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COST MANAGEMENT IN AGRICULTURE SECTOR

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- **THE INSTITUTE OF COST ACCOUNTANTS OF INDIA** (erstwhile The Institute of Cost and Works Accountants of India) was established in 1944 as a registered company under the Companies Act with the objects of promoting, regulating and developing the profession of Cost Accountancy.
- On 28 May 1959, the Institute was established by a special Act of Parliament, namely, the Cost and Works Accountants Act 1959 as a statutory professional body for the regulation of the profession of cost and management accountancy.
- It has since been continuously contributing to the growth of the industrial and economic climate of the country.
- The Institute of Cost Accountants of India is the only recognised statutory professional organisation and licensing body in India specialising exclusively in Cost and Management Accountancy.

VISION STATEMENT

"The Institute of Cost Accountants of India would be the preferred source of resources and professionals for the financial leadership of enterprises globally."

MISSION STATEMENT

"The CMA Professionals would ethically drive enterprises globally by creating value to stakeholders in the socio-economic context through competencies drawn from the integration of strategy, management and accounting."

IDEALS THE INSTITUTE STANDS FOR

- *to develop the Cost and Management Accountancy profession*
- *to develop the body of members and properly equip them for functions*
- *to ensure sound professional ethics*
- *to keep abreast of new developments*

Behind every successful business decision, there is always a **CMA**

Headquarters
CMA Bhawan, 12 Sudder Street
Kolkata - 700016

Institute Motto

असतोमा सद्गमय	From ignorance, lead me to truth
तमसोमा ज्योतिर् गमय	From darkness, lead me to light
मृत्योर्मामृतं गमय	From death, lead me to immortality
ॐ शान्ति शान्ति शान्तिः	Peace, Peace, Peace

Delhi Office
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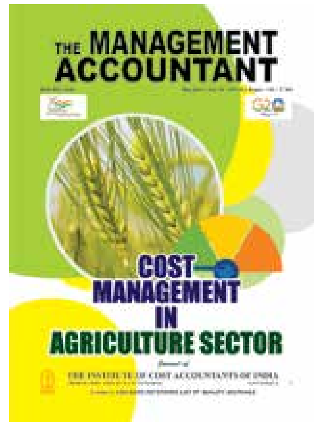
CONTENTS

INSIDE

MAY 2023



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COVER STORY

SUSTAINABILITY LEAF

We have expanded our Readership from **1** to **94** Countries

Afghanistan, Algeria, Argentina, Australia, Azerbaijan, Bahrain, Bangladesh, Belgium, Benin, Botswana, Brazil, British Indian Ocean Territory, Bulgaria, Cambodia, Cameroon, Canada, Chile, China, Colombia, Croatia, Czech Republic, Djibouti, Egypt, France, Gambia, Germany, Ghana, Great Britain, Greece, Honduras, Hong Kong, Hungary, Iceland, India, Indonesia, Iraq, Ireland, Italy, Jamaica, Japan, Jordan, Kazakhstan, Kenya, Kuwait, Lebanon, Liberia, Lithuania, Malawi, Malaysia, Mauritius, Mexico, Morocco, Myanmar, Namibia, Nepal, Netherlands, New Zealand, Nigeria, Oman, Pakistan, Papua New Guinea, Paraguay, Peru, Philippines, Poland, Portugal, Qatar, Romania, Russia, Rwanda, Saudi Arabia, Serbia, Seychelles, Singapore, Slovakia, Slovenia, South Africa, Spain, Sri Lanka, Suriname, Sweden, Switzerland, Syria, Taiwan, Tanzania, Thailand, Turkey, Uganda, Ukraine, United Arab Emirates, United Kingdom, United States of America, Vietnam, Zaire, Zimbabwe.

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https://lms.su.edu.pk/lesson/147/week-04-production-technology-of-major-field-crops-wheat-rice

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From the Editor's Desk

We have to devise ways to lower the cost of production and reduce the risks involved in agriculture such as pests, pathogens, and weeds. - M. S. Swaminathan

Agriculture is a crucial sector of the economic system of any nation. Indian agriculture sector being the largest employer, remains a critical sector for providing sustainable growth for the economy and food security at large.

Over the years, more particularly during the last couple of decades, India has been experiencing agrarian distress. The primary reasons attributable to the distress are low level of farmers' income and year to year fluctuations in the said income. This re-emphasises the necessity to satisfactorily equip the farmers with technological, credit, storage and marketing interventions. The Government has given major thrust to these factors in the current year's Budget. The numerous elements in the Budget support farmer's welfare and agricultural development.

Highlights of Union Budget 2023-24

- Agricultural Loan- The agricultural credit will be raised to Rs.20 trillion, with an emphasis on dairy, fisheries, and animal husbandry.
- Agri-Startups-Start-ups in the agricultural sector by young entrepreneurs will be given priority and supported by the launch of an ***Agriculture Accelerator Fund***.
- *PM Matsya Sampada Yojana***-** A new sub-scheme of the ***PM Matsya Sampada Yojana*** will be introduced with a targeted investment of Rs.6,000 crore to further enable the activities of fish vendors, fishermen, and micro- and small businesses, increase the efficiency of the value chain, and broaden the market.
- Atmanirbhar Clean Plant Program- An investment of Rs 2,200 crore would be made to increase the supply of high-value horticulture crops with disease-free, high-quality planting material.
- Natural Farming- 10,000 Bio Input Research Centers would be established in order to support 1 crore farmers in Natural Farming over the course of three years.
- Digital public infrastructure for agriculture -It will provide solutions that are inclusive of farmers and help to increase access to farm inputs, market intelligence and support for start-ups in the agriculture sector.
- PM Pranam-To encourage States and Union Territories to use alternative fertilisers, *PM Pranam* will also be introduced.
- Shree Anna-The Indian Institute of Millet Research, Hyderabad, will be supported as the Center of Excellence for sharing best practices, research, and technologies at the international level in order to make India a global hub for *Shree Anna.*

It appears that the Union Budget 2023-24 is focusing on regenerative agriculture, inclusive growth, improved access to agriculture credit, and better-quality agriculture inputs, digitization, and technological development. However, there is a lot more to be done in the areas of providing direct market access to the farmers by strengthening the supply chain and enhancing the incomes of the farmers.

The Institute of Cost Accountants of India has associated with the ambitious objective of augmenting farmers' income and initiated the process of formulation of "Strategic Agricultural Cost and Returns Management". As a professional body it will enhance our visibility in contributing towards Nation development.

The Institute can evolve a system whereby the concept of Minimum Support Price (MSP) can be transformed into compatible pricing which is viable for the farmers, affordable to the manufacturers and acceptable to the consumers. CMAs can carry out cost benefit analysis of each of the farming activities as also the irrigation projects and help the farmers and the policy makers in choosing profitable alternatives.

Recently, Indira Gandhi National Open University signed MoU with The Institute of Cost Accountants of India for jointly developing an Open and Distance Learning (ODL) programme titled "Diploma in Agricultural Cost Management" to create awareness and human resource in the area of agricultural cost management by imparting knowledge, skills, and entrepreneurial capabilities of the farming communities for efficient farm cost management. The programme will be beneficial for progressive farmers, Urban / rural youth, small and medium entrepreneurs, extension workers, NGO functionaries/ trainers, members of cooperative societies, self-help groups, etc.

This issue presents a good number of articles on the cover story *"Cost Management in Agriculture Sector"* written by distinguished experts. We thank all the contributors to this important issue and hope our readers would find the articles absorbing and useful. Please send your feedback at:editor@icmai.in.

Happy Reading!

THE MANAGEMENT ACCOUNTANT

PAPERS INVITED

Cover Stories on the topics given below are invited for *'The Management Accountant'* for the four forthcoming months

Month	Theme	Subtopics
June 2023	Changing Landscape of Management Accounting	⦿ Role of Management Accounting in enabling Sustainability in Businesses ⦿ Global Collaboration for Inclusive Growth ⦿ Tomorrow's Accountant: More Pertinent, Strategic, and Creative Than Ever ⦿ Emerging Tech imposing spearheading Management Accounting Practices ⦿ Fintech innovations redefining decisional aspects in Management Accounting ⦿ Impact of Digital Technology in Responsibility Accounting Systems and Performance Evaluation Mechanisms ⦿ Shifting Role of Professional Accountancy Bodies in the Era of Digital Disruption ⦿ Financial Automation: Scope for the CMAs
July 2023	Goods and Services Tax (GST): A significant step towards making India Economically Competitive	⦿ Important Advance Rulings and their Implications ⦿ Input Tax Credit under GST ⦿ Reverse Charge Mechanism under GST ⦿ Impact of Union Budget 2023 on GST Law ⦿ GST on real estate and textile industry ⦿ Capacity Based Taxation and Special Composition Scheme ⦿ GST: A game-changer for MSMEs ⦿ Emerging Litigation Areas in GST Including Important Landmark Judgments ⦿ GST @ 6: Its journey so far
August 2023	Issues and Challenges of the Cooperative Sector in India	⦿ Food Security through Agricultural Cooperatives ⦿ "Sahakar Se Samriddhi": An initiative for strengthening governance in Cooperative sector ⦿ Role of Cooperatives towards Women Empowerment ⦿ India aiming to become a hub of dairy innovations and solutions ⦿ Multi-State Cooperative Societies (Amendment) Bill, 2022: On the way to improve Ease of Doing Business ⦿ KRIBHCO's bio-ethanol project: Powering Amrit Kaal ⦿ Primary Agricultural Credit Societies (PACS) in every Panchayat to strengthen cooperative movement ⦿ National Cooperative Database: A Digital push to revitalize the Cooperatives ⦿ Tax incentive to boost up cooperative sector ⦿ Conducting Training and Awareness Programmes: Role of the Institute
September 2023	Indian Defence Sector: Marching towards Aatmanirbharta	⦿ Transformative reforms towards Aatmanirbharta ⦿ Challenges and Opportunities in the areas of Defence Finance and Economics ⦿ Innovations in Defence R & D to align with International Standards ⦿ Human Resource Management in Defence ⦿ Investments in Defence Start-ups & MSMEs ⦿ Emerging role of MSME in Aerospace manufacturing ⦿ Unmanned and Autonomous Technologies for Air Dominance ⦿ Defence Accounting & Auditing ⦿ India's defence readiness in a Cost Conscious way: Role of CMAs ⦿ Pricing Strategy for Defence Exports

The above subtopics are only suggestive and hence the articles may not be limited to them only.

Articles on the above topics are invited from readers and authors along with scanned copies of their recent passport size photograph and scanned copy of declaration stating that the articles are their own original and have not been considered for anywhere else. Please send your articles by e-mail to editor@icmai.in latest by the 1st week of the previous month.

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PRESIDENT'S COMMUNIQUÉ

CMA Vijender Sharma
President
The Institute of Cost Accountants of India

"All that we are is the result of what we have thought. The mind is everything. What we think we become."

-- Gautama Buddha

My Dear Professional Colleagues,

It is my pleasure to inform you that the Council of the Institute has decided to implement the Peer Review System in the Institute w.e.f. 1st April 2023. I appreciate the efforts of the Peer Review Board under the Chairmanship of CMA Partha Sarathi Bhattacharyya, Former CMD, Coal India Limited and the other members of the Board and also wish them success in future course of action.

This was a long pending demand of the practicing members of the Institute since there have been assignments by the Companies, Regulators and others requiring the condition of the firm to be Peer Reviewed as one of the criteria of selection. The purpose of Peer Review is to improve quality of deliverables and to ensure compliance with Technical & Professional Standards and Code of Ethics of the Institute as well as regulatory bodies.

The following two communications have been sent to the practicing members seeking their consent:

- To carry out the Peer Review of their firm and
- For empanelment as a Reviewer to undertake the Peer Review assignments.

I hereby request the practicing members to kindly respond to the above mentioned communications to the Peer Review Board on its email peerreviewboard@icmai.in within 30 days of the aforesaid communication.

Meeting with Chairperson NCLAT

I am pleased to inform that I had the opportunity to meet Hon'ble Justice Ashok Bhushan, Chairperson, National Company Law Appellate Tribunal (NCLAT) on 21st April, 2023 in his office to extend an invitation to be the Chief Guest for the 'IP Conclave' organized by the Institute on 6th May 2023 at Scope Auditorium, Lodhi Road, New Delhi, which he generously accepted and conveyed his best wishes for the successful conduct of the event.

Meeting at Central Economic Intelligence Bureau (CEIB)

I attended a meeting called by Central Economic Intelligence Bureau (CEIB), Department of Revenue, Ministry of Finance on 21st April, 2023 wherein discussions were held regarding the development and implementation of National Economic Offence Records (NEOR) Project of CEIB.

Meeting at Ministry of Cooperation

The Ministry of Cooperation, Government of India called a meeting under the Chairmanship of Shri Vijay Kumar, Additional Secretary (Cooperation)/ Central Registrar of Cooperative Societies on 6th April, 2023 to discuss strengthening of audit mechanism in the Multi-State Cooperative Societies and to create a panel of auditors of auditors for inspection. CMA B.M. Sharma, Former President of the Institute and CMA B.B. Goyal, Advisor, ICMAI MARF and Former Addl Chief Advisor (Cost), MoF, GoI represented the Institute in this meeting and the information/documents sought by the Ministry has been submitted for its consideration.

Meeting of Integrated Reporting and Connectivity Council (IRCC)

I am pleased to inform you that I attended an online meeting of the Integrated Reporting and Connectivity Council (IRCC), an advisory body of the IFRS Foundation held on 25th April, 2023. Discussions were held on the importance of integrated thinking and reporting to investors, Management Commentary Exposure Draft and a comparison with the Integrated Reporting Framework.

Meeting at Department of Revenue, Ministry of Finance

I attended a meeting called by the Department of Revenue, Ministry of Finance under the Chairmanship of Additional Secretary (Revenue), Government of India on 26th April, 2023 to discuss the role of professional Institutes and Bar Council of India in regulation of professionals as per the Financial Action Task Force (FATF) standards in view of upcoming Mutual Evaluation of India by FATF.

Meeting with officials of CFA Institute

I along with CMA Biswarup Basu, Former President & Council Member of the Institute and CMA (Dr.) S.K. Gupta, MD - ICMAI RVO had a meeting with Ms. Arati Porwal, Country Head, CFA Institute and Mr. Gaurav Kapur, Director, Government Relations, CFA Institute on 26th April, 2023 at CMA Bhawan, New Delhi to discuss the potential areas of collaboration between both the Institutes.

I now present a brief summary of the activities of various Departments/Committees/ Boards of the Institute, in addition to those detailed above:

BANKING, FINANCIAL SERVICES AND INSURANCE BOARD

The Banking, Financial Services & Insurance Board (BFSIB) of the Institute and the BFSI Department conducted the activities during the month for value addition as appended:

A.Webinar

The BFSI Board organized a webinar on "Role of CMAs in Expected Credit Loss Framework for Provisioning of Banks (Series-II)" on 28th April 2023. The Chief Guest and Speaker of the webinar was CMA (Dr.) P Siva Rama Prasad.

B. Certificate Courses on Banking

The following Certificate Courses are currently in progress:

- 6th Batch of the Certificate Course on Treasury and International Banking
- 8th Batch of the Certificate Course on Credit Management of Banks
- 8th Batch of the Certificate Course on Concurrent Audit of Banks

I call upon all members and students to take the opportunity for capacity building and knowledge enhancement by enrolling in such courses for which the link of admission is https://eicmai.in/advscc/Home.aspx

C. MOU with NSE Academy and Course on Investment Management

The BFSI Department is planning to sign an MOU with NSE Academy and to start a course on Investment Management.

CONTINUING EDUCATION PROGRAMME COMMITTEE

During the month, around Fifteen webinars and programmes were organised by the different committees of the Institute, Regional Councils and Chapters of the Institute on the topics of professional relevance and importance like Main Features of Foreign Trade Policy 2023, Financial Analysis and Decision Making, Finance Act 2023 - Direct Tax changes and Amendments u/s 142(2A), ESG Reporting and Role of CMAs; CSR and its Implementation, Ind AS 38 - Intangible Assets and so on.

I am sure our members are immensely benefited with the deliberations in the sessions.

DIRECTORATE OF CAT

- **Association with Ministry of Defence**

I am very delighted to share with you that our mother Institute has created history. As a result of various rounds of meetings and follow-up, the Institute has commenced 1st batch of "Executive Diploma in Financial Planning and Cost & Management" (FP&CM) for serving officers of the Indian Army in association with Additional Directorate General, Army Educational Corps (AEC), Ministry of Defence. The course started on 17th April, 2023 at Army Educational Corps Training College and Centre, Pachmarhi (Madhya Pradesh) and it will be completed on 17th June, 2023. I had the privilege to give presidential address virtually through video-conferencing during the inaugural programme held on the same day in august presence of Maj Gen R Putarjunam, Additional Directorate General of Army Education, Brig. V K Bhatt, Col. Arvind Nautiyal, Col. Sanjay Shukla, Col. Rudraksha Attri, Lt. Col. Vikrant More, Lt. Col. Manoj Lakhera, Lt. Col. S Shri Jeet, senior officials from AEC, Indian army and officials of the Institute. Along with these officials, I would like to thank Lt. General Samir Gupta, Director General of Financial Planning, Ministry of Defence for their continuous guidance and support in organising this program. My best wishes to officers who are pursuing the FP& CM course. The Institute commits to provide quality education to them and to the future batches. I must say that it is one of the major achievements during my tenure as a President that a long-term association with the Indian army has begun. I heartily congratulate CMA H Padmanabhan, Chairman (CAT) who initially gave us the idea to have a tailor-made course for the Defence Personnel. I also congratulate Team CAT under the leadership of Chairman (CAT) for implementing this project. Further, I am happy to inform that the Institute will be offering Fee Concession and Paper Exemptions to those candidates who successfully complete "Executive Diploma in Financial Planning and Cost & Management Accounting" in Foundation/ Intermediate/ Final Course of the Institute.

Further, I am happy to share with you that the Directorate General Resettlement (DGR), Department of Ex-Servicemen Welfare (Ministry of Defence) has included the CAT course in its 2023-24 calendar for 8 locations viz. Ambala, Chennai, Indore, Jaipur, Lucknow, Madurai, Pune and New Delhi. The course will commence shortly at these locations.

- **WEBINT**

The CAT Directorate continued the virtual learning process through the WEBINT on IND AS, in association with the Professional Development Committee, International Affairs Committee, Public Relations Committee and AAT Board for the benefit of Students and Members of the Institute. I would like to thank resource person CMA (Dr.) Gopal Krishna Raju for his continuous support and making this series a grand success under mentorship of CMA H Padmanabhan, Chairman (CAT).

DIRECTORATE OF STUDIES

Students are requested to follow the Institute's website on a regular basis, especially the students who will be appearing in the June 2023 term examination for taking the maximum benefit from the various uploads made available from time to time. The study materials published by the Institute are developed using the best available resources and students are advised to study them thoroughly as a part of their daily preparation for the upcoming CMA examinations.

- **MOU signed between the Institute of Cost Accountants of India and the Institute of Company Secretaries of India:**

I am happy to share that on behalf of the Institute, I signed an MOU on 24th April, 2023 with the Institute of Company Secretaries of India, which was also signed by ICSI President CS Manish Gupta on ICSI's behalf for exemptions in subjects for students of both the Institutes. My council colleagues and former Presidents CMA Biswarup Basu and CMA Raju Iyer were also present during the MOU signing event in our Delhi office which was also attended by the respective Secretaries and other senior officials of both the Institutes. Students and members are requested to visit the MOU section on our website for details of the MOU and Notification issued thereof. I also thank my council colleague, former President and present Chairman Training & Education Facilities Committee - CMA (Dr.) Balwinder Singh for his contribution in finalising the MOU. For ready reference of all stakeholders, a copy of the Notification dated 24th April, 2023 is published elsewhere in this edition of the Management Accountant.

MEMBERS IN INDUSTRY & PLACEMENT COMMITTEE

- **Pre-Placement Orientation Programme**

Pre-placement orientation programme is an essential component of the campus placement process. The aim of the program is to equip students with the necessary skills and knowledge to secure job offers from top companies. The pre-placement orientation programme typically includes training sessions on resume building, communication skills, group discussions, interview techniques and subject wise technical discussions. These sessions are conducted by experienced trainers and faculty members from industry and profession who provide practical tips and feedback to help students improve their skills.

The Members in Industry & Placement Committee had successfully conducted 12-days Pre-Placement Orientation Programme at 11 important centres across India – Kolkata, Mumbai, Delhi, Chennai, Ahmedabad, Jaipur, Pune, Hyderabad, Bangalore, Bhubaneswar and Vijayawada. More than 860 qualified CMAs of December 2022 Term attended this programme.

- **Campus Placement Drives**

Campus placement drives are being regularly organized by the Members in Industry & Placement Committee to provide ample job opportunities to the qualified CMAs.

During these events, companies conduct interviews, group discussions, and other selection processes to shortlist suitable candidates for job offers.

Eminent companies like Vedanta, BEL, IOCL, L&T, ITC Hotels, ITC Tobacco, ITC TM&D, NAFED, IREDA, Nestle, Mecon, HSCC, IBM, Kribhco, E&Y, Godrej, Minda Corporation, Sakata, Capgemini, RSM and many more have already joined campus placement drives at Delhi and Kolkata and offered more than 120 job opportunities to the qualified CMAs of December 2022 Term. Campus Placement drives at Mumbai and Chennai are upcoming and more companies are likely to join soon to place more CMAs.

I congratulate the team for taking continuous endeavours to make pre-placement orientation programme and placement drives highly successful.

MSME & START-UP PROMOTION BOARD

The MSME & Start-Up Promotion Board (MSPB) organized a seminar on "Financial Inclusion of MSMEs" on 28th April, 2023 at CMA Bhawan, Kolkata. The MSME – Development & Facilitation Office, Kolkata, Ministry of MSME, Government of India and National Chamber of Cottage and Small Industries joined hands with the Institute as collaborators for the event.

The Seminar started with the Inaugural Session, one Technical Session wherein the Chief Guest, Shri Debabrata Mitra, IEDS, Joint Director & Head of Office, MSME – Development & Facilitation Office, Kolkata, Ministry of MSME, Government of India addressed the audience along with a powerpoint presentation showcasing various activities of the MSME and their opportunities. The Guest of Honour, Shri Tapas Dey, Chairman, National Chamber of Cottage and Small Industries delivered his address and highlighted various issues faced by MSMEs and how to overcome them. The audience placed their questions before the speakers and in reply were answered with full satisfaction. The Guest of Honour, Shri Sitanath Mukhopadhyay, IEDS, Assistant Director Gr-1, MSME – Development & Facilitation Office, Kolkata, Ministry of MSME, Government of India delivered his address at the Valedictory Session stating the various schemes and how the MSME – DFO is working towards the development of the sector. The audience also shared their success stories.

