

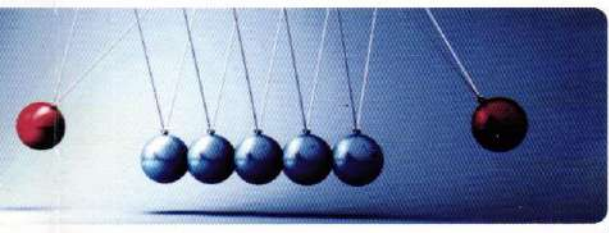


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ISSN 2456-3455

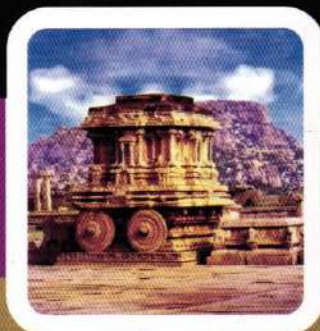
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RESEARCH EXPRESSION

Bi-Annual Peer Reviewed Multi-Disciplinary Journal



Vol. 1/Issue 1-September 2016

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NAAC ACCREDITED GRADE 'A'

CPE PHASE - I, II, III

DBT STAR COLLEGE



RESEARCH EXPRESSION

Bi-Annual Peer Reviewed Multi-Disciplinary Journal

ISSN-2456-3455

Volume 1 – Issue 1

September 2016



Dr. Surendra Kumar Rajput
PATRON

Dr. Qamar Talat
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Sponsored by:

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Published by:

Yking Books

18, Jain Bhawan,

Opp. N.B.C., Shanti Nagar,

Jaipur - 302006 (Rajasthan)

Phone : 0141-4020251

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To strive, to seek, to find and not to yield.

-Alfred Tennyson

Research Expression (ISSN 2456-3455) is published twice a year, in Autumn and in Summer. It is a Multi-Disciplinary Peer-Reviewed Research Journal of Higher Education on Literature, Art and Aesthetics, Science and Technology, Commerce, Humanities, Social Sciences, Culture and Media Studies.

The Journal is the record of the time and it captures the development of knowledge, wisdom and technology in particular branch of study in twenty first century. Our endeavour have been to invite papers from all over the country, examine and evaluate them properly so that it may be appealing to the Academia in general and Scholars.

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Happy Reading !!!

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उपन्यास का युग

शंभुनाथ साव

हिन्दी विभाग, कोलकत्ता विश्वविद्यालय, कोलकत्ता (पश्चिम बंगाल)

सारांश:

आज दुनिया में सबसे चर्चित विधा उपन्यास है। वैश्वीकरण के इस दौर में हिंदी उपन्यास में रचनात्मकता के साथ-साथ जीवन-बोध का विस्तार देखा जा सकता है। आज का लेखक यथार्थवाद की यांत्रिकता से बाहर निकलकर आधुनिकता के सर्वसत्तावादी रूपों से टकराते हुए राष्ट्र के मन में पलती आशाओं, शंकाओं और विद्रूपताओं को खुले मन से पढ़ता है। आज उपन्यास का युग है। चारों ओर बाजारवाद का साम्राज्य है। आज बाजार ने मनुष्य की रुचियाँ बदल दी हैं परंतु यह भी सत्य है कि साहित्य कभी बाजार की रुचियों और शोर में बह नहीं सकता, वरन् वह रुचियों का रचनात्मक पुननिर्माण करना है, जहाँ आकर पाठक थोड़ी देर खुलकर सांस लेता है। आज बर्बर सामंती पुनरुत्थान के खिलाफ आवाजें हैं तो साथ ही राष्ट्र पर मंडराती नव-औपनिवेशिक छायाओं के चित्र भी हैं। फलतः उपन्यास एक दार्शनिक विद्रोह है, प्रतिवाद है और उनकी आवाज है जो हृदय पर है, भेदभाव के शिकार हैं या बहिष्कृत हैं।

बीज शब्द: कला विलास, अंतः मूर्तिभंजन, आत्म औचित्यीकरण, मानवीय, कथी, खिचड़, घेटोकरण।

राजा दुष्यंत के दरबार में आकर शकुंतला ने जब अपना परिचय दिया, दुष्यंत ने विस्मय से पूछा, 'किमिदमुपन्यास्तम्', यानी यह कैसा उपन्यास या कल्पित कहानी सुना रही हो! कालिदास के साहित्य में उपन्यास के इस उल्लेख से बोध हो सकता है कि हक की आवाज से उपन्यास, कल्पित कहानी या कथा का पुराना संबंध है। अंग्रेजी के 'नावेल' से, जिसका अर्थ नया होता है, उपन्यास इस अर्थ में भिन्न है कि यह हमेशा हक की आवाज है। प्राचीन महाकाव्यों और लोककथाओं दोनों में ऐसी ढेरों जगहें हैं, जहाँ बहिष्कृत और बंचित बोलते हैं, प्रश्न उठाते हैं और जीवन का अर्थ खोलते हैं। नए युग के हिंदी उपन्यासों में यह सिलसिला बना हुआ है। इनमें वे अग्रभूमि में हैं, जो इतिहास, राष्ट्रवाद और आधुनिकता द्वारा निर्मम ढंग से पृष्ठभूमि में फेंके जाते रहे हैं और बहिष्कार झेलते रहे हैं। वे पहले वनों में बहिष्कृत होते थे, अब अपने ही देश, शहर या घर में।

उपन्यास को 'आधुनिक युग में मध्यवर्ग का महाकाव्य' कह कर उसे एक सार्वभौम अवधारणा का जामा पहनाया गया और कभी उपनिवेशित देशों के उपन्यास को 'राष्ट्रीय रूपक' कहा गया। मानो पश्चिम के उपन्यास अंतर्राष्ट्रीय रूपक हों या उपन्यास से पहले भारत न हो। दरअसल उपन्यास उन प्राचीन लोककथाओं का नया अवतार है, जो सैकड़ों साल से कल्पित कहानी या झूठ के शिल्प में जीवन की सच्चाइयों, स्मृतियों और आशाओं को बचाकर रखती आई हैं। प्रेस के आविष्कार ने कथाओं की महान मौखिक परंपरा को 'लिखित

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मौखिकता' का रूप दिया। इस तरह उपन्यास का संबंध राष्ट्र के जन्म से नहीं है, कुछ कहने-सुनने की प्राचीन परंपरा से है। वह एक मानवीय रूपक है, जो हमेशा सत्ता और प्रचलित ज्ञान का विखंडन करता आया है, क्योंकि इसके बिना कुछ नया, चुनौतीपूर्ण और मूल्यवान देना संभव नहीं है। उपन्यास हमेशा एक दार्शनिक विद्रोह है, प्रतिवाद है और उनकी आवाज है जो हाशिये पर हैं, भेदभाव के शिकार हैं या बहिष्कृत हैं। यहाँ तक कि किसी उपन्यासकार का नया उपन्यास लिखना पुराने अनुभव से जेल तोड़ कर बाहर निकलने का मामला है। यह अलग बात है कि कई बार सिर्फ गिनती बढ़ाने के लिए उपन्यास लिखे जाते हैं, लेखक का मुख्य पात्र उसके नए उपन्यास का पीछा करता है।

कभी उपन्यास की मृत्यु की घोषणा की गई थी, पर आज दुनिया में यह सबसे ज्यादा चर्चित विधा है। मनोरंजन उद्योगों द्वारा साहित्य के सामाजिक विस्थापन के दौर में यदि कोई साहित्य आज भी ज्यादा पढ़ा जा रहा है तो वह उपन्यास है। यह उपन्यास का युग है। इसकी एक वजह यह है कि उपन्यास निजीपन या गिने-चुने संदर्भों तक सीमित नहीं है। आज बड़ी मेहनत से और कई बार काफी शोध करके उपन्यास लिखे जा रहे हैं। वे कलात्मक होते हैं, पर उनका कलात्मक होना कलाविलास नहीं है। हर युग में सवाल रहा है कि उपन्यास कैसे लिखा जाए, क्योंकि उपन्यास इसलिए पढ़ा जाता है कि कुछ नया मिले। उपन्यास पढ़ कर पाठक अपने को पुनर्पलब्ध करता है, वह आनंद पाता है। वह घटित और कल्पित के मिश्रण से बना पाठ पढ़ कर सोचता है कि सदा इन्हीं चीजों के बीच रहते हुए भी इनसे कितना अपरिचित था। इसलिए उपन्यास लिखना प्रत्यक्ष वास्तव का सृजनात्मक अपरिचितकरण है, जो हमेशा चुनौतीपूर्ण होता है। उसी तरह उपन्यास पढ़ना अंतःमूर्तिभंजन है, जो आत्मौचित्यीकरण से एक भिन्न मामला है। लोग कई बार समय काटने के लिए उपन्यास पढ़ते हैं, जबकि उपन्यास पढ़ना समय को जानना है, जीना है और इसे बदलने के लिए कुछ नया सोचना है।

उन्नीसवीं सदी से नई यात्रा शुरू करके हिंदी उपन्यास तमाम परिवर्तनों के बीच से आज जहाँ पहुँचा है, वह एक उद्वेलित करने वाली जगह है। हिंदी में उपन्यास देर से लिखे जाने शुरू हुए, पर प्रेमचंद ने इसके पहले महत्वपूर्ण दौर में ही इसे काफी ऊँचाई पर पहुँचा दिया था। उन्होंने ऐसी समस्याएँ उठाई थीं, जो आज भी ताजा हैं। उनके साथ और आसपास ही प्रसाद और जैनेंद्र ने उपन्यास लिखे। इसके बाद अज्ञेय, यशपाल, हजारी प्रसाद द्विवेदी, अमृतलाल नागर, रेणु, भीष्म साहनी, निर्मल वर्मा, श्रीलाल शुक्ल जैसे महत्वपूर्ण लेखक हुए, जिनके उपन्यास आज भी विस्मित करते हैं। वे ऐसे समाज में लिख रहे थे जो उच्च विरासत के बावजूद एक अजीब विरोधाभास उपस्थित करते हुए विसंगतियों और क्रूरताओं से भरा रहा है। उन्हें अपने बनते हुए राष्ट्र की विडंबनाओं के अलावा पश्चिमी प्रभावों से भी जूझना था। उल्लेखनीय है कि भाषायी उपन्यासों में विदेशी प्रभावों को लेकर कभी गहरी उद्विग्नता रही है और कभी उन प्रभावों को रचनात्मक संघर्ष का उपकरण बना लेने की सचेत तत्परता।

उपन्यास को निश्चय ही बाजार का बल मिला है, पुरस्कारों का बल मिला है और इस विधा को शिखर पर पहुँचाने में विवादों की एक बड़ी भूमिका है। देखना होगा कि इधर उपन्यास विधा में जो फर्क आया है, उपन्यास को जनप्रिय बनाने में उसकी क्या भूमिका है। पहले था, दुनिया को जैसा देखते हो और तुम्हारा अनुभव है वैसा चित्रित करो। यह जीवनगाथा माना गया, चाहे इसमें मध्यवर्ग का जीवन हो या कृषक का। फिर उपन्यास में सिद्धांत घुसे, मुख्यतः मनोवैज्ञानिक, मार्क्सवादी और अस्तित्ववादी सिद्धांत। व्यक्ति चरित्र बने और वर्ग चरित्र भी। पिछले लगभग ढाई दशकों से इन चीजों को पीछे छोड़ते हुए एक नया परिदृश्य है। अब स्थान और काल ही महत्वपूर्ण नहीं हैं, सामुदायिक परिवेश एक तीसरा आयाम है। 1990 के आसपास से उपन्यास में जो बदलाव आया है, वह इस तीसरे आयाम की वजह से संभव हुआ है। इसने सार्वभौमता

उपन्यास का युग

और राष्ट्रवाद के मिथ को तोड़ा, क्योंकि वे ढकोसलों से भर गए थे। इसके अलावा नस्ल, जाति, जेंडर और मजहब की संकीर्णताओं पर आधारित भेदभाव और तमाम किस्म के प्रभुत्वों को चुनौती दी। अब स्थानीय और सामुदायिक में मानवीय की खोज शुरू हुई, क्योंकि वैश्वीकरण के जमाने में 'मानवीय' अब अपरिचित स्थानों, वंचितों, मूक करके रखे गए समुदायों या इतिहास की खाली जगहों में ही कहीं बचा है।

हम हिंदी उपन्यासों को कैसे पढ़ें, कैसे ये भारत के आम लोगों की समझ, संवेदना और उसकी समस्याओं को सामने लाते हैं, ये विकट हिंदी जीवन को कितना प्रतिबिंबित करते हैं और पिछले लगभग ढाई दशकों से उत्तर-औपनिवेशिक सिद्धांत किस हद तक इनके लिए प्रेरणाओं और बाधाओं का काम करते रहे हैं, ऐसे कई प्रश्नों पर विचार करने की जरूरत है। खासकर इधर के उपन्यास उस मौखिक परंपरा का स्मरण करा रहे हैं, जिसमें कथा कही-सुनी जाती थी। आज का पाठक कुछ पढ़ना नहीं चाहता, यदि उसे कुछ सुनने और शब्दचित्रों के जरिये कुछ देखने को न मिले। इसलिए आज उपन्यास विभिन्न शैलियों में बहुचित्रमय लिखित मौखिकता है, जिसकी ताकत को समझना चाहिए।

कविता रचयिता का मामला है, पर उपन्यासकार 'रचयिता' से अधिक 'लेखक' होता है। उसमें रचयिता का अहं नहीं होता। उसके लेखन में वे बोलते हैं, जो किसी न किसी रूप में हाशिये पर हैं। यह कम विलक्षण नहीं है कि आज के उपन्यासों की प्रेरणा पश्चिम नहीं है, वहाँ अब जैसे कथा ही नहीं है।

गौर करने की चीज है कि हिंदी उपन्यास में स्थान, राष्ट्र और विश्वदृष्टि का त्रिभुज सदा रहा है। इसका कभी कोई कोण छोटा और कोई बड़ा हो सकता है। दरअसल स्थान, राष्ट्र और ग्लोबल में किसी एक से ही पूर्णतः बंध जाने पर या तात्कालिकता को एक मूल्य बना देने पर उपन्यास कभी अच्छे और जीवन से भरपूर नहीं हो सकते। हिंदी उपन्यास कभी महज राष्ट्रीय रूपक नहीं था और वह कभी महज स्थानीय था। उसमें खासकर, इधर जो फर्क आया है, उसे यथार्थवाद, आधुनिकतावाद, नई आलोचना या उत्तर-औपनिवेशिक सिद्धांतों के चौखटे में रख कर नहीं समझा जा सकता। फिर भी आज के उपन्यास को एक समावेशी प्रगतिशील परंपरा के भीतर रखकर देखना होगा, विच्छिन्नता में नहीं। भारत जैसे कथाओं से भरे देश में जहाँ पहाड़, नदियाँ, पेड़-पौधे, पशु-पक्षी तक कथाओं में डूबे हुए हैं, हिंदी उपन्यासों का विविधतापूर्ण, सांकेतिक और शोद्देश्य होना स्वाभाविक है। यह देखना रोचक हो सकता है कि वे इतिहास की एक रेखीयता को चुनौती देते हुए अतीत और समकालीनता का कई 'स्थानों' से किस तरह सामना करते हैं। उनमें भारतीय अनुभव के बहुरंगपन के अलावा तीखापन सहज ही लक्षित किया जा सकता है।

उपन्यास विस्थापित इतिहास, विस्थापित राष्ट्रीय टुकड़ों की सबसे सबल मानवीय आवाज होने की वजह से कुछ सार्थक कहने में आज सभी विधाओं से आगे हैं। फिर भी उपन्यास को महज समस्यामूलक कृति, विमर्श या आवाज कहना काफी नहीं है। वह एक सतत शिल्पगत अन्वेषण भी है। उपन्यास लिखने का अर्थ प्रचारित शैली में बस एक और कथा लिखना नहीं हो सकता और न इसे सैद्धांतिक लक्षण ग्रंथ बना देना काफी होगा। यह क्रीड़ामय होने के साथ चुनौतीपूर्ण विधा है।

यह भी एक प्रश्न है कि उपन्यास और इतिहास का साहित्यिक खिचबूझ पहले किस उद्देश्य से बन रहा था और आज किस उद्देश्य से बन रहा है। उपन्यासकार अपने ढंग से इतिहास कहता है, पर उसका काम इतिहास लिखना नहीं है। देखा जा सकता है कि इधर इतिहास के राजनीतिक और व्यापारिक दुरुपयोग बढ़े हैं। अक्सर वर्तमान के जो नियामक हैं, वे अपनी ताकत से सिर्फ भविष्य ही नहीं निर्धारित करते अतीत पर भी नियंत्रण करना चाहते हैं। उपन्यास में भी बड़े पैमाने पर अतीत के 'चित्र' आ रहे हैं। अंतः देखना जरूरी है कि यह अपने साहित्यिक ढांचे में वस्तुतः विस्थापित इतिहास है या विकृत इतिहास। उपन्यास सांस्कृतिक पाठ होते हैं, पर वे सामाजिक-ऐतिहासिक संदर्भों में रचे जाकर एक बिंदु पर जीवन के व्यापक दुख-सुख,

हँसी-खुशी, उलझन-संकल्प और भटकावों-अन्वेषणों की मानवीय कथा होते हैं, क्योंकि तभी वे पाठक के लिए सहज आत्मीय हो पाते हैं। वे एक विजन के साथ निश्छल भाषा में व्यक्त किए गए अनुभव हैं। कहा जा सकता है कि औपन्यासिक भाषा की निश्छलता ही सामाजिक व्यवस्था, राजनीति और बाजार की क्रूरताओं को बंध पाती है और एक साहित्यिक प्रति-ध्रुव रच पाती है। देखा जा सकता है कि नई औपन्यासिक शैलियों ने इस निश्छलता को पुनः उजागर किया है और एक न एक तरह से उपन्यास को पठनीय बनाने पर काफी जोर दिया है।

उपन्यास की आलोचना करना पहले उसका पाठक होना है। पाठक निष्क्रिय इतिहासविहीन सत्ता नहीं है। हर पाठक के पास प्रश्न होते हैं। हो सकता है कि आलोचक के पास कुछ ज्यादा प्रश्न हों। कुछ साझा प्रश्न हों और जीवन को देखने-समझने की कुछ उसकी खुद अपनी साहित्यिक उत्कटता हो। आलोचना करना कट्टरताओं के बीच जीवन के लिए जगह बनाना है, कभी कृति के साथ घुलमिलकर और कभी अकेले। हिंदी उपन्यास का यह मूल्यांकन कोई सर्वेक्षण नहीं है। हिंदी में अनगिनत अच्छे उपन्यास हैं। इस पुस्तक में 'राष्ट्र बनाम हाशिया' की जगह 'राष्ट्र और हाशिया' के प्रश्नों पर कुछ चुने उपन्यासों से आलोचनात्मक संवाद है। यह राजनीतिक बाजार की सफलता है कि आज अनगिनत 'हम' और 'वे' हैं, इनके बीच बर्लिन दीवारें हैं। प्रेमचंद बनाम प्रसाद, जेनेंद्र बनाम यशपाल, अज्ञेय बनाम नागार्जुन, रेणु बनाम निर्मल वर्मा जैसे कई 'बनाम' हैं। वर्तमान दौर पर सैद्धांतिक घेटीकरण अलग से है। साहित्य राजनीति की कार्बन कॉपी नहीं है और न बाजार का माल है। 'बनाम' बहुत हो चुका, अब थोड़ा 'और' के लिए जगह बननी चाहिए।

आज विमर्श ही नहीं विचार-विमर्श भी जरूरी है। यह विमर्श को इकतरफेपन से मुक्त करना है। विमर्श का विमर्शरंजन बनना आत्मघात है। निःसंदेह समाज में एक व्यापक आलोड़न उपस्थित है, हाशिये धधक रहे हैं। भूलना नहीं चाहिए कि बहिष्कृत करने वाला खुद कहीं बहिष्कृत हो रहा होता है। बदले परिदृश्य की खूबी है कि उन्हें अब सुनना पड़ रहा है जो सैकड़ों साल से सिर्फ बोल रहे थे, हालांकि ताकत की संस्कृति ही भारी है। अब बारीक किस्म के अत्याचार हैं, जो नहीं दिखते। इतनी ऊंची सभ्यता में भी स्त्री, दलित, किसान, अल्पसंख्यक, आदिवासी और शहरी साधारण नागरिक दैनिक अपमान, वंचना और हिंसा के बीच निस्सहाय होकर जी रहे हैं। इसी तरह दुनिया भर के छली प्रलोभन छाए हैं, छद्म मानवीय चेहरे हैं। इसलिए बौद्धिक स्थिति यह है कि धर्म, आधुनिकता, बुद्धिवाद और यथार्थवाद को ही संदेह से नहीं देखा जा रहा है, 'राष्ट्र' भी प्रश्नों से घिर गया है। इसके मूल में लोकतंत्र का दंभ भरनेवालों के द्वारा निर्मित वर्चस्व और जारी रखे गए भेदभाव हैं। ऊपर से वैश्वीकरण की नव-उदारवादी बदहजमी है! यह विडंबनापूर्ण है कि एक तरफ तमाम किस्म के केंद्रवाद टूट रहे हैं, दूसरी तरफ वैश्वीकरण से जन्मी नई औपनिवेशिकता फिलहाल चुनौतीविहीन है।

वैश्वीकरण के वर्तमान युग में दुविधा की वैसी ही स्थिति है, जैसी कभी 19वीं सदी के अंग्रेजी राज में थी - आधुनिकता चाहिए या स्वाधीनता? आज पूछा जाता है, विकास चाहिए या न्याय? विखंडता आज वैसी ही है, जैसे पहले थी, बल्कि असहिष्णुता बढ़ी है। दमन और भय भी कम नहीं छाया है। फिर भी आवाजें हैं, भले वे छोटी हों और उनके बीच 'नीचे से राष्ट्रीय जागरण' की उभरती तस्वीरें लक्षित की जा सकती हैं। इसका मुख्य स्वर है, हमें विकास और न्याय दोनों एकसाथ चाहिए।

हिंदी उपन्यास में विभिन्न जगहों से विषय आ रहे हैं, विषय विकेंद्रण हुआ है। इससे रचनात्मकता को ही नए क्षेत्र नहीं मिले हैं, जीवनबोध का भी विस्तार हो रहा है। उपन्यास के विषय ही नहीं, पाठक भी नए-नए स्थानों से आ रहे हैं। यह हिंदी उपन्यास के लिए एक अभूतपूर्व समय है। इधर काशीनाथ सिंह और विनोद कुमार शुक्ल से लेकर मैत्रेयी पुष्पा, संजीव, ओमप्रकाश वाल्मीकि, भगवानदास मोरवाल, अनामिका आदि

तक उपन्यासकारों की कई पीढ़ियाँ हैं, जिनकी कृतियों में न सिर्फ बर्बर सामंती पुनरुत्थान के खिलाफ आवाजें हैं, बल्कि राष्ट्र पर मंडराती नव-औपनिवेशिक छायाओं के चित्र भी हैं। आज के लेखक यथार्थवाद की यांत्रिकता से ही बाहर नहीं निकल आए हैं, आधुनिकता के सर्वसत्तावादी रूपों से ही नहीं टकराते हैं, वे अधबने राष्ट्र के मन में पलती आशाओं, शंकाओं और विद्रुपताओं को भी खुले मन से पढ़ते हैं। उपन्यास अंततः एक मानवीय जगह, कॉमन प्लेस है, जहाँ पाठक आकर थोड़ी देर खुलकर सांस लेता है।

आलोचना की यह किताब आलोचना कम और सहयात्रा ज्यादा है। यह एक बड़ा प्रश्न है कि उपन्यास या आलोचना या कोई साहित्यिक कृति आज क्या दे सकती है, जब बड़े मनोरंजन उद्योगों और मुक्त बाजार व्यवस्था ने रुचियाँ बदल दी हैं। साहित्य कभी बाजार की रुचियों और शोर में बह नहीं सकता, यह रुचियों का रचनात्मक पुनर्निर्माण करता है। निश्चय ही आज कोई चीख, विद्रोह या आंदोलन बाजार के रेंज के बाहर नहीं है। ऐसी गहन चुनौती के बीच हाशिया बोल रहा है तो यह न 'राष्ट्र' को खोना है और न 'मानवीय' को। हाशिया बोल रहा है। हाशिये की आवाजों को अंततः कौन सुनेगा - बाजार या राष्ट्र?

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राजन यादव

हिन्दी विभाग, इंदिरा कला संगीत वि.वि. खैरागढ़ (छग) पिन - 491881

सारांश:

युग के प्रभाव के अनुरूप काव्य के वर्ण्य विषय और दृष्टि परिवर्तित होते रहते हैं। आज की कविता बौद्धिक युग की कविता है। आज के नव-साम्राज्यवाद का खतरा एक साथ राष्ट्रीय सम्प्रभुता, जनतंत्र और मानवीय संवेदनशीलता पर गहरे रूप में एक साथ है। इस गहन संकट को पकड़ने वाली, उसकी अभिव्यक्ति से मनुष्य को उद्वेलित कर देने वाली कविता ही आज हिन्दी कविता को नये शिखर की ओर ले जा सकती है। इक्कीसवीं सदी में भाषा-संकट भी है। आधुनिकता की अंधी दौड़ में सदियों से स्थापित हमारे नैतिक मूल्य और आदर्शों को हम पीछे छोड़ते जा रहे हैं, फलस्वरूप समाज में तमाम तरह की विकृतियाँ उत्पन्न हो रही हैं। आज स्त्री विमर्श, दलित विमर्श, विकलांग विमर्श, प्रगतिशील, परम्परावादी, उत्तर आधुनिक आदि अनेक धाराओं व वाद विशेष को केन्द्र में रखकर काव्य लिखे जा रहे हैं। अतिबौद्धिकता और अधुनातन की वजह से कविता कामिनी के लालित्य में कमी आई है। किन्तु यह भी सत्य है कि इक्कीसवीं सदी कविता के लिए नहीं है, कहानी, उपन्यास, निबंध संस्मरण आदि गद्य में ज्यादा अन्तर भी नहीं रहा। इन सबके बावजूद हम कह सकते हैं कि काव्य में लोकमंगल की भावना आज की कविता में भी सर्वोपरि है।

बीज शब्द: मण्डीवाद, हिंगलिश, अतिबौद्धिकता, भाण्ड, मारक आवृत्तित्त, सैनिकशाही

साहित्यकार अपने युग की उपज होता है। समाज और देश की परिस्थितियों का उसके संवेदनशील हृदय पर प्रभाव पड़ता है। वह युग की अच्छाइयों के साथ अपने को बाँध लेता है और बुराइयों के प्रति विद्रोह करता है। साहित्यकार जनमानस की भावना का साहित्यिक प्रतिनिधि होता है। वह अपने काल की विषमताओं और जन-मानस का प्रतिनिधित्व करते हुए अपने विराट उत्साह के परिवेश में अपने उच्चतम दायित्व को सम्पन्न करता है। साहित्य की अखण्ड परम्परा के साथ प्राचीन और नवीन का सामंजस्य होता रहा है, पर कालगत विभिन्नता भी अपनी अमिट प्रभाव छोड़ती रही है।¹ प्रत्येक युग का रचना संसार अपने लिए कुछ निश्चित काव्यादर्श अवश्य प्रतिष्ठित करता है। कभी ये आदर्श परम्परा से जुड़े होते हैं और कभी युग की आकांक्षा की पूर्ति के क्रम में ये परम्परा से हट जाते हैं। साहित्य के विकास क्रम में न तो परम्परा का त्याग संभव है और न पूर्णतः नवीन काव्यादर्श की प्रतिष्ठा ही की जा सकती है। परिवर्तन का

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हर युग अतीत के वैभव से कहीं न कहीं जुड़ा रहता है, साथ ही वर्तमान के महत्व को स्वीकार करते हुए वह नवोन्मेष भी चाहता है।¹

साहित्य की अभी तक जितनी भी परिभाषाएँ दी गई हों, उसके मानदंड और कसौटियाँ निर्धारित करने के लिए बहस और विमर्शों के दौर चलते रहे हों, किन्तु यह तो निर्विवाद है कि सम्पूर्ण साहित्य अंततः मानव मूल्यों को बचाए रखने का ही महत्त प्रयास है। प्रथम कवि के प्रथम छन्द से लेकर आज तक की लिखी जा रही कविता में उदात्त मानवीय मूल्यों और युग विशेष का स्वर झंकृत है। युग के प्रभाव के अनुरूप काव्य के वर्ण्य विषय और दृष्टि परिवर्तित होते रहते हैं। कविता की महत्ता जग जाहिर है। इसकी चन्द पंक्तियाँ दृष्टिहीन राजा को लक्ष्य भेदन की ओर उन्मुख कर सकती हैं। स्वाभिमान और दासता के भंवरजाल में फँसे राणाओं के लिए दो पंक्तियाँ नौका बन जाती हैं, कविता केवल हँसाती, रुलाती नहीं बल्कि विलास में डूबे नरेशों को दायित्व बोध भी कराती है। कविता की इन्हीं विशेषताओं की ओर संकेत करते हुए महाकवि बलदेवप्रसाद मिश्र ने लिखा है—

कविता सविता की ज्योति रशांक सुधा है

कविता मंत्रों से वेद प्रबुद्ध हुआ है

कवि के दर्शन से धन्य बनूँगा भूपर

उनकी करुणा बह चले देश के ऊपर।²

आज की कविता बौद्धिक युग की कविता है, मोबाइल कल्चर, कम्प्यूटर युग और द्रुतविकास युग की कविता है। हिंसा, व्यभिचार, आतंकवाद, अलगाववाद, नक्सलवाद, भ्रष्ट प्रजातंत्र और बर्बर सैनिकशाही युग की कविता है। इक्कीसवीं सदी की कविता अतिविकास के साथ महाविनाश युग की कविता है। उत्तर आधुनिक समय के भूमंडलीकरण और नव उपनिवेशवाद का दौर अत्यंत जटिल और बहुआयामी यथार्थ के संक्रमण से गुजर रहा है। एक ऐसी उपभोक्तावादी संस्कृति का उदय हुआ है, जिसने मानवीय अर्थव्यवस्था के हर पहलू को निगल लिया है। “राजनैतिक, सामाजिक और वैयक्तिक स्तर पर मूल्य व्यवस्था ध्वस्त हो चुकी है। अंततः लेखक हमारे बीच में जीने वाला एक सामान्य प्राणी है, भले ही अधिक संवेदनशील और जागरूक परंतु इस नियति से जूझने वाला। जब सृजन की सारी उर्वरताएँ, संवेदनाएँ अनुभव और विचार परंपराओं के स्रोत निरंतर बंजर हो रहे हैं, तो उसका दायित्व और कठिन हो जाता है। वह अपने लिए महान व उदात्त मूल्यों के सूत्रों की खोज निकालने के लिए निरंतर संघर्षरत है।³ अधिकांश युवा अपने आस-पास की दुनिया, दुनिया में चल रहे पूँजी और सत्ता के खेल और आम आदमी की समस्याओं और संघर्षों के प्रति काफी हद तक सजग हैं। साथ ही आधुनिकता से उपजे विभ्रम की स्थिति से अपने आप को बचाने में सफल भी रहे हैं। आज के नव-साम्राज्यवाद का खतरा एक साथ राष्ट्रीय सम्प्रभुता, जनतंत्र और मानवीय संवेदनशीलता पर गहरे रूप में एक साथ है। इस गहन संकट को पकड़ने वाली, उसकी अभिव्यक्ति से मनुष्य को उद्वेलित कर देने वाली कविता ही आज हिन्दी कविता को नये शिखर की ओर ले जा सकती है। इसका बीसवीं या इक्कीसवीं सदी से कोई सम्बन्ध नहीं है। “आज केदारनाथ सिंह से लेकर एकदम ताजा कवि तक जो लिख रहे हैं, उससे एक बड़ी कविता की उम्मीद तो है ही। आज के कवि अपने समय के संकट और मानवीय संवेदनशीलता के प्रति सजग हैं, यही तो उम्मीद का आधार है। बाजार तन्त्र सृजन और जीवन के अवसर में तालमेल, चमत्कारीकरण (ग्लेमराइजेशन) आदि के प्रति

आकर्षण आदि इस रास्ते में बाधाएँ खड़ी करते हैं। सृजक यदि इन आकर्षणों से बच सकें तो बड़ी कविता आयेगी।⁴

इक्कीसवीं सदी का काव्य निरर्थक युगबोध की यथार्थ स्थिति को उजागर करता है। देश की उत्तरोत्तर बिगड़ती स्थिति से कवि क्षुब्ध है। लीलाधर जगूड़ी ने युगीन विडम्बनाओं के परिप्रेक्ष्य में सही और साधारण आदमी द्वारा भोगी जाने वाली पीड़ादायक एवं असंगत परिस्थितियों पर लिखा है। उन्होंने अर्थ शून्यता, मनुष्य की अतिनिश्चय नियति, आदर्श शून्यता, आदि पर तीखा प्रहार किया है— “वह जानता है/ वास्तविकता और व्यवस्था में/ जो फर्क है/ उसके बीच/ कहीं न कहीं एक क्लर्क है/ वह जाया है/ फाइल दर फाइल/ नंबर दर नंबर/ देश ऊँचा उठ रहा है/ रेडियो रोज खबर दे रहा है/ देश आत्मनिर्भर हो रहा है/ बाकी क्या नहीं हो रहा है/ खाक हो रहा है कूड़ा हो रहा है/ देश धक्के खाता है/ जब भी मिलता है/ नक्शों और आँकड़ों से बाहर मिलता है।”⁵

आचार्य हजारी प्रसाद द्विवेदी जी कहा करते थे कि महान वह होता है जो मिलने पर आगन्तुक को बिना किसी दिखावे या प्रयास के अपनी महानता का कुछ अंश दे जाता है। आज प्रभाव की अपेक्षा प्रदर्शन को महत्व दिया जा रहा है। कवि ज्ञानेन्द्रपति की अधिकांश कविताओं में दिखावे की भावना का व्यंग्यात्मक व यथार्थ चित्रण मिलता है।

सत्ता का भूख में कबीर साहब का कलेवा है

आज के बाद कौन नामलेवा है

सुना नहीं, विचारगोष्ठी में बढ़-चढ़कर जो बोल रहे थे

नामी प्रोफेसर कहीं के-गरूर में डोल रहे थे

ज्ञान थूकते थे अभिमान थूकते थे

रह-रह विदेश-यात्रा की कहानी

अहंकार की मात्रा न जाए बखानी

किसी ने बताया-बड़ा मकान बनवाया है

फर्श पर मकराने का संगमरमर लगवाया है

उनके लिए सब कबीर की माया है

हमको हमेशा धूप, उनको हर बखत छाया है।⁶

वस्तुतः “यह मण्डीवाद” के नंगे नाच का दौर है। जो भी है उसके अतिरेक, अतिशयोक्ति, अति प्रदर्शन, अतिपाठ का दौर है यह। यह मात्रा का दौर है, गुण का नहीं। यह सूचनाओं का दौर है ज्ञान का नहीं। इसमें इतना लिखा जा रहा है, इतना छप रहा है कि इस क्षेत्र में कुछ महत्वपूर्ण मारक आवृत्ति की संस्कृति है। इसमें जिसके पास शोर नहीं है, शोर करने वाले नहीं हैं, जिसका तन्त्र नहीं है, जाल नहीं है, वह छुप जाएगा। यही नकारात्मक आवृत्ति एवं ताकत बोध काव्य संभावनाओं को भी आवृत्तिपरक (नकारात्मक अर्थों में) एवं शक्ति केन्द्रों की ओर उन्मुख है, जिसमें नई काव्य संभावनाओं का संहार होता है।⁷

इक्कीसवीं सदी में भाषा-संकट भी है। मीडिया ही संस्कृति का प्रचार-प्रसार करता है, और आज की तारीख में संस्कृति भी मंडी में बिकने वाली चीज बन चली है। जो दिखता है वह

इक्कीसवीं सदी : हिन्दी काव्य संभावनाएँ (संक्षेप)

बिकता है, इसीलिए मीडिया और मंडी दोनों पर अंग्रेजी हावी है। “सभी कृतिकार अंग्रेजी-भाषी मण्डी में जगह बनाने की कोशिश करने लगे हैं। इतर भाषाओं के कई लेखक अपनी रचनाओं को साथ-साथ अंग्रेजी में अनुवाद कराने लगे हैं। मीडिया-मुग्धा युवा पीढ़ी संस्कृति के क्षेत्र में आज हर कहीं वस्तुतः अंग्रेजी के ही गीत गा रही है और अपनी भाषा के भी गा रही है तो उनमें अंग्रेजी के शब्द जरूर घुसेड़ रही है। हमारी हिंगलिश के वजन पर जापानी युवा जैपलिश बोल रहे हैं और फ्रांसीसी युवा फांग्ले। लेकिन जहाँ और देशों में इसका विरोध किया जा रहा है वहाँ भारत में गरीबों के मसीहा कहलाये जाने वाले नेता तक अपने हर वाक्य में अंग्रेजी शब्द घुसेड़कर गौरवान्वित हो रहे हैं।”⁸ यह बड़ी विसंगति है कि “हिन्दी को एक सौ करोड़ से अधिक आबादी वाले देश की राष्ट्रभाषा घोषित किया गया है अमल नहीं है केवल ऐलान है। मराठी को छोड़कर अन्य भारतीय भाषाओं की लिपियाँ नागरी नहीं हैं किन्तु नागरी के समीप है। हिन्दी शब्दों की वर्तनी के स्वरूप कायम नहीं हुए हैं, बहुत अंधेर तथा धाँधली हैं। इक्कीसवीं शताब्दी की हर कसौटी पर हर क्षेत्र में हिन्दी की वैज्ञानिकता, सहजता, व्यावहारिकता और सुगमता सिद्ध हो रही है, कोलाहल हो रहा है अंग्रेजी भाषा के लिए।”⁹

आज कम्प्यूटर का युग है। मनोहर श्याम जोशी का लेख है— ‘कम्प्यूटर होगा अगला कवि ठाठ से उपजेंगे सब गान।’ इसमें जोशी जी लिखते हैं— “साहित्यकारों को फिलहाल कम्प्यूटरों से ज्यादा खतरा नहीं है, क्योंकि भाषा के मामले में कम्प्यूटरों को संदर्भ की सामान्य समझ देना बहुत ही मुश्किल काम है। तो भी चुटकुले तैयार करने वाला कम्प्यूटर प्रोग्राम ‘जेप’ बन चुका है। एक विशेषज्ञ ने कम्प्यूटर से कहानी भी लिखवा डाली है। पटकथाएँ लिखने वालों की सहायता के लिए कम्प्यूटर प्रोग्राम बाजार में बिक रहे हैं और हाँ, एक कम्प्यूटर को कवि बनाना कथाकार बनाने की अपेक्षा ज्यादा आसान साबित हो रहा है, क्योंकि आधुनिक कविता में थोड़ी-बहुत अनर्गलता चल ही जाती है।”¹⁰

कविता हिन्दी पाठक का संस्कार बने ऐसा नहीं हो रहा है। हिन्दी का कवि जनता का हिस्सा नहीं बन पा रहा है। मराठी, तेलुगू में आज भी कवि जनता का हिस्सा हैं। वहाँ जब गद्गार ऊपर हमला होता है तो दसियों हजार लोग सड़क पर उतर आते हैं और नारायण शूर्प को देखने-सुनने के लिए पूरा गाँव इकट्ठा हो जाता है। प्रसिद्ध कथाकार डॉ. राजेन्द्र यादव ने लिखा है— “साहित्य-प्रेम और उत्साह में आकर दिल्ली में होने वाली कवि-गोष्ठियों में मैं भी जाता रहा हूँ और हमेशा इस तरह बाहर निकला हूँ जैसे मुर्दा फूँककर आ रहा हूँ। यहाँ सुविधाजनक विभाजन यह कर लिया गया है कि जनता का कवि घटिया और मंचीय है और कुलीनों का कवि अपठनीय और किताबी। यानी एक तरह से हिन्दी कविता के मंच को खुले खजाने भाण्डों और विदूषकों को सौंप दिया गया है और खुद अन्तर्राष्ट्रीयताओं को समर्पित हो गए हैं।”¹¹

जनमानस में पारिस्थितिक सजगता पैदा करने में समकालीन कविता अपनी भूमिका निभा रही है। आज जल, जंगल और जमीन को बहुराष्ट्रीय कम्पनियों और बड़े-बड़े उद्योग निगल रहे हैं। इससे पारिस्थितिक संतुलन बिगड़ रहा है। डॉ. वी.जी. गोपालकृष्णन् के अनुसार— “समकालीन हिन्दी कविता अपने समय और समाज से सजग दिखाई देती है। पारिस्थितिक मुद्दा भी उसके प्रमुख विषयों में आ गया है। आज के कवि यह पहचान रखते हैं कि मनुष्य की प्रगति में प्रकृति का अपना योगदान है। प्रकृति से अलग हटकर प्रगति की दिशा में प्रस्थान विनाश की ओर प्रयाण है। इसलिए समकालीन कवि मनुष्य और प्रकृति के बीच के अटूट सम्बन्ध को रूपायित

कर वर्तमान पारिस्थितिक संकट के प्रति अपनी प्रतिक्रिया व्यक्त करते हैं।¹² लीलाधर मंडलोई, अजय पाठक, अशोक सिंह, सावित्री डागा, ज्ञानेंद्रपति देवीप्रसाद जैसे कवियों की कविता में जल, जंगल और जमीन पर क्रूर आक्रमण कर उसे तोड़ने-मरोड़ने के चित्र उभरे हैं। बहुराष्ट्रीय कम्पनियाँ देश की नदियों, तलाबों, झीलों को कब्जे में करके जनता को प्यासी में छोड़ रही हैं। प्राकृतिक विपदाएँ पहले भी होती रहती थीं, किन्तु आज जितनी प्राकृतिक विपदाएँ हो रही हैं उनका मूल कारण मनुष्य का प्रकृति पर करने वाला अत्याचार एवं शोषण है। ज्ञानेंद्रपति की पंक्तियों में पारिस्थितिक विनाश का एक चित्र देखा जा सकता है।

नये दिन के लिए वे तैयार कर रहे हैं खुद को
अब आर्येंगे पर्वतों के पंख काटने वाले वज्रधर इन्द्र के वंशज
अपनी फटफटिया में भड़भड़िया में
और फटाफट धड़ाधड़
चालू हो जायेंगे क्रशर
बारूद की गंध फैल जायेगी हवा में
उनके टूटने की गंध के ऊपर।¹³

वर्तमान स्थिति में चारों तरफ स्वार्थ और रिश्वत का बोलबाला है। सामान्य की ओर कोई ध्यान देता नहीं। लोग धर्म के नाम पर खर्च करते हैं पर जीवित मनुष्य की ओर कोई ध्यान देता नहीं, यांत्रिक युग की घुड़-दौड़ में मानव जैसे खो गया है। ऐसे में आलोक धन्वा सदृश कवियों का आक्रोश स्वाभाविक है -

हर बार कविता लिखते-लिखते
मैं एक विस्फोटक शोक के सामने खड़ा हो जाता हूँ
कि आखिर दुनिया के इस बेहूदे नक्शे को
मुझे कब तक ढोना चाहिए,
कि टैंक के चैन में फँसे लाखों गाँवों के भीतर
एक समूचे आदमी को कितने घंटे सोना चाहिए।¹⁴

किन्तु यह चिंताजनक स्थिति है कि हिन्दी कविता आज की तारीख में हिन्दी समाज की शिक्षित और सहृदय बौद्धिक वर्गों की पहुँच से दूर हो गई है। नागार्जुन अक्सर कहते थे- “आज के पाठकों को यदि गुनगुनाने का हो तो उसे आज के गीतकारों को छोड़कर पीछे जाना पड़ेगा। अभिनव गुप्त ने कहा है कि कविता के लिए मन-मयूर को ‘विशद’ करना पड़ेगा। निरन्तर काव्यानुशीलन के अभ्यास से।¹⁵

डॉ. बुद्धिनाथ मिश्र, अनिरुद्ध नीरव, डॉ. जीवन यदु राही, अजय पाठक जैसे गीतकार अपनी कृतियों के माध्यम से वर्तमान काव्य जगत को सरस बना रहे हैं। अजय पाठक की ग्यारह काव्य कृतियों में औद्योगीकरण के खतरे, प्रकृति प्रेम, घटते मानव मूल्य, संस्कृति प्रेम को प्रमुख रूप से उभारा गया है। जैसे-

जंगल काटा नदियाँ रोकी ऊँचे बाँध बनाये
खनिज संपदा दोहन करने पर्वत रोज ढहाये।

इक्कीसवीं सदी : हिन्दी काव्य संभावनाएँ (संक्षेप)

यही नहीं वह वन पशुओं का बन बैठा हत्यारा
दुर्बुद्धि मानव ने उसको खोज-खोज कर मारा।
करनी का फल अब उसके ही सम्मुख पड़ा हुआ है
मानव के जीवन पर ही अब संकट खड़ा हुआ है।
बिगड़ गया है ‘इको-सिस्टम’ गर्म हो रही धरती
हरियाली को लील रही है, बंजर ऊसर परती।¹⁶

