	Leaves	spherical	27
Ziziphus	Antibacterial	42.6548nm	Leaves	-	28
Asian spider flower (Asf) (Cleome viscosa L.)	Anticancer	20 to 50 nm	Leaves	morphological	29
Ficus microcarpa	Antibacterial activity	1nm	leaves	-	30
Onion, Tomato	Dye degradation	32.1nm, 22.6 nm	Fruit	spherical	31

CONCLUSION

The conclusion summarizes the key findings of the review, emphasizing the potential of plant-mediated synthesis in producing silver nanoparticles with unique properties and diverse applications. The environmentally sustainable nature of this approach positions it as a promising avenue for future research and industrial applications.

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Preface

This book represents the research papers contributed by teachers and research scholars on **Current Research Scenario in Science and Technology**. Economic growth and human development are largely fueled by science, technology, and innovation. Innovation is the process of nurturing new concepts into use that creates value. It opens the inventions from various aspects of science and technology for useful application in the society. Research plays vital role in socio-economic development and contributes significantly for the wellbeing of human beings. The growing population and rising demands limits the natural resources to support the life. Thus, it is important to overview current research scenario in science and technology to develop sustainable clean-energy technology and efforts should be taken to control climate change, achieve food security, reduce disaster risks, realize sustainable industrialization and solve the problems of poverty and unemployment.

Creating a sustainable future needs a critical thinking of how one can apply technology for the developmentof innovations within existing society. It is possible only when we create public awareness through a current research scenario. The goal of sustainable future can be achieved by the understanding the basics of scientific concepts like energy conservation reduce-reuse-recycle, water harvesting, organic farming, rooftop farming use of various technologies like solar, thermal, wind, rain, geothermal and biomass. Building knowledge based society having a significant impact on our lives to promote economic growth and environmental sustainability by exploring ideas andfinding new feasible ways.

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Dr. M. N. Kharde

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Review of electrochemical properties of Lithium Nickel Manganese Cobalt Oxide cathode material for lithium-ion batteries.

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ABSTRACT

The layered $Li[Ni_xCo_yMn_z]O_2$ cathode materials with a typical hexagonal α-$NaFeO_2$ structure suitable for application as cathode materials in lithium-ion batteries. Recently, lithium nickel cobalt manganese oxides have attracted extensive research, because of lithium nickel manganese oxides are promising, inexpensive, nontoxic, and have 'high thermal stability; thus, they are extensively studied as alternative cathode electrode materials to the commercial LiCoO2 electrode. However, a lot of work needs to be done to reduce cost and extend the effective lifetime. In this paper, we have reviewed the effects of the Ni content on the electrochemical properties and thermal stabilities of $Li[Ni_xCo_yMn_z]O_2$ (x = 1/3, 0.5, 0.6, 0.7, 0.8 and 0.85). The electrochemical and thermal properties of cathode are strongly dependent on its composition. An increase of the Ni content results in an increase of specific discharge capacity and total residual lithium content but the corresponding capacity retention and safety characteristics gradually decreased.

Keywords: Cathode materials; Composite materials; Lithium nickel manganese cobalt oxides.

INTRODUCTION

Lithium-ion batteries are widely used in applications such as cellular phones, digital cameras, laptops etc. due to their excellent properties such as high specific energy etc. lithium-ion batteries are known to consist of three major parts: cathode, anode and electrolyte. Cathode materials are significant for the electrochemical process and account for more than 30% of the LIB cost. The cathode material properties such as high energy density, high potential of the redox process and high electron and lithium ion conductivities, have the major influence on the high energy density and the service life of LIBs as a whole. Therefore, active search for new cathode materials for upgrading LIB's is currently in process. The cathode material lithium cobalt dioxide ($LiCoO_2$) having low thermal stability, high cost and high toxicity. Therefore, need a replacement of lithium cobalt oxide. Recently, a layered transition metal oxide lithium nickel manganese cobalt oxide introduced by Ohzuku and Makimura as a cathode materials. The combination of nickel, manganese and cobalt can provide many advantages, such as higher reversible capacity with milder thermal stability at charged state, lower cost and less toxicity than $LiCoO_2$ [1-2]. In this paper, we review the effects of the transition metal composition on the electrochemical properties and the structural and thermal stabilities of $Li[Ni_xCo_yMn_z]O_2$ (x:y:z = 1/3:1/ 3:1/3, 0.5:0.2:0.3, 0.6:0.2:0.2, 0.70:0.15:0.15, 0.8:0.1:0.1 and 0.85:0.075:0.075, hereafter defined as x = 1/3, 0.5, 0.6, 0.7, 0.8 and 0.85, respectively).

CATHODE MATERIALS

Li $[Ni_xCo_yMn_z]$ O_2 (x = 1/3, 0.5, 0.6, 0.7, 0.8 and 0.85)

The fundamental electrochemical properties of the Li $[Ni_xCo_yMn_z]$ O_2 with different composition is reviewed. The initial discharge capacity of the Li $[Ni_xCo_yMn_z]$ O_2 electrodes increased with increasing Ni content (x), which is the main redox species with values of 206 mAh g^{-1} for x = 0.85, 203 mAh g^{-1} for x = 0.8, 194 mAh g^{-1} for x = 0.7, 187 mAh g^{-1} for x = 0.6, 175 mAh g^{-1} for x = 0.5 and 163 mAh g^{-1} for x = 1/3[3-4].

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The discharge capacities vs. cycle number of the Li/ $Li[Ni_xCo_yMn_z]O_2$ (x = 1/3, 0.5, 0.6, 0.7, 0.8 and 0.85) cells cycled between 3.0 and 4.3 V at 25 ^{0}C and 55 ^{0}C. The tests were performed at a constant current density of 100 mA g^{-1} (0.5 C-rate). The Li^+ intercalation stability of the materials increased with decreasing Ni content (x). For example, although $Li[Ni_{0.85}Co_{0.075}Mn_{0.075}]O_2$ delivered the highest discharge capacity of 208 mAh g^{-1}, it showed a rapid decrease of capacity, leading to a capacity retention of only 55.6% (100 mAh g^{-1}) after 100 cycles at 55 ^{0}C. By contrast, the Li^+ intercalation stability of the Ni-deficient $Li[Ni_{1/3}Co_{1/3}Mn_{1/3}]O_2$ was remarkably improved, showing a capacity retention of more than 92.4% while still maintaining a discharge capacity of 150 mAh g^{-1} over the same cycling period and temperature. The capacity retentions of the other $Li[Ni_xCo_yMn_z]O_2$ materials were 90.0%, 85.1%, 78.5% and 70.2% for x values of 0.5, 0.6, 0.7 and 0.8, respectively[6-7].

The rate capability of $Li[Ni_xCo_yMn_z]O_2$ gradually improved with increasing Ni content (x). For example, the capacity retention of $Li[Ni_{1/3}Co_{1/3}Mn_{1/3}]O_2$ at 5C compared to 0.2C was 75.1%, while $Li[Ni_{0.85}Co_{0.075}Mn_{0.075}]O_2$ exhibited a much enhanced capacity retention of 90%[8-9].

The thermal stabilities of electrochemically delithiated wet $Li[Ni_xCo_yMn_z]O_2$ (x = 1/3, 0.5, 0.6, 0.7, 0.8 and 0.85) electrodes. The exothermic reaction peak temperature gradually shifted to lower temperatures accompanied with higher heat generation as the Ni content increased: 306 ^{0}C and 512.5 J g^{-1} for $Li_{0.37}[Ni_{1/3}Co_{1/3}Mn_{1/3}]O_2$, 290 ^{0}C and 605.7 J g^{-1} for $Li_{0.34}[Ni_{0.5}Co_{0.2}Mn_{0.3}]O_2$, 260 ^{0}C and 721.4 J g^{-1} for $Li_{0.30}[Ni_{0.6}Co_{0.2}Mn_{0.2}]O_2$, 242 ^{0}C and 826.3J$g^{-1}$ for $Li_{0.26}[Ni_{0.70}Co_{0.15}Mn_{0.15}]O_2$, 232 ^{0}C with 971.5 J g^{-1} for $Li_{0.23}[Ni_{0.8}Co_{0.1}Mn_{0.1}]O_2$ and 225 ^{0}C and 971.5Jg^{-1} for $Li_{0.21}[Ni_{0.85}Co_{0.075}Mn_{0.075}]O_2$. We believe that the improved thermal stability of $Li[Ni_xCo_yMn_z]O_2$ with lower Ni contents can be ascribed to the increased stable Mn^{4+} and reduced reactive Ni^+ contents, as explained previously, resulting in suppression of the increased charge transfer resistance[10]. Notably, the exothermic peak temperature decreased by a larger extent from a Ni content (x) of 0.5-0.6 indicating that $Li[Ni_xCo_yMn_z]O_2$ materials with x values greater than 0.6 have poor thermal stabilities for use in commercial cells [11-12].

CONCLUSIONS

To determine the composition of $Li[Ni_xCo_yMn_z]O_2$ (x = 1/3, 0.5, 0.6, 0.7, 0.8 and 0.85), the electrochemical and thermal properties are reviewed as a function of the Ni content. It is found that physico-chemical properties (Li^+ diffusivity, electronic conductivity, volume expansion, chemical stability, and excess lithium). There is an nearly linear decrease in the thermal stability and capacity retention as the discharge capacity is raised by increasing the relative fraction of Ni in the $Li[Ni_xCo_yMn_z]O_2$ electrodes. Increasing the relative fraction of Ni still raises the discharge capacity beyond $Li[Ni_xCo_yMn_z]O_2$, the thermal stability deteriorates at a faster rate so that the advantage gained by the increased discharge capacity is quickly negated by the concurrent deterioration of the battery safety appears that it would not be possible to develop an ideal cathode material that possesses both high capacity and high safety just by changing the composition. Hence, it is suggested that the composition of Li $[Ni_xCo_yMn_z]$ O_2 has to be selectively designed based on the required application.

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Preface

This book represents the research papers contributed by teachers and research scholars on **Current Research Scenario in Science and Technology**. Economic growth and human development are largely fueled by science, technology, and innovation. Innovation is the process of nurturing new concepts into use that creates value. It opens the inventions from various aspects of science and technology for useful application in the society. Research plays vital role in socio-economic development and contributes significantly for the wellbeing of human beings. The growing population and rising demands limits the natural resources to support the life. Thus, it is important to overview current research scenario in science and technology to develop sustainable clean-energy technology and efforts should be taken to control climate change, achieve food security, reduce disaster risks, realize sustainable industrialization and solve the problems of poverty and unemployment.

Creating a sustainable future needs a critical thinking of how one can apply technology for the developmentof innovations within existing society. It is possible only when we create public awareness through a current research scenario. The goal of sustainable future can be achieved by the understanding the basics of scientific concepts like energy conservation reduce-reuse-recycle, water harvesting, organic farming, rooftop farming use of various technologies like solar, thermal, wind, rain, geothermal and biomass. Building knowledge based society having a significant impact on our lives to promote economic growth and environmental sustainability by exploring ideas andfinding new feasible ways.