PROFESSIONAL DEVELOPMENT COMMITTEE

PD Directorate submitted representations to various organizations for inclusion of cost accountants for providing professional services.

Please visit the PD Portal for Tenders/EOIs during the month of April 2023 where services of the Cost Accountants are required in Power Grid Corporation of India Limited (POWERGRID), Mother Dairy Calcutta, GAIL Gas Limited, NHPC Limited, Indian Institute of Management Calcutta, Central Coalfields Limited, Mahanadi Coalfields Limited, Uttarakhand Power Corporation Limited, Rashtriya Chemicals and Fertilizers Limited, Odisha Mining Corporation Limited, Brahmaputra Valley Fertilizer Corporation Limited, The Institute of Company Secretaries of India (ICSI), Konkan Railway Corporation Limited, South Eastern Coalfields Limited, Steel Authority Of India Limited, Maharashtra Natural Gas Limited, BEML Limited invites, Khunti Nagar Panchayat, Odisha Power Generation Corporation Limited, Eastern Coalfields Limited, etc.

TAX RESEARCH DEPARTMENT

I am pleased to inform that the Tax Research Department of the Institute has successfully organized a lecture session on the topic "Finance Act 2023: Direct Tax Changes and Amendment u/s 142 (2A)" on 21st April, 2023 at the J N Bose Auditorium, CMA Bhawan, Kolkata. Shri Kamlesh Chandra Varshney, IRS, Joint Secretary, CBDT Tax Planning was the Chief Guest and Key Note Speaker for the session. The Key Note address on the topic and question & answer session received an overwhelming response from the participants.

The department submitted a representation to Shri Santosh Kumar Sarangi, Additional Secretary & Director General, Directorate General of Foreign Trade (DGFT), Ministry of Commerce and Industry for Inclusion of Cost Accountants on the various certifications under the New Foreign Trade Policy as applicable from 01.04.2023.

Crash Course on Income Tax Overview has been conducted at SA College of Arts and Science, Chennai and the exam for the same was held on 3rd April 2023. Classes for GST Course for college and university students at Sandip University, Nashik have been completed and exams are scheduled to be held in the next month.

Apart from the above, the classes for all the seven Taxation Courses are being conducted seamlessly and it is garnering appreciation from the students.

INSOLVENCY PROFESSIONAL AGENCY (IPA) OF THE INSTITUTE

Insolvency Professional Agency of Institute of Cost Accountants of India, in its endeavour to promote professional development and sharpen the skills of the professionals have constantly been conducting various professional & orientation programs across country and publishing various publications and books for the benefit of stakeholders at large. Towards that, IPA has undertaken several initiatives, as enumerated below, during the month of April 2023.

A two days Online Learning Session on CIRP & Liquidation on 8th -9th April 2023 which received an overwhelming response from participants who got benefitted with the knowledge sharing.

To enhance the knowledge about Judicial Pronouncement under IBC 2016 an online Workshop was conducted on 15th April 2023, covering Landmark judgment of NCLT, NCLAT and Supreme Court.

A two days Online Learning Session on Group Insolvency & Cross Insolvency" on 22nd -23rd April 2023 covering the Concept of Groups in Different Laws and Jurisdiction, Cross Border, Model Law on Cross Border Key provisions and Applicability, Procedural And Substantives consolidation etc.

A Workshop on Compliances to be made by IPs under IBC, 2016 was conducted on 29th April 2023, covering the Compliances of allied Laws to be done by Insolvency Professional under IBC 2016, Compliances under IBC to IBBI and IPAs.

In its endeavour to promote profession, knowledge sharing and sensitisation of the environment, IPA published Au-Courant (Daily Newsletter), weekly IBC Dossier and monthly e- Journal which are hosted on its website.

ICMAI REGISTERED VALUERS ORGANISATION (RVO)

I am pleased to inform that ICMAI RVO has successfully organized three "50 Hrs training programs" for Securities or Financial Assets, Land & Building Assets, Plant & Machinery Assets and organized six "Professional Development Programs" during the month. ICMAI RVO has published a book on Case Studies for Valuation exam conducted by IBBI and interacted with CFA officials for professional association in Valuation domain.

ICMAI SOCIAL AUDITORS ORGANISATION (SAO)

ICMAI Social Auditors Organisation (SAO) organized three preparatory courses for Social Auditors exam conducted by NISM and two Social Audit Bootcamps. I am pleased to inform that ICMAI SAO has initiated and released first issue of its monthly journal - The Social Auditor and started initial empanelment process. ICMAI SAO has compiled summarised study material for Social Auditors exam. It has also compiled MCQs and initiated Mock Test facility on its website.

I wish prosperity and happiness to members, students and their family on the occasion of Buddha Purnima and Guru Rabindranath Jayanti, and pray for the success in all of their endeavours.

With warm regards,

CMA Vijender Sharma

May 04, 2023

MANAGING THE AGRI-SUPPLY CHAIN IN INDIA: CHALLENGES AND OPPORTUNITIES

Abstract

Agriculture is vital to the country's economy. Agriculture sector in India, accounts for more than 65 per cent of all employment, whether direct or indirect. Currently, agriculture contributes about 20 per cent of the Nation's economy. Unfortunately, many factors affect agricultural output in India, including weather variations, seed quality, market accessibility, Governmental regulations, technology, coordination, and the involvement of supply chain participants. In this regard, the Government has undertaken a variety of initiatives to increase farming output to support those involved in the agriculture supply chain. This article explores various opportunities and challenges of agricultural supply chain in India.

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INTRODUCTION

India is one of the oldest and largest agrarian nations in the world, with a primarily rural population. India is the second-largest agricultural producer in the world. According to the Indian Economic Survey 2021, agriculture generated over 20 per cent of the nation's GDP while employing more than half of the country's labour force. More than two-thirds of the working population is directly employed in agriculture and depends on it for survival (*Invest India*). Therefore, it is very crucial to manage the agricultural supply chain correctly to ensure proper grain distribution and loss minimization.

The scope of supply chain management spans from the acquisition of raw materials to the final distribution of commodities to the end consumer. Thus, sourcing and purchasing, transformation, and logistics management are all included in the planning and management of supply chain activities. According to The Supply Chain Management Professionals Council (2009), supply chain mainly comprises of cooperation and coordination with network partners, which can include suppliers, middlemen, outside service providers, and customers. Supply chain success is measured by the amount of profit that each link of the chain generates while adding value for the consumer at the end. Since, there are numerous players involved and each of them has its own set of profit maximisation objectives, managing the right flow of items following demand throughout the supply chain is quite challenging. Similar to other product-based supply chains, agricultural supply networks face several obstacles in the distribution of commodities. Various opportunities and challenges of the agricultural supply chain are addressed in this article, laying the groundwork for future research.

AGRICULTURE SUPPLY CHAIN MANAGEMENT

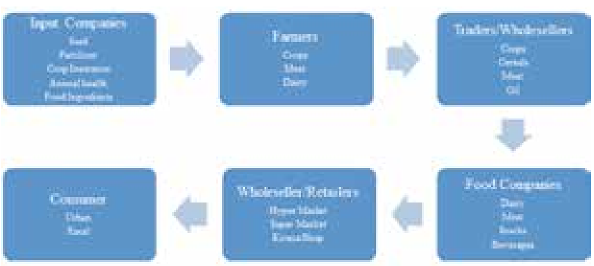
Agriproduct manufacture and distribution are handled via agriculture supply chain management. New product development, production, distribution, finance, marketing and customer service activities involve participation from farmers, transporters, warehouses, retailers, suppliers, and consumers. Agri-products like fruits and vegetables, grains, pulses, animal-based goods, and many more are produced and distributed through organizations and cooperatives that make up an agriculture supply chain system. It is typically divided into two categories:

I. Networks for the provision of fresh agricultural products (like, fresh vegetables, flowers, and fruit). Examples of these chains include growers, auctioneers, wholesalers, importers, exporters, retailers, speciality stores and the companies that provide their services. In essence, each of these steps preserves the product's natural qualities without altering how it is grown or manufactured. The main procedures involve handling, climate-controlled storage, packing, transportation and trading of these items.

II. Food distribution systems in agriculture for processed foods (like, portioned meats, snacks, juices, desserts, and canned food items). In these supply chains, agri-products are used as raw materials to create end items with higher value added for consumers. Procedures for product preservation and conditioning typically increase product shelf life.

Figure 1 below depicts the agriculture and food value chain, in which value addition occurs at various levels of the supply chain.

FIGURE-1: INTEGRATED AGRICULTURE SUPPLY CHAIN



Agri-supply chains are economic structures that share profits and spread risks among the different supply chain members. As a result, supply networks enforce internal policies and establish chain-wide incentives to guarantee the on-time fulfilment of output and delivery promises. All the members of supply chain are connected and linked by the process of information exchange, making commitments about the volume of transactions, and assuring the quality of the products. Process linkages make agricultural products more valuable while compelling individual participants to plan their actions following a process of ongoing improvement. The decisions made at a particular link in the chain have a significant impact on the costs incurred on the other link. To maintain critical control over activities including forecasting, purchase scheduling, production and processing, sales promotion and new market and product introductions, extensive pre-planning and coordination are required across the chain (*MANAGE Report*).

CHALLENGES IN THE AGRI-SUPPLY CHAIN

Indian farmers face several difficulties, but the most important ones are excessive stress on the health of the land, water, and soil, lack of information about high-growth products, limited exposure to high production practices, weak market links, ineffective supply chains with high level of food waste and heavy reliance on rainfall (*Mckinsey report*). The agricultural supply chain has the following significant challenges:

i. **Fragmented supply chain** Wastes and price increases are the results of a lengthy and fragmented supply chain. This is a result of the significant number of unorganized players in the supply chain, as well as issues with operational and economic viability.

ii. **Insufficient warehousing and cold storage:** Warehousing is a crucial link in the overall supply chain network and it is mostly controlled by unorganized firms. Presently, the Government owns 20 per cent of the entire warehousing facilities and 70 per cent of the organized market.

iii. **Logistical issues:** India still struggles with connection and quality problems in logistics. In India, national roads make up just 2 per cent of the entire road network and transport 40 per cent of all goods. Although India's port capacity is expanding, inefficient connectivity to these ports results in cost hikes and product transfer delays. Last-mile access is not offered by rail transporters.

iv. **Slowing of production growth:** Due to the marginal nature of 67 per cent of landholdings and the average size of 0.4 hectares, more than 50 per cent of marginal farmers are unlikely to generate any surplus profits above survival, which hinders advances in farm-level production.

v. **Informalization is pervasive:** Small-scale, informal firms make up more than half of the food processing industry. They are unable to take advantage of the formal financial industry's advantages and fail to realise economies of scale.

vi. **Immature processed food market:** The processed food sector in India is still in its infancy. The Indian retail market is still controlled by small dealers and *kirana* stores. This is a significant obstacle in enlarging the customer base.

vii. **Other issues:** In addition to the aforementioned obstacles, the industry faces other difficulties such as a lack of applied research, taxation problems, loan availability, outdated technologies, etc.

OPPORTUNITIES IN AGRI-SUPPLY CHAIN

The primary source of raw materials for many industries in India has always been agriculture. Around half of the money made by the manufacturing sector is produced by all of these agro-based industries. Agriculture is essential to both domestic and international trade of the country. Our principal exports, which make up around half of all exports, include goods like tea, coffee, sugar, tobacco, spices, cashew nuts and so on. Other than synthetic jute, 20 per cent of the nation's overall exports include cotton textiles and sugar. Hence, the agriculture sector generates approximately 70 per cent of India's exports (*IBEF Report*). The Central and State Governments of India rely greatly on the agricultural sector for their funding. Growing land revenue brings in a sizable sum of money to the Government. Transportation of agricultural goods is an important source of income for other businesses like, railways and roadways. The agri-food sector offers a wide range of work opportunities in small and large businesses, including business ownership, agricultural law, international business, natural resources, financial consultancy, farm management, commodities trading, marketing, and transportation.

The Indian Government has taken a few steps to support the agricultural industry. The following are some of the main initiatives:

i. From the Government's budget for 2022–2023, Rs. 1.24 lakh crore ($15.9 billion) would go to the Department of Agriculture, Cooperation, and Farmers' Welfare, while Rs. 8,514 crore ($1.1 billion) will go to the Department of Agricultural Research and Education.

ii. To ensure that latest technology, such as better crop variety seeds, novel breeds of livestock and fish and improved production and protection methods reach farmers, a State wide network of 729 *Krishi Vigyan Kendras* have been developed at the District level.

iii. The Ministry of Civil Aviation unveiled the *Krishi UDAN* 2.0 scheme in October 2021. The idea encourages air transportation of agricultural goods and provides financial help with a focus on the Northeast and tribal areas. The *Krishi UDAN* 2.0 will be executed at 53 airports througout the country and will benefit farmers, freight forwarders and airlines.

iv. The Union Ministry of Agriculture and Farmers' Welfare stated in October 2021 that, as part of a special project, 820,600 seed mini-kits will be distributed free of cost to 343 selected Districts throughout 15 significant producing States. The rate of seed replacement is projected to rise as a result of this scheme, increasing farmer revenue and productivity.

v. The Central Government has announced the Digital Agriculture Mission, which will provide funding for agricultural projects utilising cutting-edge technologies like, artificial intelligence, blockchain, remote sensing and GIS technology, drones, robots, and others, for the years 2021 to 25.

vi. The Central Government adopted the Agricultural Export Policy, 2018 in December 2018. The new policy is aimed to increase India's agricultural exports to $.60 billion by 2022 and $.100 billion during the following years.

vii. The Central Government established the Pradhan Mantri Krishi Sinchai Yojana (PMKSY), which intends to improve irrigation resources as a long-term drought cure, with an investment of Rs. 50,000 crores ($.7.7 billion).

viii. As part of the Plan for Agro-Marine Processing and Development of Agro-Processing Clusters, the Government intends to boost India's food processing capacity from 10 per cent of agricultural produce that it presently processes. It has also committed to spend Rs. 6,000 crores ($.936.38 billion) on the country's large food parks (SAMPADA).

ix. Under the automated method, the Central Government has permitted 100 per cent FDI in online commerce and the marketing of food products.

CONCLUSION

The agriculture industry in India is predicted to expand during the next few years as a result of increased investment in agriculture infrastructure, like, warehousing, cold storage, and irrigation. Also, it is projected that increased use of genetically modified crops will increase farmers' output. The Government of India started inviting private investment in agricultural marketing infrastructure by lowering several entrance obstacles and encouraging a well-coordinated supply chain to improve customers' disposable income. For instance, the revised APMR Act, which aims to encourage the development of private markets, contract farming, and direct selling, has been put into effect in several Indian states. To boost farmers' revenues, the Government has also promoted the adoption of modern technologies in the agricultural supply chain. The information-driven, integrated supply networks of today help agricultural businesses cut expenses associated with inventories, raise the value of their products, broaden their resource base, and shorten time to market while retaining customers.

The global agriculture supply chain management market is anticipated to expand rapidly over the next few years, according to NASSCOM. The agricultural supply chain is expected to experience tremendous growth in the future. Several contributory factors include, a significant rise

Around half of the money made by the manufacturing sector is produced by all of these agro-based industries

in demand for agricultural products, the use of modern agricultural techniques, a surge in the adoption of blockchain technology, artificial intelligence (AI)-driven planning and scheduling algorithms and increased data storage capacity for information related to soil, weather, commodity prices, and so on. MA

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AGRICULTURAL MARKETING INFRASTRUCTURE IN COOCHBEHAR DISTRICT OF WEST BENGAL: AN EMPIRICAL STUDY

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Abstract

The income of the farmers may highly depend on production and market price of the product but agricultural marketing infrastructure also plays a major role in the profitability of the farmers. Development of agriculture marketing infrastructure can safeguard the farmers from price volatility by enhancing the storage capacity. In this article an attempt is made to analyse the current status and bottlenecks of the agricultural marketing infrastructure of the Cooch Behar District. For the purpose of the study, a survey was conducted and information was collected from 582 respondents from Coochbehar using simple random sampling technique. The study indicates that majority of the farmers of the District do not have cold storage access. Along with it, majority of the farmers are facing problems regarding black marketing of the bonds of cold storages. To tackle these issues, the Government should promote investment in agricultural marketing infrastructure and also take strict action against all those who are involved in black marketing of the bonds.

INTRODUCTION

Since the pre-Independence era, the Indian economy has been highly dependent on the agriculture sector. The development of economy is highly correlated with the development of the agricultural sector (*Sarkar & Banerjee,2023*). At a time when the Indian economy was suffering from the turmoil of unemployment and Covid-19, the Indian agricultural sector came as a saviour. According to Statista, almost 151.79 million people were engaged in agricultural work in India in 2021. According to the Ministry of Agriculture & Farmers Welfare, the total number of agricultural workers in India during 2011 was 263.1 million which included 118.8 million cultivators and 144.3 million agricultural labourers, whereas, the workforce was reduced to 54.6 % in 2011 compared to 58.2% in 2001. According to Statista, almost 151.79 million people were engaged in agricultural work in India in 2021. Agricultural marketing infrastructure influences the farmers' livelihood directly. Farmers get most of the benefits from their produce when the marketing infrastructure is stable and developed.

According to *PIB.gov.in,* under Agricultural Marketing Infrastructure Scheme subsidies are provided by the Government. up to 25 per cent and 33.33 per cent on capital costs to eligible beneficiaries such as farmers, agri-entrepreneurs etc. In the last 2 decades, 40,985 projects with a storage capacity of 708.67 lakh metric tonnes have been developed.

According to the Ministry of Agricultural & Farmers Welfare, a budget of 2,000 crores was sanctioned by the Government in 2018-19 for the Agri-Market Infrastructure Fund which included the development of 22,000 Gramin Agricultural Markets all over India and 585 Agricultural Produce Market Committees.

Along with all of these projects and schemes, the Agricultural Infrastructure Fund of INR 1,00,000 crore was created by the Government of India, under which various medium- and long-term projects associated with warehousing and cold storage were funded by the Government. and financial support was provided to the farmers. According to the Department of Agriculture, Government of India, the amount allocated to the State of West Bengal was INR 7,260 Crore under the AIF Scheme.

In the Cooch Behar District, majority of the population is engaged in agricultural work most of whom belong to the marginal and small farmers categories. The economy of the District is solely dependent upon agriculture and a major part of the population is dependent upon it for their livelihood, and still so many loopholes prevail in the marketing infrastructure. These loopholes are hampering the farmers directly by forcing them to sell their produce without taking the market price into consideration. This ultimately reduces their income as they are left with no choice, but to sell without considering whether they earn profit or suffer loss.

OBJECTIVE OF THE STUDY

This study is aimed to analyze the current status and bottlenecks of the agricultural marketing infrastructure of the Cooch Behar District in West Bengal.

BIRD'S EYE VIEW

Cooch Behar District in West Bengal is located between 25057'47" to 26036'2" North latitude and between 89054'35" to 88047'44" East longitude. The total area of the District is 3,387 sq. km, which is 3.82 per cent of the total land mass of the State of West Bengal. It is located in the North-Eastern part of the State and surrounded by the District of Jalpaiguri in the North, Assam in the east and it shares international border with Bangladesh in the South and West. It has 12 Blocks and 5 Sub-Divisions along with 1,188 villages and 128 Panchayats. There are 12 cold storages in the district with storage capacity of 2,000 metric tonnes of potato.

STATEMENT OF THE PROBLEM

According to the data provided by the NABARD, during 2008-09 potato was cultivated in 25,690 ha of cultivated land and the yield was 6,59,976 MT. This has increased to 734,250 MT during 2009-10 when the cultivation was done on 26,700 ha of agricultural land. But the storage capacity of the existing 12 cold storages of the District is only 1,40,000 MT. This indicates that there is a huge gap in the production of potatoes and the cold storage capacity in the District. Due to this, farmers of the region are selling their produce at prices not even covering, their cost of production. Further there are so many obstacles through which a farmer has to go through while accessing the existing cold storage facility. This is one of the major failures of the agricultural marketing infrastructure in the Cooch Behar District which adversely affects the whole agricultural economy of the region.

METHODOLOGY

Sample description

Primary data for this study was collected through a well-structured questionnaire survey which was conducted on the sample unit upon the farmers' households of CoochBehar District selected randomly. In addition to the primary data, secondary data was collected from various secondary sources like websites.

Since households involved constituted the basis for the study, the total population of the study is the total number of households, which is 5,96,027. The total number of samples has been determined using Slovin's formula. According to Slovin's formula, the minimum required sample size is $n = N/(1 + Ne^2)$, which equals 400 farmer households. For the purpose of the study, 582 samples have been collected. 84 household from Cooch Behar – I, 72 from Cooch Behar – II, 62 households from Dinhata-I, 59 households from Dinhata – II, 27 from Haldibari, 43 from Mathabhanga – I, 44 households from Mathabhanga – II, and 31 households from Mekhliganj.

FINDINGS OF THE STUDY

Status of Infrastructure

The District Handbook of Cooch Behar District has clearly mentioned that this District has 1,452 fertiliser and seed outlets, 2 soil testing centres, 584 farmers' clubs and 1 Krishi Vigyan Kendra. Total number of mandies around this District is 128. There are 54 wholesale market and 60 godowns with a capacity of 2,50,000 MT. The total number cold storage is 12 in the District with a storage capacity of 1,40,000 MT. For agriculture infrastructure an amount of INR 13,815.15 lakh was projected under Potential Linked

Credit Plan (PLP). For crop production, maintenance and marketing the PLP projection was INR 1,41,015.93 Lakh. For agricultural infrastructure which involves construction of warehouses, godowns, market yard and cold storages the PLP projection during 2016-17 was INR 12,766.66 lakh.

Krishak Bazar is an initiative taken by the Government of West Bengal to support the farmers by providing them a platform where they can sell their products directly to the consumers by eliminating the middlemen and whole sellers. In Cooch Behar District, there are 9 Krishak Bazars out of which 4 were constructed in the first phase and later by noticing the further need 5 more were constructed in the second phase. Along with these, there are 71 market yards (Other than Krishak Bazar) in the Cooch Behar District which comes under the Cooch Behar Zilla RMC.