आधुनिकता की अंधी दौड़ में सदियों से स्थापित हमारे नैतिक मूल्य और आदर्शों को हम पीछे छोड़ते जा रहे हैं, फलस्वरूप समाज में तमाम तरह की विकृतियाँ उत्पन्न हो रही हैं। इस भौतिकवादी परिवेश में बहुसंख्यजन मन से आहत हैं, पीड़ित और व्यथित हैं, उनकी सुनने वाला कोई नहीं। कवि अजय पाठक की कविताओं में ऐसी स्थिति का वास्तविक चित्र उभरा है। खोखले आदर्शों पर वे करारा व्यंग्य भी करते हैं-

न्याय-नीति पर भारी पड़ता झूठ और अन्याय।
दुःशासन है धर्म-आचरण का घोषित पर्याय
धर्मराज का सत्य इधर
औचित्य खो रहा है
धीरे-धीरे कुरुक्षेत्र तैयार हो रहा है।¹⁷

स्त्री-पुरुष मानवीय इकाई के दो शाश्वत रूप हैं। इससे इतर किसी मानव की कल्पना भी मुमकिन नहीं है। यही वजह है कि जब कभी स्त्री की चर्चा होती है, पुरुष भी किसी न किसी रूप में सामने आ जाते हैं और जब पुरुष की चर्चा होती है, वहाँ स्त्रियों की चर्चा भी लाजिमी हो जाती है। सभ्यता के उषाकाल से अद्यतन स्त्री जीवन समस्याओं और सवालियों से टकराकर आगे बढ़ रहा है। स्त्रियों को जीवन की चुनौती और अस्वीकृति गर्भ से ही मिलने लगती है। कन्या भ्रूण हत्या सिर्फ एक संकीर्ण मानसिकता की समस्या ही नहीं बल्कि विज्ञान और टेक्नोलॉजी के युग में इस प्रवृत्ति का तेजी से बढ़ना और लड़का-लड़की के अनुपात का बिगड़ना इस बात का प्रमाण है कि सच्चे अर्थों में हमारा विकास नहीं हुआ है। 21वीं सदी में भी 99 प्रतिशत समाज अगर लड़का-लड़की के चक्र में उलझा है तब देश का बुलन्दी के आसमान पर पहुँचने की खबर सिर्फ शोर है। ऐसी पृष्ठभूमि पर स्त्री-विमर्श के कुछ अनछुए पहलू समकालीन कवयित्रियों में मुखर हैं। पिछले ढाई दशकों से स्त्री-विमर्श साहित्य के केन्द्र में उभरकर प्रस्तुत हो रहा है। सविता सिंह, गगन गिल, वर्तिका नंदा, अनामिका, कात्यायनी, अर्चना वर्मा, निर्मला गर्ग, उर्मिला शुक्ल तथा नीलेश रघुवंशी की कविताओं में स्त्री पीड़ा का मर्म कई स्तरों पर उभरा है। अर्चना वर्मा की कविता “दिनचर्या” में स्त्री की पुरुष के दंभ से टकराहट इन शब्दों में अभिव्यक्त हुई है- “आज उसने तुम्हारे गलत को गलत नहीं कहा/बच्चे को बेबात पड़ा थप्पड़/अपने गाल पर सहा/औरतों की बेअक्ली पर/तुम्हारे लतीफा सुना/और/तुम्हारे दंभ को सहलाया।”¹⁸

सांस्कृतिक वर्चस्ववाद ने आज तक स्त्री, दलितों व उपेक्षितों को हाशिए पर रखा है, लेकिन अब वह वर्चस्व टूट रहा है। अनेक अन्तर्विरोधों के खुलकर प्रकट होने से स्त्री-दलितों व उपेक्षितों को उसके सम्पूर्ण अधिकार देने व उनके सम्पूर्ण अस्तित्व को स्वीकारना वर्तमान की अनिवार्यता

है। समकालीन कवयित्रियों इस अनिवार्यता को बनाए रखने के लिए तत्पर हैं। कविता के माध्यम से स्त्री-विमर्श को मजबूत आधार देने वाली कवयित्रियों ने प्रकृति के उपादानों को भी अपने भाव जगत में विशिष्ट स्थान दिया है। साहित्य में आरंभिक तौर पर कथ्य का केन्द्र बने स्त्री-विमर्श से जुड़े मुद्दे तथा सजग व संघर्षरत स्त्री इस दिशा में मजबूती से कदम रख चुकी हैं, इसके बावजूद इस दिशा में अनेक नए क्षितिज तलाशने होंगे।

बीसवीं सदी के अंतिम दशक में हिन्दी दलित काव्य के कवियों में मलखान सिंह और ओमप्रकाश वाल्मीकि का विशेष महत्व है। समाज की आन्तरिक पीड़ा, उसके प्रतिरोध और उसके विद्रोह को सशक्त वाणी देने वाली मलखान सिंह की कविताओं में वर्ग वैषम्य से उपजी पीड़ा को महसूस किया जा सकता है। संस्कृति की रक्षा के नाम पर किये जाने वाली बर्बरता को ओमप्रकाश वाल्मीकि की 'रूँधे हुए शब्द' कविता के ये शब्द साकार करते हैं—

मुर्दा संस्कृति की लाश पर
मंडराती चील जश्न मनाएगी
जिसके पंखों के साये में
संस्कृति का तकिया बनाकर
शिकारगार में अधलेटा आदमखोर
निकल रहा है
दाँत में फँसे माँस के रेशे
नुकीले खंजर से।¹⁹

मनुष्य-मनुष्य के बीच संबंधों के व्यापक संसार की कोशिश, नैतिक बल, पाठक तक पहुँचने की चिन्ता-मानवीयता को बचाए रखने का काव्य सरोकार इक्कीसवीं सदी की कविता के सम्मुख संकट है, लेकिन आशा की, समाधान की किरणें भी दिखाई दे रही हैं। अरुण कमल, हरिओम पवार, अजय पाठक, विजेन्द्र कुमार विकल, बुद्धिनाथ मिश्र, विद्याभूषण मिश्र, ऋतुराज, आलोक धन्वा और वेणुगोपाल, राजेश जोशी, उदय प्रकाश, कुमार अंबुज जैसे नव प्रगतिशील कवियों की कविताएँ बहुत ही आशाप्रद चित्र प्रस्तुत करती हैं। मनुष्य और उसके समाज से जुड़ी हुई इक्कीसवीं सदी की कविता शब्द-सौंदर्य के नए-नए लोकों में जन्म धारण करती चल रही है, यह इसकी विशेष उपलब्धि है। प्रसिद्ध रंग निर्देशक देवेन्द्रराज अंकुर का यह अभिमत उल्लेखनीय है कि "हिन्दी निश्चित रूप से यदि हर तरह के राजनैतिक, सामाजिक और सांस्कृतिक उथल-पुथल के बाद भी साहित्य और दूसरी कला-विधाओं की निरन्तर गति बनी रहती है तो कविता को भी उसी परिप्रेक्ष्य में देखा जाना चाहिए। द्वितीय विश्व युद्ध के बाद यदि अंधा-युग जैसी काव्यकृति सामने आती है तो इसका अर्थ यह नहीं कि उसके बाद पचास वर्षों तक कुछ दिखाई नहीं देता। इसके बाद फिर एक लम्बी परम्परा महत्वपूर्ण कवियों और उनकी कविताओं की चली आती है, जिनमें मुक्तिबोध से लेकर आलोक, धन्वा तक और ये भी निश्चित है कि इक्कीसवीं शताब्दी से दूसरी शताब्दी में स्थानान्तरण ही अपने आप में एक बड़ी घटना है। अतः यह स्वाभाविक है कि इस बड़ी घटना या परिवर्तन का असर कविता पर भी पड़े।"²⁰

इक्कीसवीं सदी : हिन्दी काव्य संभावनाएँ (संक्षेप)

आज स्त्री-विमर्श, दलित-विमर्श, विकलांग-विमर्श, प्रगतिशील, परम्परावादी, उत्तर आधुनिक आदि अनेक धाराओं व वाद विशेष को केन्द्र में रखकर काव्य लिखे जा रहे हैं। इक्कीसवीं सदी की कविता भूमण्डलीयुग की कविता है और कवियों के पास विस्तृत आकाश है। अधुनातन श्रव्य व दृश्य माध्यम के द्वारा विश्व-घटना सहज रूप में कविता का वर्ण्य विषय होने लगा है। किन्तु यह भी सत्य है कि इक्कीसवीं सदी कविता के लिए नहीं है, कहानी, उपन्यास, निबंध, संस्मरण आदि गद्य में ज्यादा अन्तर भी नहीं रहा। अतिबौद्धिकता और अधुनातन की वजह से कविता कामिनी के लालित्य में कमी आई है। मंचीय कविता की बात ही निराली है। विदूषकों की जमात ने कविरेक प्रजापति के समादृत आसन को क्षति पहुँचाई है। इन सबके बावजूद हम कह सकते हैं कि काव्य में लोकमंगल की भावना आज की कविता में सर्वोपरि है। छंद, अलंकार आदि बाह्य आवरण व काव्य रूपों में भले ही अन्तर आया हो लेकिन मानवीय भावनाओं के चित्रण में कविता की महत्ता तब और अब भी स्वयं सिद्ध है।

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Teaching English Writing Skills to Engineering Students: Challenges and Approaches

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Abstract

The globalization of English and a growing demand for good English Language skills in the job market in particular have been placing a greater emphasis on the teaching of English language. At present, in India, English language is the widely taught second language, and in all Engineering Institutes medium of communication is English. All engineering subjects are being taught in English language, but still the major problem of student is poor speaking and writing skill in English language.

In second language contexts, the situation has considerably improved with the wide use of audio-visual mass media. Teachers of English in India toil desperately to find suitable methodologies to facilitate the students in acquiring the writing skills and are intended to analyze the multifaceted use of Internet as an interactive teaching medium to impart writing skills to the Indian learners. Although teachers are putting all efforts, yet the improvement in writing skill is not satisfactory. This paper is an endeavour to explore the possibilities of integrating Internet in the field of English language teaching in India and to describe several models for communications—instructions, methods, techniques and approaches to develop writing skills of Engineering students.

Keywords: globalization, multifaceted, technical, communicate, skills

Introduction

Today's engineers need English language skills that are far above the skills that most engineering graduates have. Improved English language skills enable engineers to keep abreast with recent developments in concerned areas. This is important, as it may enable engineers to develop competences needed in new areas of engineering and for job opportunities in international market. It is equally important for engineering companies to have an engineering staff with good English language skills. Such staff members become an important asset for meetings and negotiations with foreign companies. In education, most of the text materials relating to the subjects of Science, Engineering and Technology and Medicine also are available only in English. Moreover, all over India, there is no single language to unite the whole country and globalization in all the fields,

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necessitates the learning of a language which is international. Considering the above facts, learning English, the universal language, becomes inseparable and unavoidable in Indian education system.

Importance of English Language to Engineering Students

Prof. Jacob Tharu says, "*English is no longer some remote but a powerful mystery, lying hidden in the world of textbooks and examination.*" English is a compulsory subject (in maximum universities in India) for the first-year students of Engineering and Technology studying at colleges in India. Candidates with good communication skills and soft skills taste success and those who lack such skills become depressed and get frustrated. Very often recruiters complain that about 70 per cent of students do not have employability skills. When they mention the word 'employability skills' what actually they mean is 'communication and soft skills'.

In the introductory chapter to *Technical Writing and Professional Communication for Nonnative Speakers of English*, Thomas N. Huckin and Leslie A. Olsen, state: "Scientists and engineers may be technically brilliant and creative, but unless they can convince co-workers, clients, and supervisors of their worth, their technical skills will be unnoticed, unappreciated, and unused. In a word, if technical people cannot communicate to others what they are doing and why it is important, it is they and their excellent technical skills that will be superfluous. From this perspective, communication skills are not just handy; they are critical tools for success, even survival, in 'real world' environments" (Huckin, Thomas N. and Olsen, Leslie A., (1991), *Technical Writing and Professional Communication for Nonnative Speakers of English*, McGraw-Hill International Editions, p. 3).

Each year, universities across the country grant thousands of undergraduates their engineering degrees. After completion of their course, these talented, intelligent youngsters are expected to move into industry to display skills and abilities in various fields. Despite many project reports writing and many presentations made throughout their studies, most of them are unable to communicate their engineering skill via written communication. This article seeks to highlight the importance of writing skill in engineering education and approaches to teach in effective manner.

Writing Skill: An Essential Skill for Engineers

Writing skill is the key into the internal communications networks that most companies have developed for disseminating information throughout the organization efficiently. Engineers are often expected to report on their work and share information with their colleagues; for that a good and effective writing skill is necessary. Alan Rossiter, Ph.D., a chemical engineer and president of Rossiter and Associates, a consulting firm based in Bellaire, Texas, observes—"It depends on what you want to do with your career", he says, "If you get your satisfaction from doing calculations and want simply to do just that the rest of your life, then you don't need writing skills." He adds, however, that not investing the time and effort to develop good communication skills can be a self-limiting decision. "A lot of good ideas never see the light of day because the engineers who have them are unable to communicate their ideas", he says. "So, if you want to advance beyond

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just being a number cruncher, then you need to be able to communicate effectively." And that includes acquiring a minimal proficiency in writing. "Our engineers must communicate clearly—and often simply—with other employees, suppliers, distributors and customers,"

Among the four skills, the writing skill is considered to be the most complex and difficult skill to acquire. Norrish (1983) emphasized that writing is of course, not easy and in some way, more difficult than speaking. While speaking we can use simple, repetitive words and incomplete sentences. Speaking does not have a standard form. But written language has standard form of grammar, syntax and vocabulary, etc. Usually writing is less spontaneous than speaking. As writing is a permanent record of knowledge accessible to any reader, the writer has to be cautious all the time about whatever he writes.

Writing Skill in Engineering Curriculum

The engineering academic world has increased its understanding that it must encourage strong language and written communication skills in its curriculum to generate competitive professionals in today's global market. But the setting of an engineering class in which the technical writings are of the students' choosing based upon their subject matter is not interesting.

Further, students may not see the need to hone their language and communication skills because this need has not been communicated to them. Most of engineering curriculum is built around the language of mathematics. Students are taught to explore difficult problems in terms of equations and applicable mathematical principles and operations, with answers expressed numerically. Students participate in laboratory courses, with the requisite at the completion of an experiment that they write a report, but these reports are rarely assessed for the level of writing skill displayed. For most of the students, mastery of proper English grammar and construction is a secondary or tertiary considering other subjects. Therefore, because their understanding of English composition is rudimentary, they instead focus on the mathematical substance of laboratory reports, without giving valuable feedback as to the writing style of the work.

Teaching Writing Skill to Engineering Students

Good writing conveys a meaningful message and teaching 'how to write effectively' is one of the most important skill teachers impart to their students. To teach writing, teachers should select resources and support materials that not only aid them in teaching how to write, but also learn to write. Most of the time, teachers adopt the conventional approach to teach writing. They announce the topic and make students produce a piece of writing. Without clear instructions on various aspects, students are trained to use long sentences and idioms when they write an essay or a paragraph. They are taught to impress the readers rather than to communicate factual information to the readers. As a result, they produce ineffective pieces of technical writing.

Since, engineering students have to write reports, paragraphs for a different purpose and for the readers who are familiar with the details, they find it difficult to meet the expectations of a technical audience.

Challenges to Teach Writing Skills and Approaches

In terms of teaching writing for engineering students, teachers should consider about some aspects in teaching writing. They need to think about a variety of techniques, activities and teaching aids to make the course appealing and interesting to the students. Some general identified problems in teaching writing skills and solutions are as follows:

Student's Problems

Lack of Vocabulary: Vocabulary is a basic component of effective writing skill. Due to lack of vocabulary, students cannot communicate right message at the right time. To overcome this problem, teachers should use the electronic tools available around them and can allow the students to open any kind of dictionary during task or assignment. Teachers can offer them a four-part approach to develop vocabularies:

1. Providing rich and varied language experiences through role play and literature.
2. Teaching individual words or course specific/course oriented words.
3. Teaching use of right words at right place through word-learning strategies.
4. Fostering word consciousness through text material.

Grammar Problems: Grammar, in writing skill, determines how a paragraph is build-up and how the ideas can be understood. To teach grammar effectively, teacher can consider to use the grammar translation method to help students in grammar. According to Rabeya Nasrin Khan (2007), based on GMT method, grammar is taught inductively or called the direct method, for example, grammar structures are taught through examples.

Lack of motivation: Many of the students think that writing skill is one of the most complicated skills because it requires better grammar, lots of vocabulary and any other aspect to make it perfect and readable. According to Areej, in his journal about the effect of motivation on students' writing skill (2012), motivation in education effects on how students learn and how they behave towards a subject matter. It can direct behaviour toward particular goals, lead to increased effort and energy.

Unavailability of Conducive Environment: Environment has a great role in nurturing mindset and learning process. It is responsibility of both the teachers and parents to provide conducive environment of learning English language. They should motivate the students as a professional to learn effective writing skills for a better career.

Mixed Ability Students in Classroom: Most of the classes in any institute are mixed ability classes. Students' may have different writing level ability. Some of students have higher intelligences in which they can work faster and do all of activities with good result. In other side, there are some students that cannot work fast and get good score because of their lack ability in English. For the student in low level, teacher cannot give tasks the same as with students who have the higher level because it can pressure those students. In this situation, teacher

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should organize the class and give the appropriate activities with their level. According to Hamilton (2006), Teacher often complaints about the low level of their learners in learning English language skill, this may be due to such internal factor as the motivation level.

Other Approaches

There are many approaches to teach writing skill to Engineering students and teachers have prepared some solutions in order to solve the problems in teaching writing. There are some solutions that can be used to solve the problems in teaching and learning writing skill:

Developing Competitiveness: According to Kelly (1990), reward is defined as materials and intangible values that can be employed to motivate students to learn. While punishment is both a rather unreliable technique that is likely to have unfortunate side effect (Orchid *et al.*, 1985). Rewards and punishments have to be in positive context in order to give positive impact on learners. It has a purpose to make them have motivation to do the best. By giving rewards and punishments, the learners are expected to be competitive to do the task especially in writing skill.

Use of Modern Technology

In modern era, technological advancements have shown new vistas of learning and as a teacher, one can guide the students to use technology effectively and wisely. We can attract them to involve in the classroom activities by using technology. Such as, allowing students to use Internet access in order to make them easy searching the data that they need for their writing task from the Internet. Teacher also can allow the students to use electronic dictionary to help them in vocabulary problems.

Classroom Management: The classroom management also has important role to help student in study. Teacher should manage the classroom to attract students to involve in the classroom activities. Teacher can set up the classroom based on the topic of lessons. Students can work collaboratively on a writing project, but it needs to be carefully organized on that part of the teacher (Linse & Nunan, p. 112).

When students are divided into groups, teacher should divide the class into groups which is each group should consist of different level of student's ability; from the smart student up to the low student. If it is in a pairs, both of them should have the same quality of cognitive in order to prevent the domination from one of them and to maintain the balancing participation of the students.

Student Centred Interactive Approach: Method that is applied in the classroom also affects students' participation in the activities. Teachers should provide the appropriate methods in each topic of the lessons. Method that is used by the teacher has to be interactive which is correlated between the task of writing with the students' real life such as what they can see, listen, and do in the real. For instance, when they have a task to describe about the school environment, teacher can allow them to observe their school environment first before doing the task. If students have a task to make a procedural text, it will be better to ask them

to do the real procedures to make something and then they write what they have demonstrated. Other methods like talking and writing box, and writing centres also can be applied (Linse & Nunan, p. 112).

Practice Approach

It is said that practice makes a man perfect and people learn better to write by writing. The best way to learn to write is to practice. People learn best by making mistakes and correcting them for themselves. This means actual writing, not merely listening to lectures about writing, doing grammar drills, or discussing readings. The more people write, the easier it gets and the more they are motivated to do it. To learn effective writing a better practice is required and teachers can work hard for the same. At first the teacher can assign a writing task on a given topic with a time limit. The students should have to submit the first draft within the given date or time. After receiving the written material teacher should check the assignment and mark the corrections. The editing by the teacher will help students to learn in a better manner. The teacher should mark all the mistakes related to vocabulary, grammar and punctuation, etc. The comments can be inserted for clearing the concepts. For better practice the teacher can assign new task many times in a certain interval. The assigned task should be either of interest area or course specific. The teacher should continuously edit the material and provide the suitable comments with praise and appropriate appreciation. It is possible that the students can ignore the tasks due to their main subject interest but the teacher should not give up the efforts and must have patience. Ask the students to work on their revisions in class so they can ask questions if they need to. In class, as long as they know exactly what to change, the task should be easy for them. The teacher should observe that how well the writing is coming along. Comments like "Did that really happen?" or "That's funny!" will go a long way to boost student's confidence. Make more suggestions to improve the readability of the piece.

Writing is a skill that requires practice. But that practice sometimes needs a little guidance. If a teacher guides the students through one single writing assignment and stays with them from beginning to end, he will be giving them the gift of a lifetime. Not only will he improve the writing skills of a group of young students, but he will be contributing to the betterment of the world.

Conclusion

Teaching writing skill has different challenges than other language skills and teachers should consider about problems that will be faced and they should draw the solutions for the problems. During teaching, the problems faced by the teachers can be overcome. The method offered herein seek to introduce writing into the engineering curriculum for betterment of Engineering Students' writing skills. The well designed tasks have helped the learners to perform better. It also empowers them in the world outside the classroom.

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Cross-cultural Collisions and the Notions of Nationhood in Amitav Ghosh's Novel *The Shadow Lines*

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Abstract

Ghosh is a talented, innovative and an experimentalist writer. He has been churning out books after books, be it a work of fiction, travel writing or essays. His books are borne out of a conviction, and ideas run his books. The thought contents in his works are strong, his characters, incidents and the places convey thoughts and feelings that are genuine and true to his own ideals. *The Shadow Lines* is one of the best-known works of Ghosh. The basic idea propounded in this book is the shallowness of international borders, lines of control, frontiers and boundaries. The description of the pain of partition, riots and communal hatred brings home the notion of unreal borders. This book is scrupulously structured around the exploration of possibilities for making the connections across the cultural differences. In the last pages of the book, the sexual encounter between an Indian narrator and the English woman May, becomes a metonym for such possibility.

This paper aims to study such cross-cultural collisions in the book and to investigate the possibilities, if any, of making connections across the cultural differences. It also undertakes to examine the concept and importance of nationhood in cross-cultural confrontations.

Keywords: Borders, Partition, Nation, Nationhood, Cross-cultural differences.

The history of humanity is a history of migrations in which communities were exposed to one another to find larger cross-cultural communities. Ganapathy believes that "If cross-cultural issues receive wide critical attention today, it is because they are at the heart of the crisis of the modern construct of nation as a locus of power provoked largely by the end of empires" (Ganapathy, p. 67).

The Indian novel in English was conceived when India was struggling to overthrow colonial dependency on Britain. This depiction of nationalistic fervour and oneness of identity is perfectly illustrated in Raja Rao's *Kanthapura* written in 1938. The village Kanthapura represents a homogenous community where people forget their internal differences of caste, creed and religion and become united against their common foe, the British. It is a typical post-colonial novel where the exploited or colonized are against the colonizer. But after independence

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the tendency of Indian novelists to depict homogenous communities has changed to the depiction of a world beyond the petty boundaries of caste, religion, state and nation. This is exemplified in the fiction of Salman Rushdie, Amitav Ghosh and many other Indian English fiction writers. *The Shadow Lines* by Amitav Ghosh is an attempt to show the blurring of lines and borders between East and West, between different castes and religious beliefs through an unconventional post-colonial novel which shows the colonized travelling and moving to and from the colonizer's territory. It is best read as a novel that interrogates a political consciousness baptized in the crucible of national divides. This novel is more sombre, less fanciful in its politics, and quite stunning in the power with which its formal experiments in sequence and location resonate thematically. *The Shadow Lines* traces nearly a half-century of interlocking relations among three generations of two families, one Indian and one British, giving perhaps the definitive fictional demonstration of Benedict Anderson's dictum that nation are "imagined communities". It is the story of the family and friends of the nameless narrator, which has its roots in broader national and international experience. In the novel, the past, the present and the future combine and melt together erasing any kind of line of demarcations. The text deals with the concerns of our period, the search for identity, the need for independence, the difficult relationship with colonial culture. *The Shadow Lines* interweaves fact, fiction and reminiscence.

Malathi has noted that "In his novels Amitav Ghosh explores the ideas of nationhood and diasporas, ideas that involve relationships between individuals belonging to the same or to different communities that sometimes transgress and transcend the shadow lines of political borders. *The Shadow Lines* probably represents Ghosh's most direct confrontation with nationalism and national identity and it is simultaneously about each character's personal identity" (Malathi, p. 7). The historical consciousness that the novel carries in its background is a result of several momentous events and an occasional obscure one. It includes the freedom movement in Bengal, the Second World War, the partition of India and the miasma of communal hatred breaking out into riots in East Pakistan (Now Bangladesh) following the Hazratbal shrine incident in Srinagar in 1964. The novel does not depict or present these political and social upheavals in a straightforward manner, rather each of his characters lives through the emotional trauma which is a consequence of these happenings. This traumatic experience is not limited to a particular community or people of one nationality, but it engulfs characters irrespective of their geographical and social place in this world full of man-made divisions.

Amitav Ghosh's novels centre on the cross-cultural and cross-national confrontations of the characters that are in their very nature different from each other. Therefore as a wandering cosmopolitan; he roves round and round and weaves them together with his narrative beauty. In *The Shadow Lines*, Ghosh makes the East and West meet on a pedestal of friendship, especially through the characters like Tridib, May, Ila, Nick, unnamed narrator, etc. The metaphor of travel as a means of bridging boundaries and bringing about cultural crossings is carried out throughout the entire time span covered by the novel and through

all the variegated characters. The plot of the novel revolves around these two families—the Datta Chaudhuris of Bengal and the Prices of London and the narrator's relationship with them. The lives of these two families are constantly intersecting and intertwining and it's the unnamed narrator who weaves the various threads together. Mrs. Price's father who initiated the long relationship between theirs and the narrator's family lived in India before independence. The narrator's very eccentric uncle Tridib, went to London and lived with the Prices during the war. The narrator, who remains an anonymous 'I' throughout the narrative, is Tridib's alter ego and he also continues this pattern of dwelling in travel. The three persons who play a significant role in the life of the narrator are his uncle Tridib, Ila, and his grandmother. But it's Tridib who exercises the greatest influence on the narrator and helps him evolve into adulthood where he's able to discard all restricting boundaries and is able to invent places in his imagination. The political, regional and linguistic lines become blurred, as the narrator's consciousness and memory become an organizing place, where the lives of three generations of his family are woven together, as are the cities in which their lives have been acted out: Dhaka, Calcutta and London.

The Shadow Lines is an apt revelation of the fragility of partition, borderlines between countries and the cartographical lines which claim to separate people and communities. He gives the metaphor of the looking glass to these borderlines wherein every populace sees its own image reflected in the land on the other side of the border. In Ghosh's conception, borderline is not a division that brings about a fundamental change in the identity of people on either side of the border. The narrator himself speaks about the evolution in his thoughts. He confesses that:

"...he believed in the reality of space. I believed that distance separates, that it is a corporeal substance; I believed in the reality of nations and borders; I believed that across the border there existed another reality. The only relationship my vocabulary permitted between those separate realities was war or friendship." (*The Shadow Lines*, p. 219)

The conceptualization of terms like nation-making, nationalism, nationality and their bearing on identity seem to be in flux rather than fixed, they are processes rather than finished products. This is obvious, as cultural or sociological paradigms are dynamic and unstable; they change, shift and rearrange themselves as a result of multiple factors like politics, religion and language. In the face of such development, against the backdrop of a series of divergent factors mentioned above that continuously change the social milieu, it becomes increasingly difficult to think of the 'nation' in fixed ways. The critique of the nation then, of necessity, must move along the working through process of revisions and redefinitions. However, it is helpful to look at the issue from a cultural perspective, for the novel clearly shows that cultural formations are the sites within which one's nationality or individual identity may be constructed.

The narrator, Tridib and his grandmother—despite their differences in age, location, ideology and varying perspectives on reality, share an innate Indianness,

even a conceptual formulation of nationalism, which Ila, the Indian located in the West cannot envisage. The narrator's grandmother, for instance, is one such character for whom the nation is a clear marker of identity. She is a votary of the nation in a sense in which none of the other character is. In fact, she represents a legitimate view of the nation against which the viewpoints of others like those of Tridib, Ila and the narrator, may be perceived. Though she lives in the frozen past, the reality of nationhood is largely stable in her case. As a fervent and militant nationalist, she worries about her old uncle dying in a country not his own, almost abandoned and alone in old age. She tells her son:

It doesn't matter whether we recognize each other or not. We are the same flesh, the same blood, the same bone and now at last, after all these years, perhaps we'll be able to make amends for all that bitterness and hatred. (*The Shadow Lines*, p. 129)

It is clear that she cares for the ties of blood and nationhood, and is prepared to let go the bitter memories of family feuds. Tha'mma's sense of nation receives a severe jolt when she undertakes a rescue mission to Dhaka to bring back her Jethamoshai to India. Before her departure she wonders whether she would be able to see the border between India and East Pakistan from the window of the plane, to which her son sarcastically replies that:

"... did she think that the border would actually be a long black line with green on one side and scarlet on the other as in a school atlas!" (*The Shadow Lines*, p. 141)

True, her response to the question of the border is naive, but her expectation to find trenches or soldiers or guns pointing at each other or even no-man's land there, makes sense. But when she is told that she should expect clouds, and at the most some green fields, she is simply amazed, and her natural and forthright response is:

"But if there aren't any trenches or anything, how are people to know? I mean, where's the difference then? And if there's no difference both sides will be the same; it'll be just like it used to be before, when we used to catch a train in Dhaka and get off in Calcutta the next day without anybody stopping us. What was it all for then—partition and all the killing and everything—if there isn't something in between?" (*The Shadow Lines*, p. 151)

As far as the younger generation in the novel is concerned, they have inherited a nation stricken with dissension and disunity. It can flare up at the slightest provocation. And this is exactly what happened when the narrator was a school-going child. There were riots in Calcutta. He and his schoolmates had suddenly felt disoriented in their own land, as the city had turned against them; and they were stupefied with fear. While reflecting upon this experience as an adult he says:

"It is a fear that comes of the knowledge that normalcy is utterly contingent, that the spaces that surround one, the streets that one inhabits, can become, suddenly and without warning, as hostile as a flash flood. It is the entire subcontinent that experiences it, and it is this which differentiates it from the

rest of the world—not language, not food, not music. 'It is the special quality of loneliness', he tells us 'that grows out of the war between oneself and one's image in the mirror'" (*The Shadow Lines*, p. 204)

Likewise, Robi suffers the consequences of the nation in disarray, though in a much more poignant way. His elder brother, Tridib, had got killed in a riot in Dhaka, and he happened to be a mute witness to this gory incident. The most poignant section of the text is the account of Tridib's death, given fifteen years after the event for the first time by his brother Robi. Robi has been revisited by the same nightmare for long years and he tells it in a powerful and uneasy mix of dream and unreality:

"If only that dream would go away, I would be like other people; I would be free. I would have given anything to be free of that memory." (*The Shadow Lines*, p. 246)

This heart-rending cry of pain and helplessness should render meaningless, practically, all carefully constructed theories of the nation. The heart of darkness, the centre of the mob towards which Tridib fearlessly walks swallows not just Tridib but all sense of sanity and discretion that makes human beings humane. In the context of the painful death of his brother, Robi muses on the word 'free', and finds it to be a 'mirage'. If freedom were possible through killings, then Tridib's death would have set him free.

The Shadow Lines imbibes the themes of multiculturalism, and nationalism while making use of unique narrative technique based on memory. But the novel stands out for the introduction of Ghosh's favourite concern and a revolutionary one too, of the futility of borders and divisions and emphasis on the need to dissolve these physical boundaries. Only such an effort can obliterate psychological barriers and bring the world closer. The narrative undercuts the view based on the difference between the created regions in the subcontinent by highlighting the similarities between Dhaka and Calcutta: after partition the two cities are seen as "an inverted image of each other" (223). The narrative accomplishes the task of undercutting the ideology of nationalism by questioning the received/official version of history.

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Gender Biasness and Inter-generational Gap in Monica Ali's *Brick Lane*

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Abstract

The roots of prejudice against women have long been implanted. Since ages they were discriminated by the society declaring the males to be superior and the females as subservient to men. The orthodox idea believed that women were meant only for doing household job, taking care of husband and children. In most of the instances men were considered the primary breadwinners and women were expected to stay at home to raise children, to clean home, to cook and to provide haven for their husbands. They were expected to follow the rules set for them by society and map their behaviour according to these notions. Simone de Beauvoir wrote in her book *The Second Sex*, "One is not born, but rather becomes, a woman" (72). The ideology behind this is women are not born inferior to men in any case but it is the society which has made them to think like that. The cultural constraints have so much deeply been injected that they never think to live life their own way.

Monica Ali's novel *Brick Lane* is the story of the life of protagonist Nazneen, a Bangladeshi woman who marries Chanu, a man, double of her age and moves to London with him. The novel explores her life and adaptation in the community as well as an adjustment with Chanu. Whether she resides inside or outside her country the clutching always remain in the hands of her husband. The present paper is an analysis of the discrepancies in Bangladeshi culture between the roles of men and women, how women take on their roles and how they function in this context using Feminist perspective. It will portray the current position of women in the society and also the inter-generational clash. Despite various groundbreaking achievements by women in various parts of the world; women still remain confined to their homes and more so into the ideological products their culture expects them to be by framing themselves into the notions set for them by their culture.

Keywords: Gender-bias, Cultural constraints, Adaptation, Feminism, Bangladeshi Culture, Inter-generational gap.

Monica Ali is a Bangladeshi-born British writer and novelist. She comes from a multi-cultural background with a British mother and a Bangladeshi father. Her

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Gender Biasness and Inter-generational Gap in Monica Ali's *Brick Lane*

debut novel *Brick Lane* is the story of the life of protagonist Nazneen, a Bangladeshi woman who marries Chanu, a man double of her age and moves to London with him. The novel explores her life and adaptation in the community as well as an adjustment with Chanu. After migrating to London the couple is trapped between the two cultures and the new identity in London brings a sense of alienation and isolation more specifically to Nazneen. Instead of being helped by her husband to bring her out of this dilemma he continues to possess and profess the same conservative, parochial and typical Bangladeshi ideology of keeping woman under male hegemony. Monica Ali's *Brick Lane* is not only concerned with immigrants experience but has so many aspects revealed, such as dilemma of identity, gender inequality, religious conflict and racism.

The roots of prejudice against women have long been implanted. Since ages they were being discriminated by the society declaring the males to be superior and the females as subservient to men. At the beginning of the nineteenth century women enjoyed very few of the legal, social and political rights. They were not allowed to cast a vote. Not only this people also had a biased attitude towards females in terms of education or employment. The orthodox idea believed that women were meant only for doing household job, taking care of husband and children. In most of the instances men were considered the primary breadwinners and women were expected to stay at home to raise children, to clean home, to cook and to provide haven for their husbands.

Women were always expected to remain obedient, earlier to their father and later after getting married to their husband. They have to do things according to the desire of their counterpart and to make them feel contented in every possible condition without giving a voice to their desires. Since ages gender discrimination prevailed in our society. Women were not given a chance to attain full potential. Charles Darwin in his book *The Descent of Man* says "Women are of a characteristics of...a past and lower state of civilization" (144).

With the dawn of the twentieth century almost every facet of the accustomed lives of woman, from the familial sphere to that of public sphere got changed. The rapid movement of people to other countries replaced the preceding stereotypical concepts. Women started stepping out of their homes to receive higher education, for the source of income and started receiving powers in their own hands.

The Room of One's Own, an essay by Virginia Woolf proclaims that men have and continue to treat women as inferior in every sphere of life. Woolf invented a fictional character as Shakespeare's sister to illustrate that her sister had a same talent of writing like Shakespeare. Because she was a woman her artistic talent remained hidden from the public and she died without any acknowledgement for her skills of writing. It is just because of the society's opinion about women that they were seen intellectually inferior to men in every ages.

The rise of the new-fangled generations of female artists, writers and professionals distorted the patriarchal social median across the globe. Women who were underrated for their comprehension and skills started receiving appreciation in the workplace marking a ground-breaking alteration in the

societal and domestic roles of women. Simone de Beauvoir wrote in her book *The Second Sex* "One is not born, but rather becomes, a woman" (72). *Brick Lane* by Monica Ali also reflects the same position of women in the course of the novel. The protagonist, Nazneen after becoming a migrant not only have to adopt and imbibe the new cultural set up but also have to face gender biasness and inequality from her husband. Even after migrating to a liberal and open-minded country like London, the typical patriarchal mindset of Chanu, the protagonist's husband does not change, in fact he continues to practice traditional gender ideology. The present paper will focus on the problems of Nazneen who like the other migrant women's struggled hard to find place in the society. Not restricted to this but this paper will also highlight the gender biasness and inter-generational clash portrayed in the novel *Brick Lane*.

In the novel *Brick Lane* issues of three different generations of women's are dealt with, where some of the women have to lose something to gain something while on the other side some have to struggle hard to find a place and position in the society. The narrative of *Brick Lane* deals with the young girl Nazneen who grows up in Bangladesh deeply injected with the traditional concepts. Her 'self' is locked with the thinking that she has to bear all the pain whatever comes her way.

Soon after, when her father asked if she would like to see a photograph of the man she would marry the following month, Nazneen shook her head and replied, "Abba, it is good that you have chosen my husband. I hope I can be good wife, like Amma". (Ali, p. 16)

But later we see an unexpected change in her persona. Nazneen who was submissive, subservient and docile in the beginning later becomes assertive and independent both socially and psychologically.

Sometimes I look back and I am shocked. Every day of my life I have prepared for a success, worked for it, waited for it, and you don't notice how the days pass until nearly a lifetime is finished. Then it hits you—the only thing you have been waiting for has already gone by. And it was going in the other direction. It's like I've been waiting on the wrong side of the road for a bus that was already full. (Ali, p. 265)

Like her mother she also believes in fate and was greatly influenced by it. Her father arranges a marriage with a man named Chanu twenty years older than her. Though she does not want to marry him but being an obedient and dutiful child she cannot upset her parents. Seeing that they were already devastated by their younger daughter, Haseena's elopement. Nazneen marries a man of her father's choice burying her desires. But unluckily her marriage turns out to be unsuccessful. There was no love and passion between the two of them for each other. She is considered by her husband none other than a worker who manages homely affairs. He does not have a respect for his wife. Chanu says:

What's more, she is a good worker. Cleaning and working and all that. The only complaint that I could make is she can't put my files in order, because she has no English. I don't complain though. As I say, a girl from the village: totally unspoilt. (Ali, p. 23)

Nazneen feels suffocated in her loveless marriage where she is treated none other than a missing being but she convinces herself by saying that it must have been her fate. She was told by her mother in her childhood that "what could not be changed must be borne. And since nothing could be changed, everything had to be borne."

A woman is brought up from her childhood to believe that she exists only as a daughter, wife and mother to please men. The men are the wage earners, decision makers and women are expected to remain at home and do menial jobs taking care of children and husband. Chanu also has the same stereotypical mindset that he is the main source of income and expects her wife to obey all the commands given by him. He loved to share his thoughts and views on all kind of matters with Nazneen but never allows her to express her own insight on anything.

He talked and she listened. Often she had the feeling he was not talking to her, or rather that she was only part of a large audience for whom the speech was meant. He smiled at her but his eyes were always searching, as if she were a face in the crowd singled out for only a moment (Ali, p. 42).

The experience of being a migrant resulting alienation and isolation has already tormented Nazneen a lot but her problem does not end here. As Nazneen has migrated from Bangladesh where not only the culture, custom and traditions were different from London but also the language. Problem of inability to speak the English language comes her way. The protagonist wants to learn the host language by joining English speaking course but Chanu will not permit her. He knows that language is a great weapon and if his wife gets well acquainted with the foreign language then this will be the first key to open the door for her to the surrounding host culture. Chanu will not be able to put restrictions on her and stop her from stepping out of the cage which is constructed by him for Nazneen. She will get accustomed to the new liberal ambiance of London and will try to adapt it and change herself accordingly. Unwillingly Nazneen has to accept the commands given by Chanu and her fate without any resistance. The protagonist of the novel believes that women are born to bear low status in life. Women are never expected to object or raise questions. They are taught from their childhood to bear, adjust and be patient. Even Chanu like the rest of the men wants to keep his wife within the confines of four walls.

'You're going to be a mother...will that not keep you busy enough? And you can't take a baby to college. Babies have to be fed; they have to have their bottoms cleaned. It's not so simple as that. Just to go to college, like that'. (Ali, p. 77)

Financial independence is another basic requirement for attaining respect in the society and to achieve psychological independence. Betty Friedan in her book *The Feminine Mystique* says "A woman has got to be able to say and not feel guilty, Who am I, And what do I want out of life? She mustn't feel selfish and neurotic if she wants goals of her own, outside of husband and children" (25).

In Monica Ali's *Brick Lane* Chanu was not able to get a good job in London in spite of living there for many decades. Nazneen shows her interest to do a job

to support her family but Chanu was not in favour of his wife's stepping out bringing money to home. For him women working outside home bringing money to run the household is to bring shame from the society which projects Chanu's innate patriarchal ideology present in his genes. Chanu earlier too was not in favour of Nazneen's stepping out and doing a job. Lastly, he gives permission to his wife to begin working as a garment worker when they were in dire need of money to run the household that too under his surveillance.

Men and women keep separate here. No men doing machining. Men they cannot sit quiet so long. They have to fidget and talk and walk around smoking. They make pattern and cut cloth these are difficult job. Also they iron. That job too dangerous for woman we do not understand electricity. (Ali, p. 152)

Being born a woman is in itself a great stigma attached to Nazneen but her problem doubles when she was unable to give birth again to a baby boy. Her husband longed for a baby boy but unfortunately she could not produce it again. Chanu has a typical male mindset that it is only the boys who can keep their names alive. The outcome of this was he turns out to have very indifferent attitude towards his baby girl's. In fact his attitude towards Nazneen also worsens and he becomes more bitter towards her and blames her for her incapability to give birth to a boy. When the girls Shahana and Bibi mature they want to take their decisions by themselves but Chanu does not give them freedom. At times it becomes very irritating for the two daughters to breath in such a suffocating environment.

The liberal atmosphere of London had a great impact on the them. Since childhood they were brought up in London and had received Western education which helped them to become bold and brave. Their persona presents a foil to the character of Nazneen. When Nazneen was of her daughter's age she would not dare to speak loud and rebel against her parents. Shahana wants to follow the fashion trend of London by getting a tattoo and lip ring but is not allowed by her father. This inter-generational clash and the stereotypical state of mind brings rift between the father and the daughter who demands freedom of choice and expression. Shahana says "It's my body" (292) which projects Shahana was more independent in her consciousness than her mother.

Witnessing these changes among his daughters temperament, Chanu makes up his mind to go back to his own country. For Chanu England is temporary place to earn, save and get back to the homeland. For the first time in the novel Nazneen's 'self' awakes. She knows that her daughters are brought up in the liberal atmosphere of London that will bring problem to adjust in Bangladesh. Shahana and Bibi unlike their father Chanu do not wish to go back to Bangladesh because they cannot relate themselves to a country which they have never been to even once. "I'm not going, said Shahana. I'll runaway" (Ali, p. 175).

Nazneen had lived a suffocating life with her husband believing it must be her fate. She devotes whole her life in thinking about family and husband but has never given a voice to her desires. After going through such a turmoil Nazneen

does not want for her daughters to go through the same quandary and trouble. The love and concern for her daughter's make her bold and out-spoken to show her disfavour to go back to Bangladesh with Chanu. Nazneen says:

Shahana did not want to listen to Bengali classical music. Her written Bengali was shocking. She wanted to wear jeans. She hated her kameez and spoiled her entire wardrobe by pouring paint on them. If she could choose between baked beans and dal it was no contest. Shahana did not care. Shahana did not want to go back home. (Ali, p. 144)

Nazneen's meeting with Karim, a garment boy whom she met in her sewing job brought new meaning to her life. Life becomes full of passion and happiness. He gives her space to articulate and present her views on the issues unlike Chanu who always expects her to listen like an audience. Karim says:

"You're always working", he said.

"Buttons will not sew themselves."

"Talk to me. Leave it."

"I will listen. You talk." (Ali, p. 261)

Moreover, Karim lets her feel that she has said something significant. Nazneen had never got an encouragement from her husband like Karim. She has suppressed her feelings for many year. She has never felt so contented in the company of her husband like she felt with Karim. Life which was going irksome turns out to be very delightful in the companionship of Karim. His friendship helped her to forget about all the agonies that were there in her life. She starts realizing her potential thinking that female is capable enough to lead their life alone.