Chemistry plays a pivotal role in the strength of the Indian economy and the advancement of humankind. Chemist's achievements include life-saving pharmaceuticals, advanced energy solutions, improved agricultural productivity, and novel materials used in products from clothing to electronic devices. Current research in chemistry will help to better protect plants from pest infestations, improve food production and distribution channels, extend the shelf life of food through advances in packaging, and maintain food quality and safety. High-yield seeds in combination with new approaches to fertilization will increase food production and helpto reduce soil erosion.

Medical breakthroughs and technologies made possible through advances in chemistry provide understanding of how human health is impacted by disease and hazardous chemicals in our food, water and the environment. Current research in science plays a critical role in medical diagnosis and drug development, enabling people to live healthier lives also offers new solutions for reducing pollution and its impacts on human health. Current research in chemistry can help eliminate or reduce hazardous chemical pollution. Chemistry will help meet the affordable and clean energy goal through the development of new materials for renewable energy, by beingmore energy efficient in the chemical processing industries, and by advancing cleaner fuel technologies.

Life science research contributes for delivering better outcomes for health, the environment and industrial, agricultural and energy production. Current research in Life Science also promises more effective and efficient products to provide better health that are based on understanding of the human body and its ailments and diseases and of the interventions required to deal with them. These products can deliver on two vital and inextricably linked goals - improved health.

The increasing energy demand in scarcity of electricity that affects education and healthcare in many areas of the world, are the vital problems faced by the contemporary civilization. Physics contributes in addressing these problems by the development of alternative energy sources. The scientific research is the foundation of progress in renewable energy technologies, fuel cells as well as the nuclear power, which is considered as alternative, clean energy source. Sustainable energetic that includes photovoltaic, solar thermal applications, biomass conversion, wind energy technology, hydrogen production and fuel cells requires novel solutions provided by physics.

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Review on Spectrophotometric method for the formation of metal complexes with Thiosemicarbazone Derivative

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[1]Department of Chemistry, P.V.P. College, Pravaranagar,
[2]Arts, Commerce, Science and Computer Science College Ashvi Kd.

ABSTRACT

Thiosemicarbazones are indeed important organic reagents known for their versatile coordination chemistry and applications in various fields, including analytical chemistry. As you mentioned, they are formed by the condensation of an aldehyde or ketone with thiosemicarbazide. These compounds exhibit a broad spectrum of biological and pharmacological activities, making them significant in medicinal chemistry as well. In the context of spectrophotometric determination of metal ions, thiosemicarbazones act as chelating agents, forming complexes with metal ions. The metal complexes often exhibit distinctive colors, allowing for their detection and quantification through spectrophotometry. The absorption maximum (λmax) in the UV-visible range, as you mentioned (270-520 nm), is characteristic of these complexes. The ability of thiosemicarbazones to form complexes with a variety of metal ions, including Cadmium, Mercury, Nickel, Thallium, Bismuth, and Arsenic, underscores their utility in analytical chemistry for selective determination of these metals in sample matrices. Overall, the coordination chemistry of thiosemicarbazones and their application in spectrophotometric metal ion determination make them valuable tools in analytical and environmental chemistry.

Keywords: Spectrophotometric method, Complexing reagent, Metals.

INTRODUCTION

The thiosemicarbazone derivatives of the general formula R-CH =N-NHCSNHR[1], has attention of researchers in the area of organic and co-ordination chemistry, due to the ease of carrying out the reaction between different aldehyde groups (R-CHO) or ketones (R–CO–R′) with derivatives from thiosemicarbazide to obtain of new thiosemicarbazone derivatives. It is used as a chromogenic agent for the formation of metal complexes [1] due to their donor sets of sulphur and nitrogen containing molecules. It is versatile ligands with better coordination tendency, better selectivity, and stability to a wide variety of metal ions [2-3]. Thiosemicarbazone derivatives have a various of biological activities such as Antibacterial [4], Antineoplastic [5], Anti mycobacterium tuberculosis activity, cytotoxicity [6], Antiproliferative activity [7, 8], Antioxident, antiparasitic, anticonvulsant, Antiviral, antimicrobial, [1, 8], Antitrypanosomally activity [9]. Thiosemicarbazone derivatives are very important compounds treatment for some diseases such as cancer and their complexes with metal have wide applications in nuclear medicine and analytical chemistry [10].

Thiosemicarbazone was used in the chemical synthesis, and the majority of the compound Shows biological activity. The metallic complexes are usually formed by the coordination of transition metals with thiosemicarbazone derivatives, which are coupled by their oxygen, nitrogen, and sulphur atoms [11] and a colored metal complex ranging from moderately acidic to moderately alkaline [12]. The chelation capacity increase of thiosemicarbazone can be increase by the presence of other donor atoms that contain substituents [13]. Thiosemicarbazones act as active ligands due to the following:

i. Their coordination tendency is more effective.
ii. Their complexes become more stable.
iii. Their selectivity is superior.
iv. They may form macrocyclic ligands [14].

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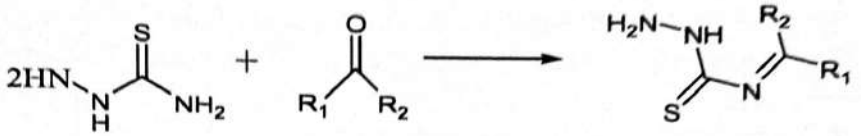
Thiosemicarbazone derivatives can be synthesized in laboratory in ethyl acetate and less amount of organic solvent and characterized by NMR, IR and elemental analysis for its purification [15].

General Reaction of synthesis of Thiosemicarbazone:



Chromogenic reagents are used for the determination of Cadmium, Mercury, Nickel, Thallium, Bismuth, and Arsenic the established conditions like λmax, pH and molar absorptivity are presented in the following Table.

Sr. No	Reagent Name	Metal Ion	Λ max	Color of complex	PH	Molar Absorptivity	Ref. No
1.	N-ethyl-3-carbazolecarbaxaldehyde-3-thiosemicarbazone	Cd(II)	380 nm	yellow	6.0	0.740 x 10^4 L mol^{-1} Cm^{-1}	16
2.	phenanthraquinone monophenyl thiosemicarbazone	Cd(II)	520 nm	Red	6.0	2.4 x 10^5 L mol^{-1} Cm^{-1}	17
3.	Benzildithiosemicarbazone	Cd (II)	360 nm	yellow	10.5	0.196 × 10^4 dm^3 mol^{-1} cm^{-}	18
4.	Tetra- thiosemicarbazone	Cd (II)	422 nm	Green	9.0	--	19
5.	2-Acetylpyridine thiosemicarbazone	Hg(II)	351 nm	yellow	6.0	5.4 x 10^4 L mol^{-1} Cm^{-1}	20
6.	3-hydroxy-5-(hydroxymethyl)-2-methylpyridine-4-carbaldehyde thiosemicarbazon	Ni (II)	430nm	yellow	6.0	1.6 x 10^4 L mol^{-1} Cm^{-1}	21
7.	N-ethyl-3-carbazolecarboxaldehyde-3-thiosemicarbazone	Ni (II)	400 nm	yellow	6.0	1.114 x 10^4 L mol^{-1} Cm^{-1}	22
8.	5-methyl-2-acetylfuran-4-methyl-3-thiosemicarbazone	Ni (II)	361 nm	yellow	9.5	1.87 x 10^4 L mol^{-1} Cm^{-1}	23
9.	Pyridoxal-4-phenyl-3-thiosemicarbazone	Ni(II)	430 nm	Reddish brown	4.0-6.0	1.92 x 10^4 L mol^{-1} Cm^{-1}	24
10.	Diacetylmonoxime-(p-anisyl)-thiosemicarbazone	TI (III)	460 nm	Reddish yellow		5.6 x10^4 L mol^{-1} Cm^{-1}	25
11.	1, 3-cyclohexanedione bis-thiosemicarbazone	Bi (III)	540 nm	Red-Violet	2.7-3.9	3.3 x 10^{-4} L mol^{-1} Cm^{-1}	26
12.	Thiophene-2-carboxaldehyde thiosemicarbazone	As(III)	281 nm	--	3.5	5.96 x 10^4 L mol^{-1} Cm^{-1}	27
13.	2,5- thiophene dicarboxaldehyde thiosemicarbazone	As(III)	270-295 nm	yellow	6.0	1.45 x 10^4 L mol^{-1} Cm^{-1}	28

CONCLUSION

The above review shows that transition metals and metalloids can be determined by spectrophotometric method. Thiosemicarbazone derivatives are widely used for the spectrophotometric determination of metal ions. The above table it can be said that all metal complexes are mostly given λmax range 270-520 nm under UV, visible region, Molar absorptivity and at pH range 1-10. The thiosemicarbazone derivatives are very precious

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reagent and spectrophotometric methods are simple, sensitive, accurate, and effective for the determination of metal ion in various samples.

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A Review on Pharmacological importance of Imidazole derivatives

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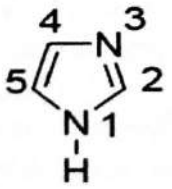
ABSTRACT

Imidazole is nitrogen-containing heterocyclic ring which shows biological and pharmaceutical properties. Imidazole is a basic unit of many drugs and its derivatives have occupied a distinctive place in the field of medicinal chemistry and have a special role in drug development. The outstanding therapeutic abilities of imidazole-related medicines have prompted medicinal chemists to develop a large amount of new chemotherapy medications. The imidazole derivatives have several biological activities such as antibacterial, anticancer, anti-tubercular, antifungal, analgesic, and anti-HIV, anti-inflammatory, anti-microbial, anticoagulants anti-viral, anti-diabetic, anti-malarial activities. In this review, we have shortened all the pharmacological and chemical applications of imidazole derivatives.

Key words: Imidazole derivatives, medicinal chemistry, biological activity etc.

INTRODUCTION

Medicinal chemistry is concerned with the discovery, development, interpretation, and identification of biologically active substances. A five-membered nitrogen-containing heterocyclic ring can be found in the structures of a variety of physiologically active synthetic substances [1]. Imidazole drugs have Variety of applications in pharmaceutical field [2].Imidazole is a five-member heterocyclic aromatic compound with two nitrogen atoms. Both Nitrogen atoms are sp2 hybridized. Imidiazole is amphoteric in nature because it behaves as an acid as well as a base. The chemical formula of the imidazole molecule is C3H4N2. Imidazole ring, which is widely observed in many natural products and most



important heterocycles have a vibrant role in medicinal chemistry for the treatment of many diseases [3]. Imidazole drugs have broadened scope in clinical medicines[4]. Due to presence of sextet of π-electrons in ring shows aromatic character with electrons pair on one of the nitrogen atoms. N-substitution is a main process in drug discovery and development. Imidazole derivatives are an N-substituted heterocyclic compounds are rich sources of diverse physical, chemical, and biological Properties [4,5].Imidazole derivatives are reported to be pharmacologically and physiologically active and it is used in the treatment of several diseases .One of the most important applications of imidazole derivatives is their use as material for treatment of denture stomatitis and in cancer [6.]The derivatives of imidazole have intensive synthetic interest due to their important biological activities, and many of these compounds are candidates for drug development and have therefore drawn the attention of various research work. [7]. In recent years, problems of multidrug-resistant microorganisms have reached a disturbing level in many countries around the world [8]. Imidazole-based derivatives have the excellent pharmacological profile [9]. On the basis of various literature surveys Imidazole derivatives shows various pharmacological possessions. Structure of Imidazole is,

In this review, we have summarized all the pharmacological, biological activities of imidazole derivatives.