Various schemes such as *Amar Fasal Amar Gola* farmers are provided with financial assistance. Under this scheme, small and marginal farmers along with FIGs and SHGs benefitted from the subsidy of INR 6,336 per unit for *kacha gola.* For *pucca gola* the subsidy has been enhanced to 39,133 per unit. The scheme '*Amar Dhan Amar Chatal'* helps in setting up sheds and paddy drying machines for the farmers to protect their produce. *Sufal Bangla* scheme helps the farmers to sell their produced vegetables to the Government at a higher price. "*Bangla Sahayata Kendra",* helps the farmers to access services like application for crop insurance and krishak bandhu (New) Scheme, applying for seed license, and *Sufal Bangla* registration.

According to *PIB.gov.in.* during the period of 2001 to 2021, a total of 43850 applications were received for storage infrastructure assistant, out of which 2,576 applications pertained to West Bengal. Out of these applications 40,985 projects were assisted by the Government all over India with storage capacity of 16,14,834 MT out of which 2,564 projects were from West Bengal with a storage capacity of 708,66,833 MT.

During 2001- 2021, 7596 applications were received for warehousing facility in India valued at INR 7,535 crores, out of which 5,446 were sanctioned by the Government valued at INR 4,407 crore. In the case of West Bengal 14 projects valued at INR14 crores were sanctioned.

TABLE 1: ACCESS TO THE COLD STORAGE BY THE FARMERS

Percentage of total Output kept in cold storage	**Number of farmers**	**Percentage of farmers in accordance to total respondents**
0 (Nothing)	350	60
Up to 20	150	26
21 to 40	45	8
41 to 60	18	3
61 to 80	11	2
81 to 100	8	1
Total	582	100

Table1, indicates that almost 60 per cent of the respondents i.e., 350 farmers have no access to the cold storage facility, whereas, 150 farmers constituting 26 per cent of the total respondents mentioned that they have access to the cold storage but are able to store only upto 20of their produce in the cold storages. 45 farmers constituting 8 per cent of the total respondents came under the 21 to 40 per cent category. 18 farmers in the 41to 60 per cent category. 11 farmers in 61-80 per cent category and 8 farmers in 81 to 100 per cent category. Overall, this result indicates that majority of the farmers did not have the access to the cold storage services whereas, remaining portion those who has the access to cold storage services and they are only able to store a very small portion of their produce in the cold storages.

TABLE 2: REASONS FOR LACK OF ACCESS TO COLD STORAGE FACILITIES

Reasons	**No. of farming households**	**Percentage of farming households**
Lack of cold storages and storage capacity of cold storages	354	61
Black Marketing of Bond	137	24
Cultivation on Lease land	82	14
Repayment of loans	9	1
Total	**582**	**100**

The above table is self-explanatory and it has clearly identified that majority (61 per cent) of the respondents i.e., 354 had pointed their finger towards the lack of cold storages in the District as the major reason for which they are not able to access the cold storage services. Other than this, 137 respondents constituting 24 per cent of the total respondents mentioned black marketing of bonds as the major reason as to why they are not able to access the cold storage facility, whereas 14 per cent of the respondents mentioned the legitimacy of the land holding of the farmers and 1 per cent of the respondents mentioned their solvency position as the reasons as to why they have not been getting access to cold storage facility.

Based on the above findings regarding the infrastructure bottlenecks it can be found that the farmers of the region are not able to access the cold storage facility due to the

Due to a lack of proper facility of institutional credit under different schemes, many of the farmers are not able to store their produce at the cold storage

lack of cold storage in the District. The total number of cold storage in the district is only 12 with a storage capacity of 1,40,000 MT which is very low compared to the total production of potatoes in the region. As each of the cold storage was located far away from the place cultivation the farmers of the region had to spend a substantial amount for transportation costs to reach the cold storage facility. Even those who are willing to avail the facility of cold storage faced problems regarding the bond distribution system in cold storage. Apart from this, many of the farmers are facing the problem of black marketing in the bond distribution process. Other than all of these, due to a lack of proper facility of institutional credit under different schemes, many of the farmers are not able to store their produce at the cold storage safeguard against price fluctuation; rather very often they were compelled to sell their entire produce for the repayment of their loan. The poor farmers are producing produce without having any knowledge about the demand for their produce. This phenomenon of high production and lack of marketing infrastructure is hampering their profitability and they are living in a miserable condition.

SUGGESTIONS AND RECOMMENDATIONS

Agriculture is a vital sector that acts as the heart of the economy of the country. To eliminate the existing problems of agricultural infrastructural bottleneck a holistic initiative should be taken for the West Bengal as a whole and Cooch Behar in particular. All the stakeholders, at the national and State level, should take up this issue in an integrated manner. From the Government's perspective, adequate cold storage facilities should be created in different parts of the District. The Government should enhance the amount of subsidy and provide other incentives to encourage investment in the development of agricultural marketing infrastructure. The construction of adequate cold storage facilities will also help in creating jobs which will reduce unemployment in these regions. The storage capacities of the existing cold storages can also be enhanced, if possible. The black marketing of the bonds should also be eliminated by the Government. This of course requires a strong political will. Policy makers both at the State and Central levels should formulate plans to sensitise the farmers about the infrastructure and the market condition of their output before cultivation, so that the storage problem can altogether be minimised to a reasonable extent. MA

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PRODUCTION, PROCUREMENT AND OFFTAKE OF CEREALS IN INDIA: AN ANALYSIS OF TRENDS

Abstract

Drawing on data on food production, procurement and PDS offtake compiled from RBI Handbook of Statistics on Indian Economy, the present study finds that in India, the production of rice and wheat has shown a persistent upward trend over the years starting from 1964-65. But the growth rate of total cereal production has witnessed both ups and downs during the period from 1964-65 to 2021-22. The ratio of procurement of rice and wheat by the PDS to the total production has been increasing in India, showing increasing commitment on the part of the Government to meet food security objectives. In recent times, this ratio has peaked at 0.42 per cent for rice and 0.40 for wheat. Nevertheless, the trend in the level of procurement of both rice and wheat exceeding offtake from the PDS may impose extra cost burden on the PDS system, making it non-viable in the long run.

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INTRODUCTION

"Right to food" has been recognized as an inevitable right being bestowed on the needy and poor citizens yelling for adequately nourished food and this right has in effect become an important interventionist tool to address the long-standing unresolved problems like poverty and mal-nourishment which in fact lead to lowering of human development index of nations. In India too, we have been at the forefront of devising strategies to address issues like hunger and poverty. Indeed, it needs to be reiterated that right to food forms an integral part of an overall effort to accomplish the goal of holistic human development *(Dev, 2007*). In fact, the right to food can be seen as a constitutional obligation of the Government (*Dreze, 2006*). It is obvious that for right to be a reality rather than a mere dream, three things are essential: availability of food (production), its accessibility (supply through Fair Price Shops under the Public Distribution System, PDS), and affordability. Set in this background the present study intends to look into the trends in the production of cereals in India including Rice, Wheat and Coarse Cereals. The study also brings out the trends in the Public Distribution System's (PDS) procurement and offtake of two main cereals viz. wheat and rice.

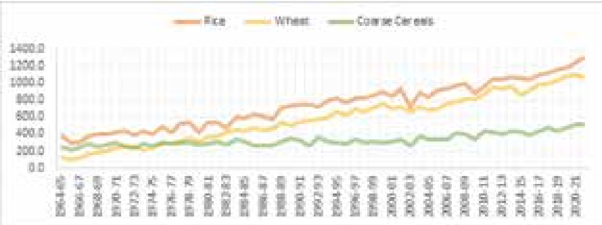
PERIOD OF STUDY AND SOURCE OF DATA

In the case of analysis of production of cereals, the period of study begins with 1964-65 and ends with 2021-22 whereas in the case of trends in PDS procurement and offtake of wheat and rice, the period of study starts with 1984-85 and ends with 2021-22. The sole source of data for the analysis is Reserve Bank of India Handbook of Statistics on Indian Economy which can be accessed at www.rbi.org.in. For analysis, the study makes use of only graphical method, percentages, ratios, and growth rates.

TRENDS IN THE PRODUCTION OF CEREALS IN INDIA

It is well known that India has an edge over other countries as far as the production of major cereals is concerned *(Singh, Anoop, & Singh, 2020)*. It has been well acknowledged that India leads the world in the production and export of cereals. The demand for cereals has been growing in the world particularly in the light of the ongoing tension between Ukraine and Russia. But, the increase in the domestic demand for rice and wheat has forced the Government to impose certain kinds of quantitative restrictions on the export of these items from the country. Rice and wheat are two major cereals produced in India. The production of rice has shown a persistent upward trend over the years starting from 1964-65 (Figure No.1). In 1964-65, the rice production stood at 393.1 lakh tonnes which increased to 395.8 lakh tonnes in 1974-75, and further to 583.4 lakh tonnes in 1984-85. Although the production showed slight downward trend in certain years, taking the overall period under consideration, the production of rice indeed has been increasing with an acceptable stability. However, the year 2002-03 witnessed an unprecedented downward trend in the production of rice when the production plummeted to a level as low as 718.2 lakh tonnes from 933.4 lakh tonnes in 2001-02. Thereafter, it has registered a tremendous increase. It is interesting to note that in recent times particularly since 2013-14, the production of rice has not shown a perceptible downward trend.

FIGURE 1 TRENDS IN CEREALS PRODUCTION INCLUDING RICE, WHEAT AND COARSE CEREALS

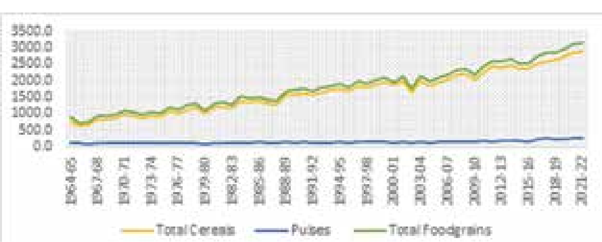


Source: RBI Handbook of Statistics on Indian Economy

When it comes to the case of wheat production in the country, the scenario slightly changes compared to that of rice production (Figure No.1). It is quite interesting to observe that wheat production in India has been slowly rising without much oscillations as in the case of rice production. Although wheat production showed a steep decline in 2014-15 to 865.3 million tonnes from 958.5 million tonnes in 2013-14, thereafter it has been continually rising. It needs to be mentioned here that climate change has started causing worries in respect of wheat production in recent times. The decline in wheat production in 2021-22 over 2020-21 is said to have been caused by climate induced heatwave that affected Punjab and Haryana (*Athar, 2022*). Unlike the wheat and rice production, the two major cereals the production of coarse cereals has never been encouraging (Figure No.1). It is disheartening to note that in 2020-21, the production of coarse cereals stood at only 509 lakh tonnes compared to 253.7 lakh tonnes in 1964-65, which points towards the fact that over the period, while the production of other two cereals viz. rice and wheat more than quadrupled, production of coarse cereals just doubled only.

Turning to the total food grain production in India including both cereals and pulses, it can be observed that the total food grain production has moved in line with the trend in the total cereal production, showing that the production of pulses has had little effect in determining the total food grain production in the country (Figure No.2).

FIGURE 2 TRENDS IN TOTAL THE TOTAL FOOD GRAINS PRODUCTION INCLUDING CEREALS AND PULSES

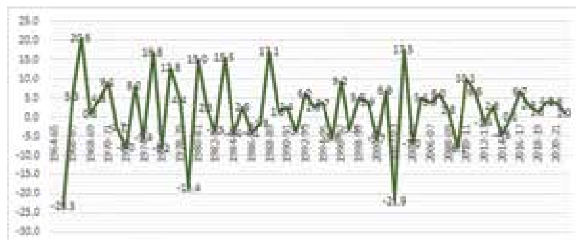


Source: RBI Handbook of Statistics on Indian Economy

Further it is interesting to note that the production of pulses has not made any significant improvement. It has remained, on an average, almost low at 141.4 lakh tonnes whereas the figures for rice and wheat are 740 lakh tonnes and 580 lakh tonnes respectively. Thus it is obvious that in India's total food grain production, the share of rice on an average during the period of the present study has been quite high compared to other crops, followed by wheat, coarse cereals and pulses.

Moving on to the growth rate in total cereal production including wheat, rice and coarse cereals, it can be seen that the period between 1964-65 to 2021-22 has witnessed sudden and frequent ups and downs in the growth rate of total cereal production in the country. For instance, the years 1966-67, 1979-80, 2002-23 showed steep decline in the production of cereals. Nonetheless, the period since 2014-15 has almost been stable compared to the previous period as far as the production of cereal is concerned (Figure No.3).

FIGURE 3 GROWTH RATE IN TOTAL CEREAL PRODUCTION

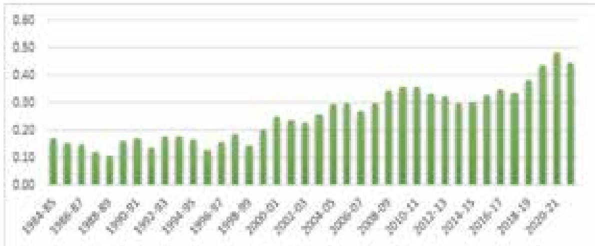


Source: RBI Handbook of Statistics on Indian Economy

THE TRENDS IN THE PROCUREMENT OF CEREALS

Having discussed the trends in the production of major cereals in India, now we turn to the trends in the procurement of cereals by the Public Distribution System (PDS) in the country. As we know, the PDS has been considered as an indispensable institutional mechanism in addressing the issue of food insecurity in the country *(George & McKay, 2019*). Through the intervention of PDS, the Government attempts to ensure adequate availability of food while ensuring that necessary quantity of food grains is made available to the people at affordable prices through the network of Fair Price Shops. Here, we consider the ratio of total procurement by PDS to the total production as a yardstick to analyse the gap between production and procurement of food grains in India. We do this analysis separately for two main cereals viz. rice and wheat. First, we shall turn to the case of rice (Figure No.4). As is shown, the ratio of procurement to production in the case rice was below 0.2 or below 20 per cent during the period from 1984-85 to 1999-2000. In 2000-01, the 0.25 or 25 per cent was the ratio of PDS procurement to production in the case of rice, the rest 75 per cent was understood have been supplied in the market. Since 2000-01, the ratio has been moving, touching the level 0.48 in 2020-21. Further, it is quite interesting to observe that the PDS procurement of rice has been on an unprecedented increasing trend since 2014-15 which in fact shows the increasing commitment of Government towards materializing the objective of tackling poverty in India.

FIGURE 4 TREND IN THE RATIO OF PDS PROCUREMENT OF RICE TO ITS TOTAL DOMESTIC PRODUCTION



Source: RBI Handbook of Statistics on Indian Economy

Turning to the case of wheat, it is observed that unlike in the case of rice, the ratio of PDS procurement to the total production has shown much volatility. For instance, in 1986-87, the ratio rose to 0.24, whereas in 1988-89 it plummeted to the ever lowest ratio of 0.12, and again in 2001-02, it went up to 0.28 but in 2006-07, it went down to 0.12. Of course, this huge variation in the ratio of procurement to production shows the varying demand for wheat through the PDS. In 2012-13, the ratio touched the historical uptrend level of 0.41, and again slipped down to 0.23 in 2016-17(Figure No.5).

FIGURE 5 TREND IN THE RATIO OF PDS PROCUREMENT OF WHEAT TO ITS TOTAL DOMESTIC PRODUCTION

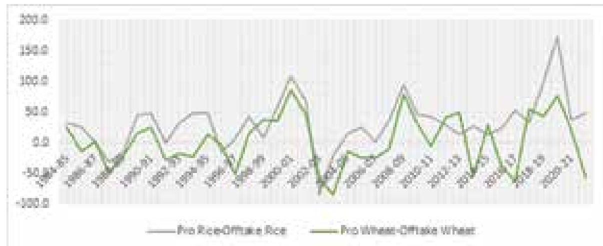
Source: RBI Handbook of Statistics on Indian Economy

TRENDS IN THE PDS PROCUREMENT AND PDS OFFTAKE

India has experienced huge positive gap between the PDS procurement and PDS offtake of rice over the years. By positive gap we mean PDS procurement far exceeding the offtake. This clearly shows a dismal condition where the States do not show interest in drawing the PDS allocation, resulting in the large piling up of stock with FCI warehouses, increasing the cost of holding up stocks by the FCI. The large positive gap between the procurement and offtake shows either a decline demand for rice in the fair price shops or a mismatching increase in the supply of the rice. Nevertheless, in the case of wheat the negative difference between procurement and offtake has been high compared to the rice (Figure No.6). The reflects much volatility either in the supply and demand for wheat in the PDS mechanism.

Production of food grains, their procurement and offtake from the PDS are very important in the successful operation of the mechanism of food security in the country

FIGURE 6 TRENDS IN THE GAP BETWEEN PROCUREMENT AND PDS OFFTAKE OF RICE AND WHEAT



Source: RBI Handbook of Statistics on Indian Economy

CONCLUSION

It is obvious that the production of food grains, their procurement and offtake from the PDS are very important in the successful operation of the mechanism of food security in the country. The present study shows that India has made remarkable improvement in the production major cereals in the country. The production of rice and wheat, the two major cereals, have far exceeded the procurement by the PDS in the country, showing that India has had enough production of both rice and wheat to meet the open market requirements. As far as the offtake of cereals from the PDS is concerned, there have been divergence between the procurement of cereals and PDS offtakes. Many a time, the excess of procurement of cereals compared to offtake has led to the escalation of holding up costs for the PDS mechanism in India. MA

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RECOGNITION OF DISSA COURSE

By
Ministry of Electronics and Information Technology (Indian Computer Emergency Response Team – CERT-In)

CMA Vijender Sharma
President

Dear Professional Colleagues and Students,

Greetings!!!

I am pleased to inform you that the ***Ministry of Electronics and Information Technology (Indian Computer Emergency Response Team)*** has recognized the ***Diploma in Information System Security Audit (DISSA)*** offered by the Institute as one of the major *Technical Qualifications [2.1.c(v)]* under *Criteria for Empanelment* in its *Guidelines for applying to CERT-In for Empanelment of IT Security Auditing Organisations.* This recognition is a significant achievement for our Institute, as it validates our commitment to providing high-quality education and training in the field of information security.

The recognition of *DISSA* by the *Ministry of Electronics and Information Technology (CERT-In)* is a testament to the rigorous curriculum and training methods of the Institute that has been developed over the years. It is also a reflection of the growing importance of information security in today's digital world, and the need for professionals who are equipped with the necessary skills and knowledge to protect sensitive information.

I am very much thankful to my Council Colleagues for their untiring support in this endeavour. I would like to heartily congratulate the faculty members and officials of the Institute for their hard work and dedication in developing, upgrading and delivering the *DISSA* program on continuous basis. I would also like to thank the *Ministry of Electronics and Information Technology (CERT-In)* for recognizing the value of this program and for their support of our Institute.

Finally, I would like to encourage all our students and members to take advantage of this opportunity and to continue to pursue excellence in their careers. The field of information security is rapidly evolving, and it is essential that we stay up-to-date with the latest trends and technologies. With the recognition of *DISSA by the Ministry of Electronics and Information Technology (CERT-In),* we are well-positioned to do so.

Thank you.
Sincerely,

CMA Vijender Sharma
President
The Institute of Cost Accountants of India

New Delhi, 14th April 2023

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PUBLIC-PRIVATE PARTNERSHIP FOR FOOD SECURITY IN INDIA THROUGH PM-POSHAN SCHEME

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Abstract

Food, water and shelter are the elementary prerequisite for human survival and their well-being. Food provides the necessary nutrients to fuel the body's functions; access to adequate quantity of safe and nutritious food is a fundamental human right. However, India still faces challenges in ensuring food security for all its citizens leading to malnutrition, dehydration, and various health issues. Food security in India is a crucial issue that affects millions of people, particularly those living in poverty. The Government has implemented various measures to address this issue, including enactment of the National Food Security Act 2013. Pradhan Mantri Poshan Shakti Nirman (PM-Poshan) earlier known as Mid-Day Meal Scheme is a great measure to tackle the problem of malnutrition among children. The program is based on a multi-sectoral approach involving the health, nutrition and sanitation sectors through community-based monitoring and behaviour change communication. The Government has allocated significant funds for the program and has also partnered with various stakeholders through public-private partnership model (PPPs). Still, there are significant gaps and loopholes in the implementation of these policies. This article brings out the intermediatory role of Akshaya Patra under the PPP Model to overcome the emerging challenges towards the implementation of this scheme.

INTRODUCTION

Food security has been a major concern in India due to its large population and high levels of poverty and inequality. The two biggest issues facing India are hunger and illiteracy. The World Bank estimated that 60 million children are underweight as India is experiencing severe malnutrition more after the severe impact of Covid-19 Pandemic. Hunger is a barrier to children's survival, health and education. The Indian Government has implemented various programs and policies to address food security and reduce malnutrition. The National Food Security Act (NFSA) was passed in 2013, to provide subsidized food grains to around two-thirds of the Indian population.

In addition to NFSA, the Government has implemented other programs such as Integrated Child Development Services (ICDS), *Antyodaya Anna Yojana* (AAY) and the Mid-Day Meal Scheme (MDMS), which provide nutritious food to children in schools and *anganwadis* (childcare centres) to address malnutrition and ensure food security. The mid-day meal programme was retitled as Pradhan Mantri Poshan Shakti Nirman (PM-Poshan) in 2021.Till now the scheme has covered 11.80 crore children of class 1st to 8th between the age group of 6 to 14 years.

The Government has also implemented various measures to increase agricultural productivity and improve food distribution systems. The *Pradhan Mantri Fasal Bima Yojana* (PMFBY) and *Pradhan Mantri Krishi Sinchai Yojana* (PMKSY) are aimed at improving crop insurance and irrigation systems respectively. The Government is also promoting the use of technology in agriculture through initiatives such as the e-National Agriculture Market (e-NAM) to improve farmers' access to markets.

In order to achieve a food security in India, what is required is a collaboration between governments, civil society organizations and the private sector through public-private partnership approach. Strategies to achieve food security may include improving agricultural productivity, increasing food distribution, storage infrastructure and monitoring so as to promote education and addressing the burning issue of poverty and income inequality.

BACKGROUND OF THE STUDY

Food security is a major global issue that affects the health, well-being and livelihood of millions of people worldwide. *Ranjan et al.* (2020) has highlighted the importance of food security in achieving the Sustainable Development Goals (SDGs) and emphasizes the need for a holistic approach to addressing the issue. The key impediments of food security include poverty, climate change, conflict and natural disasters (FAO, 2020). These drivers have significant impacts on food systems resulting in disruptions in food production, distribution and access. To address these issues of food security various interventions and policies have been implemented including social protection programs, agricultural development and trade policies (*Hossain & Dorward, 2019*). However, the effectiveness of these interventions depends on several factors including the political, economic and social context in which they are implemented.