It would be too difficult, said Nazneen, for us to be together. So I think we had better stop now.

Karim began to say 'right' again, but caught himself. Yes, I see what you mean. With the children and everything.

I have to think of them first (Ali, p. 452).

Nazneen later apprehends that she can live her own life happily with her daughters without anyone's support and not relying on anyone else.

The complication of the protagonist, Nazneen's life offered by Monica Ali is worth appreciable as it has exposed a genuine picture of the females in the society. Women who submits herself wholly and completely to men but did not receive respect and love which they really deserves. Like Nazneen in *Brick Lane* is treated by her husband none other than a maid who fulfils everyone's desire but in most of the instances has to strangle her own desires. But even after so many compromises and responsibilities if something bad occurs it is she who is answerable and blamed for it. Women are not born inferior to men in any case but it is the society which has made them to think like that. The cultural constraints have so much deeply injected that they never think to live life in their own way. Similar is the case of Nazneen presented by Monica Ali but as the novel progresses we see a gradual change in her personality gaining independent 'self'. So we can say that the core belief of feminist theory and criticism rests on the

equality of men and women politically, socially and economically. As long as women do not have consciousness of independent 'self' they will persistently be dominated by men.

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Framing the Colonial Nightmare through a Dream: Magical Realism as a Post-colonial Narrative Mode in Derek Walcott's *Dream on Monkey Mountain*

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Abstract:

Magical Realism as a critical strategy may be located in postmodernism as it problematizes the 'real' and its 'representation'. Mingling realistic portrayals of ordinary events and characters with elements of fantasy and myth, it creates a rich, often disquieting world that is once familiar and dreamlike. The characters in magical realist works unconditionally accept rather than question the 'logic' of the magical element. The term itself was initially used rather pejoratively to undermine non-Western, alternative modes of representation. Having its origin in Latin American literature particularly in the works of Gabriel García Márquez and Jorge Luis Borges, Magical Realism has been used as a critique of both Western modes of narration and their constructions of reality with regard to the 'other', which are at once essentialist and hegemonic. Derek Walcott, the Caribbean writer, uses magical realism to great effect in his play *Dream on Monkey Mountain*. The paper titled "*Framing the colonial nightmare through a Dream: Magical Realism as a postcolonial narrative mode in Derek Walcott's Dream on Monkey Mountain*" will argue that Derek Walcott uses this mode of perceiving reality and of representing it as an effective postcolonial strategy to radically examine the devious stratagems of colonialism and their material effects. Makak, the central character in the play, dreams of an alternative reality, which serves as an antidote to the problems created by 'constructs' and their tangible adverse consequences. The paper will argue that Derek Walcott frames coloniality, a concept which is a nexus between the practices and legacies of European colonialism in social structures and forms of knowledge, using magical realism to foreground the disconcerting realities caused by colonial control of a people. The term dream itself has a lot of resonances in the play. The quality of dreaming defines each character in the play and it is in this series of dreams, the paper will argue, that Makak's dream is located. Makak's dream, which weaves elements of myths and legends, will showcase the true and ugly face of colonialism. The dream, in itself is not a solution, but a means of acquiring clarity in stating the problem. Derek Walcott, who is caught in the in-betweenness of two cultures, then, states the problem by portraying Makak's yearning for an apparently irrecoverable African past. The

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paper will conclude by saying that the play, at best, juxtaposes 'mimicry' and 'ambivalence' by the non-real mode of magical realism.

Keywords: colonial and post-colonial, magical realism, constructs and representation, mimicry and ambivalence, alternative modes of perception and depiction.

Magical Realism is most commonly associated with the Latin American Literary Movement that came up in the 1960s. The term has been attributed to the Cuban writer Alejo Carpentier, who first applied it to the Latin American Fiction in 1949. Magical Realism sometimes deliberately runs contrary to the realistic portrayal of life. The art world which the practitioners of magical realism create is very symbolic. The multidimensionality of life can be foregrounded only by Magical Realism and it is not a realistic presentation or portrayal. Realism itself became a particular mode of writing and then a norm in the West in the nineteenth century. Literary texts which adhered to this mode are considered to be superior to texts that did not follow this mode of writing. So any literary text, which does not belong to that norm has been put down. But many creative writers of the world realized that realism as a mode had miserably failed to showcase life. So they took recourse to alternative non-realistic modes of representation. The West which called the shots called one of these modes as Magical Realism, a term which had hugely pejorative connotations. This label was given primarily because they did not understand new modes of representation.

Derek Walcott, a Caribbean writer, deliberately chooses Magical Realism as a post-colonial stance, which is one of protest and subversion. *Dream on Monkey Mountain* deliberately goes against the realistic mode to understand the complexities of life impacted by colonialism. Rejection of realism was a deliberate act for two reasons: one, it was an inadequate mode to deal with complexity and two it was to run down the hegemony of realism, a Western model. One of the major reasons for Derek Walcott to use Magical Realism was that the conflicts which he had dealt with were beyond conventional language and so he used lot of symbols. In the play the White Woman and the Monkey Mountain are complex symbols. He openly tells the West that he has employed a mode which they could not conceive of and to foreground the conflict due to colonialism. Derek Walcott openly says that his play is illogical, contradictory, and derivative. Dream plays a vital role in the play and it is a dream which occurs in the minds of the people. The mindscape of the people will transform itself into the physical landscape. The realistic presentation is said to be the metaphor in Magical Realism. Derek Walcott stresses that the theme of the play revolves around the dream which problematizes conventional realism.

According to Philip Swanson, "Garcia Marquez's Magical Realism must be a political question of reinterpretation of reality, utilizing the oral style inherited from his grandmother's fantastic story-telling. Garcia Marquez seems to want to reproduce a traditional, popular rural perspective—challenging the hegemony of the alien, dominant imported culture and reinstating the value of the community's own cultural perspective (2).

"Framing the Colonial Nightmare through a Dream: ...

It is true, Makak in the play feels that Caribbean consciousness is a schizophrenic consciousness. Makak's dream showcases the cause and effect of oppression. The power of art is to make everyone undergo a radical departure from certain stereotypes both in thought processes and actions. Uniquely the dream itself revolves round and is directed by a white woman in a cave. Dream is designed by a white woman and dreamt by a black man. Monkey Mountain is a symbolic space and a non-real space. Makak's dream is a dream that would bring about an inner transformation. An inner transformation will help Makak acquire an identity.

In post-colonial literatures the identity crisis is very important crisis. The moment when one realizes that the Caribbean Consciousness is schizophrenic and one sees immediately an identity crisis. Derek Walcott shows that this schizophrenia is inevitable in every colonized space, if a person is sensitive. A Caribbean writing about Caribbean situation automatically implies post-colonial situation. Logically, during the colonial times one could be a post-colonial in consciousness. Expressing solidarity by stressing on the importance of indigeneity through dress, food preferences and cultural codes, a playwright can challenge colonial structures. A post-colonial identity may possibly be an amalgam of many identities beginning at least with two identities. The amalgamation happens only when slavish, uncritical copying of the West, called mimicry is replaced by a critical examination of identity called ambivalence which leads to hybridity, a merger. The presence of the white woman in Makak's dream traces these trajectories.

Makak is arrested and his arrest is a fruitful experience for him because he is made to come face to face with himself. He dreams but he never had a retrospect of his dreams. Makak is ideally himself in the dream which makes him give the ugly constructions of a black man by the Whites. An ape-man (Makak) realizes his human potential through the conflict between the Corporal Lestrade and himself. Though initially Makak is caught between two identities: his black identity which he hates and an approximation to a white identity, in the final analysis he moves towards clarity. Makak's understands that his consciousness is what should a Caribbean one be.

Makak cannot dream of black woman because his consciousness does not permit him to think that a black woman can be ideal at any point of time. Corporal Lestrade thinks that he has become a white man because of his power. Makak realizes that unless one celebrates indigeneity or Negritude one cannot have a unproblematic though complex identity. If a black women had been at the centre of the dream two things would have been possible: one, her voice will always be muted and two, the black woman would have spoken about the blacks or Caribbean identity rather negatively owing to colonial indoctrination. To the question "Can the Subaltern Speak?" the play answers that they can speak after much struggle though the struggle is worth the while as Makak's realization that he is not an ape but a human being with multidimensionality.

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Nature as a Medium of Mysticism in Tagore's Poems

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Abstract

Just a year after the death of Gurudev Rabindranath Tagore, a collection of his verses in English, titled as *Poems* was published by Visvabharti. Most of the poems in this collection were translated/composed in English by Tagore himself. Hence this collection seems important from two perspectives—one the time of publication, and second the first-hand translation/composition. Unfortunately, this collection didn't get much attention from critics, though it is this book that proves Tagore as a true mystic poet, as the obscure poet and as the poet with strong oriental roots. This collection stands witness to Tagore's transformation of from Romantic spirit into a Mystic. The verses in the *Poems* may appear vexed or difficult to a general reader but they are poet's deep communication with the supreme energy. In these mystic poems, most of which are in free verse, poet has used nature as his tool to portray different messages. The theme is single, i.e., a humble prayer to God yet the poems are different in context to the use of nature. The objective of this paper is to solely analyze the presence of nature in the mystic poems present in the *Poems*. The paper establishes that nature was the only tool for Tagore's mysticism.

Keywords: Rabindranath Tagore, Mysticism, Tagore's poetry, Nature, Romanticism, Tagore.

Gurudev Rabindranath Tagore's attraction towards nature is very well known to the world. He strongly advocated that human life must organically evolve with nature to understand the value of peace and harmony. Tagore's essay "A Poet's School", stresses on the empathetic interconnectedness of human world with the surrounding for a complete understanding of coexistence. While Tagore's short stories, plays and novels project the socio-psychological concerns of human existence, his poetry largely reflects his longing for concordance existence of human beings. Tagore's poetry has been purposefully analyzed for mysticism, formalism, ecstasy and philosophy. But, his poetry has been seldom analyzed for representation of nature. Tagore has been highly praised for reflecting the dynamicity of social concerns, human culture and psychological contours, but it is presence of nature in his poetry that demands critical attention. A deep study

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of poems, where there are special references to nature and its bounty reveal that Tagore is no less than any romantic poet who admires nature in its various aspects—beauty, life, death, a source of eternal fascination and withering.

Nature for Tagore is a rich store of images, similes and metaphors which he abundantly uses nature to portray different images and situations. Rivers, mountains, sea, trees, flowers, colours, stars, sky, etc., just not fascinate him rather appeal him to connect the readers to various aspects of human life. He is a poet of nature in addition to a poet of philosophy. While using nature, Tagore appears to be more realistic and comprehensive than any other poet; for, at times he admires it and other moments he projects the harsh, unpleasant and ugly moods through nature. Tagore differs from western nature-poets as his poetry reflects his gradual evolvment with nature. Ezra Pound initially remarked this in the *Fortnightly* in March 1913:

There is in him the stillness of nature. The poems do not seem to have been produced by storm or by ignition, but seem to show the normal habit of his mind. He is at one with nature, and finds no contradiction. And this is in sharp contrast with the Western mode, where man must be shown attempting to master nature if we are to have 'great drama'. It is in contrast to the Hellenic representation of man the sport of the gods, and both in the grip of destiny.

Tagore has left behind a huge corpus containing 2,230 songs, many novels and short stories. His celebrated collection of poems, *Geetanjali* comprises 157 mystic poems mostly addressed to God. Majority of the poems in *Geetanjali* are inarguably spiritual poems. There are other important works too. One such important work, which has been less evaluated for its literary merit so far, is his collection of poetry titled *Poems* which was first published in 1942. This anthology contains 130 poems focusing on vivid themes. *Poems* is exceptionally critical for poet's admirers because its blurb notes that the poems are "all translated by the poet himself" (6). And, secondly the poems included in it, present a variety of moods and themes. It is these poems that we find Tagore yearning for "eternal search for the ultimate destination from here to eternity" (Mukherjee, p. 1). Most of the works of Tagore are second-hand translation, but in this collection all the poems, but fourteen, are first-hand translations of poet himself. So Foster's charge that the charms "vanished in translation," (qtd. in Sen, "Tagore and His India") proves lesser significant here as the poet must have maintained the emotional appeal and artistic glean of the poems in translating the poems himself.

The valuable ideas of Tagore on poetry, diction and poetic aspirations are also reflected in the "Introductory" of this anthology. The "Introductory" is in the form of a poem in free verse that longs for four pages. The "Introductory" should be studied parallel to Wordsworth's "Preface" to Lyrical Ballad. Akin Wordsworth, Tagore too upholds 'spontaneity' as a prime characteristic of poetry. While Wordsworth notes—"Poetry is the spontaneous overflow of powerful feelings", Tagore's way of praising the same comprises of elegant imagery:

"Imagine a song suddenly flashing up like A flying fish
From the silent depth of time." (*Poetry*, p. 7)

Offering the poems to the readers, Tagore calls the 'book' as the 'cage crowded with birds'. The word 'birds' in this line has been used as metaphor signifying the vividness of themes, and the word 'book' is a cage for it does not allow the poems to move freely in poet's mind or nature to gain further dimensions. A finalized printed book/collection of poems is thus far from natural growth for this poet. Tagore may sound awkward in this context but that is how folk literature and oral traditions have grown in the past. The folk literature emerged out of the mind of artist with no claim on authorial authority and copyright claims and endured number of transmissions and refinements to become popular. The sources of Tagore's poems have been the nature and its odd-even colours. He clearly shares wherefrom his poetry emerges in the following lines of the "Introductory":

The blue space, the infinity around constellations,
Through which flocked my verses, is left outside. (7)

It's clear from these lines that apart from the human society Tagore derives poetic inspiration from nature's bounteousness.

Tagore cries over the numbness that has been brought to the poetry by technology. He upholds the natural association the poetry has enjoyed with human beings in olden times. According to him, "When the spirit of printing press was not there", the poetry was "alive with the natural accompaniment of the irrelevant" and the stanzas were not ranged into perfect packets of alphabets, / to be silently swallowed". Tagore dreams of the age when poetry developed in the lap of nature and enjoyed liberty. His squall for being born in a hopeless age in which emotions are tainted by selfish motives and technology implies to his thirst for peace embedded in natural beauty.

I sigh and wish that I had lived
in the golden age of Kalidasa,
That you were,-but what is the use of
wild and idle wishing?
I am hopelessly born in the age of the
busy printing press- a belated Kalidasa.... (9)

In poem 2 of the *Poems*, Tagore expresses his mystic ideas beautifully with the help of different aspects of nature. He feels the presence of Godly love around him and develops nostalgia-like feelings. He says the news about the presence of his love (God) comes to him through 'spring flowers' and through the 'fragrant field in murmurs of April'. Such rapturous feelings spur in his heart "green leaves of desire". The desire has a characteristic of unceasing growth, that is why poet uses 'green leaves' to affiliate with desire. The two media through which the poet realizes the haptic message of his Love—"sky" and 'air' surface towards the end. The poet feels the 'gaze' and 'kisses' of his Love but the denouncing inquiry over the existence of eyes and lips signifies the poet's question over the necessity of physical existence. Nature here emerges as the carrier of Godly love.

The poem 3 of the collection portrays the oxymoronic dimensions of human life, viz.—loss and gain, joy and sadness. Tagore uses nature to explain the

inevitable of human life. To say that one sorrow leads to some happiness, he uses following imagery of twilight:

The sun goes down to his rest

There is gloom in the forest and glamour in the sky.

With downcast look and lingering steps

The evening star comes in the wake of departing day

Herein, the poet talks to the reader as a seer to communicate that a ray of hope is associated with every sadness. In the entire poem the dark sky and twilight echoes mysticism. The references to nature make the poem rather more comprehensible for a common reader.

Happiness is the ultimate aim of human life and all human ventures and in Tagore(s) happiness is never too tedious to be achieved. He defines happy mind as one who:

He hankers for nothing in the world

Who is in possession of himself;

The sweet air of spring is for him,

The flowers, the bird songs; (17)

While the thirst for achievements has been described by futile 'circling of desert', and the desire for physical love is compared to 'mist' that results in internal darkness.

The lessons of self-realization have been well caricatured in poem number five which reminds the reader of Blake's poem—Poison Tree. In Tagore's poem, the pains endured for 'false hopes' are pricking 'thorns' which makes him "know that they are not flowers" (18). The poem 7 talks about the state of women in the world. The poet hails the contribution of women in making this world. This comprises of a variety of imageries plucked by the poet from the nature's storehouse. These imageries help the readers to decode the poet's emotions.

You were lapped by the sea of life whose

Ripples are the leaves' flutter, bees' flight,

grasshoppers' dance and

tremor of moths' wings. (22)

The poet's distressful mood is reflected in poem 17 which is full of doleful words—'Alas', 'forsaken', 'homeless', 'sobs', 'sighs', 'hopeless', 'growl', and 'shoreless'. To express such pitiable human conditions too, Tagore takes rescue in nature. The tension lying behind the poem is expressed thorough natural imageries, for example: "The shrieks of the wind die away in sobs and sighs" (34). But, Tagore is not always a sad mystic. He is jubilant too at times; especially when he is affectionate with nature's pleasant turns. And to describe such jubilancy he finds the myriad plumes of peacock dancing in the rain falling from the clear sky to best describe his ecstasy. His description of happiness is well described in poem twenty which opens with these lines:

Nature as a Medium of Mysticism in Tagore's *Poems*

My heart, like a peacock on a rainy day,

spreads its plumes tinged with rapturous colours of thoughts,

and in its ecstasy seeks some vision in the sky,

with a longing for one whom it does not know.

My heart dances.

In poem 50 a similar mood of poet comes through the lines where he celebrates the adornment of nature with the changes in season:

The sun shines, the rain pours down in the showers

the leaves glisten in the bamboo grove,

the smell of newly tilled earth fills the air.

.....

The spirit of poet dances in swaying cadence. (73)

In poem twenty-one the poet is mesmerized over the nature's soft healing touch—"At night the fingers of the stars touch my dreams" (39). And finds—"There is love in each speck of earth and joy in the spread of sky" (39).

'Sea,' 'Night' and 'Star' occur recurrently in the poems of Tagore appearing in this collection of poems. Tagore refers to these three elements of nature in varied sense. 'Sea' is sometimes worldly humdrum affairs yet in some references it is symbolic to vastness. 'Star' is sometimes symbol of twinkling hope and sometimes lowliness. All in all, they stand witness to various moods of poet, mostly sadness. But, Tagore is very much optimistic too. In the following lines of poem 53 he asserts with full confidence:

I know that the flower one day shall blossom crowning my thorns.

I know my sorrow shall spread its red rose-leaves opening its heart to the sun.

The breeze of the south for which the sky kept watch for weary

days and nights shall suddenly make my heart quiver. (78)

The Section Two of this collection contains some important poems most of which are reflections of poet's self. Nature and its beauty surface in these poems again but in descriptive manner. A glimpse of noon can be seen in following lines:

The noon had eyes like the mad,

red thirst raged in the sky.

I opened the basket and found

the flower dead. (111)

In this part we find that the poet praises God's plenty as "Thou art a glimmer of gold..." (118), and himself to be "a meadow flower" aspiring to be "in the chain of thy neck" (120). The section two ends with poem number 87 in which the poet carves appealing imageries to communicate 'disconsolate' situation and request mankind to "bring out... lamps" so as to "offer symphony of praise to eternal light" (125).

Talking about the Tagore's connectivity with nature and mystic ideas Bharti Mukherjee notes:

At the beginning of his literary career Tagore is a romantic and to some extent a mystic poet. He is a worshipper of beauty. So anything that is beautiful in nature, the young poet feels vibration of his own self in it.

Tagore is no doubt a mystic poet but his mysticism thrives on nature. His mysticism is an outcome of his firm faith in the natural principles of unity, peace and harmony. Nature for him is message of GOD and is also a medium for him to communicate with God. He does not denounce the world in the name of mysticism. He never complains of the futility of the nature rather embraces its beauty to derive his poetic principles. Though Tagore too endured enough pains but he doesn't embrace escapism. He accepts nature as evitable 'maya'. He is realistic in a sense that maya is inevitable ingredient to realize the supreme bliss. Thus renunciation of the world is not a separation from this material maya. The delights of the external world are not negated but are accepted by him as essential for self realization and a perception of eternal bliss. Such a harmony between internal (purified and honest emotions) and external (nature) leads to Tagore's mysticism.

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Education Effect on Rural Customers' Perception for Life Insurance Services

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Abstract

India as country is under-insured in the urban as well as the rural areas. Only 35 per cent of the 250 million insurable populations are insured. Saturation of markets in many developed economies has made the Indian market even more attractive for global insurance majors. The insurance sector in India has come to a position of very high potential and competitiveness in the market. After the entry of the foreign players the industry is seeing a lot of competition and thus improvement of the customer service in the industry.

The present study has revealed the Education Effect on Rural Customers' Perception for Life Insurance Services. It was found that insurance providers have to think beyond merely satisfying the regulatory requirement of selling their products in rural areas. It is responsibility of insurance companies to develop expertise and to provide customer with insurance knowledge as a penetration strategy for relatively untapped rural life insurance market.

Keywords: Rural, Life insurance, Education effect, ANOVA.

Introduction

The Indian rural market with its vast size and large demand base definitely offers huge opportunities to marketers. In India ever since independence, because of some obvious reasons marketing acquired a largely urban bias. Hence, there was no attempt on the part of marketers to know the rural customer and satisfy their needs. The indifferent attitude also due to the assumption that the rural people were poor and had no purchasing power to buy expensive branded products. Besides, lack of transportation and communication links and limited reach of mass media were also responsible for neglect of the rural customer by the business firms. To a larger extent it was common perception and belief amongst the insurance companies that it is expensive to do business in rural areas. Most companies were focusing only on meeting regulatory requirements from rural areas and don't see them as commercially viable rural business opportunities, waiting to be exploited. As, when the insurance sectors opened up to private player in the year 2000, the Insurance Regulatory and Development Authority

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(IRDA) had made it mandatory for the private insurance players to sell a percentage of new policies written in the rural sector. The initial guidelines had stipulated that 5 per cent of total policies sold by private sector insurance players had to be in the rural areas. Currently, life insurance companies are required to sell 7 per cent, 9 per cent, 12 per cent, 14 per cent and 16 per cent of their policies in rural areas in the first, second, third, fourth and fifth financial years, respectively. It also defined rural area as one with a total population of less than 5,000, with a population density of less than 400 per square kilometre, and more than 25 per cent of the male working population is engaged in agricultural pursuits.

However, Rural Marketing in India has gained importance in recent years due to the newer understanding of the concept of rural market. Vast nations such as China and India, which account for one third of population, have 70 per cent of their population living in rural areas.

India as country is under-insured in the urban as well as the rural areas. Only 35 per cent of the 250 million insurable populations are insured. Saturation of markets in many developed economies has made the Indian market even more attractive for global insurance majors. The insurance sector in India has come to a position of very high potential and competitiveness in the market. After the entry of the foreign players the industry is seeing a lot of competition and thus improvement of the customer service in the industry. Computerization of operations and updating of technology has become imperative in the current scenario. Foreign players are bringing in international best practices in service through use of latest technologies. However, the insurance agents still remain the main source through which insurance products are sold. The concept is very well established in the country like India but still the increasing use of other sources is imperative.

In India there about 30 insurance in life insurance business and non-life sector. Indians, have always seen life insurance as a tax saving device, are now suddenly turning to the private sector that are providing them new products and variety for their choice. To increase the penetration levels insurance companies will need to look at newer segments, especially the relatively untapped rural market rather than fighting for a share in the same pie in the urban markets. Marketers have started giving importance to the neglected rural markets because of the saturated urban markets and improved incomes and spending power of the rural customer.

Brief Review of Literature

The responsiveness of service quality provides maximum customer satisfaction to the life insurance industry in India. With the increase in the overall market size of the industry as well as increasing competition since 2000, different players of the industry should invest to improve customer relationship. This would not only involve implementation of CRM solution but also internal marketing of the CRM concept. (Goswami P., 2008)

Insurance schemes are more complex and because of various demand and supply side imperfections there are inherent problems in the insurance market and most of the perspective population is unaware of the pros and cons of the different schemes of insurance. (Chakravarthi, 2006)

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Naveen and Veerashekhappa (2009) found in their study that Micro-insurance is entirely a new financial product for the rural poor and accessibility of insurance is more skewed towards the income group of very poor and moderately poor households.

Ratna and Sarkar (2007) reported that rural population treat health as an important aspect and are interested in a health insurance scheme. They reported that High costs of hospitalization and surgery is not posing financial risks for poor households. They also reported that poor rural people are able to take judicious decisions regarding the composition of a health insurance benefit packages.

Objectives of the Study

1. To study the awareness level of rural customers for life insurance.
2. To suggest strategy to insurance provider for widening their base in rural areas.
3. To identify importance of service attributes perceived by rural customer.

Hypotheses

Following hypotheses stated for the study and tested at 5 per cent level of significance:

- H₀₍₁₎ Rural customers' service quality perception for life insurance services is independent of policies of life insurance companies
- H₀₍₂₎ Rural customers' service quality perception for life insurance services is independent of advertisements of life insurance companies
- H₀₍₃₎ Rural customers' service quality perception for life insurance services is independent of information of life insurance companies provided by agents
- H₀₍₄₎ Rural customers' service quality perception for life insurance services is independent of proximity of life insurance company's office
- H₀₍₅₎ Rural customers' service quality perception for life insurance services is independent of friends and relatives information regarding life insurance company
- H₀₍₆₎ Rural customers' service quality perception for life insurance services is independent of premium amount payment policy of life insurance companies
- H₀₍₇₎ Rural customers' service quality perception for life insurance services is independent of knowing agent of life insurance companies
- H₀₍₈₎ Rural customers' service quality perception for life insurance services is independent of premium collected at home by agent of life insurance companies
- H₀₍₉₎ Rural customers' service quality perception for life insurance services is independent of less paper work requirement by life insurance companies

$H_{(10)}$ Rural customers' service quality perception for life insurance services is independent of reliability of services provided by life insurance companies.

Research Methodology

Research Type: Descriptive in nature.

Sampling Method: Convenience non-probabilistic.

Sampling Units: Life Insurance policy holders of village Thanod and Birejhar and Anjora panchayat of Durg district in Chhattisgarh.

Sources of Data Collection

Secondary Data: Secondary data collected from periodicals, magazines, business newspapers, and from subject related books, industry and company profile of different insurance companies.

Primary Data: Primary data for the study collected through the self prepared questionnaire. Reliability of questionnaire checked with the help of Cronbach's alpha, its value found to be 0.741. Validity of questionnaire checked with the help of academic and industry experts in the field. Five-point Likert scale ranging from 5 (Strongly Agree) to 1 (Strongly Disagree) was used for measuring perception of respondents.

Tools for Data Analysis: Mean standard deviations and One-way Analysis of Variance (ANOVA)

Results and Findings

Table 1: Respondent Profile

Age	Frequency	Percentage
Less than 30 years	54	45.0
30 years and Above	66	55.0
Occupation		
Serviceman & Farmer	30	25.0
Farmer	70	58.3
Batiyar	20	16.7
Income		
Less than 20000	87	72.5
20000 and above	33	27.5
Education		
Under Graduate	40	33.3
Graduate	40	33.3
Illiterate	40	33.3

Demographic profile of respondents is exhibited in Table 1. It show that approximately 45 per cent of the respondents were below 30 years of age and 55 per cent were in the age group of 30 years and above. 58.3 per cent were farmers,

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25 per cent were having dual occupation as farmer and service and 16.7 per cent belonged to Batiyar (not owning the farmland but works on others land) category. Education wise respondents' were Graduate (33.3%), Higher Secondary (33.3%) and Illiterate (33.3%). Approximately 72 per cent respondents having income of less than Rs. 20,000 family income and 28 per cent were in income group of above Rs. 20,000.

Table 2: Education-wise Mean and Standard Deviation

		Mean	Std. Deviation
Different policy provided by life insurance companies.	Graduate	1.7250	1.01242
	Higher Secondary	1.7500	.77625
	Illiterate	1.7250	.78406
Advertisement given by the life insurance companies.	Graduate	2.2250	1.04973
	Higher Secondary	2.0250	1.02501
	Illiterate	1.8000	.88289
Information given by the agent.	Graduate	2.4250	1.35661
	Higher Secondary	2.0250	1.16548
	Illiterate	1.9000	.87119
Company's office at proximity.	Graduate	2.2000	1.06699
	Higher Secondary	2.3000	1.01779
	Illiterate	1.9250	.94428
Information given by friend and relative.	Graduate	2.7750	1.36790
	Higher Secondary	2.1500	1.09895
	Illiterate	2.1750	1.05945
Disposition of premium amount.	Graduate	1.9750	1.14326
	Higher Secondary	1.8750	1.06669
	Illiterate	2.0750	.91672

If I know the agent.	Graduate	2.4750	1.15442
	Higher Secondary	2.1750	1.00989
	Illiterate	2.2000	1.11401
If agents come to home for premium.	Graduate	2.4750	1.24009
	Higher Secondary	2.1750	1.10680
	Illiterate	2.2000	.96609
If there is less of paper work.	Graduate	2.2500	1.17124
	Higher Secondary	2.0750	.94428
	Illiterate	2.2500	1.05612
Those companies are most reliable.	Graduate	2.9000	1.35495
	Higher Secondary	2.8000	1.11401
	Illiterate	2.4250	.98417

Table 3: Education-wise Analysis of Variance (ANOVA)

	F value	Sig.
Different policy provided by life insurance companies.	.011	.989
Advertisement given by the life insurance companies.	1.850	.162
Information given by the agent.	2.280	.107
Company's office at proximity.	1.476	.233
Information given by friend and relative.	3.576	.031
Disposition of premium amount.	.365	.695
If I know the agent.	.925	.399
If agents come to home for premium.	.900	.410
If there is less of paper work.	.363	.697
Those companies are most reliable.	1.860	.160

It is exhibited in Table 3 that education-wise there is significant difference observed for rural customers' service quality perception for life insurance services is independent of friends and relatives information regarding life insurance company and hypothesis $H_{0(5)}$ is rejected. However, no significant difference observed for rural customers' service quality perception for other attributes of life insurance services and remaining hypotheses were not rejected.

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It was found in the study (Table 2) that respondents who were graduate have shown that they were highly influenced by friends and relatives information regarding life insurance company, whereas illiterate and higher secondary qualified respondents were moderately influenced.

Similarly Graduates were highly influenced by advertisement of the life insurance companies and information provided by agents, higher secondary qualified respondents were moderately influenced and illiterates were least influenced and also illiterate respondents were most consistent in their opinion among all categories.

Higher secondary qualified respondents have shown more concern for proximity of company's office than graduate and illiterates. Illiterates have shown more concerned for payment policy of premium amount.

Irrespective of education respondents desired for less paper work and payment collection facility at their doorstep. Graduate and Higher secondary qualified respondents have shown more concerned for reliability of insurance services.

Conclusion

Being intangible product insurance policies and knowledge is complex. And when it comes to serving the rural masses it swells the challenges to sell the insurance policies. Insurance providers have to think beyond merely satisfying the regulatory requirement of selling their products in rural areas. It is responsibility of insurance companies to develop expertise and to provide customer with insurance knowledge as a penetration strategy for relatively untapped rural life insurance market. Operating office should be in a position to advise the prospect as to what is the best choice for him in the given circumstance. This will help them in sustainable earning for a longer period of time.

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जनजातीय महिलाओं के विरुद्ध घरेलू हिंसा

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सारांश

रीवा जिला जनसंख्या की दृष्टि से सामान्य बहुल क्षेत्र वाला जिला है। यहाँ की कुल जनसंख्या में जनजातियों की संख्या 13 प्रतिशत के लगभग है। सामान्यतः यहाँ की जनजाति उच्च वर्ण के लोगों के सम्पर्क में ही रही है। इस जिले में कोल जनजाति बहुतायत संख्या में पायी जाती है। जिले की त्योंथर तहसील में कोल जनजातियों की संख्या सर्वाधिक है। मऊगंज एवं हनुमना तहसील में गोंड, बैगा जनजातियों की संख्या ज्यादा है।

जिले की जनजातीय महिलाएँ खेतिहर एवं घरेलू श्रमिक के रूप में ज्यादा क्रियाशील रहती हैं। समय के बदलते परिवेश के साथ अब ये खेतिहर श्रमिक या घरेलू श्रमिक के रूप में कार्य करने से कतराने लगी हैं। प्रमुखतः युवा लड़कियाँ अब अन्य श्रम जैसे निर्माण कार्य, शासन की विभिन्न योजनाओं में होने वाले कार्यों में संलग्न होने लगी हैं। यहाँ की जनजातीय महिलाएँ भी शोषण एवं अवमानना की शिकार होती हैं। अभी इनमें साक्षरता की स्थिति काफी दयनीय है जिसके कारण ये अपने अधिकारों को ठीक से जान नहीं पातीं। जनजातीय महिलाएँ घरेलू हिंसा की शिकार ज्यादा होती हैं, इसे वे अपनी नियति और रोजमर्रा की जिन्दगी मानती हैं।

प्रस्तुत शोध पत्र रीवा जिले की जनजातीय महिलाओं के विरुद्ध होने वाली घरेलू हिंसा पर केन्द्रित है जिसमें हिंसा के कारणों एवं परिस्थितियों पर चर्चा की जायेगी।

बीज शब्द : घरेलू हिंसा, मातृसत्तात्मक, पितृसत्तात्मक, शोषण, असमानता, सामाजिक वर्णनायें।

जनजातीय समाज उन्मुक्त और मौलिकता से ओत-प्रोत समाज है। छल-प्रपंच और दिखावे से दूर इनका अपना रूमानी संसार है। अपनी लय, गति और जीवन की सरलता को समेटे इनकी अपनी दुनिया है। आदिकालीन जनजातीय समाज सरल, सहज और जातीय प्रतिबद्धताओं में जकड़ा समाज था। सभ्य समाज से कोसों दूर रहने के प्रयास ने उन्हें अपनी प्रतिबद्धताओं तक सीमित कर दिया था, लेकिन समय की बदलती गति से वे मुक्त नहीं रह पाये। आजादी के बाद जनजातीय समाज की प्रतिबद्धता बदलने लगी, क्योंकि वे समाज की मुख्य धारा से जुड़ने की चाहत को रोक नहीं पाये। शासकीय योजनाओं, सामाजिक आंदोलनों और संवैधानिक सुरक्षा के नीतिगत प्रयासों ने उनके जीवन की दशा और दिशा दोनों बदल दी। विकासोन्मुखी प्रभावों ने उनकी सामाजिक संरचना के ताने-बाने को भी प्रभावित किया।

जनजातीय महिलाओं के विरुद्ध घरेलू हिंसा

जहाँ तक जनजातीय महिलाओं की स्थिति है, वह प्रारंभ में ही काफी दयनीय रही है। मातृ सत्तात्मक समाजों के कुछ अपवादों को छोड़ दिया जाये, तो बाकी जगह जनजातीय स्त्रियाँ शोषण, असमानता की परिधि में ही संघर्ष करती नज़र आती हैं, लेकिन एक बात तो थी कि वे सभ्य समाज की तरह उपेक्षित नहीं रहती थीं, बल्कि जनजातीय अर्थव्यवस्था की महत्वपूर्ण धूरी होती थी। आर्थिक संरचना की उपयोगी इकाई होने के बावजूद भी जनजातीय स्त्रियाँ अनेक तरह के विषेधों और वर्जनाओं में जकड़ी थीं। उनके अंदर पुरुषों के विरुद्ध प्रतिरोध करने का साहस नहीं था। अभावग्रस्त जिन्दगी और पुरुषों की वर्चस्वता ने उन्हें हाशिये पर कर रखा था, यही कारण था कि उनका शोषण उनके समाज से ज्यादा गैर-जनजातीय समाज के लोगों ने किया।

आदिवासी समाज में महिलाओं के विरुद्ध गंभीर अपराध की घटनायें बहुत कम देखने को मिलती हैं। हाँ, वे आदिवासी समाज की सामाजिक वर्जनाओं की शिकार जरूर होती हैं। आदिवासी संस्कृति में नारी के साथ पूर्ण न्याय एवं उनके लिये पूर्ण मानवतावादी सम्मान की झलक देखने को मिलती है (शाहू : 1995)¹ मारिया जनजाति (वेरियर एल्विन, 1991 : 51)² के अंदर-अपराध का कारण अल्कोहल, पारिवारिक झगड़े, यौन उन्माद, सम्पत्ति का विवाद आदि के रूप में पाया गया। वेरियर एल्विन ने बस्तर में आत्महत्या के कारणों पर भी प्रकाश डाला है। 245 घटनाओं में उन्होंने 52 बीमारी एवं 55 पति-पत्नी के झगड़े को कारण बताया है।³ जनजातियों में बदला लेने की भावनायें भी अपराध को जन्म देती हैं (फेंटन, 1941 : 134)⁴ चाहे वह पुरुष के द्वारा हो या स्त्रियों के द्वारा। वेरियर एल्विन ने अपने अध्ययन में मारिया स्त्रियों के विरुद्ध हुई हिंसा के व्यापक कारणों को स्पष्ट किया है, जिनमें स्त्री के प्रति शंका और उसका दूसरे व्यक्ति के साथ यौन संलग्नता प्रमुख कारण थे।⁵

मीणा जनजाति में भी महिलाओं के विरुद्ध अपराध संबंधी कई अध्ययन हुए हैं। भील जनजाति में अगर स्त्री और पुरुषों में तालमेल का अभाव होता है या पुरुष अपनी स्त्री से तलाक लेना चाहता है, तो वह अपने साफा को फाड़ता है और उस टुकड़े को अपनी स्त्री को देता है। पत्नी साफे के इस टुकड़े के साथ अपने सिर पर पानी से भरे हुए दो घड़े रखती है और अपनी इच्छानुसार किसी भी दिशा की ओर चल पड़ती है। जो व्यक्ति उसकी दिशा में आता है और उसके सिर से दोनों घड़ों को उतारता है वही उसका भावी पति होता है।⁶ इस प्रकार तलाक भी हुई स्त्री को 'जेहूर' अथवा 'निकाला' कहते हैं।

कई जनजातीय समाज में स्त्री को टोनही की उपाधि दी गयी और उसके विरुद्ध अपराध किया गया। 'संथाल' जनजाति की लड़कियों को जबरन काला जादू सीखने के लिये विवश किया जाता है। यह उनकी आत्मरक्षा के लिये है या कोई कुंठित सामाजिक परंपरा का एक भाग।

जनजातीय समाज एवं घरेलू हिंसा

घरेलू हिंसा एक सामाजिक मुद्दा है। इसकी परिधि में कुछ ऐसी बातें आती हैं जो सामाजिक परंपरा और प्रथा की दृष्टि से अलग हैं। वास्तव में घरेलू हिंसा में स्त्री के मौलिक अधिकारों का हनन होता है। इस हिंसा के कारण औरत की पहचान, प्रतिष्ठा, स्वतंत्रता व क्षमता सभी पर असर पड़ता है। (प्रज्ञा शर्मा, 2006 : 39)⁷ स्त्री की इच्छा के विरुद्ध सभी कार्य घरेलू हिंसा के दायरे में आते हैं, चाहे वह शारीरिक हो, मौखिक हो या सामाजिक हो। घरेलू हिंसा में परिवार और शगे-संबंधी सम्मिलित होते हैं जो निजता के साथ स्त्री से जुड़े होते हैं। अपने एक ओर अधिकारों की लड़ाई लड़ने वाली स्त्री आज भी घरेलू हिंसा की शिकार हो रही है पितृ-सत्तात्मक

समाज में घरेलू हिंसा ज्यादा दिखायी देती है क्योंकि वहाँ पुरुष का 'अहं' सर्वोपरि होता है। इस समाज में लड़के को ताकतवर और लड़की को कमजोर बनाने के षड्यंत्र का गोरख धंधा हजारों वर्षों से चला आ रहा है। आज के शिक्षित और गतिशील समाज में घरेलू हिंसा रुकी नहीं है, बल्कि बढ़ती ही जा रही है।

जहाँ तक जनजातीय समाज में घरेलू हिंसा का प्रश्न है वह काफी जटिल और भयावह है। जनजातीय स्त्रियाँ घरेलू हिंसा अधिनियम को न जानती हैं और न जानने के लिये उत्सुक ही हैं। उन्हें जब इस अधिनियम के बारे में बताया गया तो हँसते हुए कहती हैं कि एक दिन भी ऐसा नहीं जाता जब वे घरेलू हिंसा की शिकार न हुई हों, लेकिन यह सब उनके प्रथा, परंपरा और आपसी नॉकडाँक का एक हिस्सा है।

घरेलू हिंसा से संबंधित कई अध्ययन हुए हैं। सारे अध्ययनों में स्त्री की विवशता और कमजोरी को ही माना गया है। स्त्री जब अपने घर में ही सुरक्षित नहीं है तो बाहर उसकी सुरक्षा कैसे संभव है।⁸ स्ट्रास (1973: 50)⁹ का मानना है कि परिवार तो हिंसा का पालना है (Family as cradle of violence)। उनका मानना है कि विवाह के बाद पुरुष को विवाह लायसेंस के साथ मारपीट का लायसेंस भी मिल जाता है।

महिलाओं के विरुद्ध घरेलू हिंसा आज की नहीं सदियों की चली आ रही पुरानी घटना है। स्त्री को हमेशा कमजोर और पीड़ा पहुँचाने के योग्य समझा गया। इसीलिये उसका शोषण हुआ।¹⁰ दुनिया के दार्शनिक, लेखक, बुद्धिजीवियों का एक तबका भी स्त्री को सिर्फ उपभोग की वस्तु तक ही सीमित रखता है। शायद इसी नज़रिये ने स्त्री को कमजोर करने का षड्यंत्र रचा।

रीवा जिले में आदिवासियों के विरुद्ध अपराध

रीवा जिले में आदिवासियों की जनसंख्या सामान्य जातियों की जनसंख्या से बहुत कम है। जिले की कुल 23,65,109 जनसंख्या की तुलना में आदिवासी जनसंख्या 3,11,905 है, जिसमें पुरुष 1,61,696 एवं महिला 1,50,289 हैं।¹¹ रीवा जिले में 13 प्रतिशत के लगभग आदिवासी हैं। इस जिले की कोल जनजाति प्रारंभ से ही सभ्य समाज के सम्पर्क में रही इसलिये इस जाति में सामाजिक गतिशीलता सबसे ज्यादा देखने को मिलती है। कोल जनजाति सभ्य समाज के सम्पर्क में ज्यादा रही जबकि गोंड, बैगा, भील एवं अन्य आदिवासी जनजातीय बाहुल्य क्षेत्र को आदिवासी विकास परियोजना पिपराही योजना के अंतर्गत रखा गया है। इस परियोजना में मऊगंज एवं हनुमना विकास खण्ड के क्रमशः 22 एवं 27 कुल 49 गाँव सम्मिलित हैं।

प्रस्तुत अध्ययन इस परियोजना क्षेत्र के पाँच आदिवासी बाहुल्य गाँव, पिपराही, वीरादेई, जड़कुड़, नकवार, सरदमन गाँव पर आधारित है। इन गाँवों के 150 आदिवासी महिलाओं से साक्षात्कार अनुसूची के द्वारा घरेलू हिंसा के संबंध में तथ्यों को प्राप्त किया गया।

सारणी-क्रमांक 1

रीवा जिले में आदिवासियों के विरुद्ध अपराध

क्रमांक	अपराध की प्रवृत्ति	2011	2012	2013
1.	हत्या	03	Nil	01
2.	हत्या का प्रयास	0	01	01
3.	लूट	02	Nil	Nil

जनजातीय महिलाओं के विरुद्ध घरेलू हिंसा

4.	अपहरण	Nil	01	NIL
5.	बलात्कार	11	06	04
6.	सील भंग	06	06	07
7.	साधारण चोट	03	05	02

इस तरह हम देखते हैं कि जिले में आदिवासियों के विरुद्ध अपराध के मामले बहुत कम हैं। वास्तव में कई अपराध तो थाने तक पहुँच ही नहीं पाते हैं। डर और भय के कारण आदिवासी अपराध को सह लेते हैं, लेकिन थाने नहीं जाते। शायद यही कारण है कि गंभीर मामलों को छोड़कर अन्य अपराधों को सह जाते हैं।

सारणी-क्रमांक 2

अध्ययन क्षेत्र के गाँवों में आदिवासी संख्या

क्रमांक	गाँव	कुल जनसंख्या	पुरुष	स्त्री
1.	पिपराही	2087	1074	1013
2.	वीरादेई	2290	1161	1129
3.	जड़कुड़	2448	1251	1197
4.	नकवार	1480	738	742
5.	सरदमन	1588	797	791

इन पाँच आदिवासी बाहुल्य गाँवों में आदिवासियों की जनसंख्या 90 प्रतिशत से ऊपर है। इन गाँवों में लिंगीय अनुपात भी अच्छा है। इन गाँवों में निवास करने वाली कोल, गोंड एवं बैगा जनजाति की विवाहित स्त्री को ही इस अध्ययन में सम्मिलित किया गया है।