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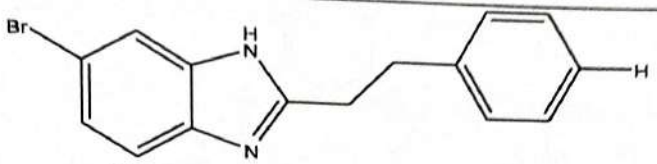
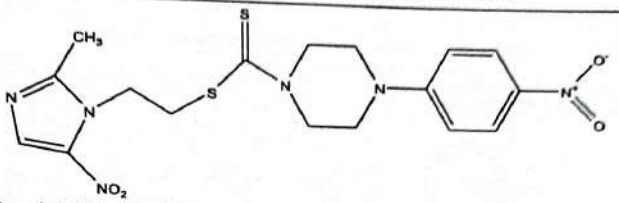
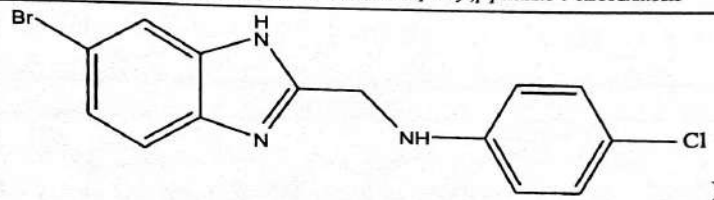
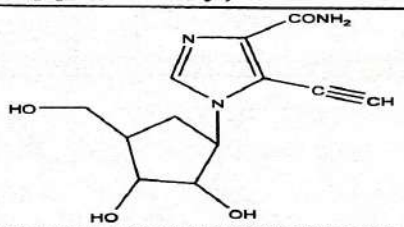
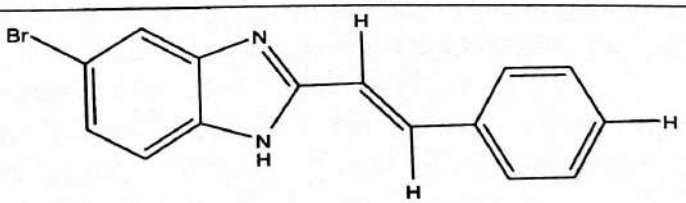
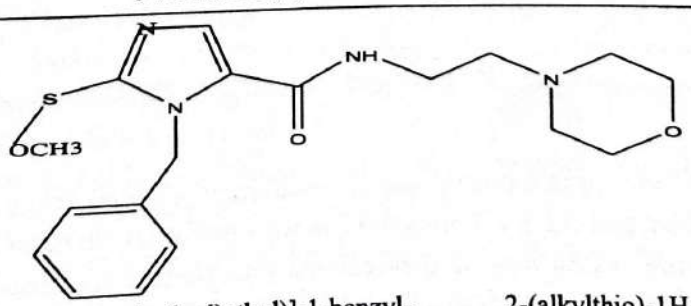
Activity	Structure	Reference
Antibacterial	 6-bromo-2-phenethyl-1*H*-benzo[*d*]imidazole	10
Antifungal	 2-(2-methyl-5-nitro-1*H*-imidazol-1-yl)ethyl 4-(4-nitrophenyl)piperazine-1-carbodithioate	11 ,21
Anti-Inflammatory And Analgesic	 N-((-bromo-1H-benzo[d]imidazole-2-yl)-4-chlorobenzamine	12 ,23
Antiviral	 5-ethynyl-1-(2,3-dihydroxy-4-(hydroxymethyl)cyclopentyl)-1*H*-imidazole-4-carboxamide	13
Antitubercular	 5-bromo-2-styryl-1*H*-benzo[*d*]imidazole	14
Antidepressant	 N-[(4-morpholinyl)ethyl)]-1-benzyl- 2-(alkylthio)-1H-imidazole-5-carboxamide	15

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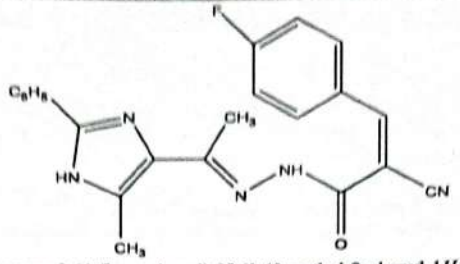
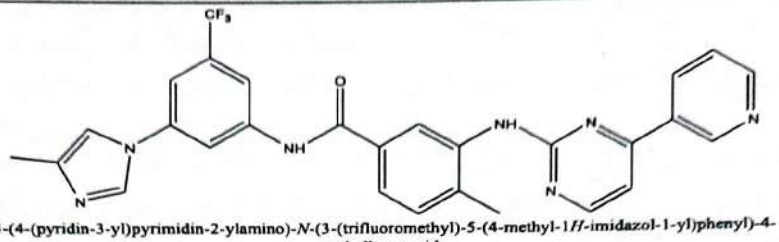
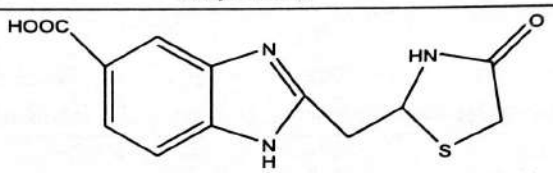
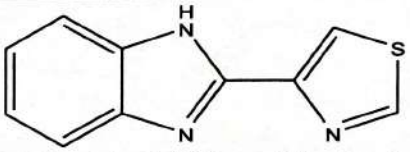
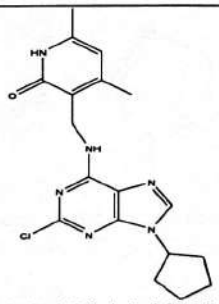
Antimicrobial	 (2*Z*,13*E*)-2-cyano-3-(4-fluorophenyl)-*N*'-(1-(5-methyl-2-phenyl-1*H*-imidazol-4-yl)ethylidene)acrylohydrazide	16
Anticancer	 3-(4-(pyridin-3-yl)pyrimidin-2-ylamino)-*N*-(3-(trifluoromethyl)-5-(4-methyl-1*H*-imidazol-1-yl)phenyl)-4-methylbenzamide	17
Antitumor activity	 2-((4-oxothiazolidin-2-yl)methyl)-1*H*-benzo[*d*]imidazole-5-carboxylic acid	18,22
Anthelmintics	 2-(thiazol-4-yl)-1*H*-benzo[*d*]imidazole	19
Inhibitory actvity	 3-((2-chloro-9-cyclopentyl-9*H*-purin-6-ylamino)methyl)-4,6-dimethylpyridin-2(1*H*)-one	20

CONCLUSION

Imidazole's have large scope in various medicinal field. Imidazole is an entity which has interesting physical and chemical properties, in the present article focus lies on analysis of these properties which in turn may be demoralized for different pharmacological activities. The possible improvements in the activity can be further achieved by slight modifications in the substituents on the basic imidazole nucleus. The numerous methods for the synthesis of imidazole have been developed and also their various structure activity relationship offer enormous scope in the field of medicinal chemistry. Therefore, this article aims to review the work reported on the biological efficacy of Imidazole derivatives to get better understand and explore its various properties and pharmacological potentials.

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Preface

This book represents the research papers contributed by teachers and research scholars on **Current Research Scenario in Science and Technology**. Economic growth and human development are largely fueled by science, technology, and innovation. Innovation is the process of nurturing new concepts into use that creates value. It opens the inventions from various aspects of science and technology for useful application in the society. Research plays vital role in socio-economic development and contributes significantly for the wellbeing of human beings. The growing population and rising demands limits the natural resources to support the life. Thus, it is important to overview current research scenario in science and technology to develop sustainable clean-energy technology and efforts should be taken to control climate change, achieve food security, reduce disaster risks, realize sustainable industrialization and solve the problems of poverty and unemployment.

Creating a sustainable future needs a critical thinking of how one can apply technology for the development of innovations within existing society. It is possible only when we create public awareness through a current research scenario. The goal of sustainable future can be achieved by the understanding the basics of scientific concepts like energy conservation reduce-reuse-recycle, water harvesting, organic farming, rooftop farming use of various technologies like solar, thermal, wind, rain, geothermal and biomass. Building knowledge based society having a significant impact on our lives to promote economic growth and environmental sustainability by exploring ideas and finding new feasible ways.

Chemistry plays a pivotal role in the strength of the Indian economy and the advancement of humankind. Chemist's achievements include life-saving pharmaceuticals, advanced energy solutions, improved agricultural productivity, and novel materials used in products from clothing to electronic devices. Current research in chemistry will help to better protect plants from pest infestations, improve food production and distribution channels, extend the shelf life of food through advances in packaging, and maintain food quality and safety. High-yield seeds in combination with new approaches to fertilization will increase food production and help to reduce soil erosion.

Medical breakthroughs and technologies made possible through advances in chemistry provide understanding of how human health is impacted by disease and hazardous chemicals in our food, water and the environment. Current research in science plays a critical role in medical diagnosis and drug development, enabling people to live healthier lives also offers new solutions for reducing pollution and its impacts on human health. Current research in chemistry can help eliminate or reduce hazardous chemical pollution. Chemistry will help meet the affordable and clean energy goal through the development of new materials for renewable energy, by being more energy efficient in the chemical processing industries, and by advancing cleaner fuel technologies.

Life science research contributes for delivering better outcomes for health, the environment and industrial, agricultural and energy production. Current research in Life Science also promises more effective and efficient products to provide better health that are based on understanding of the human body and its ailments and diseases and of the interventions required to deal with them. These products can deliver on two vital and inextricably linked goals - improved health.

The increasing energy demand in scarcity of electricity that affects education and healthcare in many areas of the world, are the vital problems faced by the contemporary civilization. Physics contributes in addressing these problems by the development of alternative energy sources. The scientific research is the foundation of progress in renewable energy technologies, fuel cells as well as the nuclear power, which is considered as alternative, clean energy source. Sustainable energetic that includes photovoltaic, solar thermal applications, biomass conversion, wind energy technology, hydrogen production and fuel cells requires novel solutions provided by physics.

Dr. M. N. Kharde

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A review on: Biological Activities of Oxazole and Benzoxazole

S. B. Tribhuvan, V. S. Shinde, P. N. Khaladkar, Y. R.Talekar
Arts, Commerce, Science and Computer Science College Ashvi Kd.

ABSTRACT

Oxazole is an important heterocyclic ring having a wide spectrum of biological activities which drew the mind of researchers round the globe to synthesize various oxazole derivatives guide them for their various biological activities. The modern medicinal chemistry platform of oxazole has been sometimes satisfied as a functional lead molecule. The essential information presented in this article will work as catalyst for new views in the hunt for national design of more biologically active derivatives of oxazoles as medicinal agents. Benzoxazole nucleus is one of the most important heterocyclic compounds exhibiting remarkable medicinal activities. The present review provides a broad overview of the synthesis and Biological activities such as antimicrobial, anticancer.