The study by *Gaiha et al.* (2019) found that the mid-day meal scheme was associated with significant improvements in the nutritional status of children, particularly in terms of reducing the prevalence of underweight and stunting. It also had a positive impact on the dietary diversity of children. In addition to its impact on nutrition, the MDMS has also been shown to have a positive impact on school enrolment, attendance and academic performance (*Dutta & Ghosh*, 2018).

Despite its potential benefits, the MDMS faces several challenges in its implementation including issues related to food quality, hygiene, and safety (*Kamath et al.,* 2016). Moreover, there are concerns about the sustainability of the program given the financial and logistical challenges associated with its implementation (*Gupta & Rani,* 2019). To address these challenges, various recommendations have been made including strengthening the monitoring and evaluation mechanisms of the program, improving the quality of food and hygiene practices and increasing the involvement of the community in the program (*Dwivedi & Das*, 2018).

> **The sustained availability, accessibility and utilization of the food will help in achieving the two main goals of sustainable development i.e., "Zero Hunger and Quality Education"**

Recently, in 2021 the MDMS was retitled as *Pradhan Mantri Poshan Shakti Nirman* (PM-Poshan). The helping hand of the Government together with the NGOs like Akshaya Patra has brought a significant change in the delivery and implementation of the scheme. The public-private partnership approach and efforts to address these issues in India will go a prosperous way in terms of achieving sustainable and equitable development.

PRESENT SCENARIO IN INDIA

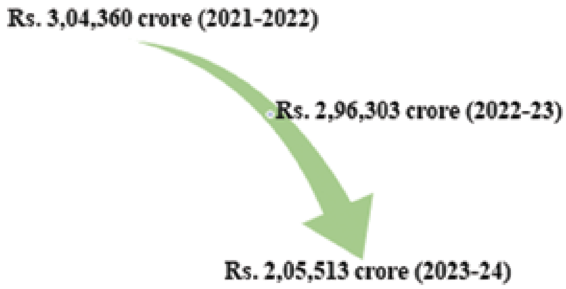
The current situation of India especially after Covid-19 is not up to the mark in spite of all Government efforts. India has shown no progress in treating anaemia and childhood wasting as per Global Nutrition Report of 2021. India has slipped to 101st positions from 94th in 2020 in the Global Hunger Index of 2021 comprising of 116 countries. As per the UNICEF's recent report, more than 8 million kids are not in school and more than 80 million kids leave school before becoming 8 years old. There should be sustainable approach for the food security system in India by covering the four main dimensions as given below:

FIGURE 1: DIMENSIONS OF SUSTAINABLE FOOD

The sustained availability, accessibility and utilization of the food will help in achieving the two main goals of sustainable development i.e., "Zero Hunger and Quality Education". Forty per cent of our country's population is under the age of 18, according to the survey done by many reputed organizations in child health sector. Less than 50 per cent of this group attend school but because of their socio-economic condition they drop schooling and work as labour to pay for at least one meal a day. According to research, the wide spread state of hunger and malnutrition is another reason for not achieving the goal of literacy. These two elements affect enrolment in schools, performance levels and dropout rates especially among female students.

As per 2022-23 Budget the allocation for food and public distribution has been slashed by 30 per cent. The new allocation under Union Budget towards food security for 2023 is Rs 2,05,513 crore which was estimated to be Rs 2,96,303 crore as given in Figure 2.

FIGURE 2: BUDGETARY ALLOCATION FOR DEPARTMENT OF FOOD AND PUBLIC DISTRIBUTION



Ensuring food security is not only essential for human well-being but also a critical component of India's overall economic and social development. PM-Poshan has shown promising results but there are still significant challenges to address including improving the quality and availability of nutritious food, ensuring the effective implementation of the program at the grassroots level and addressing socio-economic and cultural factors that contribute to malnutrition through active participation from the government and non-government organizations.

INTERMEDIATORY ROLE OF AKSHAYA PATRA

The basic objective of the mid-day meal scheme is to eradicate the classroom hunger of the children because it affects the child ability to learn, grow and explore the things. To overcome this challenge, Akshaya Patra started the 'Food for Education' initiative to feed the children of over 22,367 schools in India. The journey of mid-day meal initiative by the Akshaya Patra started in June 2000 by providing food to approximately 1,500 children at five Government schools at Bengaluru in Karnataka. Currently, the organization has coverage in 15 States and 2 Union Territories in India with 66 well equipped kitchens. In some places self-help groups (SHGs) of women have set up a decentralised kitchen facility. Karnataka government was the first to involve the active participation of NGOs towards designing, implementing and managing mid-day meal scheme as per Karnataka Human Development Report of 2005. The scheme has a wider coverage towards community welfare helping more than 9.78 crore children in 11.40 lakh schools.

The successful implementation of school lunch program by the Akshaya Patra since 2000 at Karnataka brings forth the efficacy to execute the mid-day meal scheme together with the Government through public-private partnership model. The participation of non-Government organizations (NGOs) like Akshaya Patra together with the Government was encouraged to establish the operation of providing food and to act as a catalyst agent of the Government. Consequently, lot many charities fight against hunger and malnutrition. The quality and scope of the programme have both improved as a result of this public-private partnership. When choosing a non-profit organisation to partner with it the Government, takes into account a variety of factors like openness of the organisations, their integrity etc. As a result of PPP model till now nearly 120 million children are reported to have been benefitted in 22,367 Government schools as their attendance has increased, classroom hunger has reduced, malnutrition decreased and socialisation among them has also removed the caste barrier.

The menu of mid-day meal at Akshaya Patra is planned and applied by involving a variety of nutritious dishes with seasonal vegetables as per the regional taste and flavours like Bisibelebath in Karnataka, Dalma in Odisa, Sukhdi in Gujarat, Puran poli in Maharashtra etc. Every day they strictly follow combination of food variety as per the menu framed in advance for a week or a month. While focusing on the improved nutritional level and attendance of the school going children of class 1 to 10, it further emphasises on achieving sustainable goals.

The centralised kitchen at Akshaya Patra is technology-intensive. The mechanisation and increased productivity to guarantee quality and food safety is through the automated cooking facility. The design of the kitchen and equipment, the selection of the cooking method, the construction of large cauldrons, mechanised high-speed vegetable cutting machines etc. are all governed by appropriate technological considerations. Akshaya Patra ensures the safe food for children by following the quality and food safety policy. The raw materials are checked thoroughly by the concerned authority to meet the FSSAI and AGMARK specifications. Quality assurance program is implemented at all stages of production from pre-production, production and post-production to maintain the high level of nutrition. Akshaya Patra provides a right quantity of nutritious food for each child as per the requirement (see Table 1).

TABLE 1: NUTRIENTS THROUGH COOKED FOOD

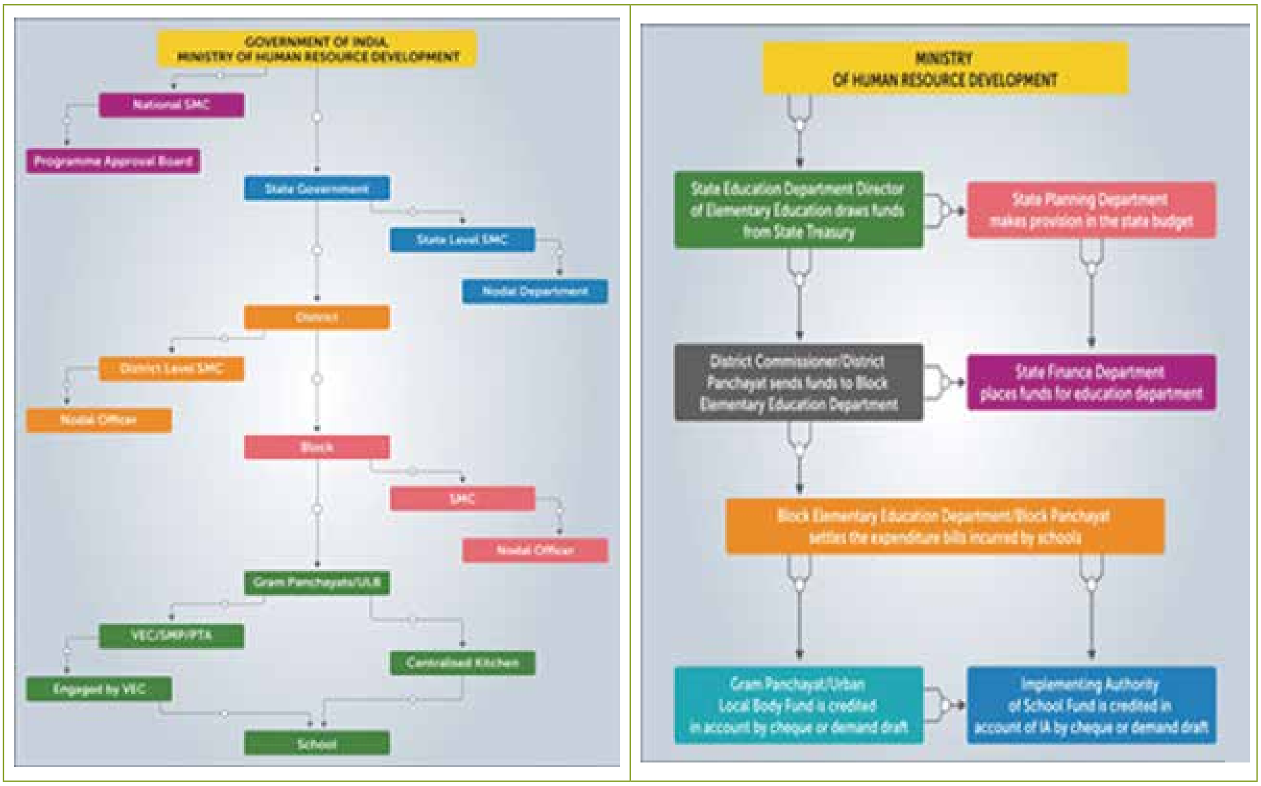
Mechanisms	**For Primary Students**	**For Upper-Primary Students**
Calories	450 Calories	700 Calories
Protein	12 gms	20 gms
Supplements	Adequate quantities of Iron, Folic Acid, Vitamin-A, B12, D etc	

The food nutrients are standardized as per the nutritive value of Indian food book of National Institute of Nutrition ICMR, Hyderabad. The Akshaya Patra mid-day meal food basically focuses on the adequate nutrients as the malnutrition is India's most significant human development challenge. Akshaya Patra adhers to the standard of ISO 22000 for Food Safety Management System, ISO 14001 for Environmental, Health and Safety Management System and ISO 9001 for Quality Management System.

FLOW OF FUNDS AND GUIDELINES

The Central and the State Governments work together towards the execution of the mid-day meal program. The Ministry of Human Resource Development under the Central Government issues guidelines and provides funds which are shadowed by the respective State Government. Some States have their own framed methods and guidelines. National Steering-Cum-Monitoring Committee has been set up to monitor the functioning, assessing the impact and in providing policy advice to Central and respective State Governments.

FIGURE 1: FLOW OF GUIDELINES AND FUNDS (AKSHAYA PATRA, 2023)



Apart from the mid-day meal programme other services from Akshaya Patra include Breakfast programme, Anganwadi kit programme and feed the homeless mothers etc. for the welfare and overall development of the nation.

CONCLUSION

The public-private partnership through NGOs and community support approach of providing lunch to the children under the mid-day meal programme retitled as Pradhan Mantri Poshan Shakti Nirman acts as an implementing arm of the Government in a very efficient manner. Overall, on a global scale the Government has worked strategically to meet the United Nation's sustainable goal of achieving zero hunger and quality education. The Government has also launched several other programs and initiatives to address food security issues which seek to reduce malnutrition among children and others by providing portable food security benefits to eligible beneficiaries across the country. However, there are still challenges to ensure food security for all in India, particularly in areas affected by natural disasters, conflict, and poverty but continuous efforts will definitely bring out significant changes towards the development of the nation. MA

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A STUDY ON UNION BUDGET WITH SPECIAL REFERENCE TO AGRICULTURAL SECTOR

Abstract

A planned income and expenditure will lead to savings and the growth of the family. Similarly, planned income and expenditure for the country will lead to its growth. The agricultural sector is very important for the growth of the country, which has the largest human workforce. The development of the agriculture sector depends on the facilities provided for crop insurance, crop price protection, export facilities, water facilities, protecting crops from diseases, selecting proper crops based on demand and supply, providing storage facilities, etc. The outcome of the budget depends on the allocation and use of funds. The current research study is focused on understanding the agricultural budget allocation for the years 2021–22 to 2023–24.

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AGRICULTURAL SECTOR AND BUDGET

India is a developing country and one of its major sectors is agriculture. For the development of the country, the agricultural sector plays a crucial role. (*Antony & Jain, n.d.)*. The history of agriculture in India says that it is 11,000 years old, and most of the activities are still traditionally oriented. Today, India is the second-largest country in terms of arable land, with 160 million hectares and 46 types of soil. The agricultural sector accounts for 49.60 per cent of the Indian workforce. The first campaign for the improvement of agricultural crops started in the year 1947 as "Grow More Food". The actions taken by the Government of India resulted in the increase of food grains from 51 metric tonnes in 1950-51 to 314 metric tonnes in 2021–22. During these years, the production of food grains, horticultural crops, milk, and eggs increased. By establishing the Imperial Council of Agricultural Research in 1929 in Delhi, India started systematic research for the agriculture sector. As a part of its reforms in the agricultural sector, it was later named as Indian Council of Agricultural Research (ICAR). Around 30,000 scientists and more than 100,000 technical and support personnel are working in the ICAR. The country has witnessed growth in agricultural activity and ranks fifth globally. The strategy in respect of food security storage and distribution resulted in a surplus and export of agricultural commodities worth US $50 billion (*Pathak et al., n.d.)*.

By 2050, the Indian population will be 1.6 billion, and food demand will reach 400 MT. As per this demand, many far reaching changes are required to be adopted and the Government of India is planning to adopt strategies like for instance increasing the farmer's income by 200 per cent , reducing fertiliser and water use by 25 per cent and 20 per cent , respectively and increasing the use of renewable energy by 50 per cent (*Pathak et al., n.d*.).

According to the National Crime Records Bureau (NCRB), a total of 1,39,123 farmers committed suicide between 2011 and 2020 in India. The NCRB releases data on farmer suicides every year and the numbers have been consistently going up in recent years. In 2020 alone, 10,281 farmers committed suicide. It is important to note that the issue of farmer suicides in India is complex and multifaceted, with various factors such as drought, crop failure, indebtedness, lack of access to credit and deficient Government policies contributing to the problem. Many farmers in India are also struggling with the effects of climate change, which can exacerbate the existing issues such as water scarcity and crop failure(*NCRB, n.d*.).

The Government of India is focusing on some of the areas like increasing the agricultural productivity, providing a supportive price for the crops, increasing the storage capacities across the country, giving various platforms for export, giving subsidies for the agricultural equipment, crop insurance schemes, research, and development, etc. (*Budget for Agriculture*, n.d.) The growth of farmers' incomes will lead to the development of the agricultural sector. Many of the farmers families' income is low and they are facing issues, such as water problems for crops, floods, storage, choosing the crops based on soil and weather, etc. (*Goyal et al., 2016)* Many farmers are dependent on subsidies or agricultural loans for their agricultural activities. For the betterment of this sector, Government-planned receipts and expenditures on agricultural sector is essential. The Union Budget therefore plays an important role in improving the agricultural sector.

The Union Budget includes information on various aspects of Government spending, including the allocation of funds to different departments and sectors, subsidies, grants, and transfers to states and union territories. It also provides details on tax revenue, including changes in tax rates or exemptions. The budget is important because it provides a roadmap for the Government's plans for economic growth and development. The agricultural budget components include agricultural credit and insurance, agricultural infrastructure and irrigation, agricultural marketing, crop insurance, livestock and fisheries, agricultural research and education and rural development. The effectiveness of the budget and the growth of the agriculture sector can be assessed by looking at the welfare of the farmers.

The Union Budget of 2023-24 on agriculture is divided into two parts: the first is Agriculture, Cooperation, and Farmers' Welfare, and the second is Agricultural Research and Education. The estimated amount on the first part is Rs 115531.79 crore and on the second part Rs 9,504 crore. Pradhan Mantri Fasal Bima Yojana, Modified Interest Subvention Scheme (MISS), distribution of pulses to States / Union Territories for Welfare Schemes, Pradhan Mantri Kisan Samman Nidhi (PM-Kisan), Pradhan Mantri Kisan Man Dhan Yojana, formation and promotion of 10,000 Farmer Producer Organizations (FPOS), Agriculture Infrastructure Fund (AIF) are the major items of expenditure of the agriculture welfare fund. Agricultural extension, agricultural engineering, Natural Resource Management Institutes including agro forestry research, crop science, horticultural science, animal science, fisheries science, Agricultural Universities and Institutions, National Agricultural Higher Education Project (EAP), ICAR Headquarters, Central Agricultural Universities, are the major expenditure areas of the agricultural research and education fund.

STATEMENT OF THE PROBLEM

The economic development of India largely depends on the agricultural sector, the service sector, and the manufacturing sector. The agricultural sector employs more people, but it contributes less than the service sector (GDP). For the holistic development of the country, planned expenditure and revenue are essential. Many of the reports and studies suggest that the Indian agricultural workforce is still underutilised and productivity is low compared to the area utilised and produce yield. The allocation of funds towards the agriculture sector has a significant impact on the performance of this sector and the livelihood of farmers. However, there is a lack of clarity on the effectiveness of the agriculture budget and its impact on the agriculture sector. Therefore, there is a need for a comprehensive study on the agriculture budget to analyse its effectiveness, identify the challenges and issues faced by the agriculture sector, and provide recommendations to improve the allocation and utilization of funds.

OBJECTIVES OF THE STUDY

- To assess the allocation of funds towards the agricultural sector.
- To assess and compare the funds spent under the head of "agricultural activities".

SCOPE OF THE STUDY

The current study focuses on the Union Budget for 2023–2024, particularly relating to the agricultural sector. The Budget for 2023–24 is compared with the earlier Union Budget for 2021–22 to 2023–24. The research focus is to understand the allocation of funds towards agricultural activities.

RESEARCH METHODOLOGY

The current research study is carried out using secondary data. To understand the pattern of allocation, the descriptive statistical tool trend analysis is used.

DATA ANALYSIS AND FINDINGS OF THE STUDY

TABLE 1

INDIAN AGRICULTURAL BUDGET TRENDS FROM 2012-13 TO 2021-22 (BASE YEAR 2012-13)

Year	Total Budgeted Amount	Trend Percentage of Budgeted Amount	Contribution of amount from the total budgeted amount for the agricultural sector	Contribution to Agriculture Sector	Trend Percentage of Agricultural Amount
2012-13	16,65,297	100	1.26	20,921	100

2013-14	16,65,297	100	1.62	27,049	129
2014-15	17,94,892	108	2.00	35,984	172
2015-16	19,77,899	119	2.10	41,580	199
2016-17	21,47,000	129	2.10	45,035	215
2017-18	24,42,213	147	2.35	57,503	275
2018-19	24,95,000	150	2.56	63,836	305
2019-20	27,86,349	167	5.44	1,51,518	724
2020-21	30,42,230	183	5.09	1,54,775	740
2021-22	34,83,236	209	3.78	1,31,531	629

Source: Union Budgets

The above data analysis reveals that from 2012–13 to 2021–22, the agricultural budget outlay increased by 600 per cent and the overall budget amount increased by 200 per cent. Till 2019-20, the trend of contribution to the agricultural sector from the total budgeted amount is moving upward, but from 2020-21 it is slowing downturn. Looking at the human resources engaged in this sector, this change in trend movement has a negative impact on the agricultural sector. The agricultural sector engages 50 per cent of the human workforce in India, and this is one of the important sectors for the development of the country.

It is interesting to note that while the total budgeted amount and its trend percentage have increased steadily over the years, the trend percentage of the contribution to the agricultural sector has decreased slightly in 2021-22. However, it is still higher than the trend percentages in earlier years. Overall, the table suggests a positive trend in the allocation of budget towards the agricultural sector, indicating a growing focus on the development of agriculture in the country.

TABLE 2

AGRICULTURAL BUDGET ALLOCATION FROM 2021-22 TO 2023-24

Particulars	Budget For 2021-22		Budget For 2022-23		Budget For 2023-24	
	Amount	In %	Amount	In %	Amount	In %
Secretariat	147.28	0.12	163.40	0.13	239.79	0.21
International Cooperation	49.69	0.04	50.73	0.04	45.92	0.04
Other attached and subordinate offices	360.50	0.29	419.37	0.34	1119.66	0.97
Crop Insurance Scheme	16000.00	13.00	15500.00	12.49	13625.00	11.77
Interest subsidy for short term credit to farmers	19468.31	15.82	19500.00	15.72	23000.00	19.87
Market Intervention Scheme and Price Support Scheme	1500.50	1.22	1500.00	1.21	0.01	0.00
Pradhan Mantri Annadata Aay Sanrakshan Yojna	400.00	0.32	1.00	0.00	0.01	0.00
Distribution of pulses to State / Union Territories for welfare schemes	300.00	0.24	9.00	0.01	800.00	0.69
Promotion of agricultural mechanization for in-situ management of crop residue	700.00	0.57	...	...	...	...
Pradhan Mantri Kisan Samman Nidhi	65000.00	52.81	68000.00	54.81	60000.00	51.83

Pradhan Mantri Kisan Man Dhan Yojana	50.00	0.04	100.00	0.08	100.00	0.09
Formation and promotion of 10,000 Farmer Producer Organizations (FPOs)	700.00	0.57	500.00	0.40	955.00	0.82
Agriculture Infrastructure Fund (AIF)	900.00	0.73	500.00	0.40	500.00	0.43
National Beekeeping Honey Mission (NBHM)	...	...	100.00	0.08	0.01	0.00
Protection of plant varieties and Farmers Rights Authority	4.70	0.00	5.50	0.00	56.44	0.05
National Institute of Plant Health Management	9.82	0.01	25.00	0.02	16.50	0.01
National Institute of Agricultural Extension Management (MANAGE)	7.77	0.01	5.50	0.00	5.00	0.00
National Council for Cooperative Training	6.57	0.01	...	...	...	...
Chaudhary Charan Singh National Institute of Agricultural Marketing	4.24	0.00	4.50	0.00	4.50	0.00
Coconut Development Board		...		...	39.13	0.03
National Horticulture Board		...		...	24.00	0.02
Total - autonomous bodies	28.40	0.02	35.00	0.03	89.13	0.08
Total - other central sector expenditure	33.10	0.03	40.50	0.03	470.57	0.41
Total - centrally sponsored schemes	17408.19	14.14	17616.00	14.20	14675.82	12.68
TOTAL	123079.07	100.00	124075.50	100.00	115766.49	100.00

Source: Union Budgets

The above data analysis reveals that more than 50 per cent of the agricultural budget outlays has been to the Pradhan Mantri Kisan Samman Nidhi for the last 3 years. Crop Insurance Scheme, Interest subsidy for short term credit to farmers, Market Intervention Scheme, Price Support Scheme, Pradhan Mantri Annadata Aay Sanrakshan Yojna, and distribution of pulses to State or Union Territories for welfare schemes are the other beneficial allocations to the farmers. Looking at the overall allocation, it is clear that the most-benefited schemes received an allocation of 30 to 40 per cent .