सारणी-क्रमांक 3

महिलाओं के प्रति अपराध का कारण

क्रमांक	अपराध का स्वरूप	कोल	गोंड	बैगा	योग 150
1.	रौब जमाना एवं गाली देना	42	28	30	100 (66%)
2.	चरित्र पर शक करना	38	15	18	61 (41%)
3.	परिवार के सदस्यों द्वारा उकसाने पर	12	13	09	34 (23%)
4.	शराब पीकर झगड़ा करना	18	20	13	51 (34%)

उपरोक्त विश्लेषण स्पष्ट करता है कि, कोल महिलायें घरेलू हिंसा की शिकार ज्यादा होती हैं, जबकि इनकी तुलना में गोंड एवं बैगा महिलाओं के विरुद्ध प्रताड़ना कम होती है। विश्लेषण में यह बात भी सामने आती है कि पुरुषों में अहं भाव हिंसा को प्रेरित करता है इसीलिये 66% महिलायें मारपीट एवं गाली-गलौज की शिकार होती हैं।

41% महिलाओं के चरित्र पर शक किया जाता है कि उसका संबंध किसी दूसरे के साथ है और वह इस शक के आधार पर हिंसा की शिकार होती है। 34% महिलाओं के पति या घर का दूसरा सदस्य शराब पीकर प्रताड़ित करता है। जबकि 23% महिलायें घर के किसी

सदस्य द्वारा उकसाने पर प्रताड़ित होती हैं। इन महिलाओं ने यह बताया कि उनकी सास या ननद उनके पति को उकसाती हैं इसलिये वे प्रताड़ित करते हैं।

जनजातीय स्त्रियाँ पुरुषों की तरह ही काम-धंधों में क्रियाशील रहती हैं। वे परिवार की आर्थिक धुरी की अहं भाग होती हैं, इसके बावजूद भी प्रताड़ना का शिकार बनती हैं।

सारणी-क्रमांक 4
अपराध करने वाले लोग

क्रमांक	अपराध का स्वरूप	कोल	गोंड	बैगा	योग 150
1.	पति	28	12	18	58 (39%)
2.	सास/ससुर	07	02	06	15 (10%)
3.	रिश्तेदार	03	x	02	05 (3%)
4.	अन्य	05	02	03	10 (7%)

आदिवासी महिलाओं के विरुद्ध सबसे ज्यादा घरेलू हिंसा उनके पति ही करते हैं। 39% महिलाओं ने उत्तर दिया कि सबसे ज्यादा वे अपने पति से ही प्रताड़ित होती हैं। इस प्रताड़ना के बावजूद भी वे पति के खिलाफ कुछ कहना नहीं चाहतीं। 10% महिलायें सास/ससुर से प्रताड़ित होती हैं जबकि 3% रिश्तेदारों से। रिश्तेदारों में ननद, देवर या जेठानी होती हैं। 7% महिलाओं को प्रताड़ित करने वाले अन्य लोग होते हैं। अन्य लोगों के संबंध में इन महिलाओं का कहना है कि ठेकेदार गाँव का मुखिया या अन्य सरहंग होते हैं जिनकी नीयत उनके प्रति अच्छी नहीं होती है।

सारणी-क्रमांक 5
अपराध की दर

क्रमांक	अपराध की दर	कोल	गोंड	बैगा	योग
1.	प्रतिदिन	11	07	06	24 (16%)
2.	कभी-कभी	09	06	08	23 (15.3%)
3.	कुछ निश्चित नहीं	18	12	19	49 (32.6%)

आदिवासी महिलाओं से जब अपराध की दर के संबंध में बातचीत की गयी तो पता चला 16 प्रतिशत महिलायें प्रतिदिन घरेलू हिंसा की शिकार होती हैं, जबकि 15 प्रतिशत महिलाओं के विरुद्ध कभी-कभी हिंसा होती है। इन सबसे हटकर 32.6 प्रतिशत महिलाओं ने बताया कि उनके साथ अपमान या हिंसा कुछ निश्चित नहीं होता। मौका देखते ही हिंसा का प्रतिरूप सामने आ जाता है। ऐसा नहीं कि ये आदिवासी महिलायें हिंसा का विरोध नहीं करतीं? वे प्रतिकार भी करती हैं। इस प्रतिकार में कभी-कभी पुरुष वर्ग और भी उग्र होकर हिंसा करता है।

सारणी-क्रमांक 6
प्रताड़ना का प्रतिकार

क्रमांक	अपराध की दर	कोल	गोंड	बैगा	योग
1.	हिंसा का प्रतिकार करती हैं	12	14	12	38 (25%)
2.	नहीं करती हैं	30	24	26	83 (53%)
3.	उत्तर नहीं दिया	08	12	12	32 (22%)

जनजातीय महिलाओं के विरुद्ध घरेलू हिंसा

आदिवासी महिलायें जितनी सौम्य और सहज होती हैं, उतनी ही निर्भीक और कठोर। 25 प्रतिशत महिलाओं का कहना है कि जब उनके खिलाफ हिंसा या अवमानना होती है तो वे इसका विरोध भी करती हैं। कभी-कभी यह विरोध काफी उग्र भी हो जाता है। 53 प्रतिशत महिलाओं का कहना है कि वे प्रतिकार नहीं करतीं, चुपचाप सह लेती हैं, लेकिन घर के बाहर का कोई सदस्य उनकी अवमानना करे तो उसका विरोध करने का वे साहस जुटाती हैं। इन महिलाओं में 22 प्रतिशत ऐसी भी थीं जिन्होंने कोई उत्तर नहीं दिया।

सारणी-क्रमांक 7
प्रतिकार का तरीका

क्रमांक	प्रतिकार का तरीका	कोल	गोंड	बैगा	योग
1.	गाली-गलौज करके	06	07	04	17 (45%)
2.	गाली के साथ मारपीट करके	03	05	03	11 (29%)
3.	शोर मचाकर पड़ोसियों को बुलाकर	03	02	05	10 (26%)

आदिवासी महिलायें अपने ऊपर हुई घरेलू हिंसा का विरोध करती हैं। उपरोक्त विश्लेषण में 45 प्रतिशत महिलायें कहती हैं कि वे हिंसा के विरोध के रूप में गाली-गलौज करती हैं। 29 प्रतिशत महिलायें तो अपशब्दों के प्रयोग के साथ प्रतिउत्तर में मारपीट भी करती हैं। 26 प्रतिशत महिलाओं के साथ जब हिंसा होती है तो वे शोर मचाती हैं, पड़ोसियों को बुलाती हैं।

जनजातीय महिलायें निर्भीकता के साथ अपना उत्तर देती हैं। उत्तरदाताओं ने यह बताया कि मारपीट या अन्य प्रतिकार करने के बाद कुछ दिनों तक माहौल शांत रहता है।

सारणी- क्रमांक 8

हिंसा की जानकारी देने का विवरण

क्रमांक	प्रारंभिक जानकारी दी	कोल	गोंड	बैगा	योग
1.	माता-पिता	05	07	06	18 (47%)
2.	पड़ोसी	03	02	03	08 (21%)
3.	रिश्तेदार	02	Nil	02	06 (16%)
4.	पुलिस	Nil	Nil	Nil	Nil
5.	किसी को नहीं	02	03	01	06 (16%)

उपरोक्त विश्लेषण से यह स्पष्ट होता है कि अधिकांशतः आदिवासी महिलायें अपने ऊपर हुई हिंसा को छुपाती नहीं हैं। वे उसे अपने रिश्तेदार/पड़ोसी आदि को बताती भी हैं। इसके पीछे मंशा यही है कि हो सकता है कि हिंसा करने वाले को लोग समझाइश दें और भविष्य में वह उसकी पुनरावृत्ति न करें।

47 प्रतिशत उत्तरदाताओं ने जबाब दिया कि वे अपने ऊपर हुई हिंसा को अपने माँ-बाप को बताती हैं, कभी-कभी उनके माँ-बाप लड़ाई करने भी पहुँच जाते हैं और अनावश्यक तनाव उत्पन्न होता है। 21 प्रतिशत महिलायें अपने ऊपर हुई हिंसा को पड़ोसी के साथ भी शेयर करती

हैं। वे अपने ऊपर हुई हिंसा की सूचना पुलिस या अन्य अधिकारी को नहीं देतीं। 16 प्रतिशत ऐसी भी महिलायें मिलीं जो हिंसा को चुपचाप सह लेती हैं किसी के साथ उसे बांटती नहीं हैं।

निष्कर्ष एवं सुझाव

आदिवासी जीवन अल्हड़ और विमुक्त जीवन होता है। ये छल, कपट और असामाजिक प्रपंचों से दूर रहते हैं। आदिवासी महिलाओं की दुनिया भी सरल और सौम्यता की दुनिया होती है। इसी सरलता के कारण वे शोषण और अवमानना की शिकार होती हैं। आदिवासी महिलाओं का शोषण सामंतवादी प्रवृत्तियों ने ज्यादा किया। उनके परिवार के सदस्यों द्वारा किये जाने वाले दुर्यवहार को वो एक नियति मानती हैं, लेकिन बाहरी व्यक्तियों के द्वारा होने वाला शोषण अमानवीय और अव्यावहारिक है। आदिवासी महिलायें घरेलू हिंसा अधिनियम को नहीं जानतीं, रोजमर्रा के जीवन में होने वाली अवमानना को अपने जीवन का एक हिस्सा समझती हैं। उनके लिये पति या परिवार के किसी सदस्य द्वारा की जाने वाली हिंसा को वे उतनी खतरनाक नहीं मानतीं।

अध्ययन के विश्लेषणों से ज्ञात होता है कि आदिवासी महिलायें भी सजग और जागरूक हो गयी हैं। वे अब अपने ऊपर होने वाले अत्याचार को सहती नहीं हैं बल्कि मुखर होकर प्रतिकार करने का हौसला रखती हैं। यह जज्बा और नई चेतना निश्चित ही आदिवासी महिलाओं के जीवन को नई ऊर्जा और गति देने में समर्थ होगा।

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समाज में नृत्य का बदलता स्वरूप : एक समाजशास्त्रीय विश्लेषण

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सारांश

भावनाओं की अभिव्यक्ति के कई साधन हैं। व्यक्ति जिन्हें अपने-अपने तरीके से व्यक्त करता है। कभी बोलकर, गाकर और कभी नृत्य के माध्यम से। इन सबमें नृत्य ही एक ऐसा माध्यम है, जिसमें भावनाओं की सशक्त प्रस्तुति अपनी आंगिक भाव आंगिकाओं द्वारा की जाती है। आरंभिक मानव ने अपनी सहज क्रियाएँ, प्रतिक्रियाएँ, प्रकृति से संबंध, अनुकरण, अपनी जिज्ञासाओं की पूर्ति, नये प्रयोग, नई खोज और नई सोच जैसी प्रक्रियाओं से स्वयं को विकास की परम्परा से जोड़ा। अपनी कल्पना और सृजनात्मक शक्ति से ही नृत्य प्रकृति से समाज में एक मूर्त रूप ले सका। भले ही पूर्व में उसकी शारीरिक क्रियाएँ संतुलित नहीं थीं पर धीरे-धीरे सतत् प्रयोग से स्पष्टता विकसित होती गई।

अपने मन के भावों को समझाने के लिए, ध्वनि और आंगिक क्रियाएँ धीरे-धीरे संशोधित होकर एक नये रूप में बदलती और निखरती गई। संप्रेषणीयता का इससे अच्छा और क्या रूप हो सकता था। अपनी प्रारंभिक अवस्था से निकलकर नृत्य नियमबद्ध और कलात्मकता की ओर चला तब इसका सशक्त शास्त्रीय रूप विकसित हुआ जो राजकीय घरानों में प्रदर्शित हुआ। प्राचीन काल से ही विभिन्न अवसरों पर नृत्य के आयोजन होते रहे हैं। पहले यह केवल कुछ खास वर्ग तक ही सीमित था। राजमहल, रजवाड़ों अथवा राजघरानों में नर्तक एवं नर्तकियाँ हुआ करती थीं, जो सभासदों और राजा के मनोरंजन हेतु नृत्य किया करते थे। जिसके प्रमाण हमें तत्कालीन शिलालेखों और पुरातात्विक सामग्री में मिलते हैं। तब नृत्य सार्वजनिक रूप से मान्य और प्रतिष्ठित नहीं था। नृत्य में संलग्न लोगों के लिये 'नचनियाँ' शब्द का प्रयोग किया जाता था। प्रस्तुत शोध आलेख में नृत्य के संबंध में प्राप्त सामग्री के आधार पर मानव-शास्त्रीय तथा समाजशास्त्रीय अध्ययनों का विश्लेषण कर नृत्य को सामाजिक परिप्रेक्ष्य में देखने का प्रयास किया है।

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भूमिका

नृत्य स्व एवं भावनाओं की सशक्त अभिव्यक्ति है, जो चेहरे और शरीर, दोनों के भौतिक तालमेल से संपादित होने वाली गतिविधि है। पिछली कई शताब्दियों से आदिमानव से लेकर आधुनिक मनुष्य तक नृत्य विभिन्न संस्कृतियों का हिस्सा रहा है, जहाँ कि नृत्य व्यक्ति की विभिन्न

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इच्छाओं और प्रेरणाओं की पूर्ति के माध्यम से व्यक्त होता था। भले ही उसके रूप अलग-अलग रहे। रंगमहल, राजमहल रजवाड़े और राजघराने तथा गणिकाघरों में नाचने वाली नर्तकियाँ होती थीं जो अपनी नृत्यकला और भावभंगिमाओं से सभासदों का मनोरंजन किया करती थीं। समय के साथ नृत्य लोक जीवन के साथ शास्त्रीय रूप में राज जीवन में परिलक्षित होने लगा। नर्तकों द्वारा किया गया नृत्य मनोरंजन की दृष्टि से ज्यादा प्रयोग होने लगा। तब एक समय ऐसा भी आया जब नृत्य कला के प्रति लोगों की मनोवृत्ति बदलने लगी। नर्तकों को 'नचनियाँ' और उनके द्वारा किये गये नृत्य को हेय दृष्टि से देखा जाने लगा। नृत्य के इस तरह स्थान बदलने से अनादर का भाव उत्पन्न हुआ। सामान्यजन के बीच नृत्य के प्रति कोई उदारभाव नहीं था। तब से लेकर आज तक नृत्य को प्रतिष्ठित रूप प्राप्त करने में एक लंबी और संघर्षपूर्ण यात्रा करनी पड़ी है।

अभिव्यक्ति की प्रेरणा का सबसे अहम् स्रोत प्रकृति है। जिसने निश्चित रूप से मनुष्य को प्रेरित किया। मनुष्य ने उन भावनाओं को व्यक्त करने के लिए कुछ आंगिक चेष्टायें कीं, जो कालांतर में स्वाभाविक लयात्मक प्रस्तुति का रूप लेने लगीं। कंठ से निकली अस्पष्ट ध्वनियाँ चुटकी, ताली तथा अन्य आंगिक क्रियाओं के रूप में नृत्य का एक आकार लेने लगा। अनेक आदिम समुदायों के अध्ययनों के अवलोकन से इस बात की पुष्टि होती है। आदिवासियों के द्वारा की गई प्रस्तुति प्रकृति और मनुष्य के आपसी और लयात्मक संबंधों की झलक है। मानव ने अपनी प्रारंभिक अवस्था में यह अनुभव किया होगा कि हर्ष-उल्लास, आशा-निराशा की स्थिति में आंगिक क्रियाएँ भिन्न-भिन्न होती हैं। कंकड़ों, लकड़ी के टुकड़ों, कोई खोखली लकड़ी से जो आवाजें निकलीं उसने मनुष्य को इच्छा और वस्तु के बीच तारतम्यता बनाने में मदद की।

इस तरह आरंभिक मानव ने अपनी सहज क्रियाएँ, प्रतिक्रियाएँ, प्रकृति से संबंध, अनुकरण, अपनी जिज्ञासाओं की पूर्ति, नये प्रयोग, नई खोज और नई सोच जैसी प्रक्रियाओं से स्वयं को विकास की परम्परा से जोड़ा। अपनी कल्पना और सृजनात्मक शक्ति से ही नृत्य प्रकृति से जुड़कर समाज में एक मूर्त रूप ले सका। भले ही पूर्व में उसकी शारीरिक क्रियाएँ संतुलित नहीं थीं पर धीरे-धीरे सतत प्रयोग से स्पष्टता विकसित होती गई।

आदिवासी समुदायों में नृत्य का प्रदर्शन जरूर किया जाता रहा। हम देखते हैं कि कई आदिवासी नृत्य कुछ समानताएँ लिए हुए मिलते हैं। अलग-अलग क्षेत्रों में यह अपने-अपने अंदाज में किया जाता था। अपने मन के भावों को समझाने के लिए, ध्वनि और आंगिक क्रियाएँ धीरे-धीरे संशोधित होकर एक नये रूप में बदलती और निखरती गई। संप्रेषणीयता का इससे अच्छा और क्या रूप हो सकता था।

आज के परिप्रेक्ष्य में नृत्य हमारी जिंदगी में विभिन्न भावनाओं की अभिव्यक्ति का लोकप्रिय माध्यम है जिसका उदाहरण हमारी सांस्कृतिक विशेषताओं, समाचार पत्र पत्रिकाओं, रंगमंच तथा दूर दर्शन पर प्रसारित होने वाले कार्यक्रम हैं। डेविड ने अपने आलेख 'How Does Dance Benefit Society' Dec. 14, 2010 में लिखा है— "मैं यह विश्वास करता हूँ कि लोगों को नृत्य में भाग लेने से जो पहचान और प्रेरणा मिलती है, इससे उनका जीवन वास्तव में सकारात्मक लाभों से भर जाता है।" इस तरह नृत्य समाज का ही एक उत्पाद है जो कि हमारे मन में चल रहे विचार, इच्छाओं और प्रेरणाओं का मूर्त रूप है। कभी यह कलात्मक रूप से, कभी कोई चिकित्सकीय कार्य अथवा कभी कोई रीति-रिवाज हो, के प्रदर्शन हेतु नृत्य का आयोजन किया

समाज में नृत्य का बदलता स्वरूप : एक समाजशास्त्रीय विश्लेषण

जाता रहा है। यही नहीं कभी सुरक्षात्मक वाल्व के रूप में प्रयोग किया जाता था। ऐसे कई प्रसंग और विवरण मिलते हैं जिनसे पता चलता है कि नृत्य अपने शास्त्रीय और व्यावहारिक रूप से संपादित होता रहा है। आदिम समाजों में तो नृत्य उनके धार्मिक क्रिया-कलापों के लिए किया जाता रहा चाहे वह देवता को प्रसन्न करना हो, बलि देना हो या जादू-टोना हो, हर अवसर पर आदिवासी नृत्य करते रहे हैं।

अध्ययन का उद्देश्य

प्रस्तुत शोध पत्र के माध्यम से नृत्य से संबंधित प्राप्त द्वैतीयक सामग्री का विश्लेषण किया गया है जिसके अंतर्गत मानवशास्त्र एवं समाजशास्त्र में किये गये कुछ अध्ययनों के माध्यम से नृत्य की बदलती भूमिका पर प्रकाश डाला गया है।

ऐतिहासिक परिप्रेक्ष्य

बहुत हद तक विस्तृत अर्थों में नृत्य को लेकर मानवशास्त्र में नृत्य संबंधी-दस्तावेज और प्रलेख मिलते हैं, जबकि समाजशास्त्र में नृत्य या इस विधा से संबंधित साक्ष्य नहीं मिलते। विभिन्न संस्कृतियों का अध्ययन करने वाले विज्ञान सांस्कृतिक मानवशास्त्र में इस संबंध में कुछ अध्ययन किये गये हैं, जिन्हें निम्न आयामों में देखा व समझा जा सकता है—

1. नृत्य समाज की ही उपज है।
2. सामाजिक नियन्त्रण का एक अंग है जिसके लिए एक विशेष शैक्षिक तकनीक की जरूरत होती है।
3. नृत्य क्रिया के दौरान भावनाओं का एक अच्छा प्रबंधन होता है।
4. व्यक्तिगत रूप से नृत्य और संगीत की शक्ति एक नैतिक ताकत के रूप में क्रिया करती है।
5. एकता को पैदा करने की शक्ति के रूप में नृत्य निर्धारित होता है।
6. नृत्य का एक आयाम एक संचित प्रक्रिया है।
7. नृत्य के माध्यम से एक चढ़ाव प्रतिस्पर्धा प्रदर्शित होती है
8. नृत्य एक धार्मिक प्रक्रिया है जो समुदाय के अस्तित्व के साथ प्रदर्शित होती है।

इस तरह नृत्य पूरे समाज में विशिष्ट भावनाओं को प्रदर्शित करने का माध्यम है। चूँकि मानवशास्त्र में इस विधा को लेकर काफी अध्ययन किये गये हैं, जिनका वर्णन यहाँ प्रासंगिक है।

मानवशास्त्रियों द्वारा किये गये अध्ययन

प्राचीन काल से ही नृत्य हमारी जिंदगी की विभिन्न भावनाओं की अभिव्यक्ति का माध्यम रहा है, जो समय-समय पर विभिन्न प्रकार की गतिविधियों के प्रदर्शन से व्यक्त किया जाता रहा। जिसका प्रमाण हमें प्राप्त साहित्यिक एवं पुरातात्विक सामग्री के अवलोकन से मिलता है। मानवशास्त्र में इस विधा के उद्गम और प्रकार्य को लेकर काफी अध्ययन मिलते हैं।

सांस्कृतिक मानवशास्त्र में विभिन्न प्राचीन संस्कृतियों का अध्ययन किया जाता है। अध्ययनकर्ताओं का मानना था कि भाषा और संस्कृति के विकास के साथ नृत्य के प्रति समाज की मनोवृत्ति में परिवर्तन आया और वह धीरे-धीरे समाज में स्वीकृत होने लगा। प्रकार्यवादी विचारकों ने

अपने अध्ययनों में इसे सामाजिक नियन्त्रण के अंग के रूप स्वीकार किया, जिसके लिए एक विशेष प्रकार के शैक्षिक तकनीक की जरूरत होती है।

जॉन लॉक (1693) में पाया कि 'नृत्य का प्रभाव मात्र कोई गतिपूर्ण कार्य नहीं बल्कि एक वैचारिकता है, जो बच्चों में आत्मविश्वास पैदा करती है।' दक्षिण अफ्रीका के वेड्डा लोगों में 1 से 4 साल के अभ्यास से नृत्य में पारंगतता आती है ताकि सीखे हुए व्यवहार को संचारित किया जा सके।

इवान्स प्रिचर्ड और मारग्रेड मीड ने दक्षिण अफ्रीका के एज़ेंडे बीयर (Azande Bear Dance) नृत्य और समोआ बच्चों के औपचारिक नृत्य के अध्ययन के आधार पर सुझाव दिया कि नृत्य उनके ऊपर बड़ों द्वारा की गई अधीनता को व्यक्त करने का साधन है।

हार्टविंग और ग्लकमैन ने अपने अध्ययन में पाया कि नृत्य तनाव से मुक्ति दिलाता है। यह अध्ययन दक्षिण अफ्रीका में 'स्वाजी फल महोत्सव', जो कि तनाव मुक्ति के प्रतीक नृत्य के रूप में किया जाता है, पर आधारित है।

रेडक्लिफ ब्राउन ने अपने अंडमान आइलैंड के विश्लेषण में पाया कि वैयक्तिक रूप से नृत्य और संगीत की शक्ति एक नैतिक ताकत है अंडमान के आदिवासी नर्तकों और गायकों के प्रदर्शन से ऐसा प्रतीत होता है, जैसे वे एक शरीर हों। उनके शरीरों का एक दूसरे के साथ संयोजन ही इस तरह संपादित होता था। इस बात की पुष्टि हरबर्ट स्पेन्सर के समाज में कला के अचेतन संचार की प्रासंगिकता के विश्लेषण से होती है।

समाजशास्त्रियों द्वारा किये गये अध्ययन

कुछ अध्ययन समाजशास्त्रियों द्वारा भी किये गये। नृत्य समाज की ही एक ऐसी उपज है जो सामाजिक गतिविधियों और क्रियाकलापों से जन्म लेता है। नृत्य एकता की शक्ति पैदा करने का साधन है जो समुदाय की विभिन्न गतिविधियों के संपादन में व्यक्त होता है, चाहे वह धार्मिक कृत्य हो, कोई उत्सव, कोई अलौकिक जादुई क्रिया हो। शरीर और मन का सधा हुआ संतुलन संयुक्त क्रिया के रूप में प्रदर्शित किया जाता है। इन अवसरों पर नृत्य कभी सुरक्षा वाल्व के रूप में, कभी चिकित्सकीय समाधान और कभी कला की विधा के रूप में समाज में परिलक्षित होने लगा।

नृत्य के दौरान आपसी अन्तःक्रिया द्वारा भावनाओं का प्रबंधन किया जाता है। 1857 में हरबर्ट स्पेन्सर ने अपने "संगीत के उद्भव और प्रकार्य" के सिद्धान्त में भावनाओं के संचरण और सहानुभूति पैदा करने में संगीत के महत्व को स्पष्ट किया। उन्होंने पाया कि "समाज नृत्य से प्राप्त सामग्री और खुशी के शिक्षण से खुद को आन्तरिकृत कर लेता है।" इस तरह नृत्य और समाज के आपसी संबंध 'एक दूसरे के पूरक रहे हैं।' नृत्य समाज के विकास के साथ चित्रों और कहानियों के माध्यम से संदेश प्रेषण का भी माध्यम बना।

दुर्खीम ने अपने आदिम समुदाय (वारन्नुआ) के अध्ययन में पाया कि धार्मिक गतिविधियों के संपादन में, कुल देवता को रिझाने के लिए आदिवासी नृत्य करते हैं। यह नृत्य का एक दृष्टिकोण था जो पुनर्जन्म के सिद्धान्त पर आधारित था। उन्होंने आस्ट्रेलियन आदिवासियों की एक सामूहिक नृत्य प्रस्तुति में पाया कि उनके द्वारा किया गया नृत्य देखने से ऐसा लगता था मानों बिजली सी निकल रही हो।

समाज में नृत्य का बदलता स्वरूप : एक समाजशास्त्रीय विश्लेषण

विक्टर टर्नर (1969) ने अपने अध्ययन में पाया कि किसी भी समाज में जहाँ सामाजिक असमानता संरचनात्मक स्तर पर विद्यमान हो, मानवों के बीच पदों के आधार पर दृष्टिगत होती है, उन्होंने नृत्य को एक रीति-रिवाज संबंधी कृत्य के रूप में स्वीकार किया।

उपरोक्त दोनों ही दृष्टिकोण से किये गये अध्ययनों के अवलोकन से यह बात स्पष्ट होती है कि नृत्य एक सामाजिक गतिविधि है जो लयात्मक रूप से प्रस्तुत की जाती है। समाज और सामाजिक संबंधों का अध्ययन करने वाले विज्ञान समाजशास्त्र में यह विधा उपेक्षित विषय रही। जिसका कारण नृत्य को लेकर समाज में व्याप्त सोच थी, जो नृत्य को अच्छा व सम्मानजनक कृत्य नहीं मानती थी।

नृत्य करने वाली नचनियाँ, गणिकाएँ अथवा वेश्यायें अथवा मदिरों की दासी ही नाच करती हैं। इसलिए यह सभ्य समाज में वर्जित एवं अमान्य था और आम राय भी, कि नाचना कोई अच्छा काम नहीं है।

आधुनिक परिप्रेक्ष्य

आज इस विधा को लेकर काफी सकारात्मक परिवर्तन हुए हैं। नृत्य भले ही पहले कुछ भी रहा हो, आज कला की एक सशक्त विधा है जिसे अब आजीविका के रूप में स्वीकृत किया जाने लगा है। समय के साथ ऐसे कला उद्धारक और कलाकार सामने आये जिन्होंने इस कला को न केवल सम्मान दिलाया बल्कि व्यवस्थित किया। परिणामस्वरूप विभिन्न सार्वजनिक स्थलों पर नृत्य का प्रदर्शन होने लगा है।

आधुनिक तकनीकी साधनों, विद्युत प्रकाश की नवीनतम तकनीक से किये गये प्रयोगों से नृत्य एक नये कलेवर में निखरा है। इसकी बढ़ती लोकप्रियता नृत्य के शास्त्रीय, लोक और मिश्रित रूपों में दिखने लगी है। एक ओर शास्त्रीय नृत्य, लोक नृत्य ऊँचाइयों को छू रहे हैं वहीं दूसरी ओर हमारी रुचियों और मूल्यों में गिरावट ने नृत्य को भी अपनी चपेट में ले लिया है।

अतः आज आवश्यकता है कि कहीं हम उस मानसिकता के दौर में न पहुँच जायें कि नृत्य अच्छा सम्मानित कार्य नहीं है। इससे बचने के लिए इसके कलात्मक रूप को जन-जन तक पहुँचाया जाय तभी हम अपनी सामाजिक रुचि को परिष्कृत कर, इसे विकासोन्मुखी बना सकेंगे।

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हिंदी माध्यम शिक्षा में नवाचार की आवश्यकता : एक मूल्यांकन

हेमलता बोरकर वासनिक

समाजशास्त्र अध्ययनशाला, पं. रविशंकर शुक्ल विश्वविद्यालय, रायपुर (छ.ग.)

सारांश:

भारत में शिक्षा प्रदान करने का माध्यम मुख्य रूप से हिन्दी है। विशेष रूप से हिन्दी भाषी क्षेत्रों में अंग्रेजी को लेकर विद्यार्थियों में ज्ञानार्जन के प्रति सीखने की क्षमता में कमी दिखाई देती है। इसका मुख्य कारण शिक्षा के क्षेत्र में प्रदत्त जानकारी का हिन्दी भाषा में उपलब्ध होना है। ग्रामीण अंचलों में अंग्रेजी भाषा में सीखने की बात बहुत दूर है क्योंकि वहाँ शिक्षा और पाठ्य सामग्री हिन्दी में ज्यादा उपलब्ध है। शिक्षक भी भाषा को लेकर कहीं न कहीं अपने दायरे में कैद होते हैं। जिससे अंग्रेजी भाषा से उनका परिचय हो नहीं पाता है और यह भाषा भी उन्हें कठिन मालूम होती है। ऐसी स्थिति में आज के परिवेश में यह आवश्यक है कि हिन्दी माध्यम शिक्षा पद्धति में कुछ सुधार हो और कुछ अंग्रेजी भाषा में सरलता और सहजता हो ताकि सुदूर क्षेत्रों में विद्यार्थियों में शिक्षण पद्धति के प्रति जागरूकता पैदा हो। प्रस्तुत शोध पत्र इन्हीं बिन्दुओं पर केन्द्रित है।

बीज शब्द—नवाचार, उच्च शिक्षा, व्यावसायिक शिक्षा

भूमिका

भारत में उच्च शिक्षा के क्षेत्र में शिक्षा का प्राथमिक माध्यम अंग्रेजी है, इसके लिए कई कारण हैं। किताबें अंग्रेजी में लिखी गई हैं और कंप्यूटर में अंग्रेजी का उपयोग होता है। कोई व्यक्ति यदि उच्च शिक्षा विदेश से प्राप्त करना चाहते हैं तो अंग्रेजी का ज्ञान होना अनिवार्य हो जाता है। यहाँ के अधिकतर छात्र अपनी प्राथमिक और सेकेंडरी शिक्षा अपनी मातृभाषा (या हिन्दी) में प्राप्त करते हैं। छत्तीसगढ़ की 31% आबादी जनजातीय है तथा 76% आबादी ग्रामीण क्षेत्रों में निवास करती है। 98% स्कूलों में शिक्षा का माध्यम हिन्दी है। ऐसे में हिन्दी माध्यम के छात्रों को उच्च शिक्षा प्राप्त करने के लिए सर्वप्रथम भाषा की चुनौती का सामना करना पड़ता है।

अध्ययन का उद्देश्य

प्रस्तुत अध्ययन में हिन्दी माध्यम के छात्रों को उच्च शिक्षा प्राप्त करने की चुनौतियों का सामना करने के नए तरीकों पर विचार गया है।

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हिन्दी माध्यम शिक्षा में नवाचार की आवश्यकता : एक मूल्यांकन

शोध प्रारूप

विवरणात्मक शोध प्रारूप पर आधारित है। सम्पूर्ण अध्ययन द्वितीयक तथ्यों (सेकेंडरी डेटा) पर आधारित है।

अध्ययन पद्धति

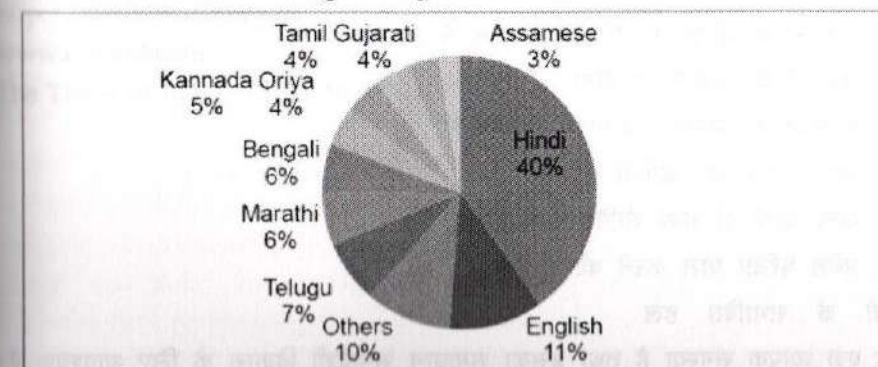
प्रस्तुत अध्ययन पूर्णतः द्वितीयक तथ्यों पर आधारित है।

स्कूलों में शिक्षा का माध्यम : एक आंकलन— निम्न तालिका भारत में स्कूलों में शिक्षा के लिए प्रयुक्त माध्यम के अनुसार स्कूलों की संख्या की जानकारी देता है —

तालिका क्रमांक 1 माध्यम के अनुसार स्कूलों की संख्या (भारत)

Medium of Instruction	Number of Schools						
	All	Rural	Urban	Primary	Upper Primary	Secondary	Higher Secondary
Hindi	397,884	334,832	63,052	324,301	60,206	8,268	5,109
English	110,424	81,904	28,520	77,319	20,722	7,215	5,168
Others	98,763	83,011	15,752	79,395	15,596	2,951	821
Telugu	72,011	64,557	7,454	57,838	13,728	416	29
Marathi	62,839	54,821	8,018	39,070	23,385	351	33
Bengali	56,708	49,247	7,461	55,141	799	494	274
Kannada	45,804	38,842	6,962	23,926	21,050	732	96
Oriya	42,979	40,104	2,875	36,292	6,423	247	17
Tamil	39,992	30,746	9,246	32,420	6,491	645	436
Gujarati	36,609	29,948	6,661	7,238	29,339	16	16
Assamese	23,975	22,927	1,048	23,186	751	30	8

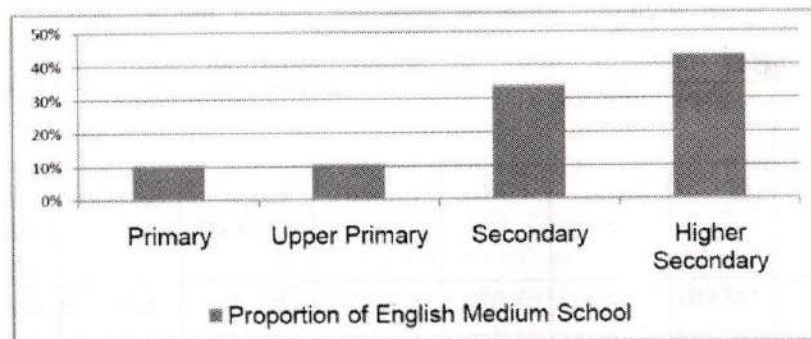
चित्र 1 माध्यम की भाषा के अनुसार स्कूलों का प्रतिशत



तालिका क्रमांक 2 माध्यम के अनुसार स्कूलों की संख्या (छत्तीसगढ़)

Medium of Instruction	Number of Schools						
	All	Rural	Urban	Primary	Upper Primary	Secondary	Higher Secondary
Hindi	25,174	23,045	2,129	23,840	899	193	242
Other	463	135	328	166	122	45	130

ओरख 2 स्तर के अनुसार अंग्रेजी स्कूलों का प्रतिशत



इस तालिका से दो बातें समझ में आती हैं:-

1. ओरख 1 के अनुसार, अपेक्षा के अनुरूप हिंदी भारत के 40% स्कूलों में इस्तेमाल की जा रही है। तालिका क्रमांक 2 के अनुसार की 98% स्कूलों में शिक्षा का माध्यम हिंदी है।
2. ओरख 2 के अनुसार, एक महत्वपूर्ण पहलू जिस पर ध्यान दिया जाना चाहिए वह यह है कि जैसे-जैसे हम प्राथमिक से सेकेंडरी स्कूलों की ओर जाते हैं अंग्रेजी माध्यम स्कूलों की संख्या में लगातार वृद्धि दिखाई देती है। उच्च शिक्षा की ओर जाने से यह प्रवृत्ति और अधिक दिखाई देती है। उदाहरणस्वरूप, व्यावसायिक शिक्षा अंग्रेजी माध्यम में ही उपलब्ध है। प्रतिष्ठित IIT और IIM संस्थानों में शिक्षा अंग्रेजी में ही होती है।

हिंदी माध्यम के छात्रों को उच्च शिक्षा प्राप्त करने में चुनौतियाँ

1. कक्षाओं के दौरान विषयों को समझने में असमर्थता
2. पुस्तकों का अंग्रेजी में होना
3. कंप्यूटर का उपयोग करने में असमर्थता
4. रिसर्च पेपर्स का अंग्रेजी में होना
5. अन्य छात्रों के साथ सीमित सहभागिता
6. प्रवेश परीक्षा पास करने की चुनौती

चुनौतियों के संभावित हल

यह एक व्यापक समस्या है तथा इसका समाधान समावेशी विकास के लिए आवश्यक है। इस मुद्दे से निपटने का एकमात्र पारंपरिक तरीका छात्रों को अंग्रेजी भाषा की अलग से शिक्षा

हिंदी माध्यम शिक्षा में नवाचार की आवश्यकता : एक मूल्यांकन

देने का है। लेखक के व्यक्तिगत अनुभव में ऐसे कोर्सेज का प्रभाव सिर्फ सतही होता है। बहुत से छात्र पहले भी अंग्रेजी को एक विषय की तरह स्कूल में पढ़ चुके होते हैं परन्तु इससे उनकी अंग्रेजी की समझ विकसित नहीं हो पाती। ऐसे में एक और कोर्स करा देने से सुधार की अपेक्षा करना ठीक नहीं है।

बहुत सारे हल दिखाई देते हैं जिनका कार्यान्वयन चुनौतीपूर्ण है

1. हिंदी किताबों की गुणवत्ता के मापदंड तैयार किये जाने चाहिए। पारिभाषिक शब्दों के लिए अंग्रेजी भाषा का उपयोग सुनिश्चित किया जाना चाहिए।
2. अंग्रेजी के किताबों का हिंदी अनुवादित संस्करण उपलब्ध होना चाहिए।
3. जहाँ जरूरी हो वहाँ लेक्चर विडियो रिकार्डेड होने चाहिए। इन रिकार्डेड वीडियो को हिंदी सब-टाइटल के साथ छात्रों को उपलब्ध किया जा सकता है।

आज का युग सूचना तकनीकी में क्रांति का युग है। तकनीक में हुए विकास ने नए दरवाजे खोले हैं जिनका उपयोग इन समाधान के कार्यान्वयन में हो सकता है।

1. क्राउड सोर्सिंग (crowd sourcing): अंग्रेजी और हिंदी, दोनों भाषा के जानकार बहुत से लोग हैं। इन्हें संगठित कर अनुवाद का बहुत सा काम किया जा सकता है। विकिपीडिया क्राउड सोर्सिंग का एक अति उत्तम उदाहरण है।
2. बहुत सारे ऑनलाइन टूल्स उपलब्ध हैं जो अंग्रेजी वाक्यों का हिंदी अनुवाद करा सकते हैं। उदाहरणस्वरूप, गूगल ट्रांसलेटर।

निष्कर्ष

इस विषय पर और अधिक शोध होने की आवश्यकता है। बहुत से सुझाये गए उपाय उपन्यासों और फिल्मों में पहले ही उपयोग में लाये जा रहे हैं। शिक्षा के क्षेत्र में इसका उपयोग काफी महत्वपूर्ण साबित हो सकता है।

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वेदवती मंडावी

राजनीति शास्त्र विभाग, शासकीय विश्वनाथ यादव तामस्कर स्वशासी स्नातकोत्तर महाविद्यालय, दुर्ग (छ.ग.)