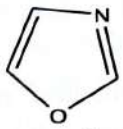
Keywords: Oxazole, Benzoxazole, Antimicrobial activity, Anticancer activity

INTRODUCTION:

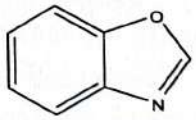
Oxazole is the parent compound for a vast class of heterocyclic aromatic organic compound these are azoles with an oxygen and a nitrogen separated by one carbon oxazoles are aromatic compounds. Oxazole are five membered heterocyclic aromatic compounds having an oxygen atom and a nitrogen atom at the 1 and 3 positions of ring. Oxazole is weakly basic in nature and its conjugate acid has a pKa of 0.8. The biological activities of the oxazole compound include antifungal, analgesic, antiproliferative and musde relaxant activity [1].

Oxazole and its derivative has been merge into a no of medicinally relevant compounds both an prior and advanced drug bidder [2]. Benzoxazole is a resourceful and important member of the heteroarenes that connects synthetic organic chemistry to medicinal, pharmaceutical, and industrial areas. It is a bicyclic planar molecule and is the most favorable moiety for researchers because it has been extensively used as a starting material for different mechanistic approaches in drug development [3].

Structure of Oxazole and Benzoxazole



oxazole



benzo[*d*]oxazole

Biological activity of Oxazole:

Oxazole derivatives are among the most useful heterocyclic compounds from both synthetic and pharmaceutical chemistry aspects and we have highlighted here the most recent developments in synthesis of oxazole and their activity profile as antipathogenic [4].

Antimicrobial activity:-

Chokkappagarietal synthesize new class of amino sulfonamido methane linked bisoxazoles, bisthiazoles and bisimidazoles in simple and adaptable synthetic methodologies. The lead compounds were assayed for antimicrobial activity [5].The spiro 3H-indole-3, 40-pyrazole pyrano oxazole derivatives given out very high activity with respect to the used prepared.

Biological activity of Benzoxazole:

Antimicrobial activity:-

Yalcin et al. synthesized 5- substituted-2-cyclohexyl methyl benzoxazoles by the

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reaction of 2–hydroxy–5-substituted aniline and cyclohexyl carboxylic acid with sodium bicarbonate. The synthesized compounds showed moderate to good antibacterial and anti-fungal activity as compared to standard [2].

Anticancer activity:-

Human colorectal carcinoma [HCT-116 (ATCC CCL247)] cancer cell line was used for evaluating the anticancer activity of the prepared benzoxazole compounds using Sulforhodamine B (SRB) assay [6]. Al-Harthy et al. have designed few benzoxazole attached to piperazine derivatives and tested it over human A-549 lung carcinoma cells [7].

CONCLUSION

Oxazole derivatives are potentially pharmacologically active. They have antimicrobial, antifungal, antiviral activities. The oxazole heterocycle is often include in medicinal chemistry studies and this review reported the oxazole derivatives with their corresponding biological activities. A new series of benzoxazole analogues was synthesized and marked for their in vitro antibacterial and anticancer activities.

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This book represents the research papers contributed by teachers and research scholars on **Current Research Scenario in Science and Technology**. Economic growth and human development are largely fueled by science, technology, and innovation. Innovation is the process of nurturing new concepts into use that creates value. It opens the inventions from various aspects of science and technology for useful application in the society. Research plays vital role in socio-economic development and contributes significantly for the wellbeing of human beings. The growing population and rising demands limits the natural resources to support the life. Thus, it is important to overview current research scenario in science and technology to develop sustainable clean-energy technology and efforts should be taken to control climate change, achieve food security, reduce disaster risks, realize sustainable industrialization and solve the problems of poverty and unemployment.

Creating a sustainable future needs a critical thinking of how one can apply technology for the development of innovations within existing society. It is possible only when we create public awareness through a current research scenario. The goal of sustainable future can be achieved by the understanding the basics of scientific concepts like energy conservation reduce-reuse-recycle, water harvesting, organic farming, rooftop farming use of various technologies like solar, thermal, wind, rain, geothermal and biomass. Building knowledge based society having a significant impact on our lives to promote economic growth and environmental sustainability by exploring ideas and finding new feasible ways.

Chemistry plays a pivotal role in the strength of the Indian economy and the advancement of humankind. Chemist's achievements include life-saving pharmaceuticals, advanced energy solutions, improved agricultural productivity, and novel materials used in products from clothing to electronic devices. Current research in chemistry will help to better protect plants from pest infestations, improve food production and distribution channels, extend the shelf life of food through advances in packaging, and maintain food quality and safety. High-yield seeds in combination with new approaches to fertilization will increase food production and help to reduce soil erosion.

Medical breakthroughs and technologies made possible through advances in chemistry provide understanding of how human health is impacted by disease and hazardous chemicals in our food, water and the environment. Current research in science plays a critical role in medical diagnosis and drug development, enabling people to live healthier lives also offers new solutions for reducing pollution and its impacts on human health. Current research in chemistry can help eliminate or reduce hazardous chemical pollution. Chemistry will help meet the affordable and clean energy goal through the development of new materials for renewable energy, by being more energy efficient in the chemical processing industries, and by advancing cleaner fuel technologies.

Life science research contributes for delivering better outcomes for health, the environment and industrial, agricultural and energy production. Current research in Life Science also promises more effective and efficient products to provide better health that are based on understanding of the human body and its ailments and diseases and of the interventions required to deal with them. These products can deliver on two vital and inextricably linked goals - improved health.

The increasing energy demand in scarcity of electricity that affects education and healthcare in many areas of the world, are the vital problems faced by the contemporary civilization. Physics contributes in addressing these problems by the development of alternative energy sources. The scientific research is the foundation of progress in renewable energy technologies, fuel cells as well as the nuclear power, which is considered as alternative, clean energy source. Sustainable energetic that includes photovoltaic, solar thermal applications, biomass conversion, wind energy technology, hydrogen production and fuel cells requires novel solutions provided by physics.

Dr. M. N. Kharde

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Applications of Nanotechnology in Drug Delivery Systems: Advancements and Challenges: A Review

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ABSTRACT

The development of nanoparticle-based drug formulations has yielded the opportunities to address and treat challenging diseases. Nanoparticles vary in size but are generally ranging from 100 to 500 nm. Through the manipulation of size, surface characteristics and material used, the nanoparticles can be developed into smart systems, encasing therapeutic and imaging agents as well as bearing stealth property. Further, these systems can deliver drug to specific tissues and provide controlled release therapy. This targeted and sustained drug delivery decreases the drug related toxicity and increase patient's compliance with less frequent dosing. Nanotechnology has proven beneficial in the treatment of cancer, AIDS and many other disease, also providing advancement in diagnostic testing.

Key Words: Nanoparticles, Nanotechnology dosing, toxicity.

INTRODUCTION

Nanotechnology, a multidisciplinary field at the convergence of physics, chemistry, and engineering, has emerged as a revolutionary force in advancing scientific applications. In particular, its integration into drug delivery systems has opened new frontiers in medical research. This paper aims to explore the profound impact of nanotechnology on drug delivery, focusing on its applications, recent advancements, and the challenges that lie ahead [1]. The traditional approaches to drug delivery often encounter limitations related to inadequate targeting, reduced efficacy, and adverse side effects. Nanoparticles, with their unique size and properties at the Nano scale, present a promising solution to overcome these challenges. By harnessing the principles of nanotechnology, researchers have been able to design innovative drug delivery systems that enhance precision, improve therapeutic outcomes, and minimize unintended consequences [2]. This exploration will delve into various types of nanoparticles, such as liposomes and polymeric nanoparticles, elucidating their role in optimizing drug delivery mechanisms. By examining real-world applications in areas like cancer treatment and personalized medicine, we can appreciate the transformative potential of nanotechnology in addressing complex medical issues. However, the journey towards integrating nanotechnology into drug delivery is not without hurdles. Challenges such as toxicity concerns, regulatory complexities, and scalability issues demand careful consideration. Understanding these limitations is crucial for devising strategies to overcome them and pave the way for the widespread implementation of nanotechnology in healthcare. As we navigate through the intricate landscape of nanotechnology in drug delivery, we will also spotlight recent advancements and breakthroughs that exemplify the dynamic nature of this field. By analyzing current research trends, this paper aims to provide insights into the future prospects of nanotechnology, anticipating further innovations and developments that hold promise for transforming the landscape of medicine. In essence, this exploration into the applications of nanotechnology in drug delivery systems seeks to unravel the potential benefits, current challenges, and future directions in this cutting-edge realm of scientific inquiry [3].

HISTORY

The roots of nanotechnology can be traced back to the visionary ideas articulated by physicist Richard Feynman in his famous 1959 lecture, "There's Plenty of Room at the

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Bottom." Feynman's insights laid the conceptual groundwork for manipulating matter at the nanoscale, envisioning a realm where scientific principles could be applied with unprecedented precision. However, it wasn't until the 1980s that the term "nanotechnology" gained prominence, thanks to the pioneering work of researchers like Eric Drexler and his influential book "Engines of Creation." Drexler's writings popularized the notion of nanoscale engineering, illustrating the potential for building structures atom by atom. The 1990s witnessed a surge in nanotechnology research, with scientists developing tools like the scanning tunneling microscope, enabling the visualization and manipulation of individual atoms. This era marked a turning point, as the scientific community began to explore practical applications of Nano scale phenomena. In the early 2000s, nanotechnology's application in medicine gained traction. The potential to engineer nanoparticles for targeted drug delivery and diagnostic purposes captured the imagination of researchers [4]. This period saw the emergence of Nano medicine as a distinct field, promising groundbreaking solutions to longstanding challenges in healthcare. The historical timeline also includes significant milestones such as the Nobel Prize in Chemistry awarded in 2016 to Jean-Pierre Savage, Fraser Stoddart, and Bernard Feringa for their work on molecular machines, showcasing the tangible impact of nanoscale advancements. As we traverse through the history of nanotechnology, it becomes evident that what began as theoretical pondering in the mid-20th century has evolved into a dynamic interdisciplinary field with applications spanning electronics, materials science, and medicine. The journey from Feynman's conceptual musings to the practical realization of nanoscale innovations highlights the transformative nature of this scientific endeavor, promising a future where the manipulation of matter at the atomic and molecular levels continues to redefine the boundaries of what is possible [5]..

APPLICATIONS

Nanotechnology has unfolded a spectrum of transformative applications across various industries. Some notable areas include:

Medicine and Healthcare:

Nanoparticles for targeted drug delivery, enhancing efficacy and minimizing side effects.

Nanoscale imaging agents for improved diagnostic accuracy.

Development of Nano biosensors for real-time monitoring of health indicators.

Electronics:

Nano scale transistors and memory devices for more powerful and efficient electronic components.

Nanoelectromechanical systems (NEMS) for advanced sensors and actuators.Nanocomposites for enhanced performance in electronic materials [6].

Energy:

Parameters and pollution levels. Nanomaterials for more efficient solar cells and energy storage devices.

Nanocatalysts for improved efficiency in fuel cells and energy conversion processes.

Nanotechnology in energy-efficient lighting and insulation materials.

Environment:

Nano remediation for the removal of pollutants and contaminants from soil and water.

Nanosensors for monitoring environmental

Nanomaterials for water purification and air filtration.

Materials Science:

Development of stronger and lighter nanomaterials for construction and aerospace.

Nano composites for improved mechanical and thermal properties in materials.

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Nano coatings for enhanced durability, corrosion resistance, and self-cleaning properties.