The crop insurance budget allocation was 13, 12.49, and 11.77 per cent, respectively, during 2021–22, 2022–23, and 2023–24. This allocation shows that there was a downward trend in the allocation of funds for crop insurance. The allocation of interest subsidy for short-term credit to farmers during 2021–22 was 15.82 per cent; in 2022–23, it was 15.72 per cent %; and in 2023–24, it was 19.87 per cent. The three-year allocations showed that during these years, allocations were slightly increased.

Market intervention scheme, price support scheme, and Pradhan Mantri Annadata Aay Sanrakshan Yojna scheme allocation is nil for 2023–24, which is a bad sign for the farmers. To develop the agricultural sector, it is important to make appropriate allocation of funds. If funds are allocated for price protection, crop insurance, storage of crops, transportation facilities, providing good seeds, and water facilities, it will help the farmer. But looking at the budget allocation, it can be concluded that it is not worthy and will not bring about the development of the agricultural sector. Allocating funds under the Pradhan Mantri Kisan Samman Nidhi scheme will not help the farmer. Giving Rs 6,000 per year to a farmer's family will be ineffective; the current cost of living is much higher than this. It will be better if the outlay of Rs 61,000 crores is utilised for any other purpose in the agricultural sector.

CONCLUSION

For the development of the country, it is important that the agricultural sector be fully developed. The development of the agricultural sector depends on the measures taken by the Government of India. Budget is one of the major measure that helps all the sectors in the country, including agriculture. Budget allocations are important for the success of the budgeting process. If farmers want to improve and if the agriculture sector is to grow then allocation should be more for providing direct facilities to the farmers and the agricultural sector. Allocation of funds should include crop insurance, price protection, export facilities, water facilities, protecting crops from diseases, facilities for selecting proper crops based on demand and supply, and storage facilities. Looking at the 2023–24 agricultural budget allocation, it can be concluded that it is not sufficient for the development of the agricultural sector. MA

The agricultural sector employs more people, but it contributes less than the service sector

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OVERCOMING OBSTACLES TO AGRICULTURE FINANCE IN INDIA: A VIBRANT PROSPECT OF AGRI-ENTREPRENEURSHIP

Abstract

The traditional agriculture in India used to be affected adversely by the delay in monsoon, drought, inferior quality of seeds and insufficiency of fertilizer and shortage of skilled labour etc. A clear vision of the Government, since independence, changed the environment of agriculture in the country to a great extent. Constant initiatives, in the form of promoting agri-financing by rural credit, infrastructural development, upliftment of standard of living of the farmers, supervisory role of regulatory bodies to provide banking services, strengthening rural financial institutions, have created a healthy ecosystem of agri-entrepreneurship. The increase in demand due to change in food habits of the people, combined with better purchasing power, is encouraging the entrepreneurs to come up with innovative products. The development of financial markets in India, to provide better financial services in the form of insurance and risk management etc., is bringing agri-entrepreneurship on the threshold of a golden era.

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INTRODUCTION

Agriculture finance does not merely mean the flow of funds to the farmers to meet the needs of agricultural inputs, such as seeds or the fertilisers, skilled labour etc., but in a wider sense, agricultural finance empowers them to build up, altogether, a healthy ecosystem. Agriculture provides livelihood to about 70 per cent of the total population in India and generates employment for 54.6 per cent of India's workforce (*Economic Survey 2020-21*). Since independence, there have been constant initiatives taken by the Government, in respect of the policy measures, to improve the access to formal financing, especially for the small and marginal farmers. With globalization, the nature of Indian agriculture changed drastically. The vision of the farmers and that of the Government, are changing to give the sector a new shape. Entrepreneurs are considering agriculture as one of the promising sectors and coming up with innovative product ideas to serve the needs of the generation. In this process of transformation, a close watch and constant monitoring becomes necessary to provide all-round support to the sector.

OVERVIEW OF AGRI-ENTREPRENEURSHIP

The delay in monsoon, drought, inferior quality of seeds and insufficiency of fertilizer, shortage skilled labour etc. used to adversely affect the traditional agriculture in India, as the farmers were in the dark in respect of scientific agriculture and efficient agriculture management system. The advancement of technology and increase in the practice of management skills are making the farmers more proficient to deal with the adversities in relation to agriculture. Thus, the foundation of Indian agriculture is becoming stronger with the passage of time. On this stronger foundation, the erratic market demand of the customers seeking new varieties of products is stimulating the stakeholders to innovate and thereby to add value to agri-entrepreneurship. Entrepreneurship in agriculture contributes towards the creation of employment opportunities, reduction of disguised unemployment, eradication of poverty, improvement of health and nutrition which in turn provide immense support towards the wellbeing of the nation. There are plenty of opportunities for the entrepreneurs to contribute to the agricultural value-chain. For an entrepreneur, it is important to have the innovative skill, ability to accept change and most importantly the ability to bear the risk, as the society is becoming more and more environment conscious and thereby making the rules and regulations more stringent. The Indian agricultural sector is full of opportunities for all forms of entrepreneurs irrespective of their scale of operations. A brief mention of such opportunities is made hereunder:

Bansal (2011) proposed a detailed scope of agri-entrepreneurship in the modern era by categorising the opportunities under five broad heads such as the farming, product marketing, processing, input marketing and facilitative activities and defining clearly the specific activity which may be performed.

FARMING	*Crop, dairy/poultry/goat, fish, rabbit, vegetables, flowers, ornamental plants, palmrosa, fodder, sericulture, agro-forestry, beekeeping, mushroom.*
PRODUCT MARKETING	*Wholesale, retail, commission agent, transport, export, finance, storage, consultancy*
PROCESSING	*Fertilizer, agricultural chemicals, seeds, machineries, animal feed, poultry hatchery, vet-medicines, landscaping, agriculture credit, custom service, bio-control units, bio-tech units.*
INPUT MARKETING	*Milk, fruits, vegetables, paddy, sugarcane, cashew, coir, poultry, cattle, tannery, brewery*
FACILITATIVE ACTIVITIES	*Research and development, marketing information, quality control, insurance, energy.*

Having mentioned the above proposition, a clear vision becomes essential to be set. As it is important to note that agri-entrepreneurship in modern India is not an isolated task of individual farmers but a collective endeavour to build a healthy ecosystem for all-round development. In this regard, the different types of enterprises, which can be the integral parts of the healthy ecosystem, as explained by *Uplaonkar et al*. (2015) can be referred as follows:

- ***Farm level producers***- where individual families are to be considered as a venture to increase the productivity by best use of technology and market demand.
- ***Service providers***- to provide support in agricultural core activities by providing various ancillary services such as conveyance, warehousing etc.
- ***Input producers-*** to provide necessary input of agriculture such as bio-fertilizers, irrigation accessories, cattle feed concentrate etc.
- ***Processing and marketing of farm produce-*** these enterprises can be in the form of co-operatives where high-level of technological and managerial knowledge irons out the marketing of the end product.

It is becoming clearer that there remains an immense scope for agri-entrepreneurship in modern days. The old concept of '*doing things better*' is now replaced by '*doing new things*' in respect of agricultural innovation.

GOVERNMENT INITIATIVES IN AGRICULTURE

It has remained a challenging task for the Government since independence to monitor agriculture in a country like India where agriculture still provides the livelihood to about 70 per cent of the total population (*Economic Survey 2020-21*). The task was critical, as there were two apparently contradicting objectives to be fulfilled simultaneously. One was to shift the burden of livelihood dependence of a large population from agriculture to other industrial sectors and the second was to bring excellence in the agricultural sector to increase per hectare output. In this regard, the role of National Bank for Agriculture and Rural Development (NABARD) becomes worth mentioning. NABARD was set up in the year 1982 'by transferring the agricultural credit functions of RBI and refinance functions of the then Agricultural Refinance and Development Corporation (ARDC)'. NABARD is mainly a refinancing agency. They refinance the commercial and Regional Rural Banks which are situated mainly in rural areas. The role of commercial banks, Regional Rural Bank and Agricultural Credit Societies situated in rural areas is incredible in our agriculture-based country. They finance the farmers directly and indirectly on the basis of their credit policy. They provide crop loans to the farmers on a seasonal basis in short-term and also finance the agri-allied activities (like- piggery, goatery, fishery and hatchery etc.) to the people who are engaged in such activities. These are done through Panchayet Samities in collaboration with the District Rural Development Agency (DRDA) mainly subsidy-oriented agencies. All these are implemented by the Government of India and respective State Governments for the purpose of development of agriculture without profit or loss concept. Commercial banks also provide term loans (like purchase of tractor and power tiller) to the farmers which are refinanced by the NABARD.

Thus, NABARD has been functioning for the last four decades in the country with a predetermined vision to bring excellence in Indian agriculture.

1982-1991	ENERGISING RURAL CREDIT
1992-2001	EMPOWERING WOMEN AND STRENGTHENING RURAL INFRASTRUCTURE
2002-2011	REACHING THE UNREACHED
2012-2022	BUILDING A VIBRANT INDIA

Source: NABARD Annual Report 2021-22

During the first phase (1982-1991) of its functioning, the main objective of NABARD was to energise rural credit and thereby provide financial support to the farmers to procure necessary inputs for agriculture. The second phase (1992-2001) of NABARD's functioning was mainly dominated by the objectives of empowerment of women associated with agriculture and also build necessary infrastructure to strengthen the foundation of agriculture in the country. The third phase (2002-2011) of the functioning of NABARD was driven with the objective of reaching to the remotest part of the country and provide assistance to promote agriculture. Having completed successfully the above three phases it was crucial for NABARD to bring more vibrancies in agriculture by uplifting the standards of firming and make it at par with the global standard to cater to the needs of the generation. Thus, during these four decades, NABARD played a very crucial role in Indian agriculture by focusing on the following:

i. Investing in building a sustainable future to address climate change, rehabilitating degraded soils, supporting watershed development and promoting a sustainable farm sector to achieve harmony with nature.
ii. Promoting better livelihood, specially by securing tribal regions.
iii. Developing infrastructure in rural India, to facilitate agriculture and allied sectors.
iv. Supervisory role, to provide banking services to agriculture.
v. Straightening fanatical institutions in the rural areas, to provide credit facilities.
vi. Developing rural areas and financing agriculture thereby implementing government policies.

In addition to NABARD, the Reserve Bank of India (RBI), the Securities and Exchange Board of India (SEBI), the financial markets such as the commodity exchanges and the stock exchanges are continuously providing necessary support to agriculture to build up a healthy ecosystem to promote agri-entrepreneurship.

PROMISING FUTURE OF AGRI-ENTREPRENEURSHIP IN INDIA

In spite of having several obstacles in the form of agri-financing, technological bottlenecks and small-scale farming etc., a steady future of agri-entrepreneurship is awaiting in India. There are many reasons for betterment of the prospects of agri- entrepreneurship which may be summed up as follows:

> **Entrepreneurs are considering agriculture as one of the promising sectors and coming up with innovative product ideas**

i. The domestic demand for agricultural products is increasing day by day with the increase in population.
ii. Continuous changing food habits combined with better purchasing power of the consumers is encouraging the entrepreneurs to innovate and come up with newer varieties of food.
iii. With the proliferation of media, promotions are becoming easier gradually which facilitates in stimulating the demand and creating a greater market for the entrepreneurs.
iv. With change in family structure in urban areas, people seek ready *to cook* or *ready to eat* food stuff which in turn creates a huge opportunity for both the farmers as well as the food processing firms to serve better.
v. As discussed already, agri-financing is facilitating the entrepreneurs by providing necessary funds to start-up ventures.
vi. The consciousness of the citizens, in respect of their nutrition, hygiene, provide new scopes to the entrepreneurs.
vii. The constant research and developments for new food grains with better productivity and profitably is encouraging new entrepreneurs to start their voyage.
viii. The financial support services such as risk management through hedging with the help of Commodity Exchanges are facilitating both the input cost management and assured sale of output.
ix. The insurance services to protect the corps as well as the assets operating in agricultural activities are protecting the entrepreneurs from various uncertainties.
x. The development of Stock Exchanges, providing better mobilisation of savings and formation of capital to be invested in agri- industries are ultimately channelized to the grass-root level thereby financing the farming.
xi. The opportunity to export premium quality output

at a premium price is contributing towards reducing the balance of payment deficits.

Thus, under the able guidance of the Government, agri-entrepreneurship in India is on the threshold of a golden era.

CONCLUSION

There has been a great contribution of agriculture to the prosperity of the Indian economy over the years. The Indian economy, in terms of employment generation and providing livelihood to the citizens, is still dependent mainly on agriculture even after seventy-five years of independence. Continued Government initiatives, to bring efficiency in agriculture and to reduce the burden of livelihood on agriculture especially in the form of disguised-unemployment, have remained at the centre of focus for every ruling Government in India. The erratic demand, as supported by the purchasing power of the people, is opening up new opportunities for product innovation. The continued research in agriculture is providing better quality inputs for farming. The financial markets in India empower the agri-entrepreneurship not only with adequate funds but also with various support services such as insurance, risk management through hedging with exposure in the commodity market. The upliftment of the standard of living and education of the persons associated with agriculture encourages them '*to do new things*' thereby making them passionate in entrepreneurship. Thus, the agri-entrepreneurship in India is on the threshold of a golden era. MA

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TRENDS IN AGRICULTURE TRADE AND THE INFLUENCE OF GLOBAL CRISES ON EXPORT

Abstract

Agricultural trade in India has recently experienced significant changes as a result of global crisis. The years 2021 and 2022 saw record exports ($50.2 billion) and imports ($32.4 billion). The resulting surplus of $17.8 billion was significantly lower than the surplus of $27.7 billion in the previous record-breaking export year 2013–14. Covid pandemic and Russia Ukraine war had a positive influence on the record exports from India. But the greater increase in imports has partially offset the remarkable expansion in exports. In this context, an attempt has been made to examine the causes of this pattern in India's export of agricultural produces. The study in this regard is significant because, aside from software services, this is one industry in which India has some comparative advantage. The nation must prioritise a stable trade policy, especially for those goods having highest trade potential.

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INTRODUCTION

India plays a major role in the agricultural industry worldwide and is one of the top ten exporters of agricultural products worldwide. The only industry to experience positive growth during the financial year 2021-22 despite a 4.8 per cent decline in gross value added (GVA) was the agriculture industry. For developing nations like India, the contribution of agricultural trade to economic development, poverty alleviation and ensuring food security is enormous. India's export portfolio has expanded to include non-traditional goods, and differentiated products are now becoming more significant. After 2005–2006, there was a noticeable increase in both agricultural commodity exports and imports. India is becoming more and more significant on the global market and it has improved its export competitiveness in some niche markets. This study provides the current trends in the trade surplus and also gives a snapshot of the influence of global crisis on the Indian agricultural export by presenting the trends in the export.

STATEMENT OF THE PROBLEM

India's exports, which were at their highest level ever, were positively influenced by the recent Covid pandemic and Russia Ukraine war. As there was also an increase in imports, the nation was unable to fully benefit from this trend, which ultimately caused the trade surplus to shrink. Until now, most studies focused on the decline in agriculture exports, the reasons for the same and the consequences of trade. Since the recent global crises had opened new opportunities for India to increase its exports, the phenomenon needs a fresh perception in the changed circumstances. The intention of the current study is to assess India's export import patterns as well as the influence of the Covid pandemic and the Russia-Ukraine conflict on the nation's agriculture trade.

SCOPE OF THE STUDY

The study is focused on the trend of agriculture trade in India and how global crisis, specifically Covid pandemic and Russia Ukraine war, had influenced the export of agricultural produce from India.

OBJECTIVES OF THE STUDY

1. To evaluate the trend in trade surplus of agricultural produce in India.
2. To examine the influence of the Covid pandemic and Russia-Ukraine conflict on exports from India.

METHODOLOGY OF THE STUDY

The study mainly used secondary data collected from various publications, Government reports, newspapers, journals and official portal of Government of India. Statistical tools like CAGR, percentage, line graphs and bar diagram were used

TRENDS IN INDIA'S AGRICULTURE TRADE

TABLE 1: INDIA'S AGRICULTURE TRADE

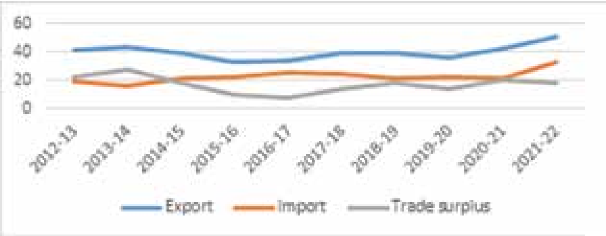
(IN $ MN)

Year	Export		Import		Trade surplus	
	$ MN	*Percentage Growth*	*$ MN*	*Percentage Growth*	*$ MN*	*Percentage Growth*
2012-13	41.73		18.98		22.75	
2013-14	43.25	3.64	15.53	-18.18	27.72	21.84
2014-15	39.08	-9.64	21.15	36.19	17.93	-35.31
2015-16	32.8	-16.07	22.59	6.81	10.21	-43.06
2016-17	33.7	2.74	25.64	13.50	8.06	-21.06
2017-18	38.9	15.43	24.89	-2.93	14.01	73.82
2018-19	39.2	0.77	20.92	-15.95	18.28	30.48
2019-20	35.6	-9.18	21.86	4.49	13.74	-24.84
2020-21	41.9	17.70	21.65	-0.96	20.25	47.38
2021-22	50.24	19.90	32.42	49.75	17.82	-12
CAGR (%)	1.87		5.5		-2.41	
April-Dec21	36.16		24.07		12.09	
April-Dec22	38.1		27.77		10.33	

Source: Consolidated and Calculated based on data from Department of Commerce, Ministry of Commerce and Industry, Government of India

The data from 2012 to 2022 illustrates the fluctuations in the value of India's agricultural trade in US dollars. In the year 2012-13 trade surplus was high, whereas from 2013-14 the trade surplus had been decreasing and reached the lowest level in 2016-17. Since then, there has not been any consistent increase or decrease in the trade surplus. From 2020 to 21 there has been a steady decline. This pattern was also influenced by the Russia-Ukraine War, which prevented the normal movement of agricultural goods from one location to another. The surplus in the 2021 and 2022 is very low. Highest surplus was recorded in the year 2013-14. There was not much difference in exports during these years, but an increase in import can be seen in the following years which is the reason for the decrease in exports. The compounded annual growth rate calculated for the 10 years from 2012 to 2022, shows that the growth in imports (5.5 per cent) was almost 3 times than that of growth in exports (1.87 per cent). It can be observed that trade surplus is fluctuating and now it is decreasing with a negative CAGR of 2.41 per cent.

FIGURE 1: INDIA'S AGRICULTURE TRADE (IN $ MN)



Source: Department of Commerce, Ministry of Commerce and Industry, Government of India

INFLUENCE OF GLOBAL CRISIS ON AGRICULTURAL EXPORTS

Covid pandemic

The Covid-19 pandemic in the first quarter caused a rise in the demand for staple foods, opening the door for more exports of agricultural products. India was able to rise to the occasion and establish itself as a dependable food supplier as a result of the administrative framework that was already in place at the State and District levels and focussed efforts were made to remove the bottlenecks brought in by the pandemic. India now exports more staple food than ever before, including rice, wheat, sugar, other materials, and meat. The Government's quick action to assure the export of rice and other grains is believed to have caused the sharp increase in rice exports, particularly during the period when the COVID19 pandemic had disrupted supply chains of several commodities globally.

Russia Ukraine war

The Russia Ukraine war, may be one of the major reasons that led the FPI of FAO to rise to an all-time high in 2021-22. The FAO food price index tracks the monthly change in a basket of food commodities' international prices. It is made up of the weighted average of five commodity group price indexes averaged throughout the years of 2014 to 2016.

FIGURE 2: INDIA'S FARM EXPORTS V/S WORLD FOOD PRICES

Source: Food and Agricultural Organisation of United Nations

From Figure 2, it can be inferred how closely India's farm performance is linked to international commodity prices. In the years 2012-13 and 2013-14 the FPI was above 100, but after 2014-15 FAO food price index and export deteriorated and down below 100. Exports bounced back in 2020–2021 and 2021–2022, as a result of rising global prices and the FAO index, which in those two years averaged to 102.5 points and 133 points, respectively. This increase may be due to the Russia Ukraine war, as during this time the export or import of agricultural produce was not feasible. It was the European Union or the NATO countries, which

> **A narrowing trend can be seen in trade surplus due to the increase in imports simultaneously with the increase in the country's exports**

was putting pressure over Russia, as they were not able to export from the Russian countries. Because of this halt in the production of agricultural produces the import and export also came to a standstill. This led to demand and supply gap, the prices of the commodities increased and the FPI of FAO came to an all time high in 2021-22. Just after Russia invaded Ukraine in March 2022, the FAO index reached its highest value of 159.7 points. Since then, it has decreased each month, with the most recent measurement of 131.2 points in January 2023 being the lowest in September 2021 level of 129.2 points.

India's newer markets for wheat despite ban

According to sources in the Ministry of Commerce and Industry, there has been an increase in wheat export despite a prohibition since May 2022, on the same due to pre-existing orders, the impact of the Russia-Ukraine war, and demand from nations which previously did not buy wheat from India. The conflict between Russia and Ukraine, which carried out more than 30 per cent of the world's wheat trade, has disrupted the world's supply of wheat. India is trying to obtain access to markets that have previously received wheat from Belarus and Ukraine. Buyers who are concerned about delays in the supply chain from Ukraine and Russia have turned to India because they know that only India can now be a significant, reliable source of wheat. From $568 million in 2020–21 to about $2119 million in 2021–22, wheat sales increased by an extraordinary 273 per cent, nearly a four-fold increase. This information indicates that if India hadn't imposed export restrictions on wheat, the country's wheat exports would have increased massively.