सारांश

ग्लोबल वार्मिंग की समस्या संपूर्ण विश्व के लिये चिंतनीय है। इसका सूत्रपात औद्योगिक क्रांति के साथ हुआ है। औद्योगिक क्रांति से विकास की गति में तेजी आयी तब दूसरी ओर ग्लोबल वार्मिंग एवं उससे उत्पन्न समस्या मुंह बाये करके खड़ी है। फलस्वरूप दुनियाँ को चिंतित होना स्वाभाविक है। ग्लोबल वार्मिंग के कारण तापमान में वृद्धि हो रही है, जलवायु परिवर्तन होने से कई रोगों का जन्म हो रहा है। महासागरों में जल स्तर बढ़ रहा है, जो मानव जीवन के लिये खतरा है। इसकी रोकथाम हेतु विश्व स्तरीय प्रयास जारी हैं।

इस कड़ी में 2009 में स्वीडन की राजधानी कोपेन हेगेन में दस दिवसीय सम्मेलन का आयोजन किया गया था। इस सम्मेलन में 193 देशों के राष्ट्राध्यक्ष, प्रतिनिधि, विदेश मंत्री एवं पत्रकार सम्मिलित हुए। इस सम्मेलन की खास विशेषता यह थी कि सम्मेलन में पर्यावरण हितैषियों द्वारा रैली निकाली गई थी, जिसने हिंसक रूप धारण कर लिया। जिससे 1000 लोग गिरफ्तार एवं रिहा हुए। इसी प्रकार सं. रा. संघ द्वारा 2050 तक 50 प्रतिशत कार्बन डाई ऑक्साइड की मात्रा कम करने की बात कही गई। पूर्व सम्मेलनों की भाँति इस सम्मेलन में भी गरीब एवं अमीर देशों में अंतर्द्विरोध दिखाई दिया। विकासशील देशों की ओर से ब्राजील, चीन एवं भारत की महत्वपूर्ण भूमिका थी। इस सम्मेलन में दीर्घकालीन लक्ष्य, बाध्यकारी समझौता, उत्सर्जन में कटौती, गरीब देशों को वित्तीय सहायता, वन संरक्षण, कार्बन बाजार का जिक्र किया गया।

बीज शब्द: ग्लोबल वार्मिंग, जलवायु परिवर्तन, ग्रीन हाउस, हरितकोष, वैश्विक क्रांति

उद्देश्य—इस शोधलेख का प्रमुख उद्देश्य ग्लोबल वार्मिंग की समस्या से विश्व के सभी नागरिकों को अवगत कराना है। सभी चिंतित देशों द्वारा किये गये उपायों के संबंध में की गई चर्चा को सामने लाना है।

ग्लोबल वार्मिंग का सूत्रपात 18वीं सदी में औद्योगिक क्रांति के साथ हुआ। सर्वप्रथम इंग्लैण्ड से प्रारंभ होकर 19वीं सदी के पूर्वार्द्ध में यूरोपीय देशों के साथ-साथ अमेरिका तक तेजी से फैल गया। औद्योगीकरण की प्रक्रिया में जीवाश्म ईंधन के लगातार उपयोग से वातावरण में कार्बन डाईऑक्साइड की मात्रा में निरंतर वृद्धि हो रही है। परिणामस्वरूप पृथ्वी का तापमान भी बढ़ रहा है। वैज्ञानिकों के अनुसार पिछली शताब्दी की तुलना में इस शताब्दी में 15 डिग्री सेल्सियस

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तक वृद्धि हुई है। जिसके कारण ध्रुवीय प्रदेशों से ग्लेशियर पिघलकर महासागरों के जलस्तर में बढ़ोतरी देखी जा रही है।

अतः ग्लोबल वार्मिंग पर विश्व के सभी देशों का चिंतित होना स्वाभाविक है। एक ओर, सभी देशों का प्रमुख मुद्दा राष्ट्रहित एवं विकास है, तो दूसरी ओर विकास बनाम पर्यावरण प्रदूषण एवं ग्लोबल वार्मिंग की समस्या मुंह बाये करके खड़ी है, जो विश्व के सभी देशों को चिंतित होने पर मजबूर कर रही है। आज विश्व के समक्ष मानव जीवन के अस्तित्व के लिये सबसे बड़ी चुनौती है। यही कारण है कि विश्व के सभी छोटे-बड़े एवं जागरूक राष्ट्र इस चुनौती का सामना करने के लिये निरंतर प्रयासरत है। जिसमें इस सदी का महत्वपूर्ण सम्मेलन 2009 में स्वीडन की राजधानी कोपेन हेगेन में दस दिन का निरंतर चिंतन-मनन किया।

ग्लोबल वार्मिंग तापमान में निरंतर वृद्धि होना ही ग्लोबल वार्मिंग कहलाता है। वायुमंडल में मिथेन, कार्बन डाई ऑक्साइड, सल्फर डाई ऑक्साइड, कार्बन मोनो ऑक्साइड आदि गैसों के कारण सूर्य से आने वाली ऊष्मा को अवशोषित तो कर लेता है, किन्तु उसका उत्सर्जन नहीं हो पाता। परिणामस्वरूप पृथ्वी पर तापमान औसत से अधिक बढ़ता जा रहा है। जिससे जलवायु में विभिन्नता बढ़ रही है। ग्लेशियर पिघलने के अलावा सूखा, बाढ़, असमय वर्षा एवं तापमान में वृद्धि हो रही है, इसे ही ग्लोबल वार्मिंग कहते हैं। वैश्विक ताप वृद्धि पर भारत ही नहीं पूरी दुनियाँ चिंतित है। इसकी रोकथाम हेतु समय-समय पर दुनियाँ भर के नेता एकत्रित होकर अपने-अपने सुझाव एवं समस्याओं से अंतर्राष्ट्रीय जगत को अवगत कराने का प्रयास किया। सर्वप्रथम 1949 में लेक सेक्स सम्मेलन, 1972 स्कार होम, 1977 अर्जेन्टाइना, 1982 नैरोबी और 1992 रिओ घोषणा पत्र महत्वपूर्ण प्रयास हैं। ग्लोबल वार्मिंग पर क्योटो संधि 1997 में एकरूपता बनाने की कोशिश की गई। इसके बाद 2002 एवं 2005 में क्योटो ताप संधि पर सहमति व्यक्ति की गई। इस सहमति को बरकरार रखने हेतु डेनमार्क की राजधानी कोपेन हेगेन में जो विचार-विमर्श हुआ, उसका चित्रण करने की कोशिश इस लेख का मुख्य उद्देश्य है।

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यह सम्मेलन डेनमार्क की राजधानी कोपेन हेगेन में 8 दिसंबर से 18 दिसंबर 2009 को सम्पन्न हुआ। सम्मेलन में 193 देशों के मुखिया अधिकारी, पर्यावरणविद् और पत्रकार जिनकी संख्या लगभग 1500 थी, इस समस्या पर चर्चा हेतु एकत्रित हुए। धरती को बचाने का यह अचूक मौका था। भूमि को रेगिस्तान से बचाने एवं समुद्र के बढ़ते जल स्तर पर संयुक्त राष्ट्र संघ की चेतावनी पर यह सम्मेलन आयोजित किया गया था। इस सम्मेलन में बराक ओबामा (अमेरिकी राष्ट्रपति), डॉ. मनमोहन सिंह (भारतीय प्रधानमंत्री) एवं चीनी नेता बान जियाबाओ उपस्थित हुए। इसके अतिरिक्त इस सम्मेलन में निम्नलिखित राष्ट्राध्यक्षों एवं प्रतिनिधियों की महत्वपूर्ण भूमिका रही। ईवोडिबुओं — संयुक्त राष्ट्र संघ के कार्यकारी सचिव हैं, उनकी प्रमुख मंसा कोपेन हेगेन बाध्यकारी संधि पर सहमति था।

एडमिलीलैण्ड—तत्कालीन ब्रिटिश जलवायु परिवर्तन मंत्री जो इस सम्मेलन की सफलता हेतु भरसक प्रयास किया। वे चाहते थे कि इस कार्यक्रम हेतु गरीब देशों को दी जाने वाली मदद पक्की हो। केविनकोण्डसन मॉलद्वीप एवं अन्य 42 गैर द्वीपीय राज्यों का प्रतिनिधित्व किया। उन्होंने बोली जलवायु सम्मेलन में अमेरिका को चुनौती दी थी कि 'तुम किसी कारण दुनियाँ का नेतृत्व नहीं कर सकते, तो हमारे रास्ते से हट जाओ'। जयराम रमेश भारत के वन एवं पर्यावरण मंत्री

का कहना था कि – कटौती का विरोध करेंगे, क्योंकि जलवायु संकट को उन्होंने विकसित राष्ट्रों की देन माना। जोनाथन कोपेन हेगेन में अमेरिका के मुख्य वार्ताकार थे, उनके अनुसार जलवायु संकट को देखते हुए अमेरिका ने लचीला रुख अपनाने की मंसा जाहिर की हैं। उपरोक्त किरदारों के अलावा ब्रिटेन के मुख्य वार्ताकार जेनथाम्पसन, चीन के राष्ट्रपति हुआजिन्ताओ, भारतीय दूत श्यामशरण, आस्ट्रेलियाई मंत्री पेनीवांग, डेनमार्क के जलवायु मंत्री कोनीहेदमोर की प्रमुख भूमिका रही।

कोपेन हेगेन सम्मेलन के दूसरे दिन मसौदे को लेकर विकसित एवं विकासशील देशों के बीच मतभेद का संकट दिखाई दिया। इस सम्मेलन में विगत दो वर्षों से चर्चा चल रही थी। उन सभी बातों को मसौदे में नहीं रखा गया था, अतः सभी विकासशील देश एकजुट होकर रखे गये मसौदे का विरोध करने लगे। मसौदे में विकासशील देशों से कहा गया कि, वे 2050 तक प्रति व्यक्ति 1.44 टन कार्बन से अधिक उत्सर्जन नहीं करेंगे जबकि विकसित राष्ट्रों के लिये 2.67 टन रहेगी। इस संबंध में रूस ने कहा कि क्योटो प्रोटोकाल के स्थान पर ऐसी किसी भी संधि से संतुष्ट नहीं है। श्रीशमा नोवा ने कहा कि विकासशील देशों ने गैस उत्सर्जन घटाने वाली किसी बाध्यकारी जिम्मेदारी को पूरी तरह खारिज कर दिया। वे विकसित राष्ट्रों से यह माँग कर रहे हैं, कि वर्ष 2012 तक ग्रीन हाउस गैसों के उत्सर्जन कम करने के लिये अतिरिक्त जिम्मेदारी लें। चीन ने 2020 तक ग्रीन हाउस गैसों के उत्सर्जन में कमी करने के लिये अमेरिका, यूरोपीय संघ एवं जापान के लक्ष्यों की आलोचना की। चीन ग्लोबल वार्मिंग का असर कम करने के लिये 25 से 40 प्रतिशत कमी लाने पर बल दिया। जापान ने 28 प्रतिशत कटौती को असंभव शर्त बताया।

जलवायु परिवर्तन सम्मेलन के चौथे दिन अफ्रीकी देशों ने क्योटो प्रोटोकाल से कहीं ज्यादा सख्त कदम उठाने की माँग की। इसके लिये कानून बनाना आवश्यक बताया, किन्तु भारत एवं चीन जैसे बड़े विकासशील राष्ट्रों ने इसका विरोध किया। क्योंकि उन्हें डर था कि इसका असर उनके विकास पर पड़ेगा। इस समस्या के समाधान हेतु यूरोपीय संघ विकास कोष में 76.5 करोड़ योगदान की योजना बनाई गई। अति कमजोर राष्ट्रों द्वारा टुकालु के नेतृत्व में सम्मेलन में बहिर्गमन करके अवरुद्ध करने का प्रयास किया। जिसके कारण कुछ घंटों तक कार्यवाही रोकनी पड़ी। द्वीपीय देश का मानना है कि ग्लोबल वार्मिंग के कारण समुद्र का जलस्तर बढ़ने से सबसे अधिक खतरे में वे लोग हैं। अतः इससे (कोपेन हेगेन) के बाहर भी अतिमहत्वपूर्ण समझौता चाहते हैं। भारत एवं अन्य उभरती अर्थव्यवस्था ब्राजील, दक्षिण अफ्रीका एवं चीन द्वारा जलवायु परिवर्तन के कुप्रभाव से दुनियाँ को बचाने के लिये तैयार किये गये मसौदे इस सम्मेलन में चर्चा का मुख्य मुद्दा बन गया था।

जी-77 देशों और चीन ने अमेरिका के राष्ट्रपति बराक ओबामा से कहा कि वह नोबेल शांति पुरस्कार विजेता के तौर पर जलवायु परिवर्तन के मुद्दे से जुड़ें। मानव को इस संकट से बचाने के लिये धन मुहैया कराने के अलावा इस मुहिम में अपने देश का नेतृत्व करें। जी-77 देशों के अध्यक्ष एल.एस. दपांग के अनुसार, “संयुक्त राष्ट्र संघ के बिना धरती को बचाने के लिये उचित और बराबरी का समझौता नहीं हो सकता। अमेरिका मानवता के लिये इस खतरे से निपटने में भागीदारी नहीं करेगा तो वैश्विक शांति एवं सुरक्षा पर खतरा है।”

रूस ने 2020 तक 25 प्रतिशत तक उत्सर्जन में कटौती करने तथा अगले 3 वर्षों में 4.4 अरब डॉलर का वैश्विक कोष बनाने की बात कही। ब्रिटेन सबसे अधिक 88.3 करोड़ डॉलर

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राशि मुहैया करायेगा, किन्तु जर्मनी सर्वाधिक धनराशि उपलब्ध कराने की बात कही। धन के मामले और कटौती की बात पर विकासशील एवं विकसित राष्ट्रों के मध्य खाई बढ़ती नजर आ रही थी। जी-77 के प्रवक्ता एवं सूडान के लुमुंबा स्टेनिसलाडी एपींग ने धनी देशों पर आरोप लगाया कि, वे इस समस्या को कम आंक रहे हैं। धनी देश धन उपलब्ध कराने में रुचि नहीं रख रहे हैं।

कोपेन हेगेन के सम्मेलन में चीन एवं अमेरिका के बीच तकरार और तेज हो गई। चीन ने आक्रामक रुख अपनाते हुए कहा कि चीन के शीर्ष दूत अमेरिकी हरितकोष चीन को नहीं देने की बयान देकर गैर-जिम्मेदारी का परिचय दिया है। उन्होंने यह भी बताया कि विकसित देश चाहते हैं कि उत्सर्जन कटौती के दीर्घकालिक लक्ष्यों पर गरीब देश दस्तखत करेंगे। तब उन्हें अधिक अंशकालीन वित्तीय सहायता मिलेगी। बराक ओबामा के विशेष दूत टाडसर्न ने कहा कि सार्वजनिक निधि को चीन में जाते नहीं देख सकते। तब चीन ने कहा कि, यह बयानबाजी उस वैश्विक सहमति के साथ विश्वासघात है, जिसमें गरीब देशों को अमीर देशों की ओर से सहायता का जिफ्र किया है। हम कोई चंदा नहीं माँग रहे हैं। अतः अमेरिका का बयान गैरजिम्मेदाराना है।

आर्कटिक क्षेत्र के रहने वाले इनुइट समुदाय के लोगों ने जलवायु परिवर्तन के प्रति अनुकूलन के लिये आर्थिक मदद की माँग की। इस क्षेत्र में जलवायु का असर दिन प्रतिदिन दिखाई दे रहा है। बढ़ते तापक्रम के कारण शिकार के अनुकूल मौसम बहुत कम दिनों का हो रहा है। ग्रीनलैण्ड, कनाडा, अलास्का और रूस में फैले इस समुदाय के लोगों का जीवन मुख्यतः शिकार पर निर्भर है। अतः बाँस को सुरक्षित रखने के वैकल्पिक रास्ते तलाशने होंगे। इसी प्रकार अलास्का में अपरदन से गांव समुद्र में विलीन हो रहे हैं। जलवायु परिवर्तन सम्मेलन के दौरान ग्लोबल वार्मिंग रैली का आयोजन भी किया गया था। किन्तु रैली के अचानक हिंसक हो जाने के कारण 1000 लोगों को गिरफ्तार किया गया। कड़कड़ाती सर्दी में भी पर्यावरण हितैषी सड़कों पर उतर आये थे। इन प्रदर्शनकारियों में भारतीय अभिनेता राहुल बोस, डेनिश मॉडल हेलेना क्रिसटेसेन भी मौजूद थी। भारत ने भी इस बात को स्पष्ट कर दिया, कि उसने क्योटो प्रोटोकाल में किसी प्रकार के संशोधन का विरोध किया और अगले दो दशकों में कार्बन डाईऑक्साइड को कम करेगा। आस्ट्रेलिया ने भी अपनी बात रखते हुए कहा कि इस अभियान में सभी देशों को सम्मिलित होना चाहिये। संयुक्त राष्ट्र संघ के मसौदे के अनुसार 2050 तक 50 प्रतिशत तक कटौती करेंगे।

सम्मेलन के सातवें दिन संयुक्त राष्ट्र संघ की एक रिपोर्ट के अनुसार आगामी 2090 तक तापमान में बढ़ोतरी और ग्लेशियर के पिघलने का क्रम जारी रहा तो एसिड की मात्रा 50 गुना बढ़ जायेगी और कई देशों के समुद्र में समा जाने का खतरा बढ़ जायेगा। सम्मेलन में प्रस्तुत रिपोर्ट के अनुसार 1979 से वर्तमान तक आर्कटिक क्षेत्र की बर्फ में कमी पायी गई।

इस दिन जी-77 देशों ने बैठक का बहिष्कार किया। इनका कहना है कि अमीर देशों के अडिगल रवैये के चलते बैठक में बाधा आयी है, क्योंकि विकसित राष्ट्र कार्बन उत्सर्जन में और अधिक कटौती करने तैयार नहीं हैं। भारत के तत्कालीन पर्यावरण मंत्री जयराम रमेश ने साफ कहा कि भारत अपने मुख्य सिद्धांतों पर समझौता नहीं करेगी। उन्होंने कहा कि वार्ता का नतीजा संयुक्त राष्ट्र संघ के जलवायु परिवर्तन संबंधी प्रारूप के भीतर क्योटो प्रोटोकॉल के मुताबिक और बाली एक्शन प्लान के अनुपालन में होना चाहिये। श्री जयराम रमेश ने जिन सिद्धांतों पर समझौता नहीं करने की बात कही है, वह निम्नांकित हैं:

1. उत्सर्जन में कमी के लिये कानूनी बाध्यता नहीं होगी।
2. शीर्षवर्ष (पीकिंग इअर) स्वीकार नहीं।
3. उत्सर्जन घटाने के लिये घरेलू वित्तीय प्रयासों को अन्तर्राष्ट्रीय समीक्षा के दायरे में नहीं लाना।

सम्मेलन के आठवें दिन यूरोपीय संघ गैसों के उत्सर्जन में 30 प्रतिशत तक कटौती पर सहमत हो गये, किन्तु इस सम्मेलन में समझौते की दिशा में कोई खास परिवर्तन दिखाई नहीं दिया। धनी देश भारत और चीन को दोषी ठहरा रहे थे, जबकि एक अन्तर्राष्ट्रीय स्वयंसेवी संस्था डब्ल्यू.डब्ल्यू.एफ. के वरिष्ठ अधिकारी ने कहा कि धनी देशों में ग्रीन हाउस गैसों के उत्सर्जन में कमी लाने की इच्छा का अभाव विनाशकारी है। यूरोपीय देशों की 30 प्रतिशत कटौती करने पर कार्सटेंशन ने कहा कि धनी देश गरीब देशों को जलवायु प्रभावों को रोकने के लिये 10 अरब डॉलर देगा, जबकि विश्व बैंक द्वारा 75 अरब डॉलर सालाना है।

संयुक्त राष्ट्र संघ के एक अध्ययन के अनुसार 245 आपदाओं में 224 आपदायें खराब मौसम के कारण थीं। इस अध्ययन में इन आपदाओं से निपटने के लिए एक मजबूत समझौते को रेखांकित किया गया है। इस दौरान इन आपदाओं से 5.80 करोड़ लोगों में से 5.50 करोड़ लोग मौसम संबंधी आपदाओं से प्रभावित थे। कार्यक्रम के WMO एवं CRED द्वारा संयुक्त अध्ययन के अनुसार उपरोक्त आपदाओं के लिये एशिया को जिम्मेदार ठहराया। अमेरिकी अंतरिक्ष एजेंसी नासा द्वारा दी गई रिपोर्ट के अनुसार ग्रीन हाउस गैसों की तरह कालिख और धूल हिमालय का तापमान बढ़ा रहा है। नासा के ग्लोडर्डस्पेस लाइट सेंटर में वायुमंडलीय विज्ञान के प्रमुख विलियम लेउ के अनुसार कालिख की वजह से पूरे दक्षिण एशिया में लकड़ी एवं गोबर से जलने वाले चूल्हों की वजह से दक्षिण से चलने वाली हवा तिब्बत के पठार में कालिख और धूल जमा होकर तापमान में वृद्धि कर रहे हैं। तापमान के कारण ग्लेशियर पिघल रहा है जिससे 1.3 अरब लोग प्रभावित हो रहे हैं। इस बहस पर फ्रांस एवं अमेरिका ने तापमान में कमी करने हेतु अपील की तथा अमीर देशों द्वारा गरीब देशों की मदद करने की बात कही। इस प्रकार सम्मेलन में प्रतिदिन आरोप-प्रत्यारोप का दौर चलता रहा।

सम्मेलन के अंतिम दूसरे दिन उस समय गतिरोध पैदा हो गया जब मेजबान देश द्वारा गरीब देशों के अनुरोध को अनदेखी करते हुए अपने राजनीतिक घोषणा पत्र पर जोर दिया। डेमनार्क के प्रधानमंत्री लार्सलोकके रासमुस्सेन ने विकासशील देशों के किसी भी पर्यावरण मंत्री को राजनीतिक घोषणा पत्र का मसौदा दिखाने से इंकार कर दिया। घोषणा पत्र में राष्ट्राध्यक्षों के समक्ष प्रस्तुत किये जाने पर बल दिया। भारतीय पर्यावरण मंत्री ने उचित नहीं माना। जापान जलवायु परिवर्तन से लड़ने के लिये सहमत हुआ और 15 अरब डॉलर देने की घोषणा की। अमेरिका विदेश मंत्री हेनरी क्लिंटन ने कहा कि उनका देश 2020 तक कार्बन उत्सर्जन में कमी लाने हेतु गरीब देशों को 100 अरब डॉलर की मदद करेगा। चीन ने विदेश मंत्री हिलेरी क्लिंटन की घोषणा का स्वागत किया, कि उनका देश अमेरिका की चीनी कार्बन उत्सर्जन निगरानी की माँग पर समझौता कर सकता है। संयुक्त राष्ट्रसंघ के महासचिव बॉन की मून ने कहा कि कोपेन हेगेन में जलवायु परिवर्तन हेतु समझौते को अमली जामा पहनाने के लिये विश्व नेताओं से अपील की। यहाँ उपस्थित विश्व के राष्ट्राध्यक्ष समझौता नहीं करेंगे तो कौन करेगा। अब आपसी समझ, सहमति और साहस की जरूरत है हमारा नैतिक दायित्व बनता है कि हम भविष्य के लिये कदम उठावें।

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कोपेन हेगेन मसौदे की मुख्य बातें निम्न हैं:-

1. दीर्घकालीन लक्ष्य:-विज्ञान के मुताबिक वैश्विक उत्सर्जन में बड़े पैमाने पर कटौती आवश्यक है और यह कटौती वैश्विक तापमान में दो डिग्री सेल्सियस से कम की बढ़ोतरी को ध्यान में रखकर किया जाना चाहिये।
2. कानूनी तौर पर बाध्य समझौता:-कानूनी रूप से अगले वर्ष तक के लिये बाध्यकारी जलवायु परिवर्तन से जुड़े समझौते के संबंध में इसमें पहले तैयार किये गये मसौदे का जिक्र समझौते के अंतिम प्रारूप से गायब था। जिसकी वजह से यूरोपीय संघ के अलावा प्रशांत महासागर में स्थित देश तुवालु चिंतित थे।
3. गरीब देश को वित्तीय मदद:-मसौदे के अनुसार इस समझौते को लागू करने के लिये विकसित देश विकासशील देशों को पर्याप्त वित्तीय और तकनीक मदद मुहैया कराते रहेंगे। इसमें कम विकसित देश, छोटे महाद्वीप वाले विकासशील देशों और अफ्रीकी देशों को खास तौर पर मदद करने का जिक्र किया गया है। मदद राशि 100 अरब डॉलर की राशि सार्वजनिक एवं निजी, बहुपक्षीय सहित कई स्त्रोतों से एकत्रित की जायेगी।
4. उत्सर्जन में कटौती:-मसौदे में कार्बन उत्सर्जन संबंधी दो संलग्नक हैं। एक में विकसित देशों के लिये कटौती का लक्ष्य निर्धारित किया गया है, जबकि दूसरे में बड़े विकासशील देशों के लिए स्वैच्छिक प्रतिबद्धता का जिक्र है। ये कानूनी रूप से बाध्यकारी नहीं है।
5. निगरानी अथवा जांच:-चीन ने कार्बन उत्सर्जन में कटौती पर अन्तर्राष्ट्रीय नियंत्रण को मानने से इंकार कर दिया है। इसलिये विकासशील देशों पर निगरानी या कटौती से जुड़ा भाग मसौदे में सबसे बड़ा है।
6. वन संरक्षण:-मसौदे में घने जंगलों से होने वाले ग्रीन हाउस उत्सर्जन में कटौती के लिये इनकी कटाई करने की जरूरत पर भी बल प्रयोग एवं विकसित राष्ट्रों द्वारा धन उपलब्ध कराया जायेगा।
7. कार्बन बाजार:-मसौदे में कार्बन बाजार का जिक्र किया गया है। मसौदे के अनुसार कार्बन के स्टोर में कटौती को बढ़ावा देने के लिये, उसकी कीमतों में कटौती बढ़ाने के लिये, बाजार का इस्तेमाल करने का फैसला लिया गया। इसके अलावा कई तरह के दृष्टिकोणों का फैसला करना कठोर सौदेबाजी और मंत्रणायें की गईं। तत्पश्चात् अंततः कोपेन हेगेन समझौता पारित हो गया। इस निर्णय से संयुक्त राष्ट्र संघ के तत्कालीन महासचिव बॉन की मून ने कहा कि अब भारत और अन्य देशों द्वारा तैयार समझौता लागू होगा। महासचिव के अनुसार चार प्रमुख तत्व वैश्विक तापमान वृद्धि के उत्सर्जन में कटौती की सभी देशों की प्रतिबद्धता, वनों की कटाई को रोकने एवं इस संकट से निपटने के लिये गरीब देशों की मदद के लिये कोष जुटाना है।

इस प्रकार विभिन्न रुकावटें एवं वाद-विवाद के बीच कोपेन हेगेन सम्मेलन न्यूनतम समझौते को साथ समाप्त हुआ। संयुक्त राष्ट्र संघ के महासचिव बॉन की मून ने कहा कि अंततः सभी देशों ने एक समझौते को अपनी मंजूरी दी। कोपेन हेगेन सम्मेलन संभवतः सभी देशों की आशा के अनुरूप नहीं है, लेकिन ग्लोबल वार्मिंग समस्या के समाधान हेतु एक महत्वपूर्ण प्रयास की शुरुआत है।

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छत्तीसगढ़ में पर्यटन की प्रसम्भाव्यता

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सारांश

यद्यपि राष्ट्रीय स्तर पर पर्यटन मानचित्रों में छत्तीसगढ़ को विशिष्ट स्थान नहीं मिल पाया है तथापि यहां पर ऐतिहासिक, पुरातात्विक, पौराणिक, धार्मिक वन्य जीवन अभ्यारण्य एवं प्राकृतिक सौंदर्य के अद्वितीय उदाहरण एक साथ विद्यमान हैं। छत्तीसगढ़ की पहचान अध्यात्म, पुरातत्व तथा प्राकृतिक सौंदर्य के रूप में है।

बीज शब्द: प्रादुर्भाव, देशादन, अभ्यारण, पुरातात्विक, अभ्यारण, ऐतिहासिक

भूमिका

मानव सभ्यता के इतिहास का अवलोकन करने से यह स्पष्ट होता है कि मानव उत्पत्ति के साथ ही अपनी भोजन जैसी आवश्यकता की पूर्ति के लिए एक स्थान से दूसरे स्थान पर भटकता था, जब आवास स्थायी होने लगा तो एक स्थान से दूसरे स्थान वस्तु विनिमय करने लगा, तत्पश्चात् व्यापार हेतु देशादन प्रारंभ हुआ। कृषि सभ्यता के प्रादुर्भाव से मानव ने स्थायी जीवन यापन प्रारंभ किया, चूँकि मानव का मन चंचल होता है, इसलिए एक जैसे क्रिया-कलाप से तंग आकर मानव पर्यटन करना चाहता है। पर्यटन किसी भी क्षेत्र के इतिहास, सभ्यता, संस्कृति से परिचित होने का सशक्त माध्यम होता है। विश्व स्तर पर भारत की पहचान अध्यात्म, पुरातत्व तथा प्राकृतिक सौंदर्य के रूप में है। भारत विदेशी पर्यटकों के लिये आकर्षण का केन्द्र है।

अध्ययन क्षेत्र

छत्तीसगढ़, भारत का हृदय स्थल, मध्यप्रदेश का पूर्वी क्षेत्र 01 नवम्बर 2000 को भारत के 26 वें राज्य के रूप में उदित हुआ (विस्तार 17°46'-24°06' उत्तरी अक्षांश तथा 80°15'-84°24' पूर्वी देशांश के मध्य)। छत्तीसगढ़ का क्षेत्रफल 135191 वर्ग कि. मी. तथा जनसंख्या लगभग 2.55 करोड़ (जनगणना 2011) है।

अध्ययन का उद्देश्य

- छत्तीसगढ़ के ऐतिहासिक, धार्मिक, एवं स्वास्थ्यवर्धक स्थलों की पहचान करना,
- छत्तीसगढ़ में पर्यटन स्थलों की प्रसम्भाव्यता का आंकलन करना।
- छत्तीसगढ़ को पर्यटक राज्य के रूप में स्थापित करना।

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विधितंत्र तथा आँकड़ों के स्रोत

छत्तीसगढ़ में पर्यटन स्थलों के द्वितीयक आँकड़ों के आधार पर क्षेत्र में पर्यटन की प्रसम्भाव्यता का आकलन अधोलिखित सांख्यिकीय विधि से किया गया, यथा—

$$P(A) \frac{M}{N}$$

जहाँ—N=परस्पर एकमात्र एवं समान रूप से संभाव्य स्थिति
M="अ" क्षण में विशिष्ट स्थिति

छत्तीसगढ़ के वर्तमान पर्यटन स्थल

यद्यपि राष्ट्रीय स्तर पर पर्यटन मानचित्रों में छत्तीसगढ़ को विशिष्ट स्थान नहीं मिल पाया है, तथापि यहाँ पर ऐतिहासिक, पुरातात्विक, पौराणिक, धार्मिक वन्य जीवन अभ्यारण्य एवं प्राकृतिक सौंदर्य के अद्वितीय उदाहरण एक साथ विद्यमान हैं। एशिया के नियाग्रा नाम से विख्यात चित्रकोट जलप्रपात, छत्तीसगढ़ का प्रयाग—राजीम, सरगुजा एवं बस्तर पठार के विशाल हरे-भरे घने वन एवं गुफायें पर्यटकों को आकर्षण के केन्द्र हैं। राष्ट्रीय स्तर पर पर्यटन के विकास के लिये 01 अक्टूबर 1966 को राष्ट्रीय पर्यटन विकास निगम की स्थापना की गई। 23 मई 1998 को पर्यटन विभाग को स्वतंत्र पर्यटन मंत्रालय का दर्जा दिया गया है। 12 जुलाई 2001 से राष्ट्रीय पर्यटन उद्योग के रूप में राजीम महोत्सव को सम्मिलित किया गया।

पर्यटन की महत्ता के आधार पर छत्तीसगढ़ के पर्यटन स्थलों का निम्नांकित वर्गीकरण किया जा सकता है:—

1. धार्मिक स्थल— राजिम, चम्पारण, डोंगरगढ़, दंतेवाड़ा, भोरमदेव, गिरौदपुरी, लुथरा शरीफ, नगपुरा, कुनकुरीचर्च।
2. वन्य जीवन— बारनवापारा सीतानदी उदयती अभ्यारण्य, कांगेर घाटी राष्ट्रीय उद्यान, इन्द्रावती राष्ट्रीय उद्यान, अचानकमार अभ्यारण्य, बादलखोल अभ्यारण्य।
3. जलाशय एवं प्रपात— चित्रकोट जलप्रपात, चित्रधारा, चरमेर जलप्रपात, गंगरेल बांध, सोंदूर, खुंटाघाट बाँध, मिनीमाता बाँध,
4. पुरातात्विक— आरंग, सिरपुर, बारसूर, शिवरीनारायण, पाल, सिंधनपुर गढ़घनोर, तालगांव,
5. स्वास्थ्यवर्धक स्थल— मैनपाट बगीचा, रामगढ़ की पहाड़ी, चिरमिरी।
6. छत्तीसगढ़ में पर्यटन की प्रसम्भाव्यता।

बिलासपुर तथा रायपुर के मैदानी क्षेत्रों में पर्यटन की प्रसम्भाव्यता उच्च (0.026 से 0.28) माना जा सकता है। इन क्षेत्रों में प्रमुख पर्यटन स्थल निम्नांकित हैं, यथा—

धार्मिक पर्यटन स्थल

(क) राजिम—रायपुर से 45 कि. मी. दूरी पर 8वीं—9वीं शताब्दी की पंचायन शैली में बना राजीव लोचन मंदिर प्राचीन शिल्प और वास्तुकला का अद्भुत नमूना है, राजिम में सोंदूर, पैरी और महानदी का संगम है।

(ख) चम्पारण—रायपुर से 43 कि.मी. दूरी पर स्थित चम्पारण की ख्याति, महाप्रभु वल्लभाचार्य की जन्मस्थली और चम्पेश्वर महादेव मंदिर के कारण है।

छत्तीसगढ़ में पर्यटन की प्रसम्भाव्यता

(ग) डोंगरगढ़—हावड़ा—मुंबई रेलमार्ग पर रायपुर—नागपुर राष्ट्रीय राजमार्ग पर डोंगरगढ़ की पहाड़ी है, जहाँ पर 1600 फीट की ऊँचाई पर स्थापित शक्तिपीठ मां बम्लेश्वरी देवी का मंदिर समूचे छत्तीसगढ़ तथा सीमावर्ती राज्य के श्रद्धालुओं के लिए आस्था का स्थल है।

(च) भोरमदेव—कवधों से 18 कि.मी. की दूरी पर छपरी नामक गाँव के समीप चौरागाँव में भोरमदेव मंदिर है। यह मंदिर नागशैली के मंदिरों का सुन्दर उदाहरण है। भोरमदेव मंदिर के समीप ही दो प्राचीन मंदिर मंडवा महल और छेरकी महल स्थित हैं।

(छ) गिरौदपुरी—यह सतनामी समाज का प्रमुख तीर्थ स्थल है, यहाँ प्रतिवर्ष फाल्गुन मास की पंचमी से सप्तमी तक मेला भरता है।

(ज) अन्य पर्यटन स्थल—बिलासपुर क्षेत्र में लुथरा शरीफ मजार, दुर्ग क्षेत्र में नगपुरा जैन मंदिर गौण पर्यटन स्थल हैं।

वन्य जीव पर्यटन स्थल

(क) बारनवापारा—रायपुर से 120 कि.मी. दूरी पर बारनवापारा अभ्यारण्य रायपुर जिला क्षेत्र में है। यह क्षेत्र सघन वन से आच्छादित है। अभ्यारण्य क्षेत्र में 22 वनग्राम आते हैं।

जलाशय

(क) गंगरेल बाँध—रायपुर से लगभग 76 कि.मी. दूरी पर 1980 में निर्मित 32 टी.एम.सी क्षमता वाले गंगरेल बाँध में 14 जलद्वार हैं। गंगरेल बाँध पिकनिक स्पॉट के लिए प्रसिद्ध है।

(ख) खुंटाघाट जलाशय—बिलासपुर—अबिकापूर मार्ग पर 25 कि.मी. की दूरी पर रतनपुर से मात्र 10 कि.मी. की दूरी पर खुंटाघाट स्थित है। यह स्थल चारों तरफ से घने वनों एवं पहाड़ों से घिरा हुआ है।

(ग) अन्य जलाशय—माडम सिल्ली बाँध, सोंदूर जलाशय अन्य पर्यटन स्थल हैं।

पुरातात्विक महत्व के स्थल

(क) आरंग—रायपुर से कि.मी. की दूरी पर स्थित आरंग के प्रसिद्ध मंदिर मांडूदेवल, बाघदेवल मंदिर एवं महामाया मंदिर हैं। कलचुरी शैली का 11—12 वीं शताब्दी में बना मांडूदेवल मंदिर, छत्तीसगढ़ में अपनी शैली का एकमात्र मंदिर है। यह मंदिर खजुराहो के मंदिर के सदृश है।

(ख) सिरपुर—रायपुर—संबलपुर मार्ग पर रायपुर से 83 कि.मी. की दूरी पर स्थित है। यह स्थल प्राचीन काल में श्रीपुर के नाम से विख्यात था। पाण्डुवंशीय शासकों के काल में दक्षिण कोसल की राजधानी होने का गौरव प्राप्त था। यहाँ स्थित लक्ष्मण मंदिर ईंटों से निर्मित है। इस मंदिर का निर्माण 650 ई. के लगभग मान्य है।

(ग) शिवरीनारायण—बिलासपुर से 65 कि.मी. और रायपुर से 165 कि.मी. की दूरी पर शिवरीनारायण कलचुरीकालीन स्थापत्य कला का मंदिर है। यह स्थल मैकल पर्वत शृंखला के तलछटी में स्थित है। शिवरीनारायण को नारायण या पुरुशोत्तम क्षेत्र गुप्त प्रयाग विष्णुकाक्षी भी कहा जाता है। यह मान्यता है कि शबरी ने भगवान राम को इस स्थल पर जूटे बेर खिलाये थे।

(छ) पुरातात्विक महत्व के अन्य पर्यटन स्थलों में पाली (रतनपुर) तथा तालगांव (बिलासपुर) सम्मिलित हैं।

जगदलपुर, जशपुर, महेंद्रगढ़, भूपदेवपुर, सरगुजा तथा कंटगी पठारी क्षेत्रों में पर्यटन की प्रसम्भाव्यता निम्न से मध्यम (001 से 009) है। इस क्षेत्र में प्रमुख पर्यटन स्थल निम्नांकित हैं।

धार्मिक पर्यटन स्थल

दंतेवाड़ा में शंखिनी और डंकिनी नदियों के संगम पर 14वीं शताब्दी का दंतेश्वरी मंदिर माँ दुर्गा का एक रूप है। जनश्रुति के अनुसार सती के दाँत यहाँ गिरे थे।

वन्य जीव पर्यटन

(क) सीतानदी उदंती अभ्यारण्य—उदंती अभ्यारण्य रायपुर—देवभोग मार्ग पर उड़ीसा (ओडिशा) की सीमा पर उदंती नदी के किनारे स्थित है। उदंती नदी अभ्यारण्य के बीचों-बीच प्रवाहित होती है। पूरा अभ्यारण्य घने वनों से घिरा है। उदंती नदी सुन्दर जलप्रपात का निर्माण करती है।

(ख) कांगेर घाटी राष्ट्रीय उद्यान—कांगेर नदी के किनारे बसा कांगेर घाटी राष्ट्रीय उद्यान जगदलपुर से 33 कि.मी. की दूरी पर स्थित है। विश्व प्रसिद्ध गुफायें, खूबसूरत झरने, जलप्रपात एवं पर्वतीय सौंदर्य पर्यटकों को आकर्षित करते हैं। 28 कि.मी. लम्बाई में एशिया का प्रथम घोषित जीवमण्डल भी यहाँ स्थित है।

(ग) इंद्रावती राष्ट्रीय उद्यान—दन्तेवाड़ा जिले में स्थित यह राष्ट्रीय उद्यान मूलतः व्याघ्र परियोजना के उद्देश्य से बनाया गया है। यह उद्यान छत्तीसगढ़ के राज पशु वन भैंसे की शरण स्थली है।

(घ) अचानकमार अभ्यारण्य—अमरकंटक की घाटी पर बसा अचानकमार अभ्यारण्य बिलासपुर से 58 कि.मी. की दूरी पर बिलासपुर—पेण्ड्रा—अमरकंटक मार्ग पर स्थित है। यहाँ सालवन के जंगल और विभिन्न प्रकार के वन्य प्राणियों की बहुलता है।

(च) बादलखोल अभ्यारण्य—बगीचा से 15 कि.मी. की दूरी पर वन विभाग का बादलखोल अभ्यारण्य है। यहाँ शेर, तेंदुआ, हिरण और भालू जैसे वन्य प्राणी पाये जाते हैं।

जलप्रपात

(क) चित्रकोट—जगदलपुर से 49 किलोमीटर की दूरी पर इंद्रावती नदी पर यह जलप्रपात 21 मीटर ऊँचा है। यह जलप्रपात एशिया का नियाग्रा जलप्रपात के नाम में ख्यात है।

(ख) चित्रधारा—बस्तर जिले के राष्ट्रीय राजमार्ग क्रमांक 16 पर 27 कि.मी. की दूरी पर मावली भाठा ग्राम में चित्रधारा प्रवाहित है। इसे महादेव घूमर प्रपात भी कहते हैं।

(ग) चर्रे—मर्रे जलप्रपात—नारायणपुर के अंतागढ़—आमाबेड़ा वनमार्ग पर अंतागढ़ से 12 कि.मी. दूर पिंजारिन घाटी में इस झरने का उदगम है।

पुरातात्विक महत्व के स्थल

(क) बारसूर—यह स्थल जगदलपुर से 94 कि.मी. की दूरी पर बारसूर इंद्रावती नदी के तट पर बसा है। 11वीं शताब्दी में यहाँ कुल 147 बड़े मंदिर तथा 147 तालाब थे, जो बारसूर के चारों दिशाओं में 8-8 मील की दूरी तक बसाये गये थे। वर्तमान में 5-6 तालाब ही शेष रह गये हैं। यहाँ का गणेश मंदिर प्रसिद्ध है।

छत्तीसगढ़ में पर्यटन की प्रसम्भाव्यता

स्वास्थ्यवर्धक एवं दर्शनीय स्थल

(क) मैनपाट—अम्बिकापुर से करीब 75 कि.मी. की दूरी पर तथा समुद्रतल से 1100 मीटर की ऊँचाई पर यह 28 वर्ग कि.मी. क्षेत्र में आयताकार पहाड़ी पर बसा है। यह छत्तीसगढ़ के प्रमुख हिल स्टेशन के रूप में प्रसिद्ध है। यहाँ पर झरने और पर्वतीय सौंदर्य प्रमुख आकर्षण के केन्द्र हैं। टाईगर प्वाइंट, दरोगा प्वाइंट तथा दरहा, भूतहिया समेत अनेक जलप्रपात हैं। यहाँ तिब्बती शरणार्थी शिविर हैं।

(ख) बगीचा—छत्तीसगढ़ के पूर्वोत्तर जशपुर जिले की बगीचा तहसील सैलानियों के लिये आकर्षण का मुख्य केन्द्र है। सर्दियों में शून्य डिग्री के आस-पास और गर्मियों में अधिकतम 30-35 अंश तापमान सैलानियों को लुभाता है।

निष्कर्ष

राष्ट्रीय स्तर पर (1998) पर्यटन को विकास निगम का स्वतंत्र दर्जा दिया गया है भारत में पर्यटन को बढ़ावा देने के लिये विदेशी पर्यटकों को आगम वीसा योजना प्रारंभ की गई है। वर्ष 2000-01 में विदेशी पर्यटकों की संख्या 26.7 लाख अनुमानित थी।

छत्तीसगढ़ में पर्यटन केन्द्रों की संख्या व महत्व को देखते हुए यहाँ पर्यटन उद्योग की प्रसम्भाव्यता को नकारा नहीं जा सकता। छत्तीसगढ़ राज्य के अस्तित्व में आने के पश्चात् सर्वप्रथम 12 जुलाई 2001 को राष्ट्रीय परिपत्र में राजिम को सम्मिलित किया गया है। वर्तमान में पर्यटन उद्योग एक वृहद् उद्योग के रूप में देखा जा रहा है, जिसका उद्देश्य अधिक से अधिक आर्थिक विकास करना है।

पर्यटन को प्रोत्साहित करने के लिए पर्यटन विकास एक्ट, 2000 (TDA) लागू किया गया है इससे राष्ट्रीय एवं अंतर्राष्ट्रीय स्तर पर पर्यटन प्रोजेक्ट प्रोत्साहित होंगे।

राज्य का पठारी क्षेत्र यथा बस्तर पुरातात्विक संपदा की दृष्टि से धनी क्षेत्र है, विश्व धरोहर की सूची में सम्मिलित किया जा सकता है चित्रकोट, तीरथगढ़ जलप्रपात के अलावा विश्व प्रसिद्ध कुदुमसार गुफा है। विदेशी पर्यटक कोण्डागांव में टेराकोटा कला सीख रहे हैं। वेरियन एलविन तथा गिर्सन बस्तर की जनजातियों का अध्ययन कर चुके हैं।

भारत सरकार (2005-06) द्वारा कराये गये सर्वेक्षणों में राज्य के अन्य पर्यटन केन्द्रों की अपेक्षा बस्तर में विदेशी पर्यटकों की संख्या में कमी दर्ज की गई। बस्तर के पठारी क्षेत्रों में प्राकृतिक सौंदर्य एवं पुरातात्विक पर्यटन का 50 प्रतिशत भाग स्थित है। 50-60 विदेशी पर्यटक हर महीने अपनी व्यावसायिक यात्रा के साथ पर्यटन का आनंद लेते हैं।

केन्द्र सरकार ने राज्य के पर्यटकों पर नक्सली डर समाप्त करने के लिये टूरिज्म पुलिसिंग की सिफारिश की है।

आतंकवाद, नक्सलवाद, भ्रष्टाचार पर्यटन उद्योग के रास्ते में अवरोधक हैं। इस दिशा में शासन को तत्काल सकारात्मक प्रक्रिया अपनानी चाहिये।

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Swami Vivekananda's Concept of Management: An Assessment

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Abstract

Present research paper concentrates on the Vivekananda's concept of the management. The Indian traditions endow with a very rich of concepts and thoughts in the realm of personality development and leadership. These thoughts have been presented exclusively in the Vedas and Upanishads, which are the richest sources of understanding personality development and leadership in ancient Indian thoughts. The issues of self, soul, human nature, human existence, and human experience in terms of what they are, what they mean, how they are determined, their manifestation in the human being and their role in reconciling personality development form the core themes around which personality development can be understood according to the ancient philosophical tradition. Swami Vivekananda's concept of development of personality is very much influenced by this philosophical perception. Vivekananda's speeches and writings deal with various aspects of life which go beyond the barriers of caste and creed, colour and community, time and clime and having a universal appeal. Vivekananda believes that growth in human personality during recorded time has been social rather than biological; it has proceeded not by heritable variations in the species, but mostly by social, intellectual and moral innovation transmitted to individuals and generations by imitation, custom or education.

Keywords: Management, Personality Development, Leadership, Self, Success, etc.

"Arise, awake and stop not till the goal is reached."

—Swami Vivekananda

Introduction

When we speak of Swamiji as 'the Great Innovator of the concept of Management', we must remember that during Swamiji's time the science of management did not exist. Generally management is nothing but organized common sense, and that is from time immemorial. When nations became industrialized and new markets and products were discovered, industries and companies grew and exploited labour; tycoons and powerful politicians started

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making the rules and therefore money. The science of management started only after the World War I. It first went into organizing labour, work measurement, work study, production, and productivity. Then slowly other departments came up. According to Oxford Advanced Learners Dictionary, "Management is the art or skill of dealing with people or situations in successful way" (p. 935). Latest management techniques like 'values-based management' that we know, Swamiji unconsciously practised them. There is a beautiful book called *The Power of Ethical Management* by Kenneth Blanchard and Norman Vincent Peale, where it is written on the cover "You need not cheat in order to win", And one of the paragraph starts with the sentence "To work only for profits is like playing tennis with your eyes on the scoreboard rather than on the ball." Therefore we have to give emphasis on values. Second, not only profit, but the method in which we are making that profit. Swamiji opines about the value-based management that if one really wants to succeed, one must have credibility. Credibility will come when one practices values. And his words are proving prophetic.