Food and Agriculture:

Nanoscale delivery systems for controlled release of nutrients and pesticides.

Nanosensors for detecting foodborne pathogens and spoilage.

Nanotechnology in food packaging for improved preservation and safety [7].

Textiles and Apparel:

Nanofabrics with enhanced properties such as stain resistance and UV protection.

Nanocoatings for waterproofing and antimicrobial properties in textiles.

Nanomaterials for improved comfort and functionality in clothing.

Communication:

Nanophotonics for faster and more efficient data transmission.

Development of nanoscale antennas and components for miniaturized communication devices.

Nanotechnology in the development of advanced displays and screens.

These applications underscore the diverse and impactful contributions of nanotechnology, revolutionizing industries and paving the way for innovative solutions to complex challenges [8-11].

DISCUSSION

The integration of nanotechnology into various fields has sparked considerable excitement and debate. Here are key points for discussion:

Ethical Considerations:

Explore the ethical implications of nanotechnology, especially in medicine. How should privacy concerns be addressed with nanoscale monitoring devices, and what are the ethical considerations in using nanomaterials in human enhancement?

Regulatory Challenges:

Discuss the challenges associated with regulating nanotechnology applications. How can regulatory frameworks keep pace with the rapid advancements, ensuring both safety and innovation?

Environmental Impact:

Examine the environmental implications of widespread nanotechnology use. Are there concerns about the disposal of nanomaterials, and how might they affect ecosystems?

Equity and Access:

Consider the global implications of nanotechnology adoption. How can we ensure that benefits are distributed equitably, and what challenges might arise in providing access to nanotechnology advancements in developing regions? [9-12]

Interdisciplinary Collaboration:

Discuss the importance of interdisciplinary collaboration in nanotechnology research. How can scientists, engineers, and policymakers work together to maximize the positive impact of nanotechnology while addressing potential risks?

Public Perception:

Explore public perceptions of nanotechnology. How can scientists and communicators effectively convey the benefits and potential risks to the public, fostering informed decision-making and avoiding undue fears?[13-14]

Future Directions:

Consider where nanotechnology might be headed in the future. What emerging applications hold the most promise, and what challenges need to be overcome for these advancements to become a reality?

This discussion could provide a platform to explore the broader societal and ethical

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implications of nanotechnology, encouraging a thoughtful consideration of its role in shaping our future [15].

CONCLUSION

In conclusion, the journey through the realms of nanotechnology reveals a transformative force with multifaceted implications for science, industry, and society. The applications of nanotechnology in medicine, electronics, energy, and various other fields exemplify its potential to revolutionize the way we approach challenges and harness the properties of matter at the nanoscale [16].

As nanotechnology continues to advance, ethical considerations, regulatory frameworks, and public perceptions play pivotal roles in shaping its trajectory. The discussion of these factors underscores the importance of responsible and inclusive practices to ensure that nanotechnology developments benefit humanity while minimizing potential risks.

Looking ahead, interdisciplinary collaboration remains essential for navigating the complexities of nanotechnology. By fostering dialogue among scientists, policymakers, ethicists, and the public, we can collectively steer the course of nanotechnology toward a future that balances innovation with ethical considerations and global equity [17].

In this dynamic landscape, where nanotechnology converges with societal needs and aspirations, it is crucial to remain vigilant, adaptable, and mindful of the broader impact on our world. As we conclude this exploration, the evolution of nanotechnology beckons us to continue navigating the uncharted territories of the nanoscale, propelling us toward a future where the smallest of innovations carry the potential for monumental change [17-18].

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Role of fluorine in synthetic organic chemistry: A Review

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ABSTRACT

This abstract explores the pivotal role of fluorine in synthetic organic chemistry. Fluorine's distinct properties, including electronegativity, small atomic size, and strong carbon-fluorine bonds, make it a valuable tool for designing and synthesizing organic compounds. Its influence on stereochemistry, reactivity, and stability is examined, along with its applications in fluorination reactions and fluorous chemistry. The versatile nature of fluorine contributes significantly to the advancement of synthetic methodologies, drug discovery, and material science, shaping the landscape of modern organic synthesis.

Keywords: -fluorination, fluromethylation.

INTRODUCTION

Fluorination chemistry has been developed for more than 100 years with the first examples of nucleophilic and electrophilic fluorination reactions reported in the second half of the 19th century [1], yet still today, significant challenges in fluorination chemistry remain. Current interest in fluorination chemistry is largely a consequence of the properties that fluorine substitution can impart on molecules, such as pharmaceuticals,[2], Carbon–fluorine bond formation is a challenging chemical transformation largely due to fluorine's high electronegativity and the high hydration energy of fluoride anion.[3]

1. Fluorination: Fluorine can provide many beneficial properties when incorporated into a molecule. Modulation of the pKaH of functional groups proximal to fluorine substitution [2a, 4] can result in increased membrane penetration at physiological pH.[5]. Fluorinated arenes are more lipophilic than their non-fluorinated counterparts,[4, 6] which can be used to advantage in drug development.[2a, 2c-e, 2g, h] Fluorine is sometimes used as an isostere for hydrogen in medicinal chemistry, but the van der Waals radius of fluorine is more similar to oxygen (1.47 Å for fluorine versus 1.52 Å for oxygen and 1.20 Å for hydrogen).[7] Fluorinated compounds can be strategically used as transition state inhibitors.[2c] The high electronegativity of fluorine contributes to the high carbon–fluorine bond strength due to coulombic attraction between carbon and fluorine due to the polarized covalent bond; the large bond polarization [2f, 8] results in attractive interactions of the C–F fragment with hydrogen bond donors,[9] other fluorinated compounds,[4c, 4d, 4h, 10] polar functional groups such as carbonyls,[11] and hydrophobic moieties.[12] Fluorinated molecules can show increased binding affinity to proteins[11-12, 12c, 13] likely due to attractive polar interactions;[14] however, in many cases this phenomenon is empirically observed and rationalized ex post facto and is difficult to predict or design a priori. Most fluorinated compounds,but not all,[15] also exhibit increased metabolic stability by impeding undesired oxidative metabolism pathways.[16]

2.Fluoromethylation:-

Fluorinated functional groups such as monofluoromethyl and difluoromethyl groups have been used as oxygen mimics in molecules such as nucleotides, phosphate esters, and sulphate esters.[17] Introduction of fluoromethyl groups via a SN2 reaction with fluoromethyl halide reagents is more challenging than methylation with methyl halide reagents because the transition state involves build-up of partial positive charge on the pentacoordinate carbon functionalized with electronegative fluorine. Reactive nucleophiles and fluoromethylating reagents with good leaving groups are thus required for electrophilic fluoromethylation. Difluoromethylation and trifluoromethylation reactions via a SN2 mechanism are increasingly impeded by the compounded destabilizing effect of each additional fluorine atom. Nucleophilic fluoromethylation of electrophiles relies on the use of fluoromethide equivalents,typically containing mesomeric stabilizing groups such as sulfones. Many α-fluorinated carbanions are kinetically unstable due to 1,1-elimination to form carbenes. Although rare, an example of radical fluoromethylation has been reported.[18]

2.1. Electrophilic methods for fluoromethylation:-

Fluoromethylation of phenols, thiophenols, as well as of imidazole and indole can be

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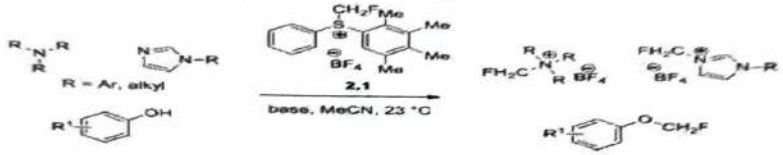
accomplished with chlorofluoromethane as the alkylating reagent as described by Hu and co-workers.[19] The reaction is postulated to occur via an SN2 mechanism, rather than through single electron transfer processes.[19] Monofluoromethylated amines, ethers, and sulfides can be unstable.

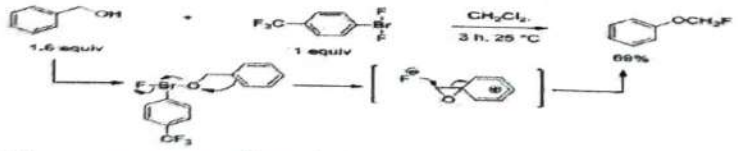
Due to the hyperconjugation of the lone pair electrons with the σ*C-F orbitals, which results in the elongation of the C–F bond and can lead to fluoride extrusion. Fluoromethylsulfonium reagent 2.1, which undergoes fluoromethylation reactions with tertiary amines, imidazoles, phosphines, carbon-based nucleophiles, and even carboxylic and sulfonic acids was developed by Prakash and Olah (Reaction 1).[20] The process by which electrophilic fluoromethyl transfer occurs is currently unclear; both two-electron and one-electron pathways are conceivable. Because reagent 2.1 is synthesized through chlorofluoromethane alkylation of sodium thiophenolate, fluoromethylation with chlorofluoromethane is more efficient and can afford comparable yields for reactive substrates such as phenols, thiophenols, and imidazoles,.[20] Electrophilic fluoromethylation of carbon nucleophiles is limited to methyne nucleophiles containing mesomeric stabilizing groups because for the corresponding methylene nucleophiles, the reaction products are susceptible to hydrogen fluoride elimination. Another fluoromethylating reagent N-dimethyl-S-fluoromethyl-S-phenylsulfoximinium, developed by Shibata and co-workers, is used for alkylation at oxygen ofnucleophiles such as phenols and α-carbonyl-enols; the reason for the chemoselectivity is currently under investigation.[21] To the best of our knowledge,



electrophilic fluoromethylation of aryl nucleophiles have not yet been reported in the literature.

Rxn(1):- Monofluoromethylation of various N-, O-, C-nucleophiles.

Another approach for the synthesis of fluoromethylated ethers involves the oxidative rearrangement of benzyl alcohols induced by XeF2 [22] or aryl difluoro-λ3-bromane (Reaction 2)[23] through phenyl group participation in the aryl carbon–oxygen bond forming step of aryl α fluoromethyl ether synthesis. Electrophilic fluorination of O,S-acetals[24] and α-carboxymethyl ethers[25, 26] can also afford α-fluoromethyl ethers. Relatedly, N fluoropyridium triflate can be used to oxidize the C–H bond on the methyl group of methyl sulfide to afford α-fluoromethyl sulfides.[27]



Rxn(2):-Oxidative rearrangement of benzyl alcohol to monofluoromethyl phenol with aryl difluoro-λ3-bromane

2.2. Nucleophilic methods for fluoromethylation:

The synthesis of α-fluoromethyl ethers[28] and sulfides[29] can be accomplished from chloromethyl ethers or thioethers through chloride displacement with KF Nucleophilic displacement requires heating in refluxing acetonitrile and starting materials often decompose before displacement occurs. Additionally, nucleophilic fluorinating reagents such as DAST,[30] tetrabutylammonium dihydrogentrifluoride,[31] and Deoxo-Fluor®[141c] have been used to induce fluoro-Pummerer rearrangements of sulfides and sulfoxides to yield α-fluoromethylsulfides. It should be noted that αfluoromethyl sulfides are easily oxidized to the α-fluoromethyl sulfoxide in ambient atmosphere.The general approach to nucleophilic fluoromethylation involves electrophiles bearing electron-withdrawing groupstabilized fluoromethide equivalents generated by deprotonation of pronucleophiles such as fluorobis(phenylsulfonyl)methane (FBSM) or α-fluoro(phenylsulfonyl)methane (FSM).