MAJOR FINDINGS

1. The surplus on the farm trade account has shown a narrowing trend.
2. In the fiscal year that ends on March 31, 2023, India's agricultural exports are anticipated to reach a new high. But rising imports reduces the excess in the overall farm trade.
3. Based to the 10-year compound annual growth rate

calculated from 2012 to 2022, import growth (5.5 per cent) is nearly three times greater than export growth. (1.87 per cent). In conclusion, it can be seen that the trade surplus varies and is primarily now declining with a negative CAGR of 2.41 per cent.

4. India's agricultural exports fluctuated during the course of the ten-year period from 2012–13 to 2021–22 as a result of an unreliable fluctuating farm trade system and also due to global crisis.
5. Global demand for staple foods increased during the Covid pandemic, and India was able to take advantage of this circumstance by responding promptly.
6. Due to the "global supply crunch" brought on by the Russia-Ukraine war, India, which had been a marginal player in the world wheat market last year, has emerged as a major player this year. This lead to demand from nations that had not previously purchased Indian wheat.
7. The world looks to India for supply of wheat and other food grains even during the current crisis caused by the Russia-Ukraine war.
8. In recent days, India secured contracts to export over 500,000 tons of wheat, taking advantage of a steep rise in global prices and indicating a significant increase in exports from the second-largest producer of the grain in the world.

SUGGESTIONS

The agriculture sector would need to concentrate on exports and private investments while aiming for a 5 per cent annual growth in agriculture GVA in order to achieve US$ 5 billion targets by 2025–2026. For the agriculture sector to be stimulated, emphasis on agricultural marketing reforms and agricultural exports to double farmers' income by financial year 2024-25 would be acceptable. The nation must broaden its export portfolio in terms of the products offered and the markets accessed other than always depending on just a few groups of nations to export its goods. Along with this, the increasing trend in imports should also be considered, by encouraging their domestic production, otherwise, the advantages of growing exports gets nullified by the narrowing trade surplus.

CONCLUSION

India appears to be performing better overall in global agricultural trade and exports of agricultural commodities reached a record high despite the global crisis which positively influenced the export. Since 1995, the nation has constantly had an agricultural trade surplus. Now a narrowing trend can be seen in trade surplus due to the increase in imports simultaneously with the increase in the country's exports. By seizing the opportunity provided by the global crisis, exports should be increased, correcting the narrowing tendency in trade surplus. There is enormous untapped export potential that may be realised with the right course of action. MA

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CALOCYBE INDICA CULTIVATION: POTENTIAL AND BENEFITS

Abstract

The edible mushroom of Calocybe indica commonly considered as the button mushroom of Bengal has a robust size and can be grown easily on paddy straw substrate in polythene bags with a casing soil. In Bengal it grows from June to December. The mushroom also has very good health benefits including anti-oxidant effect, anti-microbial and anti-cancerous effects. The cost involved is around Rs. 35,550/- for 800 to 1000 Kg and the price is around Rs.150/- per Kg. Thus the profit is around 320 times. But in spite of these attractive points, mushrooms have not gained enough popularity due to lack of awareness. Mushrooms can be highly prospective for amateur and professional growers in West Bengal.

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INTRODUCTION

Mushrooms are fruit bodies of fungi commonly being used as food and medicine by humans for thousands of years (*Prabhu and Kumathakalavallai, 2016*). *Calocybe indica,* (milky white mushroom) is very important because of its commercial significance in Indian market (*Maurya et al., 2019).* It belongs to the family Tricholomataceae. order Agaricales. Presently becoming popular due to its taste, flavour, high nutritional value and great organoleptic properties. It is very attractive with its robust all-white appearance, firm consistency and long shelf -life. Thus it differs from other native species. Presence of high-quality protein, low fat, low carbohydrate, high content of vitamins and minerals make it suitable for daily dietary requirement (*Amin Ruhl et al 2010, Ouzouni et al 2009*). In comparison to other mushrooms like button and oyster mushrooms, milky mushroom contains higher protein (*Krishnamoorthy et al., 2000*).

It also fulfils the dietary requirements of patients suffering from various health disorders. Several age-related problems can be encountered with this mushrooms because of its excellent therapeutic potential. It is full of nutraceuticals which can delay or minimise the prognosis of several diseases (*Krishnamoorthy* and Bala, 2015).

It is highly suitable for persons suffering from hyper acidity and constipation because of its alkaline property and high fibre content *(Doshi et.al.,1988*). Presence of dietary fibres as beta-glucans in it, stimulates immunity, also having anti cancer activities (*Crisan and Sands, 1978).* Hepatoprotective, antimicrobial, antiproliferative, anti-obesity and anti-infammatory activities have been demonstrated in *C. indica* (*Anju and Ukkuru, 2016; Bains et al, 2021*; *Krishnaveni and Manikandan, 2014; Prabu and Kumuthakalavalli,2014).* For a healthy lifestyle, it is an unique food with additional nutrition and novel function (*Ghosh & Acharya, 2022).* The anti microbial activity is also reported and it can have a synergistic effect along with standard antibiotics against potential pathogenic microbes

The vegetarian population of the society should be provided with better nutrition and food with medicinal attributes. If it can be done by recycling agro-wastes then it will be highly beneficial for our environment. Mushroom farming can contribute towards it with its high efficiency in converting waste into high proteinaceous food (*Thakur, 2020*). Being tropical in nature, cultivation of *C. indica* is getting wide acceptance for the scope of cultivation in Indian climate. It is quite popular in southern parts of India especially in Tamilnadu (*Kumar et al, 2017)*.

In this article a detail study has been carried out to demonstrate the economic importance and potential for cultivation method of *C. indica* along with cost of production and potential for household earning.

Several age-related problems can be encountered with this mushrooms because of its excellent therapeutic potential

CULTIVATION

The cultivation of milky mushroom involves spawn production, bed preparation, maintenance of cropping room, harvesting, packaging and management of spent substrate.

Different grain varieties like sorghum grains, ragi grains, wheat grains were found to be very productive for spawn preparation (*Purkayastha and Chandra, 1976; Krishnamoorthy and Muthuswamy, 1997; Senthilnambi, et al.,2011*). Temperature range like 30 to 35°C is required for 24-28 days for the successful spawning. Ideally this mushroom can be grown between June to December every year in West Bengal.

The substrate includes straws of paddy and wheat and millets, sugarcane bagasse, dehulled maize cobs, jute wastes, cotton wastes, cotton / bajra/ maize stalks and leaves, tea/coffee waste etc., were tested to cultivate *C. indica* (Purkayastha *and Chandra, 1976; Purkayastha and Chandra, 1979; Krishnamoorthy and Muthuswamy, 1997*). Substrate should be fresh, dry and must contain lignin, cellulose and hemicelluloses. However cereal straw (paddy/wheat) is commonly used because of easy availability.

Straw is chopped and soaked followed by different types of treatment like hot water treatment, steam pasteurization, sterilization. After spawn run is over, casing is absolutely essential for fructification in this case. Cropping requires an optimum temperature range of 35-38°C along with 85-90 per cent humidity, proper ventilation and diffused light. About ten days are taken for mycelium to cover all the surface after maintaining temperature and relative humidity. After harvesting, it can be marketed as fresh, dry, pickled, powder or canned product.

COST OF PRODUCTION

While working out the cost of production, different factors like whole sale price, production per unit and cost of raw material should be kept in mind. In the present situation, the market (whole sale) price in India is between Rs. 120-150 per Kg.

For a mushroom production unit with its medium size and average yield, the cost of production should be calculated in Table 1.

For a medium size mushroom production unit with an average yield, the cost of production for 1000 Kg can be calculated as shown in the following Table 2.

TABLE 1: APPROXIMATE PRODUCTION COST OF PRODUCING 800 TO 1000 KG PER MONTH:

Sl No.	*Item*	*Quantity (Kg)*	*Approximate cost (In Rupees)*
1	Paddy straw	1000	2000
2	Spawn	200	20000
3	Polythene bags for growing	10	1000
4	PP bags for packing	10	1000
5	Casing material		1000
6	Formaldehyde	4 liters	300
7	Bavistin	0.3 kg	250
8	Bleaching powder	5	100
9	Labour (Rs.3,000/-month)	2Nos.(1 months)	6000
10	Water		500
11	Electricity		400
12	Transport		1000
13	Rent of mushroom house/Shed		1000
14	Others		1000
		Total	35550

TABLE 2: PROFIT ANALYSIS

Sl No.	*Item*	*Quantity (Kg)*	*Approximate cost*
1	Fresh mushroom produced (kg)	1000(for 100%production)	35,550
2	Wastage	5-7	1000
3	Sale	990	
4	Realization	150/kg	1,50,000
5	Net monthly profit		(1,50,000-35,550)=1,14,450/-

Thus mushroom farming can be one of the most lucrative agri-businesses in modern India as it involves low investment, low space and minimum effort. Good revenue can be earned through cultivation of *C. indica*. Even it can be an alternative source of income for many people.

Agricultural income at present is exempt from income-tax under section 10(1) of the Income-tax Act,1961. Agriculture income is defined under section 2(1A) of the said Act. The income from growing mushrooms is considered as "income from agriculture". Hence the income derived from this type of activity is entitled to be exempt under section 10(1) of the Act.

NOT VERY POPULAR IN INDIAN CUISINE

Mushroom has not been popular in traditional Indian cuisine . It is unfortunate that still it is limited to urban kitchen especially that of mid-upper-class Indians and not of common people. Except some fringe uses, it is occasionally collected or cultivated for western or Chinese dinning by Indians. Many psychological reasons are also there. Village people are still in a dilemma to accept its edibility because it grows on dumped wastes (especially agricultural) in the backyard. Owing to the umbrella shape it has, many Bengali people also call it as ‹*Banger* chhata' which means "Frogs' umbrella". Not only funny it is but also some negative thought is also associated with it. Common people are not categorizing it as vegetable which they consume regularly. Due to this, it is not becoming a preferred ingredient. Because of its taste, it is not always included in vegan meal also.

POTENTIAL FOR CULTIVATION OF *C. INDICA*

Small scale growers prefer to grow milky mushroom because of various reasons. It is highly suitable to warm climate with a temperature range of 30- 38°C along with 80 to 85 per cent humidity. As a result, cost of infrastructure along with cost of production will be much lower. This synergistic effect leads to the situation where the industrial production could be highly attractive. Growers also take interest in it because of short (7 to 8 wk) crop cycle in addition to high (140 kg yield /100 kg substrate) biological efficiency. It has a longer shelf life, can be stored for few days without refrigeration. Unlike button mushrooms, it retains its fresh white appearance for a long period without turning brown or black. Under controlled conditions, lesser contamination of insects and competitor moulds is noted during this crop production (*Krishnamoorthy* and *Balan, 2015*).

MUSHROOM MARKET NEEDS TO GROW MORE

Common people can be sensitized about its high nutritional and therapeutic value through awareness programme. It is important to develop a habit of regular consumption of this which may lead to the growth of mushroom industry. Along with that employment generation is possible. Minimum infrastructural cost can be attractive to go for a start-up using common household area. It is possible to run mushroom cultivation unit along with household activities. Women can take interest in it. Once they are financially benefitted, it will definitely have a positive impact on the quality of family life as well as on social life.

Local self-help groups can be trained properly on mushroom cultivation and processing technique. Owing to its high food value, mushroom can be included in the Government sponsored food item like mid-day-meal etc. to mitigate malnutrition. Continuous supply and easy availability should be there in the local market. Unsold items should be processed like drying, storing and packaging or canning in Brine solution. Spent mushroom substrate can be reutilized for vermicomposting, bioremediation, production of organic manure, biofuel which ultimately helps in solid waste management.

Cooking *C. indica* is highly beneficial

- It saves fuel. No need to boil or softening; texture remains same before and after cooking. Just sauté is enough; only least amount of fuel is needed. It is never overboiled if cooked in high temperature also. It can even be eaten raw.
- It is energy saving and hygienic. It contains high moisture and can be cooked in their own juice. So no need to add extra water while cooking it.
- No waste is produced like other vegetarian (like seed, peel etc) or non-vegetarian (like scale, bone etc.) food items. It is consumed as a whole body and it is highly economic.

A group of food researchers (*Shirur et al., 2014*) prepared different recipes like salad, curry etc. using five varieties (paddy straw, oyster, shiitake, white button and milky mushroom) of mushroom to study the response of the consumers. Many of them preferred the recipes made of milky mushroom than any other mushroom.

Proper care should be taken while cooking this mushroom as maintenance of food value is important. The anti-oxidant effect is retained after stir frying in low oil and cooking in microwave (*Arora and Singh, 2014*).

CONCLUSION

C. indica is gradually getting wider acceptance in the world market. It can be attributed to its milky white appearance, robust fleshy structure, longer shelf life, higher productivity, low cultivation cost. In addition to that, major parts of our country along with their humid tropical and subtropical environment is found highly beneficial for commercial production t (*Navathe et al.,2014*). Its resemblance with button mushroom including its less infrastructural cost may help in increasing the demand for this mushroom in the world. It has a tremendous potential for so many sectors like food, nutrition, medicine and employment security in rural parts of India *(Thakur, 2020*). Ecological benefit is also involved here. Mushroom production plays a significant role in solid waste management. Huge biomass of lignocellulosic waste can be converted into human food. Local market needs to flourish as it is not yet found to be very acceptable in traditional recipes. Fortunately, the situation is changing day by day. With the emergence of so many departmental stores and online marketing, different varieties of mushroom are available now. Many mushroom-based dishes are being served in restaurants and homes. People are slowly adopting mushrooms in their recipes. More awareness programmes need to be arranged to make common people aware about its nutritional and medicinal properties. Higher consumption will increase its demand which will enable the mushroom industry to develop further. Proper industrialization will help to increase profit margins to mushroom growers. High production of fresh mushroom along with processed item like fried, dry, pickled, canned product will enhance the shelf life and make it suitable for marketing in different parts of the world.

It is high time to explore its unexploited potential towards better economic and therapeutic utilization.

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NOTES FOR AUTHORS

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- **Choose a referencing style:** There are many different referencing styles, such as APA, MLA, Chicago, and Harvard, each with its own specific format and rules. Choose the style that is most appropriate for your field and stick to it consistently throughout your paper.
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INNOVATIVE SOLUTIONS FOR A BETTER WORLD: THE ROLE OF CHATGPT IN VEGAN AGRICULTURE

Abstract

This research study explores the application of ChatGPT in vegan agriculture, examining its functionality and ability to provide valuable assistance to businesses and farmers in this industry. It reviews how this application can assist in cost management and challenges associated in adopting the same. Additionally, the study highlights the emerging trends and innovations in vegan agriculture, such as precision farming and artificial intelligence, and how chatbots like ChatGPT can play a vital role in driving growth and success in this industry. The study concludes that the integration of chatbots in vegan agriculture represents a significant opportunity for businesses and farmers to leverage technology to optimize operations, reduce costs, and increase profitability, while promoting sustainable and ethical practices.

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INTRODUCTION

Veganism is a new trend gaining momentum in India (*Guha Bose Kritika & Gupta Prakhar,* 2022). Usually, individuals confuse veganism with vegetarianism; however, the line that differentiates each is that the vegan diet eliminates any kind of product that causes animal cruelty, like products from the farm or meat businesses. The term "vegan product," also commonly known as "plant-based product," is used quite often by businesses. The number of consumers following a vegan diet has notably increased in several developed countries and it is doubtless that their influence on the commodity sector will continue to grow (*Meike Janssen et al.,* 2016). One recent survey estimated an increase from 2,000 to 20,000 vegan Indians since 2006 (*Gupta Suyasha & Bhatia Shilpi,* 2016). Competition is heating up in the race to produce plant-based products in India and this trend has motivated pioneering food producers to develop innovative vegan products for niche markets, thus driving the sustainability transition of this sector (*Saari et al.,* 2021). Vegan agricultural production excludes all animal inputs into plant production. It uses ecosystem services supplied by the soil micro-fauna or wild bees for pollination, but uses no domesticated animals or any of their by-products like manure, horn or leather(*Schmutz & Foresi*, 2017).

Nowadays digital technologies have become a catalyst of subsequent stages of the evolution towards the transformation of current paradigms and solutions based on them *(Kaczorowska-Spychalska,* 2019). As a result of continuous development within the field of artificial intelligence (AI) and the behavioural shift in how people use technology to communicate, in recent years the use of chatbots for marketing purposes has increased

(*Popescu Cristian-Aurelian, 2020*). Thus, digital revolution has reached a scale and level of impact that no business, industry or Government can ignore (*Kaczorowska-Spychalska, 2019*). ChatGPT is an AI chatbot released in November, 2022 by OpenAI, San Francisco, USA developed by using human feedback and freely accessible, the platform has already attracted millions of interactions. When presented with a query, ChatGPT will automatically generate a response, which is based on thousands of internet sources, often without further input from the user(*Liebrenz et al.,* 2023). As an AI model we found that ChatGPT can assist in vegan agriculture in a number of ways which are discussed herein below.

CHATGPT: AN AID TO VEGAN AGRICULTURE

Functionality

- The chatbot is programmed with a set of rules or algorithms that determine how it will respond to user inputs. These rules may be based on keywords or phrases that the chatbot is designed to recognize, or they may be more complex, based on natural language processing algorithms.
- The user interacts with the chatbot through a messaging interface, such as a chat window or voice interface. The user may ask a question, make a request, or provide information to the chatbot.
- The chatbot uses natural language processing algorithms to analyse the user's input and determine the user's intent. For example, if the user asks "What is the weather like today?", the chatbot may determine that the user is looking for information about the weather.
- The chatbot uses its rules or algorithms to generate a response to the user's input. The response may be a pre-written message or a dynamic message generated based on the user's input and the chatbot's programming.
- The chatbot sends the response back to the user through the messaging interface. The user can then respond with further questions or requests, and the chatbot will continue to interact with the user based on its programming.
- The chatbot may also be integrated with other systems, such as customer relationship management software or e-commerce platforms. In these cases, the chatbot can retrieve information from these systems and provide personalized recommendations or assistance to the user.

General Assistance in vegan agriculture

- ***Providing information on weather patterns:*** ChatGPT can access real-time weather data and provide insights on weather patterns and predictions, which can help farmers make informed decisions about planting, irrigation, and crop management.
- ***Answering farming-related questions:*** Farmers can ask questions related to crop management, soil fertility, pest control, and other farming-related topics, and it can provide accurate and relevant information based on its training data and access to various agricultural resources.
- ***Analysing data***: The AI platform can help farmers make sense of large volumes of data related to crop yields, soil fertility, and weather patterns, and provide insights that can help farmers optimize their farming practices.
- ***Recommending best practices:*** Based on its understanding of best practices in agriculture, the chatbot can provide recommendations to farmers on how to improve their crop yields, reduce waste, and increase efficiency.
- ***Translation services:*** It can also provide language translation services for farmers who speak different languages, which can help them access valuable information and resources from around the world.

Assistance in Cost Management

- ***Provide information on best practices:*** It can provide farmers with the latest information on best practices in vegan agriculture that can help to reduce costs while maintaining the quality and yield of crops. For example, tips on soil management, crop rotation, organic fertilizers, and pest control techniques.
- ***Answer specific questions***: If farmers have specific questions about cost management in vegan agriculture, it can provide them with answers. For example, farmers may want to know which inputs are most cost-effective, or how they can optimize their water usage. It can provide answers to these questions based on the latest research and industry expertise.
- ***Offer advice on technology adoption:*** ChatGPT can help farmers understand the latest technological innovations in vegan agriculture that can help to reduce costs. For example, it can provide information on precision farming, which involves using sensors and other technologies to optimize

Competition is heating up in the race to produce plant-based products in India and this trend has motivated pioneering food producers to develop innovative vegan products

crop yields and reduce waste.

- ***Help farmers stay up-to-date***: Providing farmers with the latest news and updates on trends in vegan agriculture that may impact their cost management strategies. For example, it can provide updates on market trends, weather patterns, and regulatory changes that may affect farmers' operations.
- ***Provide guidance on decision-making***: It can provide farmers with data-driven insights that can help them make informed decisions about cost management. For example, analyse data on weather patterns, market prices, and input costs to help farmers determine the most cost-effective strategies for their operations.

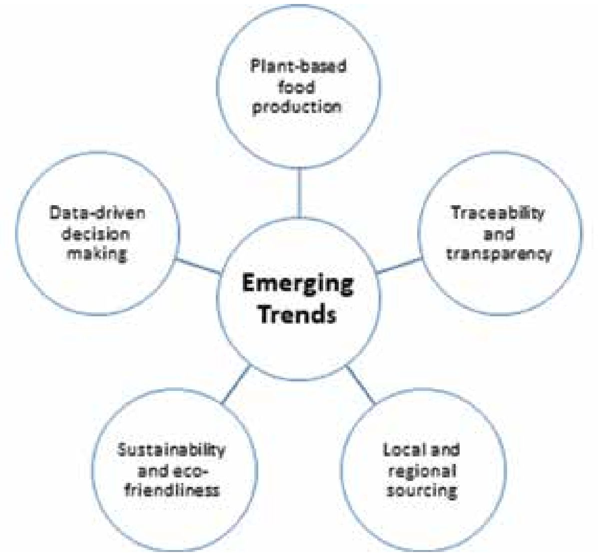
Challenges

- ***Limited access to technology:*** Many farmers may not have access to the technology needed to interact with chatbots, such as smartphones, tablets, or computers. This can limit the reach and impact of chatbots in the agriculture sector.
- ***Complex and nuanced questions***: Agriculture is a complex and nuanced industry with a wide range of questions and concerns that farmers may have. ChatGPT may struggle to provide accurate and useful responses to more complex queries, leading to frustration and dissatisfaction among users.
- ***Accuracy of data:*** The chatbot relies on data to generate responses, and the accuracy and quality of the data can significantly impact the chatbot's effectiveness. Inaccurate or incomplete data can lead to incorrect recommendations or advice, which can negatively impact farmers' operations.
- ***Integration with existing systems:*** Integrating chatbots with existing systems, such as farm management software or supply chain management systems, can be challenging and require significant resources and expertise.
- ***Trust and user adoption:*** For chatbots to be effective, users must trust the technology and feel comfortable using it. Some farmers may be hesitant to adopt this chatbot due to concerns about data privacy, security, and reliability.