When we think of the great leaders in the history, we find the common characteristic in them that is their charismatic personality which is influencing generations and "the degree of unselfishness marks the degree of success everywhere" (V.420). Personality is not physical appearance or strength. It is not brain power or intellectual capacity. According to Swamiji, personality is deeper than that. Personality is related to will power, "it is the will power that moves the world" (V.47). Further he speaks, "a pure and a strong will is omnipotent" (III.224) soul or atma of human being. An American paper *New York Critique* referred to him as "an orator by divine right". Still more handsome is the tribute paid by the well-known poetess, the late Harriet Monroe, who was for many years editor of *Poetry* a magazine of verse. Miss Monroe attended the World Fair in 1893, and years later in her autobiography, *A Poet's Life* recorded her impressions of the Parliament of Religions and of Swamiji, "But the handsome monk in the orange robe gave us in perfect English a masterpiece. His personality, dominant, magnetic, his voice, rich as a bronze bell; the controlled fervour of his feeling; the beauty of his message to the Western world he was facing for the first time—these combined to give us a rare and perfect moment of supreme emotion. It was human eloquence at its highest pitch" (59-60). There are lots of personality development courses today. Behavioural science is an important area of discussion in modern times. We read lot of books on this subject written by Western management gurus. Swami Vivekananda wrote on personality development more than 100 years ago. Management gurus and researchers should understand the approach of Vivekananda. Supreme value of youth period is incalculable and indescribable. Youth life is the most precious life. Youth is the best time. The way in which you utilize this period will decide the nature of coming years that lie ahead of you. Your happiness, your success, your honour and your good name all depend upon the way in which you live now, in this present period as Swamiji said, "Happiness belongs to him who knows this oneness, who knows he is one with the universe" (I.374). This wonderful period of the first state of your life is related to you as the soft wet clay in the hands of the potter. Skilfully the potter gives it the right and

correct shapes and forms, which he intends to give. Even so, you can wisely mould your life, your character, your physical health and strength, in short your entire nature in any way in which you make up your mind to do. And you must do this now. To Swamiji, "you are the self, and that must be realized" (IV.245). It is easy to understand body and brain. But the soul or atma is deeper one and also finer one. This is the root of everything in human being. Controlling this root is important to control everything, "nothing else exists but the self" (VII.195). He who knows and controls his own mind knows the secret of every mind. Vivekananda says that the body and brain are temporary. Souls are immortal. Swamiji says that everybody is searching for God and divinity outside. But divinity resides in every soul. If we understand this spirit there will be harmony around us.

Vivekananda's Concept of Management

Swamiji spoke that the true management for the success of any organization is obedience, "the first requisite for organization is obedience" (VI. 321). Further, he says, "everyone wants to command, and no one wants to obey" (III. 134). "The first thing which is needed is obedience" (VI. 322). While speaking about personality Swami Vivekananda has emphasized on physical, mental and spiritual personality. He said, "Be strong my friends, you will be nearer to heaven through football than through the study of the *Bhagavad Gita*." This should not be misunderstood that he was against the studying of any religious scripture. To develop our personality, we need to learn from both happiness and pain. "Pain has its uses" (III. 78). Sometimes we learn more from pain. Man's character is the collective expression of past experiences. These experiences result in habits. Swamiji says that we need to have vairagya to change our habits to develop a better character and "the only remedy for bad habits is counter habits" (I. 208). Swamiji also teaches us how to control our negative emotions and always be willing to learn, "the object of life is to learn" (II. 502). But he was against the nature of so-called religious practitioners. He was against the nature of people, who sleeping in lethargy under the name of satvik (pious and balanced) nature and wearing the garb of religion proclaim themselves as the sole defenders of dharma. In another place he said, "Strength is life and weakness is death" (V. 409). Strength is felicity and immortal; weakness is constant strain and misery" (II. 3). The strength which Swamiji was expecting is physical, mental and spiritual. Speaking about mental personality Swami Vivekananda strongly emphasized on mental freedom. "Freedom, O Freedom! Freedom, O Freedom! Is the song of the soul" (I. 335). This simply means everybody has to strive hard to gain mastery over mind and better the power of concentration. Further he added that difference between animal and man is the difference in their power of thinking. "As soon as his thinking power goes, he becomes no better than an animal" (III. 359). Along with concentration of mind, will power is another important facet of mental personality. The remedy to destroy weakness of anything is not by brooding over it but by thinking of strength and through positive and constructive activities. The effort for creating our personality has to continue for a long time without any lethargy or frustration. It is like avoiding any stain on

a brass vessel otherwise one has to clean it every day. Or if we want to dig a well and get water, then we have to dig at one place constantly and deeply and not by shallow digging at several places. Each soul is potentially divine. "The goal is to manifest this divinity within by controlling nature, external and internal" (I. 257). Do this either by work or worship or psychic control or philosophy—by one or more or all of these—and be free. This is the whole of religion. Doctrines and dogmas, rituals, books, temples or forms are but secondary details. It is not confined to any form of god or different styles of prayer and it is not the rules and regulations written in religious holy books. But these are means to unfold our spiritual personality and not the goal in itself. The spirituality means manifestation of the potential divinity within us by work (karma yoga) or worship (bhakti yoga) or philosophy (gyana yoga) or psychic control (raja yoga). The characteristic of this manifestation is the mastery over the inner and external personality and the result of it is total freedom. This is what Swami Vivekananda, the patriotic and revolutionary monk of India envisaged in the human personality. He inspired and motivated hundreds and thousands of young minds in India before independence and still his thoughts are not reduced in their intensity even by an ounce to attract people from all over India and from rest of the world.

This incident took place in 1895. The place was London. Swami Vivekananda was to give a public lecture and he had come to London with Swami Saradananda. When it was time to stand up and speak, Swami Vivekananda suddenly announced that Swami Saradananda would deliver the speech instead of him. Though taken by surprise, Saradananda did an excellent job that day, and thereafter too. Swami Vivekananda had realized that all Saradananda needed was a little push to bolster his self-confidence. This incident in isolation may not say much, but we need to see it from the perspective of the leadership and management style of Swami Vivekananda. Swami ji said, "Every religion has the idea that the universe comes out of intelligence. The theory of God, taking it in its psychological significance, apart from all ideas of personality, is that intelligence is first in the order of creation, and that out of intelligence comes what we call gross matter. Modern philosophers say that intelligence is the last to come" (I. 205). Swamiji was not only an inspirational leader, but was also a very pragmatic one. He not only believed in 'Servant-based Leadership' but constantly endeavoured to empower all those around him. In dealing with his brother-disciples and followers, he evoked what is today popularly known in the management world as the 'Pygmalion Effect.' Management expert J. Sterling Livingston describes it as the effect of enabling subordinates to excel in response to the leader's expectation of them. Swami Vivekananda had a high expectation of his followers and he communicated that to them clearly, thus eliciting a high level of performance. Leaders empower their followers by believing in them, and they rise to greatness as a result. The leaders make themselves larger by enlarging others. The leader constantly aims at moving people around him from dependence to independence to the state of inter-dependence. Swami Vivekananda had chosen 'empower and facilitate' philosophy over 'command and control' long before modern management realized its potential. Trust plays an important part in the process. If the leader

does not trust his followers, he will use control instead of empowerment. Swami Vivekananda while exhorting his disciples to the highest levels of work had the fullest trust in them and their abilities. His urge to motivate people around him to aspire for higher levels of performance can be seen from this letter of his to his direct disciple Swami Shuddhananda in 1897. He writes, "...Lastly, you must remember I expect more from my children than from my brethren (his brother disciples. I want each one of my children to be a hundred times greater than I could ever be. Every one of you must be a giant—must, this is my word. Obedience, readiness, and love for the cause—if you have these three, nothing can hold you back." This also shows Swamiji's interpersonal skills and the ability to motivate and develop people. One can even say that J. Carla Nortcutt had once said, "The goal of many leaders is to get people to think more highly of the leader. The goal of a great leader is to help people to think more highly of themselves." This is perhaps the best description of Swami Vivekananda, the greatest leader of our times. Swami Vivekananda as a leader also needs to be measured and assessed from the point of view of these criteria. He not only created an extraordinary institution for growth of spirituality but also made sure that the welfare of the people would be the centerpiece of the organization's work. This is clearly evident in the motto that he gave the Ramakrishna Mission and Ramakrishna Math—'Athmano Mokshartham, Jagath Hithayacha'—where the realization of the personal self had to go hand in hand with the betterment of humanity. Swamiji speaks, "humanity travels not from error to truth, but from truth to truth" (IV. 147). Swami Vivekananda as the founder of the organization had to create the larger vision and constantly work towards building not just the organizational processes but also the people to man these organizations. He had to lay down the rules, set value systems and ensure that it was well communicated to his colleagues and team mates. "All the great systems of ethics preach absolute unselfishness as the goal. Supposing this absolute unselfishness can be reached by a man, what becomes of him? He is no more the little Mr. So-and-so; he has acquired infinite expansion. The little personality which he had before is now lost to him forever; he has become infinite, and the attainment of this infinite expansion is indeed the goal of all religions and of all moral and philosophical teachings" (I. 91). He had to inspire people to not just take on the vows of poverty and chastity but also engage themselves in meaningful social work. He was the trainer, visionary, organizational behaviour expert and the charismatic inspirer of men—all rolled in one. One also needs to understand that a leader's work cannot be measured merely from his immediate contributions. Much of the good work that he has done will be evident years later. The Institution that Swamiji has left behind is proof of the extraordinary leadership that he gave it during the years of its inception and infancy. John Maxwell, a Christian pastor and leadership expert writes, "It is very difficult task to take on the role of a leader.... There must not be a shade of jealousy or selfishness then you are a leader" (VI 284). If you develop yourself, you can experience personal success. If you develop a team, your organization can experience growth. If you develop leaders, your organization can achieve explosive growth so "a leader must be impersonal" (VIII. 429). The fact that the Ramakrishna Math & Mission achieved explosive growth long after

Swamiji's death is testimony to the fact that Swami Vivekananda helped create great leaders too. Swamiji was conscious of not making the organization too dependent on him or becoming 'Vivekananda Centric.' He never lost sight of the 'work at the centre' which was of far greater importance than either himself or his image. He never assumed any formal office for himself and made sure that from the inception, there were others to take on the mantle and lead the organization. His primary role was to mentor, guide and train these leaders. Swamiji says, "there is no allegiance possible where there is no character in the leader, and perfect purity ensures the most lasting allegiance and confidence" (VI. 284). The Ramakrishna Mission is respected for the work that it does not just in India, but all over the world. Swami Vivekananda undoubtedly has left behind an enormously positive legacy—not just an organization that any nation can be proud of, but also successive generations of positively charged up young people who share and believe in his vision and message. His loudest and greatest legacy is the millions of inspired people who dream of building a better nation and a better world.

Swami Vivekananda often related the experiences of his time and Swami Sharadananda recalls him saying once, "Even before the period of mourning was over; I had to go about in search of a job. Starving and barefooted, I wandered from office to office under the scorching midday sun with an application in hand, one or two intimate friends who sympathized with me in misfortunes accompanying me sometimes. But everywhere the door was slammed on my face. This first contact with the reality of life convinced me that unselfish sympathy was a rarity in the world—there was no place in it for the weak, the poor and the destitute" (I. 53). Swamiji's legendary concern for the poor and the downtrodden was born out of these experiences and possibly shaped his thinking and future actions. Studies in modern management have many lessons to learn from him. Many complexities arising out of diverse institutional mechanism can be solved through his approach to the practical life. Only 'get done the job tactfully' is not going to ameliorate our quality of daily management practices in institutions but we need to think vastly through non-material approach with philanthropic ideas as narrated by Swamiji.

Conclusion

Swamiji had a genius for arresting words and burning phrases hammered out white hot in the forge of his soul so that they transpierced thousands. It may justly be said that Indian's destiny was changed by him, and that this teaching re-echoed throughout humanity. And at last this perusal comes to the conclusion that Vivekananda was a management Guru whose concept of managements is the need of the hour, because of its wider perspective and a universal dimension to it. Swami Vivekananda was not only a multi-faceted personality but was also far ahead of his times. Swamiji understood the problems facing humanity. Through the cause and effect method he traced the problems and provided solutions which served beyond immediate relief and farther into the future. He was a social reformer, a nationalist, and a management specialist. His concern was to elevate human kind and subsequently conquer all environments and circumstances. These unique qualities made him a leader of the supreme kind. Any block to

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human progress was his concern and he brought his great mind and heart in pointing out the obstructions and thereby providing solutions and showed great leadership and managerial skills.

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Capital Management Analysis in Steel Industry with Special Reference to Steel Authority of India

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Abstract

Finance is regarded as the soul of business. It's the finance that makes the resources of production dynamic. Thus, capital management in any industrial organization must be adequate and proper. Steel Authority of India (SAIL) is a maharatna company of Indian public sector which is operating as one of the biggest steel producing units through the combined efforts of integrated steel plants, special steel plants and subsidiaries. This paper studies capital structure of the organization and its management through various financial ratios and statistical analysis of the financial data. The analysis brought out the fact that the financial position of SAIL is satisfactory. Karl Pearson correlation coefficient showed a high negative correlation of net profit after interest and tax and also of net profit before tax with other financial items and a high positive correlation among other financial items. This proved that profit is a dependent variable which depends on how favourable other financial items are.

Keywords: Capital structure, Financial ratios, Correlation coefficient.

Introduction

The fundamental instruments on which human life is based and which fulfil his material and cultural needs are known as resources. They are also called natural resources as they are gathered from earth and occur naturally within environments. Major natural resources include biotic resources like forests, animals and the materials that can be obtained from them, fossil fuels such as coal and petroleum and abiotic resources such as land, fresh water, air & heavy metals including ores such as gold, iron, copper, etc. Minerals hold an esteemed place among natural resources for they have contributed towards improvement of standard of living in every stage of industrial development. The level of development of a country depends on the availability and optimum utilization of natural resources in every aspect of the economy whether it be agriculture, manufacturing, trade or transport. Iron is one of the most important mineral resource and is considered as the backbone of the civilization. Steel was first produced in Iran in 1000 BCE followed up by improved Indian and Chinese versions. The steel industry is often considered an indicator of economic progress, because of the

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critical role played by steel in infrastructural and overall economic development. The first attempt to establish an iron & steel industry on modern lines was made in 1830. However, it was not until 1875 that the foundation of India's present iron & steel industry was laid through a blast-furnace plant at Kulti, Calcutta. This was followed by several iron & steel companies being established across the country, namely, Tata Iron & Steel Company (TISCO), Indian Iron & Steel Company (IISCO), Mysore Iron & Steel Works, Steel Corporation of Bengal, among others. After independence, government took significant steps through industrial policies and five year plans for development of the nation. During the First Five Year Plan, with the authorized capital of 600 crores, Hindustan Steel Limited was established in the Indian public sector. In the early stages of its establishment, 3 integrated plants were set up at Rourkela, Bhilai, and Durgapur with assistance of Western Germany, Russia, and England respectively. The fourth plant was set up in Bokaro during the fourth five year plan. Through the policy statement of Ministry of Steel & Mines and its subsequent approval by the parliament, Steel Authority of India (SAIL) was incorporated in 1973. Presently, the organization manages 5 integrated steel plants, 3 special steel plants and a Ferro Alloy plant.

Of the five main factors of production—land, labour, capital, organization and entrepreneurship, capital is the most important factor which activates all other factors. Capital is the foundation of business activities without which economic and commercial practices are not possible. It is essential to have an adequate amount of capital in the business. While constructing a building, various raw materials are mixed in a specific proportion, in the same way, in the capital structure of the business; funds obtained from various sources are combined in right proportion. Iron & steel industry involve high investment of capital. Keeping this fact in mind, the paper seeks to analyze the capital structure of SAIL and the financial ratios obtained from the financial statements.

Literature Review

Bhat (1980) analyzed financial leverage of Indian manufacturing companies by taking the variables of size of firm, income variability, development, profitability, operating leverage and dividend payment policy. Firm's financial leverage had no association with its size. There was a negative correlation between firm's leverage and dividend payout policy. Degree of operating leverage did not influence the level and usage of debt.

Mallik & Sur (1998) carried out research in Indian tea industry to assess the influence of working capital management on profitability. They measured the interrelationships between nine selected ratios regarding working capital management and the selected profitability measure which revealed both negative and positive associations.

Bhunia (2010) studied liquidity management in Iron & Steel industry of private sector of India and its effect on financial performance. The study revealed that investment in loans and advances should be minimized and efforts should be made towards increasing the assets and reducing the liabilities. A proper working capital management system in the companies would enhance the profitability of the company and assist in their further growth.

Chakraborty (2009) studied the relationship between working capital management and profitability in 25 pharmaceutical companies of India during 1996-97 to 2007-08. The partial regression coefficients used in statistical analysis of the data revealed that liquidity management, inventory management and credit management positively contributed towards improvement of corporate profitability.

Nandi (2011) studied the influence of financial ratios obtained from working capital management on profitability of National Thermal Power Corporation Limited (NTPC) between 1999-2000 to 2008-09 by using the statistical analysis techniques of correlation, regression analysis, etc. He measured sensitivity of return on investment (ROI) to changes in the level of working capital leverage (WCL) of the company.

Angamuthu & Sivanandam (2012) examined the long term and short term solvency status of 4 privately owned and one government owned cement companies between 2000-01 and 2009-10. There was no risk of solvency in fulfilling long term commitment in most of cement companies. They also had sufficient liquid assets to cover their short term debt.

Objectives of Study

1. To study and analyze the invested capital in SAIL
2. To study and analyze the capital structure of SAIL
3. To study and analyze return on invested capital in SAIL
4. To study and analyze the financial ratios obtained from the financial statements of SAIL
5. To statistically analyze the relationships between the various financial ratios based on capital structure.

Research Methodology

The selection of the research design is crucial for it determines what conclusions a researcher can draw about a phenomenon. It also facilitates research to be as efficient as possible yielding maximal information. This paper is based on analytical research design keeping in mind the basic concept that the financial position of SAIL is satisfactory in accordance with its capital structure. The practicality and efficiency of research work depends on the accuracy of data collected. This paper used financial data published in annual reports of SAIL from 2010-2014 as secondary data. For analysis of the collected data, ratio analysis was used as the main technique. Along with that, statistical methods of average, standard deviation, coefficient of variation, correlation, chi-square test, time series analysis, etc., were also used.

Data Analysis & Interpretation

Interpretation (Annexure 1)

1. Table 1 shows that company has obtained its funds by issuing equity share capital, of which 80% is contributed by the Indian government. Of the remaining 20% of the share capital, insurance companies hold the largest share (7%), followed by foreign financial investors, banking companies, other institutions, mutual funds and domestic companies.

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Thus, it's clear that SAIL as a public company fulfils the objective of its establishment. In the initial capital structure, 20% of the capital has been allocated to different classes of capital market. This change has been brought about by the new economic policies of liberalization, privatization and globalization.

Interpretation (Annexure 2)

2.1. Total average value of profit after tax of SAIL in the last 5 financial years is Rs. 3,397.8 crores which is 1.5 times more than the minimum and maximum value of the years 2012 and 2010. The value of coefficient of variation is 46.59 which shows considerable fluctuations in profits of the company. There is moderate skewness in the values of profit after tax of years under study. Kurtosis value is found to be negative with a platykurtic distribution.

2.2. During the last 5 years, average value of equity share capital of the company is Rs. 4,130.6 crores which is almost equal to the maximum and minimum values of issued share capital of different years taken under study. The percentage of coefficient of variation in share capital is very less which depicts position of stability. The mathematical values of skewness and kurtosis show negative trends with moderate level of skewness and platykurtic distribution.

2.3. The average value of the total amount of accumulation fund in the last 5 years of SAIL has been closer to the maximum and minimum values than to the total value of all the years taken under study. But the percentage of coefficient of variation is less showing less variability in the amounts of funds. There is moderate skewness in the amount of accumulation fund but kurtosis measure is very low with platykurtic distribution.

2.4. The average value of the total loan amount of SAIL in the last 5 years has been 21.4 per cent greater than the minimum value and 27.60 per cent lesser than the maximum value. The percentage of coefficient of variation in total loan amount is excessive which brings out the fact that the company is using loan capital in highly varying amounts. The value of skewness is 0.703 shows moderate asymmetry in usage of loan amounts but value of kurtosis shows qualities of a platykurtic distribution.

2.5. During the last 5 years of SAIL, the average value of total net worth of the institution shows a midway position of total maximum and minimum value. Also the percentage of coefficient of variation is very less which displays the stability of financial position of the organization. Skewness is found to be in moderate amount while kurtosis measure depicts a platykurtic distribution.

2.6. The average value of the total assets of the last 5 years is more than the minimum amount of last 5 years and value of coefficient of variation is less which indicates that there is not much change happening in the total assets of the institution. There is moderate skewness and value of kurtosis is very less and shows a negative trend.

2.7. The average value of net fixed assets amount is 31.25 per cent more than the minimum amount and is Rs. 8,901.2 crores less in comparison of total

maximum amount. The value of coefficient of variation is less which is an indicator of stability of net fixed assets. There is substantial skewness in the values. Kurtosis measure shows a leptokurtic distribution, i.e., a high probability for extreme values.

2.8. The average value of net profit after interest and tax of SAIL during the last 5 years is much greater than minimum amount but is Rs. 4,343.4 crores less than the maximum amount. The coefficient of variation is quite high with 50 per cent chance of variability of values. The skewness measure is moderate while value of kurtosis shows a platykurtic distribution with comparatively lesser probability for extreme values than that for a normal distribution.

2.9. The average value of interest expenses paid by SAIL during the last 5 years is Rs. 654.2 crores which is Rs. 252.2 crores more than the minimum value. Interest expenses show whether the leverage of the company is within acceptable limits. The coefficient of variation is 34.48 per cent, skewness is very less indicating an approximately symmetric distribution and value of kurtosis shows a platykurtic distribution trend.

Interpretation (Annexure 3)

3.1. Share earnings ratio is the indicator of soundness of any institution. In 2010, the ratio was 16.35 which is highest in comparison of ratios of all other years. The continuous decline in the ratio in the next 4 years shows the rate of earnings per share of SAIL has gone down continuously. The share earnings ratio of the year 2014 is less than half of that of 2010. This position is not satisfactory. The average value of share earnings ratio is 9.68, coefficient of variation is 46.60 and there is moderate skewness.

3.2. The proportional value of accumulation fund and per share capital in SAIL has increased in all the next 4 years as compared to base year 2010. The value of this ratio in 2010 was 70.67 per cent which increased in 2014 to 93.28 per cent. There is an increase of 22.61 per cent which shows the strong financial position of SAIL. Also, the average value of accumulation fund and per share capital ratio is 83.88. The coefficient of variation is quite less, i.e., 10.59. The skewness measure shows symmetry in the values.

3.3. The ideal debt equity ratio of any institution should be less than 1:1 ratio so as to maintain a strong financial soundness. Debt equity ratio of SAIL has been less than the ideal ratio and is fluctuating during all the years taken under this study. This ratio was lowest in the year 2012. The rates of debt equity ratio show that long-term debt servicing capacity is good. The average value of debt equity ratio from 2010-2014 is 50.93 which is marginally higher than the ideal ratio. The value of coefficient of variation is 12.94 which is less.

3.4. Ownership fund ratio is important from the perspective of long term investment. Greater this ratio more is the financial soundness of the institution. During 2010-2014, for the management and arrangement of assets, an average of 50.66 per cent of the amount is taken from the ownership fund and rest of the amount is obtained from external sources. This does not provide adequate security and economic stability to long term capital investors for their invested

capital. The coefficient of variation is 4.05 and skewness is very high. Overall, the position of ownership fund is satisfactory.

3.5. Net fixed assets ownership fund ratio was at its highest rate of 62.75 per cent in the year 2014. The ideal rate of this ratio is 0.67:1. Considering this, net fixed assets ownership fund ratio of SAIL is found to be less than the ideal ratio during the years taken under the study. Its average value is 45.63 which is quite good from the perspective of long term investors. The coefficient of variation of this ratio is 21.08 per cent and skewness is high. Both of the measures indicate a favourable situation.

3.6. Debt service ratio is calculated to provide adequate security to the capital of long term capital investors, that's why higher the ratio, it's better for the organization. In the above table, value of this ratio in the year 2010 is 25.20 per cent which is highest among all the years taken under study. After 2010, there has been a trend of constant decrease in this ratio with the lowest value being 3.33 per cent in 2014. This reduction shows that the burden of interest expenses is increasing than increase in net profit. The coefficient of variation is quite high, 82.12 per cent and skewness shows a state of symmetry.

3.7. Rate of return on ownership fund is considered an important ratio for every industrial organization. Increase in the rate of return shows an increase in efficiency of an enterprise. The above table shows that this ratio has been fluctuating over the 5 years. In 2010, this ratio stood at 20.27 per cent which was the highest among all the years taken under study. Later on, fluctuations were observed in this ratio which can't be considered satisfactory from the perspective of investors. The average value of this rate is 10.76 per cent and coefficient of variation is 57.15 per cent, which is quite high.

Interpretation (Annexure 4)

4.1. Chi square test was used in the above table for testing the authenticity of calculated values of proportional relationships among major financial items of capital management of SAIL. It's clear from the table that value of chi square test at 5 per cent level of significance and with 4 degrees of freedom is much more than the table value of 9.488. It reveals a high relationship among the items.

Interpretation (Annexure 5)

5.1. The above table shows inter-relationships among the financial items of capital management by calculating binary correlation coefficient and presented in form of correlation matrix. By analyzing the coefficient values of the table, it's clear that there is high level of correlation among the financial items at 0.01 per cent level of significance. The correlation coefficients at 0.05 per cent level of significance bring out the fact that profit after tax of SAIL has a high level of negative correlation with financial items mainly number/amount of equity shares, amount of accumulation fund, total loan amount, net worth/amount of ownership fund, total assets amount, net fixed assets amount and interest expenses. In the same way, net profit after interest and tax is negatively correlated with mainly number/amount of equity shares, amount of accumulation fund, total loan amount, net worth/amount of ownership fund, total assets amount and net fixed

assets amount. Except these two items, there is high level positive correlation among all other items.

Limitations of the Study

The paper is presented from the perspective of an external analyst on the basis of financial ratios calculated from the data contained in annual reports published by SAIL. The validity of the findings depends on the authenticity of financial data given by the company.

Conclusion

The profitability of any industrial institution depends on proper capital structure and management, i.e., in big industrial enterprises having a suitable capital structure is very essential. It's clear from the analysis of capital management of SAIL that it has obtained its share capital through the issue of equity shares which is uncomplicated and secure from the perspective of shareholders. 80 per cent of share capital of the company is invested by the government and rest 20 per cent is divided among other classes. Of the various financial ratios used for analysis, share earnings ratio and ownership fund ratio reveal less than satisfactory position of the firm, while accumulation fund and per share capital ratio, debt equity ratio and net fixed assets ownership fund ratio bring out financial soundness of the organization. Also, the debt service ratio and rate of return on ownership fund ratio demonstrate a satisfactory financial position of the undertaking.

Suggestions

For increasing the productivity of invested capital of SAIL, the authors suggest that the organization can consider using market based price policy, producing modern useful products, controlling the high interest expenses, modernizing integrated steel plants of SAIL and controlling the rising costs.

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Annexure 1: Analysis of Capital Structure

Class	Number of Holders	Amount (in crores)	Percentage
Indian government	01	3304.29	80.00
Insurance companies	12	292.95	7.09
Banking companies	75	129.51	3.14
Mutual funds	31	29.26	0.71
Foreign financial investors	175	241.68	5.85
Global deposit receipts	2	0.45	0.01
Domestic companies	3163	19.15	0.46
Others	388998	113.22	2.74
Total share capital	392457	4130.53	100.00

Source: Annual reports of SAIL.

Annexure 2: Statistical Analysis of Financial Items based on Capital Management

Count Value	Profit after Tax	Number/ Expenses Amount of Equity Shares	Amount of Accumulation Fund	Total Loan Amount	Networth/ Amount of Ownership Fund	Total Assets Amount	Netfixed Assets Amount	Net Profit After Interest & Tax	Interest Expenses
Average	3997.6	4130.6	34647	19812.8	38777.6	76592.2	17869.8	5788.6	654.2
Standard Error of Average	832.97	0.245	1642.87	1675.7	1642.8	3331.67	2312.8		100.88
Standard Deviation	1862.57	0.548	3673.56	3746.98	3673.41	7449.84	5159	2928.70	225.58
Coefficient of variation	46.59	0.013	10.62	96.63	9.47	9.73	28.94	50.59	34.48
Median	3543	4130	35680	19375	39811	73829	16777	5151	678
Minimum	2170	4130	29186	16320	33317	67772	13615	3225	402
Maximum	6754	4131	38536	25281	42666	87313	26771	10132	968
Skewness	0.829	-0.609	-0.811	0.703	-0.812	0.557	1.82	0.847	0.361
Kurtosis	-0.392	-3.333	-0.084	-0.651	-0.086	-0.058	3.655	-0.434	-0.831

Source: Annual reports of SAIL.

Annexure 3 : Financial Ratio Analysis based on Capital Management

Year	Share earnings ratio	Accumulation fund & per share capital ratio in %	Debt equity ratio in %	Ownership fund ratio in %	Net fixed assets ownership fund ratio	Debt service ratio	Rate of return on ownership fund ratio in %
2010	16.35	70.67	49.56	49.16	40.87	25	20.27
2011	11.88	79.76	52.27	50.21	40.62	15	13.23
2012	8.58	86.37	40.99	53.97	43.02	70	18.90
2013	5.25	89.31	52.64	51.10	40.89	4	5.29
2014	6.33	93.28	59.21	48.87	62.75	33	6.13
Average value	9.68	83.88	50.93	50.66	45.63	12	10.76
Standard error of mean	2.02	3.97	2.95	0.92	4.30	4	2.75
Standard deviation	4.51	8.88	6.59	2.05	9.62	.13	6.15
Coefficient of variation	46.60	10.59	12.94	4.05	21.08	8	57.15
Median	8.58	86.37	52.27	50.21	40.89	7	8.90
Skewness	0.829	-0.078	1.571	1.574	4.788	0	0.357

Source: Annual reports of SAIL

Annexure 4 : Chi Square Analysis Values of Proportional Relationship of Financial Items based on Capital Management

Count of Value	Share Earnings Ratio	Accumulation Fund & per share Capital Ratio in %	Debt Equity Ratio %	Ownership Fund Ratio %	Net-fixed Assets Ownership Fund Ratio	Debt Service Ratio	Rate of Return Onownership Fund Ratio in %
Value of Chi square test	1684.204	175.89	938.443	165.133	2116.406	1701.446	4641.885
Degrees of freedom	4	4	4	4	4	4	4
Table value at 5% level of significance	9.488	9.488	9.488	9.488	9.488	9.488	9.488

Source: Annual reports of SAIL.

Annexure 5 : Correlation Matrix of Proportional Relationship of Financial Items based on Capital management of SAIL

Financial Items	Profit After Tax	Number/ Amount of Equity Shares	Amount of Accumulation Fund	Total Loan Amount	Networth/ Amount of Ownership Fund	Total assets amount	Net Fixed Assets Amount & Tax	Net Profit After Interest	Interest Expenses
Profit aftertax	1								
Number/ Amount of equity shares	-0.898**	1							
Amount of accumulation fund	-0.970**	0.890**	1						
Total loan amount	-0.670**	0.456*	0.733*	1					
Networth/amount of ownership fund	-0.970**	0.891**	1.000**	0.733**	1				
Total assets amount	-0.848**	0.710**	0.913**	0.942**	0.913**	1			
Net fixed assets amount	-0.629**	0.624*	0.782**	0.831**	0.782**	0.901**	1		
Net profit After Interest & tax	0.96**	-0.896**	-0.987**	-0.712**	-0.987**	-0.885**	-0.693*	1	
Interest expenses	-0.877**	0.873**	0.947**	0.800**	0.947**	0.947**	0.911**	-0.910**	1

Source: calculated from annual reports of SAIL

*proven at 0.01% level of significance

**proven at 0.05% level of significance

Synthesis of the SnO₂ Thin Film by Spray Pyrolysis for H₂S Gas Sensing

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Abstract

In this work, SnO₂ thin films were deposited onto microspores glass substrate at 250°C by spray pyrolysis technique. The films were studied after annealing in air at temperatures 200°C, 250°C and 300°C for 15 min. These films were tested in H₂S gas at different operating temperatures ranging from 50-300°C. The film showed maximum sensitivity to H₂S gas. The effect of annealing temperature on the optical and gas sensing properties of the films were studied and discussed. It was found that the annealing temperature significantly affects the sensitivity of the SnO₂ to the H₂S. The sensitivity was found to be maximum for the film annealed at temperature 250°C. The quick response and fast recovery are the main features of this film.

Keywords: Annealing, spray pyrolysis technique, sensing, sensitivity.

Introduction

Since the last decade there has been a great deal of interest in the preparation of inexpensive thin films of SnO₂. This is because tin dioxide based thin films with large band gap (Eg>3eV) n-type semiconductors are attractive from the scientific and technological point of view [1]. It has been widely used for various catalytic applications such as a transparent conductive electrode for solar cells [2], a gas sensing material for gas sensors devices [3], transparent conducting electrodes [4], photochemical and photoconductive devices in liquid crystal display [5], gas discharge display, lithium-ion batteries, etc. Their properties depend on their microstructure, the quantity of doped impurities and the size effects of their particles. A variety of techniques have been used to deposit tin oxide (SnO₂) thin films. These include spray pyrolysis [6], ultrasonic spray pyrolysis [7], chemical vapour deposition [8], activated reactive evaporation [9], ion-beam assisted deposition, sputtering [10], and sol-gel [11] methods. Among these techniques, spray pyrolysis has proved to be simple, reproducible and inexpensive, as well as suitable for large area application. Besides the simple experimental arrangement, high growth rate and mass production capability for large area coating make them useful for industrial as well as solar cell applications. In addition, spray pyrolysis opens up the possibility to control the film morphology

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and particle size in the nm range. Spray pyrolysis is a versatile technique for deposition of metal oxides. Till now, many researchers have prepared SnO_2 using chemical spray pyrolysis. For example, they have grown tin dioxide films by spray pyrolysis on microspores glass substrate. However, metal oxides which have been used for nearly four decades for gas sensing ability was first discovered by Seiyama who reported that ZnO thin films exhibit changes in their electrical conductivity with small amount of reducing gases and the same year by Taguchi who reported that partially sintered SnO_2 pellets respond similarly [12, 13]. These were the beginning of a rapid gas sensor development phase. Also some recent studies on the sensing properties of pure nanocrystalline SnO_2 thin films toward H_2S and H_2 seems to contradict the general trend that higher sensitivity is to be expected for smaller crystals, and it was, therefore, concluded that small size of crystals was an essential but not sufficient condition for the achievement of maximum gas sensitivity and fast response [14, 15].

Therefore, our objective in this work was to prepare SnO_2 thin films by the spray pyrolysis method and to investigate the influence of various exposure times of H_2S gas and corresponding flow of current in the sample. Also this paper demonstrates the H_2S sensing properties of SnO_2 thin films. The results of these studies are presented here.

Experimental

Materials and Method

Materials used were $\text{SnCl}_4 \cdot 5\text{H}_2\text{O}$, HCl , H_2O_2 , and H_2S gas. Double distilled (DD) water was used in all the experiments.

SnO_2 Thin Film Preparation

Cleaning of Glass Slide: For thin film deposition we used microspores glass slide as a substrate. Cleaning solution is $3\text{HCl}:\text{H}_2\text{O}_2$ and the glass slides were dipped into the cleaning solution for overnight. Then wash the glass by DD water and put it under sunlight for an hour.

Weighing of Glass: After cleaning glass slide measure the weight of glass slide in which we want to deposit the film.

Details of Spray Pyrolysis System

The schematic experimental set up of the spray pyrolysis system built in our lab is shown in figure 1. It consists of substrate heater, variac, compressor, pressure, regulator, motor with controller and power supply. Due to air pressure, a vacuum is created at the tip of the nozzle to suck the solution from the tube after which the spray starts. The spray funnel is fixed at an appropriate distance from the substrate. The precursor solution was sprayed on to the substrate in air as small drops and around a high temperature zone where thermal decomposition and possible reaction between solutions occur, through compressed air. The flow rate was controlled through air compressor regulator.

Deposition of SnO_2 Thin Film

First of all SnCl_4 was taken as starting material; the clean glass slide was heated for an hour to increase the temperature of the glass slide to 300°C . Now

Synthesis of the SnO_2 Thin Film by Spray Pyrolysis for H_2S Gas Sensing

put the material in the canonical flask in which there are two pipes connector. The first pipe connector is connected with the pump and the other, connected with nozzle (By) for spray the vapour on the slide. After heating the glass slide upto 250°C put the canonical flask on another heater. The spray is done for 10 min. only. After ten more minutes when the temperature of the slide is reduced, the slide was removed from the heater. We can see that there is deposition of film on the slide. Check its conductivity by using the avometer. After making the film again take the weight of glass slide.

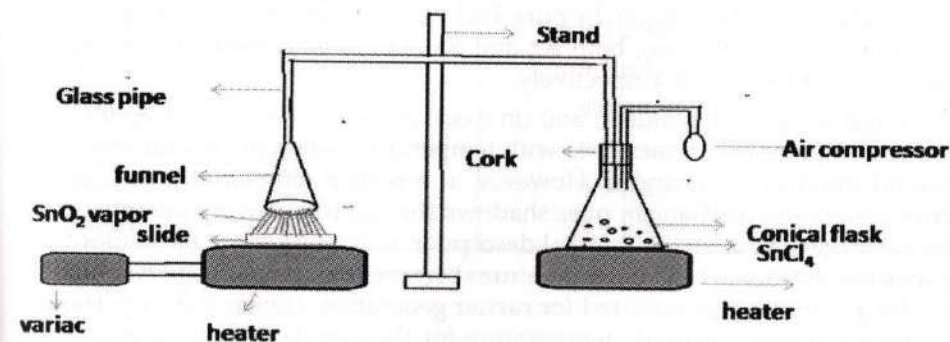


Fig. 1: Apparatus Arrangement of Spray Pyrolysis Method

Result and Discussion

Thickness Measurement: For determining the thickness of different films first we have to measure the mass of glass substrate and deposited film substrate respectively. Now measure the difference between the mass of deposited film and non-deposited glass substrate. We know that density of the given material any using the formula.

$$\text{Density } \rho = \frac{\text{mass of deposite thinfilm} - \text{mass of glass slide}}{\text{volume}}$$

$$\rho = \frac{M_f - M_b}{A \cdot t} \quad \dots\dots\dots (1)$$

When film is deposited by using spray pyrolysis method nanoparticle are deposited by layer and layer on the glass substrate. The thickness of layer can be calculated by eq. (1). When we deposited thin layer on the glass substrate of SnO_2 the conductivity vary with temperature. The thickness of prepared SnO_2 thin film is 82.4nm.

Annealing: Annealing, in metallurgy and materials science, is a heat treatment that alters the physical and sometimes chemical properties of a material to increase its ductility and reduce its hardness, making it more workable. It involves heating a material to above its recrystallization temperature, maintaining a suitable temperature, and then cooling. In annealing, atoms migrate in the crystal lattice and the number of dislocations decreases, leading to the change in ductility and hardness.

Sensitivity v/s Temperature: To measure the efficiency of gas sensor. The graph has been plotted between sensitivity and temperature. Figure 2 shows that with the increase of temperature, sensitivity also increases linearly and reaches its saturation limit. With further increase of temperature the sensitivity decreases. It shows that sensitivity of the sensor is variable and is good only at a maximum temperature.

However most recently, the authors of the related technical papers have almost unanimously employed $S = R_a/R_g$, in which R_a and R_g are the steady state resistances of the sensor in pure and gas contaminated air, respectively. According to this definition, both R_g and R_a should be measured at operating temperature of the device, respectively.

S is temperature dependent, and tin oxide based gas sensors are operated at elevated temperatures. S increases with temperature when the interaction at the gas-solid interface is enhanced. However, at a certain temperature the thermal carrier generation mechanism over shadows the same caused by the interaction with the target gas. Also the thermal desorption of the target gas molecules from the sensitive surface at higher temperatures becomes more significant and hinders the solid-gas interaction required for carrier generation. Hence, it is important to find the maximum sensitivity temperature for the sample devices fabricated. In Fig.2 the results of our sensitivity measurements at various operating temperatures is presented.

Table 1: Sensitivity Measurements at Various Operating Temperatures

Voltage	Temp (°C)	R _a (resistances of the sensor in air) (ohm)	R _g (resistances of the sensor in gas) (ohm)	Sensitivity S= R _a /R _g
10V	100	1.18	7.5	0.157
10V	150	1.50	9.5	0.157
10V	200	1.66	10.5	0.158
10V	250	2.94	9.5	0.309
10V	300	1.28	8.5	0.151

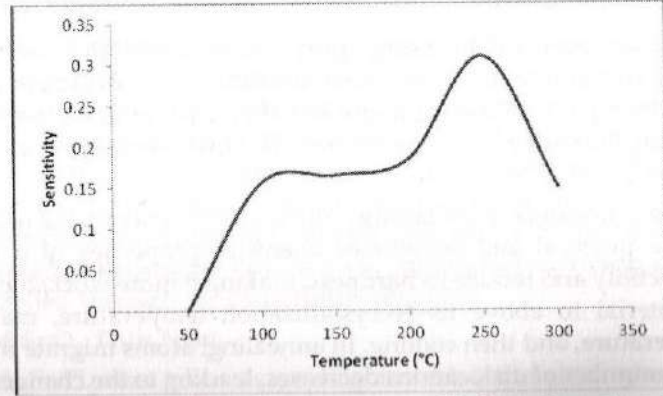


Fig. 2: Graph Showing Sensitivity Measurement at Various Operating Temperatures

Table 2: Various Exposure Time of H₂S Gas and Corresponding Flow of Current in the Sample

Time	Current
1min	10μAm
2min	9.9 μAm
3min	9.7 μAm
4min	9.5 μAm
5min	9.2 μAm
6min	9.1 μAm
7min	9.0 μAm
8min	8.9 μAm
9min	8.9 μAm
10min	8.9 μAm

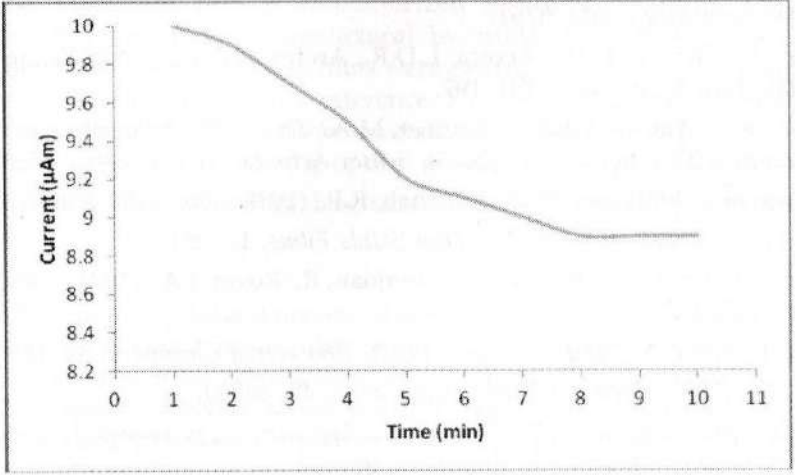


Fig. 3: Graph Showing the Exponential Decay of Current with Increase in Exposure Time of H₂S Gas

Fig.2 shows that the exposure time of H₂S gas and variation of current. To measure the sensitivity of the sensor for H₂S gas the graph has been plotted between exposure time and current which shows that in the early minutes of exposure of gas the current were found to be high and as the exposure time of gas increases the value of current start decreasing exponentially and reaches to its saturation value.

This happens because in the early minute of exposure the gas molecules occupied the free space of the specimen slide and current is found to be maximum. With the further exposure of gas more and more molecule of gas occupies the free space and when all the free space of specimen slide is being occupied, the current value decreases and reaches to its saturation value.

Conclusion

We have prepared tin oxide thin films by a simple and convenient method. We have successfully prepared SnO_2 films by spray-pyrolysis method using $\text{SnCl}_2 \cdot 5\text{H}_2\text{O}$. The sensor exhibited excellent sensitivity and rapid response to the presence of H_2S gas at low temperature. The maximum sensitivity was obtained at an operating temperature of 250°C for the exposure of H_2S . The results of the H_2S sensing studies reveal that the SnO_2 film prepared by spray pyrolysis method is a suitable material for the fabrication of the H_2S sensor.

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Characterization of Manganese Sulphide Thin Film by Spray Pyrolysis

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Abstract

Manganese sulphide (MnS) thin film is deposited on the glass substrate using aqueous solution of manganese chloride (0.1N) and thiourea (0.1N) dissolved in double distilled water by using spray pyrolysis deposition method at 390° . The prepared MnS thin film is characterized optically by using UV-Visible Spectrophotometer and microstructural by using X-Ray diffraction. Optical absorption measurements of thin films were carried out in the visible region (380–1000 nm) with glass surface as a reference. The electrical properties of MnS thin film is carried out using four probe methods. The strong absorption edge of the spectrum is used to calculate the optical energy band gap of MnS thin film.

Keywords: MnS thin film, Electrical properties, Optical properties, Spray pyrolysis.

Introduction

Wide ranges of metal and non metal semiconductor compound are studied for the deposition of thin film on substrate (1-5). Now a day's varieties of methods are used for thin films deposition such as chemical bath deposition, electro deposition, spray pyrolysis, screen printing, spin coating, sol gel coating, etc. In this article spray pyrolysis method used for deposition of MnS thin film. Spray pyrolysis method is simple, low cost and convenient for large layers of deposition on the glass substrate (6-9).

Manganese sulphide belongs to VII-VI compound semiconducting material. Optical band gap of MnS film ($E_g = 2.2 \text{ eV}$) having a potential application in photodiode, gas sensors, solar cell, transparent electrodes, solar cell, photo transistor. The MnS thin films are having potential use in solar cell application in the form of a window buffer material (11 -12).

Optical characterization of MnS thin films were prepared using spray pyrolysis technique is studied by UV- VIS spectrometer from its absorption spectrum in optical range (380–1000nm). Electrical characterization of MnS thin film is done by four probe methods with correction factor and for thickness measurement gravimetric method is used (11). The structural nature of deposited thin films is determined by XRD analysis.

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Experimental Work

Before deposition the glass substrate was cleaned in conc. Nitrate acid, alcohol and distilled water for several times to remove the impurities on the surface of substrate. The glass substrate is weigh before and after deposition using electron unipan microbalance of accuracy 10^{-4} gm. Manganese chloride (0.1N) and thiourea (0.1N) solution are prepared in 100 ml double distilled water and stirrer for 7-8 hours on electronic stirrer. By mixing manganese chloride and thiourea in balance from an aqueous solution of MnS thin film is prepared. Now the clean glass substrate was arranged on hot metal plate on heating coil with controlled variac with suitable temperature (390°C). The solution sprayed on the glass substrate to form MnS thin film. After deposition the glass substrate was allow. to cool at room temperature.

Prepared MnS thin film is used to study optical properties, electrical and energy gap measurement (6-9). Optical absorption and percentage transmission were measured by UV-VIS Spectrophotometer Elco (SL- 159) in the wavelength range 380–1000 nm. Electrical properties are studied using four probe methods with correction factor for thin layer (4.532) and the thickness of deposited MnS thin film is determined by gravimetric method.

Result and Discussion

1. Structural characterization:

Fig. 1 show XRD pattern of MnS thin film deposited by spray pyrolysis method. The film was characterized by using X-ray diffractometer. The XRD pattern is mixed phases of Cubic and hexagonal symmetry. The peak observe at $2\theta = 26.358, 32.784, 49.832, 60.431$ and 73.176 (JCPDS card no. 06 - 0518). The nature of deposited MnS thin film is crystalline.

2. Optical characterization:

Fig. 2 and Fig. 3 show Optical absorption and % transmission of the deposited MnS thin film in visible region (380–1000 nm) on ELCO –SL159 Spectrophotometer which shows high transmission in the visible wavelength. Band gap (Fig. 4) of MnS thin film is determine by the equation of stern (6-9). Absorption coefficient $(\alpha \cdot h\nu)^2$ is linear function of frequency which indicates direct transition in MnS material at strong absorption edge.

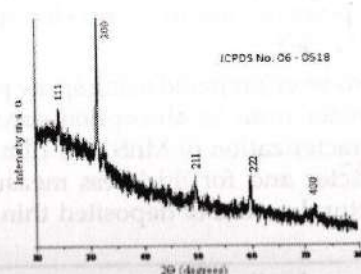


Fig. 1 XRD Pattern for MnS Thin film

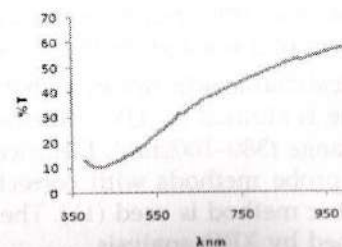


Fig. 3 plot of %T vs wavelength (nm) for MnS thin film

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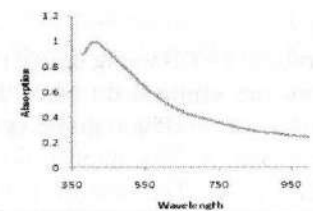


Fig. 2 absorbance of MnS thin film

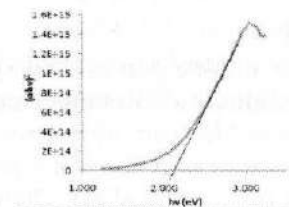


Fig. 4 Band gap of MnS thin film (Eg = 2.1 eV - 2.2 eV)

3. Electrical characterization:

MnS thin Film is studied for thickness parameter by using weight difference density method (gravimetric method). MnS thin film thickness is calculated by weight difference equation.

Electrical characterization of MnS thin film is studied by using four probe techniques which is most commonly method used to determine bulk resistivity and conductivity of the material (11).

Due to the combination of current and voltage probe correction factor is applied to determine resistivity of the thin film. Fig. 5 and Fig. 6 show the resistivity and conductivity as a function of temperature. Electrical conductivity as a function of inverse of temperature for MnS thin films are show in Fig. 7.

Figure shows Resistivity of the MnS thin films decreased with the increases in temperature and conductivity is increased with increase in temperature.

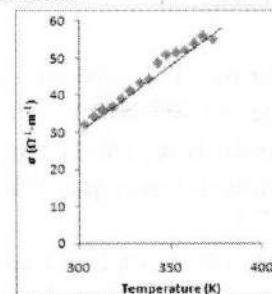


Fig. 6 Electrical Conductivity for MnS thin film

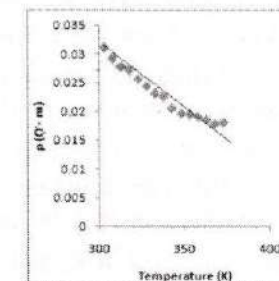


Fig. 5 electrical resistivity for MnS thin film

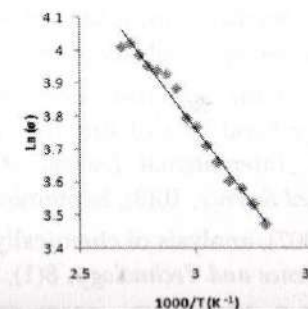


Fig. 7 plot of Ln (σ) vs 1000/T

Conclusion:

Thin film of MnS deposited on glass substrate at 390°C using spray pyrolysis technique is identical. Various characterizations are studied on MnS thin film. XRD pattern of MnS thin film is mixed phases of Cubic and hexagonal symmetry. XRD of MnS thin film show the peaks at $2\theta=26.358, 32.784, 49.832, 60.431$ and 73.176 with orientation (111), (200), (211), (222), (400). The energy band gap of MnS thin films is obtained at $E_g = (2.1 - 2.2 \text{ eV})$.

Increase in conductivity with temperature concludes that MnS material is semiconducting material with single charge carriers. Various characterizations analysis show that the spray pyrolysis technique can be used to prepared MnS thin film on glass substrate and the deposited thin film can be used in various applications.

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Phyto Diversity in Buxawaha Tehsil, District Chhatarpur, M.P., India. Part-I: Tree Diversity

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Abstract

The study area is a protected forest in Buxwaha tehsil in Chhatarpur district in the state of Madhya Pradesh. The study was carried out to determine the diversity at tree layer. The study area was sampled with 50 square quadrats of 30 x 30 m size. In total 57 species of trees were recorded. Basal area was found to be maximum for mahua (*Madhuca longifolia*) while frequency, density and IVI were found to be maximum for teak (*Tectona grandis*). Different diversity indices produced different values. Whittaker plot indicated almost log normal model while the K-dominance plot indicated poor evenness in the tree layer. The rarefaction plot indicated a little more effort required for sampling.

Keywords: Chhatarpur, Tree diversity, IVI, Whittaker plot, K-dominance plot.

Introduction

The study area, forms a part of the Bundelkhand region which comes under Deccan Peninsula Biogeographic Region of India (WII, 2000). The area has highly undulating topography, varies from 408 m to 466 m above sea level. First description of the area as the Highlands of Central India, was given by Forsyth (1872). At the time teak was scattered all over the region. Even at that time settlements in the forests, for the common requirements in timber and fuel have hacked down the forests into mere scrub. Buch (1991) has described the area under the southern part of the Yamuna catchment. Presently the forest of the study area are maintained as protected forests means where the rights of the people are protected to use the forest as resource for nistar purposes.

According to the Revised Survey of Forest Types of India (Champion and Seth, 1968), forests in the area are of two types, dry tropical and dry teak forests:

1. II 5ACIb and
2. II 5AC₃.

The area receives an average rainfall of more than 1,000 mm. With so much rainfall still the area is included under dry zone probably because the rainfall is highly seasonal. More than 80 per cent of the rain falls within a short interval of about 3 months from about mid-June to mid-September. Most spectacular is the

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summer aspect of the forests when the temperature rises from the lowest of about 8°C in the winter to to about 45°C in the summer. The entire forest gives a deserted, denuded look with *Lannea coromandelica* and *Bowsellia serrata* trees with their whitish stem, standing out almost as flagship species.

Study area has relatively good variety and density of vulnerable to least concern mammals. Some of them are: Chinkara (*Gazella gazelle*), four horned antelope (*Chausingha, Tetracerus quadricornis*), Sloth bear (*Melursus ursinus*), leopard (*Panthera pardus*), hanuman langur (*Presbytes entellus*), Rhesus macaque (*Macaca mulatta*), Indian mongoose (*Herpestes edwardsii*), small mongoose (*H. javanicus*), jackal (*Canis aureus*), jungle cat (*Felis chaus*), Indian civet (*Paradoxurus hermaphrodites*), common fox (*Vulpes bengalensis*), hyena (*Hyaena hyaena*), nilgai (*Boselaphus tragocamelus*), wild boar (*Sus scrofa*), sambar (*Rusa unicolor*), spotted deer (*Axis axis*), porcupine (*Hystrix brachyura*), tree shrew (*Ananthana ellioti*), wild dog (*Cuon alpinus*) and honey badger (rattle, *Mellivora capensis*). Still of importance is that the vulture species *Gyps bengalensis* has also been spotted in the area.

Several indices have been proposed to quantify the biodiversity, but so far no single index has been found adequate to summarize the concept of biodiversity (Hulbert, 1971; Purvis & Hecter, 2000). Magurran (2004) considers that richness(s) as proposed by Whittaker (1972) is the simplest and still most commonly applied index to represent biodiversity, however, accepts that species or trait abundance is also important for diversity. Simplest of indices incorporating the abundance was proposed by Berger and Parker (1970). The index reports the proportion of most abundant species and has analytical relationship with the geometric series of the species abundance model (May, 1975; Caruso *et al.*, 2007). Shannon and Simpson have combined richness and abundance to propose compound indices (Magurran, 2004), Simpson's evenness index, being the inverse of Simpson's diversity index is closely related to the later. One controversy is about the Shannon index, Shannon Weaver index or the Shannon Wiener index. Original paper was published by Shannon (1948) and was again published with Shannon and Weaver (1949). The source of Shannon Wiener is not known. Thus for Shannon index Shannon (1948) should be quoted.

Variety of methods used to display species abundance data has made it difficult to make a comparative studies of diversity. Out of several species abundance distribution methods one of the best known and most informatics methods is the rank/abundance plot or dominance/diversity curve (Magurran, 2004), to which Krebs (1999) prefers to term Whittaker plots in celebration of their inventor (Whittaker, 1965). In this plotting proportional or percentage abundances are used. k-dominance plot is the another way of presenting species abundance data in a ranked format (Lambshead *et al.*, 1983; Platt *et al.*, 1984). Y-axis in the plot is percentage cumulative abundance while the X-axis is the species rank or log species rank. Under this plotting method more elevated curves represent the less diverse assemblages and *vice versa*. The shape of the plot indicates the type of species abundance, viz., geometric series log normal or broken stick.

Several possibilities exist for describing tree size and accordingly also tree size diversity. Examples are diameter, basal area, height, crown height and crown

width. Circumference at breast height (CBH) can easily be converted to Diameter at breast height (DBH) or basal area and is most simple method to measure, hence, is a preferred method to sample tree size. The diameter is also highly correlated to other tree size parameters (Lexerod & Eid., 2006). Diversity indices, dominance abundance plots and importance value index (IVI) (Brashears *et al.*, 2004) have become common methods of phytosociological analysis, for comparison between sites and to determine the percentage of similarity between two sites. The purpose of determining diversity by a numerical index is to provide a means of comparison between different sites (Hill, 1973). However, some objections have been raised against biodiversity values. Morris *et al.* (2014) consider that biodiversity is a multidimensional property.

So far no any systematic study has been carried out in the region either for its vegetation nor for phytodiversity. Present study was made, therefore, to analyze phytosociology, calculate some diversity indices and draw some plots to draw inference about the tree diversity of the forests of the area.

Material and Methods

The tree layer was studied with the help of square shaped 50 quadrats of 30 x 30 m. The size of plant to be taken as tree has some variation according to different workers. Brashears *et al.* (2004) have taken plants with >12.7 cm diameter at breast height (Circumference >39.91 cm), Forest Survey of India, in its report has taken >10 cm diameter at breast height (Circumference >31.43 cm). On the other hand, Mishra (1989) and Chaubey *et al.* (2015) have taken plants with >6.36 cm diameter at breast height (Circumference >20 cm) as trees; and this has been adopted for the present study. Number and girth of trees were recorded species wise in each sampling plot.

1. Importance Value Index (IVI)

Basal area, frequency and density, their relative values and Importance value index (IVI) of individual specie were calculated using the following formulae:

$$\text{Basal area} = \frac{(\text{Circumference at breast height})^2}{12.56} \times \frac{\text{No. of sampling plots in which the species is present}}{\text{Total No. of plots sampled}} \times 100$$

$$\text{Frequency (\%)} = \frac{\text{No. of individuals of the species}}{\text{Total area sampled (ha)}} \times 100$$

$$\text{Density (Ha}^{-1}\text{)} = \frac{\text{Basal area of the species}}{\text{Basal area of all the species}} \times 100$$

$$\text{Relative basal area} = \frac{\text{Frequency of the species}}{\text{Frequency of all the species}} \times 100$$

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$$\text{Relative frequency} = \frac{\text{Frequency of the species}}{\text{Frequency of all the species}} \times 100$$

$$\text{Relative Density} = \frac{\text{Density of the species}}{\text{Density of all the species}} \times 100$$

IVI (of trees) = Relative basal area + Relative frequency + Relative density.

2. Diversity Indices

Most of the workers and formulae suggest the use of number of individuals for the calculation of diversity indices. However, during present investigation, in the formulae for the calculation of diversity indices number of individuals has been replaced either by basal area or by IVI. This has been done because taking the number of individuals for the calculation of diversity indices may overestimate the contribution by a species, having larger number of individuals but the individuals have smaller basal areas; similarly the contribution of species with fewer number of individuals but with larger basal area will be underestimated. Similarly IVI is the value obtained by combining the relative values of basal area, frequency and density. The combined value cancels out the effect of large value in any one parameter of a species and small value in another parameter of the same species. Thus, IVI is a better parameter to be taken for the calculation of diversity indices. Therefore, presently diversity indices have been calculated both by taking basal area or the IVI values instead of number of individuals.

(i) Shannon index

Shannon index was calculated using the formula (Shannon, 1948):

$$H' = - \sum p_i \ln p_i$$

Where,

p_i = the proportion of basal area or IVI of the species relative to the total basal area or IVI of all the species,

\ln = the natural logarithm,

The final product is multiplied by -1.

(ii) Margalef's index of species richness (M): (Kent and Coker, 1992).

$$M = \frac{S-1}{\ln N}$$

Where, S = No. of species

N = No. of individuals ha⁻¹ or Total of IVI values.

(iii) Simpson's index (Simpson, 1949)

The calculation of the Simpson index (Simpson, 1949) is based on the squared proportions of basal area in each diameter class.

$$D = \sum p_i^2$$

p_i = the proportion of basal area or IVI of the species relative to the total basal area or IVI of all the species,

The value of D has inverse relationship with the diversity, 0 represents infinite diversity and, 1 represents no diversity.

(iv) Simpson index of diversity = $1-D$

(v) Simpson's index of dominance = $1/D$

(vi) Simpson evenness = $1/D \times S$

S = No. of species

(vii) Berger Parker index of diversity = $1/d$. Berger Parker (1970).

d = (Total basal area or IVI of trees in the grid / Max. basal area or IVI of individual species in grid).

(viii) Pielou's species Evenness index (EH) (Magurran, 2004)

= $(H'/\ln(s))$

Where H' = Shannon index

S = No. of species

Basal area, number of individuals, importance value index (IVI) or any other parameter may be taken as the parameter for plotting K-dominance, rank abundance and rarefaction. However, as the IVI is derived after combining three parameters, this was considered to be better and was used also for drawing the plots. Plotting for K-dominance, rank abundance and rarefaction was done using Biodiversity Pro software (<http://www.sams.ac.uk>).

3. Diversity Plots

The plots were drawn with the help of Biodiversity Pro software. To accommodate several orders of magnitude on the same graph, species are plotted in a \log_{10} format in sequence from most to least abundant along the x-axis and their abundances on the y-axis. High dominance indicated with a steep plots signifying a geometric or log series distribution while shallower slopes imply higher evenness consistent with a log normal or even a broken stick model. Rank abundance plots have the advantage that they highlight the differences in evenness and with the help of the plots inference could be drawn about the model best describing the data (Nee *et al.*, 1992; Tokeshi, 1993; Smith and Wilson, 1996; Magurran, 2004).

Result and Discussion

IVI values for trees is given in Table 1. Among the 57 species of trees, a wide range of basal area, was recorded ranging from 0.0026 m^2/ha for ber (*Zyziphus mauritiana*) to 2.1334 m^2/ha for mahua (*Madhuca longifolia*). This is because the area of study is a protected forest area where the people's right for nistar purposes are protected, i.e., people can collect fuel wood and other nistar requirement from the forest. Although rules are there not to cut living trees but the people have all the methods to first kill a living tree through ringing or some other methods. The tree dies over a time and people are now free to cut and collect such tree. Charcoal is also prepared extensively within the study area, which is another major cause for cutting the trees. However, during all these illegal cutting Mahua trees are spared. The process going on since nineteenth century (Forsyth, 1889) large sized mahua trees are standing in the area as flagship species along with *Lannea coramandelica*. This is the reason for the maximum basal area of mahua.

Table 1: IVI of Trees

SN	Species	BA $\text{m}^2 \text{ha}^{-1}$	Fre	Den ha^{-1}	RBA	RF	RD	IVI
1.	Acacia catechu	0.2633	48	21.33	2.33	4.72	6.03	13.08
2.	Acacia leucophloea	0.3897	8	2.22	3.45	0.79	0.63	4.86
3.	Adina cordifolia	0.0110	2	0.22	0.10	0.20	0.06	0.36
4.	Aegle marmelos	0.6717	70	27.56	5.94	6.89	7.79	20.63
5.	Albizia lebbek	0.1273	8	1.34	1.13	0.79	0.38	2.29
6.	Albizia odoratissima	0.0996	6	0.67	0.88	0.59	0.19	1.66
7.	Anogeissus latifolia	0.1644	26	13.11	1.45	2.56	3.71	7.72
8.	Anogeissus pendula	0.6960	32	28.22	6.16	3.15	7.98	17.29
9.	Bauhinia malabaica	0.0170	4	0.44	0.15	0.39	0.12	0.67
10.	Bauhinia racemosa	0.0483	8	0.89	0.43	0.79	0.25	1.47
11.	Bombax ceiba	0.0935	6	0.67	0.83	0.59	0.19	1.61
12.	Boswellia serrata	0.9410	24	6.22	8.33	2.36	1.76	12.45
13.	Bridelia retusa	0.0405	14	3.33	0.36	1.38	0.94	2.68
14.	Buchanania lanzan	0.3715	58	18.22	3.29	5.71	5.15	14.15
15.	Butea monosperma	0.0510	2	0.22	0.45	0.20	0.06	0.71
16.	Casearia tomentosa	0.1886	12	5.56	1.67	1.18	1.57	4.42
17.	Cassia fistula	0.0245	28	4.67	0.22	2.76	1.32	4.29
18.	Catunaregan uliginosa	0.0113	2	0.22	0.10	0.20	0.06	0.36
19.	Chloroxylon swietenia	0.1356	6	1.78	1.20	0.59	0.50	2.29
20.	Choclospermum religiosum	0.0319	2	0.22	0.28	0.20	0.06	0.54
21.	Cordia myxa	0.0483	2	0.22	0.43	0.20	0.06	0.69
22.	Dalbergia latifolia	0.0594	4	0.44	0.53	0.39	0.12	1.04
23.	Dalbergia paniculata	0.0754	2	0.22	0.67	0.20	0.06	0.93
24.	Diospyros melanoxylon	0.5905	82	37.56	5.23	8.07	10.62	23.91
25.	Ehretia laevis	0.0663	2	0.22	0.59	0.20	0.06	0.85
26.	Elaeodendron glaucum	0.0099	8	0.89	0.09	0.79	0.25	1.13
27.	Emblica officinalis	0.1518	22	5.56	1.34	2.17	1.57	5.08
28.	Feronia limosa	0.0453	2	0.22	0.40	0.20	0.06	0.66
29.	Ficus infectoria	0.1299	2	0.22	1.15	0.20	0.06	1.41
30.	Ficus racemosa	0.0637	2	0.22	0.56	0.20	0.06	0.82
31.	Flacourtia ramontchii	0.2110	66	10.00	1.87	6.50	2.83	11.19
32.	Garuga pinnata	0.0111	16	6.89	0.10	1.57	1.95	3.62
33.	Gmelina arborea	0.0851	4	0.67	0.75	0.39	0.19	1.34
34.	Grewia tiliaefolia	0.0483	4	0.44	0.43	0.39	0.12	0.95
35.	Holarrahaena antidysenterica	0.0085	16	4.44	0.08	1.57	1.26	2.91
36.	Holoptelia integrifolia	0.0204	2	0.22	0.18	0.20	0.06	0.44
37.	Hymenodictyon excelsum	0.0681	4	0.44	0.60	0.39	0.12	1.12
38.	Lagerstroemia parviflora	0.5408	74	24.44	4.79	7.28	6.91	18.98
39.	Kydia calycina	0.0410	6	0.67	0.36	0.59	0.19	1.14

40. <i>Lannea coromandelica</i>	0.4030	44	17.56	3.57	4.33	4.96	12.86
41. <i>Madhuca longifolia</i>	2.1334	70	15.78	18.88	6.89	4.46	30.23
42. <i>Maytenus emarginata</i>	0.0127	2	0.22	0.11	0.20	0.06	0.37
43. <i>Miliusa tomentosa</i>	0.0310	22	4.00	0.27	2.17	1.13	3.57
44. <i>Mitragyna parviflora</i>	0.0203	4	0.44	0.18	0.39	0.12	0.70
45. <i>Ougeinia oojeinensis</i>	0.0292	10	1.56	0.26	0.98	0.44	1.68
46. <i>Schleichera oleosa</i>	0.0046	2	0.22	0.04	0.20	0.06	0.30
47. <i>Schrebera swietenoides</i>	0.0249	2	0.22	0.22	0.20	0.06	0.48
48. <i>Soymida febrifuga</i>	0.0082	10	4.00	0.07	0.98	1.13	2.19
49. <i>Sterculia urens</i>	0.0170	2	0.22	0.15	0.20	0.06	0.41
50. <i>Syzigium cuminii</i>	0.0398	4	0.44	0.35	0.39	0.12	0.87
51. <i>Tectona grandis</i>	1.0449	84	61.78	9.25	8.27	17.46	34.98
52. <i>Terminalia arjuna</i>	0.0717	2	0.22	0.63	0.20	0.06	0.89
53. <i>Terminalia bellirica</i>	0.1657	6	0.67	1.47	0.59	0.19	2.25
54. <i>Terminalia chebula</i>	0.0645	4	0.44	0.57	0.39	0.12	1.09
55. <i>Terminalia tomentosa</i>	0.5390	54	13.78	4.77	5.31	3.90	13.98
56. <i>Wrightia tinctoria</i>	0.0342	4	0.67	0.30	0.39	0.19	0.89
57. <i>Zyziphus mauritiana</i>	0.0026	4	0.44	0.02	0.39	0.12	0.54
TOTAL	11.2992	1016	351.29	100	100	100	300

Abbreviations:

BA = Basal area m²/ha RF = Relative frequency
 Fre = Frequency RD = Relative density
 Den = Density/ha IVI = Importance value index
 RBA = Relative basal area

The study area is basically a teak forest area, but teak is the first species attempted to cut illegally. Hence not a single large tree of teak is visible in the area but a large number of them are surviving in smaller sizes. Due to this, although the teak with basal area of 1.0449m²/ha is second in order with respect to basal area but frequency, density and IVI values were recorded highest for the teak with values of 84, 61.78 and 34.98 respectively. Some of the other species, in decreasing order of IVI, were *Madhuca longifolia* (30.23), *Diospyros melanoxylon* (23.91), and *Aegle marmelos* (20.63). Some other tree species with higher values of IVI were *Lagerstroemia parviflora* (18.98), *Anogeissus pendula* (17.29), *Terminalia tomentosa* (13.98), *Acacia catechu* (13.08) and *Lannea coromandelica* (12.86). During leafless period of the trees in the months of March to May trees like *Lannea coromandelica* and *Boswellia serrata* give a special look with their whitish, tall trees. The forest area had a poor basal cover of only 0.113 per cent, however, such lower, per cent basal cover is not unexpected of a protected forest.

Different diversity indices, calculated for presently recorded data are given in Table 2. The indices were calculated both by taking basal area as well as IVI as the base for calculation. The values for different indices exhibited wide range of variation, however, almost similar values for different indices were obtained either by taking basal area or the IVI for calculating the indices. Thus with the present data any one of the parameter: basal area or the IVI may be taken for the

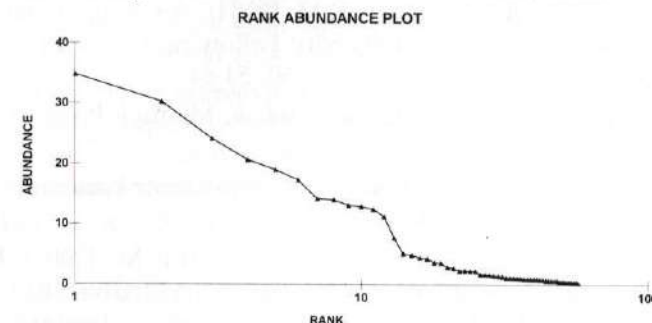
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calculation of biodiversity indices. Different indices giving different values indicate that while comparing two stands through biodiversity indices, comparison should be made with the same index.

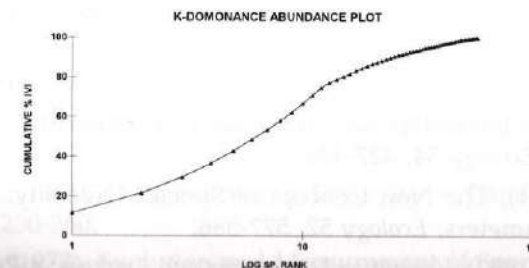
Table 2: Different Diversity Indices

SN	Index	Based on Basal Area	Based on IVI
1.	Shanon index (H')	3.13	3.25
2.	Maragalef index of species richness (M)	9.55	9.82
3.	Simpson index (D)	0.072	0.056
4.	Simpson index of diversity (1-D)	0.928	0.944
5.	Simpson index of dominance (1/D)	13.87	17.86
6.	Simpson index of evenness (1/D x S)	0.243	0.313
7.	Berger parker index of dominance (1/d)	0.189	0.116
8.	Pielou's index of species evenness (EH)	0.775	0.804

Rank abundance curve or the Whittaker plot (Fig. 1) shows almost a log normal model as has been observed by Whittaker (1960) and redrawn by Magurran (2004) and plot drawn by Magurran (1968). The log normal models indicate that the species in the study area have random niche distribution.

**Fig. 1: Rank Abundance Curve or the Whittaker Plot for the Tree Layer in Study Area**

K-Dominance abundance plot (Fig. 2) indicates that evenness is poor in the tree layer of the study area as the more elevated curves represent less diverse assemblage (Mogurran 2004).

**Fig. 2. K-Dominance Abundance Plot for the Tree Layer in Study Area**

The rarefaction plot (Fig. 3) shows an ascending trend indicating that sampling of the area was not satisfactory and requires more intensive sampling.

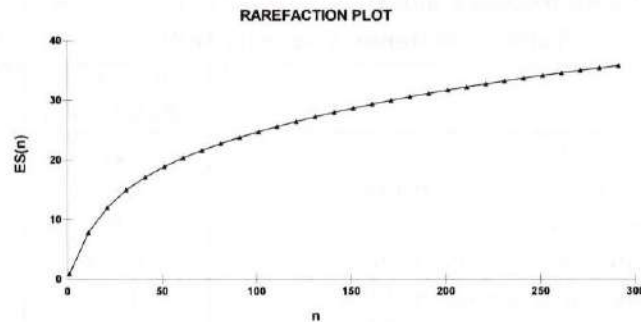


Fig. 3: Rarefaction Plot for the Tree Layer of the Study Area

The study area being a protected forest area is in degraded condition. Tree species, less useful to the local people or the species more useful when surviving (*Madhuca longifolia*) are domination the tree layer. However, the area still supports a good variety and density of wildlife.

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Ethno Botany in Relation to Traditional Herbal Home Remedies for Diabetes in Tribals of Bastar Chhattisgarh

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Abstract

Traditional home remedies and herbal medicine constitute prominent dimensions of local health tradition and unique heritage of district Bastar, Chhattisgarh. In Chhattisgarh, traditional home remedies and herbal medicines are administered both in remote rural areas as well as in urban areas where allopathic medicine is easily available. The health of the people of the state is determined by medical pluralism. Chhattisgarh, the premier herbal state of India upholds unique local health tradition interlinked with a large number of sacred grooves and rich traditional knowledge base of thousands of folk healers, Baidyas, Guniyas and local knowledgeable person in tribal area of Bastar. The Traditional Folk Healers of Bastar, Chhattisgarh have sustained a wide range of folk healing practices since generations together. In recent years, there has been renewed interest in the treatment of different diseases using herbal medicine. Present study is carried out in various localities in district Bastar of Chhattisgarh State. Fifteen antidiabetic plants and plant formulations were documented in this field survey during the year 2006 to 2008. Most of formulation found as Decoction Paste and Juice extract.

Keywords: Diabetes, Traditional herbal remedies, Tribals, Bastar.

Introduction

The traditional and primitive folk healing practices among tribals of Bastar normally involve medicine derived from plants and animals available within local agro climatic zones. Different studies have been conducted by scientists on folk healing practices in different districts of Chhattisgarh. It is evident that folk-logic including cultural, biological, historical, religious, and environmental factors that significantly influence the folk therapy. The concepts of illness and healing are not universal. They vary from culture to culture. One third population of Chhattisgarh is tribal. They have their own value system and cultural interpretation of disease and treatment. They have a very different understanding of why people get sick, and how they can be treated. The traditional healers of Bastar have been treating and rendering miraculous cure to thousands of patients annually.

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World Health Organization (WHO) has recommended the effectiveness of plants in condition where we lack safe modern drugs. Due to the modernization of life-style, Non-Insulin Dependent Diabetes is becoming a major health problem in developing countries. A number of plants have shown varying degree of hypoglycemic and antihyperglycemic activity. Medicinal plants used to treat hypoglycemic or hyperglycemic conditions are of considerable interest for ethno-botanical community as they are recognized to contain valuable medicinal properties in different parts of the plant. Plant derivatives with hypoglycemic properties have been used in folk medicine and traditional healing systems around the world from very ancient time. Despite the introduction of hypoglycaemic agents from natural and synthetic sources, diabetes and its secondary complications continue to be a major medical problem to people.

Materials and Methods

The present research work entitled Ethno Botany in Relation to Traditional Herbal Home Remedies for Diabetes in Tribals of Bastar, Chhattisgarh has been conducted in tribal dominated villages of district Bastar, Chhattisgarh. In this study involves various steps like field study in which questionnaire was filled by the tribals and personal interview was organized, collection of plant specimen, preparation of herbarium and identification of plants with the help of flora. The study was conducted in the year 2006-2008. The methodology of the present work was adopted from some of the earlier workers like Jain (1987, 1988), Masih (1990) and Jain & Singh (1997). The methods of Ethnobiological studies have been summarized by Roy (1989), was also consulted in the present study. The Ethnobiological information was obtained from Baidyas, Sirhas, Gunias, knowledgeable person, experienced people, medicine men, and heads and local inhabitants of the village, who have knowledge of plants for health and livelihood security.

Result and Discussion

The extensive field survey has been observed that Bastar district has very rich flora about the medicinal plants. Details of antidiabetic plants in alphabetical order as per scientific name, followed by family, common name, vernacular name, part used, mode of administration and recommended dosage is listed in Table. During this study, 15 antidiabetic plant species were documented, belonging to 13 families. The drug preparation methods were very old and traditional. Most of the drugs were found to be prepared either by making fine powder in pastel and mortal or paste or decoction or extract from plants were noted to be used directly. Most of the formulations were either decoctions, pastes or extracted juices from crushed or macerated whole plant or plant part(s), depending on the extent administered. The bitter constituents of *Andrographis paniculata* decreases the blood glucose level due to its antioxidant properties and also increases glucose metabolism (Kavishankar *et al.*, 2011).

Table: List of the Plants Documented for Diabetes during the Study

S.N.	Botanical Name	Vernacular Name	Family Name	Plant Part Used	Mode of Drug Preparation and Administration
1	<i>Aeglemarmelos</i> (L.) Corre.	Bel	Rutaceae	Unripe fruit	The unripe fruit pulp of the fruit is eaten with one glass of water
2	<i>Anogeissus latifolia</i> , Wall.	Dhawra	Combretaceae	Bark	The pest of bark boiled with the water filter it take two spoon in empty stomach
3	<i>Azadirachta indica</i> A. Juss.	Leem	Meliaceae	Fruit	Leaves are boiled with two glasses of water. Oneglass of decoction is taken in the morning on empty stomach
4	<i>Andrographi spaniculata</i> (Burm.f.) Wall.	Bhuileem	Acanthaceae	Wholeplant	The entire plant is boiled in water. The decoction prepared and one glass is taken on an empty stomach in the morning
5	<i>Annona squamosa</i> (L)	Chhita	Annonaceae	Leaf	Leaf powder is taken with water daily in empty stomach
6	<i>Cassia tora</i> (L)	Charota	Fabaceae	Root & leaf	Root and leaf boiled with the water half cup taken in morning
7	<i>Costus speciosus</i> , Retz.	Keo-kanda	Costaceae	Herb	Boil the Rhizomes eat directly for diabetes
8	<i>Emblica officinalis</i> Gaertn	Amla	Euphorbiaceae	Fruit	The powder of the fruit taken with water twice in day

9	<i>Ficus glomerata</i> , Linn.	Dumarchhali	Moraceae	Fruit, Leaves, Bark	Dried powder of leaves and bark taken with water. Fruits are eaten directly for diabetes
10	<i>Gymnema sylvestre</i> (Retz).	Gudmar	Asclepiadaceae	Whole plant	The dried powder of whole plant taken with one cup of cow milk twice in a day
11	<i>Paspalum scrobiculatum</i> L.	Kodochaur	Poaceae	Seeds	Cooked seeds are used as rice. It the best food for diabetic patients
12	<i>Pterocarpus marsupium</i> , Roxb.	Beeja	Fabaceae	Leaf & Bark	Dried powder of equal quantity leaf and bark deep in one glass of water over night early morning filter it and take in empty stomach for one week
13	<i>Punica granatum</i> L.	Darmi Anar	Punicaceae	Fruit	The peel of the fruit is removed and dried under the sun . The dry peel is powdered and preserved in a clean glass container. One tea spoon powder is mixed with a glass full of warm water and taken on empty stomach in the morning.

14	<i>Syzygium cumini</i> , Linn.	Chiraijaam	Myrtaceae	Seed, Bark Fruit	1. Chiraijam seeds are dried in the sun and then crushed and made into fine powder. 1-2 tea spoon of this powder is added to one glass of water. 2. 4-5 pieces of dried bark is boiled in 2 glasses of water and reduced to half. One glass of decoction is taken daily in empty stomach in the morning. The powder of fruit directly taken with the water for cure of diabetes
15	<i>Terminalia chebula</i> Retz.	Harra	Combretaceae	Fruit	

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Conclusion

The present research work entitled Ethno Botany in Relation to Traditional Herbal Home Remedies for Diabetes in Tribals of Bastar. Chhattisgarh indicates that the tribals have deep faith on the traditional home herbal remedies for curing the health ailment. The 15 plants belong to 13 families viz., Rutaceae, one plant, Combretaceae, two plants, Meliaceae, one, Acanthaceae, one, Annonaceae, one, Costaceae, one, Fabaceae, two, Euphorbiaceae, one, Moraceae, one, Asclepiadaceae, one, Poaceae, one, Punicaceae, one and Myrtaceae, one plant in the study.

Acknowledgement

I would like to thank all the informants, viz., Baidyas, Sirhas, Guniyas, persons of Bastar for sharing their valuable knowledge of medicinal plants used by them for treatment of diabetes.

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Clean Coal Technology: A Review of Present Practices in India

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Abstract

India ranks third largest coal producing country in the world and is also the fourth largest importer of coal in the world. The aim of this study is have a review of adaptation of CCT in the context of Indian coal based power value chain, with the goal of reducing the negative impacts associated with coal mining. The study also attempts to provide an overview of Indian coal based power value chain and its three pillars: coal mining, coal logistics, and coal power plants. The quality of Indian coal is poor and is worsening since the higher quality resources have already been exploited. Coking coal accounts for around 18-20 percent, of which only a small percentage is of prime coking quality. The rest of the Indian coal is characterised by high ash content. This is due to the fact that majority of coal in India in Gondwana sediments, which are characterised by seams intertwined with mineral sediments. Further Indian coal has high moisture content, while sulphur content and calorific values are low. Coal in India commonly belongs to D, E and F categories which have low calorific value. In India Clean Coal Technology is to be studied in reference to long term planning. The benefits of Clean Coal Technology may not appear in shorter duration but on a longer time framework it appears that India can gain competitive advantage only by adhering to norms and procedures prescribed by Clean Coal Technology. Clean Coal Technology is a broad based concept which is aimed at achieving higher productivity and greater benefits to the users of coal.

Keyword: burgeoning, contamination, deforestation, emission, sediments

Introduction

India ranks third largest coal producing country in the world and is also the fourth largest importer of coal in the world. The abundant availability of coal and its affordability makes it a major contributor for generation of electricity in our nation. Coal accounts for around 69 per cent of the country's electricity output. In the days to come coal as a fossil fuel will continue to play a dominant role in meeting ever-increasing energy demands of the nation. Thus managing the negative consequences of coal mining must be viewed as continued priority.

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Over the past several decades, advancements in clean coal technology (CCT) have managed to reduce the coal industry's negative environmental and health impacts across the globe. The European Union (EU) remains the world leader in cutting-edge CCT, and is home to a wide array of companies specialized in reducing the environmental impact of the coal industry. Many small and medium enterprises (SMEs) from countries such as Germany, Poland and the United Kingdom, offer a range of technological and consulting solutions that could be put to good use in India, as country prepares to curb the negative side effects of its burgeoning coal sector over the coming years and decades.

The aim of this study is have a review of adaptation of CCT in the context of Indian coal based power value chain, with the goal of reducing the negative impacts associated with coal mining. The study also attempts to provide an overview of Indian coal based power value chain and its three pillars: coal mining, coal logistics, and coal power plants. These areas offer significant scope for the reduction of environmental pollution and greenhouse gas emission. The world's largest coal producing company Coal India Limited accounts for around 80 per cent of the India's coal sector has a dominant role to play in the introduction and adaptation of CCT. In coal logistics and transportation, opportunities to explore are introduction of new low emission haul trucks, conveyors, vehicle guiding software, and hydro-transport. The most promising of the three pillars is within coal power plants, i.e., introduction of supercritical, circulating fluidised-bed consumption and integrated gassification combined cycle boiler technology is perfectly suited for Indian conditions. An attempt also been made by briefly addressing other two CCT innovations that are only beginning to be considered in India: Carbon Capture and Storage (CCS) and Underground Coal Gassification.

Coal Mining

Main Coal Regions and Their Characteristics: In India, coal can generally be found in two main geological horizons: Gondwana sediments (Permian) and early Tertiary sediments (Eocene). The majority of the deposits belong to first category, and are located in the eastern and south-eastern part of the country, specifically in Andhra Pradesh, Assam, Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh, Maharashtra, Orissa, Sikkim, Uttar Pradesh and West Bengal. The tertiary coal fields are mainly located in Arunachal Pradesh, Assam, Meghalaya, Nagaland and other North-east regions. Lignite resources are available in Tamil Nadu, Gujarat, Rajasthan, J & K and Puducherry.

The quality of Indian coal is poor and is worsening since the higher quality resources have already been exploited. Coking coal accounts for around 18-20 per cent, of which only a small percentage is of prime coking quality. The rest of the Indian coal is characterized by high ash content. This is due to the fact that majority of coal in India is located in Gondwana sediments, which are characterized by seams intertwined with mineral sediments. Further, Indian coal has high moisture content, while sulphur content and calorific values are low. Coal in India commonly belongs to D, E and F categories which have low calorific value.

Table 1: Classification of Indian Coal with Calorific, Ash and Moisture Values

Grade	Calorific Value Range (kcal/kg)	Ash & Moisture Content (%)
A	Exceeding 6200	Not exceeding 19.5
B	5600 – 6200	19.6 to 23.8
C	4940 – 5600	23.9 to 28.6
D	4200 – 4940	28.7 to 34.0
E	3360 – 4200	34.1 to 40.0
F	2400 – 3360	40.1 to 47.0
G	1300 – 2400	47.1 to 55.0

Coal Washing

Coal washing is a process of separation which uses the difference in specific gravity of coal and the impurities that are extracted along with it, such as shale, sand and stones. The purpose of coal washing is to get a relatively pure marketable coal, with a higher calorific value since non-combustible material is separated from useful combustible material. Due to the high ash content, this process is particularly appropriate for Indian coal, and it started to be adopted in the 1950s. Traditional Indian coal washeries mainly use outdated technology, but the need for coal washing is increasing and calls for an improvement of the technologies and a broadening of beneficiation. Coal washing allows the lowering of production costs through improved thermal efficiency and availability, and also reduces the amount of material to be transported, hence cutting emissions in transportation. Furthermore, coal washing increases the calorific value of the coal, lowers ash disposal, operation and maintenance costs, reducing the need for imports of higher quality coal. Coal washing also reduces land requirements, and has a social impact as well, decreasing settlement costs and effects on cultivation in the impact zone, and improving health and living conditions. In 1997, the Ministry of Environment and Forest decreed that all thermal plants located at a distance of a thousand kilometres or more from the mine (or located in very polluted urban areas) must use coal not exceeding 34 per cent ash content. This law does not apply to plants situated near mining sites, which can burn coal without beneficiating it. The regulation was meant to be operative since 2001, but has not been implemented on a large scale. In India there are currently 17 coking coal and 32 thermal coal washeries, with a total installed capacity of 130 million tonnes a year. However, the real effective utilization is rather low. The actual washing is preceded by crushing, in order to reduce the size of raw coal. While the smaller pieces are not washed, the bigger ones are beneficiated by jig, heavy medium bath or heavy medium cyclone. In some washeries inefficient barrel washers and spirals are used, and sometimes the cleaning of coal is limited to rock removal by hand picking. However, these methods are clearly not efficient.

Although the government's support and Coal India's recent investments in coal washing, obstacles for implementation and improvement of this kind of coal beneficiation continue to persist. There is widespread perception that improving

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coal washing would add to the cost of supplied coal, but this would be true from a very short term perspective only. In fact, in the longer term, improving these techniques would have major economic benefits.

The hurdles are not technical, but primarily political. One of the main issues in achieving a satisfying development of coal beneficiation is the need for effective coordination between the different governmental departments dealing with coal (such as the Ministry of Coal, the Ministry of Transportation and the Ministry of Railways); from extraction, to preparation, transportation, distribution and use. Furthermore, the coal pricing system should also be addressed, including the quality of coal as a factor influencing in the cost, so that there would be a further incentive to the production of quality coal.

Until 2012, coal supplied by Coal India the country's largest single supplier, was priced based on quality, grade and the amount of heat generated from a particular type of coal. This method was revised in January 2012, and made the price depend on the coal's gross calorific value, which led to an increase in prices. In April 2013 Coal India and NTPC Limited, a large state-owned power generation company, agreed on a new pricing system; the price of coal will now be calculated based on the amount of heat that can be generated by burning a particular amount of coal, with coal sampling done by a third party.

Environmental Issues with Coal Mining and Washing

Coal mining has severe impacts on the environment that go well beyond the problem of production of CO₂ generally associated with the use of coal. Mining deeply affects air, water and land resources. Due to mining, dust and methane, sulphur dioxide (SO₂), oxides of nitrogen, CO and other gases are spread in the air, thus affecting water and land resources, as well as human health. These are consequences of underground mining and, even more, of opencast operations. Another source of damage related to mining are fires in the mines, which are frequent and have severe consequences not only for the environment and the safety of the workers, but also for the production itself.

The impact of mining and associated activities on water resources is also difficult. Mining requires large amounts of water, diminishing the quantity available for other purposes. Furthermore, both underground and opencast mining disturbs aquifers and water table.