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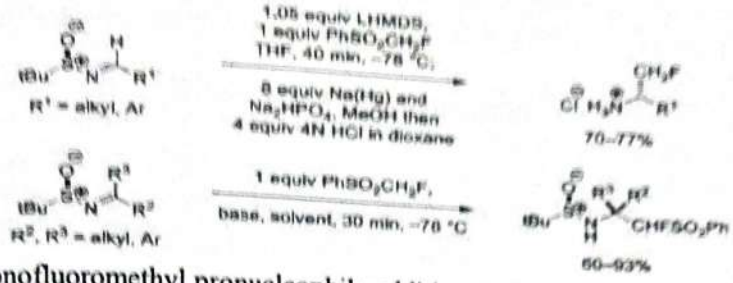
Diasteroselective fluoromethylation of chiral N-(tert-butylsulfinyl)aldimines (Reaction 3) [32] and ketimines (Reaction 3),[33] chiral α-amino N-



Rxn(3):-Monofluoromethyl pronucleophile addition to chiral N-(tert-butylsulfinyl)aldimines and ketimines

(tertbutylsulfinyl)aldimines[34] have been reported as well as fluoromethylation of aldehydes [35] (followed by a Ritter-type reaction to give α fluoromethylated acetamides[36]) and the 1,4 fluoromethylation of α,β-unsaturated carbonyls.[37] The use of achiral auxiliary implies the need for stoichiometric amounts of chiral material, but >99:1 facial selectivity can be obtained in the transformation. Diastereoselectivity is proposed to originate from a closed six-membered metal cation–chelation transition state with the sulfinyl directing group and the α-fluoro(phenylsulfonyl)methylanion. Fluorobenzylation has also been reported with fluorobenzylsulfone pronucleophiles.[38]

CONCLUSION

Summarizing the key findings, the conclusion emphasizes the pervasive impact of fluorine and fluorine-containing functional groups in diverse fields of chemistry and industry. It underscores the need for continued research to unlock the full potential of fluorine in advancing materials and pharmaceutical sciences.

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A Review: Method of Removal of heavy metal from electrocoagulation

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ABSTRACT

This review provides an optimization of electrocoagulation process for the simultaneous removal of heavy metals such as mercury, lead, and nickel from water. In doing so, the thermodynamic, adsorption isotherm and kinetic studies were also carried out. Materials and methods Magnesium alloy, magnesium, aluminium, and mild steel sheet of size 2 dm^2 were used as anode and galvanized iron as cathode. To optimize the maximum removal efficiency, different parameters like effect of initial concentration, effect of temperature and effect of current density were studied. Mercury-, lead-, and nickel-adsorbed magnesium hydroxide coagulant was characterized by SEM and EDAX.

Keywords: Electrocoagulation. Heavy metal. Adsorption. Kinetics. Thermodynamics,

INTRODUCTION

Waste water from many industries are now one of the major sources of water pollution which represent important environmental problems [1]. These pollutants in water causes considerable damage to the aquatic environment [2] and significant source of environmental pollution [3-4]. It contains several harmful chemicals that are toxic to biological life [5]. The reuse of wastewater has become an absolutenecessity and unurgent need to develop inexpensive techniques for treatment of wastewater. Number of conventional treatment techniques have been applied to overcome this problem such as catalytic oxidation, adsorption processes, ion exchange, biological processes, membrane separation processes, advanced oxidation processes, ultrafiltration, chemical precipitation, reverse osmosis, photocatalysis, chemical coagulation and electrocoagulation [6-7]. Most of these methods are effective, although theyare quite expensive and have many disadvantages and limitations [8]. Electrocoagulation (EC) is a promising technique for removal of pollutants from wastewater due to its simple, cheap to operate, easily available equipment and environmentally friendly [9]. Moreover, the mechanisms of EC are yet to be clearly understood and there has been very little consideration of the factors that influence the effective removal of ionic species particularly heavy metal ions, oil wastes, foodstuff, suspended particles, polymeric wastes, phenolic wastes, arsenic, textile and dyes from wastewater by this technique [10-11].

A clean and reasonable water supply to meet the needs of the growing global population has become agreat challenge of this century [12-13]. Surface and groundwater, which are a major source of drinkable water supplies, besides desalinated water in water-scarce areas, are commonly contaminated by variouspollutants, primarily heavy metals [14-15]. Increasing urbanization and expansion of industries, such as metallurgical industries, electroplating units, mining operations, electronic manufacturing units, fertilizer industries and leather industries, have resulted in discharging a considerable amount of wastewater containing high concentrations of trace metals, besides other contaminants, into the environment [16-17].

Definition of Electrocoagulation:

Electrocoagulation is potentially effective method for treating many types of wastewater with high decolorization efficiency and relatively little sludge formation [18-20] Electrocoagulation (EC) is a unique method for water and wastewater treatment that is based on the electrochemical dissolution of sacrificial metal electrodes into soluble or insoluble species that improves the coagulation, the adsorption or the precipitation of soluble or colloidal pollutants with highremoval efficiency [21-22].

Principles of Electrocoagulation:

The electrocoagulation technique uses an electrochemical cell to treat the water. In the simplest form, an electrochemical cell consists of two electrodes, the anode, and the

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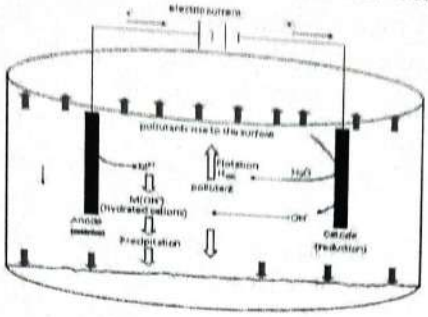
cathode, immersed in a conductingsolution or the electrolyte and connected together via an electrical circuit which includes a current source and control device, as shown in Figure [23].



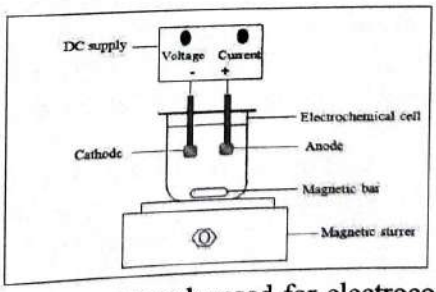
The metallic cations, generated from the anode, hydrolyse to form hydroxides, poly hydroxides and poly hydroxyl metallic compounds with a strong affinity for dispersed particles and counter ions, thus causing coagulation. Indeed, when metal salts are used in water treatment facilities, the two stages, coagulation and flocculation, are physically separated or differentiated on the basis of the time required for each of the processes [24] [25].

Mechanisms of Electrocoagulation Process:

The chemical processes occurring in the cell are oxidation and reduction reactions, which take place at the electrode/electrolyte interface. The electrode at which reduction occurs is referred as the cathode, whereas the anode is the electrode at which oxidation processes occur. The anode, also called the sacrificial electrode, corrodes to release active coagulant cations, usually aluminium or iron, to the solution. Consequently, electrocoagulation introduces metal cations in situ, rather than by external dosing. Simultaneously, electrolytic gases are generated, typically hydrogen at the cathode. The current flow in the electrocoagulation cell is maintained by the flow of electrons resulting from the driving force of the electrical source. Electrocoagulation process contains major reactions [26]: Electrolytic reactions at the electrode Formation of coagulants, Adsorption of pollutants, Removal of colloids by sedimentation or floatation

Reaction of the electrodes:

A simple electrocoagulation reactor is made up of one anode and one cathode (Figure 2). When a potential is applied from an external power source, the anode material undergoes oxidation, while the cathode will be subjected to reduction or reductive deposition of elemental metals. The electrochemicalreactions with metal M as anode may be summarized as follows:



The main plate electrodes that are commonly used for electrocoagulation process are iron and aluminium, science these two materials have been extensively used to clarify wastewater [27]. The type of coagulant produced was determined according to the electrode materials used. This coagulant effectson the coagulation and the efficiency processes [28].

Parameter affected of electrocoagulation:

2.Effect of Current Density:

One of the most critical operation parameters in EC having integral effect on process efficiency as the current density. The effect of current density is another important parameter for pollutant removal in the electrocoagulation process that effects the metal hydroxide concentration formed during the process.High current density especially causes both decomposition of the electrode material [40]. With the increase of the current density

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higher values of removal efficiencies were obtained. The higher removal efficiency of contaminants with increased current density was due to the higher number of ions produced on the electrodes that promote destabilization of the pollutant molecules and, finally, the aggregation of the induced flocs, while increasing hydrogen evolution. However, the increase of the current density causes higher consumption of the anode material [41].

3.Effect of Electrode Material:

The selection of electrode material is important. The most common electrode materials for EC are aluminium and iron. They are cheap, readily, available, and effective [42-43]. Metal electrodes are dissolved during the EC process, which occurs with coagulant species and metal hydroxides Metal anode dissolution is accompanied by hydrogen gas evolution at cathodes, the bubbles capturing and floating the suspended solids formed and thus removing contaminants [44-45]. Electrode material defines which electrochemical reactions take place in the EC system. Aluminium and iron electrodes have both been used successfully in EC systems. Aluminium dissolves in all cases as Al (III) whereas there is some controversy as to whether iron dissolves as Fe (II) or Fe (III) [46-47]. Most results indicatethat iron dissolves as Fe (II), such as [48] [49], and is oxidized in bulk solution to Fe(III) if there are oxidants, such as oxygen, present in sufficient concentration and pH is alkaline. Fe (II) is a poor coagulant compared to Fe (III) due to higher solubility of hydroxides and lower positive charge, whichexplains some poor results obtained with iron electrodes, such as in the study of Bagga et al. [49].

4.Effect of Electrolyte (NaCl) Concentration:

Sodium chloride is usually employed to increase the conductivity of the water or wastewater to be treated. The effect of electrolyte type on the removal efficiency using Feand Al electrodes respectively in the presence of different supporting electrolytes including NaCl, KCl,CaCl2, NaF, Na2CO3, Na3PO4 were studied [50]. Experiments were done using NaCl because it is cheap,and the solution contains it has high conductivity thus it need low voltage for electrocoagulation.

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Preface

This book represents the research papers contributed by teachers and research scholars on **Current Research Scenario in Science and Technology**. Economic growth and human development are largely fueled by science, technology, and innovation. Innovation is the process of nurturing new concepts into use that creates value. It opens the inventions from various aspects of science and technology for useful application in the society. Research plays vital role in socio-economic development and contributes significantly for the wellbeing of human beings. The growing population and rising demands limits the natural resources to support the life. Thus, it is important to overview current research scenario in science and technology to develop sustainable clean-energy technology and efforts should be taken to control climate change, achieve food security, reduce disaster risks, realize sustainable industrialization and solve the problems of poverty and unemployment.

Creating a sustainable future needs a critical thinking of how one can apply technology for the development of innovations within existing society. It is possible only when we create public awareness through a current research scenario. The goal of sustainable future can be achieved by the understanding the basics of scientific concepts like energy conservation reduce-reuse-recycle, water harvesting, organic farming, rooftop farming use of various technologies like solar, thermal, wind, rain, geothermal and biomass. Building knowledge based society having a significant impact on our lives to promote economic growth and environmental sustainability by exploring ideas and finding new feasible ways.