SUPPLY CHAIN MANAGEMENT IN VEGAN AGRICULTURE

Emerging Trends

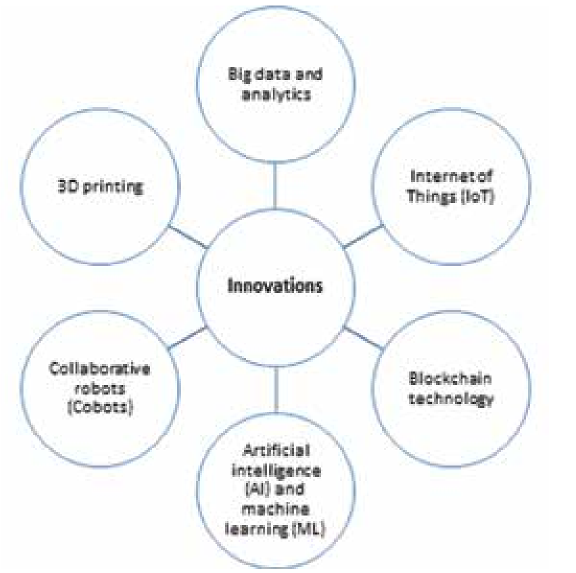
FIGURE. 1



- ***Plant-based food production:*** With the growing demand for vegan and plant-based foods, the trend towards increasing production of these items is likely to continue. This will drive the need for more efficient and sustainable practices in the vegan agriculture sector.
- ***Traceability and transparency:*** Consumers are becoming increasingly concerned about the origin and sustainability of the products they purchase. As a result, there is a growing demand for greater transparency and traceability in the supply chain of vegan agriculture. This will require the use of technology, such as blockchain, to track products from farm to table.
- ***Local and regional sourcing***: The trend towards local and regional sourcing is also likely to continue, as consumers seek to support small, sustainable farms and reduce their carbon footprint. This will require innovative supply chain solutions that can efficiently link small-scale producers with larger distribution networks.
- ***Sustainability and eco-friendliness***: Sustainability and eco-friendliness will continue to be key drivers in vegan agriculture. This will involve the use of sustainable farming practices, such as regenerative agriculture, and the reduction of waste and greenhouse gas emissions throughout the supply chain.
- ***Data-driven decision making:*** The use of data and analytics will become increasingly important in this sector. This will help to optimize operations and improve sustainability by providing real-time insights into production processes and environmental impact.

Innovations

FIGURE. 2



- ***Big data and analytics:*** The use of big data and analytics is helping to improve supply chain visibility, reduce waste, and optimize processes. This is achieved by collecting and analysing vast amounts of data from across the supply chain to identify areas for improvement.
- ***Internet of Things (IoT):*** The Internet of Things is helping to improve supply chain efficiency by enabling real-time monitoring of inventory, transportation, and other supply chain processes. This can help to minimize waste, reduce costs, and improve customer service.
- ***Blockchain technology***: Blockchain technology is helping to improve supply chain transparency and security by creating an immutable record of transactions and activities throughout the supply chain. This can help to reduce fraud, improve traceability, and increase trust in the supply chain.
- ***Artificial intelligence (AI) and machine learning (ML):*** AI and ML are being used to automate and optimize supply chain processes, including inventory management, transportation planning, and demand forecasting.
- ***Collaborative robots (Cobots):*** Cobots are collaborative robots that work alongside human workers to improve supply chain efficiency and reduce costs. They are being used to automate repetitive tasks, improve accuracy, and reduce waste.
- ***3D printing:*** 3D printing is being used to create prototypes and small production runs of products, reducing the need for large production runs and reducing waste. This is helping to improve supply chain flexibility and responsiveness, while also reducing costs.

CONCLUSION

ChatGPT has the potential becoming increasingly popular in the agriculture industry, with its potential applications spanning from customer support to supply chain management. In vegan agriculture, it can provide valuable assistance by extending real-time support to farmers and offering recommendations for sustainable and ethical practices. Moreover, chatbots can play a significant role in cost management, helping businesses to optimize their operations and reduce costs. However, the implementation of the same in agriculture is not without its challenges, such as limited access to technology, complex and nuanced questions, and the accuracy of data. It is crucial for businesses and farmers to consider these challenges and develop strategies to overcome them. Looking to the future, vegan agriculture is poised to experience significant growth, with emerging trends and innovations such as precision farming and artificial intelligence. The integration of chatbots like ChatGPT in vegan agriculture will probably play a vital role in this growth, providing a cost-effective and scalable solution for businesses to improve their operations and sustainability. Overall, the application of chatbots in vegan agriculture represents a significant opportunity for businesses and farmers to leverage technology to drive growth and success. MA

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AN ASSESSMENT OF COMPLEMENTARITY BETWEEN AGRICULTURE AND INDUSTRIAL SECTOR AND SELECTION OF BIMODAL/ UNIMODAL STRATEGY TOWARDS ENHANCING THE ROLE AN EXPLORATORY ANALYSIS WITH FOCUS GROUP METHOD

Abstract

The complementary role of agriculture and the industrial sector in the development of the economy has been a topic of interest for policymakers, economists, and scholars worldwide.

This study employs a selection of the bi-modal and uni-modal strategies towards enhancing the role of agriculture in the Indian economy. To explore these strategies' effectiveness, an exploratory analysis was conducted using the Focus Group Method. This method involved bringing together a group of experts, policymakers, and representatives from the agriculture and industrial sectors to discuss and deliberate on the different strategies.

The study concludes that the uni-model strategy can enhance the complementary role of agriculture and the industrial sector in the Indian economy. Policymakers should consider implementing policies that promote the growth of both sectors simultaneously to achieve sustainable economic growth.

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INTRODUCTION:

It is Customary to identify economic development with the process of industrialization. It is argued that economic development is indicated by the structural changes in the economy with the larger working population engaged in the industrial sector and industrial sector making larger contribution to the national income. It implies that in the course of economic development, the relative importance of agriculture declines. However, it does not mean that in development strategy, we should overlook the importance of agriculture. In fact, in many developing, overpopulated countries like India, the long-term objective of structural transformation into an industrial economy can be achieved only with short-term priority to the development of agriculture.

The contribution of agriculture to economic development can be divided into two groups:

1. Instrumental contribution – it implies that agriculture growth is just an instrument of promoting the growth of the other sector of the economy.
2. Intrinsic contribution – it implies that an increase

in agricultural production and farm income is important in itself to remove mass poverty and to develop the rural economy.

Against this background, considering that India is a predominantly agro-based economy where 65 per cent of Indians earn their livelihood from the agriculture sector only. Economic growth models state that for sustained economic growth, agriculture and Industry should go hand in hand.

LITERATURE REVIEW

Using the Granger Causality test and a Vector Error-Correction Model, the paper by Ohlan (2013) empirically examines the relationship between agricultural exports and India's agricultural GDP from 1970–1971 to 2009–2010. According to the findings of unit-root testing, India's agricultural GDP and farm exports are interconnected on an order-one scale. The researcher discovered a one-way causal relationship between farm exports and agricultural GDP. It shows that exports of agricultural goods from India drive up the sector's GDP, supporting the idea that exports drive growth. (Ohlan, 2013)

According to Kumareswaran Thangaraj (2019) agriculture contributes about 16 per cent of the total GDP of India and about 12 per cent of total exports. Its share of agricultural exports of India in world agricultural exports was around 2.2 per cent in 2015-16. India's agri import faces certain constraints related to the product, storage, enterprises, public value etc, which in turn is responsible for fewer exports.

According to Sampriti Das (2021) trade-in-services has made a phenomenal impact during the globalisation period with the arrival of the technological revolution and rapid digitization. But unlike the manufacturing sector, the agriculture sector is lagging in exports.

Dr.S.Jaber Asan's study (2022) showed that agriculture is the dominant sector of the Indian economy, which determines growth and sustainability. The Government has also taken initiatives to encourage private investment in the food processing industry. The agriculture sector represents one of the most significant and dynamic sectors of the Indian economy

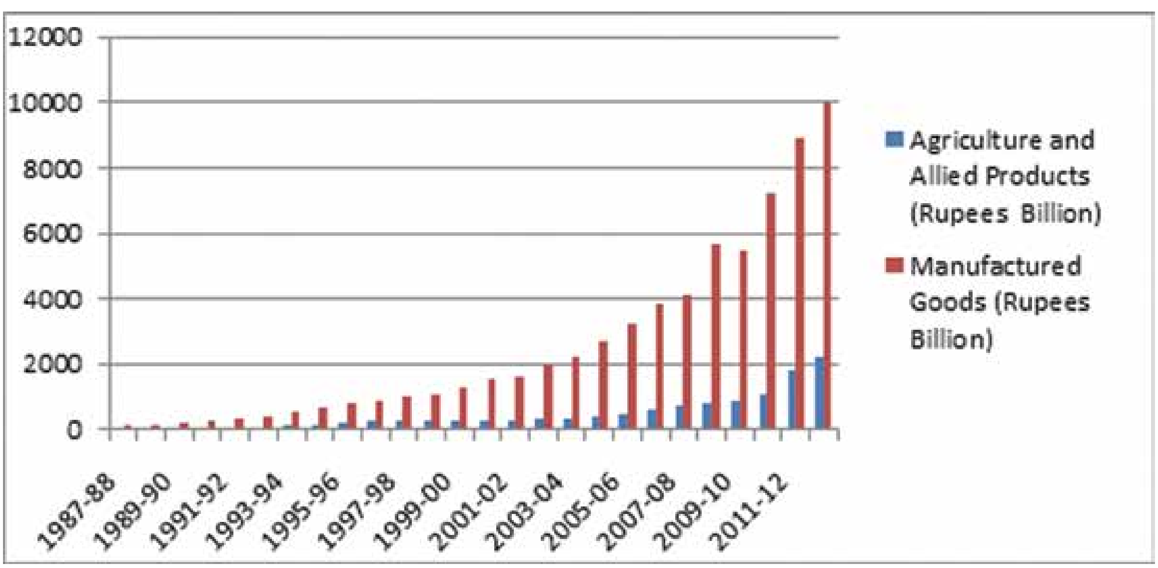
According to the study by R.R.Blesson Hrangao (2015) the free market economy was a boon to small and marginal farmers, but being in a free market economy farmers still do not enjoy supportive agricultural policies and easy finance options which in turn is a major cause of lag in the agricultural sector.

The study by Elumalai Kannan (2011) throws light on the trends and patterns in agricultural growth at the national and sub-national levels in India. The results of the crop output growth model indicate that the enhanced capital formation, better irrigation facilities, normal rainfall and improved fertiliser consumption helped to improve crop output in the country.

OBSERVATIONS OF THE STUDY

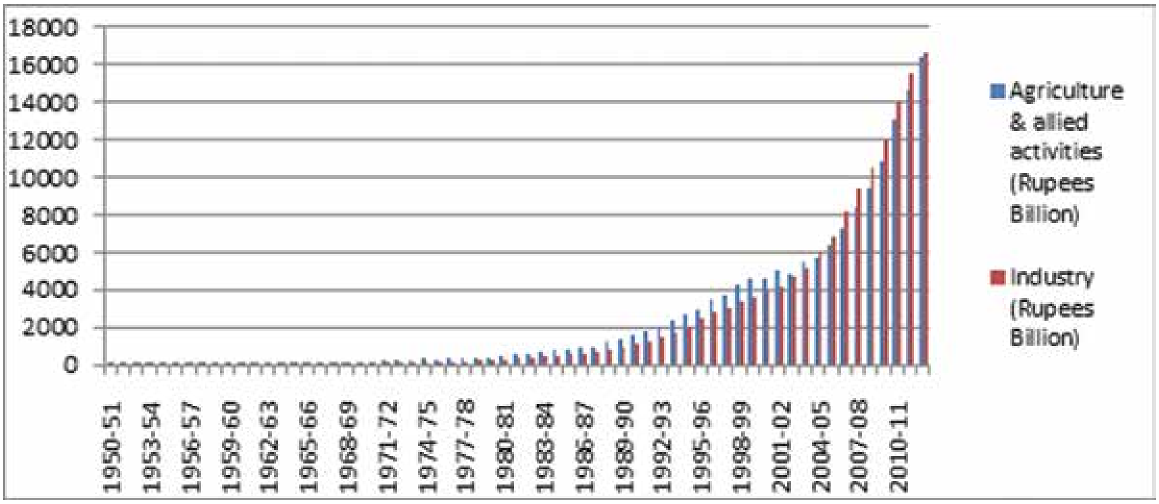
Against the background of the literature review and to assess the role of agriculture vis a vis industry, the researchers reviewed the data which is presented below and it is observed as under:

FIGURE 1. EXPORT OF AGRICULTURE AND ALLIED PRODUCTS V/S MANUFACTURED



(Source: DGCI&S, Kolkatta)

FIGURE NO. 2 GROSS DOMESTIC PRODUCT (GDP) CONTRIBUTION



(Source: Central Statistics Office (CSO))

1. The data pertains to the role of agriculture and industry after Globalisation.
2. The data measures contribution concerning exports and gross domestic product.
3. The comparative analysis indicates that after globalisation, agricultural contribution to exports is relatively less as compared to the industries contribution for corresponding years, despite tall claims that the Indian economy is predominantly agrarian based.
4. The paradox observed is a mismatch between agriculture and industry contribution and the very fact that 65 per cent of the population earns their livelihood from agriculture only.
5. In terms of the external sector, the paradox noticed is the rate of growth of industry and its contribution to exports is relatively higher than agriculture though the Indian economy is agriculture based.

The above observations aroused the curiosity of the researchers to explore ways and means to find out reasons for the mismatch in contribution.

RESEACH PROBLEM

Despite the agro based nature of the Indian economy, why the contribution of agriculture in economic development is far lower as compared to industry and what strategic measures can be explored, suggested and adopted for sustainable economic growth through agriculture.

To probe into the above problem, the researchers thought of adopting an exploratory method with a focus group study. The focus group comprises 20 stakeholders from the APEDA institutions and representatives from Krishi Vidyapeeth along with selected farmers in the vicinity.

The researchers presented the problem to explore reasons and plausible solutions based on unstructured interviews. The unstructured interviews comprise areas about research and education in the field of agriculture like the following:

a. Development of water resources through irrigation
b. Promotion of organization of farmers like credit societies.
c. Marketing and price policy of agricultural goods.
d. Agricultural taxation
e. Land reforms and changes in the system of land tenure.

The responses of stakeholders in the focus group to each of the above issues led the researchers to make the following observations:

a. It is necessary to formulate an appropriate strategy for agriculture development failing which resources are wasted without tangible return.
b. The strategy to be formulated should-
   i. Contribute to the overall economic growth and help the long-term process of structural transformation to industrialization.
   ii. Achieve a satisfactory rate of increase in agricultural production at the lowest possible cost by encouraging the sequence of innovations which use factor endowment in the country and introduce appropriate technical change.
   iii. Improve the welfare of the rural masses.
   iv. Promote social modernization which implies widespread changes in attitudes, values and behaviour of the agricultural

population.

c. Necessity of complementary sub-strategies about education, water, credit societies, pricing, taxation and land reforms so that allocation of funds in agriculture would maximise the efficiency and thus ensure optimisation.

d. The strategy should be such that would contribute to the overall economic growth and development.

e. In this context the following two strategies are glaringly noticed as having high empirical value concerning developing economies like India
   1. Bi-modal
   2. Uni-modal

CONCLUSION

In the concluding part, the researchers made a comparative analysis of the above strategies, as stated in the title of the study for selection and effective implementation.

Uni-model strategy encourages progressive and wider diffusion of technical innovation adapted to the availability of various factors of production in the sector as a whole. In the bi-modal strategy, an attempt is made to have concentrated development by modernising only a part of agriculture. With uni-modal strategy and an appropriate sequence of projects and innovations based on modern science and experimental methods, it is possible to develop agriculture with a large increase in factor productivity throughout the agricultural sector.

Such a uni-model strategy is successfully implemented in countries like Japan. In the case of such strategy, the resources newly employed in agriculture are complementary to the already existing resources like land and labour. In other words, the use of machinery would not displace labour from jobs in agriculture and aggravate the unemployment problem. In fact, resources like high-yielding varieties of seeds, chemical fertilizers, simple agriculture equipment and small irrigation projects would allow better and more efficient use of land and labour already employed in agriculture. As a result, there would be no disruption of the existing pattern of factor endowments in agriculture. Another important feature of such uni-model strategy is that the inputs like HYV seeds is divisible. It means that to use these inputs it is not necessary to have a large scale of operation; even a small farmer with small operational agriculture holdings can use these inputs almost as efficiently as a large farmer. As a result, the new technology involved in this strategy is size neutral. It means that it does not favour a particular size of agriculture operations but it is equally good for different forms with different sizes of land holdings. This makes it possible to have the spread of benefits throughout the agricultural sector and it is also possible to promote income and employment of small farmers and landless agriculture labourers.

When we favour such a uni-model strategy it does not mean that it would be possible to have the development of the entire agriculture sector with all sub-sectors at the same rate. However, the innovation would be such that once they are introduced in one sector they would spread easily to other sectors of agriculture. The benefits of these innovations would be thus wide spread. In a shorter period, bi-modal strategy of capital intensive mechanise farming only in a parts of agriculture may increase agriculture output; over a long period the uni-model strategy of innovations which are not capital-intensive and which are not necessarily in favour of large-scale farming can be useful. The attempt to have a green revolution in most South Asian countries is an adaptation of such uni-model strategy.

Thus, the comparative analysis done above led the researcher to conclude that opting for uni-modal strategy would go a long way in enhancing the role of agri vis -a-vis industry towards the economic development of a country like India. MA

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RISK MANAGEMENT THROUGH WEATHER DERIVATIVES IN AGRICULTURE SECTOR IN INDIAN CONTEXT

Abstract

Agriculture plays a vital role in the Indian economy, with a significant portion of the population relying on it for their livelihoods. However, the sector is highly vulnerable to weather-related risks, causing immense uncertainty and financial losses for farmers. This research article explores the potential of weather derivatives as a risk management tool for the agricultural sector in India. By analyzing the literature and drawing on various case studies, this article highlights the challenges and opportunities associated with the implementation of weather derivatives in the Indian context.

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INTRODUCTION

The agriculture sector in India faces various challenges, weather-related risks being a significant contributor to its instability (*Sharma & Vashishtha, 2007)*. Risks, such as irregular rainfall, droughts, and floods, can lead to severe crop losses and financial hardships for farmers. As a result, there is a growing need for innovative risk management tools to safeguard the interests of farmers and ensure the sustainability of the agriculture sector.

One such tool is weather derivatives, are financial instrument designed to hedge against the adverse effects of weather on business operations (*Choksi, 2014*). This research article seeks to analyze the potential of weather derivatives as a risk management tool for the agricultural sector in India by exploring the challenges, opportunities and implications of their implementation.

WEATHER DERIVATIVES: AN OVERVIEW

Weather derivatives are financial contracts that allow parties to hedge against the financial risks associated with weather events, such as temperature fluctuations or rainfall deviations (*Lyubchich et al., 2019)*. These instruments are typically traded on Commodity Exchanges and can be structured as options, futures, or swaps, depending on the needs of the parties involved (*Bharath et al., 2021)*. Weather derivatives provide means of transferring weather-related risks from one party to another, usually from those who are negatively impacted by adverse weather events, such as farmers, to those who are willing to accept these risks, such as insurance companies or financial institutions.

In the agriculture sector, weather derivatives can help farmers to manage the financial risks associated with weather-related crop losses, providing a level of income protection against unpredictable events *(Abdi et al., 2022)*. For example, a farmer may purchase a rainfall option that pays out if the cumulative rainfall during a specified period is below a pre-determined threshold, compensating for potential yield losses due to drought. Similarly, a farmer could purchase a temperature option to hedge against losses resulting from extreme heat or cold temperatures that may adversely affect crop yields.

The pricing of weather derivatives is based on historical weather data, and contracts are typically settled using data from reliable sources, such as Government meteorological agencies or private weather data providers (*Choksi, 2014)*. This ensures that the payout of a weather derivative contract is determined objectively, reducing the potential for disputes between the parties involved.

The use of weather derivatives has been growing globally, with various industries besides agriculture, such as energy, tourism, and transportation, also utilizing these instruments to manage weather-related risks (*Lyubchich et al., 2019*). As a result, the market for weather derivatives has expanded rapidly over the past few decades, with an estimated notional value of over $20 billion as of 2021 (*Bharath et al., 2021*).

A key advantage of weather derivatives over traditional crop insurance is that they are based on objective weather parameters rather than actual crop losses, reducing the potential for moral hazard and adverse selection (*Abdi et al., 2022*). Furthermore, since weather derivatives do not require complex loss assessments or lengthy claims processes, they can provide farmers with quicker access to compensation in the event of adverse weather, helping them to maintain financial stability and continue their agricultural operations.

In addition to direct benefits for farmers, the use of weather derivatives can also promote more efficient resource allocation in the agriculture sector by encouraging the adoption of improved farming practices and technologies that mitigate weather-related risks (*Lyubchich et al., 2019*). For instance, farmers with weather derivatives in place may be more inclined to invest in advanced irrigation systems or drought-resistant crop varieties, knowing that they have financial protection against potential weather-related losses.

Despite the potential advantages of weather derivatives, there are challenges associated with their widespread adoption, particularly in developing countries like India. These challenges include a lack of awareness and understanding of these instruments among farmers and stakeholders, inadequate weather data infrastructure, and the need for appropriate regulatory frameworks and Government support in developing a weather derivatives market (*Sharma & Vashishtha, 2007*).

Developing a robust and reliable weather data infrastructure is crucial for the accurate pricing and valuation of weather derivatives

Thus weather derivatives offer an innovative risk management tool for the agricultural sector, allowing farmers to hedge against the financial risks associated with weather-related crop losses. With their potential to provide income protection against unpredictable weather events, weather derivatives can play a crucial role in ensuring sustainability and resilience of the agriculture sector, particularly in the face of increasing climate variability and extreme weather events.

CHALLENGES AND OPPORTUNITIES

The implementation of weather derivatives in the Indian agriculture sector faces several challenges. One of the primary hurdles is the lack of awareness and understanding of these instruments among farmers and other stakeholders, such as insurance providers, Government agencies, and commodity traders (*Singla & Sagar, 2012*). This knowledge gap can be attributed to the relative novelty of weather derivatives as a risk management tool, as well as the complexity of the underlying concepts and the limited availability of educational resources on the topic. To overcome this challenge, targeted outreach and capacity-building programs are needed to promote awareness and understanding of weather derivatives among key stakeholders.