The main pollutants associated with mining are suspended solids, dissolved salts acidity and iron compounds. One of the major problems related to coal mining and water pollution is Acid Mine Drainage (AMD), the outflow of acidic water from coal mines. It contaminates drinking water and endangers the life of vegetation and water species; moreover, it also causes the corrosion of mining equipment and structures (barges, bridges, concrete materials). This issue is especially associated with opencast mining, as well as with coal washing, making necessary more adequate waste water disposals, in order to prevent the contamination of underground and surface water. Developing technologies for containment or re-use of AMD and other contaminants such as mercury that result from mining and coal washing, should become a bigger priority in the

coming years. Disposing of such rejects in an environmentally-friendly manner is challenging. One option that is already used in India, but could be developed further, is greater use of these rejects in power generation. As some still have carbon content, they can generate power through fluidised-bed combustion (FBC) or circulating fluidised-bed combustion (CFBC) units at the end of the washery.

The impact of mining activities on land is probably the most evident, with large scale excavations, removal of top soil, dumping of solid wastes, cutting of roads, creation of derelict land, subsidence and so on. Whereas the impact of opencast mining is more noticeable, the one of underground drilling might not be immediate to the eye, but it does affect the land on a large scale. Finally, noise and vibration generated by mining and related operations, such as blasting and crushing, not only affect the quality of life and work of the people working or living in the mining area, but also have an impact on the environment, as they disturb the local fauna, causing it to move elsewhere, hence misbalancing the ecosystem.

The Indian government has issued legislation concerning environmental protection, with the aim of addressing these kinds of problems. The Ministry of the Environment and Forests has also started to reject some projects for new coalfields due to their environmental impact, whenever it determines that they would result in further deforestation and water pollution. Nevertheless, these measures have not had the expected outcome, as the focus on mining as a priority is still very strong, hence implementation of laws and regulations is still rather weak. Following some comments from civil society and non-governmental organizations (NGOs), Coal India has tried to mitigate the effects of coal mining, introducing air, water and land pollution control measures with the Environmental and Social Mitigation Project (ESMP). This project was implemented in 25 selected opencast mines, was funded by the World Bank from 1996 to 2002 and tackled both environmental and social problems. Nevertheless, reports on CIL environmental practices found that in some cases overburden is not stocked safely, plantation density is below expectation, topsoil is not properly restored and effluent, sewage treatment is often inadequate and, in general, some mines operate without appropriate environmental systems certification. Furthermore, problems of compliance have been pointed out in the field of monitoring of implementation of environment protection performance. In general terms, it can be said that clean coal technologies and environmental concerns have to be implemented under strict monitoring and need special care to succeed in India. As new power plants are built, they do incorporate more CCT. There is also a need to renovate the older plants, as the main goal is to keep them running as long as possible, without significant regard for environmental concerns.

Main Coal Washing Technologies Currently are in India

- Coking coal:
 - o Heavy media (HM) cyclones
 - o Deshaling jigs, HM bath, batrac jig and froth flotation
 - o Deshaling jig, HM cyclone and flotation

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- o HM washer, cyclone and flotation
- o Jig (coarse coal), jig (small coal) and froth flotation
- o Jig and heavy media.
- Thermal coal:
 - o Rotary breaker and barrel washer
 - o HM washer, baum jig and flotation
 - o Run-of-mine (ROM) jigs, batrac jigs
 - o HM washer, HM cyclone
 - o HM cyclone, hydro cyclone and spiral.

Some new technologies are being introduced. For example: fine coal washing and washing of low volatile medium coking coal for enhancement of domestic met coal supply; and washery flow sheet simulation and IT applications for improved recovery and better quality control. Furthermore, dry beneficiation is also in the demonstration stage. Other new technologies could also be considered for more widespread implementation. One example is dry sorting through the use of X-ray machines, which is an affordable alternative to coal washing, which has the added benefit of not consuming (often scarce) water resources. X-ray sorting does, however, require highly-skilled personnel to operate effectively.

Coal Logistics

Logistics is a key factor in the coal supply chain, as coal transportation can account for up to 70 per cent of the delivered cost of coal. Logistical considerations begin at the coal mine proper and include the use of appropriate and economic mining and material handling equipment and the transportation of coal to stock yards and waste dump sites. On-site transportation is most commonly either discontinuous (principally by large haul trucks) or continuous (such as belt conveyors or mobile conveyor bridges).

The transfer of coal from the point of extraction to the final consumer (power plants or industry) can be done through various modes of transport. In India, the supply of coal to consumers is determined by the Standing Linkage Committee (SLC). The SLC establishes linkages between supply points, core consumers (power, cement and steel industries) as well as non-core consumers (other industries). Some 56 per cent of coal transport from the mines to consumers is based on railways, with the rest transported by road (approximately 19 per cent), merry-go-round (MGR) systems for the increasing number of power plants located near pitheads (approximately 18 per cent) and other. The share of domestic inland water transportation (IWT) is negligible, but the growing amount of coal being imported to cover India's energy needs principally reaches the country by ship. Most of India's major coal ports such as Mundra, Dahej, Magdalla, Sikka and others are located in Gujarat on the west coast, although new ports are being built in the south and east of the country to accommodate the increasing imports. Within the ports, coal is unloaded, handled and stored mainly by conveyors before it is transported further either by road or railway.

Even though transport by road offers flexibility, fuel, tyre, labour and maintenance costs make the usage of trucks costly and inefficient. As a result, large companies such as state-owned Coal India Ltd., principally utilise trucks for carrying coal from pitheads to the nearest railheads. Coal transportation by road is handled by a variety of private companies and large truck owners' associations. The share of coal transported by railway is on the rise, and India is currently planning to complete three major railway lines in Jharkhand, Chattisgarh and Odisha by 2017 in order to reach its goal of producing 615 million tonnes of coal in 2016/17. Transportation by railway is handled by state-owned Indian Railways.

The on-site discontinuous transport method consumes a considerable amount of energy and has an unfavourable carbon footprint due to emissions from large haul trucks. In contrast, continuous mining systems rely on electricity and their lower carbon emissions will likely increase the appeal of these systems in the future. The same applies to transportation from mines to the final consumers. A study of the Indian transport sector by Ramachandra and Shwetmala shows that shipping accounts for the smallest amount of CO₂ and CO emissions, followed by railways, aviation and road transport.

Type of transport	CO ₂ emissions	CO emissions
Shipping	0.6%	N/A
Railway	2.0%	1.2%
Aviation	2.9%	45.1%
Road	94.5%	53.3%

As stated earlier, coal in India is mined at a limited number of locations primarily in the east of the country, with major coalfields including Jharia, East Bakara and West Bakara which are often located far away from factories and power plants. This makes coal transport an important factor that leaves some scope for a reduction in emissions. Even though power plants are increasingly being built nearer to coal mines enabling transport through electricity-powered systems such as MGR and conveyors the scope for greater investment in such systems in India remains limited. Given the country's extensive railway network and the costs involved with building, operating and maintaining conveyors, these systems will likely remain feasible only for distances of some 10 kilometres, replacing transportation by truck to a limited degree.

As coal in India contains a large amount of ash frequently between 40 and 50 per cent the transportation of such high amounts of inert material over long distances increases emissions in transportation. Effective coal washing can significantly reduce the amount of matter that needs to be transported. Since 2002, the Indian Ministry of Environment and Forest requires that coal shipped more than 1,000 kilometres (revised to 500 in 2012) from the mine should be washed and have less than 34 per cent ash. An analysis of one facility, the Dadri Power Plant, estimates that the use of coal washing in that plant alone reduced CO₂ emissions from transportation and combustion by over 600,000 tonnes per year. Another recent study discovered a significant reduction in emissions after dry

coal sorting using X-ray sorting equipment; CO₂ emissions were reduced by four kilograms when transporting X-ray-sorted coal over a distance of 30 kilometres.

Technological Development and Potential for Sustainable Coal Logistics

The increasing share of railway transportation is making coal logistics in India more sustainable over the long term. The construction of expensive new lines is, however, proceeding slowly and the overburdened railway transport network is causing bottlenecks in the transport of coal.

Although already diminishing, coal transport by road will remain a reality in India for some time to come. As a result, procuring modern vehicles with lower CO₂ emissions and new technology such as electronic-controlled engine management and twin-speed drive axle which increases fuel efficiency should be encouraged. Such technology is already available in India and has been implemented into haul trucks by companies such as India's second largest vehicle manufacturer, Ashok Leyland.

In addition, modern information technology, such as advanced vehicle tracking and dispatch systems, can greatly increase efficiency in transportation, save fuel and reduce emissions. As with other vehicle technology, it is already available domestically: One recent example is the implementation of a radio-frequency identification (RFID) vehicle tracking system developed by the Mumbai-based company Essen. The system was introduced by the Sundargargh Truck Owners' Association, which manages a fleet of over 4,500 coal transport trucks.

Beyond improving existing modes of transportation, coal logistics in India could be made more sustainable by adopting new methods. One technological solution that is already widely available but has yet to be adopted on a large scale in India is hydro-transport, which is primarily based on coal slurry pipelines. These enable the transportation of crushed coal mixed with water over long distances while integrating coal beneficiation (such as marginal ash reduction), mitigating risks of spontaneous combustion, completely isolating coal transport from the outside environment, and enabling the dewatered coal to be readily converted into briquettes. In India, hydro-transport would be economical y feasible across distances of 10 kilometres or more. Even though hydro-transport is seeing increased investment in other coal-abundant countries, such as China, the slow and complex decision-making process in India has so far prevented its widespread adoption.

SME Opportunities in Logistics

1. Software companies specialising in RFID and Global Positioning (GPS) tracking systems could sell their products to logistics companies and truck owners' associations
2. As Indian transport companies continue to upgrade and modernize their truck fleets with more cost- and fuel-efficient vehicles, highly specialized SMEs that contribute specific components to such trucks could play a role
3. If new modes of transportation, such as hydro-transport, become widely adopted in India, opportunities will arise for specialised SMEs

- Indirect contribution to reducing emissions in transportation: Contributing to coal washing and dry (X-ray) coal sorting, which both greatly help reduce emissions in transportation promoting Clean technologies in India and tackling Climate Change.

Conclusion

In India Clean Coal Technology is to be studied in reference to long term planning. The benefits of Clean Coal Technology may not appear in shorter duration but on a longer time framework it appears that India can gain competitive advantage only by adhering to norms and procedures prescribed by Clean Coal Technology. Clean Coal Technology is a broadbased concept which is aimed at achieving higher productivity and greater benefits to the users of coal. In the short run this technology may appear to be expensive and infeasible but over a longer term time horizon CCT would not only help boosting coal production but also increase productivity thereby ultimately lowering the cost per tonne of coal mined. The critical mindset of managers needs to undergo a thorough change towards CCT. Coal mining in future will have to include activities such as coal washing and efficient coal logistics.

The country's continued investment in new coal mines and power plants is increasingly accompanied by investment in CCT. A major coal consumer and importer, and home to the world's largest coal producing company, CIL, India is in a promising position to become a major player in CCT, once some of the aforementioned obstacles alongside some others, such as outdated environmental legislation are overcome. With its major market share, substantial resources and state backing, Coal India is particularly well-placed to spearhead CCT innovation through direct R&D, as well as create positive ripple effects by investing in related areas, such as CSR.

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Selective Oxidation of Ethylenediamine by Chloramine-T in the Presence of Ir(III) Chloride

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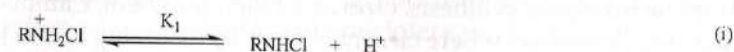
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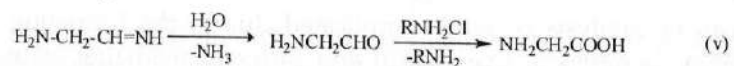
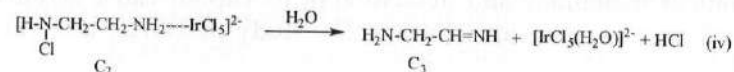
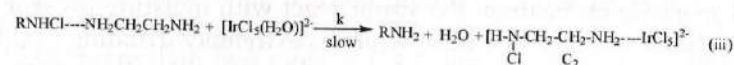
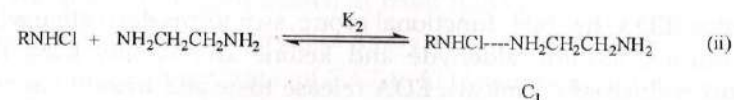
Novelty & Highlights

- Catalytic activity of Ir(III) chloride.
- Oxidation of ethylenediamine to glycine.
- Multiple regression analysis and comparative study.

Graphical Abstract



Where, R = $\text{CH}_3\text{C}_6\text{H}_4\text{SO}_2$



$$\text{Rate} = \frac{2kk_2K_1[\text{NH}_2\text{CH}_2\text{CH}_2\text{NH}_2][\text{Ir(III)}][\text{CAT}]_T}{k_2K_1 + K_2k[\text{NH}_2\text{CH}_2\text{CH}_2\text{NH}_2] + k[\text{H}^+][\text{Ir(III)}]}$$

Abstract

The influence of iridium(III) chloride {Ir(III)} for the oxidation of ethylenediamine (EDA) by chloramine-T (CAT) in acidic medium at 308K by the kinetic study is reported here. The results showed a first-order with respect to CAT. The Ir(III) chloride and EDA followed first-order kinetics at lower concentration range, but tends to zero order at higher concentration. The rates decreased with increase in the proton concentration. Chloride ion, ionic strength

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(I) and dielectric constant of the medium (D) had no significant effect on the rates. Activation parameters of the reactions were determined by studying the reaction at different temperatures (298-313K). A plausible reaction scheme of the oxidation of EDA by CAT in presence of Ir(III) chloride was proposed, which was found to be in agreement with the rate law and the reaction stoichiometry. The determined stoichiometry ratio was 1:2 and oxidation product was glycine.

Keywords: Kinetics, Oxidation, Ethylenediamine, Ir(III) chloride, Chloramine-T.

1. Introduction

The chemistry of aromatic sulfonyl haloamines (N-haloamines) is of interest due to their diverse behaviour and versatile nature and their abilities to exist as halonium cations and nitrogen anions, which act both as base and nucleophile [1-5]. As a result, these compounds react with wide range of functional groups and affect variety of molecular changes. The prominent members of this class of compounds are Sodium-N-chloro-4-methyl benzensulfonamide, $p\text{-CH}_3\text{C}_6\text{H}_4\text{SO}_2\text{NCINa}\cdot 3\text{H}_2\text{O}$, generally known as chloramine-T (CAT), which has long been used as an analytical reagent. It contains active chlorine so it is used as a source of electrophile in organic synthesis. Ozerassi, Filler, Mukherji, Campbell and Johnson wrote excellent reviews where clearly explain its oxidizing action [6-7]. There are number of publications on the mechanistic aspects of the redox reactions of CAT in acidic/alkaline media reported [8-11].

Ethylenediamine (EDA) has NH_2 functional group, so it forms derivative with carboxylic acid, nitriles, alcohol, aldehyde and ketone and widely used for production of many industrial chemicals. EDA release toxic and irritant vapour to surroundings especially on heating, the vapor react with moisture present in humid air to form characteristic white mist, which is extremely irritating to skin, eyes, lungs and mucus membrane and inhalation of its vapour cause seriously damage health and may even result in death. So, study of EDA oxidation is necessary [12-13].

The mechanism of catalysis is quite complicated due to the formation of different intermediate complexes, free radical and different oxidizing state of Ir(III). Ir(III) chloride is the most important platinum group metal ion and has been widely used as homogenous catalyst in various redox reaction [14-19]. Few reports are available for the oxidation of EDA by CAT in the presence of different metal ions [20], but to the best of our knowledge there is no report available for the oxidation of EDA by CAT in the presence of Ir(III). This has encouraged us to investigate mechanistic aspect of EDA by CAT. Preliminary result indicate that in the absence of the Ir(III) chloride catalyst in acidic medium was very sluggish but reaction become facile in the presence of small amount of iridium. Objectives of the present study are : (i) to ascertain the reactive species of Ir(III) chloride as catalyst and CAT as an oxidant in acidic medium, (ii) to identify the oxidation products, (iii) to elucidate a plausible mechanism, (iv) to deduce an appropriate rate law.

2. Experimental

2.1 Material

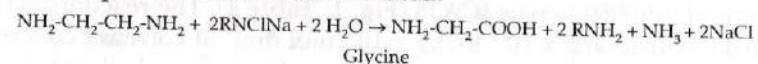
AR grade chemicals and double distilled water used throughout the investigation. Stock solution of CAT (Loba) was prepared in doubly distilled water and standardized iodometrically. Solution of Ir(III) chloride was prepared by dissolving a known weight of IrCl_3 (S. D. fine) in HCL of known strength. Stock solution of EDA (Fluka) was prepared by dissolving appropriate amount of sample in double distilled water. Standard solution of KCl, NaClO_4 and phthalimide were prepared with double distilled water and perchloric acid (GR) was used as a source of H^+ ions and acetonitrile as solvent.

2.2 Kinetic Procedure

All the kinetic measurement were carried out in a black-coated vessel at constant temperature (308 K) and performed under pseudo first-order condition with $[\text{EDA}] \gg [\text{CAT}]$. The reaction was initiated by the rapid addition of known amounts of oxidant to the reaction mixture containing the required amounts of EDA, perchloric acid, Ir(III) chloride and water in glass stoppered pyrex boiling tubes; thermostated at the same temperature. Progress of reaction was monitored by iodometric determination of unconsumed [CAT] in known aliquots of the reaction mixtures at different time intervals. Each kinetic run was studied for ~75 per cent reaction. Runs were repeated twice and had < 4 per cent standard deviation. The rate of reaction ($-\text{d}[\text{CAT}]/\text{dt}$) in each kinetic run was determined by the slope of tangent drawn at fixed [CAT].

2.3. Stoichiometry and Product Analysis

Varying different ratio of CAT to EDA were equilibrated at 308 K in presence of requisite amount of all reactant under the condition of $[\text{CAT}] \gg [\text{EDA}]$, for 48 h. Determination of unconsumed CAT revealed that for the oxidation of each mole of EDA, more than two mole of CAT was required. Accordingly, the following stoichiometric equation could be formulated:



Stoichiometric investigations revealed that 1 mole of EDA utilized 2 moles of CAT to convert it into amino acid (glycine).

Product Analysis Method

The reaction products were neutralized with NaOH and extracted with ether. The organic products were subjected to spot test and chromatographic analysis which revealed the formation of glycine [21].

3. Kinetic measurements & Results

3.1 Kinetics Study

Initially, the kinetics of the oxidation of EDA by CAT in the presence of Ir(III) chloride in acidic conditions were studied at several initial concentrations of all the reactants at 308 K. For the variation of [CAT], the reaction rate was calculated by the slope of tangent drawn at fixed time. In the variation of concentration of other reactants, tangents were drawn at constant [CAT] ($[\text{CAT}]^*$) (Fig. 1).

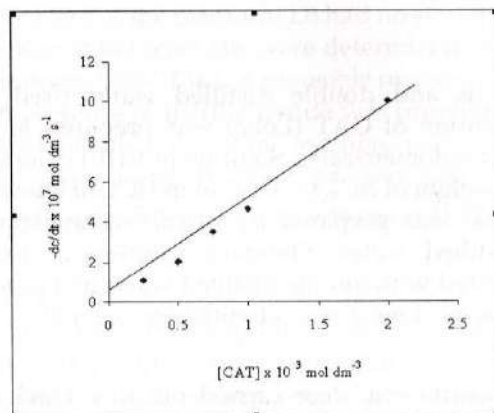


Fig. 1: Plot of Rate versus [CAT] at T = 308K.

[EDA] = $2.00 \times 10^{-2} \text{ mol dm}^{-3}$, $[\text{HClO}_4] = 0.50 \text{ mol dm}^{-3}$ and $[\text{Ir(III)}] = 3.34 \times 10^{-6} \text{ mol dm}^{-3}$.

The pseudo-first-order rate constant k_1 was calculated as

$$k_1 = \frac{-(dc/dt)}{[\text{CAT}]^*}$$

The order of reaction in each reactant was determined using log-log plot of $(-dc/dt)$ versus concentration of reactant. Considering CAT, EDA, perchloric acid and Ir(III) chloride as the main reactants, the general form of the rate equation for the oxidation of EDA by CAT can be written as

$$\text{rate} = k_1 [\text{CAT}]^\alpha [\text{EDA}]^\beta [\text{Ir(III)}]^\gamma [\text{H}^+]^\delta$$

Uniform pseudo-first-order rate constant (k_1) values for the variation of [CAT] clearly indicate that the order with respect to [CAT] is unity. This is also obvious from the plot of $(-dc/dt)$ versus [CAT] (Fig. 1; Table 1). The reactions have been studied for EDA from 0.5×10^{-2} to $3.5 \times 10^{-2} \text{ mol dm}^{-3}$ at constant concentration of all reactants at constant temperature. The rate of reaction calculated at different [EDA], this was showing fractional order kinetics with respect to [EDA] (Fig. 2; Table 1).

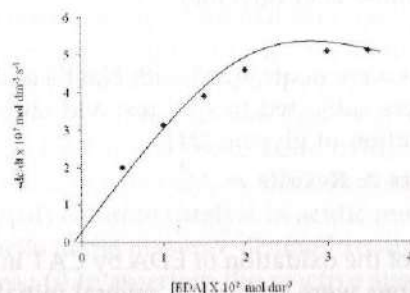


Fig. 2: Plot of Rate versus [EDA] at T = 308K.

[CAT] = $1.00 \times 10^{-3} \text{ mol dm}^{-3}$, $[\text{HClO}_4] = 0.50 \text{ mol dm}^{-3}$ and $[\text{Ir(III)}] = 3.34 \times 10^{-6} \text{ mol dm}^{-3}$.

Selective Oxidation of Ethylenediamine ...

The reaction follows first-order kinetics with respect to [Ir(III)] chloride at a low range of concentration and tends to zero-order at high concentration range. This result was further confirmed by the plot of $-dc/dt$ versus [Ir(III)] (Fig. 3; Table 1).

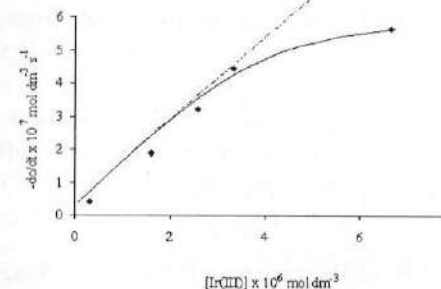


Fig. 3 Plot of rate versus [Ir(III)] at T = 308K.

[CAT] = $1.00 \times 10^{-3} \text{ mol dm}^{-3}$, [EDA] = $2.00 \times 10^{-2} \text{ mol dm}^{-3}$, $[\text{HClO}_4] = 0.50 \text{ mol dm}^{-3}$.

Table 1: Effect of [CAT], [EDA], [Ir(III)] and $[\text{H}^+]$ on the Rate of Oxidation of EDA at 308 K.

[CAT] x 10 ³ mol dm ⁻³	[EDA] x 10 ² mol dm ⁻³	[Ir(III)] x 10 ⁶ mol dm ⁻³	[H ⁺] mol dm ⁻³	$k_1 \times 10^4$ s ⁻¹ (Cal)	$k_1 \times 10^4$ s ⁻¹ (exp)
0.25	2.00	3.34	0.50	5.36	-
0.50	2.00	3.34	0.50	5.78	-
0.75	2.00	3.34	0.50	5.20	-
1.00	2.00	3.34	0.50	5.00	-
2.00	2.00	3.34	0.50	5.47	-
1.00	0.50	3.34	0.50	2.50	2.60
1.00	1.00	3.34	0.50	3.90	3.68
1.00	1.50	3.34	0.50	4.87	4.46
1.00	2.00	3.34	0.50	5.75	5.12
1.00	3.00	3.34	0.50	6.37	6.21
1.00	3.50	3.34	0.50	6.40	6.68
1.00	2.00	0.33	0.50	0.50	0.54
1.00	2.00	1.60	0.50	2.40	2.51
1.00	2.00	2.60	0.50	4.01	4.02
1.00	2.00	3.34	0.50	5.57	5.12
1.00	2.00	6.68	0.50	7.06	10.01
1.00	2.00	3.34	0.10	13.31	16.18
1.00	2.00	3.34	0.20	12.02	9.86
1.00	2.00	3.34	0.30	9.01	7.38
1.00	2.00	3.34	0.50	5.75	5.11
1.00	2.00	3.34	0.70	3.75	4.02
1.00	2.00	3.34	0.90	3.30	3.35

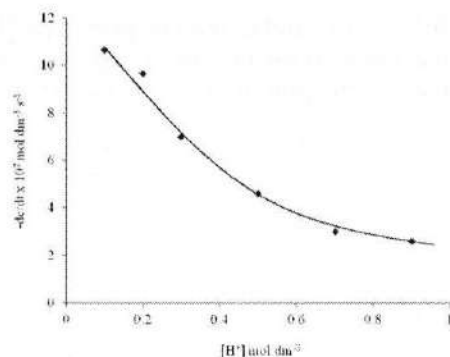


Fig. 4: Plot of Rate versus $[H^+]$ at $T = 308K$.

$[CAT] = 1.00 \times 10^{-3} \text{ mol dm}^{-3}$, $[EDA] = 2.00 \times 10^{-2} \text{ mol dm}^{-3}$ and $[Ir(III)] = 3.34 \times 10^{-6} \text{ mol dm}^{-3}$.

The reaction rate decreased with increasing $[HClO_4]$ (Fig. 4). The variation of $[Cl^-]$, solvent and ionic strength of medium did not affect the reaction velocity. Effect of temperature on the reaction rate was determined by keeping constant concentration of other constituents of the reaction mixture (Table 2). The values of different activation parameters such as activation energy (E_a), enthalpy of activation (ΔH^\ddagger) and entropy of activation (ΔS^\ddagger) were determined from the temperature effect on rates.

Table 2: Effect of Temperature and Corresponding Activation Parameter on the Rate of Oxidation of EDA.

Temperature (K)	$k_t \times 10^4 s^{-1} (Cal)$
298	2.90
303	4.64
308	5.64
313	6.25
E_a (kJ mol ⁻¹)	23.6
ΔH (kJ mol ⁻¹)	21.03
ΔS (JK ⁻¹ mol ⁻¹)	-40.47
ΔG (kJ mol ⁻¹)	8.57
log A	4.13
$k_r \times 10^{-3} (s^{-1})$	0.3749

3.2 Test for Free Radicals

To test the presence of free radicals in the reaction, the reaction mixture containing CAT, EDA, Ir(III) chloride and perchloric acid with acryl amide was placed in an inert atmosphere for 24 h. When the reaction mixture was diluted with methanol, it was found that there was no precipitate in the reaction mixture [9,10,15]. This clearly showed free radicals were not formed in the redox reaction under investigation.

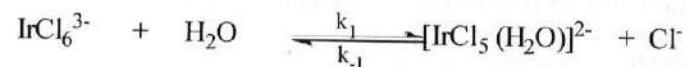
4. Discussion

4.1 Reactive Species of CAT

CAT acts as a mild oxidant in both acidic and alkaline media. In general, CAT undergoes two-electron change in its reactions forming the reduction products, PTS ($p\text{-CH}_3\text{C}_6\text{H}_4\text{SO}_2\text{NH}_2$ or RNH_2) and sodium chloride. The oxidation potential of CAT- RNH_2 redox couple varies with pH of the medium (E_0 is 1.14 V at pH 0.65, 0.778 V at pH 7.0, 0.614V at pH 9.7 and 0.50 V at pH 12) and decrease with increase in pH of the medium. The existence of similar equilibria in acid and alkaline solution of CAT has been reported by Morris *et al.* [22], Ruff and Kucsman [23], Bishop and Jennings [24], Hardy and Johnston [25], and Higuchi *et al.* [26]. Aqueous solution of chloramine-T (RNCINa) behaves as a strong electrolyte [23] and depending on the pH, it furnishes different types of reactive species. The possible oxidizing species in acidified CAT solution are the conjugate free acid (RNHCl), dichloramine-T (RNCI_2), hypochlorous acid (HOCl) and possibly H_2OCl^+ and in alkaline solutions RNHCl , HOCl , RNCI^- and OCl^- .

4.2 Reactive Species of Iridium

It is known that IrCl_3 in hydrochloric acid gives $[\text{IrCl}_6]^{3-}$ species [27]. It has also been reported that iridium (III) and iridium (I) ions are the stable species of iridium [28]. Further, the aquation of $[\text{IrCl}_6]^{3-}$ gives $[\text{IrCl}_5(\text{H}_2\text{O})]^{2-}$, $[\text{IrCl}_4(\text{H}_2\text{O})_2]^-$ and $[\text{IrCl}_3(\text{H}_2\text{O})_3]$ species [29-30]. This equilibrium may be shown by general equation.



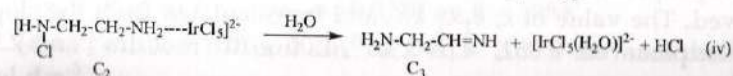
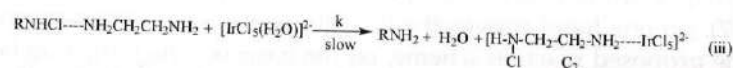
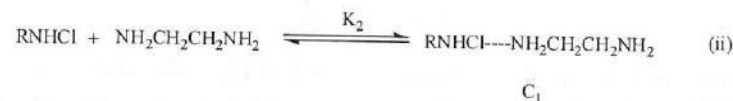
In case of negligible effect of chloride ions on the reaction rate in the present study indicate that $[\text{IrCl}_5(\text{H}_2\text{O})]^{2-}$ can be considered as the reactive species. Therefore, considering our experimental results, $[\text{IrCl}_5(\text{H}_2\text{O})]^{2-}$ has been considered to be the reactive species of iridium (III) chloride in the present study.

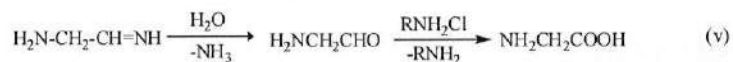
Considering the reactive species of catalyst, oxidant and with the help of above experimental findings, the probable reaction mechanism is proposed (Scheme I)

Reaction scheme I:



Where, $\text{R} = \text{CH}_3\text{C}_6\text{H}_4\text{SO}_2$,





Considering the fact that 1 mole of EDA is oxidized by 2 moles of CAT.

$$\text{Rate} = 2 k [\text{C}_1] \quad (1)$$

On the basis of steps (i) to (v), Eq. (2) can be obtained in the following forms, respectively:

$$\text{Rate} = \frac{2 k K_1 K_2 [\text{H}_2\text{NCH}_2\text{CH}_2\text{NH}_2] [\text{RNH}_2\text{Cl}] [\text{Ir(III)}]}{[\text{H}^+]} \quad (2)$$

Applying steady state approximation

$$0 = \frac{d\text{C}_1}{dt} = k_2 [\text{RNHCl}] [\text{NH}_2\text{CH}_2\text{CH}_2\text{NH}_2] - k_{-2} [\text{C}_1] - k [\text{C}_1] [\text{Ir(III)}] \quad (3)$$

$$\text{Rate} = \frac{k k_2 K_1 [\text{RNH}_2\text{Cl}] [\text{NH}_2\text{CH}_2\text{CH}_2\text{NH}_2] [\text{Ir(III)}]}{[\text{H}^+] (k_{-2} - k [\text{Ir(III)}])} \quad (4)$$

At any time of the reaction, the total concentration of CAT, i.e., $[\text{CAT}]_T$ can be shown as

$$[\text{CAT}]_T = [\text{RNH}_2\text{Cl}] + [\text{RNHCl}] + [\text{C}_1] \quad (5)$$

On substituting the value of $[\text{C}_1]$ in Eq. (5) we get Eq. (6)

$$= [\text{RNH}_2\text{Cl}] + \frac{K_1 [\text{RNH}_2\text{Cl}]}{[\text{H}^+]} + \frac{K_1 k_2 [\text{RNH}_2\text{Cl}] [\text{NH}_2\text{CH}_2\text{CH}_2\text{NH}_2]}{[\text{H}^+] (k_{-2} - k [\text{Ir(III)}])} \quad (6)$$

$$[\text{RNH}_2\text{Cl}] = \frac{[\text{H}^+] [\text{CAT}]_T (k_{-2} - k [\text{Ir(III)}])}{k_{-2} K_1 + K_2 k [\text{NH}_2\text{CH}_2\text{CH}_2\text{NH}_2] + k [\text{Ir(III)}]} \quad (7)$$

$$\text{Rate} = \frac{2 k k_2 K_1 [\text{NH}_2\text{CH}_2\text{CH}_2\text{NH}_2] [\text{Ir(III)}] [\text{CAT}]_T}{k_{-2} K_1 + K_2 k [\text{NH}_2\text{CH}_2\text{CH}_2\text{NH}_2] + k [\text{H}^+] [\text{Ir(III)}]} \quad (8)$$

$$\frac{\text{Rate}}{[\text{CAT}]_T} = k_{\text{obs}} = \frac{2 k k_2 K_1 [\text{NH}_2\text{CH}_2\text{CH}_2\text{NH}_2] [\text{Ir(III)}]}{k_{-2} K_1 + K_2 k [\text{NH}_2\text{CH}_2\text{CH}_2\text{NH}_2] + k [\text{H}^+] [\text{Ir(III)}]} \quad (9)$$

The rate expression obtained in equation (8) can be re-written as

$$\frac{1}{k_{\text{obs}}} = \frac{k_{-2}}{2 k k_2 [\text{NH}_2\text{CH}_2\text{CH}_2\text{NH}_2] [\text{Ir(III)}]} + \frac{1}{k [\text{Ir(III)}]} + \frac{[\text{H}^+]}{K_1 k_2 [\text{NH}_2\text{CH}_2\text{CH}_2\text{NH}_2]} \quad (10)$$

Eq. (10), indicates that if a plot is made between $[\text{CAT}]_T/\text{rate}$ and $1/[\text{EDA}]$ or $[\text{H}^+]$ or $1/[\text{Ir(III)}]$, a straight line with positive intercept on y-axis will be obtained (Fig. 6, 7), on one hand proves the validity of the rate law (8) and on the other hand the proposed reaction scheme, on the basis of which the rate law (8) has been derived. The value of k , $k_2 K_1$, $k K_2$ and k_{-2} calculated from the slope and intercept of the plot were 0.331 , 4.54×10^{-3} , $1.00 \times 10^{-7} \text{ mol dm}^{-3}$ and 2.59×10^{-13} respectively.

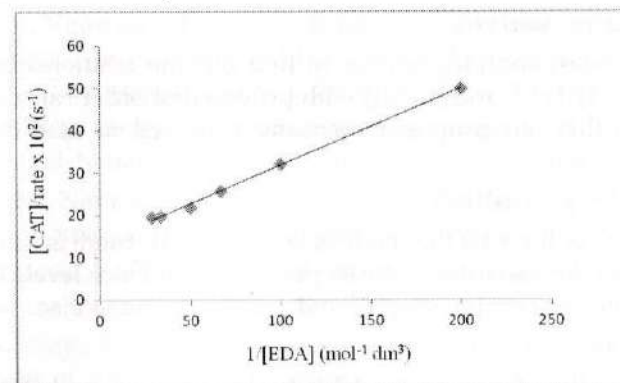


Fig. 6: Plot of $1/[\text{EDA}]$ versus $[\text{CAT}]/\text{rate}$ at $T = 308\text{K}$.

$[\text{HClO}_4] = 0.50 \text{ mol dm}^{-3}$ and $[\text{Ir(III)}] = 3.34 \times 10^{-6} \text{ mol dm}^{-3}$.

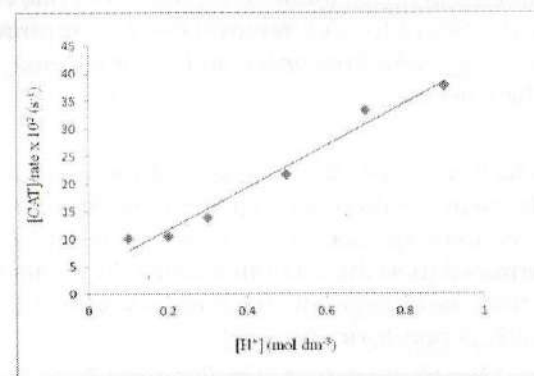


Fig. 7: Plot $[\text{H}^+]$ versus $[\text{CAT}]/\text{rate}$ at $T = 308\text{K}$.

$[\text{EDA}] = 2.00 \times 10^{-2} \text{ mol dm}^{-3}$ and $[\text{Ir(III)}] = 3.34 \times 10^{-6} \text{ mol dm}^{-3}$.

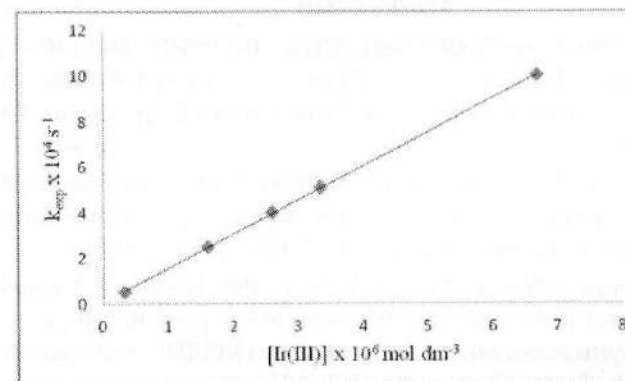


Fig. 8: Plot of k_{obs} versus $[\text{Ir(III)}]$ at $T = 308\text{K}$.

$[\text{CAT}] = 1.00 \times 10^{-3} \text{ mol dm}^{-3}$, $[\text{EDA}] = 2.00 \times 10^{-2} \text{ mol dm}^{-3}$, $[\text{HClO}_4] = 0.50 \text{ mol dm}^{-3}$.

4.3 Multiple Regression Analysis

Multiple regression analysis help us to find out the relationship between dependent (i.e., [EDA], $[H^+]$, and $[Ir(III)]$) with psuedo first order rate constant k_1 to sure or confirm that our proposed mechanism is well in accordance with experimental data or not.

$$k_1 = k [EDA]^{0.3} [H^+]^{-0.7} [Ir(III)]^{0.9}$$

Since the P-value in the ANOVA table is less than 0.01, there is a statistically relationship between the variables at the 99 per cent confidence level. This study also supports validity of rate law (Eq. 8) and reaction scheme also.

4.4 Comparative Study

There are several literatures are available for kinetics and oxidation study of EDA, i.e., removal of carbon dioxide by EDA [31] and super critical waste water treatment by oxidation process [13]. On doing comparison of present work with above work, it is concluded that, EDA followed second order rate constant, 15770 $m^3/(kmols)$ at 303 K and efficient for CO_2 removal or CO_2 capturing solvent and in present work it shows pseudo first order and generate non toxic product glycine as product of the reaction.

5. Conclusion

Oxidation of EDA by CAT in perchloric acid medium was found to be very sluggish, but became facile in the presence of a micro-quantity of $Ir(III)$ chloride catalyst. Among the various species of $Ir(III)$ chloride in acidic medium, $[IrCl_5(H_2O)]^{2-}$ was determined to be the catalytic species. As we already discussed that EDA's vapour is toxic and dangerous for human health, so we also got its oxidation product which is non toxic (glycine).

Acknowledgement: One of us, author (Dr. Bhawana Jain) thanks UGC for financial support under post doctoral fellowship grant (F.15-1/2013-2014/PDFWM-2013-14GE-CHH-18784 (SA-II)).

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Poems

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The Only Expertise

I married a man, but
he turned out a mask
many-layered.

I tore the pink part
within was the black one
then the pale...and then,
chameleon like, changing colours
to suit any occasion; and
finally the white one
all dead and lifeless.

Should I blame
his family which formed him
or my family which zeroed on him
or me who dittoed their choice
or this age, expert only in masking?

वो कौन थी

अनुपमा कश्यप

रसायन शास्त्र विभाग, शासकीय विश्वनाथ यादव तामस्कर स्वशासी महाविद्यालय, दुर्ग (छ.ग.)

From the Top

View from the top
is always beautiful
but the reality can be found
only on the ground.

What is the essence
of beauty without truth?
A glare without light?
A noise without meaning?
A word sans emotion?

Yet you love only the top
only the dazzle of glare,
and never the troublesome
search for pearls in the depth
of the stormy ocean
and diamond in the deep
dark caves of mines.

‘अनायास ही मेरी नजरें बार-बार महाविद्यालय के परीक्षा कक्ष के झरोखे से दिखायी देने वाले छोटे से उपवन की ओर चली जाती, उसे ढूँढ़ती, वह हर साल मार्च-अप्रैल के महीने में एक न एक बार जरूर आती, हौले से बिना किसी आहट के अपनी उपस्थिति दे जाती, पेड़ों की झुरमुट में छिपकर, पर मैं उसे ढूँढ़ ही लेती। बात उन दिनों की है जब मेरी पोस्टिंग की राजनांदगाँव के दिग्विजय महाविद्यालय में हुयी। यह महाविद्यालय, राजा का किला था कभी छोटी सी रियासत-वहाँ किसी समय उपवन थे जो अब उजड़ चुके थे किन्तु पिछवाड़े की तरफ कुछ पेड़ वो भी दुर्लभ जाति के, प्राचीन समय के सौन्दर्य की गाथा गा रहे थे। बस उसी उपवन से लगे कमरों में परीक्षाएँ होती थी। एक दिन परीक्षा कक्ष से मेरी नजर उस पर पड़ गयी, वह इतनी सुन्दर थीं कि परीक्षा ड्यूटी करते समय बार-बार मैं उसे देखती रही। इस तरह हर वर्ष मुझे अपनी ओर देखने को मजबूर कर देती। जब मेरी नजरें उस पर टिकतीं तो न जाने कितने चक्कर मैं उसे देखते हुये लगा लेती। प्यारी सी आँखें, उसकी मधुर आवाज-न जाने कहाँ से आती और मन मोह कर अचानक अदृश्य हो जाती।

कुछ वर्ष बाद फिर मार्च का महीना आया। परीक्षाएँ शुरू हो गयीं। एक बार फिर मेरी नजरें परीक्षा भवन से उपवन की ओर गयीं। दोपहर का समय था पर यह क्या? मैं चौंक उठी। इस साल उपवन सूना और उजाड़ लगा, उजाला भी कुछ ज्यादा लगा। वह भी दिखायी नहीं दी। हर दिन मेरी नजरों ने उसे ढूँढ़ा पर वह दिखायी ही नहीं दी। उसकी एक झलक पाने को बेचैन मैं प्रतीक्षा करती रही पर वह नहीं आयी। मन में प्रश्न उठने लगे क्या बात हुयी, वह क्यों नहीं आयी क्या इस बार मैं उससे नहीं मिल सकूँगी। मन आतुर हो तड़प उठा उसके लिये। उपवन में तितलियाँ उड़ रही थीं, कोयल भी कूक रही थी। सरोवर के जल को छूकर ठंडे झोंके हवा के हम तक पहुँच रहे थे लेकिन बस वो नहीं थी। अचानक मेरा ध्यान उपवन में बड़े हुये उजाले की ओर गया। यह उजाला कहाँ से? देखा तो वहाँ के कई दरख्त कट चुके थे। पता चला कुछ दिनों पहले कटाई-छँटाई हुयी है। हरियाली भी कम हो चुकी थी। उसे पेड़ों की ओट नहीं मिली होगी। इसीलिये वह शर्मीली नहीं आयी। पता नहीं किस दरख्त की छाँव उसे अच्छी लगती थी जो आज उससे अनजाने में छिन गयी। निगाहें थक चुकी थीं, मेरी आस टूट चुकी थी सिर्फ एहसास रह गया था- मुझे सम्मोहित करने वाली वो कौन थी- हाँ वो थी एक प्यारी-सी चिड़िया। तीन रंगों में आती थी- कभी पूरी सफेद तो कभी पूरी काली

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और कभी पूरी लाल। सिर पर हल्की सी कलंगी। तन छोटा सा और उससे दुगुनी सुन्दर सी पूँछ वाली चिड़िया। उसकी गुलाबी आँखें और मधुर आवाज मेरे जेहन में अभी तक बसी है। वह दुर्लभ जाति की चिड़िया ही थी जिसे मेरी आँखें हमेशा ढूँढ़ती रहेंगी।

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RESEARCH EXPRESSION

Bi-Annual Peer Reviewed Multi-Disciplinary Journal

1. Place of Publication : Jaipur
2. Periodicity of Publication : Bi-Annual
3. Language of Publication : Bi-Lingual (English and Hindi)
4. Publisher's Name & Address : Yking Books
18, Jain Bhawan, Opp. N.B.C., Shanti Nagar,
Jaipur, Rajasthan
5. Sponsor's Name & Address : Government Vishwanath Yadav Tamaskar
Post Graduate Autonomous College,
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6. Patron's Name Designation : Dr. Surendra Kumar Rajput
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8. Research Expression : Email: expressions201512@yahoo.com

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ISSN 2456-3455
Vol. 1/Issue 1-September 2016

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