Chemistry plays a pivotal role in the strength of the Indian economy and the advancement of humankind. Chemist's achievements include life-saving pharmaceuticals, advanced energy solutions, improved agricultural productivity, and novel materials used in products from clothing to electronic devices. Current research in chemistry will help to better protect plants from pest infestations, improve food production and distribution channels, extend the shelf life of food through advances in packaging, and maintain food quality and safety. High-yield seeds in combination with new approaches to fertilization will increase food production and help to reduce soil erosion.

Medical breakthroughs and technologies made possible through advances in chemistry provide understanding of how human health is impacted by disease and hazardous chemicals in our food, water and the environment. Current research in science plays a critical role in medical diagnosis and drug development, enabling people to live healthier lives also offers new solutions for reducing pollution and its impacts on human health. Current research in chemistry can help eliminate or reduce hazardous chemical pollution. Chemistry will help meet the affordable and clean energy goal through the development of new materials for renewable energy, by being more energy efficient in the chemical processing industries, and by advancing cleaner fuel technologies.

Life science research contributes for delivering better outcomes for health, the environment and industrial, agricultural and energy production. Current research in Life Science also promises more effective and efficient products to provide better health that are based on understanding of the human body and its ailments and diseases and of the interventions required to deal with them. These products can deliver on two vital and inextricably linked goals - improved health.

The increasing energy demand in scarcity of electricity that affects education and healthcare in many areas of the world, are the vital problems faced by the contemporary civilization. Physics contributes in addressing these problems by the development of alternative energy sources. The scientific research is the foundation of progress in renewable energy technologies, fuel cells as well as the nuclear power, which is considered as alternative, clean energy source. Sustainable energetic that includes photovoltaic, solar thermal applications, biomass conversion, wind energy technology, hydrogen production and fuel cells requires novel solutions provided by physics.

Dr. M. N. Kharde

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A Review: Thiazole Scaffold as biologically active:

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ABSTRACT:

Thiazole is a good pharmacophore nucleus due to its various pharmaceutical applications. Its derivatives have a wide range of biological activities such as antioxidant, analgesic, and antimicrobial including antibacterial, antifungal, antimalarial, anticancer, antiallergic, antihypertensive, anti-inflammatory, and antipsychotic. Indeed, the thiazole scaffold is contained in more than 18 FDA-approved drugs as well as in numerous experimental drugs, the biological activities of thiazole ring-containing compounds.

Keywords: Thiazole, Biological Activity

INTRODUCTION

Thiazole is a good pharmacophore nucleus due to its various pharmaceutical applications. Its derivatives have wide range of biological activities such as antioxidant, analgesic, antibacterial, anticancer, antiallergic, antihypertensive, anti-inflammatory, antimalarial, antifungal, and antipsychotic [1–6]. The thiazole scaffold is present in more than 18 FDA-approved drugs. Among them are cefiderocol, which was the first siderophore antibiotic approved by the FDA in 2019 under the brand name Fetroja® (Figure 1). This thiazole derivative was found to be active against a wide range of multi-drug resistant Gram-negative bacteria, including Pseudomonas aeruginosa (P.aeruginosa) and used to treat complicated urinary tract infections in case when no other treatment is available [7–9]. Another thiazole-based drug is alpelisib with the brand name Pigray®, which was approved again in 2019 for the treatment of certain types of breast cancer. Worldwide, breast cancer is one of the most common severe diseases and the second leading cause of cancer death mostly in less developed countries [10]. Lusutrombopag is a medication that was approved in 2018 for the stimulation of platelet formation used to treat thrombocytopenia such as thrombocytopenia associated with chronic liver disease. Another example is cobicistat, which is a drug used for the treatment of human immunodeficiency virus infection (HIV) as a drug prolonging the half-life of some antivirotic drugs. It was approved by the FDA in 2018 [11].

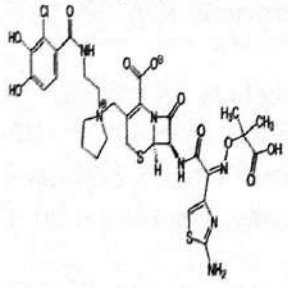

Figure 1 Cefideracol

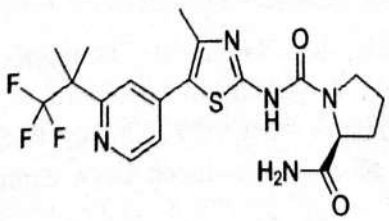

Figure 2. Alpelisib

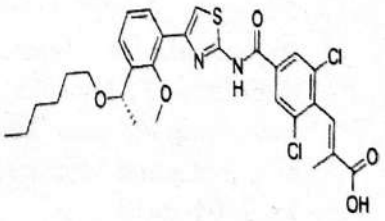

Fig. 3. Lusutrombopag

Thiazole Derivatives as Antimicrobial Agents Currently, medicinal chemists pay serious attention to the design and development of antimicrobial agents with different modes of action due to the growth of the bacterial resistance accentuated by appearance of multidrug-resistant strains such as *Staphylococcus aureus, Enterococcus sp., Acinetobacter baumannii (A. baumani), Pseudomonas aeruginosa (P. aeruginosa), Enterobacter cloeacae (E. cloacae)* [12] and Candida sp. with acquired resistance to fluconazole [13], playing roles in many human infections (e.g., pulmonary and urinary). The development of novel antimicrobial drugs was quite poor for some decades, and this precipitated in a lack of highly active drugs to resistant Gram-negative bacteria. Hence, the need for the discovery of novel

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agents targeting both sensitive and resistant strains [14] with different and rather novel modes of action is obvious.

Mohammad et al., based on their precious study [15-16] identified a novel lead thiazole compound with potent antimicrobial activity against clinically relevant isolates of MRSA. These synthesized series of 2,5-disubstituted thiazole derivatives were evaluated for their antimicrobial activity against MRSA, VISA, and VRSA strains. The most potent compound against VISA and different VRSA strains with MIC in a range of 0.7–2.8 μg/mL compared to vancomycin (MIC 0.7→190.2 μg/mL). The structure–activity relationship studies revealed that the presence of a nonpolar, hydrophobic moiety at position 2 of thiazole and the ethylidenehydrazine-1-carboximidamide head group at position 5 are beneficial for the antibacterial activity of these compounds.

Karale et al. [17] reported the synthesis of twenty-four compounds, derivatives of 1-(2-hydroxyphenyl)-3-[3-(2,4-dimethyl-thiazol-5-yl)-1-(4-fluoro-phenyl)-1H-pyrazol-4- yl]-propenone, 2-[3-(2,4-dimethyl-1,3-thiazol-5-yl)-1-(4-fluorophenyl)-1H-pyrazol-4-yl]- 4H-chromen-, 2-[30 -(2,4-dimethyl-thiazol-5-yl)-10 -(4-florophenyl)-3,4-dihydro-2H, 10H- [3,40]bipyrazolyl-5-yl]-phenol, 2-[3-(2,4-dimethylthiazol-5-yl)-1-(4-fluorophenyl)-1Hpyrazol-4-ylmethylene]-benzofuran-3-one and evaluated their antibacterial activity. Compounds were tested against bacterial strains *E. coli, Salmonella typhi, B. subtilis, and S. aureus* using the agar well diffusion method with ciprofloxacin as the reference drug. Compounds showed the highest activity among compounds tested against *Bacilus subtilis (B.subtilis*), (ZI 16, 18, and 16 mm, respectively). Compounds also active against *Staphylococcus aureus (S. aureus*) (17 mm).

CONCLUSIONS:

Thiazole derivatives were synthesized and evaluated for different kinds of biological activities such as antimicrobial, anti-inflammatory, anticancer, antidiabetic, anticonvulsant, antitubercular, as well as carbonic anhydrase inhibitors and neglected diseases. Many of studied thiazole derivatives appeared to be more potent than reference drugs, being good candidates for further modification and development new active and safe derivatives.

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Dr. M. N. Kharde

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A Review: Applications of HPLC in Pharmaceurical Analysis

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ABSTRACT

HPLC is one of the main useful analytical technique among all the different chromatographic methods. HPLC is a versatile, safest, and fastest chromatographic technique for quality control of drug component. HPLC is a method for the separation of various elements in plants extracts that resemble a specific and sensitive process. High Pressure Liquid Chromatography (HPLC) iscurrently being used Revised on 11 May 2021, Accepted on 01 June 2021in almost every research laboratory and pharmaceutical industry to detect, separate,and quantify the drug.

Keyword: HPLC, HPLC Application, Pharmaceutical Application, HPLC methods, HPLC Detectors

INTRODUCTION

HPLC is an analytical technique in whichsolutes are resolved by differential rates of elution as they pass through a chromatographic column [1]. Liquidchromatography is the science of separating the chemical compounds that are in the sample. Afterward, these chemical compounds can identify and quantitate whatis. Reversed-phase HPLC (RP-HPLC) is one of the more popular methods due toits speed, column stability, and capacity to separate a wide range of compounds.The latest HPLC instruments can develop up to 6,000 psi [400 bar] of pressure,and consists of improved injectors, detectors, and columns. HPLC began to take hold in the mid-to-late 1970s with continued advances in performance during this time [smaller particles, even higher pressure], the acronym HPLC remained the same, but the name was change to high-performance liquid chromatography.[2] Your HPLC success depends on three things:

The suitability of the equipment you buy,Your ability to keep it up and running (or find someone to service it) and the support you receive, starting out in new directions or in solving problemsthat come up.

High-performance liquid chromatography or High pressure liquid chromatography (HPLC) is a specific form of column chromatography generally used in biochemistry and analysis to separate, identify, and quantify the active compounds. [15 & 16]

HPLC INDUSTRY APPLICATIONS

There is a wide variety of applications throughout the process of creating a new drug from drug discovery to the manufacture of formulated products that willbe administered to patients. This Process to create a new drug can be divided into3 main stages

Drug discovery

Drug development

Drug manufacturing.

LC-MS is the best tool for compound identification and characterization. It may be used as a measurement tool during high throughput screening. PreparativeHPLC is also used to isolate and purify hits and lead compounds as required. Eg: a combinatorial synthesis. The ability to prove purity of enantiomeric molecules isa standard in pharmaceutical assays, for which HPLC is suitable. [3]

PHARMACEUTICAL APPLICATIONS

Tablet dissolution study of the pharmaceutical dosage form.

To control drug stability, Shelf-life determination.

Identification of active ingredients.

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Pharmaceutical quality control.
Tablet dissolution of pharmaceutical dosage forms. [4]

TYPES OF HPLC METHODS

Reverse Phase HPLC

Reversed phase chromatography has found both analytical and preparative applications in the area of biochemical separation and purification. Molecules that possess some degree of hydrophobiccharacter can be separated by reversed phase chromatography with excellent recovery and resolution. [5]

Normal Phase HPLC:

In this the mixtures of organic solvents for mobile phase and columns i.e. cyano, diol and amino silica can be used as stationary phase [6]

HPLC DETECTOR TYPES

UV detectors: The sample detection depends on the absorption of UV rays energy by the analyte. The detector comprises of accessories in order as s a UV source, grating (for light diffraction), sample passing through a tubing exposed to rays, photocell, charge conductor, etc. When the UV rays emitted by lamp pass through gratings, rays split into different wavelengths. One specific wavelength rays are passed through the sample. Some amount of light is absorbed by the sample and the unabsorbed rays which fall on a photocell.

PDA detectors are those detectors that follow principle similar to UV detectors but the range of detection extends from UV, visible and to some extent to IR region.

Fluorescence detector in this detector the fluorescence rays emitted by the sample after absorbing incident light is measured as a function of quality and quantity of the sample. The equipment comprises of accessories in order as light source, the sample passing through a tubing exposed to rays, grating (for light diffraction), and photo cell.

Electrochemical detectors this detector is especially suitable to estimate oxidizable and reducible compounds. The principle is that when a compound is either oxidized or reduced, the chemical reaction produces electron flow. This flowis measured as the current which is the function of type and quantity of compound. **Refractive Index detectors** these are detectors that measure the change of the refractive index of the eluent from the column with respect to the pure mobile phase. [7 & 8]

SELECTING AN HPLC METHOD & INITIAL CONDITION:

First classify the sample as regular or special we define regular samples as typical mixtures of small molecules («2000 Da) that can be separated using more- or-less standardized starting conditions. Exceptions or special samples are usually better separated with a different column and customized conditions. Regular samples can be further classified as neutral or ionic. Samples classified as ionic includes acid, base, amphoteric compounds and organic salts (ionized strong acidsor bases). If the sample is neutral, buffers or additives are generally not required in the mobile phase. Acids or bases usually require the addition of a buffer to the mobile phase. For basic or cationic samples, "less acidic" reversed phase columns are recommended, and amine additives for mobile phase may be beneficial. On the basis of the initial exploratory run, isocratic or gradient elution can be selected as most suitable. [9]

CHARACTERISTICS OF HPLC

HPLC as compared with the classical Liquid Chromatography (LC) technique is characterized by:
High resolution.
Small diameter (4.6 mm), stainless steel, glass or titanium columns.
Column packing with very small (3, 5 and 10 μm) particles.

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Relatively high inlet pressures and controlled flow of the mobile phase.
Continuous flow detectors capable of handling small flow rates and detecting very small amounts. 6. Rapid analysis. [10, 11, 12]

ENVIRONMENTAL APPLICATIONS:

Solid Phase Micro Extraction-HPLC (SPME-HPLC) analysis of pesticides:

Pesticides are an important and diverse environmental and agricultural species. Their determination in formulations, in feed and food, and in complex environmental matrices (e.g., water, soil, sludge, sediments, etc.) often requires separation methods capable of high efficiency, unique selectivity, and high sensitivity. Because pesticides (organophosporus, organochlorine, carbamate, dithiocarbamate, etc.) are carcinogenic, they are problematic for humans in the course of the food chain. Residual analyses were performed to find out the concentration and type of pesticides and their metabolites left in food at the time of consumption. SPME in combination with HPLC has a wide acceptability as an analytical technique. This has great advantages over the classical sampling techniques, which are time consuming and require larger samples and solvents [13]

CONCLUSION

This review describes HPLC method development and validation in general way. A general and very simple approach for the HPLC method development for the separation of compounds was discussed.

The selection of buffer, Column, detector and wavelength and mobile phase composition (organic and pH) plays a dramatic role on the separation selectivity. HPLC is one of the most commonly used analytical technique. It is having severaladvantages over classical chromatographic techniques.

High-performance liquid chromatography is just the premier technique for Trace analysis of organic and inorganic compounds. Determination of trace compounds is very important in pharmaceutical, toxicology and environmental studies since even a trace substance can be harmful or poisonous. [18]

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Preface

This book represents the research papers contributed by teachers and research scholars on **Current Research Scenario in Science and Technology**. Economic growth and human development are largely fueled by science, technology, and innovation. Innovation is the process of nurturing new concepts into use that creates value. It opens the inventions from various aspects of science and technology for useful application in the society. Research plays vital role in socio-economic development and contributes significantly for the wellbeing of human beings. The growing population and rising demands limits the natural resources to support the life. Thus, it is important to overview current research scenario in science and technology to develop sustainable clean-energy technology and efforts should be taken to control climate change, achieve food security, reduce disaster risks, realize sustainable industrialization and solve the problems of poverty and unemployment.

Creating a sustainable future needs a critical thinking of how one can apply technology for the development of innovations within existing society. It is possible only when we create public awareness through a current research scenario. The goal of sustainable future can be achieved by the understanding the basics of scientific concepts like energy conservation reduce-reuse-recycle, water harvesting, organic farming, rooftop farming use of various technologies like solar, thermal, wind, rain, geothermal and biomass. Building knowledge based society having a significant impact on our lives to promote economic growth and environmental sustainability by exploring ideas and finding new feasible ways.

Chemistry plays a pivotal role in the strength of the Indian economy and the advancement of humankind. Chemist's achievements include life-saving pharmaceuticals, advanced energy solutions, improved agricultural productivity, and novel materials used in products from clothing to electronic devices. Current research in chemistry will help to better protect plants from pest infestations, improve food production and distribution channels, extend the shelf life of food through advances in packaging, and maintain food quality and safety. High-yield seeds in combination with new approaches to fertilization will increase food production and help to reduce soil erosion.

Medical breakthroughs and technologies made possible through advances in chemistry provide understanding of how human health is impacted by disease and hazardous chemicals in our food, water and the environment. Current research in science plays a critical role in medical diagnosis and drug development, enabling people to live healthier lives also offers new solutions for reducing pollution and its impacts on human health. Current research in chemistry can help eliminate or reduce hazardous chemical pollution. Chemistry will help meet the affordable and clean energy goal through the development of new materials for renewable energy, by being more energy efficient in the chemical processing industries, and by advancing cleaner fuel technologies.

Life science research contributes for delivering better outcomes for health, the environment and industrial, agricultural and energy production. Current research in Life Science also promises more effective and efficient products to provide better health that are based on understanding of the human body and its ailments and diseases and of the interventions required to deal with them. These products can deliver on two vital and inextricably linked goals - improved health.

The increasing energy demand in scarcity of electricity that affects education and healthcare in many areas of the world, are the vital problems faced by the contemporary civilization. Physics contributes in addressing these problems by the development of alternative energy sources. The scientific research is the foundation of progress in renewable energy technologies, fuel cells as well as the nuclear power, which is considered as alternative, clean energy source. Sustainable energetic that includes photovoltaic, solar thermal applications, biomass conversion, wind energy technology, hydrogen production and fuel cells requires novel solutions provided by physics.

Dr. M. N. Kharde

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ROLE OF PSYCHOLOGY IN SPORTS

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Abstract

Emotional stability, inner force, adaptation ability and competitive development: these are the four big categories which group thirty psychological factors that have a direct influence on sports performance. Sports psychology looks at how physical activity and mental well-being intersect. Sports psychologists help athletes maintain high levels of performance by prioritizing mental fitness. They also look at sports participation in relation to skills like teamwork and emotional regulation. Sport psychologists are educators who teach techniques to help the athlete better handle competitive situations but they don't help athletes get their life in order.

Keywords : *Sports Psychology,*

Introduction :

Sport psychologists can help athletes at all levels deal with pressure from parents, coaches, or even their own expectations. Recover from injuries. After an injury, athletes may need help tolerating pain, adhering to their physical therapy regimens, or adjusting to being sidelined. The best sports psychologists were perceived to have the following characteristics: Likable and had something very applied and concrete to offer. Flexible and able to meet individual needs by providing person-specific input. Accessible enough to establish a rapport with individual athletes, caring attitude.

Sport psychologists are interested in two main areas: (a) helping athletes use psychological principles to achieve optimal mental health and to improve performance (performance enhancement) and (b) understanding how participation in sport, exercise and physical activity affects an individual's psychological development. Psychological techniques must support the automatic engagement of developed athletic skills, respond to contextual cues, and help athletes focus on the necessary aspects of competition or training. These include focusing on the present and coping with internal and external experiences.

What Is Sports Psychology?

In simple terms, sports psychology is the study of psychological factors that influence an athlete's performance, and how mental health plays a big role in an athlete's life.

Sports Psychologist Responsibilities:

Identifying mental strengths and weaknesses that contribute to or affect an athlete's performance. Facilitating counseling and/or workshops that focus on goal setting, visualization, and relaxation. Enhancing an athlete's performance through visualization techniques.

5 Theories and Facts of Sports Psychology

Mental toughness : In sport, mental toughness is necessary in order to play at the elite level; factors influencing the extent, include self-determined motivation, environmental and surrounding factors, along with other personal forces such as persistence and optimistic thinking.

Motivation : Motivation can be defined as the drive to take part and persist in an activity, it is a significant factor related to sports adherence. There are two main types of motivation: Intrinsic internal factors enjoyment. Extrinsic external factors rewards.

Goal setting : Goal setting can be one of the most important skills to teach athletes in order to help them optimize their performance. It can help them focus on what is important and give them a sense of control and positive self-direction. SMART goals can help athletes gain confidence and believe in their ability to succeed.

Anxiety and arousal : It is helpful to remember that anxiety is psychological, that is, comes from the mind of the athlete. On the other hand arousal is physiological resulting from bodily responses to a stimulus. Arousal levels required for optimum performance in a sport depend on the individual sport.

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Confidence : Having sports confidence means having self-confidence which is YOUR belief in YOUR ability to complete a physical skill or task required in your sport. Our confidence can be bolstered at times by others' belief in us; but, ultimately, we have to believe in our own abilities to go out there and perform our best.

Importance of Sports Psychology

Sports psychology can be used to enhance an athlete's performance by helping with stress management, increasing motivation, anxiety control, mental toughness, etc. It also helps with injury rehabilitation, team building, burnout, career transition, etc.

There are trained professionals who take up this role to help athletes and are professionally called as sports psychologists. Sports Psychology can be used for:

1. Better Performances
2. Motivation and Feedback
3. Recovery and Rehabilitation
4. Overall well-being

Psychological Skills in Sports

1. Choose and maintain a positive attitude.
2. Maintain a high level of self-motivation.
3. Set high, realistic goals.
4. Deal effectively with people.
5. Use positive self-talk.
6. Use positive mental imagery.
7. Manage anxiety effectively.
8. Manage their emotions effectively.
9. Maintain concentration.

The Mental Benefits of Sport

- Sport improves your mood. ...
- Sport improves your concentration. ...
- Sport reduces stress and depression. ...
- Sport improves sleep habits. ...
- Sport helps you maintain a healthy weight. ...
- Sport boosts your self-confidence. ...
- Sport has been linked to leadership traits. ...
- Mental benefits of sport for older people.

Conclusion

Sports psychology, or performance coaching, helps teach and apply psychological strategies to manage an athlete's mental health issues. These doctors of human behavior and the mind help clients recognize strengths and identify and eliminate the mental obstacles that impact sports performance and physical healing.

We now know what sports psychology is and the importance of it. Apart from the usual coaching staff and medical team, all sporting organizations should have a team psychologist on-board who would work on the mental aspect of an athlete. The recent hit show Ted Lasso also beautifully showcases the importance of sports psychology in a team.

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