Another significant challenge is the absence of a robust weather data infrastructure in India, which is crucial for the accurate pricing and valuation of weather derivatives (*Sharma & Vashishtha, 2007*). The country's existing network of weather stations is insufficient in terms of both spatial coverage and data quality, with many rural areas lacking access to reliable and up-to-date weather information. To address this issue, the Indian Government must invest in the modernization and expansion of its weather data infrastructure, incorporating advanced technologies such as remote sensing, satellite imagery, and data analytics to improve the availability and accuracy of weather data.

The need for Government support in developing a weather derivatives market is another key challenge (*Sharma & Vashishtha, 2007*). This includes the establishment of a conducive regulatory environment that encourages the growth of the market, as well as the provision of financial incentives and subsidies to facilitate the adoption of weather derivatives by farmers. Furthermore, the Government should promote public-private partnerships and encourage collaboration between various stakeholders, such as financial institutions, insurance providers, and research institutions, to develop customized weather derivative products tailored to the needs of the Indian agriculture sector.

Despite these challenges, there are significant opportunities for implementing weather derivatives in the Indian agriculture sector. The growth of the Indian economy, coupled with advancements in technology, has led to the emergence of a more sophisticated financial market that can support innovative risk management tools such as weather derivatives *(Choksi, 2014*). As the Indian financial market continues to mature and diversify, there is potential for the development of a vibrant and liquid weather derivatives market that can cater to the unique risk management needs of the country's agriculture sector.

Furthermore, the increasing frequency and intensity of extreme weather events due to climate change underscore the need for effective risk management strategies in agriculture *(Alam et al., 2020).* The adoption of weather derivatives can help to build resilience in the agriculture sector by providing farmers with financial protection against weather-related risks, thereby reducing the adverse impacts of climate change on rural livelihoods and food security.

While the implementation of weather derivatives in the Indian agriculture sector faces several challenges, there are also significant opportunities for harnessing these innovative risk management tools to protect farmers from weather-related risks and ensure the sustainability of the agriculture sector. By addressing the challenges related to awareness, weather data infrastructure, and Government support, India can capitalize on the benefits of weather derivatives and build a more resilient and sustainable agriculture sector in the face of increasing climate variability and extreme weather events.

CASE STUDIES: WEATHER DERIVATIVES IN AGRICULTURE

Several countries have successfully implemented weather derivatives as a risk management tool in their agriculture sectors, providing valuable lessons for India. These case studies demonstrate the potential benefits of weather derivatives in promoting financial stability, encouraging investment, and improving resource allocation in agriculture.

⊙ Malaysia

In Malaysia, agriculture insurance schemes incorporating weather derivatives have contributed to greater financial stability for farmers and increased investment in the sector *(Alam et al., 2020*). The Malaysian Agricultural Producers Association (MAPA) has worked in collaboration with the private sector and Government agencies to develop index-based insurance products that utilize weather derivatives. These products offer protection against weather-related risks such as drought, excessive rainfall, and extreme temperatures, and have resulted in increased crop production and improved food security. Furthermore, the adoption of weather derivatives has incentivized Malaysian farmers to invest in advanced farming technologies and practices, leading to higher productivity and more sustainable agriculture.

⊙ United States

In the United States, weather derivatives have been employed to manage risks associated with temperature and precipitation variability, resulting in more efficient resource allocation and higher crop yields (*Lyubchich et al., 2019).* The U.S. Department of Agriculture (USDA) has supported the development of weather derivative products for farmers through its Risk Management Agency (RMA), which provides financial assistance to farmers for purchasing these instruments. The use of weather derivatives in the U.S. agriculture sector has led to improved risk management, enabling farmers to better plan their planting and harvesting activities, and to invest in risk-mitigating technologies and practices.

These case studies demonstrate the potential of weather derivatives as an effective risk management tool in agriculture, highlighting the positive impacts on financial stability, resource allocation, and productivity. By learning from the experiences of countries like Malaysia and the United States, India can develop a tailored approach to implementing weather derivatives in its agriculture sector, addressing the unique challenges and opportunities present in the country. In doing so, India can harness the benefits of weather derivatives to protect its farmers from weather-related risks, enhance the resilience of the agriculture sector, and promote sustainable development in the face of increasing climate variability and extreme weather events.

POLICY RECOMMENDATIONS AND CONCLUSION

To facilitate the adoption of weather awareness and education: Initiatives to educate farmers and stakeholders about the benefits and functioning of weather derivatives are essential for their successful implementation (*Singla & Sagar, 2012)*. Collaborative efforts between the government, financial institutions, and non-governmental organizations can help raise awareness and build trust in these risk management tools.

- ***Weather Data Infrastructure:*** Developing a robust and reliable weather data infrastructure is crucial for the accurate pricing and valuation of weather derivatives (*Sharma & Vashishtha, 2007)*. The Government should invest in modernizing and expanding the existing network of weather stations and adopt advanced technologies, such as remote sensing and data analytics, to improve the quality and accessibility of weather data.
- ***Regulatory Framework:*** A conducive regulatory environment is essential for the growth of the weather derivatives market (*Bharath et al., 2021*). The Government should establish clear guidelines and regulations governing the trading of weather derivatives and ensure adequate oversight to prevent market manipulation and promote transparency.
- **Public-Private Partnerships**: Encouraging public-private partnerships can facilitate the development of innovative risk management solutions tailored to the needs of the Indian agriculture sector (*Alam et al., 2020).* Collaborations between the Government, private sector, and research institutions can help foster the growth of a weather derivatives market and develop customized products that cater to the diverse needs of Indian farmers.

Weather derivatives hold significant potential as a risk management tool for the agriculture sector in India. By addressing the challenges associated with their implementation and learning from the experiences of other countries, India can harness the benefits of these innovative financial instruments to protect its farmers from weather-related risks and ensure the sustainability of the agriculture sector. MA

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SEBI AND THE REFORM ON SUSTAINABLE FINANCE (Part 2 of 3)

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Abstract

In the backdrop of increasing interest in sustainable finance around the globe as well as in domestic market, SEBI after extensive consultation with market participants revised its regulatory framework for issuance and listing of green debt securities.

The Regulatory framework was revised to enhance the scope of definition of green debt security to include pollution prevention and control and eco efficient products within the ambit of eligible categories to raise funds through issuance of green debt securities. Further, the concept of Blue Bonds (related to sustainable water management and marine sector), Yellow Bonds (related to solar energy) and Transition Bonds (related to transitioning to a more sustainable form of operations) was introduced as sub categories of green debt security.

To facilitate transparency and informed investment decision making, SEBI also updated the initial and continuous disclosure requirements for issuance and listing of green debt securities. Appointment of third party auditor/certifier for reviewing/certifying the processes for project evaluation and selection criteria, post – issue management of the use of the proceeds raised through issuing green debt security etc. , impact reporting and disclosure of major elements of Business Responsibility and Sustainability Reporting are some of the major changes to the extant disclosure requirements.

The new Green bond framework of SEBI

The second part of the article discusses the new green bond framework of SEBI

SEBI's push to revise the green bond framework:

A strong and effective policy framework, as well as a transition to renewable energy, will help India accelerate its drive to net zero. And precisely, to scale the necessary finance to achieve these national targets, new innovative financial instruments such as green bonds need to scale up. The objectives of SEBI's push to revise the green bond framework were to strengthen and expand the market for green bonds in India through:

- *expanding and diversifying the issuer and investor base;*
- *a reduction in the cost of capital / debt;*
- *encouraging demand from institutional and retail investors; and*

SEBI held a series of discussions held with multiple stakeholders and also its a series of discussions held with multiple stakeholders before releasing the paper for public comments. Accordingly, the consultation paper sought public comments on the following as part of a revised green bond framework:

- *to amplify the definition of green debt securities,*
- *to introduce the concept of blue bonds*
- *to reduce the compliance cost for issuers of green debt securities with while not creating any perverse incentives that may lead to 'greenwashing'.*

Suggestions were also solicited towards increasing avenues for sustainable finance in India, while considering India's unique goals of pursuing high growth with sustainable development.

SEBI has aligned its extant green bond framework with Green Bond Principles of the International Capital market Association (ICMA).

Based on the review and after taking into account the public comments on its Consultation paper, SEBI has updated its regulatory framework to provide for the following:

- Enhance the scope of definition of green debt security by including new modes of sustainable finance in relation to pollution prevention and control, eco-efficient products, etc.;
- Introduce the concepts of:
  - blue bonds (related to water management and marine sector),
  - yellow bonds (related to solar energy) and
  - transition bonds as a sub category of green debt securities

Accordingly, 'green debt securities' refers to a security, the funds raised through which are used for the all or any of the following purposes:

i. renewable and sustainable energy including wind, bioenergy, other sources of energy which use clean technology,

ii. clean transportation including mass/public transportation,

iii. climate change adaptation including efforts to make infrastructure more resilient to impacts of climate change and information support systems such as climate observation and early warning systems,

iv. energy efficiency including efficient and green buildings,

v. sustainable waste management including recycling, waste to energy, efficient disposal of wastage,

vi. sustainable land use including sustainable forestry and agriculture, afforestation,

vii. biodiversity conservation,

viii. pollution prevention and control (including reduction of air emissions, greenhouse gas control, soil remediation, waste prevention, waste reduction, waste recycling and energy efficient or emission efficient waste to energy) and sectors mentioned under the India Cooling Action Plan launched by the Ministry of Environment, Forest and Climate Change,

ix. circular economy adapted products, production technologies and processes (such as the design and introduction of reusable, recyclable and refurbished materials, components and products, circular tools and services) and/or eco efficient products,

x. *blue bonds* which comprise of funds raised for sustainable water management including clean water and water recycling, and sustainable maritime sector including sustainable shipping, sustainable fishing, fully traceable sustainable seafood, ocean energy and ocean mapping,

xi. yellow bonds which comprise of funds raised for solar energy generation and the upstream industries and downstream industries associated with it,

xii. transition bonds which comprise of funds raised for transitioning to a more sustainable form of operations, in line with India's Intended Nationally Determined Contributions, and

xiii. any other category, as may be specified by the Board from time to time.

Nationally Determined Contributions (NDCs)[1]

India's updated Nationally Determined Contributions (NDCs) are to be communicated to the United Nations

[1] *https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1847812*

Framework Convention on Climate Change (UNFCCC)[2]. NDCs embody efforts by each country to reduce national emissions and adapt to the impacts of climate change. The Paris Agreement (Article 4, paragraph 2) requires each Party to prepare, communicate and maintain successive nationally determined contributions (NDCs) that it intends to achieve. Parties shall pursue domestic mitigation measures, with the aim of achieving the objectives of such contributions. In short, Intended Nationally Determined Contributions (INDCs) refer to the climate targets determined by India under the Paris Agreement at the Conference of Parties 21 in 2015, and at the Conference of Parties 26 in 2021, as revised from time to time.

In its INDCs, India has pledged to:

- improve the emissions intensity of its GDP by 33 to 35 per cent by 2030 below 2005 levels.
- increase the share of non-fossil fuels-based electricity to 40 per cent by 2030.
- agreed to enhance its forest cover which will absorb 2.5 to 3 billion tonnes of carbon dioxide (CO_2, the main gas responsible for global warming) by 2030.

India's updated NDC also represents the framework for India's transition to cleaner energy for the period 2021-2030.

Major changes in the new requirements:

SEBI has also made major changes to the extant requirements for entities desirous of borrowing funds through SEBI's green bond framework, including disclosure requirements:

1. Appointment of a third party auditor/ certifier

The SEBI requirement states that an issuer shall appoint an independent third party reviewer/ certifier, for reviewing/ certifying the processes including project evaluation and selection criteria, project categories eligible for financing by green debt securities, etc. The third party reviewer shall certify the following:

1.1 Post-issue management of the use of proceeds from the green debt security,

1.2 verification of the internal tracking and impact reporting.

This requirement of appointing a third party reviewer/ certifier is applicable on a 'comply or explain' basis for a period of two years. While this requirement was voluntary under the earlier green bond framework, SEBI thought it fit to make it on a 'comply or explain basis before making it mandatory because it is one of the important aspects of certification that yields itself to independence and consequent trust for the discerning investor. One of the reasons cited for investors shying away from investing in India's green bonds was the absence of independent certification. SEBI has plugged the gap by introducing this requirement.

'Comply or explain' for this purpose, would mean that the issuer shall endeavour to comply with the provisions and achieve full compliance by two years from the date of issuance of the circular. In case the entity is not able to achieve full compliance with the provisions till such time, the issuer shall in its annual report, explain the reasons for such non-compliance/ partial compliance and the steps initiated to achieve full compliance

2. Impact reporting

An impact report is but a means of communicating that intends to convey the change caused due to an activity – the 'before' and 'after' a reform / law / project. Essentially, this is but a measurement of an organisation's activities – in this case, the funds and the projects in which they were gainfully employed in and the effect of the same.

The SEBI requirement on impact reporting is that information, on a project-by-project basis, pertaining to reporting of the environmental impact of the projects financed by the green debt securities. Reporting standards or taxonomies followed by the issuer with regard to reporting of environmental impact, if any, shall also be disclosed. In impact reporting, metrics, data / information and communication are paramount. There is a need to align impact based goals between investors and the issuers of green bonds. Impact reporting facilitates this.

3. Disclosure of major elements of Business Responsibility and Sustainability Reporting (BRSR)

While issuers with a market capitalization of Rs.1000 crore and above have to comply with the requirements of filing Business Responsibility and Sustainability reports as part of their Annual reports, the same was hitherto not applicable for issuers of bonds. MA

[2] *https://unfccc.int/process-and-meetings/the-paris-agreement/nationally-determined-contributions-ndcs*

EXPLORING A FORENSIC METHODOLOGY FOR IDENTIFYING CYBER FRAUDS WITHIN THE INDIAN BANKING SYSTEM

Abstract

Heave in online banking usage has resulted in a growth in frauds and scams. Somewhat scams or frauds in banks have an extensive impact. Fraud has far-reaching consequences that go beyond economic loss. Fraud influences organizations, individuals, businesses group, businesses, services, and the entire ecosystem. Units can make better decisions if they understand and assess the overall effect of fraud. Any fraud, whether committed by opportunistic individuals or major and organized crime groups, can have significant consequences.

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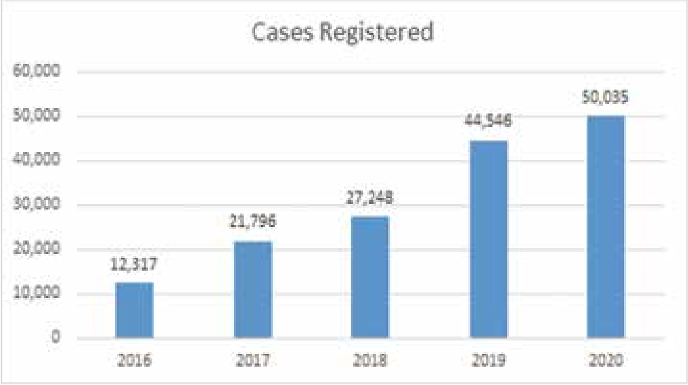
INTRODUCTION

The finance industry has also been affected by cybercrimes and cyber frauds. Digital India has enlarged the commonness of contactless payments and digital currency. [1,2,3,4] In such a state, it is critical to take all necessary cyber security protections to preserve the integrity and confidentiality. Security data breach is a significant issue in the financial sector. A poor cybersecurity system might expose a company's clientele to cyber security risks. Recovery from a data breach involving a bank's data may be time-consuming and frustrating. The following graphical depiction shows the registered cybercrime in India. [5]

FIG: 1.
CASES REGISTERED AND CRIME RATE IN INDIA (AS PER NCRB REPORT)



LOSSES DUE TO CYBER FRAUD IN BANKING SECTOR

The following Table shows at a glance the losses arising from bank frauds:

TABLE: 1

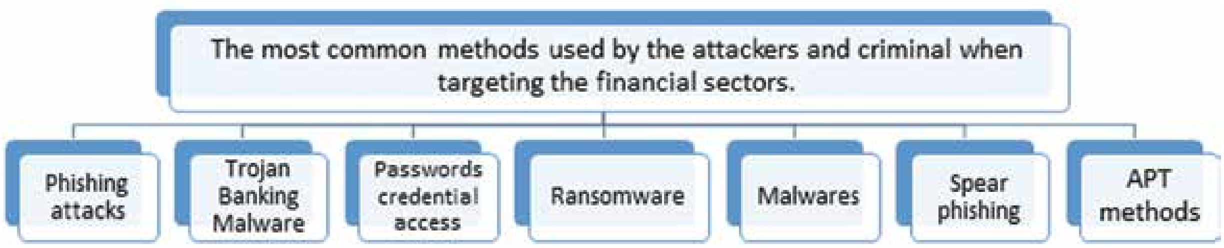
LOSSES DUE TO CYBER FRAUD IN BANKING SECTOR

Visible	Invisible
Brand reputation	Legal issues
Financial loss	Loss of Resources
Data Loss	Reduce customer faith
Loss of Assets	Reputation loss
Loss of trust	

PROBLEM DOMAIN

FIGURE: 2

MOST COMMON METHODS USED BY THE ATTACKERS



ATTACKERS PROFILE

Multiple advanced persistent groups are targeting financial services. The following table demonstrates the study based on the attacker's profile and origin country.

TABLE: 2

APT GROUPS AND ATTACKS METHODS

S.no	Name of Attacking Group	Origin country	Attack Methods	Target Sector
1.	**APT1 (PLA Unit 61398)**	China	Compromising websites, malware	Financial services, Information technology Aerospace, Education, Energy, Financial Government, Healthcare, Research,
2.	**APT28 (Fancy Bear)**	Russia	Spear Phishing, password credentials	Financial, Healthcare, Industrial Energy, IT, Oil and Gas, Telecommunications
3.	**APT37 (Lazarus Group)**	North Korea	Social Engineering methods, malware	Financial services Organizations, Governmental Organizations
4.	**APT41 (Double Dragon)**	China	Malwares	Financial services, Healthcare, Telecom, Technology, Game Industries.
5.	**APT38 (Lazarus Group)**	North Korea	Ransomware	Banks and Financial Institutions
6.	**APT33 (Elfin)**	Iran	Phishing, spear Phishing Spyware, Malware	Energy, Financial services Companies/Agencies
7.	**APT35 (Charming Kitten)**	Iran	Social Engineering methods, malware	Financial services, Military Organizations, Governmental Organizations.

8.	**APT29 (Cozy Bear)**	Russia	Malwares	Government Networks in Europe and NATO Member Countries
9.	**Equation Group**	USA	Phishing, spear Phishing Spyware, Malware	Oil and Gas, Telecommunications, Transportation.
10.	**Ocean Buffalo (APT 32)**	Vietnam	Phishing, spear Phishing Spyware, Malware	Financial services Companies/ Agencies

India has experienced more security breaches than the national median, and cyber-attacks on financial institutions are on the rise, even globally. The following table indicates examples of Indian banks that become victims of cyber fraud.

TABLE: 3
SHOWS THE MAJOR CYBER INCIDENTS IN INDIAN BANKS

Bank/financial entities name	**Year of Occurrence**	**Type of Cyber Fraud**	**Motive**
Hitachi Payment Systems	2016	Data Breach and Trojan Malware	Malware (Malicious software) infiltrated the financial network, leading to the exposure of the personal information of around 3.2 million bank cardholders, resulting in losses of Rs 1.3 billion.
Punjab and Sind Bank	2016	Compliance failure	RBI has imposed a penalty of Rs 25 lakh on Punjab and Sind Bank for non-compliance with certain provisions of cyber security framework for banks issued by the central bank in 2016. [9]
City Union Bank	2018	Social Engineering Fraud and Malware	To steal $2 million from the bank, cyber hackers broke into its payment systems. The bank was successful in recovering $1 million.
Cosmos Bank fraud	2018	Card Cloning and Banking Malware	The bank suffered a loss of Rs.94 crore because of a malware assault that authorized fraudulent transactions, with ATM withdrawals purportedly being made in 28 different countries. Cloning thousands of credit cards.
Union Bank of India's foreign exchange account	2017	Account Hijacking and Malware	Upon evaluation of viruses, attackers gained access to financial credentials, which were then utilized to take $170 million from the company's bank accounts. The timely involvement resulted in the complete recovery of the funds.
Union Bank of India	2019	Compliance failure	The application of a consequence is premised on compliance requirements failures and is not meant to adjudicate on the legitimacy of any transactions or concurrence engaged into it by the financial institution with its consumers,' the institution said in its statement.
Axis Bank	2020	Compliance Issue	They failed to comply with specific aspects of the central bank's rules on the payments industry among banking as a customer, information assurance, and digital payments regulations.
Standard Chartered Bank	2021	Data not available	For failing to notify a cyber-security event within the statutory time frame and for neglecting to refund the money engaging in illegal online transactions, along with other grounds.
Mahesh Cooperative Urban Bank, A.P.	Jan 2022	Account Hijacking and Trojan Malware	Some person hacked into the servers of the bank and transferred a huge amount to 100 different bank accounts. Nearly Rs 12 crore were allegedly fraudulently transferred to several bank accounts across the country.
Razor Pay Hacked	May 2022	Manipulation of data	Criminals took Rs 7.3 crore by manipulating the gateway payment process

PROPOSED SOLUTION

Forensics can help in the investigations. The following table demonstrates the proposed solution for major cyber frauds and their forensics aspects which can help in the investigation.

TABLE: 4

MAJOR CYBER FRAUD, RED FLAGS, AND PROPOSED FORENSICS ASPECTS FOR INVESTIGATION

Fraud Type	Red Flags	Possible forensics Aspects
Credit/Debit Card Fraud	⦿ Fraudsters will claim to be a bank officer or pretend to be a government employee/ officer. ⦿ Email offering lottery winning. ⦿ Tempting emails offering prize money. ⦿ Ads on websites. ⦿ Fraudsters will ask for personal and financial information.	⦿ Mobile number analysis. ⦿ Location analysis. ⦿ KYC details analysis ⦿ Email sender information ⦿ Account analysis. ⦿ Location of email senders. ⦿ IP address of email sender. ⦿ URL analysis. *(In case of malware or file)* ⦿ Attached file if any ⦿ Attached file analysis (Using sandboxing techniques) ⦿ Operation performed by the files. *(In case of money withdrawal)* ⦿ Account Transactions ