



Magadh Mahila College



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JIGYASA

The Journal of Educational Research and Innovation
A Peer Reviewed Journal



[Estd. : 1946]

MAGADH MAHILA COLLEGE

PATNA UNIVERSITY

3rd Cycle NAAC Accredited 'B+' Grade
'College with Potential for Excellence' (CPE)
Status Accorded by UGC

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From the Chief Editor's Desk



Magadh Mahila College is the premier college known for its academic excellence and dedication towards dissemination of knowledge. The college recognizes the value of research in education and is committed to encourage students and faculty members to pursue research. In order to encourage students to conduct research under the faculty members, the college has taken strong initiative to publish the research articles in "Jigyasa Journal - The journal of Educational Research and Innovation".

The journal intends to publish academic research papers and articles in the fields of science, social science and humanities. Interested students from different departments of college carry out research project works under the supervision of faculty members in their respective departments. After the completion of research project, the collected data / material are analysed and organized in the form of research papers. The articles are published only after the strict evaluation by reviewers along with plagiarism screening of each manuscript to uphold high academic standards, ethics and integrity. Jigyasa publishes original research papers that have never been published anywhere or presented in a public setting. I congratulate all students whose research papers are published in this issue of Jigyasa and express my sincere thanks to their mentors and referees. We hope, the research culture of our college will be greatly enhanced by the issue of this journal and look forward for the participation and contributions from different Colleges, Universities and Research Institutes.

Prof. (Dr.) Namita Kumari
Principal and Chief Editor
Magadh Mahila College
Patna University, Patna



One best book is equal to
hundred good friends
but one good friend is
equal to a library

—*A. P. J. Abdul Kalam*



रीतिकालीन सन्तों का सामाजिक अवदान

ज्योति दूबे *

सारांश:

शिवनारायणी संप्रदाय, चरणदासी संप्रदाय, गरीब पंथ, पानप पंथ, रामस्नेही संप्रदाय तथा अन्य अनेक फुटकर संतों का उदय इसी समय हुआ था। सोलहवीं शताब्दी से उन्नीसवीं शताब्दी तक नाना पंथ एक के बाद एक अस्तित्व में आते गए। सिक्खों के गुरु नानकदेव ने (सं. 1526–95) नानकपंथ, दादू दयाल ने (1610 1660) दादूपंथ, कबीरदास के अनुयायियों ने कबीरपंथ, बावरी ने बावरीपंथ, हरिदास (17वीं शती उत्तरार्ध) ने निरंजनी संप्रदाय और मलूकदास ने मलूकपंथ को जन्म दिया। आगे चलकर बाबालालजी संप्रदाय, धानी संप्रदाय, साथ संप्रदाय, धरनीश्वरी संप्रदाय, दरियादासी संप्रदाय, दरियापंथ, शिवनारायणी संप्रदाय, गरीबपंथ, रामस्नेही संप्रदाय आदि नाना प्रकार के पंथों एवं संप्रदायों के निर्माण का श्रेय उन संतों को है जिन्होंने सत्यदर्शन एवं लोकोपकार का व्रत ले रखा था। संत काव्य परंपरा और प्रयोग दोनों ही दृष्टियों से अपना एक विशेष एवं महत्वपूर्ण स्थान रखता है। जिसमें समन्वय की प्रवृत्ति के साथ कर्मकाण्डों का प्रवेश, अवतारवाद की ओर झुकाव, संतों की बानियों के संग्रह का प्रयत्न जैसी प्रवृत्तियां देखने को मिलती हैं।

शब्द कुंजी : भक्ति, सन्त, भक्ति आंदोलन, कर्मकाण्ड, अवतारवाद
परिचय :

हिन्दी साहित्य के संदर्भ में भक्तिकाल से तात्पर्य उस काल से है, जिसमें भागवत धर्म के प्रचार-प्रसार हेतु भक्ति आंदोलन का सूत्रपात हुआ। इस भक्ति आंदोलन में लोकोन्मुख प्रवृत्ति इतनी प्रबल थी कि धीरे-धीरे कई लोकप्रचलित भाषाएं भक्तिभावना की अभिव्यक्ति का माध्यम बनती चली गईं और भक्ति संबंधी विपुल साहित्य की बाढ़ सी आ गई। भक्ति शब्द

का प्रयोग सबसे पहले हमें श्वेताश्वेतर उपनिषद में मिलता है। इसके बाद हम देखते हैं कि ईसा की कई शताब्दियां पहले से भक्ति परंपरा का विकास हो चुका था। लेकिन हिन्दी साहित्य के संदर्भ में जिस भक्तिकाल की बात हो रही है उसका प्रादुर्भाव 1375 विक्रम संवत् से हुआ, जो 1700 विक्रम संवत् तक अवितरत चलता रहा। इस भक्ति आंदोलन की प्रमुख विशेषता है विभिन्नता में मूलभूत एकता और इसकी लोकोन्मुख विराट चेतना, जिसके कारण चर-अचर सृष्टि मात्र मानवमात्र ही नहीं पशु-पक्षी, जड़-चेतन सभी इसमें शामिल हैं और सभी को एकसूत्र में बांधने की क्षमता इस भक्तिकाल में है।

हालांकि जो ये विशेषता भक्तिकाल में पायी जाती है, उसके पीछे मूल कारण है भक्ति की दीर्घ लंबी प्राचीन परंपरा। इसके मूल में यह परंपरा तत्कालीन परिस्थितियों के आपद धर्म के रूप में उपस्थित नहीं हुई थी। यही कारण है कि भक्तिकाल के विभिन्न कवि के बीच हम एक सामंजस्य की भावना देखते हैं। नाथ-सिद्ध अलखवादी जोगियों की परंपरा को आगे बढ़ाने वाले कबीर, नानक, रैदास, दादू आदि निर्गुणी संत हों, या अनहलक के द्रष्टा मंझन, कुतुबन, जायसी, उस्मान आदि सूफी कवि हों, या कृष्ण-राधा के कीर्तन का गान करने वाले वल्लभ, हरिदास, सूरदास, नंददास आदि कृष्ण-भक्त कवि हों या राम-सीता की मर्यादा भक्ति के प्रतिष्ठापक तुलसी हों, सभी कवियों में हम एक सामंजस्य वाली भावना देखते हैं। सभी प्रवृत्ति और निवृत्ति के भी, इहलोक और आध्यात्मिक के बीच सामंजस्य का संदेश देते हैं। ये सभी कवि बाह्य आडंबर का भी विरोध करते हैं और धार्मिक पाखंड का खंडन करते हैं। चरित्र के आदर्श, चरित्र की शुद्धता एवं जीवन की निर्मलता का आग्रह सभी कवियों का है। ये सभी जीवन को समग्रता में ग्रहण करते हैं। और ये सब श्रद्धा और प्रेम से युक्त उस भक्ति के प्रति

ज्योति दूबे

असिस्टेंट प्रोफेसर, हिन्दी विभाग

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अनुरक्त हैं, जिसमें भूतदया और विश्वमैत्री की भावना है, जो समाज के सर्वोच्च वर्ग से लेकर निम्न वर्ग तक के हृदय में उत्साह का संचार करती है।

असल में संत वो हैं जो दया और करुणा से भरा हुआ है। संतों की सबसे बड़ी विशेषता है—उनका कथनी और करनी का सामंजस्य। उन संतों को जिनमें इन दोनों का सामंजस्य दिखाई देता है, उन्हें वे ईश्वर के समकक्ष मानते हैं। जिनकी कथनी कुछ है और करनी कुछ, ऐसे लोगों के विषय में चरणदास का कहना है कि वे उस बाँझ स्त्री के समान हैं जो पालना तो झुलाती हैं, किन्तु उस पालने में बालक नहीं रहता। यही स्थिति करनी बिना कथनी की होती है—

बाँझ झुलावै पालना बालक नहिं माहीं।

बातु विहीना जानिये जहँ करनी नाँही।¹

वे किसी बात को तब तक स्वीकार नहीं करते जब तक उसे जीवन में उतार नहीं लेते। कहना न होगा कि यही उनकी कथनी—करनी का समन्वय है।

संत कवयित्री सहजोबाई के विचार से संतों के मिलन मात्र से ही सब दुःख—दर्द दूर हो जाते हैं। उनकी वाणी का लाभ प्राप्त करते ही मनुष्य जन्म—जन्मान्तरों की पीड़ा से मुक्त हो जाता है उनके शब्दों में—

साध मिलै दुःख सब गये मंगल भये सरीर।

वचन सुनत ही मिटी गयो जनम—जनम की पीर।²

संत दया, विश्वबंधुत्व आदि में विश्वास रखते हुए समस्त विकारों से दूर रहनेवाला व्यक्ति होता है। उसका जीवन समाज के जरूरतमंद लोगों के लिए एक वरदान सा समझा जाता है। वह सभी का उपकारक तथा ज्ञान—ज्योति विकीर्ण करनेवाला होता है। संत मत को और भी अधिक स्पष्ट समझने के लिए हमें उसकी कुछ प्रमुख प्रवृत्तियाँ और विशेषताओं पर एक दृष्टि डालनी होगी। संत काव्य परंपरा की सबसे पहली विशेषता के रूप में जो दिखाई देता है, वह है—एक ईश्वर के प्रति एकनिष्ठता का भाव। वइ ईश्वर, वह ब्रह्म अनिर्वचनीय है, अगम है, अज्ञेय है, अलख है, सगुण—निर्गुण से परे है। जो अनिर्वचनीय है, शब्दों में उसे नहीं बाँधा जा सकता—‘पारब्रह्म के तेज कूँ कैसा है उपमान। कहिबे की सोभा नहीं, देख्या ही परवान।’ संत—परंपरावादी कवियों की दूसरी विशेषता यह है कि ये अपने आप को किसी धर्म से नहीं जोड़ते। वह धर्म चाहे हिन्दू हो, शैव हो या शाक्त हो, जैन धर्म हो, या बौद्ध धर्म हो, या इस्लाम धर्म हो। सभी धर्मों में धार्मिक संकीर्णता, सांप्रदायिक संकीर्णता की गंध पाते हैं। इसलिए वे अपने आप को इन सब

धर्मों से परे रखते हैं। क्योंकि उनका मुख्य उद्देश्य, परम गंतव्य विश्व कल्याण की भावना है। वे ‘वसुधैव कुटुंबकम्’ से लेकर आधुनिक युग के विश्वग्राम तक की यात्रा अपने हृदय में करते हैं, और इसीलिए वे अपने आपको इन सभी संकीर्ण धर्मों से परे रखते हैं। इसीलिए ये कवि क्रांतद्रष्टा कवि कहे जाते हैं। कबीर में आज भी हमें वही ताजगी महसूस होती है, जो छह सौ वर्ष पहले था, इसीलिए वे आज भी उतने ही प्रासंगिक दिखाई देते हैं। संत कवियों की तीसरी विशेषता के रूप में—बहुदेववाद और अवतारवाद का विरोध—देखा जा सकता है। चूंकि उनकी निष्ठा एक ईश्वर में है, वे एकेश्वरवादी हैं, अद्वैतवाद में वे विश्वास करते हैं, इसलिए बहुदेववाद और अवतारवाद को ये खारिज करते हैं।

संत कबीर के साथ भारत में जिस संतमत का उदय हुआ, उसके स्वरूप में क्रमशः परिस्थितियों के अनुसार परिवर्तन भी होता रहा। संत—मत के कालानुसार स्वरूप परिवर्तन को पूर्णतया समझने के लिए इस संपूर्ण विकास काल को दो भागों में बांटा जा सकता है। संवत् 1550 से 1700 विक्रमी तक का काल और 1700 से 1850 विक्रमी तक का काल।

संवत् 1550 से 1700 विक्रमी तक के समय को हम संतमत का विकास काल कह सकते हैं।

इस विकास काल में कई प्रवृत्तियों का समावेश संतमत में होता दिखता है, जिनमें से प्रमुख हैं—(क) पंथ और संप्रदाय प्रवर्तन की प्रवृत्ति, (ख) संतों की बानियों के संग्रह का प्रयत्न।

संत कबीर की रचनाओं में पंथ प्रवर्तन की प्रवृत्ति का संकेत नहीं मिलता। जीवनगत अनुभूत सत्त्यों के आधार पर ही सिद्धांतों का निर्माण कबीर को अत्यधिक प्रिय था। किसी भी प्राचीन परिपाटी का ग्रहण और प्रचार उन्हें इष्ट नहीं था। धार्मिक और सामाजिक क्षेत्र में उन्हें अपने सिद्धांतों के प्रचार करने, छोड़ जाने या उनके द्वारा यश लाभ करने की भी वांछा न थी। उन्होंने किसी भी संप्रदाय के सिद्धांतों का अंधानुसरण नहीं किया था। ‘उनका कहना था कि धर्म के नाम पर जितने भी वाह्य कृत्य किये जाते हैं अथवा जो—जो धारणाएं साधारणतः बनायी जाती हैं, वे सभी निरर्थक व निराधार हैं और हमारे मानव—जीवन के आदर्शानुसार उनका कुछ भी महत्त्व नहीं।’³ अतः यह निश्चित है कि हिंदी प्रदेश में संतमत के उदय को संभव करने वाले कबीर के द्वारा पंथ निर्माण नहीं हुआ। विद्वानों के अनुसार यह कार्य संत नानक द्वारा संपन्न हुआ। इस संबंध में पंडित परशुराम चतुर्वेदी का कथन है कि— ‘नानक पंथ के मूल प्रवर्तक गुरु नानक अपने मत के प्रचारार्थ मरते

समय अपने विश्वसनीय साथी लहना को अंगद नाम देकर उसे विधिपूर्वक अपना उत्तराधिकारी नियुक्त किया। और अपने अनुगामियों को अपनी जगह उसका अनुसरण करने का भी आदेश दिया।⁴ नानक पंथ के प्रादुर्भूत होने पर कबीर अनुयायियों को भी अपने श्रद्धा-भजन कबीर के सिद्धांतों के आधार पर पंथ संगठन की बात सूझी होगी। नानक पंथ और पंथ की स्थापना के पश्चात् देखा-देखी दादू पंथ, लाल पंथ आदि अनेक पंथों की प्रतिष्ठा हुई। पंथ निर्माण के मूल कारणों पर विचार करते हुए आचार्य परशुराम चतुर्वेदी कहते हैं— 'प्रायः देखा गया है, किसी मतविशेष के प्रवर्तक को अपने सिद्धांतों के प्रचार के लिए बहुधा संगठन करने की भी इच्छा हो जाया करती है और वह अपने अनुयायियों को इसलिए आवश्यक उपदेश देने लगता है। उसे इस बात की अभिलाषा रहती है कि मेरे सिद्धांत किस प्रकार अधिक से अधिक सफलता के साथ प्रचलित हों और मेरे मत के अनुयायी अधिक से अधिक संख्या में विद्यमान रहें। इसी कारण वह अपनी मृत्यु के अवसर पर अपना कोई योग्य उत्तराधिकारी नियुक्त करता है और सफल प्रचार के लिए कुछ न कुछ कार्यक्रम भी निर्धारित कर देता है।⁵ पंथ निर्माण के सन्दर्भ में आचार्य चतुर्वेदी ने जो विचार प्रस्तुत किये हैं वो विचारणीय है। निश्चय ही संतों के द्वारा अपने विचारों के प्रसार की अभिलाषा ने ही पंथ या संप्रदाय निर्माण की नींव डाली होगी।

संत मलूक के समय (संवत् 1631 से 1739 तक) तक आते-आते संतों की बानियों का संग्रह किया जाने लगा था। पंथ निर्माण के बाद ही इसकी विशेष आवश्यकता पड़ी होगी। अन्य पंथ वालों से अपने पंथ के सिद्धांतों की भिन्नता प्रतिपादित करने के लिए भी यह आवश्यक समझा गया होगा।

संवत् 1700 से 1850 विक्रमी तक का समय संतमत के विस्तार का काल माना जा सकता है। इस विस्तार काल में अनेक प्रवृत्तियों का समावेश देखा जा सकता है। वास्तव में उनकी बानियों में साहित्यिक विशेषतायें खोजना उनके प्रति ज्यादाती होगी। लेकिन उनकी भक्तिमय बानियों में साहित्यिक तत्वों का अनायास झलक अवश्य परिलक्षित होता है। प्रमुख जिनकी ओर विद्वानों ने ध्यान आकर्षित किया है वे निम्नलिखित हैं—

(क) पंथों और संप्रदायों का प्रादुर्भाव

(ख) समन्वय की प्रवृत्ति

(ग) अवतारवाद की ओर झुकाव

(घ) अन्य मतों के आध्यात्मिक ग्रंथों का संतो द्वारा अध्ययन

(ङ.) कर्मकांड का प्रवेश

कदाचित् संवत् 1700 से 1850 वि० के बीच संतमत विस्तार की दृष्टि से अपने स्वर्णयुग में कहा जा सकता है।

इसी अल्पकाल में अनेक पंथों-संप्रदायों का प्रादुर्भाव देखा जा सकता है। बाबालाली संप्रदाय, धामी संप्रदाय, सत्तनामी संप्रदाय, धनेश्वरी संप्रदाय, दरियादासी संप्रदाय, दरिया पंथ, शिवनारायणी संप्रदाय, चरणदासी संप्रदाय, गरीब पंथ, पानप पंथ, रामरनेही संप्रदाय तथा अन्य अनेक फुटकर संतों का उदय इस समय हुआ था। परम भक्त सतगुरु दरिया साहब जिनकी महिमा जगत् प्रसिद्ध है पीरनशाह के बेटे थे। पीरन शाह प्रतिष्ठित उज्जैन के क्षत्रिय थे। जिनके पुरखा बक्सर के पास जगदीशपुर में राज करते थे।

दरिया साहब कबीर और ब्रह्म में कोई अंतर नहीं देखते थे। उसे ये 'निर्गुण सरगुन ते बिना 'कथा एक अछै वृक्ष' के रूप में देखते हैं और उसका वर्णन सृष्टिकर्ता के रूप में भी करते हैं। दरिया साहब ने अपने और कबीर में कोई अंतर नहीं बताया है तथा अपने को उन्हीं की भांति सत्य पुरुष के संदेश वाहक के रूप में अवतरित बताया है। इन्होंने कबीर की भांति सामाजिक ढकोसलों पर प्रहार किया तथा नम्रता, सरलता और दीनता से रहकर, नश्वर संसार में अविनश्वर को प्राप्त करने की सीख दी। इनके पद एवं साखी भी सरल भाषा में ज्ञान एवं भगवत् प्रेम के गूढ़ तत्वों को व्यक्त कर देते हैं। 'इनके मत में वेद और सरगुन (अर्थात् अवतार सरूपों की पूजा, मूर्ति पूजा, तीर्थ व्रत, नाम आचार जातिभेद आदि) का खंडन है और मांस मदिरा और हर तरह का नशा मना किया है। केवल निर्गुण और सत्पुरुष का ईष्ट दृढ़ आया है, यहां तक की सोहं, ओं, इत्यादि सत्यलोक के नीचे के लोकों के धुन्यात्मक नामों का भी निषेध किया है, इसी कारण पंडितों को इनसे बड़ा विरोध पैदा हुआ और कोई युक्ति इनकी निंदा फैलाने और दुख देने की सजा न रक्खी।⁶

इनके पंथ में ईश्वर की निर्गुण भक्ति का उपदेश दिया जाता है तथा सगुण भक्ति एवं मूर्ति पूजा, व्रत, तीर्थ आदि का खंडन किया गया है—

पंडित पढ़ जिनि भूलहूँ, खोजहु मुक्ति के भेव।

सास्तर गीता ज्ञान विचाहु, करहूँ जनम के सेव॥

तब तोहिं जानौ पंडिता, मुक्ति कहि देहु आय।

छप लोक की बात कहु, तब मोर मन पतियाय॥⁷

इस पंथ में मांस, मद्य एवं हर तरह के नशे पर प्रतिबंध है। वेदों की निंदा के कारण इनका ब्राह्मणों से विरोध भी पैदा हुआ है। इन्होंने कबीर की भांति सामाजिक ढकोसलों पर प्रहार किया तथा नम्रता, सरलता और दीनता से रह कर नश्वर संसार में अविनश्वर को प्राप्त करने की सीख दी। दरिया साहब ईश्वर

में पूर्ण विश्वास को बनाए रखने के लिए कहते हैं। उनका कहना है कि मनुष्य अगर ईश्वर में विश्वास बनाए रखता है तो वो परम पद को प्राप्त करने में सफल होता है। ईश्वर के प्रति अगाध विश्वास रखते हुए उसके भजन गाने वाला मनुष्य संत होता है। पर अक्सर व्यक्ति भ्रम में पड़कर ईश्वर की प्राप्ति के लिए इधर-उधर भटकता रहता है। वह व्रत-तीर्थ सब करता है पर कभी सच्चे मन से भजन नहीं गाता—

भजन भरोसा एक बल, एक आस बिश्वास।

प्रीति प्रतीति इक नाम पर, संत बिबेकी दास।।

है खुसबोई पास में, जानि परे नहीं सोय।

भरम लगे भटकन फिरै, तीरथ बरत सब कोय।।⁸

बावरी साहिबा की बात करें तो बावरी साहिबा की परम्परा संत-परम्परा की आधे दर्जन बड़ी परम्पराओं में से एक है और इसका प्रभावक्षेत्र प्रधानतः दिल्ली प्रान्त एवं उत्तर प्रदेश के पूर्वी जिलों तक विस्तृत है। इसके अंतर्गत उच्च कोटि के अनेक महात्मा हो चुके हैं जिनके कारण कुछ नवीन पंथ भी प्रचलित हो गए हैं।⁹

बावरी पंथ में बावरी साहिबा और वीरू साहिब के सिद्धांतों के समन्वित रूप का आभास मिलता है। बावरी पंथ वालों का ध्येय पूर्ण परम तत्व की अनुभूति है जो गुरु की बताई युक्ति से अजपा-जाप के सहारे 'सूरति' के साथ उसका नित्य संबंध स्थिर करके ही उपलब्ध की जा सकती है। वीरू साहिब ने उसको 'अनहद सुर', 'लाल की बांसुरी की तान' कहा है। बुला साहब ने भी 'सुरत शब्द योग' की साधना की ओर बारंबार संकेत किया है। भीखा साहब ने ब्रम्ह, माया, जगत तथा जीवात्मा के स्वरूप का वर्णन शास्त्रीय पद्धति एवं शब्दावली के अनुसार किया है। वे अपने अद्वैतवाद का निरूपण करते हैं और माया को भ्रमित करने वाला तक बताते हैं। उन्होंने जोगी को एकनिष्ठ तथा आध्यात्मिक जीवन-यापन करने वाला भजनानंदी फकीर माना है। पलटू साहब का विशेष ध्यान उक्त बातों के अतिरिक्त काया के भीतर की रहस्यमई स्थिति के विवरण की ओर अधिक है। वह ब्रह्म की सर्वव्यापकता निरूपित करते हुए अद्वैतवाद का दिग्दर्शन कराते हैं। इस प्रकार बावरी साहिबा का आध्यात्मिक दीवानापन, यारी साहब के सूफी संस्कारों एवं गुलाल तथा भीखा साहब के वातावरणों में क्रमशः और भी गंभीरता को प्राप्त होता हुआ यह पंथ पलटू साहब तक पूर्ण अभिव्यक्त हो गया। पलटू का परमात्मा-विश्वास, उत्कट वैराग्य, संतोष, अपूर्व मस्ती इस पंथ के अनुयायियों के लिए आदर्श है। पलटू साहब के नाम पर आगे नवीन पंथ भी चला पर पंथ में कोई श्रेष्ठ संत नहीं हुआ। भीखा साहब के नाम पर

भीखा पंथ भी प्रसिद्ध है जिनकी एकमात्र विशेषता सात्विक जीवन है।¹⁰

इस पंथ में वीरू साहब, यारी साहब, बुल्ला साहेब, गुलाल साहेब, भीखा साहब, गोविंद साहेब, पलटू साहिब आदि अनेक उच्च कोटि के साधक और कवि हुए। गाजीपुर के भुड़कुड़ा नामक स्थान में इस पंथ की गद्दी अब भी विद्यमान है।

इस पंथ के पलटू साहब अधिक विख्यात हुए। पलटू साहब जाति के बनिया थे और पहले

गृहस्थ ही बने रहे। यह कहते हैं कि —

गिरहस्थी में जब रहे, पेट को रहे हैरान।

पेट को रहे हैरान, तसदिया से मिले अहार।।

साग मिल्यो बिनु लोन, बही तब ऐसी धारा।

आए हरि की सरन, बहुत सुख तब से पाई।।

लुचुई चारों जून, खांड और खोवा खाई।

लड्डू पेड़ा बहुत सेंट कोऊ खाता नहीं।।

जलेबी चीनी कंद भरा है घर के माही।

पलटू हरि के सरन में हाजिर सब पकवान।।

गिरहस्ती में जब रहे, पेट को रहे हैरान।।¹¹

इन्हें जीवन की नश्वरता का ज्ञान हो चुका था। इस संसार के माया-जाल से संतप्त हो कर ही उनकी यह मनोदशा हुई थी। उन्होंने खुद को पूर्णरूप से ईश्वर को समर्पित कर दिया था। पलटूदास एक स्पष्ट वक्ता, निर्भीक समालोचक, निर्गुण पंथी संत थे। उन्होंने उस समय के विलासी महंतों तथा पाखंडियों की खुल कर निंदा की। अतः इन महंतों से इनका झगड़ा होना कोई आश्चर्यजनक बात नहीं है। महंत और अन्य सन्यासी पलटूदास की ख्याति से काफी ईर्ष्या करते थे। एक बार उन्होंने अयोध्या में एक भंडारा किया और चारों ओर निमंत्रण भेजे, परन्तु ईर्ष्या तथा धार्मिक विद्वेष के कारण अयोध्या के महंतों और सन्यासियों ने उसमें भाग नहीं लिया। पलटूदास ने उनके विरोध की परवाह न करते हुए आगत व्यक्तियों का सत्कार किया और शेष सामग्री जनता में वितरित कर दी। इसका वर्णन उन्होंने स्वयं किया है —

सब बैरागी बटुरी के, पलटूहिं किया अजात।

पलटूहिं किया अजात, प्रभुता देखि न जाय।।

बनिया करिहक भक्त, प्रकट भा सब दुतियाई।

हम सब बड़े महंत, ताहि को कोऊ न जाने।।

बनिया करे पखंड, ताहीं को सब कोई माने।

ऐसी ईर्ष्या जानि, कोऊ न आवै खाई ।।

बनिया ढोल बजाय, रसोई दिया लुटाय।।¹²

पलटू साहब के समय में सामाजिक स्थिति अच्छी नहीं थी। हिन्दू और मुसलमान अपने मूल धर्म से दूर वाह्याडम्बर से घिरे थे। उनमें असत्य तथा मिथ्या की भावना भरी हुई थी। जिसके फलस्वरूप आपसी शंका और भ्रम बढ़ते जा रहे थे। सामाजिक एकता नष्ट हो चुकी थी। पलटूदास अपने जीवन काल में ही एक ख्याति प्राप्त संत हो चुके थे। उनके समय में समस्त प्रचलित धर्मों में आडम्बर आ गया था, जिस कारण धर्म के वास्तविक स्वरूप का लोप हो चुका था। धार्मिक असहिष्णुता के कारण सामाजिक वातावरण विषाक्त हो गया था। उन्होंने नागाओं तथा वैरागियों के गढ़ अयोध्या में ही क्रांति का झंडा ऊँचा किया। उन्होंने अपने बानियों के माध्यम से धर्म का शुद्ध रूप जनता के सामने रखा तथा उन्हें इन वह्याडम्बरों से बचने का उपदेश दिया।

हिंदी साहित्य में मलूक दास नाम के दो संतो का उल्लेख मिलता है। एक कबीर के शिष्य बतलाए गए हैं, जिनकी समाधि पूरी में बनी है। दूसरे मलूक दास इलाहाबाद जिले के कड़ा नामक स्थान के निवासी थे। मलूक पंथ के प्रवर्तक मलूकदास का जन्म इलाहाबाद के कड़ा नामक गाँव में बैसाख बदी 5 संवत् 1631 विक्रमी में लाला सुन्दरदास खत्री कक्कड़ के यहाँ हुआ। 'उनके शिष्य सुथरा दास द्वारा लिखित परचई में उनका विस्तृत जीवनवृत्त मिलता है। वे दीर्घायु थे और उन्होंने अकबर से लेकर औरंगजेब के शासनकाल को देखा था उन्होंने औरंगजेब की धर्मांधता और संकीर्णता का वर्णन भी किया है।¹³ संत मलूक दास में ज्ञान और भक्ति का अच्छा संबंध में मिलता है। उनका अनुसार ब्रह्म अलख-अरूप है जो सर्वव्यापी है। उन्हीं के शब्दों में –

सर्वव्यापी एक कुम्हारा, जाकी महिमा आर न पारा।

हिंदू तुरक का एकै कर्ता, एकै ब्रह्म सबन का भर्ता।।

इनकी साधना में ज्ञान, भक्ति और वैराग्य का समन्वय है। ये योग की बात करते हुए दिखलाई

पड़ते हैं और शून्य महल की भी चर्चा करते हैं—

सुन्न महल में महल हमारा, निर्गुण सेज बिछाई।

चेला गुरु दौड में करत है, बड़ी असाइस पाई।।¹⁴

बाबा मलूकदास के पंथ की मुख्य गदियाँ मौजा कड़ा, जिला प्रयाग जैपुर, इस्फाहाबाद, गुजरात, मुल्तान, पटना, सीताकोयल, कलापुर, नेपाल और काबुल में है। उनके रचे हुए ग्रंथ भी कई हैं, जिनमें मुख्य 'रत्नाखान' और 'ज्ञान बोध' माने गए हैं। मलूक दास जी अपने वचनों में कहते हैं कि ब्रह्म का विचार, संत-सेवा, गुरु-वचनों में विश्वास, सत्य व संतोष का जीवन और नाम-स्मरण का स्वभाव अपनाने से अपनी आत्मा

जागृत हो उठती है, यही इनके मत का सार है, जिसे दूसरे शब्दों में आत्म-ज्ञान भी कहते हैं।

संत मलूकदास की ईश्वर के अस्तित्व में प्रबल आस्था थी और उसके प्रति असीम निष्ठा थी।

यह उसके प्रत्यक्ष वर्तमान रहने का अनुभव प्रतिक्षण और प्रत्येक स्थल पर सच्चे हृदय से करते थे और अपने को ये उसका आत्मीय असंदिग्ध रूप से समझा करते थे। वे उससे विनय करते हुए कहते हैं—

दीनदयाल सुनी जबतै जबतै हिया में कछु ऐसी बसी है।

तेरो कहाय के जाऊँ कहाँ, मैं तेरे हित की पट खेच कैसी है।।

तेरोई एक भरोसा मलूक को, तेरे समान न दूजो जसी है।

ए हो मुरारी पुकारी कहौ अब मेरी हंसी नहीं तेरी हंसी है।।¹⁵

संत मलूकदास की ख्याति उनके जीवनकाल में ही बहुत फैल गई थी और इन से भेंट करने के लिए बहुत से लोग इच्छुक रहा करते थे। प्रसिद्ध है कि अपनी पूर्व यात्रा के अवसर पर सिक्खों के नौवें गुरु तेगबहादुर सिंह ने भी इनसे कड़ा गाँव में भेंट की थी। रामस्नेही संप्रदाय के प्रवर्तक संत रामचरणदास का जन्म माघ शुक्ल 14, शनिवार, संवत् 1776 वि० माना जाता है। रामस्नेही संप्रदाय में रामनाम की बड़ी महिमा है। स्वयं स्वामी रामचरण जी ने रामनाम की महिमा गाई है। संप्रदाय के साधुओं में भी राम शब्द बड़ा ही प्रिय एवं प्रचलित है। अतः यदि स्वामी जी को भी इसी नाम का पर्याय मानकर संप्रदाय में उन्हें राम नाम से अभिहित किया गया हो तो यह अस्वाभाविक नहीं प्रतीत होता। संतों की लोकजीवन पर सीधी नजर थी। लोकजीवन की उन्होंने ना तो कभी उपेक्षा की और ना उसकी लौकिकता में फंसे ही। वह बड़े ही सहज भाव से रामोपासना में रत रहते थे। अपने उपासक जीवन को विस्मयकारी बनाकर समाज को प्रभावित करने की दिशा में वे कभी अग्रसर नहीं हुए प्रत्युत ऐसे तत्वों से समाज को सदैव सजग रहने का मंगलमय संदेश देना वे अपना परम कर्तव्य समझते थे। सिद्धों, नाथों और वैष्णवों की उपासना पद्धतियों में संलग्न विकृतियाँ जो उन्हें नापसंद थीं, परंपरा से चली आती सामाजिक रूढ़ियाँ और अंधविश्वास, जिन्हें वे लोक जीवन के लिए विष समझते थे तथा अनेक वह्याचार जिन्हें उनके मस्तिष्क ने नहीं स्वीकार किया— के प्रति लोकजीवन को दिशा देने में वे पीछे नहीं रहे, साथ ही व्यक्ति और समाज के नैतिक मूल्यों के विकास के लिए उनकी अमर देन है। स्वामी रामचरण के साहित्य का लोकपक्ष भी खंडन-मंडन से पूर्ण प्रतीत होता है। स्वामी जी ने जहाँ समाज में प्रचलित बाह्याडम्बरों, अंधविश्वासों आदि पर

जोरदार शब्दों में आक्रमण किया है, वही उन्होंने लोकजीवन को रचनात्मक दिशा भी दी है।

स्वामी रामचरण ने अपनी वाणियों के माध्यम से तमाम वाह्याडम्बरों जैसे—मूर्ति पूजा, व्रत—उपवास की व्यर्थता, हिंसा एवं मांसाहार का विरोध, पूजा—नमाज, तीर्थ—यात्रा, जाति—पात, लीला और स्वांग की भर्त्सना, मादक वस्तुओं का निषेध—का विरोध किया है।¹⁶ स्वामी जी इन तमाम वाह्याडम्बरों को छोड़कर सिर्फ नाम—स्मरण पर जोर दिया है। 'सवैया सांच को अंग' में स्वामी रामचरण ने परमात्मा तक पहुंचने के पथ को 'झीणा मारग' (सूक्ष्म पंथ) कहा है। यह 'झीणा मारग' सांसारिक मायाजाल, ढोंग पाखंड से नहीं मिलता। इसके लिए गुरु प्रदत्त ज्ञान अपेक्षित है—

‘रामचरण बिना गुरु ज्ञानहिं झीणु सो मारग हाथ ना आवे।’¹⁷

स्वामी जी की दृष्टि में कर्मकांडों से भगवान नहीं रीझता बल्कि इन कर्मकांडों से भ्रम उत्पन्न होता है। संसार के इन प्रपंचों में वृद्धि के कारण मनुष्य को मुक्ति का मार्ग नहीं मिल पाता।

अतः स्वामी जी ने इन कर्मकांडों के परित्याग का उपदेश दिया है। उन्होंने सबसे विरक्त होकर राम—स्मरण का पंथ सुझाया है।

इस प्रकार स्वामीजी एकता की भावना को लोक जीवन के लिए आवश्यक समझ कर उसे सभी को जीवन में चरितार्थ करने का उपदेश देते हैं। स्वामी जी के लोक—पक्षीय विचार प्रवाह पर दृष्टि करने से विदित होता है कि स्वामी जी की लोक—जीवन में गहरी रुचि थी। वे भक्त हृदय संत कवि थे। जीवन और जगत में परिव्याप्त कुत्साओं की उन्होंने बड़ी तीखी आलोचना की और जन—मानस को ढोंगियों, पाखंडियों और अनेक सामाजिक रूढ़ियों तथा अंधविश्वासों से मुक्त कराने के लिए भरपूर प्रयास किया। साथ ही उन्होंने जीवन को सुखी बनाने के लिए अनेक रचनात्मक सुझाव भी दिए, जिससे लोक का बड़ा उपकार हुआ। एतदर्थ उन्होंने राम—नाम की उपासना, सत्संग, जीवों के प्रति दया—भाव, श्रद्धा—भक्ति, विश्वास, संतोष, सत्य पालन, एकता आदि मानवोचित गुणों को अपनाने की प्रेरणा दी। इसके अतिरिक्त वचन—विवेक, विनयशीलता, कथनी—करनी की अभेदता आदि की संक्षिप्त चर्चा उन्होंने की है। स्वामी रामचरण के संपूर्ण साहित्य में लोक जीवन के प्रति उनकी उदारता की एक अच्छी झांकी देखने को मिल जाती है।

शिवनारायणी संप्रदाय के प्रमुख संतों में शिवनारायण साहब, रामनाथ साहब, लखनराम, सदाशिव, जीवराम, लेखराज माने जाते हैं। संत शिवनारायण ने भी अपने पूर्ववर्ती अन्य

निर्गुण संतों की भांति संसार को स्वप्नवत् माना है। उन्होंने कई स्थलों पर कहा है कि दुनिया का वैभव स्वप्न की शोभा के समान है। संत पुरुष इसे देखकर मुग्ध नहीं होता।¹⁸ 'संत उपदेश' नामक ग्रन्थ में उन्होंने संसार को भ्रम का सागर बताया है—

‘यह संसार भ्रम का सागर, बिना मूल बिनु साखा हो।

तेही मा डूबत थाह ना पावत, नाव बेरा ना राखा हो।।

संत साहित्य में सामान्यतया गुरु—प्रदत्त आत्मानुभूत ज्ञान को ही महत्व दिया गया है। संत शिवनारायण की ज्ञान—साधना भी गुरु—ज्ञान एवं आत्मानुभव ज्ञान तक ही सिमित थी। ब्रह्म का रहस्य, जगत का वास्तविक स्वरूप आदि सभी तत्वों का ज्ञान उन्हें गुरु—कृपा से ही उन्हें प्राप्त हुआ था। वे कहते हैं—

मैं बपुरा का जानो भेदा नहिं कछु ज्ञान पढ़े न वेद।

उपर्युक्त कथन नम्रतासूचक होने पर भी सत्यता से वंचित नहीं है। इसके अतिरिक्त वे कई स्थलों पर वे स्वीकार करते हैं कि उनका आंतरिक ज्ञान गुरु की पुनीत वाणी का ही प्रसाद था :

गुरु के बानी सुनत पुनीता। हिय गदगद भौ हर्ष बहुता।

दिव्य ज्ञान तब चित मंह पाई। चिंता गो तब अस्तुति लाई।¹⁹

शिवनारायणी संप्रदाय के अनुसार 'सर्वश्रेष्ठ नैतिक गुण सत्य, अहिंसा, दया, क्षमा, मादक वस्तु परित्याग एवं एक पत्नी व्रत है। इस पंथ के अनुयायियों में जाति, वर्ण, आश्रम या पूर्वधर्म के अनुसार किसी प्रकार का वर्गीकरण नहीं किया जाता। सभी जातियों के लोग इस धर्म में पाए जाते हैं। आजकल निम्न—जाति के लोग इसके अनुयायी हैं। इस पंथ में योग्य स्त्रियां भी मठाधीश बन जाती हैं।²⁰

उत्तरमध्यकालीन समाज पर सत्तनामी संप्रदाय का बड़ा प्रभाव था। सत्तनामी का अभिप्राय सत्य नाम से परिचित कराने वाले ईश्वर का संप्रदाय है। इस के प्रवर्तकों के रूप में 4 व्यक्तियों के नाम लिए जाते हैं, वे हैं— जगजीवन दास, वीरभानु, उदादास और जोगीदास। इनमें से परवर्ती तीन व्यक्तियों का नाम 'नाथ संप्रदाय' से जुड़ा हुआ है। कुछ लोग साध संप्रदाय और सत्तनामी संप्रदाय को अभिन्न मानते हैं। संभवतः इसी कारण संप्रदाय के प्रवर्तक को लेकर भ्रांतियां उत्पन्न हो गई।

इस संप्रदाय की तीन शाखाएं पाई जाती हैं— नारनौल शाखा, छत्तीसगढ़ी शाखा और कोटवा शाखा।

सत्तनामी संप्रदाय के अधिकतर अनुयाई साधारण मजदूर एवं किसान ही पाए जाते हैं। इस संप्रदाय के सिद्धांत के अनुसार ईश्वर एक है, निर्गुण एवं निराकार है। इस संप्रदाय में सूर्य की देवता के रूप में उपासना होती है। इस संप्रदाय के लोगों द्वारा वर्ण व्यवस्था निषिद्ध माना गया। सत्तनामी लोगों

का सादा रहन—सहन, इनके साहस की, संगठन की और भेदभाव रहित जीवन यापन करने की प्रणाली को सर्वथा स्तुत्य मानना चाहिए। इन लोगों का स्वभाव उत्तम एवं चरित्र बल प्रशंसनीय कहा जाता था। स्वामी प्राणनाथ जो धामी अथवा प्रणामी संप्रदाय के प्रवर्तक माने जाते हैं, धामी या प्रणामी संप्रदाय के अनुयायियों को 'साचीभाई' या 'भाई' कहा जाता है। आज—कल इस संप्रदाय के अनुयायी वैष्णव—संप्रदाय से प्रभावित होकर कृष्ण के बालरूप का ध्यान करने लगे हैं। इस पंथ के अनुयायी 'कलजमे शरीफ' धर्म—ग्रन्थ की पूजा करते हैं। ये आत्मज्ञानी तथा योगी होते हैं तथा नैतिक आचरण पर विशेष ध्यान रखते हैं। पन्ना नगर इनका प्रधान केंद्र है।²¹

इस संप्रदाय का विशाल साहित्य है तथा इस परंपरा में स्वामी लालदास, नवरंग स्वामी, ब्रजभूषण, बख्शी हंसराज, परमहंस गोपाल दास, परमहंस युगल दास, मुकंदर स्वामी, छत्रसाल, मस्ताना, जीवन, लल्लू जी महाराज, पंचम सिंह, गुलाब दास जी आदि अनेक संत महात्मा एवं सुकवि हुए हैं। मध्यप्रदेश से लेकर गुजरात तक इसके अनुयायियों की बहुत बड़ी संख्या भी है, फिर भी प्रणामी साहित्य उसके अनुयायियों तथा भक्तों तक ही सीमित रहा है। महात्मा चरणदास जी का जन्म राजपूताना के मेवात के डेहरा नामी गांव में एक प्रसिद्ध दूसरे कुल में हुआ था। संत चरणदास ने निष्काम प्रेमाभक्ति का प्रतिपादन किया है तथा सामाजिक व्यवहार में सच्चरित्रता का समर्थन किया है। इन्होंने कर्मवाद को भी महत्व दिया है। असत्य भाषण, अपशब्द कथन, कठोर वचन, चोरी, परस्त्री गमन, हिंसा, पर—हानि चिंतन आदि विषयों को त्याग देने पर विशेष बल दिया है। चरणदास ने समाज सेवा, सद् गुरु संगति तथा परमात्मा के प्रति दृढ़ अनुराग को अपनाने का विशेष आग्रह किया है। इस पंथ के अनुयाई विरक्त एवं गृहस्थ दोनों ही होते हैं तथा यह अपने गुरु के प्रति अपने गुरुशुकदेव के प्रति दर्शायी श्रद्धा से भी अधिक श्रद्धा प्रदर्शित करते हैं और गुरु को ईश्वर से भी बड़ा मानते हैं। सहजोबाई ने अपने गुरु को हरि से भी बड़ा माना है और कहा है—

राम तजुं पर गुरु न विसारु। गुरु के सम हरि को न निहारो।²² अन्य संतों की भांति चरणदास की बनियों में भी गुरु की महिमा का बखान किया गया है। उन्होंने भी कबीर, दादू आदि निर्गुण मार्गी संतों की तरह आत्म—साक्षात्कार या परम—पद की प्राप्ति के लिए सद्गुरु की ही मुक्ति का दाता बतलाया है। उनकी मान्यता है कि सतगुरु ही हरि की भक्ति का मार्ग प्रशस्त करते हैं तथा शिष्य में पड़े संस्कार—रूप बीज

को अंकुरित कर उसे पल्लवित एवं पुष्पित करते हैं। वे गुरु को सर्वोपरि मानते हुए ईश्वर से भी ऊँचे स्थान पर रखते हैं। चरणदास जी कहते हैं की गुरु का नाम लेने से उनका स्मरण करने से सरे पापोंका नाश हो जाता है और संसार की सारी व्याधि मिट जाती है—

गुरु समान तिहुँ लोक में ,और न दिखै कोय।

नाम लिए पातक नसै ,ध्यान किये हरि होय।।

गुरु ही के परताप सँ ,मिटै जगत की व्याधि।

राग दोष दुःख न रहै ,उपजै प्रेम अगाध।।²³

ये संत कवि निर्विवाद रूप से लोक भूमिका से संबद्ध रहे हैं। वस्तुतः इनकी वाणी समाजेतिहास का यथार्थ प्रतिबिंब है। इन संतों की वाणी में लोक जीवन की धड़कन विद्यमान है। अपनी वाणी के माध्यम से इन्होंने सामाजिक परिवेश को उजागर किया है, और समकालीन लोगों के अनुभवों को वाणी दी है। लोक जीवन की यथार्थ अभिव्यक्ति के लिए मलूकदास, चरणदास, पलटूसाहब जैसे संतों ने लोकभाषा को माध्यम बनाया तथा उसके द्वारा सामाजिक विसंगतियों पर कठोर प्रहार किया। उनकी रचनाओं में ऐसी प्रखर सामाजिक चेतना विद्यमान है जो पाखंडी को ललकारती है, संकीर्णता को चुनौती देती है और प्रतिगामी व्यवस्था को निष्ठुरता पूर्वक झटक देती है। वस्तुतः पुस्तकीय ज्ञान से विरत इन संतों ने सांस्कृतिक सामाजिक मूल्यों को अपने आचरण के धरातल पर उतारकर जिस सदाशयता का परिचय दिया है, वह भारतीय इतिहास में अन्यतम है। राजनीतिक पराधीनता के परिवेश में भी इन संतों ने जो सामाजिक संदर्भ अपनाया उसकी महत्ता आज भी अक्षुण्ण है।

रीतिकालीन संतों की बानियों में वैसे तो उनके पूर्ववर्ती संतों का प्रभाव अवश्य है, फिर भी उनकी विचारधारा प्राचीन भारतीय चिंतन परम्परा से भी संबद्ध दिखाई देती है। अनुभव की महत्ता के साथ—साथ उपनिषद्, पुराण एवं वेद आदि धर्म ग्रंथों का भी प्रभाव है। यद्यपि उन्होंने प्राचीन वांग्यमय का अध्ययन नहीं किया था, किंतु लोक—परंपरा से विकसित वेदांत के दर्शन, बुद्ध की करुणा, महावीर की अहिंसा, सिद्धों और योगियों की साधना पद्धति, वैष्णव भक्तों की निष्ठा तथा सूफियों की प्रेम साधना का उनमें समन्वय है, जो अनुभवों की कसौटी पर कस कर आया है।

रीतिकालीन संतवाणी केवल सामाजिक परिस्थितियों की प्रतिक्रिया मात्र नहीं है, यह गंभीर चिंतन और अनुभूति की सहज अभिव्यक्ति भी है। इसमें पूर्ववर्ती तथा समकालीन विभिन्न

विचारधाराओं का समावेश भी है। इस काल की संत-परम्परा में जो सबसे विशिष्ट और नयी बात देखने को मिलती है, वह है-संप्रदाय और पंथों का निर्माण। इन संप्रदायों में कर्मकांडों, विधि-विधानों तथा पूजा पाठों का घटाटोप आडंबर भी देखा जा सकता है। पर सम्भव है कि यह परिणति संतों की व्यापक लोकपरक भावना के परिणाम स्वरूप सम्प्रदायों और पंथों में आ गई हो।

इसी अल्पकाल में अनेक पंथों-संप्रदायों का प्रादुर्भाव देखा जा सकता है। बाबालाली संप्रदाय, धामी संप्रदाय, सत्तनामी संप्रदाय, धनेश्वरी संप्रदाय, दरियादासी संप्रदाय, दरिया पंथ, शिवनारायणी संप्रदाय, चरणदासी संप्रदाय, गरीब पंथ, पानप पंथ, रामस्नेही संप्रदाय तथा अन्य अनेक फुटकर संतों का उदय इसी समय हुआ था। इस प्रकार सोलहवीं शताब्दी से उन्नीसवीं शताब्दी तक नाना पंथ एक के बाद एक अस्तित्व में आते गए। सिक्खों के गुरु नानकदेव ने (सं० 1526-95) नानकपंथ, दादू दयाल ने (1610-1660) दादूपंथ, कबीरदास के अनुयायियों ने कबीरपंथ, बावरी ने बावरीपंथ, हरिदास (17वीं शती उत्तरार्ध) ने निरंजनी संप्रदाय और मलूकदास ने मलूकपंथ को जन्म दिया। आगे चलकर बाबालालजी संप्रदाय, धानी संप्रदाय, साथ संप्रदाय, धरनीश्वरी संप्रदाय, दरियादासी संप्रदाय, दरियापंथ, शिवनारायणी संप्रदाय, गरीबपंथ, रामस्नेही संप्रदाय आदि नाना प्रकार के पंथों एवं संप्रदायों के निर्माण का श्रेय उन संतों को है जिन्होंने सत्यदर्शन एवं लोकोपकार का व्रत ले रखा था। पर बाद में यही संत संकीर्णता की ओर अग्रसर होने लगे। जो संत निर्गुण ब्रह्म की उपासना का उपदेश देते हुए राम, कृष्ण आदि को साधारण मनुष्य के रूप में देखने के आग्रही थे वे स्वयं ही अपने आपको राम-कृष्ण की भाँति पुजाने लगे। संप्रदाय-पोषकों ने अपने आदि गुरु को ईश्वर या परमात्मा सिद्ध करने के लिए नाना प्रकार की कल्पित आख्यायिकाएँ गढ़ डालीं। यही कारण है कि उन सभी निर्गुणिये संतों के वृत्त अपने पंथ या संप्रदाय की पिटारी में ही बंद होकर रह गए। अंत में यही कहना उचित होगा कि संत काव्य परंपरा और प्रयोग दोनों ही दृष्टियों से अपना एक विशेष एवं महत्वपूर्ण स्थान रखता है। जिसमें समन्वय की प्रवृत्ति के साथ कर्मकाण्डों का प्रवेश, अवतारवाद की ओर झुकाव, संतों की बानियों के संग्रह का प्रयत्न जैसी प्रवृत्तियाँ देखने को मिलती हैं।

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सांस्कृतिक पुनरुत्थान में हिन्दी भाषा की भूमिका

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सारांश :

सांस्कृतिक पुनरुत्थान में हिन्दी भाषा की भूमिका महत्वपूर्ण है। संस्कृति का आधार भाषा है। जिस देश की भाषा जितनी समृद्ध होगी उस देश की संस्कृति भी गत्यात्मक रूप उतरोत्तर विकास करेगी। वास्तव में मानवीय समाज के उत्थान-पतन में इन दोनों की अग्रगण्य भूमिका होती है। एक भाषा के रूप में हिन्दी न सिर्फ भारत की हस्ताक्षर है, अपितु हमारे जीवन की मूल्यों संस्कृतियों एवं संस्कारों की रक्षा कवच भी है, जो समय-समय पर हमारी चेतना को शून्य होने से बचाता है। हमें सही दिशा प्रदान करता है। अतः भाषा हमारी जीवनदायिनी शक्ति ही नहीं बल्कि यह संस्कृति की मूलाधार भी है। अतः अपनी संस्कृति को बचाये रखने का संकल्प प्रत्येक व्यक्ति को करना चाहिए।

शब्द कुंजी: सांस्कृतिक पुनरुत्थान, समृद्ध, गत्यात्मक, उतरोत्तर, हस्ताक्षर, रक्षा कवच, चेतना, जीवनदायिनी शक्ति, मूलाधार

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परिचय :

मानव जगत की मूलाधार उसकी संस्कृति है। संस्कृति एक ऐसी प्रकृति है जिसमें रहकर मनुष्य मानवोचित गुण ग्रहण करता है और अपने अवदानों से समाज का निर्माण करता है। संस्कृति शब्द की व्युत्पत्ति सम उपसर्ग 'कृ' धातु और 'क्ति' प्रत्यय के योग से हुई है, जिसका अर्थ है संस्कार करना, परिमार्जन करना तथा शुद्ध करना है। इसके अंतर्गत मनुष्य के शारीरिक, मानसिक, बौद्धिक आदि का सर्वांगीण विकास होता है। प्रकृति और विकृति भी इसी धातु से बनी है, लेकिन एक का निर्माण खूबसूरती है तो दूसरे का बेडौल, बेढंगा आदि। संस्कृति जीवन जीने की कला है। संस्कृति जल की तरह प्रवाहमान रहे तो स्वच्छ बनी रहती है। अन्यथा इसमें सड़न आ जाती है। यह वह सवाहिका है। जिसके होने से हमारा समग्र जीवन संस्कृत होता है। यह राष्ट्र के पुनरुत्थान में एक ऐसी कड़ी है। जिससे मनुष्य के अंदर मनुष्यता को बचाया जा सकता है। संस्कृति के उदात्त पक्ष का संरक्षण करना चाहिए। पुनरुत्थान का शाब्दिक अर्थ ही होता है— 'फिर से उठना'।

आज भारतीय समाज की चेतना को पुनर्जीवित करने की जरूरत है। उसकी सोयी हुई आत्मा को जगाने की आवश्यकता है। वर्तमान परिवेश में भटकाव अधिक है, खासकर 'युवा पीढ़ी' में। आज भाईचारा, सौहार्द, प्रेम, संवेदना आदि गौण दिखलायी पड़ती है। इनकी बोधगम्यता कराने हनु सांस्कृतिक

पुनरुत्थान मील का पत्थर साबित होंगे। राष्ट्रीय चिंतन उसकी एकात्मकता को सुनिश्चित करने के लिए उसके जड़ को मजबूत करना अनिवार्य है। भारतीय संस्कारों की महत्ता उसके भारतीयता से है। आधुनिकता के संघर्ष की अंधी दौड़ में परिवार, समाज, मानवीयता, मूल्य, आत्मीयता आदि संवेदनाओं को संरक्षण करने का कार्य सांस्कृतिक पुनरुत्थान से ही संभव है। विश्व बंधुत्व हमारा आदर्श है। 'वसुधैव कुटुम्बकम्' सनातन धर्म का मूल संस्कार तथा विचारधारा है, जो महाउपनिषद सहित कई ग्रन्थों में लिपिबद्ध है। जिसका शाब्दिक अर्थ होता है— 'सारी वसुधा ही परिवार है।' हमें अपने वेदों, उपनिषदों, धार्मिक ग्रंथों पर गर्व करना चाहिए। वे ही हमारे मार्गदर्शक हैं। चरैवेति, चरैवेति, चरैवेति, चरैवेति.....अर्थात् चलते रहने का नाम ही जीवन है।

सांस्कृतिक पुनरुत्थान में हिन्दी भाषा की भूमिका महत्वपूर्ण है। प्रारंभ से ही हिन्दी भाषा अपने को समृद्ध करनेवाला तत्व है। इसका प्रचार-प्रसार होता रहा है। हिंदी हमारी देश की एकता का भाषा है। यह तो हम सभी जानते हैं कि आजादी की लड़ाई में हिंदी ने महत्वपूर्ण भूमिका है। आजादी के समय से ही हिन्दी भाषा की शक्ति को समझा गया। भारतेन्दु ने भाषा के महत्व को बताते हुए कहा भी है कि—

“निज भाषा उन्नति अहै, सब उन्नति के मूल

बिन निज भाषा ज्ञान के, मिटै न हिय के शूल अंग्रेजी पढ़के जदपि सब गुण हाते प्रवीण बिन निज भाषा ज्ञान के रहत हीन के हीन।”¹

लोक जनजागरण, जनचेतना, लोक मंगल, लोकगाथा आदि अपनी थाती को बचाये रखने का श्रेय प्रबुद्ध मनीषियों ने हिन्दी भाषा को ही दिया। आज हिन्दी का स्वरूप काफी व्यापक हो चला है। साहित्य, फिल्म, कला, संस्कृति, ज्ञान-विज्ञान संचार बाजारों में हिन्दी की ही धूम है। भूमंडलीकरण बाजारीकरण सांस्कृतिक पुनरुत्थान के दौर में हिन्दी भाषा अनिवार्य है। हिन्दी की प्रासंगिकता और उपयोगिता ने हिन्दी में अनुवाद कार्य का मार्ग प्रशस्त किया है। प्रधानमंत्री 'नरेन्द्र मोदी' ने हिन्दी को विकास की सीढ़ी माना है। नई शिक्षा नीति के तहत हिंदी को अधिक तवज्जो दिया गया है। हिंदी की देवनागरी लिपी दुनिया की सर्वश्रेष्ठ वैज्ञानिक लिपि मानी जाती है। बिल गेट्स ने कहा था कि “जब बोलकर लिखने की तकनीक उन्नत हो जाएगी, तब हिंदी अपनी लिपि श्रेष्ठता के कारण सर्वाधिक सफल होगी।

आज बात चरितार्थ होते देखी जा सकती है। हिन्दी के पास भाषिक क्षमता इतनी ज्यादा है कि वह विश्वभाषा बन सकती है। आज डिजिटल माध्यम से हिन्दी के द्वारा नई पीढ़ी को उनकी गति, प्रगति में राह दिखाती है। सांस्कृतिक जागरण में भाषा की भूमिका अग्रगण्य है। भाषाई संस्कार के माध्यम से उनकी चेतना को संरक्षित किया जा सकता है। हिन्दी प्रेम की बोली है। यह मिठास की भाषा जिन विसंगतियों से मानव का हनन हो रहा है। उसे संगत में लाने का नाम 'हिन्दी' है। साहित्य समाज का दर्पण है बल्कि वह दीपक की तरह है। वह अपने प्रकाश से अंधकार को दूर भगाता है। तो भाषा उसका माध्यम है। हिन्दी केवल देश की समुन्नत नहीं करता बल्कि विदेशों में भी भारतीय संस्कृति हिन्दी के माध्यम से देवैव्यमान है। अमेरिका में विश्व हिन्दी समिति, विश्व हिन्दी न्यास, हिन्दी विकास मंडल आदि अनेक स्वयंसेवी संस्थाएँ हैं जो हिन्दी भाषा को नई पीढ़ी तक पहुँचाने का काम कर रही हैं। 'सर्वधर्म सद्भाव' जैसे समरसता और एकता का पाठ पढ़ाने वाली भारतीय संस्कृति की धरोहर को समृद्ध करने में हिन्दी भाषा अक्षुण्ण का योगदान है। हिन्दी साहित्य स्थानीय संस्कृति एवं संस्कारों से ओत-प्रोत है। हिन्दी लेखक अपनी भाषा और संस्कृति से अलग नहीं हो पाता। तुलसी का रामचरितमानस इसका सशक्त उदाहरण है। तुलसी की लेखनी ने सार्वभौमिक संस्कार को जन-जन के हृदय में पहुँचाया। लोकसंस्कृति, लोकमंगल, लोकचेतना, नवनिर्माण, संस्कार, लोक प्रेम आदि से परिचित कराता है। अयोध्याकाण्ड के अंतर्गत राम-लक्ष्मण का शील वैविध्य में उस आत्मीयता का दिग्दर्शन करते हैं। जो समाज के लिए एक वरदान बनकर हमारे सामने आता है। व्यक्ति कितना कुछ प्राप्त कर लें, लेकिन जब तक विश्वास जननी प्रेम न हो तब सब व्यर्थ है। वर्तमान परिप्रक्ष्य में इस विश्वास की कड़ी ही खोखली हो गई है। यहाँ प्रेम नहीं स्वार्थ लिप्सा है, एक ऐसी पिपासा है जिसकी प्यास को बुझाया नहीं जा सकता। आज की स्थिति जर्जर हो गई है। इस जर्जर स्थिति को पुनः हरा-भरा किया जा सकता है बशर्ते कि संस्कृतियों का निर्वहन हो साहित्यकार अपनी माटी एवं अपनी बोली, अपनी भाषा के प्रति पर्याप्त उदार रहे हैं। तभी तो विधापति कहते हैं—

“देसिल बयना सब जन मिट्टा,

ते तैसन जंपओं अवहट्टा।”²

भारतीय आर्य भाषा को तीन अर्थों में देखी जा सकती है—

(क) प्राचीन भारतीय आर्य भाषा, (ख) मध्यकालीन आर्य भाषा तथा (ग) आधुनिक भारतीय आर्य भाषा।

भारत में प्रमुखतः आर्य परिवार व द्रविड़ परिवार की भाषाएँ बोली जाती हैं। उत्तर भारत की भाषाएँ आर्य परिवार की एवं दक्षिण भारत की भाषाएँ द्रविड़ परिवार की हैं। उत्तर भारत की भाषाओं में 'संस्कृत' सबसे प्राचीन भाषा है। चारो वेद ऋग्वेद, यजुर्वेद, सामवेद, अथर्ववेद 'ब्राह्मण ग्रंथ' उपनिषद् प्राचीन भाषा काल के ही हैं और यही से हमें आध्यात्म, धर्म, संस्कृति, संस्कार, शाश्वत ब्रह्म आदि की जानकारी प्राप्त होती है। पालि बौद्ध धर्म की भाषा है। त्रिपिटक की रचना पालि भाषा में ही हुई। अवधी भाषा में रामचरितमानस, लिखी गई। सूरदास ने ब्रजभाषा में सूरसागर लिखकर कृष्ण प्रेम के निश्छल रूप को प्रकट किया। पश्चिमी हिन्दी बोलने वाले सारे प्रदेशों में 'गीतो' की भाषा ब्रज ही थी। हिन्दी प्रदेश बोलियों की बात की जाय तो हम पायेंगे कि चारों दिशाओं में हिन्दी ने अपना परचम लहराया है। हम जानते हैं कि हिन्दी की महीयसी संस्कृत है। अर्थात् संस्कृत, प्राकृत, पालि और अपभ्रंश से होकर सारी भाषाओं का निर्माण हुआ है। भाषा चलायमान है, गतिशील है, निरंतर अपनी प्रकाष्ठता से समाज को संबलता प्रदान करती रही है। अपनी थाती को बचाए रखने में भाषा की अहम भूमिका होगी। साहित्य, संस्कृति तथा संस्कृति साहित्य पर आधारित होता है। वे दोनों एक-दूसरे के पूरक हैं। बचपन में जिस भाषा में व्यक्ति को सुसंस्कृत किया जाता है। वह उसी भाषा में संस्कार प्राप्त करता है। अपनी संस्कृति में रचता बसता है। अपने देश की मिट्टी की खुशबू उसके व्यक्तित्व में झलकती है। वह हिन्दी भाषा ही है जो भारतीय संस्कृति के प्रचार एवं प्रसार में खड़ा है। भारतीय संस्कृति में अनेकता में एकता देखने को मिलती है। अनेक धर्म, संप्रदायों, भौगोलिक विभिन्नता, आचार-व्यवहार, संस्कृतियों आदि व्याप्त हैं। भारत की आत्मा एक है। सबकी मूल चेतना एक है। विहंग में नहीं दिखलायी पड़ती है। बल्कि एक राष्ट्र, एक राष्ट्रीयता, एक संस्कृति की गूंज दिखलायी पड़ती है। जब हम एक हैं। तब पुनरुत्थान भी संभव है। मॉरीशस के प्रसिद्ध कवि हमें राज सुंदर लिखते हैं—

“हिन्दी हमारी संस्कृति की रानी है हिन्दी का भक्त होना, भारत से जुड़ना है। अपनी पितृभूमि से नेह लगाना है।”³

भारतीय पर्व-त्यौहारों, रीति-रिवाजों की जीवंत परंपरा एवं भारतीय संस्कृति को 'फीजी' ने इस प्रकार विश्लेषित किया है—

“सब के लिए शुभ हो, कार्तिक अमावस्या की शाम इंतजार कर रहा मानव जगत परिवार के साथ दीपमाला का स्वागत में दीया की थाली लेकर हाथ श्रद्धा से पूजन करूँ कि चरणों में प्रणाम सब के लिए शुभ हो, कार्तिक अमावस्या की शाम”⁴

प्रत्येक समाज, क्षेत्र विशेष, देश, प्रांत की अपनी अलग-अलग संस्कृति होती है। संस्कृति किसी भी समाज का प्राणतत्व है एवं उसकी आत्मा है। तथा व्यक्ति उसका आधार तत्व मनोविज्ञान एवं अंतर्दृष्टि है। समाज की इन सबके अभाव में समाज में निहित संस्कृति की कोई परिकल्पना नहीं की जा सकती। साहित्य मानव मन एवं भाव का प्रतिबिम्ब है। हिन्दी साहित्य ने अपने पंख फैलाकर अपने देश को ही नहीं बल्कि विदेशों की मिट्टी में अपने को सन्निहित किया है। अपनी भाषा, अपना धर्म, अपना खान-पान, अपने देश की मिट्टी की खुशबू सुगंधित करती रहती है। भारत ने अपनी भारतीय संस्कृति को बचाए रखने का संकल्प ले रखा है। उसे सींचा है। उसने अपनी थाती को बचाया है।

हमारी संस्कृति माता की तरह अत्यन्त विशाल हृदय है। धर्म, संस्कार, संप्रदाय आदि उसके छोटे-छोटे बाल-बच्चे के जैसे हैं जो आकृति-प्रकृति में अनमेल होते हुए भी एक-दूसरे से माता की गोद में एक साथ मातृत्व सुख प्राप्त करते हैं। सम्पूर्ण मध्यकाल जाति, वर्ण, वर्ग, सम्प्रदाय, प्रथा परम्पराओं आदि की संकीर्णताओं से भीगा हुआ था। तभी एक हुंकार निकलती है। 'जात पात पूछें नहीं कोय, हरि को भजै, सो हरि को होय।' यही सांस्कृतिक पुनरुत्थान है। समग्र साहित्य में देखने को मिलता है। उनकी

दूरदर्शिता ही ऐसी है कि अनबोले ही सबकुछ बोल जाते थे। आज वर्तमान युग में जाति विदेश एवं साम्प्रदायिक कलह पनप रहे हैं। आए दिन समाचार पत्रों एवं न्यूज चैनलों पर धर्म को लेकर सम्प्रदाय को लेकर आदि कई झाकियाँ परासे जा रहे हैं। सवाल यह है कि क्या वे अपनी संस्कृति, अपनी धरोहर, अपनी सम्पदा, अपनी निधि को समझ नहीं पाए हैं? यही समय है परिवर्तन का। सांस्कृतिक पुनरुत्थान का। आज विवेकानन्द, गांधी, बुद्ध, तुलसी, आदि की दरकार है। उदार दृष्टिकोण ही नहीं उदार हृदय वाले मनुष्य चाहिए। जो देश की संस्कृति को संरक्षित कर सके। धरती हमारी माँ है। इसकी संस्कृति को जब कोई खंडन करता है तो उसे उस राष्ट्र से परिचित कराया जाय। जिसका वह ऋणी है उसे यह एहसास कराया जाए तथा अपने व्यवहार में शामिल भी करें तभी पुनरुत्थान की कवायद शुरू हो सकेगी। संस्कृति संवाहिका है वह रक्षिता है,

वह अस्मिता है। स्थिति परिस्थितिबश उनके साथ अपनी संस्कृति दूसरे देशों में जाती है और वह वहाँ अपनी खूबसूरती कायम करती है। उदाहरण के लिए ईसाई धर्म रोम में उगा और इस्लाम अरब में पनपा। बौद्ध देशों के निवासी अभी भी गुरुभूमि भारत माता के दर्शन करने निरन्तर भारत आते रहते हैं। संवेदनाओं और भावनाओं का दायरा असीम है। यदि मानव के भीतर सच्ची आत्मीयता है। उसके अंदर मनुष्यता है। तो वह इसका द्योतक है। वह संरक्षक है। संस्कृति से जुड़ने का संघर्ष ही वास्तविक पुनरुत्थान है। कोई भी भाषा हमारी भावनाओं, संस्कृतियों को समझने का एक माध्यम है, हिन्दी भाषा ऐसी ही शक्ति है जो सम्पूर्ण राष्ट्र को जोड़ता है। उसकी विविध बोलियाँ भारत के विविध राज्य में बोली जाती हैं। अपने बोलियों के माध्यम से तारतम्यता को जोड़ती हैं। जिससे देश में संपुष्टता सम्पन्नता एवं अखण्डता बनी रहें। भारत और अन्य देशों में हिन्दी बोली लिखी-पढ़ी जा रही है। अपनी प्रकृति से उसे विभोर कर रही है। इस आलखे का यह उद्देश्य है—जागरण, लोकजागरण, राष्ट्रीय संवृद्धि, सांस्कृतिक पुनरुत्थान, हिन्दी भाषा का महत्व, आत्म चेतना, जन चेतना, मूल्यों को संरक्षित करना, संवेदना को संवेदना से मिलन, आदि। राष्ट्र एक तभी होगा जब इन्हें संजोया जाएगा। एक देश, एक राष्ट्र, एक राष्ट्रभाषा की परिकल्पना पूरी होगी। यह आज भी उतना

प्रासंगिक है जितना कल था। संस्कृतियों का पुनरुत्थान हमसे और हमारे समाज से ही संभव है।

अतः राष्ट्रीय पुनरुत्थान या सांस्कृतिक पुनरुत्थान में भारतीय संस्कृति और हिन्दी भाषा का अत्यंत घनिष्ठ संबंध है। संस्कृति के दोहन को रोकने के लिए हिन्दी भाषा का होना राष्ट्रीय हितैषी

साबित होगा। हम जानते हैं कि भारतीय संस्कृति का सबसे बड़ा गुण है—धर्म, अर्थ, काम, मोह। इन बातों को व्यक्ति आत्मसात कर लें तो वह राष्ट्र को कुछ न कुछ देकर जाएगा। अपनी संस्कृतियों के पुनरुत्थान में मूल्यों को स्थापित करेगा। भारतीय संस्कृति के विषय में कहा गया है कि— “यनून मिश्र रामे मिल गये सब जहाँ से, बाकी रहा है अब तक नामों निशां हमारा सदियों रहा है दुश्मन दौरे जहाँ हमारा।

संदर्भ—सूची :

- भारतेन्दु हरिश्चन्द्र, भाषा महत्त्व, हिंदी गद्य-पद्य संग्रह भाग1, पृष्ठ—64 संपादक दिनेश प्रसाद सिंह
- हिन्दी साहित्य का इतिहास, रामचन्द्र शुक्ल, कमल प्रकाशन, नई दिल्ली—110002 पृष्ठ—18
- प्रवासी हिन्दी साहित्य संवेदना के विविध संदर्भ सम्पादक डॉ प्रतिभा मुदलियर पृष्ठ—101, वर्ष—2019 हिन्दी बुक सेंटर, असफ अली रोड, नई दिल्ली
- वहीं





अखतरूल ईमान की नज्मों में माजी (भूतकाल) का तसव्वुर (कल्पना) : एक अध्ययन

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محمد سهیل انور

اخترا الایمان کی نظمیں ماضی کا تصور: ایک مطالعہ

ماضی، حال اور مستقبل دراصل ایک ایسا میضہ ہے۔ جس کے تحت انسانی زندگی رو بہ عمل رہتی ہے، یہ انسانی فطرت ہی ہے کہ وہ زیادہ دیر تک ایک ہی حالت میں نہیں رہ سکتا۔ جدیدی اس کے ضمیر میں رہا جاسا ہے۔ اسی لئے حال میں گذر بسر کرنا، ماضی کے تھوڑے نکلے جھانکنا اور مستقبل سے اچھے کی توقع رکھنا انسانی جبلت میں شامل ہے۔ ایک ہمارا انسان سے زیادہ حساس پسند ہوتا ہے، لہذا اس کا ماضی زدہ ہونا عید از قیاس یا تحمیر کی بات نہیں۔ اخترا الایمان بھی اس زمرے سے باہر نہیں۔ اپنی بقی زندگی کے گذرے لمحات کو یاد دہن "ایک لڑکا" اور "اس آباد گراہے میں" وغیرہ کے عوالمات کے تحت برہمن کی کوشش کی ہے۔ لہذا عوالم کی مناسبت سے ماضی کے تصور کا ذکر آتے ہی ملتا نائل ذہن اخترا الایمان کی مدد پر بالامظلومات کی جانب موجہ ہو جاتا ہے اور ساتھ ساتھ مشقورات میں مشاق احمدیہ کی شاہکار "آب گم" کی جانب خیال منتقل ہو جاتا ہے۔ حرقی پسند تحریک کے علمبرداروں و حوالوں اور جدید اذہان و مابعد جدیدیت کے رجحانات نے ملکہ فکر و ادب کے مختلف اصناف کو کسی نہ کسی طرح متاثر کیا اور مختلف اصناف میں تحیرات بھی رونما ہوئے۔ غالباً اسی لئے تحریک آزادی سے قبل اور اس کے بعد بھی دیوں، ہماروں و فنکاروں نے اپنی باتوں کو مؤثر انداز میں عوام کے روبرو پہنچانے کے لئے مختلف طریقہ کار کو اپنا کر مظلوم و مغرور کلام کو بروئے کار لایا۔ لہذا کچھ شعراء آزاد و معری ہمارے کی طرف راغب ہوئے تو معدودے چند نے قافیہ بیتانی کا سہارا لے کر قافیہ بند و مصفیہ ہمارے یعنی نظم میں طبع آزمائی کی۔ انہی رجحانات و عوامل کے زیر اثر اپنے افکار و نظریات اور آپ بیتی کو عوام تک پہنچانے کا حیلہ تلاش کیا۔ آزادی کے انہی حوالوں میں سے اخترا الایمان و معاصرین میں ان۔ م۔ راہد اور میراجی فیض، جمیل مظہری کے نام لئے جاسکتے ہیں۔ لیکن نظم نگاری کی صف میں راہد اور میراجی کے بعد جدید نظم گوئی کی صف میں جن کا نام ممتاز و منفرد اہمیت کا حامل ہے ان میں اخترا الایمان بھی اہم مقام رکھتے ہیں البتہ یہ خیال رہے کہ جن لوگوں کا نام اس زمرے میں اوپر لیا گیا وہ فہرست مکمل نہیں ہے۔ پہلی جگہ عظیم سے قبل اور اس دوران بھی حالی، اقبال، شبلی و حسرت و غیرہ اور اس قبیل کے دوسرے شعراء و ادیب کے نام بھی اس ضمن میں کافی اہمیت کی حامل ہیں۔ چونکہ میراجی بحث موضوع اخترا الایمان ہے لہذا وسیع کیوں میں جانے سے طوالت کا اندیشہ ہے۔ اس لئے اب اخترا الایمان کے موضوع پر ہی اکتفا کرنا گویا ہو جاتا ہے۔

اخترا الایمان، نظم نگاری کو جدید طرز اسلوب میں پیش کرنے والے حایہ پہلے نظم گو ہمارے نہیں، ان کے معاصرین و پیش روؤں نے بھی جدید نظم نگاری میں طبع آزمائی کی ہے جن کا ذکر گذرہ سطور میں آچکا ہے۔ تاہم اخترا الایمان اپنے منفرد و انوشے انداز فکر کی وجہ سے نظم نگاری کو نیا چہرہ دے کر معاصرین، راہد، میراجی وغیرہ سے قدرے مختلف طرز اسلوب میں پیش کرنے پر قادر تھے، یہ جگہ ظاہر ہے کہ اخترا الایمان بھی جدید ذہن اور حرقی پسند افکار کے پروردہ تھے لہذا ان کی نظموں میں کلاسیکی زبان و اسلوب اختیار کرنے کے وصف کے باوجود دلچسپ و مؤثر تھا۔ اسی لئے اپنے معاصرین سے اسلوب نگارش میں منفرد راہ اپنائی۔

باوجود کلاسیکیت ذہن رکھنے کے جدید ذہن کے مالک تھے اور افکار و خیالات بھی جدید تھے اور طبع آزمائی کے لئے بہت تکنیک (Form & Technic) بالکل نئی اپنائی۔ حایہ اسی لئے عربی و فارسی الفاظ و جرائد کی کاربھل استعمال کر کے اپنی نظم گوئی میں بہت خوبصورتی سے برتا ہے۔ نظموں و شعری کلمات کا بغاوت مطالعہ کریں گے تو اس بات کا احساس ہوگا۔ آئندہ سطور میں نمونہ کلام و اظہار پیش کر کے اس کی مثالیں دی گئی ہیں۔ کسی بھی ہمارے ادیب کے اسلوب و بیان میں اس کی خصوصیت کا پرتو ملتا ہے۔ حایہ اسی لئے اخترا الایمان بھی اپنے ہم عصروں سے اسلوب نگارش میں مختلف نظر آتے ہیں۔ کبھی اپنے اسلوب کے ذریعہ اساطیری و انشاء پر دازی، کبھی تاریخی انداز بیان تو کبھی داستانوی حوالے (تظہیر و استعارہ کی شکل میں) ان کے انداز بیان میں یکسر سما جاتے ہیں۔ انہی متعدد و مختلف اسالیب کی وجہ سے اخترا الایمان کو نہ صرف بیسویں صدی بلکہ اکیسویں و آئندہ صدیوں کا ہمارے بھی تسلیم کرنے سے گریز نہیں کیا جاسکتا ہے۔ لیکن ان کی اجرائی نظموں کا مطالعہ کر کے یہ ایسا گمان گذرتا ہے کہ یہ بھی خود کو بقول غالب: "عند لب گلفین تا آفریدہ" سمجھنے لگے تھے۔ حالانکہ ایسا گمان کرنا ہر حساس ہمارے ادیب و فنکار کا تعلق انداز و اسلوب ہے جس میں کوئی محاکمہ نہیں۔ حایہ اخترا الایمان انہی گمان کے باعث بقول ان کے: "اس طرز گفتگو یا نقطہ نظر کی وجہ سے ان کے معاصرین ان کو کوئی خاص اہمیت نہیں دیتے تھے۔ باوجود اس بے رخی کے اخترا الایمان نے ان ہی احباب کے درمیان ایک شناخت قائم کی اور اپنی ایک ساکھ جہان میں کامیاب ہوئے۔

جیسا کہ میں نے شروع میں کہا کہ اخترا الایمان کی نظموں و شعری کلمات کا بغاوت مطالعہ کریں گے تو اس نتیجے پر پہنچیں گے کہ اخترا الایمان کی شعری و غری اسالیب اپنے معاصرین سے جدا و منفرد ہیں۔ غالباً اس کی ایک وجہ یہ بھی ہو سکتی ہے کہ وہ اپنے معاصرین و شعراء و ادیب سے زیادہ حساس اور ماضی زدہ تھے۔ اس لئے ان کے کلام میں کلاسیکیت و جدیدیت کی آمیزش ہونے کے باوجود ان کا ماضی و حال سے جو دامن مابوئے کا وصلہ بدسور قائم رہا۔ میراجی اس بات کی تصدیق کے لئے ان

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کے ایک شعری اظہار کا اعادہ کرنا ضروری ہے۔ جس کا اظہار انہوں نے اپنے ایک روزنامے کے حوالے سے ”باقیاتِ اختر الایمان“ میں درج کیا ہے۔ ۱۵ جنوری ۱۹۶۷ء کو اپنے ایک روزنامے میں مرزا غالب کے شعر کے ساتھ اپنی ماضی زد و ماضی پرست کیفیت کا بہت خوبصورت انداز میں احاطہ کیا ہے۔ اقباس دیکھیں: ”انسان ماضی پرست ہے اس لئے کہ ماضی ہی حقیقت ہے باقی سب افسانہ ہے

حقیقت نہیں۔ مستقبل اور حال دونوں اس تیزی سے گزر جاتے ہیں کہ انسان

پکڑتے پکڑتے بے دم ہو جاتا ہے اور پکڑ میں نہیں آتے، شاید اسی لئے غالب نے کہا تھا:

”لیتا ہوں مکتبِ غم دل میں سبقِ آموز لیکن یہی کہ رفت گیا اور ہو دھما۔“

اور مزید لکھتے ہیں: ”رفت اور بود کے سوا انسان کے پاس اور کچھ نہیں رہ جاتا اور میں

ان لوگوں میں سے ہوں جن کے پاس رفت اور بود بھی نہیں“ [بحوالہ ڈائری کے اقباسات مشمولہ باقیاتِ اختر الایمان]

موضوع کی نسبت سے وقت کا تصور، یادیں اور ایک لڑکا، یہ سبھی ماضی کے سرچشمے سے ہی عبارت ہیں، شاید اسی لئے ان کی طبع زاد نظمیں یادیں اور ایک لڑکا، ان کے ماضی کی یادوں کی بازیافت ہی ہیں۔ لہذا یہ باتیں ذہن نشین رہنی چاہئے کہ لفظ یادیں ہوں یا یادداشت پر مبنی خیالات و افکار، یہ سبھی لوازمات و عناصر، ماضی کا ہی حصہ ہیں۔ جیسا کہ مذکورہ اقباس سے بھی یہ کلتہ آشکار ہوتا ہے کہ اختر الایمان سر تاپا، ماضی پرست و ماضی زد ہیں اور رفت و بود کے ٹھکنے سے باہر نہیں نکل پاتے ہیں۔ یہ باتیں جگ ظاہر ہیں اور روزمرہ کی زندگی کا دستور العمل بھی یہی ہے کہ صیغہ ماضی، حال اور مستقبل، انسانی تفکرات کو اپنے دائرہ افکار سے باہر نہیں جانے دیتا ہے۔

ماضی کی بازیافت یا ماضی کا روایا ہنسا ہمارے گرد و نواح اور ہماری سوچ کے اطراف و جوانب گردش کرتا نظر آتا ہے اور مسلسل گردش کرتا ہی رہتا ہے۔ البتہ حال ہمیں عمل پیرا ہونے کی تلقین کرتا ہے اور مستقبل [بمعنی دگر ہاعر] آگے کی سوچ سے بے نیاز ہو کر مستقبل قریب میں جہد مسلسل کی ترغیب دیتا ہے۔ لیکن ماضی بھی انسان کو سبق لے کر آگے کی حکمت عملی مستند انداز میں کرنے کی ترغیب دیتا ہے تاکہ ماضی قریب و ماضی بعید میں سرزد ہونے والی غلطیوں کا ازالہ ہو سکے۔ اختر الایمان کا یہ شعر ماضی سے عمرت لے کر حال کو سوار نے اور مستقبل سے ہونے پر مایا زرنے کی جانب ایک تمثیلی شعر کی حیثیت رکھتا ہے۔

مرے حق میں ابھی کچھ فیصلہ صادر نہ فرما نا میں جس دن آؤں گا تازہ لخت ہمراہ لاؤں گا

پہلے مصرعہ میں ماضی حال ہے تو مصرعہ ثانی میں مستقبل سے رو برد ہونے کا سبق اور اصلاحی کیفیت مضمر ہے۔ یہ باتیں بلا تامل کہی جاسکتی ہیں کہ اختر الایمان نے اپنے تصورات کو ماضی قریب، ماضی بعید و ماضی حال میں منتقل کرنے کے لئے نظم کے عنوانات کا ہی سہارا لیا ہے کیونکہ غزل میں تسلسل میں اپنے خیالات رکھنے کی گنجائش مفقود ہیں۔ ان کی نظموں کے عنوانات سے قاری کسی نہ کسی مقام پر بہ آسانی اندازہ لگا سکتے ہیں کہ اختر الایمان کسی نہ کسی نہج پر ماضی کے تھرونگے، ماضی پرست یا ماضی زد کی صورت میں اپنی نظموں کے عنوانات و خیالات کو مظلوم پیرائے میں پیش کرنے کی کامیاب کوشش کی ہے۔ خواہ ان کی نظموں میں یادیں، یادداشت، وقت، ایک لڑکا جیسی شاہکار نظمیں ہوں۔ زیر مطالعہ ایسا گماں گذرتا ہے کہ ہاعر ماضی کی یادوں سے اپنا پیچھا

پھردانے میں ناکام ہے۔ انہی تصورات و خواہوں کے سہارے اپنے افکار و نظریات یا اپنی آپ بیتی کو مظلوم سانچے میں ڈھالنے میں یکسر سکوں و عافیت محسوس کرتا ہے اور ہاعر اس فعلِ حنہ میں کامیاب بھی ہے۔ خود اپنے شعری مجموعے کے دیباچے میں اور گاہ بہ گاہ اپنے شعری کلمات میں انہی باتوں کا اعادہ بھی کیا ہے۔ دیکھیں مندرجہ ذیل مثالوں میں ماضی کے موضوعات میں یکسانیت، زمانی پس منظر، دونوں صورتوں میں قدر مشترک نظر آتے ہیں۔

ایک لڑکا:

مجھے اک لڑکا، آوارہ منش، آزاد سیلانی

مجھے اک لڑکا جیسے تند چشموں کا رواں پانی

نظر آتا ہے، یوں لگتا ہے، جیسے یہ بلائے جاں

مرا ہم زاد ہے، ہر گام پر، ہر موڑ پر جولاں

اسے ہمراہ پاتا ہوں، یہ سائے کی طرح میرے

تعاقب کر رہا ہے، جیسے میں مفرو و ملزم ہوں

ظفر مندوں کے آگے رزق کی تحصیل کی خاطر
کبھی اپنا ہی نغمہ ان کا کہہ کر مسکراتا ہے
وہ خامہ سوزی، شب بیداریوں کا جو نیچہ ہو
اسے اک کھوٹے سکے کی طرح سب کو دکھاتا ہے

حالانکہ نظم ایک لوکا، صرف چار بندوں پر مشتمل احتجاج و اختصار سے اور ڈرامائی عنصر اور تضاد و تناؤ بشمول معصومیت کے انداز میں اور دنیا داری سے متاثر ہو کر مظلوم کی گئی ہے۔ وہیں دوسری طرف ان کی دیگر نظمیں مثلاً 'یادیں' میں داخلی و خارجی عناصر کی موجودگی کے باوجود اور جذباتیت کی جھلک نظر آنے کے باوجود عمومی لہجے کی جانب مائل ہے۔ البتہ 'یادیں' کی جذباتیت وہ مقام حاصل نہ کر سکی جو ایک لوکا کے توسط سے شاعر نے حاصل کی۔ دراصل اختر الایمان کی نظموں میں بیشتر مقام ایسا آتا ہے جس میں تکلمانہ اسلوب اور واحد متکلم کا صیغہ استعمال کیا گیا ہے، جس نے نظم کی تاثرات میں انفعال و اشتعال کی کیفیت پیدا کر دی ہے۔
نمونہ کلام کے طور پر ان کی نظم 'یادیں' سے چند بندیں ملاحظہ فرمائیں۔

”یادیں“

وہ بالک ہے آج بھی حیراں میلا جوں کا توں ہے لگا
میلے کی سچ دھج میں کھو کر باپ کی انگلی چھوڑ گیا
ہوش آیا تو خود کو تنہا پائے بہت حیراں ہو
بھید میں راہ ملی نہیں گھر کی اس آباد خرابے میں
یاد ہے کہ ہم نے اس حق کو آخر اسی تذبذب میں چھوڑا
اور نکالی راہ مفر کی اس آباد خرابے میں

اور اسی نظم 'یادیں' سے دوسری بند بھی ملاحظہ کریں، جس میں آپ مشاہدہ کریں گے کہ اختر الایمان کس طرح ذاتی کشمکش و تذبذب سے دوچار نظر آتے

ہیں

۔ جس پہ ناز ہے ہم کو اتنا، تھکی ہے اکثر وہی جبین
کبھی کوئی سفلہ ہے آقا، کبھی کوئی ابلہ فرزند
بچی لاج بھی اپنے ہنر کی اس آباد خرابے میں
دیکھو ہم نے کیسے ہنر کی اس آباد خرابے میں

دیکھیں مزید ایک مثال اور جس میں شاعر مفاہمت پسندی اور شیشے کا آدمی کے محل نازک رشتے کو نظم 'غیر' میں بہت ہی خوبصورتی سے برتا ہے جس میں نہ

چاہتے ہوئے بھی استہمایہ پہلو کھڑک سامنے آ گیا ہے۔ میں کس طرح سوچتے لگا ہوں مجھے رفیقوں پہ کتنا شک ہے

حیرت تو تب ہوتی ہے جب اختر الایمان رومانویت پسند شاعر ہونے کے باوجود، فیض کی طرح ہی اپنے اسلوب کو وقت کے ساتھ ساتھ رومانیت اور رنگینی کو اپنے

کلام سے آزاد کیا ہے گو کہ وہ بھی اب فیض کی مانند رومانیت سے مخرف کر گئے ہیں اگر اس کی مثال دیکھنی ہو تو ان کے آخری دور کی نظم 'پانچ گاڑی کا آدمی' سے چند بند

دیکھیں۔ کچھ ایسے ہیں جو زندگی کو مہمہ و سال سے ناپتے ہیں گوشت سے، ساگ سے، دال سے ناپتے ہیں

صوبت سے جہاں سے ناپتے ہیں۔

۔ اختر الایمان کا تہذیبی سرکار اور ان کے اسلوب کی نوعیت کا تعین دراصل ان کی فکرِ ماضی کی مہم و منت ہے۔ شاید یہی وجہ ہو کہ اختر الایمان کے تصورِ کائنات کو

ان کے سماجی و تہذیبی رویوں کے ساتھ ہم آہنگ کر کے نہ دیکھا جائے گا تاہم تھیکہ کہ بہت اور اسلوب کی سطح تک۔ حتیٰ کہ ماضی زد کی ان کی انفرادیت کو نہ بجا طور پر

پر کھاجا سکتا ہے اور نہ ہی نشان زد کیا جاسکتا ہے کیونکہ ماضی زد (Nostalgia) کا ان کا یہ تجربہ و مشاہدہ سب سے مختلف ہے۔ شاید یہی وجہ ہے کہ منظومات میں ان

کی شاہکار نظم ایک لوکا، اور معنویت میں مشائق احمد یوشی کی 'آپ گم' کو نا سنجیا کی پہلی شاہکار تخلیق ہونے کا شرف حاصل ہے۔ اسی لئے سید عبداللہ نے اپنی کتاب

میں ایک مہم و منت کے تصور کو، لوکا، کے تصور کے ساتھ ساتھ، ۱۹۸۰ء

”۔۔۔ ایک لڑکا سایے کی طرح ساتھ لگا رہتا ہے گویا کہ میں مفرد و ملزم ہوں“

[اردو ادب کی ایک صدی از سید عبداللہ ص ۲۲۳]

مزید لکھتے ہیں: ”اختر الایمان دل شکستگی اور کشمکش کے نمائندے ہیں۔“ حیران بالک کی علامت

ان کے سارے تفکر کو ظاہر کرتی ہے۔ اختر الایمان کے یہاں غم کی تلخی شدید ہے اور

علامت کی زبان میں یہی ان کے احساس کا خلاصہ ہے۔“ [ایضاً ص ۲۲۳]

حواشی: ۱۔ اطلاقی تنقید نئے تناظر میں مرتبہ از پروفیسر گوپی چند نارنگ [ص ۲۲۳ تا ۲۷۷]

۲۔ اردو ادب کی ایک صدی از سید عبداللہ [ص ۱۳۳]

۳۔ موج ادب از پروفیسر کوثر مظہری [ص]

۴۔ ڈائری کے اقتباسات مشمولہ باقیات اختر الایمان۔ ص ۷۷ اردو۔

مقالہ نگار: ڈاکٹر محمد سہیل انور

صدر، شعبہ اردو، مگدھ مہیلا کالج

پٹنہ یونیورسٹی، پٹنہ [بہار]



Comparative Assessment of Heavy Metal Pollutants in Paddy Fields of Patna and the Efficacy of Bioremediation Techniques

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Abstract:

This research paper presents a comparative study of heavy metal pollutants in the paddy fields of Patna and explores the effectiveness of bioremediation using rhizobacteria to reduce heavy metal concentrations in the soil. Soil samples were collected from different regions in Patna district and analysed for heavy metal contamination before and after bioremediation. Rhizobacteria, known as plant growth promoting rhizobacteria (PGPR), were isolated from these samples, exhibiting the ability to accumulate heavy metals inside their cells and synthesize byproducts, thereby reducing heavy metal concentrations in the soil. This eco-friendly approach offers an attractive alternative to chemical fertilizers, pesticides, and supplements, promoting sustainable agriculture and plant growth. The heavy metal concentrations were detected using atomic absorption spectrometry (AAS) technique. Bioremediation was conducted by mixing two soil samples with different heavy metal levels. The results demonstrate significant reductions

in heavy metal concentrations, except for Zinc, after the bioremediation process. Overall, the research concludes that rhizobacteria hold great potential in mitigating heavy metal stress in agroecosystems and enhancing plant growth and development.

Keywords: , Bioremediation, Catalase test.

Introduction:

Heavy metals, when present in trace amounts, serve as beneficial micro-nutrients for plants, promoting the physical growth and development of plant roots (R. A. Aziz et al). However, exceeding the permissible levels of these micro-nutrients can have various detrimental effects on plants, including reduced crop production and hormone production. The extent of heavy metal contamination in soil varies, primarily depending on the soil's geological origin and human activities in the region (Blaylock MJ., Huang JW., 2000). This type of contamination has significant impacts on terrestrial and aquatic ecosystems (Meagher RB., 2000). With few exceptions, most heavy metals have mobility, allowing them to move through soil pores and be absorbed by plant roots. Some heavy metals, such as Ca, Mg, Zn, and Fe, are

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essential micronutrients for plants, but high concentrations of these micronutrients can be harmful and cause toxicity (Marschner H., 1995).

In contrast, heavy metals like Cd and Pb do not provide any beneficial effects to plants and animals. On the contrary, when present in excessive amounts, these metals can be toxic (Adriano DC., 1992, Gough LP. et al., 1979).

To address the issue of heavy metal contamination effectively and in an environmentally friendly manner, one of the most commonly employed and cost-efficient strategies is bioremediation. Among the various bioremediation approaches, microbial bioremediation utilizing rhizobacteria present in the rhizosphere of paddy crop soils stands out as one of the most suitable methods for reducing heavy metal stress in agroecosystems (Kumar A., Meena V. J., 2019). Rhizobacteria residing in the roots of paddy crops enhance overall growth and development, earning them the designation of plant growth promoting rhizobacteria (PGPR). These bacteria play a pivotal role in increasing nutrient availability through the decomposition of organic compounds. Numerous bacteria with nitrogen-fixing and phosphate-solubilizing capabilities are found in the rhizosphere, including *Pseudomonas*, *Rhizobium*, *Arthrobacter*, and others.

Material and Methods:

Collection of Soil Sample

To investigate heavy metal contamination and its potential bioremediation, four different soil samples were collected from distinct regions within Patna district, Bihar, India; namely Phulwari (Alipur Village, approx. 3Km from Parsa Railway Station), Danapur (Mathiyapur village), Maner (Highway near Bahpura Village), and Bypass (Parsa Bazar, near Surya Mandir Khairatali Dariyapur), and stored under aseptic conditions for further analysis and comparative study.

The collected soil samples were carefully placed in plastic bags and stored under aseptic conditions for further analysis.

Preparation of soil samples

The collected soils were subjected to two drying methods: air drying, where Rhizobacteria were present, and oven drying at 120 °C for 60 minutes. After drying, the soils were crushed using a mortar and pestle and then sieved through a 4 mm sieve to obtain uniform and homogeneous soil particles for further analysis.

Isolation of rhizobacteria

Bacterial colonies were isolated using the serial dilution method. Sample solutions from the serially diluted concentrations of 10⁻³ and 10⁻⁴ were taken as inoculum with the aid of a micropipette. Approximately 1 ml of the inoculum was spread onto NA (Nutrient Agar) media plates, which were then incubated at 37°C for 24-48 hours to allow bacterial colonies to develop.

To obtain pure colonies, the streak plate technique was employed. In this process, an inoculum was taken from the 48-hour incubated mixed culture plate using a sterilized inoculation loop and streaked onto another NA media plate, followed by incubation.

These isolation techniques were carried out for all four soil samples within the confines of a laminar air flow (LAF) bench to maintain sterile conditions. For the isolation of Rhizobacteria bacteria, mannitol salt agar, a selective and differential media, was used as the substrate. Approximately 5 ml of the media was poured into different petri plates, and 1 ml of inoculum from the cultured broth was evenly spread over each plate.

Identification of rhizobacteria: Simple staining, Gram staining and Catalase test

The simple staining technique is employed as a distinctive method to differentiate between the organisms and their background. In the gram staining technique, crystal violet serves as the primary stain, alcohol acts as the decolourizer, and methylene blue acts as the secondary stain. To confirm the presence

of Rhizobacteria, a catalase test is conducted. This test determines whether the organism can produce the catalase enzyme or not. A clean and dry glass slide containing the rhizobacteria is subjected to the addition of 3% hydrogen peroxide during the test.

Detection of heavy metals

The presence of heavy metals in the soil samples was analysed using the atomic absorption spectrometry (AAS) technique. AAS is an analytical method that allows for qualitative and quantitative measurement of element concentrations. The following procedure was followed for the AAS analysis:

Soil sample digestion: One gram of each homogeneous soil sample was placed in a beaker, and then a mixture of 5ml hydrochloric acid and 5ml nitric acid was added. The mixture was left undisturbed and heated on a hot plate to digest the solid sample matrices.

Filtration of digested soil sample: After digesting each sample, they were transferred into separate volumetric flasks. Next, the samples were filtered using filter paper, and distilled water was added to each volumetric flask. The prepared samples were then analyzed for heavy metals (Fe, Pb, Zn, Cd).

Bioremediation and its process

Bioremediation presents a cost-effective, eco-friendly, and highly suitable approach to reducing heavy metal concentrations in soils. To implement the bioremediation process, we selected the soil sample with the highest heavy metal concentration as the control and mixed it with soil containing the least heavy

metal concentration. Our hypothesis was that the soil with the highest heavy metal concentration may have less numbers or no rhizobacterial colony, while the sample with the lowest heavy metal concentration would contain ample colony of rhizobacteria.

Both soil types were combined and incubated at an appropriate temperature for 24-48 hours. After the incubation period, all the samples were mixed in a consistent manner and analysed for any changes in heavy metal concentration using the AAS (Atomic Absorption Spectroscopy) technique.

Results and Discussion

1. Simple Staining and Gram Staining

The isolated rhizobacteria from various soil samples exhibited mostly gram-positive characteristics, with a few being gram-negative. The morphology of the rhizobacteria included both bacillus (*Streptobacillus*) and coccus forms, with a flat elevation, mucoid surface, and opaque density.

2. Catalase Test

To confirm the presence of the isolated rhizobacteria, a catalase test was conducted. When a few drops of 3% hydrogen peroxide were added to the slide containing the isolated bacteria, the appearance of small bubbles or effervescence after a few minutes confirmed the presence of rhizobacteria. These bacteria showed a positive catalase reaction, indicating their ability to produce the catalase enzyme.

Heavy Metal Concentration in Different Soil Samples:

A. Iron (Fe): The concentration of iron (Fe) in various soil samples was measured using AAS. The results are provided in Table 1 below.

Sl. No.	Sample label	Concentration (mg/L)	%RSD	Mean Absorbance
1	Maner	5.67	1.11	0.6691
2	Control	4.89	0.49	0.6872
3	Danapur	4.77	0.39	0.7170
4	Phulwari	4.75	0.36	0.6925
5	Bypass (Parsa Bazar)	3.45	0.17	0.7053

Table 1: The table indicates that the soil sample from Maner had the highest concentration of iron compared to the other samples, while the Bypass (Parsa Bazar) soil had the lowest concentration.

B. Zinc (Zn): The concentrations of Zinc (Zn) in various soil samples were determined using AAS. The results are presented in Table 2 below.

Sl. No.	Sample label	Concentration (mg/)	% RSD	Mean Absorbance
1	Control	0.678	0.38	0.1693
2	Phulwari	0.433	1.12	0.1604
3	Bypass (Parsa Bazar)	0.411	0.85	0.1701
4	Maner	0.345	0.58	0.2182
5	Danapur	0.256	1.00	0.1884

Table 2: The Table displays the zinc concentrations in the soil samples collected from different regions. The highest concentration of zinc was found in the soil from the paddy field of the control region, while the lowest concentration was detected in the soil collected from the Danapur region.

C. Lead (Pb): The concentrations of lead (Pb) in various soil samples were measured using AAS. The results are provided in Table 3 below.

Sl. No	Sample label	Concentration (mg/l)	% RSD	Mean Absorbance
1	Bypass (Parsa Bazar)	0.100	High	0.0010
2	Phulwari	0.083	High	0.0009
3	Danapur	0.062	High	0.0007
4	Maner	0.000	High	-0.0072
5	Control	0.000	High	-0.0084

Table 3: The Table Illustrates the lead concentrations in the soil samples collected from different regions. The highest concentration of lead was detected in the soil from the Bypass (Parsa Bazar) region, and the second highest was found in the soil from Phulwari, followed by the Danapur region. However, the lead concentration was recorded as zero for the soil samples collected from Maner and the control region.

D. Cadmium (Cd): The concentrations of cadmium (Cd) in various soil samples were measured using AAS. The results are presented in Table 4 below.

Sl. No.	Sample label	Concentration (mg/L)	% RSD	Mean Absorbance
1	Control	0.302	1.13	0.0465
2	Maner	0.000	2.21	0.0035
3	Danapur	0.000	1.70	0.0069
4	Bypass (Parsa Bazar)	0.000	1.80	0.0071
5	Phulwari	0.000	2.46	0.0060

Table 4: The Table displays the accumulation of cadmium, which was found exclusively in the soil sample collected from the control region.

BIOREMEDIATION

Iron (Fe): To observe changes in iron (Fe) concentration, soil from the Maner region was mixed with Bypass (Parsa Bazar) rhizosphere soil and then incubated. The alterations in iron (Fe) concentration before and after bioremediation are presented in Table 5.

Sl. No.	Sample	Concentration (mg/L)	%RSD (Relative standard deviation)
1	Maner	5.67	0.6691
2	Bypass (Parsa Bazar)	3.45	0.7053
3	Maner + Bypass (Parsa Bazar)	0.267	0.0213

Table 5: The Table displays the iron concentrations before and after the bioremediation process. Initially, the iron concentration in the Maner soil was 5.67 mg/L, while in the Bypass (Parsa Bazar) soil, it was 3.45 mg/L. However, after the bioremediation process, the concentration decreased significantly to 0.267 mg/L.

Zinc (Zn):

To assess the changes in zinc (Zn) concentration, soil from the Control region was mixed with soil from Danapur. The results obtained after the bioremediation process are presented in Table 6.

SI. No.	Samples	Concentration	%RSD (Relative standard deviation)
1.	Control	0.678	0.38
2.	Danapur	0.256	1.00
3.	Control+ Danapur	0.250	

Table 6: The Table displays the zinc concentrations before and after the bioremediation process. Prior to bioremediation, the zinc concentration in the Control soil was 0.678 mg/L, while in the Danapur soil, it was 0.256 mg/L. However, after mixing these two soils and conducting bioremediation, the concentration decreased to 0.250 mg/L.

Lead (Pb):

To determine the lead (Pb) concentration, soil samples from Maner and Bypass (Parsa Bazar) were mixed. The results obtained after the bioremediation process are presented in Table 7.

SI. No.	Samples	Concentration Mg/L	%RSD (Relative standard deviation)
1	Bypass (Parsa Bazar)	0.100	0.0010
2	Maner	0.000	-0.0072
3	Maner + Bypass (Parsa Bazar)	0.010	0.0013

Table 7: The Table displays the lead concentrations before and after the bioremediation process. Prior to bioremediation, the lead concentration in the Bypass (Parsa Bazar) soil was 0.100 mg/L, while in the Maner soil, it was 0.000 mg/L. However, after mixing these two soils and conducting bioremediation, the concentration decreased to 0.010 mg/L.

Cadmium (Cd):

To observe changes in cadmium (Cd) concentration, soil from the Control region was mixed with soil from Danapur. The results obtained after the bioremediation process are presented in Table 8.

SI No.	Samples	Concentration	%RSD (Relative standard deviation)
1.	Control	0.302	1.13
2.	Danapur	0.000	1.70
3.	Control + Danapur	0.000	0.871

Table 8: The Table displays the cadmium (Cd) concentrations before and after the bioremediation process. Prior to bioremediation, the cadmium concentration in the Control soil was 0.302 mg/L, while in the Danapur soil, it was 0.000 mg/L. However, after mixing these two soils and conducting bioremediation, the concentration decreased to 0.000 mg/L.

Discussion:

The main objective of our research was to investigate the concentration of heavy metals in different soil samples collected from paddy fields in Patna district before and after bioremediation using rhizobacteria. Rhizobacteria, also known as plant growth promoting rhizobacteria (PGPR), possess the ability to accumulate heavy metals within their cells and synthesize byproducts that help in reducing heavy metal concentrations in soil. This presents an eco-friendly and cost-effective approach to address heavy metal pollution in agriculture, promoting sustainable crop growth.

The heavy metal concentrations were analysed using atomic absorption spectrometry (AAS) technique, which allows for the qualitative and quantitative measurement of elements. We isolated rhizobacteria from the collected soil samples using serial dilution and spread plate techniques. Characterization of the isolated rhizobacteria was done through simple staining, gram staining, and the catalase test, confirming their identity.

Earlier studies show that PGPRs have been harnessed for enhancing plant growth (Singh et al., 2016). In a study, twelve PGPRs isolated from arsenic-affected agricultural soil exhibited resistance to arsenic, which facilitated their survival in contaminated soil (Das et al., 2014). Another study reported that the application of PGPRs to an arsenic-treated rice variety resulted in enhanced germination percentage, increased root elongation, and elevated activities of amylase and protease in the plant (Pandey et al., 2013). Recent research has demonstrated that the presence of PGPRs in hydroponic conditions led to reduced concentrations of arsenic (As) in both shoots and roots of rice plants (Nookongbut et al., 2018).

To assess the potential of bioremediation, we mixed soils with contrasting heavy metal

concentrations, hypothesizing that the soil with higher heavy metal concentrations would have lower rhizobacteria levels, and vice versa. After mixing the soils, they were incubated for 24-48 hours.

The results of the bioremediation process revealed significant reductions in heavy metal concentrations. In the case of iron (Fe), the concentration in Maner soil before bioremediation was 5.67 mg/L, and in Bypass (Parsa Bazar) soil, it was 3.45 mg/L. After bioremediation, the concentration decreased to 0.267 mg/L.

For zinc (Zn), the control soil had a concentration of 0.678 mg/L, while the Danapur soil had a concentration of

0.256 mg/L. After bioremediation, the concentration decreased to 0.250 mg/L.

Lead (Pb) concentration was highest in the Bypass (Parsa Bazar) soil at 0.100 mg/L, followed by the Phulwari soil at 0.083 mg/L. After bioremediation, the concentration reduced to 0.010 mg/L.

Cadmium (Cd) concentration in the control soil was 0.302 mg/L, and in Danapur soil, it was 0.000 mg/L. After bioremediation, the concentration decreased to 0.000 mg/L.

The results indicate that bioremediation using rhizobacteria effectively reduced the heavy metal concentrations in the soil samples. However, it was observed that the reduction in zinc concentration was not as significant as the other heavy metals.

Overall, the research highlights the potential of rhizobacteria in mitigating heavy metal pollution in paddy fields. The isolation and characterization of rhizobacteria from different soil samples provide valuable insights into their distribution and abundance in the agroecosystem. The bioremediation process proved to be an effective and ecofriendly method to reduce heavy metal stress, enhancing the overall growth and development of the paddy crops.

Conclusion:

The research demonstrates the importance of bioremediation using rhizobacteria as a viable approach to tackle heavy metal pollution in paddy fields. Rhizobacteria play a crucial role in reducing heavy metal concentrations and promoting plant growth. Among the heavy metals tested, iron (Fe), lead (Pb), and cadmium (Cd) concentrations were significantly reduced after bioremediation, while the reduction in zinc (Zn) concentration was comparatively lower.

The study provides valuable insights into the potential applications of rhizobacteria in sustainable agriculture, offering an eco-friendly alternative to chemical fertilizers and pesticides. Further research and experiments can be conducted to explore the specific mechanisms by which rhizobacteria mediate heavy metal reduction and promote plant growth.

Overall, the findings support the use of rhizobacteria-based bioremediation as a promising strategy to combat heavy metal pollution in paddy fields, thereby contributing to environmental sustainability and improved crop productivity.

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□



Biodiesel; Synthesis from Waste and Fresh Vegetable Oil

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Abstract :

Civilization has always been in need of energy from its advent. With passage of time and development of science and technology demand for energy grew, so was the growth with ever increasing population. In the modern era, for the last 120 years, as a resource, fossil fuels have played a major role in the economic and industrial growth of humans. The excessive use with ever rising demand and environmental damage made by fossil fuel, compelled for an alternative and good source of energy, biodiesel. Scientific method as transesterification has been used to produce biodiesel from organic products of vegetable oils. Biodiesel is a clean, renewable, environmental friendly and non-toxic fuel that can play a good role in meeting the energy demand.

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Keyword : Fossil fuel, biodiesel, energy, transesterification, vegetable oils.

Introduction

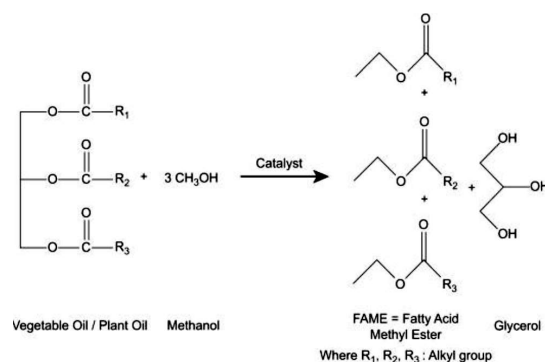
Our future economic growth considerably depends on the long-term accessibility of energy from the sources that are easily available, safe and affordable. For delivering a sustained growth rate of 8%, India needs to increase its primary energy supply by 3 to 4 times. New sources of energy like biofuels may play a significant role in meeting the energy demands. Biodiesel is an alternative renewable source of energy and is the energy for global energy demand in developing countries including India as well. The petroleum-based fuel reserves are concentrated in only some parts of the world and these resources are depleting day by day. The likelihood of producing biofuels from locally grown sources and using them as an alternative for various petroleum products is one of the best attractive method to overcome the energy crisis. Any investments in biofuels will lead to a considerable boost in economic development. It is expected that with suitable production process, biofuels will produce significantly lesser greenhouse gas emissions than are produced by fossil fuels.

Experimental Procedure

Biodiesel, the term often use with reference to straight vegetable oil, SVO (unused or fresh new rapeseed or corn usually) and waste vegetable oil, WVO (used vegetable oil from restaurants, etc). By way of trans-esterification the reaction of triglycerides with alcohol under caustic catalyst, (e.g. NaOH) is processed to produce glycerol and monoalkyl esters that are known as biodiesel and can be potentially used as alternative fuel in compression ignition engine.

Trans-esterification Reaction

The process of converting vegetable oil into biodiesel is known as transesterification. Glycerol is too thick to burn properly in a diesel engine at room temperatures, while esters make an excellent combustible material. The goal while making biodiesel was to convert the triglycerides from glycerol based esters to methyl esters to fatty acids. Sodium hydroxide (lye) which converted them ethanol into methoxide ion, which leaved the fatty acid from the glycerol by replacing the one glycerol with three methoxy groups per each triglyceride.



Making fuel from fresh vegetable Oil

250 ml of new vegetable oil was poured into a large beaker. New fresh vegetable oil was heated and temperature of the oil was observed closely so that overheating of the oil is not occurred. 55 ml of methanol was measured in a graduated cylinder. Now methanol was poured in the mixing bottle and the cap of methanol bottle was closed tightly. 1 gm of sodium hydroxide (lye) was weighed and added to the

methanol in the mixing bottle. The methanol and sodium hydroxide was mixed for few minutes until all the lye (NaOH) is dissolved i.e sodium methoxide in the bottle, as strong base. When the lye is dissolved completely and the oil temperature reaches to 50°C, sodium methoxide was added to warm oil and mixed. Now again bottle was shaken vigorously for few seconds, while holding the bottle upright the cap of the bottle was opened to release the pressure. The cap was retightened and shaken and for a minute bottle was set on the bench. After 30-60 minutes it was observed that a darker layer (glycerin) formed on the bottom of the bottle with a lighter layer (biodiesel) floating on the top. Complete separation of the reaction mixture required several hours to overnight. It was then transferred to a separating funnel and after 20 minutes the mixture was fully separated. The biodiesel was carefully poured off into a beaker and the glycerin into another beaker.

Making fuel from waste vegetable Oil (WVO)

The WVO was collected from a local restaurant or deep fryer and was filtered to remove any left food particles. WVO was more acidic, thus formation of free fatty acid took place due to which an extra amount of lye was needed which was determined by the titration process (1.5gm). 250 ml of waste vegetable oil was measured and poured into a large beaker and was heated to 50°C (over heating avoided). 55 ml of methanol using the graduated cylinder was measured and poured in mixing bottle. The correct amount of lye was weighed and added to mixing bottle to prepare sodium methoxide. When the lye dissolved completely and the oil temperature reached to 50°C, sodium methoxide was added to warm oil and mixed. Now again bottle was shaken vigorously for few seconds, while holding the bottle upright the cap of the bottle was opened to release the pressure. The cap was retightened and shaken for a minute and bottle was set on the bench. After 30-60 minutes it was observed that a darker layer (glycerin) was formed on the bottom of the bottle with a lighter layer (biodiesel) floating on

the top. Complete separation of the reaction mixture required several hours to overnight. It was then transferred to a separating funnel and after 20 minutes the mixture was fully separated. The biodiesel was carefully poured off into a beaker and the glycerin into another beaker.

Quality Testing

After making biodiesel it's extremely important to test our biodiesel. The test can be performed by washed, dried or unwashed biodiesel.

3/27 Conversion test

Method

Solubility of both biodiesel were tested by 3/27 conversion test which involves the shaking gently the 3ml Biodiesel to 27ml Methanol for 5 minutes. The test was one part Biodiesel and nine parts methanol. The test were first Performed with Biodiesel made from fresh soybean vegetable oil & then that from Waste vegetable oil.

The "Shake-Em up"

Test

The mixing bottle was filled half third full of biodiesel and distilled water was added to the rest of the bottle. The cap of mixing bottle was closed and shaken vigorously for about 20 seconds. The bottle was set on the bench to settle water, and the biodiesel for about 30 minutes to 1 hour . The water settled at the bottom was observed.

Washing biodiesel (mist washing)

Mist washing was done by misting or spraying water over the surface of the biodiesel. When we mist drops through our biodiesel it took contaminants with it that lead to the formation of waste water layer beneath the biodiesel. Mist washing decreases the chance of emulsification as it does not agitate the mixture as much as other washing, like bubble washing or stir washing.

Calorific value measurement

A bomb calorimeter was used to measure the heat generated by a known amount of test fuel when was burnt in sealed chamber in an atmosphere of pure oxygen gas. The apparatus consist of bomb, water jacket, offset stirrer, Calorimeter vessels bomb firing unit vibration time, illuminator with magnifier gas release valve, crucible and ignition wires.

Specific gravity

An old time biodiesel suggested using ice for determination of oil or biodiesel ice has a specific gravity of 0.917, causing float in oil usually and sink in the biodiesel while some oil like canola with specific gravity of 0.913 to 0.916 is less dense than ice so that ice would sink in to it. Some contaminants can alter specific gravity about 0.05 lower than that biodiesel which has had them ethanol removed. Vegetable oil typically has a specific gravity from 0.908 to about 0.921 depending on fatty acid composition and temperature. The specific gravity of biodiesel should be somewhere between 0 to 0.90.

Titration of waste vegetable oil was done by oil-titration method.

Isopropyl alcohol	Oil	Phenolphthalein	Titration solution used
10 ml	1 ml	2 Drops	1.2 ml
10 ml	1 ml	2 Drops	1.2 ml
10 ml	1 ml	2 Drops	1.1 ml
10 ml	1 ml	2 Drops	1.3 ml
10 ml	1 ml	2 Drops	1.1 ml

Table 1. Shows chemical analysis of waste vegetable oil by oil-titration method

Samples	Weight	Temperature	Calorific Value
Fresh Vegetable oil	0.5g	1.82°C	8428.08Cal/gm
Waste Vegetable Oil	0.5g	0.69°C	3241.16Cal/gm
Biodiesel (Obtained from Fresh oil)	0.5g	0.73°C	3436.52Cal/gm
Biodiesel (Obtained from WVO)	0.5g	0.52°C	2410.88Cal/gm

Table 2. Represents Calorific values at different temperature rise for Fresh Vegetable Oil, Waste Vegetable Oil, Biodiesel (Obtained from Fresh oil), Biodiesel (Obtained from WVO).

Calculation

Table1

From Titrating waste vegetable oil results, we have calculated correct amount of lye need for production of Biodiesel from waste vegetable oil.

$$\frac{1.1 + 1.2 + 1.2}{3} = \frac{3.5}{3} = 1.1666 \approx 1.17$$

NaOH Base no. = 5
KOH Base no. = 7

(Base + Titration) × Litres of oil = catalyst required
 $(5 + 1.17) \times 1 = \text{catalyst required} = 6.17$
 6.17g catalyst required for 1000 ml

For 250 ml catalyst required

$$= 6.17/1000 \times 250 = 1.54 \approx 1.5\text{g.}$$

i.e 1.5 g is the correct amount of lye.

Result & Discussion

When we are concerned about environmental problems related to emission of green house gases that is generated by the burning of fossil fuels, derived from petroleum products, attempts have been made to develop new renewable energy sources. Biodiesel, is one such attempt that is produced through transesterification reaction of natural oil triglycerides,

with a short chain alcohol in presence of a catalyst (usually NaOH).

3/27 Conversion test

We found that biodiesel produced from fresh vegetable oil have small amount of oil present at the bottom of the bottle. Biodiesel obtained from WVO on 3/27 conversion test, it was found that the solution became cloudy indicating the fact that the biodiesel from WVO was not quite soluble in methanol. A more clear solution was obtained in case of biodiesel produced from fresh vegetable oil in comparison from that obtained from WVO.

Shake Em Up Test

We found that in shake Em Up test, biodiesel made from new (fresh oil) and that from WVO has soap present in it, because the water that settled out was not as clear as water went in. We observed cloudy water in both biodiesel which indicated us that the biodiesel produced was soapy.

Mist Washing

Mist washing was performed in order to lower the soap content in the fuel.

Specific Gravity

It was found that specific gravity of biodiesel should be somewhere between 0 to 0.90.

Calorific value

- a. Fresh oil
Calorific value = 8428.08Cal/gm
Maximum temperature = 1.82°C
- b. For used vegetable oil (waste vegetable oil)
Calorific value was found to be = 3214.16Cal/gm
Maximum temperature = 0.69°C
- c. Biodiesel obtained from fresh vegetable oil
Calorific value = 3436.52Cal/gm.
Temp = 0.73°C
- d. Biodiesel obtained from waste vegetable oil (WVO)
Calorific value = 2410.88Cal/gm.
Temp = 0.52°C

Conclusion

Biodiesel produced from two different vegetable oil-one from new (fresh) & Other from waste vegetable oil. Calorific value of biodiesel produced from fresh oil was 3436.52Cal/gm at maximum temperature 0.73°C while that of biodiesel produced from waste vegetable oil has calorific value 2410.88Cal/gm at a maximum temp rise to 0.52°C specific gravity of biodiesel was found to be somewhat between 0 to 0.90.

Also it is concluded that biodiesel produced from waste vegetable oil require an extra amount of lye (NaOH) because waste vegetable oil (WVO) became degraded during cooking process owe added an extra amount of lye to make up for that neutralizes by free fatty acids. It was concluded that the biodiesel produced from both fresh and waste vegetable oil was soapy.

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Generating Electricity from Sewage

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Abstract:

Water and Wastewater treatment plants requires huge amount of energy operation cost. As per the energy demand, water companies require cost reducing and sustainable solution to produce energy. The generated energy should reduce its dependence on fossil fuel. For this study, different types of hydropower technology have been studied. And as per suitable criteria of wastewater treatment plants, Gravitational water vortex flow power plant which is one of the best low head and low flow rate based hydropower technology have been selected.

Keywords: Hydropower, Wastewater treatment plants, Cost, Sustainable environment, Gravitational water vortex flow power plant

Introduction:

Sewage is considered to have a huge energy

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potential. It can be a source of biogas power generation from sewage sludge and of hydraulic power generation from sewage.

The latest trend of hydro power generation is mostly by micro hydropower. These plants are low cost, easy to install and eco-friendly. Sewage water can be one source of micro hydro power plants where low head screw turbines can be used to generate power. A single screw turbine to the sewage line produces power up to 1963 watts. While an increase in the number of turbines, head, and flow rate results in a linear increase in power generation. Consequently, the utilization of sewage flowing in drainage facilities (sewage pipes) for power generation promises to realize small-scale distributed power generation, which could contribute to the local production of electric power for local consumption.

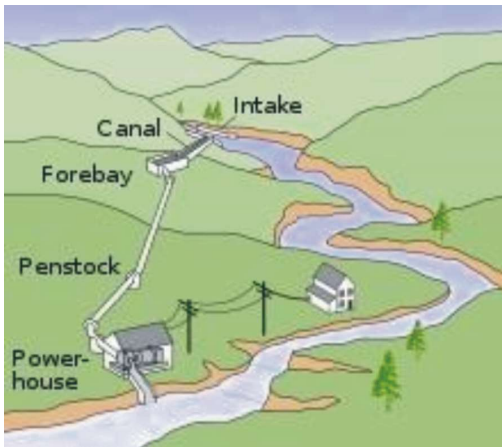
Aim of the Study

For this study, different types of hydropower technology have been studied. As per suitable criteria of wastewater treatment plants. Generated electricity will be considered for CO_2 reduction energy and it can use in plant itself which can reduce its cost. Parameters of wastewater will be check for selection of appropriate turbine blade materials.

Principle

Micro-Hydro power systems convert the potential energy in small streams and waterways into kinetic energy via a mechanical turbine, which drives a generator to produce electricity. The greater the drop and quantity of water there is flowing through the turbine, the more electricity can be generated.

Construction and Working



Several Hydropower technologies which can be used in Wastewater treatment plants to produce clean energy. micro-scale and pico-scale hydraulic power are one of them. they typically produce from 5 kW to 100 kW of electricity using the natural flow of water. Micro hydro systems are typically set up in areas capable of producing up to 100 kilowatts of electricity. This production range is calculated in terms of "head" and "flow".

A hydraulic turbine is needed to convert the hydraulic potential into electric power. Several types of water turbines can be used in micro hydro installations, selection depending on the head of water, the volume of flow, and such factors as availability of local maintenance and transport of equipment to the site.

Some specific hydraulic turbines are as follows:

- Kaplan Turbine:
- Gravitation water vortex power plant
- Francis Turbine
- Pelton turbine

Analysis of Francis Turbine

Francis Turbine is a combination of both impulse and reaction turbine, where the blades rotate using both reaction and impulse force of water flowing through them producing electricity more efficiently. Primarily there are 2 turbines flow patterns on which they work, namely radial and axial flow concepts.



Main Components of Francis Turbine

1. Spiral Casing

Spiral casing is the inlet medium of water to the turbine. The water flowing from the reservoir or dam is made to pass through this pipe with high pressure. The blades of the turbines are circularly placed, which mean the water striking the turbines blades should flow in the circular axis for efficient striking

2. Stay Vanes

Stay vanes and guide vanes guides the water to the runner blades. Stay vanes remain stationary at their position and reduces the swirling of water due to radial flow, as it enters the runner blades. Thus, making turbine more efficient.

3. Guide Vanes

Guide vanes are not stationary, they change their angle as per the requirement to control the angle of striking of water to turbine blades to increase the efficiency. They also regulate the flow rate of water into the runner blades thus controlling the power output of a turbine according to the load on the turbine.

4. Runner Blades

In a Francis turbine, runner blades are divided into 2 parts. The lower half is made in the shape of small bucket so that it uses the impulse action of water to rotate the turbine. The upper part of the blades use the reaction force of water flowing through it. These two forces together makes the runner to rotate.

5. Draft Tube

The pressure at the exit of the runner of Reaction Turbine is generally less than atmospheric pressure. The water at exit cannot be directly discharged to the tail race. A tube or pipe of gradually increasing area is used for discharging water from the exit of turbine to the tail race. This tube of increasing area is called Draft Tube. One end of the tube is connected to the outlet of runner while the other end is sub-merged below the level of water in the tailrace.

The Francis turbine is a type of reaction turbine, a category of turbine in which the working fluid comes to the turbine under immense pressure and the energy is extracted by the turbine blades from the working fluid. A part of the energy is given up by the fluid

because of pressure changes occurring on the blades of the turbine, quantified by the expression of degree of reaction, while the remaining part of the energy is extracted by the volute casing of the turbine. At the exit, water acts on the spinning cup-shaped runner features, leaving at low velocity and low swirl with very little kinetic or potential energy left. The turbine's exit tube is shaped to help decelerate the water flow and recover the pressure.

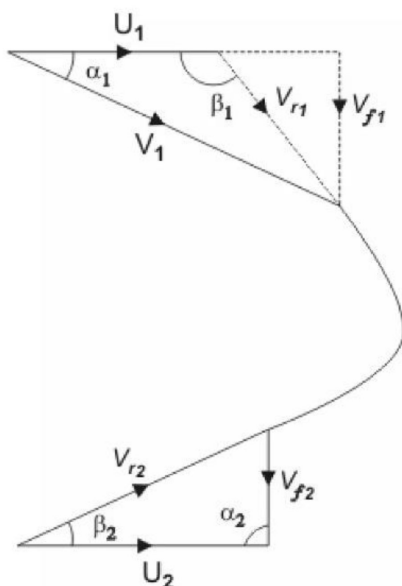
Usually the flow velocity (velocity perpendicular to the tangential direction) remains constant throughout, i.e., $V_{f1} = V_{f2}$ and is equal to that at the inlet to the draft tube. Using the Euler turbine equation, $E / m = e = V_{w1} U_1$, where e is the energy transfer to the rotor per unit mass of the fluid, α_1 is guide blade angle & β_1 is vane angle.

$$V_{w1} = V_{f1} \cot \alpha_1$$

And

$$U_1 = V_{f1} (\cot \alpha_1 + \cot \beta_1), \text{ Therefore,}$$

$$e = V_{f1}^2 \cot \alpha_1 (\cot \alpha_1 + \cot \beta_1)$$



Velocity triangle

At inlet triangle:

U_1 = velocity of the blade at inlet

V_1 = absolute velocity of entering water

V_{r1} = relative velocity of entering water

V_{f1} = velocity of flow at inlet

α_1 = guide blade angle

β_1 = vane angle

At outlet triangle:

U_2 = velocity of the

blade at outlet

V_{r2} = relative velocity of leaving water

$V_{f2} = V_2$ = velocity of flow at outlet

α_2 = guide blade angle

β_2 = vane angle

The loss of kinetic energy per unit mass at the outlet is $V_{f2}^2/2$. Therefore, neglecting friction, the blade efficiency becomes

$$\eta_b = e / (e + V_{f2}^2 / 2)$$

Benefits of Francis Turbine

Francis turbines may be designed for a wide range of heads and flows. This versatility, along with their high efficiency, has made them the most widely used turbine in the world. Francis type units cover a head range from 40 to 600 m (130 to 2,000 ft), and their connected generator output power varies from just a few kilowatts up to 1000 MW. Large Francis turbines are individually designed for each site to operate with the given water flow and water head at the highest possible efficiency, typically over 90% (to 99%)

Conclusion

Application of Micro Hydropower technology in waste water treatment plants is the clean and sustainable energy source which can reduce carbon emission by avoiding fossil fuel based energy. There is no harmful impact as compare to the large hydropower project. This study will be useful for implementing small scale power project into other

Wastewater treatment plant to reclaim the energy from wastewater. In today's world where sewage is considered as a bane, this technology proves it to a boon.

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Structural, Morphological and Optical Properties of SnO₂ Thin Films Prepared by rf Sputtering with Varying Deposition Parameters

Manish Kumar Verma *

Abstract:

SnO₂ thin film has been prepared by rf sputtering with varying oxygen percentage in the reactive gas (10% - 50%). Structural, optical and morphological properties of the thin films are studied using X-ray Diffraction, Atomic Force Microscopy and UV-Visible spectroscopy. The deposited thin films were polycrystalline with crystallite size 13 nm - 16 nm. The roughness of thin films was found in the range 6.72 to 15 nm. The deposited thin films were highly transparent in the optical region with absorption edge around 350 nm.

Keywords: Thin film, Sputtering, X-ray diffraction, AFM, Highly transparent, optical region.

Introduction:

Tin oxide is a wide bandgap oxide semiconductor which exists in the form of two stoichiometric compounds SnO and SnO₂ with tetragonal litharge and rutile type structures, respectively.¹ Tin can exist in two chemical states, Sn²⁺ for SnO phase and Sn⁴⁺ for the SnO₂. SnO is intrinsically p-type semiconductor while SnO₂ is n-type.^{2,3}

SnO₂ thin films are used in large number of applications including solar cells, gas sensors, flat panel display electrodes, lithium battery and supercapacitor

electrodes and electrochromic devices.⁴⁻⁷ SnO₂ thin films have been fabricated using various physical and chemical deposition techniques including rf sputtering, e-beam and thermal evaporation, sol-gel, spray pyrolysis, chemical vapour deposition (CVD), electrospinning. Amongst all these methods rf sputtering is most suitable for the growth of good quality thin films at relatively low temperature with controlled stoichiometry. Due to fairly high deposition rate and capability to deposit uniform thin film reproducibly on the large area substrates, sputtering is the most preferred growth technique in the industry.⁸

Therefore, in the present study thin films of SnO₂ are deposited by rf sputtering. The effect of variation of deposition parameters on the structural, optical and morphological properties of thin films has been studied.

Experiment:

Tin oxide (SnO₂) thin films were deposited on corning glass substrate by rf-magnetron sputtering technique using a 6" diameter tin metal target (99.999% pure) in a reactive gas (Ar and O₂) atmosphere. The growth pressure in the deposition chamber was kept high at 50 mTorr with varying oxygen percentage in the reactive gas (Ar and O₂) atmosphere from 10% to 50% and rf power of 300

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W. The substrate was kept at room temperature, placed at 15 cm from the target. The SnO_2 thin films deposited on corning glass substrate were annealed in air at 300 °C for two hour to improve the crystallinity and to achieve a stable film.^{9,10} The post deposition annealed SnO_2 thin film samples grown under varying oxygen content of 10%, 20%, 30%, 40% and 50% in reactive mixture ($\text{Ar} + \text{O}_2$) are referred as S10, S20, S30, S40 and S50 respectively.

Crystallographic structure of the SnO_2 thin films were studied using X-ray Diffraction (Bruker D8-Discover). AFM measurements of the prepared thin films were carried out using Veeco DICP2 instrument

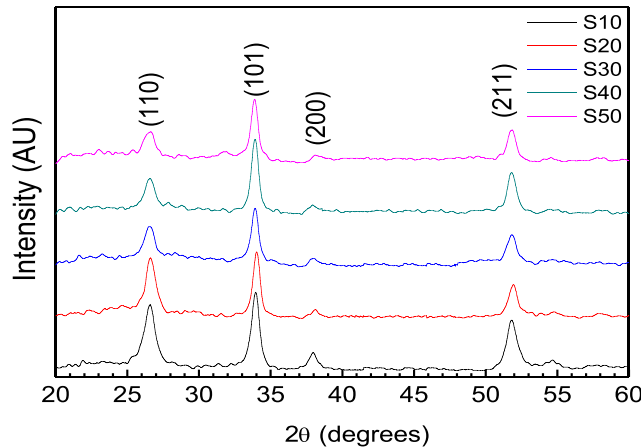


Fig. 1: XRD pattern of post-deposition annealed SnO_2 thin films with varying O_2 percentage in reactive gas atmosphere

The broad and well defined reflections were observed at $2\theta = 26.58^\circ, 33.94^\circ, 37.98^\circ$ and 51.79° corresponding to (110), (101), (200) and (211) planes, respectively, in the XRD pattern of all annealed SnO_2 thin films, and are in good agreement to the corresponding reported values for rutile structure of SnO_2 , confirming the formation of polycrystalline SnO_2 thin films.¹¹⁻¹³

It can be observed from Fig. 1 that relative intensity of the XRD peak corresponding to (110) plane is decreasing with increasing oxygen percentage in the reactive gas in sputtering chamber, while XRD peak (101) is the dominant peak in all cases.

and the images were analyzed by SPM Lab analysis software. Optical properties of SnO_2 thin films were studied using UV-Visible spectrophotometer (Perkin-Elmer lambda 35).

Results and Discussion

Structural Analysis: X-ray diffraction

The XRD pattern of all SnO_2 thin films fabricated in the present work does not show any reflection corresponding to any plane of SnO_2 indicating that the as-deposited thin films were amorphous. The XRD pattern of SnO_2 thin films deposited at 50 mTorr with varying oxygen content from 10 to 50% is shown in Fig. 1 after a post deposition annealing treatment.

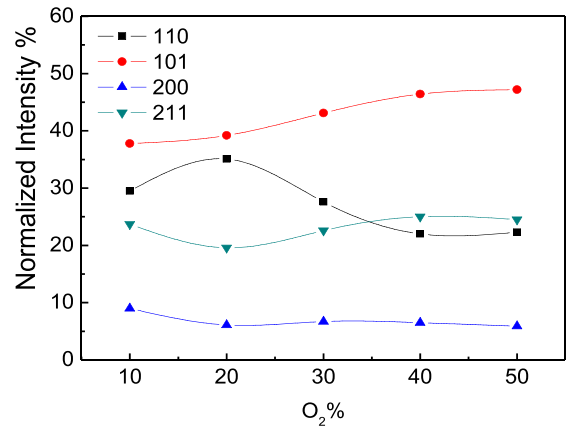


Fig. 2: Influence of the oxygen partial pressure on the normalized intensities of various XRD peaks of SnO_2 thin films.

In order to find out the preferred orientation of crystallites in annealed SnO_2 thin film samples, normalized intensities of all observed XRD peaks were calculated as a ratio $I(hkl)/\Sigma I(hkl)$, where $I(hkl)$ is the intensity of the XRD peak under analysis, and $\Sigma I(hkl)$ is the sum of the intensities of all peaks appearing in the XRD pattern. The influence of oxygen percentage in the reactive gas composition (mixture of Ar and O_2) in the sputtering chamber on the normalized intensities of all the observed peaks [(110), (101), (200) and (211)] in the SnO_2 thin films is shown in Fig. 2.

It may be noted from Fig. 2 that (101) is the most preferred orientation of the crystallites in all post deposition annealed SnO₂ thin films and its normalized intensity is increasing from 37.8% to 47.2% with increasing O₂ content from 10% to 50% in the sputtering gas composition. It is also observed that intensity of peak corresponding to (110) plane increases initially with increasing O₂ content in processing gas composition having a maximum value for 20% O₂ and thereafter decreases with further increase in O₂ content (Fig. 2). While intensity corresponding to (200) and (211) peaks are almost constant with O₂ percentage in processing gas composition and showing a comparatively low intensity for all gas compositions used for the growth of SnO₂ thin films (Fig. 2). It is important to emphasize that (110) plane is the most preferred orientation due to its low surface energy in comparison to the other planes.¹⁸ But in the present study (101) plane dominates instead of (110) plane for all deposited SnO₂ thin films. However, (110) is the second most preferred direction, especially for SnO₂ thin films deposited under low oxygen content ($\leq 30\%$), in the processing gas (Fig. 2). The (110) plane is the most favourable surface reported for SnO₂ thin film for gas sensing application.¹³ Therefore, 20% O₂ in reactive processing gas seemed to be preferable composition for gas sensing applications since normalized intensity of (110) peak for these films is maximum and is close to the (101) peak intensity (Fig. 2). The lattice constants (a and c) of all deposited SnO₂ thin films were evaluated

using equation $\frac{1}{d_{hkl}^2} = \frac{h^2 + k^2}{a^2} + \frac{l^2}{c^2}$ and the observed XRD peak position for various planes (*hkl*) and are listed in Table 1. The lattice constant 'c' of SnO₂ thin films deposited under oxygen deficient ($\leq 30\%$) processing gas was found to be slightly lower in comparison to the corresponding values ($c = 3.186$ Å) reported for bulk SnO₂ (Table 1). However, the

value of lattice parameter (a) is almost same as that of the bulk value for all prepared samples. The value of lattice parameter 'c' of SnO₂ film approaches the bulk value with increase in oxygen content in sputtering gas (Table 1). The observed deviation in lattice parameter from corresponding bulk value indicates that unit cell of SnO₂ thin films deposited under oxygen deficient ambient were in state of strain and the unit cell of SnO₂ thin films was found to be relaxed with increase in O₂ content ($> 30\%$) in processing gas (Table 1). The extent of strain in the unit cell of annealed SnO₂ thin film was estimated from the measured values of lattice parameters for SnO₂ thin film and the value of strain% (S) along 'c' crystallographic axis was given as

$$S = \frac{(c_0 - c)}{c_0} \times 100$$

The estimated value of strain% for prepared SnO₂ thin film samples are also presented in Table 1. The unit cell of the SnO₂ thin film deposited under reactive ambient of 20% oxygen and 80% Ar (sample S20) was found to be strained to the maximum extent ($S \sim 0.55\%$) in comparison to that observed for the films grown under other gas compositions (Table 1).

The value of strain was found to decrease on either increasing or decreasing the oxygen content in the sputtering gas (Table 1). The strain in unit cell was found to be relieved when the SnO₂ films were deposited under oxygen rich ambient ($> 30\%$ O₂ in reactive gas). It is important to note that the sign of strain parameter was positive for all films deposited under low oxygen content ($< 40\%$) indicating that the lattice is in the state of elongation, and unit cells are under tensile strain. The origin of strain in the unit cell of SnO₂ thin films may be due to the presence of native defects related to interstitial Sn or Oxygen vacancies in the lattice of SnO₂ films grown under oxygen deficient ($\leq 20\%$) reactive gas composition. Although the value of strain is less, but a change in the sign of strain parameter from positive to negative was observed for SnO₂ thin film grown under oxygen rich

(50% O₂ and 50% Ar) condition (sample S50), indicating a transition in the state of strain in the unit cell of SnO₂ thin films from tensile to compressive (Table 1). The crystallite size of the SnO₂ thin films were estimated using well known Scherrer formula $X = 0.94 \lambda / (\beta \cos \theta)$ and are listed in Table 1 for all

annealed SnO₂ thin films. The crystallite size of all post deposition annealed SnO₂ thin film was found to increase slightly from 13 to 16 nm with increase in O₂ content in reactive gas composition from 10% to 30% (Table 1) and thereafter saturates at a constant value of 16 nm with further increase in O₂ content (> 30%).

Table 1: *The structural parameters of post deposition annealed SnO₂ thin films grown under varying oxygen content in sputtering gas*

Oxygen in reactive gas (%)	Lattice parameters		Crystallite size (nm)	Strain, S (%)
	a (Å)	c (Å)		
10	4.738	3.175	13	0.34
20	4.734	3.168	14	0.55
30	4.741	3.179	16	0.21
40	4.734	3.181	16	0.14
50	4.727	3.189	16	-0.09
Bulk	4.737	3.186		

Surface morphology: Atomic Force Microscope (AFM)

Surface morphology of all post deposition annealed SnO₂ thin films grown on glass substrates were studied by AFM. Surface morphology of all the thin films was examined over an area of 5×5 μm² in the non contact mode and the AFM images of post-deposition annealed SnO₂ thin films (S10, S20, S30 and S40) are shown in Fig. 3 (a to d). The surface morphology of samples S10, S20 and S30 was found to be fine having uniformly distributed grains (Figs. 3 a to c). The formation of channel like structure was obtained for the SnO₂ thin films grown in Oxygen rich (> 30%) reactive gas ambient (Fig. 3 d). The surface morphology of sample S10 was observed to be dense

and smooth (Fig. 3 a). Sample S20 was found to be having relatively small sized grains but with large amount of porosity (Fig. 3 b). The porosity was found to decrease and larger grains were observed to be present in the AFM images of SnO₂ thin films grown under oxygen rich ambient (≤ 30%). The rms value of the surface roughness of all prepared SnO₂ thin films was obtained from the AFM study and are plotted in Fig. 4 as a function of oxygen content in sputtering gas composition. The roughness of all prepared samples was found in the range 6.72 to 15 nm. The roughness of the samples prepared with low content of oxygen (d' 20%) was small (6.72 to 7.12 nm) and increases with increase in oxygen percentage in the reactive sputtering gas (Fig. 4).

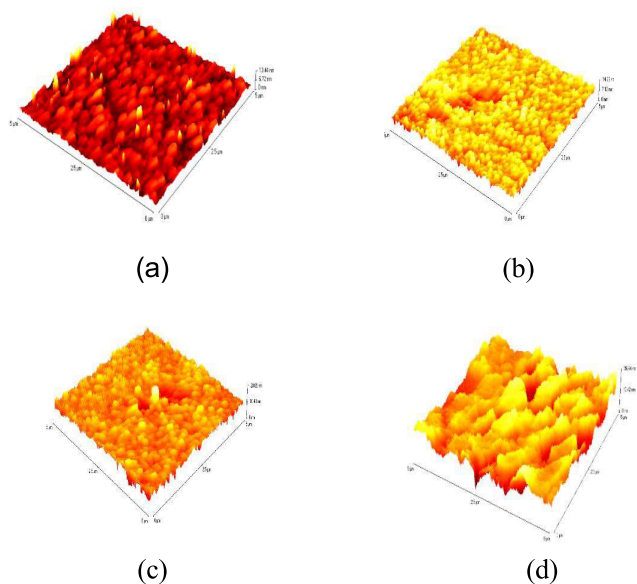


Fig. 3 AFM images of the surface of post deposition annealed SnO_2 thin films (a) S10, (b) S20, (c) S30 and (d) S40.

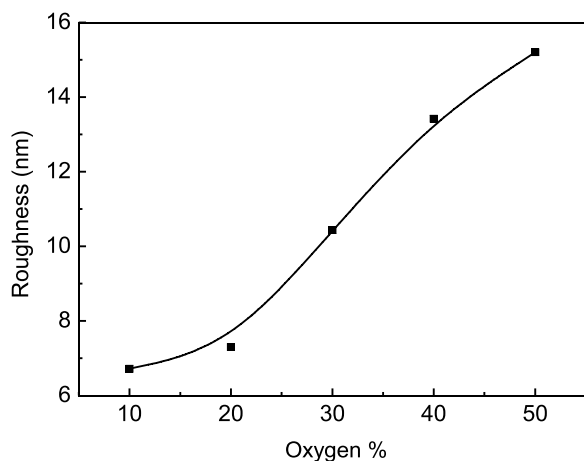


Fig. 4: Roughness variation of SnO_2 thin film with oxygen content in sputtering gas ambient.

Optical properties: UV-visible spectroscopy

Figure 5 shows the optical transmission spectra of all post deposition annealed SnO_2 thin films grown at varying oxygen content in the sputtering gas ambient. The sample S10 was found to be highly transparent ($\sim 80\%$) in the visible region with the onset of a sharp absorption edge at around 350 nm (Fig. 5). A slight blue shift in the absorption edge of SnO_2 thin film was observed with increasing oxygen content in sputtering gas ambient, indicating a change in the optical bandgap of SnO_2 thin films with composition of processing gas ambient. The transmission of SnO_2

films is slightly increasing in the visible region with increasing the O_2 content in the sputtering gas (Fig. 5). Furthermore, it may be seen from Fig. 5 that the interference fringes are not present in the transmission spectra of prepared thin film samples, which may be due to deposition of very thin (90 nm) SnO_2 films.

The value of optical bandgap of the annealed SnO_2 thin films deposited under varying O_2 content in sputtering gas composition were estimated using equation $\alpha h\nu = \text{const} (h\nu - E_g)^{1/2}$, where, $h\nu$ is the incident photon energy and E_g is the direct optical bandgap of the sample.¹⁴ Value of the optical bandgap (E_g) was obtained by extrapolating the linear part of the Tauc plot between $(\alpha h\nu)^2$ versus $h\nu$ to the energy axis as shown in Fig. 6.

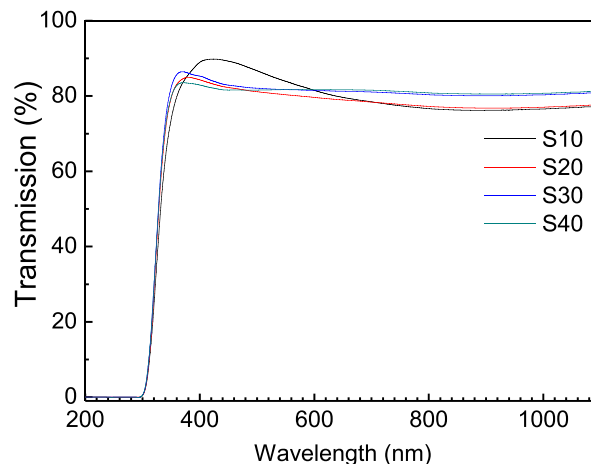


Fig. 5: Transmittance spectra for SnO_2 thin films deposited under varying oxygen content in sputtering gas ambient.

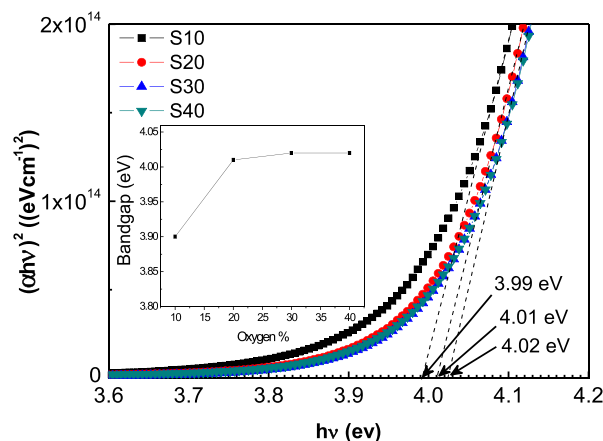


Fig. 6: Tauc plot obtained for the post deposition annealed SnO_2 thin films grown with varying content in reactive sputtering gas.

The estimated value of bandgap obtained from the τ auc plot for the prepared thin film samples is found to increase from 3.99 eV to 4.02 eV with increasing oxygen content in reactive sputtering gas as shown in the inset of Fig. 6. The observed bandgap of the SnO_2 thin films deposited in the present work is found to be higher than the corresponding bulk value (3.6 eV), and may be attributed to the growth of SnO_2 thin films having small grain size (13 to 16 nm). The contribution of change in stoichiometry due to varying O_2 content in the sputtering gas composition and the presence of defects in the SnO_2 thin films towards the bandgap especially for samples grown under oxygen rich condition may not be ruled out in the present study.

Conclusion:

The post deposition annealed SnO_2 thin films were nanocrystalline and possessed porous and rough microstructure. Structural and morphological properties of SnO_2 thin films were found to be highly dependent on the deposition conditions implying that varying the deposition conditions we can deposit different quality films to be used for different applications. Thin films deposited under reactive ambient of 20% oxygen and 80% Ar showed a maximum intensity of the (110) XRD peak, and was expected to have a maximum oxygen adsorption activity on its surface which may give enhanced response towards the reducing gas.

From the structural, morphological and optical analysis, it is identified that the sample S20 shows high intensity corresponding to (110) crystallographic plane, porous microstructure and high bandgap (more non-stoichiometry) and hence expected to exhibit high sensing response characteristics towards the target gases.

High optical transparency in the visible region makes these films highly desirable for application in solar energy conversion devices and in photovoltaic cells.



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Investigation and Identification of Spider Species

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Abstract:

The present study entitled "Investigation and Identification of habitat and behaviour of spider spotted in garden of a house, Patna City and Magadh Mahila College (MMC) campus, near Gandhi Maidan, Patna has been conducted in the growing season. This short-term study revealed the presence of different species with different genera placed taxonomically under families which were further arranged systematically under order. The presence of 5 Families, 12 genera and 22 species of spider in a small area revealed that Spider forms one of the most diverse groups of organisms which exist in almost all microhabitat. Spiders are key components of all ecosystems in which they live and are considered to be useful indicators of the overall species richness and health of terrestrial communities. They are extremely sensitive to natural conditions and disturbances. Due to the small size, this group can't be deniable in conservational studies. This study is a little approach to generating knowledge regarding the taxonomical study of the diversity of spiders.

Keywords: : Spider, Species, Habitat, genus, Diversity

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Introduction:

The study has been carried out to explore the diversity of spiders in the garden of the house and the Magadh Mahila College campus. The study generally focused on the identification, characterization and observation of their habitat and behaviour. The study site 'house' is situated in Patna City, Bihar, near the Ganga River and MMC is situated near Gandhi Maidan, Patna, on the bank of the Ganga River. In the house garden, there were only a few varieties of plants (shrubs) present like Tulsi, Rose, Hibiscus, Aloe vera, Chilli, Sadabahar, etc. And MMC garden is rich in vegetation and has varieties of plants, trees, shrubs and herbs. It also has various faunal diversity. This study has been done during a period of the growing season. This period is important for studying spider diversity because the spider community reaches its peak in this growing season. The growing season is recorded as the period with average temperature, rainfall and relative humidity. During this study, various types of spider species were recognized by me.

Spiders are ARACHNIDS, a class of arthropods. More than 45000 different species of spiders are found in the world. Spider range in size from the tiny Samoan moss spider, which is .011 inch long, to the massive Goliath bird eater, tarantula with a leg span of almost

a foot. Though all species have venom to one degree or another, only a handful are dangerous to humans.

In India, 1686 species belonging to 438 genera of 60 families of spiders are reported (Keswani et al., 2013). Spiders are the most diverse female-dominated and entirely predatory order in the arthropod. Evidently, they are the key component of all ecosystems in which they live (Bennett., 2001). As a predator, Spiders have immense economic importance to human because it serves as biological controlling agent and plays a role in controlling insect and pest population that could otherwise devastate the crop. They can be used as successful biological indicators to assess ecosystem health as they can be easily identified and are differently responsive to natural and anthropogenic disturbances (Pearce and Venier, 2006).

Despite their size, the ecological importance of spiders is undeniable as they are more abundant predators than other forest arthropods (Scharff et al., 2003). However, their fundamental roles in most natural ecosystems, have largely been ignored in conservational studies (Pearce and Venier 2006).

Materials and Methods:

The present study explores the diversity of spiders in my house garden, in Patna City, Patna and in Magadh Mahila College (MMC) garden, near Gandhi Maidan, Patna. These regions are located near the Ganga River. This study generally focused on the Identification, characterization and observation of their habitat and behaviour.

Collection: Photographs of Spiders were collected during the study period from both sites.

Method: Photographs of specimens were collected by using a mobile camera (with AI Triple Rear camera 16MP+2MP+8MP of Vivo Z1 Pro).

Spiders were recognised by the visual search method. They were spotted on the flowers, folded

leaves, under leaflets, ground and shrubs. Continuous observation was made regarding their movement, feeding habits, web-building activities and their shape and size.

Various types of spiders had been recognised on the basis of general shape, size, distinctive colour pattern, number and position of eyes, length and arrangement of their legs, etc., noted in each observation.

Identification: Spiders were identified on the basis of observation and with the help of internet resources by matching their characteristics which were observed during the study.

Result

The present short-term study focused on the identification and investigation of the habitat and behaviour of spider diversity at two different sites (my house garden and Magadh Mahila College Garden). The study revealed the presence of different species with different genera, placed taxonomically under different families which were further systematically arranged under the order Araneae. A total of 22 species belonging to 12 genera under 5 families were identified. Among them, 8 Species under 3 genera of Araneidae, 5 Species under 2 genus of Oxyopidae, 4 Species under 4 genera of Salticidae, 3 Species under 2 genera of Tetragnathidae, 2 species under 1 genus of Thomisidae were found.

The species richness of the Magadh Mahila College (MMC) garden was more as compared to my house garden. 20 Species were recorded from the MMC garden and 10 species were recorded from my house garden, out of which 5 species were commonly found in both places. Common families were Araneidae, oxyopidae and salticidae.

S. N	Family	No of Genus	No of Species
01	Araneidae	03	08
02	Oxyopidae	02	05
03	Salticidae	04	04
04	Tetragnathidae	02	03
05	Thomisidae	01	02

Fig: A total of 5 families, 12 Genus and 22 species were identified during the investigation.

Identified spiders belong to different functional groups i.e., stalker, orb-web builder and ambushers. Orb-web builder constituted 11 species under the families Araneidae, and Tetragnathidae. Stalker was composed of 09 species under the families Salticidae and Oxyopidae. Ambushers constituted 2 species under the families Thomisidae.

Spiders were analysed for their characteristic features, habitat, behaviour, and feeding habits. Spiders preferred to live in an area which has less disturbance. Generally found on leaves, stems, ground, flowers and grass, mostly in the area of low land vegetation. Spiders show behaviour like mimicking and camouflage. There are some spiders who build the web and some do not build their web. Web builder spider generally builds their webs in the evening and hang themselves upside down in the centre of their web to capture their prey. Spiders are shade lovers, so used to hiding under the leaves inside their silk-woven platforms during the day.

Some spiders have spinnerets (silk-spinning organs) but they don't build their web to capture prey instead they use silk to climb or move from one plant to another, to form cocoons in folded leaves for egg-laying, to form a silk-woven platform for rest to hide. Spiders generally prey on small flies, bees, butterflies, and mosquitoes. They don't eat the whole

organism instead of that they suck their fluid content. Some of them also feed over pollens and nectars of flowers. Eggs of *Thomisus onustus* are also obtained from the folded leaf.

Discussion:

Spider diversity, distribution and insect feeding habits play an important role in the balance of nature (Young and Edward, 1990). The presence of a wide variety of spiders in such a small area shows its abundance in the ecosystem. It indicates good vegetation and healthier environmental conditions. Spiders can be found in every type of microhabitat which has less disturbance. Their mimicking and camouflage behaviour suggest their ability to adapt to their surrounding environment. They are potential biological indicators of natural habitat and are used for determining how communities react to environmental change or disturbance (Marc and Canard, 1997).

In this study total of 22 species belonging to 12 genera under 5 families were recorded from the investigated site.

20 species have been identified from the MMC garden. Araneidae was dominant among them and commonly found. MMC garden is rich in vegetation and faunal diversity (flies, butterflies, dragonflies, wasps, beetles, ants...) which is the key factor of any microhabitat of the spiders.

Another site which is my house garden is a small area containing a small number of plant groups. 10 species under different families were identified but it took a long period of time because it was a small and most disturbed area. Bonn and Kleinwachter (1999) suggest that species richness increased with habitat divergence and an interrelated set of species.

Most of the spider species were found over trees, shrubs and herbs in my study. So, It demonstrates that the selection of habitat by spiders is affected by various biotic and abiotic factors.

Conclusion:

The result and observation about several factors of this study led to the conclusion that habitat structure (like shape, size, and arrangement of vegetation) and environmental factors may be the crucial factor which determines the complexity and composition of the spider community of the area. The availability of vegetation and food resources can affect its diversity. Identification and investigation of their habitat and behaviour provide various information and enhance the knowledge about the spider diversity pattern in the ecosystem. Being a good biological indicator spider has an important economic role in the ecosystem.

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A Paradigm Shifts: The National Education Policy 2020

Prerana Pushp *

Abstract:

Education in general and higher education, in particular, is witnessing both a number of challenges and opportunities. India is a country of role models in the field of education who have advocated for the betterment of education to bring the desired change in society. Swami Vivekanand, M. K. Gandhi, Ravindranath Tagore, Pandit Madan Mohan Malviya, Dr. S. Radhakrishnan and Dr. A. P. J. Abdul Kalam have carried out the torch of quality education throughout their lives. An opportunity is provided by the National Education Policy-2020 and many new concepts like Multiple-Entry Multiple-Exit, Credit System, cluster, autonomy and so on to look at higher education differently. Students can 'reskill' and 'up-skill' as per the need. The speed with which technology is changing is really a great challenge for higher education. In such a case autonomy provided to the institutes will be a boon, provided, the mindsets of the academic heads along with the entire team working in the institution must be autonomous.

Keywords: Quality Education, Multiple-Entry and Exit, Credit System, Holistic Multidisciplinary Education, Academic Bank of Credits

Introduction:

The National Education Policy-2020 (NEP 2020) outlines the vision of India's new education system, focusing on affordability, accessibility, quality, equity, and accountability to ensure continual learning. It has been crafted in consistence with the needs of the citizens as the demand for knowledge in society and

the economy called for the need to acquire new skills on a regular basis. Therefore, providing quality education and creating lifelong learning opportunities for all in the new digital age, leading to productive employment and decent work forms the thrust of NEP-2020.

The elitist education system was attempted to be replaced post-independence with limited success. A review of the skill requirements and the education policy was undertaken and a new policy was implemented in 2020 with due emphasis on multiple entry-exit options, flexibility to choose courses of one's choice and move between institutions of learning. With the requisite availability of resources, new policy can support the innovativeness and enterprise lacking in our education system.

In sum, NEP-2020 offers a new and forward looking vision for India's Higher Education System, aiding in India's moves towards becoming a knowledge economy and society, and the young Indians aspiring for higher education. Higher education and research play an important role in promoting human as well as societal well-being and in developing India as envisioned in its Constitution. The sector also contributes towards sustainable livelihoods and economic development of the nation. NEP envisions moving stand-alone single-discipline universities and colleges, and large multidisciplinary universities and

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colleges towards high-quality holistic and multidisciplinary education.

NEP-2020 aims for a complete overhaul in order to re-energize the higher education sector and enable it to thrive. The policy document says that the regulation of higher education has been too heavy-handed for decades and too much has been attempted but with too little effect.

NEP-2020 Proposes Reforms

The NEP-2020 proposes reforms in all areas of higher education, including its structure, curriculum and pedagogy, teaching-learning strategies, learning resources and technology-enabled learning, vocational education and skilling and employability, 21st-century learning and social and life skills, optimal learning environment and learner support, formative and summative assessment, internalization, research and scholarship, governance and leadership, and regulation and accreditation.

Multiple entry and Exit:

Proposed objectives for multiple entry and exit (National Education Policy 2020) " Flexible curriculum for learners rather than rigid boundaries.

- Novelty in Course option instead of bifurcation in a restricted stream in addition discipline specific specializations in the same.
- Increasing gross enrollment ratio(GER) and thereby decreasing dropouts.
- Offering different designs for the Master's level.
- Facility for credit accumulation and transfer for the award of degree.

Academic Bank of Credits (ABC):

Students are free to opt for multidisciplinary or interdisciplinary academic courses which give flexibility and a student can freely move to any Higher Education Institute (HEI) and their accumulated Credits can be easily transferred to the new institution. It is up to the students to choose their path and goal to attain a certificate, diploma, or degree course. Multiple entry and exit is facilitated to students at undergraduate and postgraduate level as well as accumulation of credit to enable acceptance of multidisciplinary courses, credit transfer and credit acceptance (UGC 2021).

Level 7	Doctoral Degree
Level 6	Masters Degree after completing level 4 (Duration 1 year/2 semesters)
Level 5	Masters Degree (Duration 2 years/4 semester)
Level 4	Honours'/Research Bachelor's Degree (Duration 4 years/8 semesters)
Level 3	Bachelor's Degree (Duration 3 years/6 semesters)
Level 2	Under-graduate Diploma (Duration 2 years or 4 semester)
Level 1	Under-graduate Certificate (Duration 1 year/2 semester)

Figure 1 : Entry and certification levels in NEP 2020

Multidisciplinary/Interdisciplinary

Academic programmes are redesigned to include Multidisciplinary/Interdisciplinary Courses as electives/ open electives. This approach gives freedom to the student to choose their preferred options from the range of programs offered by the Institution.

NEP also focuses on interdisciplinary research among the faculty members and should be creating a platform for nurturing interdisciplinary re work.

Holistic Multidisciplinary Education:

The confluence of art and science streams with no definite bifurcation in the streams can now take place. Students are free to choose subjects of their own choice. Holistic and multidisciplinary education will be helpful in their all-round development.

- Professional Education is included in General Education instead of imparted in isolation.
- All stand-alone universities and institutions will offer holistic and multidisciplinary education.
- Bringing improvement in the legal education use of new technology is suggested for wider access.
- India should prepare professionals in advanced fields like Artificial intelligence, nanotechnology, neuroscience, genomic studies etc. these subjects will also be taught at the undergraduate level for raising the employability of the youth.
- All the students of allopathic will know about Yoga, Ayurveda, Naturopathy, Unani, Siddha and Homeopathy.
- Quality improvements and use of advanced technology suggested for agriculture education Which would directly benefit the community to set up agricultural technology park to promote technology incubation and dissemination and promote sustainable methodologies.

Yashpal Committee report also recommended that universities should allow for the growth of knowledge and should not lead to its fragmentation. It is therefore recommended that normally no single discipline or specialized university should be created.

United States of America also offer students a wide range of options to select subjects as there is no discrete line of separation between various streams. Similar to National Policy 2020 certain provision mentions that there will be no more forced lines of separation between different streams.

Institutional Development Plan (IDP)

Each and every HEIS institution should integrate its academic plans ranging from curricular design and development (CDD) to quality of teaching and learning (TL) - into its larger and robust Institutional Development Plan (IDP). The IDP shall be prepared with the joint consultation of the Board of Governors (BOG)/Governing Council Academic Council (AC) Faculty, students, and administrative staff.

Massive Open Online Learning Courses (MOOCs):

Online learning course has been given importance for the upliftment and benefit of the students. Online learning has been notified in regulation 2021 in the Gazette of India that there should be a facility up to 40% of the total course in a particular programme to be offered through online mode Swayam or any online mode but it should be under the approved list of University Grant Commission. In this way (GER) Gross Enrolment Ratio will also increase. It is a great deal of help for those who because of domestic compulsion cannot go for further Education. Such programs can have both asynchronous and synchronous modes to provide greater Experiential learning pathways are included at all levels for inculcating interest and learning applicability at the same time. Yashpal committee recommended practical training to the people that should be based on new

knowledge and in response to social and personal needs. Acharya Rammurti Committee (1990) education must provide a techno informative knowledge base and opportunities to acquire skills the students.

Skill Development Centre Collaboration

NEP has put a lot of focus on skill development among the student community. Aims at providing quality vocational education through DDUKK / Skill sectors combining classroomcentered formal education and training with experience sharing of Industry practitioners and industry blended internships programmes. Hence, HEIS should initiate the process of Collaboration with the Sector Skill Council, National Skill Development Corporation (NSDC), Ministry of Skill Development and Entrepreneurship and National Skill Training Institute (NSTI) and NASSCOM Future Skills, etc.

Blended Learning (BL)/Online Education/ Virtual Learning

HEIS should encourage faculty members to actively engage in e-content development and to offer MOOC courses that promote the blended learning edifice of learning. HEIS should bring out Institutional Level Norms, standards, and guidelines for systemic development, regulation, and a framework for the quality of BL. In order to ensure preparedness with alternative modes of quality education whenever and wherever traditional and in-person modes of education are not possible, has been covered. A dedicated unit for the purpose of orchestrating the building of digital infrastructure, digital content, and capacity building should be set up at the HEIS to look after the e-learning needs. The policy emphasizes the promotion and implementation of blended learning in Indian higher education institutions.

Virtual Learning Environment (VLE)

The virtual learning environment in higher education has become significant growth. The use of

the VLE in higher education may face challenges such as providing effective educational material within the VLE and teaching way and the development of suitable pedagogy. To create a working virtual learning environment, it is important to consider some key areas such as mandates of the higher educational institutions pertaining to the educational delivery methods, teaching design and requirements, the functional needs of the course delivery, and technical skills and needs of the various populations of the students and academics.

Higher Education Commission of India (HECI)

There will be a single body for the promotion of the higher education Commission of India(HECI) with independent bodies for standard setting-the General Education Council; Funding Higher Education Grant Council, Accreditation-National Accreditation Council (NAC) and Regulation-National Higher Education Regulatory Council (NHERC) Yashpal committee the report of the committee on renovation and rejuvenation of higher education has recommended protecting the intellectual autonomy of educational institutions and the creation of an all encompassing National Commission and research to replace on subsume the existing regulatory bodies.

Setting Up of NEP Taskforce

At the Institutional Level mandatorily a task force should be constituted for the effective implementation National Education Policy. This committee shall devise the modalities for implementation of several of NEP s such as preparation Course, Curriculum, Pedagogy, Skilldevelopment, Extension, and Examination reforms for holistic and multidisciplinary UG/PG Programmes. The Task Force should also decide to break out various emphases on research and development. The setting up task force is essential in accelerating the Institutional level policy implementation process as envisaged under NEP-2020 for reliability and sustainability.

Outreach/Extension Programme/Centres

The Institution should encourage students to participate in extension activities to impart value-based education (VBE) which enables the students to understand the reality of the society and engage themselves in community building. These initiatives will fulfil the holistic education approach.

Restructuring of Higher Education:

Universities will come under three categories

(i) Multidisciplinary Research Incentive Universities.

(ii) Multidisciplinary Teaching Incentive Universities.

(iii) Multi Autonomy College instead of Deemed University, Affiliating University, Central University etc.

Top-rank University around the world is free to open a campus in our country. National knowledge commission (2006-2009) Formulating policy for entry of foreign institutions of India and the promotion of Indian Institutions abroad.

Concluding Remarks:

The National Education Policy 2020 may thus prove to be the game- provided it gets the resources required for its full implementation. A possible way out could be greater involvement of private institutions in the programmes; at least in the sector of higher education.

- Multiple entry and exit is a new idea that has come up and brings the revolution by providing an opportunity to earn a degree by accumulating all the previously gained credits.



- Providing an opportunity for other countries to open universities in India and vice versa. In this way many things can be learnt.
- Making internships compulsory will provide students to learn the applicability of theoretical concepts in real-life situations.
- Establishment of Multidisciplinary Education and Research Universities will help in reaching a high level of promoting research.
- Higher Education Commission of India (HECI) will come into existence to ensure best practices in the Education sector. Full autonomy to Higher Education Institute for academic financial and administrative which encourages innovations and excellence.

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Issue of Environmental Ethics

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Abstract:

Environmental ethics has been described as having a conscience or moral that reflects one's commitment and responsibility toward the environment as well as present and future generations of people. In essence it refers to human societies living in harmony with the natural world on which they depend for survival and well-being. Human beings are a part of the society and so are the other living beings. When we talk about the philosophical principle that guides our life, we often ignore the fact that even plants and animals are a part of our lives. They are an integral part of the environment and hence have a right to be considered a part of the human life. This article will explore the types of environmental ethics, the principles of environmental ethics, and some examples. It will also discuss the impact of environmental ethics on business decisions, the challenges of implementing environmental ethics, and the benefits of incorporating environmental ethics into business operations.

Keywords: Environment, Ethics, moral obligations, value of nature, human beings

Introduction:

The issues of environmental ethics are momentous, live and forced; that is to say, these issues involve moral choice of enormous importance that humans can make. Human's moral responsibility to nature and

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to the future is of unprecedented significance and urgency, and it is a responsibility that cannot be escaped. One of the most serious problems with the environmental movement today is that its moral position is badly articulated and defended.

Environmental ethics is a field of study that seeks to understand humans' moral obligations to protect and preserve the environment. It is a branch of ethics that recognizes the intrinsic value of nature, the interconnectedness of all living things, and the responsibility of humans to act in accordance with ethical principles. This article will explore the types of environmental ethics, the principles of environmental ethics, and some examples. It will also discuss the impact of environmental ethics on business decisions, the challenges of implementing environmental ethics, and the benefits of incorporating environmental ethics into business operations. Environmental ethics includes issues as:

- If only people "matter" here why care about nature "for itself"
- When landscapes or species and wilderness areas what, of value to mankind if they are destroyed,
- Do human beings have a need for nature that implies an obligation to preserve it? What is the evidence for this?

- What we have "taken from environment, will future generations can "miss" it ?
- What are the ultimate grounds of an affirmation to protect the environment? Are they rational? Irrational
- Does future generation have a "right" to avail a clean and natural environment when their time comes?
- Do the facts of environmental science have moral implications?
- Are human beings mentally and psychologically capable of caring for future generations and nature?

The formulation of a new field 'environmental ethics' began since 1970 of with the cooperation of responsible groups in the business world who were concerned about the environment and liked to see environment- friendly attitude among corporations. An example is the Coalition for Environmentally Responsible Economics (CERE) formed in 1989 to promote responsible corporate environmental conduct. The CERE is a network of over 80 organisations including environmental groups, public interest and community groups and investors. The CERE encourages companies to endorse the principles formulated by it. By 2002, seventy US companies including large multinational corporations, mid-sized companies and small firms had endorsed CERE principles.

What are Environmental Ethics?

Environmental ethics is a branch of ethical thought that focuses on the relationship between humans and their natural environment. It is a holistic approach to understanding and evaluating our moral obligations to protect and preserve the environment. Environmental ethics seeks to bring together the interests of both humans and the environment, recognizing that both are interdependent and have intrinsic value. A variety

of ethical theories, including consequentialism, utilitarianism, and virtue ethics, define environmental ethics. These ethical theories provide a framework for understanding the moral obligations we have to the environment and how we should act to protect it. Environmental ethics also draws upon the fields of philosophy, economics, ecology, and law, providing a comprehensive approach to understanding and evaluating the moral implications of human actions. (John-Roth, K., 2000)

History of Environmental Ethics:

Every human society has set of beliefs about nature and natural resources. The concept of environmentalism that brings ancient concerns with modern knowledge of environment, seems to be a recent subject but its roots are embedded deep within human history. Virtually all religions have much to say about environmental ethics as to what is right or wrong concerning issues, principles and guidelines relating human interactions with their environment. But no religion, perhaps, lays as much emphasis on environmental ethics as Hinduism. The Vedas, Puranas, Upanishads, Gita, Mahabharat, Ramayana and many more ancient scripts contain the earliest message of environmental ethics. For centuries, while praying to Goddess Durga Hindus had said So long the earth has mountains, forests and trees, human race will survive. Sustainable development, burning topic of current century, has been well advocated in Atharveda sayings:

"What of thee I dig out, let that quickly grow over
Let me not hit thy vitals, or thy heart."

"Supreme Lord, let there be peace in the sky and atmosphere, peace in the plant world and in the forests; let the cosmic powers be peaceful; let Brahman be peaceful, let there be fulfilling peace everywhere."

A stage has come when we need to seriously reconsider our vision of the environment. Are we satisfied with having patches of protected biodiversity in the form of nature reserves, places as islands in a vast ocean of monoculture? Or are we looking for more heterogeneity in our landscapes, as nature would like to have it for us, so that biodiversity is not merely restricted to nature reserves? The later approach will provide resilience to the environment by strengthening the internal buffering mechanism against uncertainties in the environment. This brings us to cosmic tree which is rooted in Brahman, the ultimate and has been described by the ancient seers of India in the Upanishad. Tat twam asi (that thou art) means that individual is the part of the creation, i.e., humans are well integrated into ecosystem functions giving back what they have taken from the environment-the concept of 'sarvabhutaday' in Buddhism. In Lotus Sutra Buddha is presented metaphorically as a "rain cloud covering, permeating, fertilising, and enriching" all living beings, to free them from their misery to attain the joy of peace, joy of present world and joy of 'Nirvana'. "Whoever plants a tree and diligently looks after it until it matures and bears fruits, is rewarded" said Prophet Mohamed.

The concept of non-violence is integrated in all religious teachings. The eastern philosophical thoughts have taken it to greater heights through the concept of Ahimsa, abjuring violence through both, word and action. From a purely ethical point of view of biodiversity conservation, there are many who would argue that do other organisms too have as much right to live, as human race has. Such a rationalship within the framework of environment conservation and management alone will give meaning and value to human existence, and take us forward through the new millennium. (Mishra S.P., Pandey S. N., 2016)

Types of Environmental Ethics:

- **Libertarian Extension:** Libertarian extension is a type of environmental ethics that focuses

on an individual's right to do whatever they want with the environment and its resources. This concept also stresses that an individual should not impose their own values on others and should instead respect the choices of others.

- **Ecological Extension:** Ecological Extension is a type of environmental ethics that focuses on preserving the natural environment and its resources in order to maintain the balance and health of the ecosystem. This concept stresses the importance of humans working with nature in order to sustain it for future generations.
- **Conservation Ethics:** Conservation Ethics is a type of environmental ethics that focuses on preserving natural resources for future generations by ensuring that current resources are not depleted or damaged beyond repair. This concept encourages individuals to use natural resources responsibly and judiciously so there will be enough for future generations.

In short, Libertarian extension promotes an individual's right to use natural resources, Ecological Extension encourages humans to work with nature, and Conservation Ethics emphasizes sustainable use of natural resources. Each of these types of environmental ethics has its own benefits and should be taken into account when considering how to best protect the environment. (Tripathi, A. K., A. K. Srivastava and S. N. Pandey (eds.), 1993)

Importance of Environmental Ethics:

- Environmental ethics is essential for protecting the environment, species, and resources.
- It promotes sustainable practices and encourages people to become more aware of the impact their actions have on the environment.
- It emphasizes the interconnectedness of all living things and the need to respect them. It

encourages us to think about our place in the world and how we can contribute to preserving the natural environment.

- Environmental ethics helps to build better relationships with nature, recognizing its intrinsic value, not just its instrumental value.
- It encourages us to think beyond our immediate needs and consider the long-term implications of our actions.
- It teaches us responsibility towards our environment, advocating for environmentally friendly practices that help protect natural resources.
- Environmental ethics also promotes better public policies and laws, which help ensure that our environment is properly cared for.

Examples of Environmental Ethics:

One example of environmental ethics in action is using renewable energy sources. Renewable energy sources are sources of energy that are naturally replenished and can be used without depleting natural resources. Examples of renewable energy sources include solar, wind, and hydropower. Renewable energy sources are seen as an ethical choice, as they do not cause pollution or deplete finite resources.

Principles of Environmental Ethics:

Leopold (1949) defined ethic as "a limitation on freedom of action". According to philosophic tradition, the answer to as to who should follow the ethic is, only human beings are worthy of ethical consideration. If so, this leads to a concept of 'anthropocentrism', which requires concerted efforts of individuals, corporations and other groups to consider how human actions may directly affect the natural environment and indirectly other human beings.

An ethic which is mainly 'life centred' was known as 'biocentrism' (Goodfaster, 1978). Considering man as a member of biotic community, later on led to the

hypothesis of 'ecocentrism' in twentieth century. Traditional western philosophers have a nonanthropocentric view and believe in that environment is more systematically integrated with man and ignoring may have untoward environmental consequences. (Mishra S.P., Pandey S. N., 2016)

Environmental Ethics and Religion?

Environmental ethics and religion are closely linked, as religious texts often encourage us to respect the environment and our fellow human beings. Many religions, such as Christianity, Judaism, Hinduism, and Buddhism, place value on the natural world and recognize our responsibility to care for it. In particular, the three Abrahamic religions - Judaism, Christianity, and Islam - share a belief in stewardship of the Earth, with the book of Genesis proclaiming, "And God said, 'Let us make mankind in our image, in our likeness, so that they may rule over the fish in the sea and the birds in the sky, over the livestock and all the wild animals, and over all the creatures that move along the ground.'" This suggests that humans have a special relationship with nature and should care for and protect it. In Hinduism, there is a concept known as Dharma which relates to the ethical and moral obligations of each person to their environment. This includes the idea of ahimsa, or nonviolence, which suggests that all living things should be treated with compassion and respect. Buddhism also encourages us to take an ethical approach to the natural world by considering how our actions will impact the environment. Ultimately, regardless of one's beliefs, understanding and respecting the environment is vital to living harmoniously on this planet. By incorporating religious teachings about environmental ethics into our lives, we can help ensure that our relationship with nature is optimistic.

Concluding Remarks:

Ethics helps to solve many environmental problems and teaches us what to do when faced with

crucial situation. Ethic deals with the morals, i.e., the distinction between the right and the wrong. Traditionally all societies have had their cultural connections with the nature. The concept of environmental ethics appeared only few years ago to remind people of their duty to respect the environment. Every religion and human society has set of beliefs about the nature and natural resources. India is a unique country with a great cultural diversity and reverence to nature, inherent in its cultural ethos. The roots of the environmental values are deep in our ancient vedic literature and upanishads. All religions in India are of one and the same underlying principles of the environmental ethics, i.e., respect for nature, care for the environment, sustainable use of resources and path of 'Ahimsa'. Environmentalism tells us as to how human actions may affect natural environment. Environmental Ethics deal with issues related to the rights of individuals that are fundamental to life and well-being. They are concerned about not only the needs of each person,



but also those who will come after us. It also deals with the rights of other living creatures that inhabit the Earth.

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State Formation under the Marathas: A Study

Deepika Singh *

Abstract:

The study of the state in medieval India has been a topic of interest since colonial times. However, the notions of the state that have been applied are largely influenced by Eurocentric perspectives, which often tend to focus on bureaucratisation, distinct geographic boundaries, and a centralised administration led by a monarch with complete sovereign power. In this context, the Maratha Kingdom, which emerged in the seventeenth century in the Western Deccan, became a significant focal point of study. It is often regarded as the second-largest state which extended to the North, East, and South in the 18th century. The Maratha Empire was one of the most dominant powers across much of India throughout the eighteenth century. The purpose of this paper is to delve into the intricate details of the Maratha state formation, exploring their political structure, organizational hierarchy, and guiding principles thoroughly and analytically. We will closely examine the administrative changes that took place during the early eighteenth century, shedding light on the significance of these transformations and their impact on the Maratha state. Through a comprehensive analysis, we aim to provide a deeper understanding of the Maratha state's evolution and the factors that shaped its development.

Keyword : Maratha State, Swaraj, Confederacy, Peshwa, Ashtapradhanas, Fitna, Peshwa.

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Introduction

The formation of 'Maratha State' was a major event in the history of India in general and of the Deccan in particular.¹ This was a period where the disintegration of the Mughal Empire and the rise of Maratha power were simultaneously going on. This period has been explored by the scholar from various perspectives, which enriched our understanding. Like, As Athar Ali pointed out historians who are studying the eighteenth century could see it as the 'Maratha century'.² Another scholar Frank Perlin deplored the Mughal and Maratha-centric treatments of the economic history of this period and suggested other ways to look at it.³ These issues remained because the eighteenth century in Indian History in many ways a period of tremendous vibrancy, which witnessed multiple avenues for both gaining and losing power by the states and other powers. The notion of Maratha history changed when Indian historians like V.K. Rajawade, G.S. Sardesai, Sir Jadunath Sarkar and G.H. Khare began to focus on the various aspects of Maratha history in the early decades of the twentieth century. These scholars have identified and used a range of sources in Marathi, Persian and other languages to have a holistic and better understanding of the subject matter. Their writings and treatment of the multiple sources gave new avenues for the new

researchers to explore the wide range of possibilities in this area.

Historians like Stewart Gordon and Andre Wink studied the same sources as the historians mentioned from a different viewpoint. They were the earliest ones who have studied the nature of state formation under the Marathas. Gordon termed the Marathas as '*marauders*', whereas Wink's focus centred around the question of the *Fitna*, which he understood as sedition and further related to the understanding of the nature of sovereignty. Wink further saw the Marathas as representing the '*zamindari stratum*', and believed that the eighteenth century witnessed the '*gentrification of the Muslim Empire*'⁴ and to that extent, saw the Maratha state as in some way continuing some of the Mughal structures. Historian Sumit Guha argued that the emerging elite in eighteenth-century Maharashtra invested heavily in land, but then spent more time and energy on diverting resources from land into securing windfalls from redistribution.⁵ Such studies were, of course, in addition to the early nationalist writings which focussed on the Maratha power as the '*Maratha Confederacy*', but they did not delve into the matter of state formation.

According to V.K. Rajwade, the emergence of the Maratha power was attributed to the crucial political situation in the Royal court of Nizamshahi of Ahmednagar. Maloji Bhonsale, the grandfather of Shivaji, took an active part in the civil and military activities of the state to secure a balance of power in his court, which was the main turning point that led to the creation of the Maratha structure in the court. Shivaji's father, Shahji, derived inspiration from his father and took advantage of the political situation as well as his growing importance in the Deccan as a military leader, gradually preparing the whole ground for the rise of Maratha power under Shivaji. However, some historians argued that Shahji was indirectly responsible for the rise of Maratha power.⁶

Grant Duff has written a comprehensive history of Marathas who suggested that the very indifference of the Muslim rulers towards the Marathas caused the rise of the Maratha power.⁷ However, firstly in 1624, during the battle of Bhatvadi, Shahji distributed the Nizam's territories among the two competing parties excluding his jagir which he had taken from both the Deccani rulers: Nizamshah and Adilshah as a reward for his services. Further Shahji assigned to Shivaji from his jagir being the Mahals of Pune, Supe, Indapur⁸ and Chakan which was practically an independent area which became the basis of the Maratha Swaraj of Shivaji.⁹ After that, Shivaji captured many areas which were under the control of Adilshahi and in 1645 declared his connotation of founding the *Hindavi Swaraj*.¹⁰ It was Shivaji the Great (1630-80), who united and inspired the Marathas with an idea of an independent Kingdom (*Swarajya*).¹¹ Soon the nature of the Maratha state underwent significant changes with the accession of Shahu. After the death of Aurangzeb in 1707, his coronation took place as the Chatrapati. During this phase, the power of the Marathas spread over a large area but the nature of the state changed gradually and it became visible after his death which resulted in a major political disadvantage for the Marathas.¹²

Shivaji got himself coronated in a ceremony according to Hindu Shastras on 6th June, 1674 to declare to the world that he was an independent sovereign power as *Chhatrapati*.¹³ As a Hindu monarch, he became the judicial head of the Maratha state, both for temporal and ecclesiastical matters.¹⁴ A.R. Kulkarni rightly stated that Shivaji's coronation as the Chhatrapati of the Marathas was an event of extraordinary socio-political significance. It is quite convincing and shows that it was something more than Shivaji's "*Kshatriyization*" and the way to solve the problems of authority.¹⁵ The organization of the Maratha state was thus very peculiar and without a precedent.¹⁶

Shivaji established a strong well-knit monarchy of a unitary type. The King was the leader of his military forces as well as the head of the civil departments of his government. Shivaji had a clear conception of the need for an efficient government and would not countenance the jagir system. He insisted that his officers be paid directly from the government treasury and not by the land assignment. He did his utmost to undo the evils of feudalism by depriving the old collectors of land revenue - *Deshmukhis* and *Deshpandes* of some of their obnoxious rights and prerogatives. He pulled down the fortified places of the petty local tyrants and he was determined not to create new fiefs or renew the evils of military tyranny and feudal anarchy. During this phase, the Maratha power spread over vast parts of India, resulting in the establishment of a feudal state with its feudatories enjoying near-complete independence. Most of the prominent Maratha dynasties emerged from these feudatories, cementing their place in history.¹⁷

Andre Wink's study of the Maratha state formation during the 18th century is based on Marathi documents both state and private papers which illustrate Watan as an institution much akin to the Zamindari rights of the Zamindars in the North and its role in elite formation at various levels in Maharashtra. According to him, *Fitna* is a concept very popular in the process of Maratha state formation during the 18th century. He studied the changing loyalty and conflict among the Maratha Watandars and Sardars in the process of Maratha state formation under Shivaji and his successors and even later under the leadership of the Peshwas. The Watandars as Patel, and Kulkarni at the village level and Deshmukh and Deshkulkarni at the district level acted as functionaries in the Maratha revenue collection machinery as well as partners in larger political formations led by the local Maratha sardars who in turn supported the Chhatrapati, the Maratha King.¹⁸ Wink interprets the growth and transformation of the Maratha state into a confederacy

in the later period under the Peshwas and the Maratha sardars Gaikwad, Shinde, Holkar, Bhonsle and others within Maharashtra and outside in the *Fitna* paradigm.

Much of the source materials are available on the theme in the *Bakhars* or chronicles of Shivaji's period and old papers of his times published by Rajwade and the *Bharat Itihas Samshodak Mandal* of Poona over the last half a century. These sources supplemented by Peshwa's Diaries and the Selections from the Peshwa Daftar edited by Sardesai help us have a better understanding of the evolution of the Maratha administration over a century and the changing organization of the Maratha army. All these sources and the learned books based on them in addition to *Ajnapatras* and *Elphinstone's* report on the territories conquered from the Peshwa (1819) give us a good account of how the Maratha government functioned in the 17th and 18th centuries.¹⁹ The state policy of Shivaji has been well epitomized in a treatise called *Ajnapatra* or "Royal Edict" on the principles of state policy and organization written by Ramchandra Pant Amatya, a contemporary of Shivaji and a minister of his Council of Eight Ministers (*Ashtapradhans*). It is said that at the time of the coronation, the eight members of the council got their Sanskrit names and stood around the throne to pour holy water from gold and silver jars on the King's head.

When it comes to the segment of Swarajya, it means the term Swarajya was applied to the territories of Maharashtra which formed the independent Kingdom of Shivaji. The history of the Maratha's Saranjam system can be traced back to the system of land assignment for military purposes.²⁰ Shivaji, being the son of a Jagirdar, was well aware of the fact that both Jagir and Watan grants were the main causes of feuds and litigation.²¹ Thus, the Jagirdari or Saranjamdari way of thinking came to permeate the entire Maratha State and it is not surprising to find the Peshwa accepting the system and working through it. The Peshwa, who was the de facto ruler of the Maratha State, became the biggest Jagirdar or feudatory of

the state.²² According to Satish Chandra, the distribution of Jagirs to Maratha Sardars caused rifts between the Mughal nobles and the emperor, as it became difficult to satisfy the new applicants with Jagirs.²³

The rise of the Peshwa to real power after the demise of Shahu encouraged the process of transformation of the Maratha Kingdom into the confederacy. Shahaji had given to Shivaji three servants, namely the Peshwa, the Muzumdar and the Chitnis. The Peshwa, after the coronation of Shivaji, became one of the eight ministers called Ashtapradhanas or one of the high officials called Sarkarkuns, who were known as the traditional servants of the Kingdom.²⁴ Shivaji had fixed the salaries of Ashtapradhanas, and the annual salary of the Peshwa under Shivaji was 13 thousand hons, which was also mentioned in a memo (Yadi) under Shahu's rule.²⁵

After Shivaji's death, the Maratha State faced a succession dispute between his two sons, Sambhaji and Rajaram. Both had delegated their power to other individuals. Rajaram was moreover unduly liberal in giving different land assignments to different persons which made the centripetal forces strong in the Maratha State.²⁶ Shivaji died in 1680 and then the Mughal emperor Aurangzeb deployed large forces and moved personally southward to direct a campaign to crush the Maratha State.

Despite Shambhaji's efforts to resist, he was unable to fend off Aurangzeb's forces. Rajaram succeeded Shambhaji in 1689 but lacked his father's natural charisma and delegated his authority to his Brahmin officers- the Pratinidhi and the Amatya.²⁷ Shahu became King in 1708, and with the help of his capable Peshwa Balaji Vishwanath, he was able to maintain his position. However, feudalism grew and was actively promoted during Shahu's reign, leading to the formation of the Maratha Confederacy and reducing the Chhatrapati's sovereign position to a mere figurehead, especially during the Peshwa period.

Nonetheless, Bajirao, a fighting Peshwa, played a crucial role in saving the Maratha state from disruption and transforming it into a great power.²⁸

Conclusion:

During the seventeenth century, Shivaji accomplished extraordinary feats in both the civil and military spheres. Being a dynastic founder, he was able to write his own rules in his version of power politics and government, which we could call state formation. Given the historiography surrounding Shivaji as a larger-than-life figure, it is not surprising that he even eclipsed his own Senapati Kartoji Gujar.

However, by the 18th century, the central government of the Maratha state had become too weak to effectively manage the sprawling empire. The Marathas' distinctive culture and beliefs evolved, with their ultimate downfall being attributed to the deviation from Shivaji's established policies by his successors. Although the socio-economic and political policies and principles of the Maratha state and confederacy have been extensively studied by historians and scholars, the Marathas eventually surrendered to the British. The Peshwa even mortgaged the Maratha state to the British through the Treaty of Vasai in 1803. As a result, the Maratha State became an integral part of the Bombay Presidency of the East India Company, which was finally merged into the colonial Empire of the British.

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भारत में लैंगिक असमानता और संवैधानिक प्रावधान

रिशू राज *

सारांश :

समाज में व्यक्तियों के बीच लिंग के आधार पर भेद-भाव किया जाना लैंगिक असमानता कहा जाता है। लैंगिक असमानता समाज में महिलाओं की स्थिति को अधीनस्थ या दोयम दर्जे का बना रखा है। लैंगिक असमानता का आधार जैविक नहीं होता है, बल्कि इसका आधार सामाजिक होता है। भारत में लैंगिक असमानता को विभिन्न अर्थों एवं विभिन्न स्तर पर समझा गया है। जैसे जनसंख्या और लिंग अनुपात के आधार पर, साक्षरता के आधार पर सामाजिक, आर्थिक अवसर के आधार पर विशिष्ट सेवाओं तक पहुँच के आधार पर आदि जेन्डर डेवलपमेंट इंडेक्स (GDI) के अंतर्गत भारत में महिलाओं की स्थिति को दक्षिण अफ्रीकी देश मोजाम्बिक, एशियाई देश बांग्लादेश, पाकिस्तान आदि देशों के जैसे बताया गया है। इससे स्पष्ट है कि सम्पूर्ण विकास के अंतर्गत महिलाओं की स्थिति निम्न बनी हुई है। भारत में लैंगिक असमानता को दूर करने के प्रयास अनेक स्तरों पर किये जा रहे हैं, जैसे पंचवर्षीय योजनाओं में महिलाओं से संबंधित कार्यक्रमों, लिंग आधारित बजट (जेन्डर बजटिंग) की शुरुआत की गई।

शब्द कुंजी:—साक्षरता, महिला, लैंगिक असमानता, सामाजिक, आर्थिक।

परिचय :

भारतीय समाज में महिलाओं की स्थिति प्राचीन या वैदिक

रिशू राज

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काल में सृदढ़ थी उस समय महिलाओं को सभा और समिति जैसी सामाजिक संस्थाओं में समान प्रतिनिधित्व मिलता था। इसके अतिरिक्त अपाला और लोपामुद्रा जैसी महिलाओं ने वेदों की रचना में भी योगदान दिया। लेकिन परवर्ती काल में महिलाओं की स्थिति लगातार कमजोर होती गई। प्राचीन काल के पश्चात् मध्य काल में महिलाओं की स्थिति लगातार खराब बनी रही। ऐसी परिस्थितियों में आधुनिक काल के कुछ बुद्धिजीवियों द्वारा भारत के स्वतंत्रता संघर्ष के दौरान लैंगिक समानता हेतु किये गये प्रयास अत्यधिक प्रशंसनीय रहे तथा इन प्रयासों से महिला समानता की नवीन अवधारणा का उद्भव हुआ एवं स्वतंत्रता के पश्चात् निर्मित भारतीय संविधान में भी महिलाओं के सशक्तीकरण से संबंधित विभिन्न प्रावधान किये गये।

पंचवर्षीय योजनाएं एवं महिलाओं के विकास मुद्दों के तरफ ध्यान देते हैं तो सातवीं पंचवर्षीय योजना में महिलाओं के लिए 27 विशिष्ट कार्यक्रमों की निगरानी की संकल्पना को प्रस्तुत किया गया था। धीरे-धीरे इसका विस्तार किया गया और आठवीं पंचवर्षीय योजना में पहली बार लैंगिक परिप्रेक्ष्य पर विशेष बल दिया गया और सामान्य विकास क्षेत्रों से संसाधनों की निश्चित मात्रा में महिलाओं की ओर हस्तान्तरण करने की बात की गयी। आठवीं योजना में ही यह भी स्पष्ट किया गया कि विभिन्न क्षेत्रों के विकास का लाभ महिलाओं तक प्रभावी रूप से पहुंचना चाहिए और महिला के लिए विशिष्ट कार्यक्रम सामान्य विकास के पूरक के रूप में लाया जाना चाहिए। नौवीं पंचवर्षीय योजना में महिला कम्पोनेन्ट प्लान को एक वृहद रणनीति के रूप में अपनाया गया। केन्द्र

और राज्य सरकारों से कहा गया कि कुल निधि या कोश का कम से कम 30 (तीस) प्रतिशत हिस्सा महिलाओं से संबंधित क्षेत्रों के लिए सुनिश्चित किया जाए। इसी योजना में महिला सशक्तिकरण के लिए विकास के लाभ को महिलाओं तक पहुँचाने के लिए विशेष तंत्र की स्थापना की बात की गयी। दसवीं पंचवर्षीय योजना में लिंग आधारित बजट के प्रति प्रतिबद्धता दर्शाई गई और लैंगिक प्रतिबद्धताओं को बजटीय प्रतिबद्धताओं में परिवर्तित करने की बात की गयी। इसी लैंगिक असमानता को दूर करने एवं लैंगिक समानता को बल प्रदान करने के लिए दसवीं पंचवर्षीय योजना में महिला कम्पोनेन्ट प्लान और लिंग आधारित (संवैधानिक बजट) को रणनीति के रूप में अपनाया गया। इसी योजना में यह विचार प्रस्तुत किया गया कि महिला कम्पोनेन्ट प्लान को केन्द्रीय और राज्य स्तर पर परम्परागत रूप से महिला संबंधित मंत्रालय और विभाग से विस्तार किये जाने की आवश्यकता है और इसे सभी मंत्रालयों और विभागों से जोड़े जानी की आवश्यकता है। इसमें इस बात पर भी बल दिया गया कि महिलाओं के लिए आवंटित कोश पूर्ण रूप से महिलाओं को लाभान्वित करे, यह उत्तरदायित्व सरकार का हो। ग्यारहवीं पंचवर्षीय योजना तीव्र और अधिक समन्वित संवृद्धि की ओर के दृष्टिकोण के अंतर्गत लैंगिक समानता पर बल दिये जाने का उद्देश्य है। इस योजना में लिंग आधारित बजट की प्रक्रिया को आगे बढ़ाए जाने की बात की गई है तथा इसमें लैंगिक संतुलन की संकल्पना को भी प्रस्तुत किया गया है। भारत में इसी लैंगिक असमानता को न्याय दिलाने के लिए ही भारतीय संविधान की मूल भावना और उसके विभिन्न प्रावधानों में समानता के न्यायिक दृष्टिकोण की तरफ दृष्टिपात करते हैं तो पाते हैं कि यदि हम संवैधानिक समानता के विचार पर न्यायिक दृष्टिकोण का विभिन्न निर्णयों उसके प्रकाश का विवेचन करें तो इसे समानता के दो प्रतिरूपों के आधार पर स्पष्ट किया जा सकता है—

- औपचारिक समानता (Formal Equality)
- सारभूत समानता (Sub-Stantiv Equality)

समानता की जिस अवधारणा ने पाश्चात्य चिंतन को अस्तु के समय से ही प्रभावित किया है। वह औपचारिक समानता को धारण कर रही है। औपचारिक समानता की व्याख्या सामान्यतः यह की जाती रही है कि सभी के साथ समान व्यवहार किया जाये।

इसकी संवैधानिक अभिव्यक्ति पहले अमेरीका और बाद में भारत के संविधान में 'विधि के समान संरक्षण' के सिद्धान्त

के अंतर्गत हुई चाहे वह पुरुष हो या महिला हो। समान के साथ असमान व्यवहार उपर्युक्त धारणा के अंतर्गत असमानता एवं लैंगिक असमानता दोनों का वाहक बन जाता है। इसके विपरीत सारभूत समानता का प्रतिरूप इस मान्यता के साथ प्रारंभ होता है कि समानता कभी-कभी असमान व्यवहार के द्वारा भी लाई जाती है जो समानता की औपचारिक धारणा की आलोचना है। दूसरे अर्थों में सारभूत समानता कानून के अंतर्गत समान व्यवहार को नहीं, बल्कि कानून के वास्तविक प्रभाव को महत्वपूर्ण मानती है।

इसी के संदर्भ में भारत के संविधान की अनुच्छेद 14, 15 तथा 16 संवैधानिक समानता की स्थापना करती है। अनेक महिला संबंधी वादों में न्यायपालिका ने समानता की 'सारभूत धारणा' को भी अपनाया और आगे बढ़ाया है। महिलाओं के संदर्भ में ऐसे निर्णय दिये हैं जिनके द्वारा महिलाओं की लैंगिक असमानता दूर हो साक्ष्य के रूप में दो विवादों को उदाहरण के रूप में प्रस्तुत किया जा सकता है—

प्रथम एयर इण्डिया बनाम नर्गिस मिर्जा एवं दूसरा सी. वी. मुथम्मा बनाम भारत संघ का मामला।

प्रथम के अंतर्गत सर्वोच्च न्यायालय ने यह निर्णय दिया कि गर्भावस्था के आधार पर पुरुष और महिला कर्मचारी में विभेद करना अनुच्छेद 14 का उल्लंघन है। इसी प्रकार मुथम्मका के मामले में भी सर्वोच्च न्यायालय ने कहा कि विवाहित महिलाओं के साथ केवल लिंग के आधार पर नियुक्ति प्रदान करने में भेद-भाव करना या अविवाहित महिलाओं को विवाह से पूर्व सरकार से अनुमति की शर्त रखना अनुच्छेद 14 का उल्लंघन है।

इस प्रकार उपर्युक्त निर्णय महिलाओं की लिंगजनित असमानता को दूर करते हैं। इसी प्रकार कानूनी भेद-भाव समाज में महिलाओं का निम्न स्तर पितृसत्तात्मक समाज द्वारा बनाये रखना, महिलाओं पर घरेलू हिंसा इत्यादि भी उसे लैंगिक असमानता की ओर नैतिक रूप से दोषी ठहराता है। भारत में लिंगानुपात में अंतर परिवार के आय में महिला के आय को अदृश्य रखना, संसदीय राजनीति में महिलाओं की भागीदारी दस फीसदी से भी कम एवं मातृत्व मृत्यु दर अधिक होना भी कहीं न कहीं लैंगिक भेद भाव को दर्शाता है। रमूल अधिकार और समाजिक व्यवस्था में भी लिंग भेद की तस्वीर भी अमेरिका, पाकिस्तान, नेपाल, बांग्लादेश एवं भारत में देख सकते हैं। जिसमें भारत की स्थिति सबसे खराब सूचकांक को दर्शाता है। अनुच्छेद-39 भी समान काम के लिए समान वेतन

होने के बावजूद आज महिला को कम वेतन दे दिया जाता है। अनुच्छेद 51 (अ) स्त्री गरिमा इस प्रकार मात्र पहली बार महिला को राजनीति में देख सकते हैं कि 15वीं लोकसभा में मात्र 45 सदस्य महिला थी और उसके बाद नवगठित लोकसभा में बढ़कर महिलाओं की संख्या 59 हुई और पहली बार पंद्रहवीं लोकसभा में किसी महिला (मीरा कुमार) को स्पीकर पद हेतु चुना गया। जबकि भारत में महिला की आबादी लगभग आधी है।

संयुक्त राष्ट्र की भूमिका

लैंगिक समानता पर अपने लक्ष्य को प्राप्त करने की दिशा में भारत सरकार का समर्थन करने के लिए संयुक्त राष्ट्र काफी सक्रिय रहा है। 2008 में संयुक्त राष्ट्र महासचिव ने महिलाओं के खिलाफ खुले मन से हिंसा और वेतन वृद्धि राजनीतिक इच्छाशक्ति और सम्पत्ति बढ़ाने और महिलाओं के खिलाफ सभी प्रकार की बर्बरता के लिए सम्पत्ति बढ़ाने के लिए यूएनआईटीई को एंड वायलेंस के खिलाफ प्रस्ताव दिया।

दुनिया भर में प्रादेशिक और राष्ट्रीय आयामों में अपनी पदोन्नति गतिविधियों के माध्यम से, UNITE धर्मयुद्ध लोगों और नेटवर्क को सक्रिय करने का प्रयास कर रहा है। महिलाओं और आम समाज संघों के लंबे समय से प्रयासों का समर्थन करने के बावजूद, लड़ाई प्रभावी रूप से पुरुषों, युवाओं, वीआईपी, शिल्पकारों, खेल पहचान, निजी भाग और कुछ और के साथ मोहक है।

भारत में संयुक्त राष्ट्र महिला लिंगानुपात को पूरा करने के लिए राष्ट्रीय बेंचमार्क स्थापित करने के लिए भारत सरकार और आम समाज के साथ मिलकर काम करती है। संयुक्त राष्ट्र की महिलाएँ कृषकों और मैनुअल फोरमों की मदद से महिलाओं की वित्तीय मजबूती को मजबूत करने का प्रयास करती है। सद्भाव और सुरक्षा पर इसके काम के एक प्रमुख पहलू के रूप में संयुक्त राष्ट्र की महिलाएं शांति से संबंधित यौन क्रूरता की पहचान करने और रोकने के लिए शांति सैनिकों को प्रशिक्षित करती है।

अध्ययन महत्व

लैंगिक समानता असमानताएँ और उनके सामाजिक कारण भारत के लिंग अनुपात, महिलाओं की भलाई आर्थिक स्थितियों के साथ-साथ देश के विकास को प्रभावित करते हैं। भारत में लैंगिक असमानता एक बहुपक्षीय मुद्दा है जो देश की बड़ी आबादी को प्रभावित करता है। किसी भी स्थिति में, जब भारत की आबादी का सामान्य रूप से विश्लेषण किया जाता है, तो महिलाओं को अक्सर उनके पुरुष समकक्षों के साथ समान

व्यवहार नहीं किया जाता है। इसके अलावा, यह उम्र के माध्यम से अस्तित्व में रहा है और देश में कई महिलाओं द्वारा भी जीवन के एक हिस्से के रूप में स्वीकार किया जाता है। भारत में अभी भी कुछ ऐसे हिस्से हैं, जहाँ महिलाएँ सबसे पहले विद्रोह करती हैं, अगर सरकार उनके आदमियों को बराबरी का व्यवहार न करने के लिए काम में लेने की कोशिश करती है जबकि हमले, बंदोबस्ती और बेवफाई पर भारतीय कानूनों ने बुनियादी स्तर पर महिलाओं को सुरक्षा प्रदान की है, ये गहन रूप से दमनकारी प्रथाएँ अभी भी एक विचलित दर पर हो रही हैं, जो आज भी कोई महिलाओं के जीवन को प्रभावित करती हैं। वास्तव में, 2011 में वर्ल्ड इकोनॉमिक फोरम (WEF) द्वारा डिस्चार्ज किये गए ग्लोबल जेंडर गैप रिपोर्ट के अनुसार, भारत 135 देशों के मतदान के बीच जेंडर गैप इंडेक्स (GGI) में 113 पर तैनात था। तब से भारत ने 2013 में वर्ल्ड इकोनॉमिक फोरम के जेंडर गैप इंडेक्स (GGI) पर अपनी रैंकिंग को 105/136 तक बढ़ा दिया है। हालांकि अब भारत को (GGI) के टुकड़ों में बांटा जाता है तो यह राजनीतिक मजबूती में बहुत अच्छा प्रदर्शन करता है। हालांकि भारत में कन्या भ्रूण हत्या के आंकड़े चीन जितने ही खराब है।

इन सारी विभेदताओं के उपरांत हम कह सकते हैं कि किसी भी राष्ट्र की महिलाओं से परिलक्षित होती है फिर भी हमारे भारत में इसकी रफ्तार बहुत धीमी रही है। लेकिन मौजूदा देश में हो रहे महिला हिंसा और दिल दहला देने वाली घटना दिसम्बर 2012 की दिल्ली गैंग रेप का मामला सारे देश को हिला कर रख दिया और यह एक क्रांतिकारी बदलाव का सूचक है जो महिलाओं के संपूर्ण क्षेत्र में व्याप्त लैंगिक हिंसा को कम करने में एक ज्वलंत मुद्दा बनकर उभरेगा और महिलाओं के प्रति पुरुष सत्तात्मक सोच में बदलाव आयेगी और संवैधानिक न्यायायिक समता की सार्थकता भी सिद्ध होगी। इस प्रकार एक नैतिक रूपी मानवीय संवेदना जागृत होगी और स्वतः लैंगिक हिंसा मुक्त समाज होगा।

उद्देश्य

- लैंगिक असमानता का विश्लेषण करना।
- आर्थिक विकास और समानता के बीच संबंध का अध्ययन करना।
- नारी शिक्षा का गरीबी उन्मूलन से संबंध का विश्लेषण करना।
- समानता व राष्ट्रीय शिक्षा स्तर के बीच संबंधों का विश्लेषण करना।

अध्ययन विधि

शोध नियमों के अनुसार प्रस्तुत शोध सैद्धांतिक विश्लेषणात्मक, तुलनात्मक एवं नवीन व्यवहारिक पद्धतियों को अपनाते हुए मौलिकता प्रदान करने का प्रयास किया गया है। इस अध्ययन कार्य हेतु द्वितीयक स्रोतों का प्रयोग किया गया। द्वितीयक स्रोतों के तहत आवश्यक सामग्री विभिन्न राष्ट्रीय पुस्तकालयों इंटरनेट एवं शोध संस्थानों आदि में उपलब्ध साधनों से एकत्र किया जाना अनुमान्य है। इन संदर्भ आधारित पुस्तकों के अलावा विभिन्न आयोगों के प्रकाशनों, आत्मलेखों, समाचार पत्र-पत्रिकाओं एवं राजनैतिक दलों के घोषणा पत्रों इत्यादि के लेखन सामग्री संग्रहित कर विश्लेषणात्मक अध्ययन है।

निष्कर्ष

महिलाओं को काफी समय से समान अधिकारों के लिए जूझना पड़ा है, एक मतदान करने का विशेषाधिकार अपने शरीर को नियंत्रित करने का विशेषाधिकार और काम के माहौल में समानता का विशेषाधिकार इसके साथ ही, इन झगड़ों को कड़ी टक्कर दी गयी है, फिर भी हमें महिलाओं को उनका पूरा हक दिलाने के लिए एक लम्बा रास्ता तय करना है। हालांकि वर्तमान समय में सरकार के साथ गैर सरकार संगठन और यूएन जैसे संगठन महिलाओं को उनका हक दिलाने के प्रति दृढ़ कार्य कर रहे हैं और इससे समाज में कुछ लोगों का महिलाओं के प्रति नजरिया बदला है और साथ ही महिलाएँ भी अपने अधिकारों के प्रति जागरूक हुई हैं। शायद, हम भविष्य में कम से कम एक ऐसे समाज का सपना देख सकते हैं जो अलग-अलग लिंग के लोगों के साथ अलग-अलग व्यवहार नहीं करता है।

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How Technology Influences Student's Online Learning

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Abstract :

The purpose of the study is to explore how technology influences student's online learning. Methods: Purposive and snowball sampling methods were used to select participants for this survey. Responses were analyzed using descriptive statistics. Result: The majority of the students mentioned they would prefer offline classes over online classes. Although, there were new opportunities for the students as well as teachers to learn and explore in online classes. Also, online classes were more flexible than offline classes but there were negative aspects mentioned by students that they were unable to interact properly in discussions, failed to ask their queries, or found it difficult to understand the concepts of the topic as there were disruptions due to poor network connectivity, power cuts, problems with apps, lack of access to technology have limited access to online classes for many students, etc. Conclusions: The findings of the study show that there are many positive and negative aspects of technology use in online learning. However looking through survey results, students share most of the things which were created

hindrances during online classes or became barriers to participating in online discussion. Like poor network issues, power cuts, problems with apps, etc.

Keyword : Technology, Online learning, Students

Introduction:

Volti (2009) defines technology as "a system created by humans that uses knowledge and organization to produce objects and techniques for the attainment of specific goals". Examples are laser, television, computer, etc. In short, technology is a system that allows to production of objects and performs techniques to achieve goals.

In the educational setting, technology plays a vital role in shaping the way we learn. It continues to transform the way we access and deliver education and improve the learning experience for students and teachers. It has made it easier for people to access educational materials, collaborate with others, and complete assignments and projects. Having stable access to the internet is critical to student's learning experience during online learning. Berge (2005) expressed concern about the divide in digital readiness, and the pedagogical approach between different countries could influence students' online learning experience. Digital readiness is the availability and adoption of information technologies and infrastructures in a country.

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Supporting evidence is emerging in recent studies conducted during the COVID-19 pandemic. In Egypt's capital city, Basuony et al. (2021) found that only around 13.9% of the students experienced issues with their internet connection. Whereas more than two-thirds of the students in rural Indonesia reported issues of unstable internet, insufficient internet data, and incompatible learning devices (Agung et al., 2020).

According to Muirhead and Juwah (2004), interaction is an event that can take the shape of any type of communication between two or subjects and objects. Specifically, the literature acknowledges the three typical forms of interactions (Moore, 1989): (i) student-content, (ii) student-student, and (iii) student-teacher.

Anderson (2003) posits, in the well-known interaction equivalency theorem, learning experiences will not deteriorate if only one of the three interactions is of high quality, and the other two can be reduced or even eliminated. Quality interaction can be accomplished across two dimensions: (i) structure-pedagogical means that guide student interaction with contents or other students and (ii) dialogue-communication that happens between students and teachers and among students. To be able to scale online learning and prevent the growth of teaching costs, the emphasis is typically on structure (i.e., pedagogy) that can promote effective student-content and student-student interaction. The role of technology is typically recognized as a way to amplify the effect of pedagogy (Lou et al., 2006)

Influences on students online learning:

In education settings, scholars are looking for some advanced technological tools that are going to enhance the studying and learning patterns of the students as well as beneficial for the educational world. With increasing advancements in academic settings it has negative effects on students learning. Using computers/ phones/ laptops can affect motor skills and cognitive skills.

Professors and parents should encourage students for their learning and to attend classes regularly. This

will help them to accommodate new information, and interact with classmates and teachers. Teachers can help students overcome their fear of change, training in basics, etc.

Those students who usually face internet problems can be provided with a different alternative which includes physical textbooks or audio-conferencing, instead of video-conferencing and screen sharing. However, a lack of visual and instructor presence could reduce student's attention, recall of information, and satisfaction with online learning.

Methodology:

Data collection : This survey was conducted to recognize how technology influences student's online learning. There is a total of 100 responses were collected using an online portal using Google Forms. Participants were selected using purposive and snowball sampling methods.

Tools and techniques : Participants were selected through an online portal using Google Forms. They were provided with a questionnaire and a total of 34 questions were given. First, students were asked to give their consent in which they were informed about the duration and procedure of the survey. They were also informed about the right to withdraw from the survey at any point in time without citing any reasons. The demographic information questions provided context for the selected data enabling researchers to describe their participants' backgrounds and better analyze responses.

Data analysis : Data analysis is an important component of research. It's a method of putting facts and figures to solve the research problem. First, Descriptive statistics was used to compile and analyse the data to describe participants' demographics and their responses to each survey item. Each item was analyzed in terms of frequency and percentage by using graphs. Participants' responses to all items were analyzed to understand how technology influences student's online learning.

Results:

A hundred students from various colleges were sampled for the study using an online survey technique. The survey was done to get an understanding of the psychological and physical impact of online classes on college students about the online mode of teaching. Findings from the analysis of data follow:

Demographic details of respondents:

The demographic of the populations on which the study was conducted and variables included are shown as gender, education, college/university, Total duration dedicated to online classes, Average data consumption for online classes, designated exclusive space for online classes, etc. Out of 100%, of respondents, 77% were female, and 23% were male category. From students'

educational background, 48% of respondents belonged to the Science stream, 29% belonged to the Arts/Humanities and 23% belonged to the vocational courses. 58% of the respondents belonged to a government college/University while 42% of respondents belonged to a Private/government college. 72% of the respondents said that they dedicated 3-5hrs /day to online classes while 28% of respondents said that they dedicated 6-10hrs/day to online classes. Out of the 100%, for 43% of respondents average data consumption for online classes is more than 1GB, for 36% less than 1GB while for 21% of respondents, they require approx. 1GB data. 65% of respondents said that they got designated space for online classes while 35% of respondents said 'NO'.

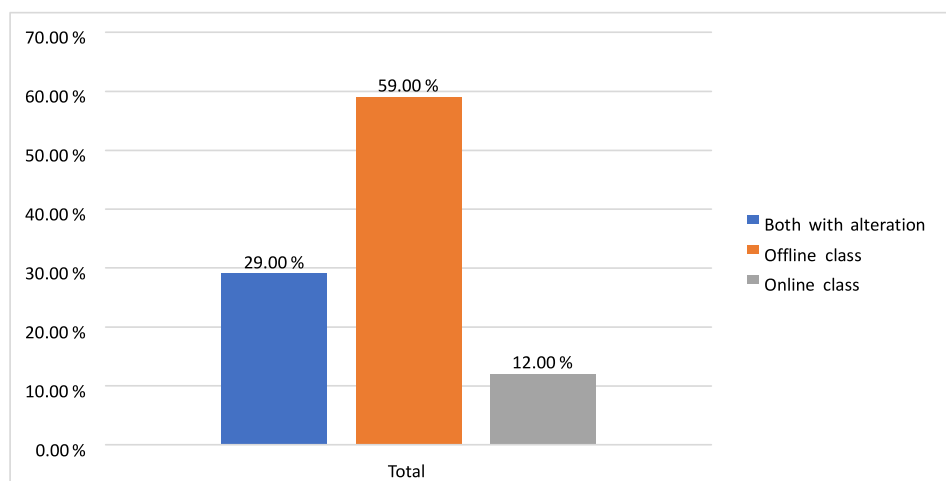
Influence of Technology on students online learning:

The following tables show the various questions that show how technology influences students online learning:

Questions	Responses				
According to you, which mode of class is preferable?	Both with alteration (29%)		Offline (59%)		Online (12%)
To what extent, online classes influence your study and learning?	Extremely well (09%)	Not at all (06%)	Not so well (36%)		Somewhat well (49%)
Quality of discussion in online classes are?	Average (40%)	Bad (02%)	Below average (19%)	Excellent (07%)	Good (32%)
Do you think, lack of access to technology might have limited access to online classes for many students?	YES (97%)		NO (03%)		
Do you feel that technical facilities should have been provided to students with lower- income families for online education?	YES (95%)		NO (05%)		
Do you feel habituated or addicted to technological gadgets and mobile screen?	Strongly Agree (21%)	Agree (51%)	Neither agree nor disagree (15%)	Disagree (11%)	Strongly disagree (02%)

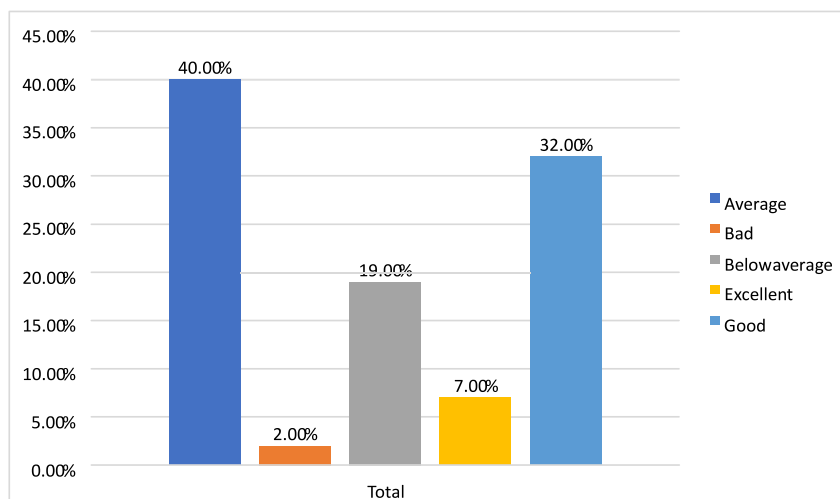
Some important data of survey findings:

1. According to you, which mode of class is preferable?



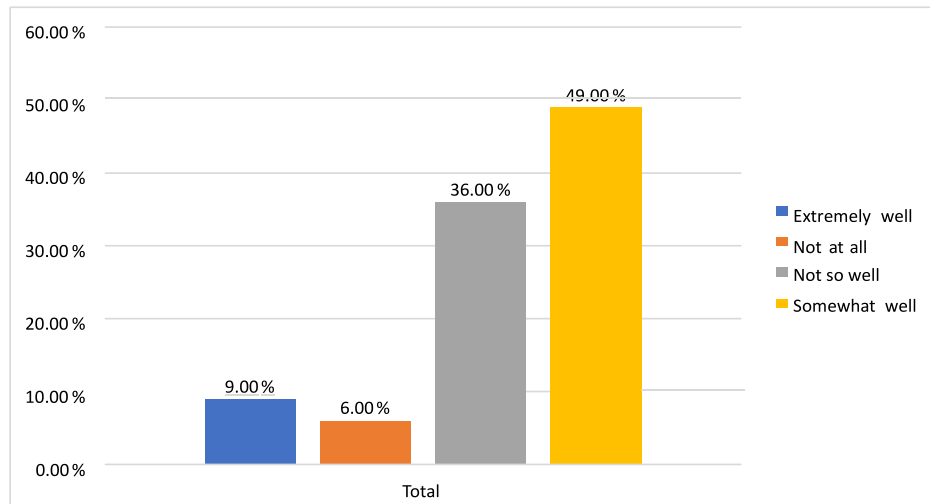
when participants were asked about which mode of class they would like to prefer. Out of 100%, 59% of the participants said 'Offline classes', 29% said 'Both with the alteration', and 12 % said, online classes.

2. Quality of discussion in online classes are?



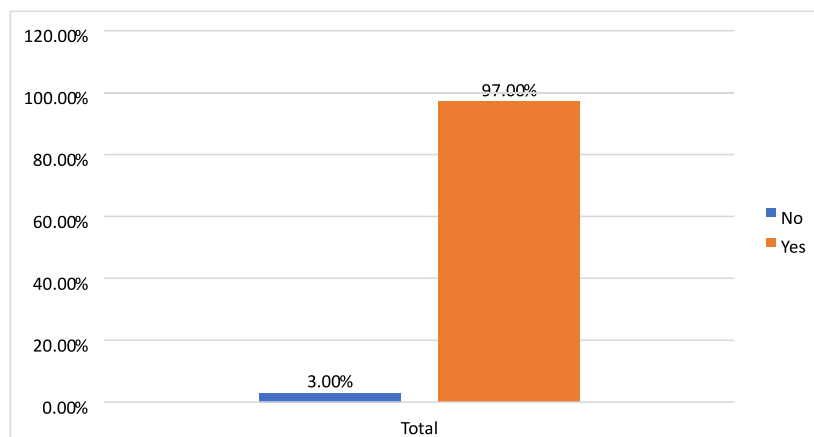
This graph shows that out of 100%, 40% of participants said that the quality of discussions are 'Average', 32% said 'good' 19% said 'below average', 7% 'excellent', and 02% said Bad.

3. To what extent, online classes influence your study and learning pattern?



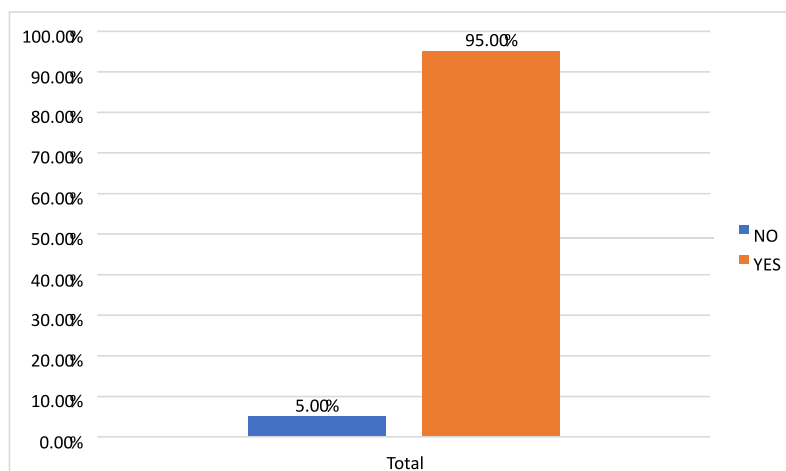
When participants were asked about whether online classes influence their study and learning patterns. Out of the 100%, 49% of the participants said "somewhat well", 36% of the participants said "Not so well", 6% of the participants said "Not at all" and 9% of the participants said, "Extremely well".

4. Do you think, a lack of access to technology might have limited access to online classes for many students?



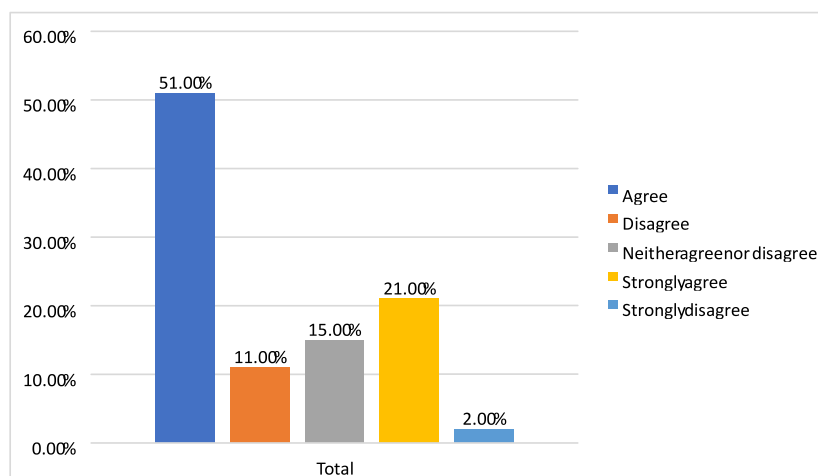
In this graph, the majority of the participants said that due to a lack of access to technology, many students have limited access to online classes.

5. Do you feel that technical facilities should have been provided to students with lower-income families for online education?



In this graph, the majority of the participants said that technical facilities should be provided to students with lower incomes for online education.

6. Do you feel habituated or addicted to technological gadgets and mobile screens?



This graph shows that out of 100%, 51% of the participants feel habituated or addicted to technological gadgets and mobile screen and 21% of the participants strongly agree whereas few participants disagree or neither agree nor disagree.

Discussion:

The purpose of the study was to determine how technology influences student's online learning. The questions were asked through the given survey.

Students were asked questions related to their preference of classes: offline mode, online mode, and both with alterations. The majority of the participants said they would prefer offline classes to online classes and few said 'both with alteration'. The possible reason

could be, that in offline classes students would be able to interact with their friends or classmates, can participate in class discussions, etc.

Students were asked about what difficulties they face due to technical issues in online classes that influence their studying and learning patterns. The findings show that out of 100%, 49% of students responded that it influenced them to a somewhat level whereas 35% of students said that it didn't influence them so well. Only 9% of students said that it influenced students to be not satisfied with online classes as they are unable to interact with their teachers and face problems in explaining their doubts clearly because some students turn less active. Students said that their teachers are unable to make concepts clear as they are in a habit of offline classes. So, they find it difficult to understand the topic of the class. Students from science backgrounds whose studies are practical-based lack concept clarity as responses came that when teachers demonstrate video of bones or skeletons, the quality of the video is hellish. The issues can be handled if students stay in touch with professors and inform them about what's happening. They will hopefully understand and be flexible about the situation, perhaps even recording class sessions as a backup.

When a question was asked related to how technology influences online learning and the quality of discussion in online classes. Out of 100%, 40% of participants said 'Average', 32% said 'good' and 19% said 'below average'. The possible reasons could be the adaptability of students, as well as teachers with regular use of continuous looking at the screen for long hours, which has affected their physical and psychological comfort. Most of the students reported technical issues poor network connectivity, power cuts, broadband issues, poor audio and video quality, and problems with the app. Getting disconnected between the classes and finding it hard to log in again

is the main issue. However, the new opportunity of conducting online classes has helped them to participate in online classes from anywhere, at any time which is only possible through technological gadgets which create new online educational direction. The majority of the students reported that lack of access to technology might have limited access to online classes to those whose families are facing financial problems or whose parents lost their jobs. Families with lower income face issues like expenses by recharging the data frequently, due to which they feel burdened, especially for students who come from financially less stable homes. The next concern was that online facilities and tools were not accessible for students coming from economically disadvantaged backgrounds which again adds to the burden of buying smartphones which is financially burdening for some during the COVID-19 outbreak.

Conclusions:

The findings of the study show that there are many positive and negative aspects of technology use in online learning. However looking through survey results, students share most of the things which were created hindrances during online classes or became barriers to participating in online discussion. Like poor network issues, power cuts, problems with apps, etc.

Several recommendations were made for future practice which is required in online learning for students. Students should be provided with the necessary technical support to students to overcome technical issues. Educators also felt that students need more training with the provided technology to help promote more independence.

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Impact of Gender Discrimination in Contemporary Indian Society : A Sociological Study of Rural Patna

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Abstract :

Gender discrimination: The bias against females in India is grounded in cultural, economic and religious roots. Sons are expected to work in the fields; they provide greater income and look after parents in old age. In this way, sons are considered as a type of insurance. In addition, in a patriarchal society, sons are responsible for "preservation" of the family name. Also, as per Hindu belief, lighting the funeral pyre by a son is considered necessary for salvation of the spirit. This strong preference for sons which results in a life-endangering deprivation of daughters is not considered abhorrent culturally and socially.

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Keyword : Gender discrimination, grounded, addition, preservation, considered, necessary

Introduction:

Patriarchy in Society : Patriarchy literally means rule of the father in a male-dominated family. It is a social and ideological construct which considers men as superior to women. A patriarchal society is one where by men are the decision maker and holds positions of power and prestige and have the power to define reality and common situations.

For instance in our North America Societies, decision making is largely governed by electoral politics and corporate interests, where men are over represented. Also because of most position of power and prestige such as Doctor, Lawyer, business executives and politician are held by men we would define our society as Patriarchal. Many patriarchal societies are also patrilineal, meaning that property and title are inherited by the male lineage.

Concept of Gender:

Gender is a socially constructed component of human sexuality. The word Gender is now being used sociologically or as conceptual category, and it has

been given a very specific meaning, Gender refers to the socio- cultural definition of man and women and assign them social roles. The word 'Gender' refers to the socially and culturally constructed roles and responsibilities of women and men in a given culture or location. These roles are influenced by perception and expectation arising from cultural sociological political environmental, economical and religious factors as well as custom, laws, class ethnicity and individual or institutional bias. Gender attitudes and behaviors are learned and can be changed.

Gender refers to the economic, social and cultural attributes or opportunities associated with being male/ masculine or female/feminine in a particular point in time. The concept of gender enables us to state that sex is one thing and gender is quite another.

"Ann Oakley" who was among the first feminist scholar to use the concept "Gender".

Concern about gender and educational attainment focuses mainly on the extent to which females and males perform differently in different subjects and their tendency to study different subjects given the choice. However, it is not true that males generally attain more qualifications or higher grades than females at college, in fact the reverse is the case. Gender is a common term where as gender discrimination is meant only for women, because females are the only victims of gender discrimination. Gender discrimination is not biologically determined but it is determined socially and the discrimination can be changed by the proper and perpetuate efforts. Denial of equality, rights and opportunity and suppression in any form on the basis of gender is gender discrimination.

Half of the world's population is females. They are doing two- third of work of the total work in the world but received only one-tenth of the world's total income. Nearly two-third of the women is illiterates and they have possessed only one percent of the total world's assets.

In the world only one-fourth of the families are

headed by female. India is a male dominant society and gender discrimination is customized habitually.

Concept of Discrimination

Discrimination is the prejudicial treatment of an individual based on their actual or perceived membership in a certain group or category, "in a way that is worse than the way people are usually treated." It involves the group's initial reaction or interaction, influencing the individual's actual behavior towards the group or the group leader, restricting members of one group from opportunities or privileges that are available to another group, leading to the exclusion of the individual or entities based on logical or irrational decision making.

Discriminatory traditions, policies, ideas, practices, and laws exist in many countries and institutions in every part of the world, even in ones where discrimination is generally looked down upon. In some places, controversial attempts such as quotas or affirmative action have been used to benefit those believed to be current or past victims of discrimination- but have sometimes been called reverse discrimination themselves.

Discrimination by Type

- Age
- Disability
- Equal Pay/Compensation
- Genetic Information
- Harassment
- National Origin
- Pregnancy
- Race/Color
- Religion
- Retaliation
- Sex
- Sexual Harassment

Concept of Gender Discrimination

Gender discrimination is any distinction, restriction made on the basis of gender and transgender identity which has effect or purpose of impairing or nullifying the recognition, enjoyment, growth & development. Gender discrimination is the unfavorable treatment of individual on the basis of their Gender which denies rights, opportunities & resource. It also Encompasses fundamental freedom. Gender discrimination refers to any situation where a person is denied an opportunity or misjudged solely on the basis of their sex.. Gender may also be referred to as Sexism. Characteristics of gender discrimination are any Situation where a person shows a prejudice towards another that would not occur had they been the opposite sex. In a patriarchal society this involves systematic and structural discrimination against women. In the distribution of income access to resource and participation in decision making .

Types of Gender Discrimination

1. Infanticide
2. Denial of education
3. Denial of health facilities
4. Early marriage, force marriage
5. Rape
6. Dowry
7. Divorce,desabulization
8. Eve teasing
9. No equal pay for work.
10. Discrimination in policy making

Causes of Gender Discrimination

The causes of gender discrimination are:-

- Educational backwardness
- Caste Religious beliefs
- Culture
- On the name of family history Customs and beliefs

- Races
- Low income
- Unemployment
- Society
- Family situation
- Attitudes

Solution For Gender Discrimination

Various movements, programmes are being carried out by the Government, voluntary organizations and by lot of social activities for women's development and against the gender discrimination. To solve the gender discrimination problem the factor are :

1. Education

Education develops the skills, imparts knowledge, changes the attitude and improves the self confidence. It provides employment opportunity and increases income. Hence educating women is the prime factor to combat gender discriminate and for the upliftment of women. Not only the female, the society must be educated to give equal right for female.

2. Employment

Employment gives the income and improves the economic position of the women. Employed women are given importance by the family members and gives the economic independence for the women.

3. Economic Independence

In India, mostly, women in the young age depends on her father, in the middle age- she depends on her husband and in the older age-depends on her son. Woman always depends on somebody for her livelihoods hence, independency in economical aspects are imperative for women's development. Economic independence will free the women from the slavery position and boost the self confidence. Economic independence of women also helps in the national economic development.

4. Empowerment

Empowering women with the help of laws, education and employment will make the society to accept the women as an equal gender like male. Female also has all the potential and empowering women will help to use her full capability and mitigate the economic dependency of women.

5. Self-confidence

Due to prolonged suppression, Indian women, an especially uneducated and unemployed woman hasn't had the self-Confidence. Women need self confidence to fight against all the atrocities against her and to live self esteemed life hence boosting the moral and self confidence of the women , is the key to eliminate the inferior complex of her.

6. Decision Making

Even in the family as well as in the society the decision making power of women is denied. Mostly males make the importance decision in the family and in the society. This makes women as voice less and destroys her confidence and she feels less important in the family as well as in the society. So, to end gender discrimination women must empower with decision making power.

A nation or society, without the participation of women cannot achieve development. If we eliminate gender discrimination, women will deliver all the potentials, skills, knowledge to develop the family, the nation and the whole world.

Women's Right to Education

Women's Right to Education is nearly six decades since the UN General Assembly adopted the Declaration of Human Right on 10th December 1948. This declaration listed 30 articles. Out of which:

The Article 26 states that:

- Everyone has the right to education. Education shall be free, at least in the elementary and fundamental stage. Elementary education shall be compulsory. Technical and professional education shall be

made generally available and higher education shall be equally accessible to all on the basis of merit.

- Education shall be directed to the full development of the human personality and to the strengthening of respect for human rights and fundamental freedom. It shall promote understanding, tolerance and friendship among all nations, racial, religious groups and shall further the activities of the United Nations for the maintenance of peace.
- Parents have a prior right to choose the kind of education: that shall be given to their children.
- Article 14 of Indian Constitution says that the state shall not deny to any person equality before or equal protection of the law,
- Article 15 says that no woman can be discriminated against on the ground of sex.
- Article 15 (3) emphasis that the state shall make special provisions for women and children and Article 16 provides equality of opportunity in matters relating to employment by the state.
- In Article 39(a) emphasis that the citizens men and women equally, have the right to an adequate means of livelihood.
- In Article 39(d) it says that the state should secure equal pay for equal work for both men and women and in Article 34 it provides that the state shall make provision for securing just and human for work and for maternity relief.
- The 73rd and 74th Amendments of Indian Constitution in 1993 are the milestone in the history of India, which provides lot of powers for the local bodies. It paves the way for decentralization, empowers the poor people as well as women.

Factors Responsible for the Low Literacy Rates Among Women:

- Gender based inequality.
- Social discrimination and economic exploitation. Occupation of girl child in domestic chores.
- Low enrolment of girls in school and college.
- Low retention rate and high dropout rate.
- Deprived of access to information and alienated from Decision-making processes.
- Absence of female teachers and professors in school and College.
- College established in a far away place etc.

Main Seven Causes of Discrimination of Women in Family in Higher Education:

Seven areas of discriminations between males and females.

1. Women experience differential treatments in mortality, Natalivity, basic facilities, special facility, professional, ownership and household.
2. Many forms of discriminations are difficult to eliminate because, women perceive such discriminations as their fate and they had no complaint against.
3. Girls are less valued than boys. They receive less medical care and education, and chauvinistic attitudes preclude vital opportunities.
4. Female illiteracy and female foeticide rates are alarming. Girls are married early, despite the government's official Minimum age requirements.
5. The lack of education perpetuates the problem of child marriage and the problem of child marriage perpetuates the lack of education.

6. Early marriage also contributes to poor maternal and child health, as young girls are unprepared for pregnancy.
7. Throughout their lives, women face reduced opportunities and discrimination. Literacy rates are much lower for women than men.

Women often face domestic violence and harassment, with no legal recourse, as paternalism and gender discrimination is deeply entrenched in society. Many laws are explicitly biased against women, especially those regarding property, citizenship and marriage. Our socio-demographic composition is carrying generations with different principles.

The clear demarcation in terms of culture, education, understanding, psychology and goals have given the society a complex panorama. Definitely, the demarcations are observed in terms of gender discrimination and the perception toward it.

Gender discrimination has been a major obstacle in granting equal opportunity for women in higher education. It has been identified as a crucial category and deserves attention in the education-equality paradigm. Today, women's education has become an issue of debate within which it is now necessary to shift the focus from women's intellectual development to women's autonomy in decision-making, freedom of expression and control over resources.

Empowerment is the manifestation of a redistribution of power that challenges patriarchal ideology, transforming the institutions that reinforce or perpetuate gender discrimination.

The parameters of empowerment have been identified as:

1. Developing ability for critical thinking;
2. Fostering decision-making and action through collective processes;
3. Ensuring equal participation in developmental processes;
4. Enhancing self-esteem and self confidence in women.

The time has arrived to realize the relevance, in a rapidly developing country like India, of education for leadership-building, especially for women - something which can be achieved only through Higher Education.

Literature Review

According to the (Dutta and Sen, 2020), that those girls who completed secondary or higher secondary schooling were less exposed to child marriage. Meanwhile they also found that few districts in the west Bengal, had great awareness about the negative impact of early child marriage but there were 26.17% girls dropped out between the age group of 14-18 years. All the girls who dropped out were got married of the same age group. Schultz, T.P (2002), discuss the importance of education for girls and its implication on self, child health care, job related skill development and overall well beings.

Amina and Alhassan (2015) said that emphasized on school s and teachers' role as a guide and counselor for the girl students and parents to make them understand the value of education. They also highlighted that the, lacking proactive measures from the school, poor households' condition, and early marriage and pregnancy cumulatively forced those girls to quit schools at Secondary level. Benefits of women education is utmost important to build a healthy nation and basic hygiene factor like separate toilet for girls also causing resulting high dropout among adolescent girls.

Objectives

1. Board objective of present study is to find out gender discrimination faced by girl within family at higher education level.

2. To identify the role of higher education of women.
3. Attitudes of guardian/parents while selecting educational stream at higher level education.
4. Impact of gender discrimination in gaining benefits of educational development programme.
5. To find out the different types of hurdles confronted by women in pursuing higher education.

Methodology:

Universe: Area of Study Patnarural area

Sample size : The sample size was 50 which consisted of 25 males and 25 female under the age category 15to 59 years.

Sampling Method : Random Sampling

Limitations of the study:

- This study has been done on the basis of the data collected from Patna rural area through Schedule.
- The study cannot be generalized as the sample collected was from a very small population.

Sources of Data Used in this Study

Primary & Secondary

Tools of Data Collection used in this Study

Interview Schedule

Observation

TABLE- 1
EDUCATIONAL QUALIFICATION OF RESPONDENT

QUALIFICATION	RESPONDENT		NO. OF RESPONDENT	PERCENTAGE
	MALE	FEMALE		
MATRIC	3	7	10	20%
I.A.	6	9	15	30%
B.A.	8	5	13	26%
M.A	8	4	12	24%
TOTAL	25	25	50	100%

This table indicates the education qualifications of the respondents

- 20% of the respondent acquired matric qualification .
- 30% of the respondent acquired I. A.
- 26% of the respondent acquired B.A. qualification.
- 24% of the respondent acquired M.A. qualification.

TABLE - 2
ANY TYPE OF DISCRIMINATION FACED BY YOU

OPINION	RESPONDENT		NO. OF RESPONDENT	PERCENTAGE
	M	F		
YES	09	14	16	32%
NO	16	11	34	68%
TOTAL	25	25	50	100%

This table indicates that any type of discrimination faced by the respondent:-

- The majority of the respondent say no .

TABLE-3
UNDERSTANDING GENDER

OPINION	RESPONDENT		NO. OF RESPONDENT	PERCENTAGE
	M	F		
B/W M/F	25	25	50	100%
M	0	0	0	
F	0	0	0	
TOTAL	25	25	50	100%

This table indicates that the respondent understand about Gender:-

- The majority of the respondent say yes between male and female i.e. 100% from which 25% male and 25% female.

TABLE - 4
IS BEHAVIOURAL DISCRIMINATION IS FOUND IN FAMILY TOWARDS GIRL

OPINION	RESPONDENT		NO. OF RESPONDENT	PERCENTAGE
	M	F		
YES	17	18	35	70%
NO	8	7	15	30%
TOATAL	25	25	50	100%

This table indicates that any type of behavioral discrimination found in family towards girl the 50 respondents present their views :-

- The majority of the respondent say yes between male and female i.e. 70% from which 17% male and 18% female.
- The minority of the respondent say no between male and female of which 8% male 7% female.

TABLE- 5
DO YOU AWARE OF ITS LAWS AND ACTS

OPINION	RESPONDENT		NO. OF RESPONDENT	PERCENTAGE
	M	F		
YES	6	16	22	44%
NO	19	9	28	56%
TOTAL	25	25	50	100%

This table indicates that any respondent knows about the Laws and acts:-

- The majority of the respondent say no between male and female i.e,56% from which 19% male and 9% female.
- The minority of the respondent say yes between male and female 44% of which 6% male 16% female.

TABLE-6
Is Patriarchy Responsible for the Harassment of Women

OPINION	RESPONDENT		NO. OF RESPONDENT	PERCENTAGE
	M	F		
YES	17	20	37	74%
NO	8	5	13	26%
TOTAL	25	25	50	100%

This table indicates that is patriarchy system in society is responsible for the harassment of women among 50 respondent:-

- The majority of the respondent say yes between male and female i.e. 71% from which 17% male and 20% female.
- The minority of the respondent say no between male and female 26% of which 8% male 5% female.

Conclusion

Gender discrimination is not just a women issue but an issue that concern all men and not just individual perpetrators.

The study observed that for many men concern about women's freedom or paid employment are closely tied to concept of family honor . women are perceived as unable to protect themselves , a perception which is used to justify male dominance. Though many of these findings require further research to provide a better understanding to the subject and

the importance of this study lies in the new light that is shed on gender discrimination.

In conclusion study indicated that the gender roles are the social constructs that propagated by parents during childhood. Both sexes from its consequences with women assuming productive and income generating roles , many male feel their supremacy. As a result discrimination is likely to be perceived as a defense used by the men to protect their vanishing roles.

First the paper show that it is possible to operationalized these concepts of gender discrimination is different ways that there is indeed good correlation between these types of gender attitudes this implies that like and relationship are very important.

Secondly, if one weighed the relative importance between relational and structural process. An interesting further consideration is that a cross gender relationship between lathers and daughter, mother and son has emerged as a significant in determining traditional and nontraditional gender attitude.

The discrimination that girls or women face in the society on the basis of their gender is what we call gender discrimination. Sometimes this happens unknowingly by family and society because during socialization, many such qualities and characteristics are taught to us knowingly or unknowingly. Which is as per the expectations of the society and is completely created by the society keeping women in mind, which later on takes the form of discrimination.

Researcher tried to conceptualized gender discrimination. In fact the concept of gender discrimination can be operationalized in three distinctive ways as forms of transmission from parents to children which depends on personal attitude and resources and also on family life.

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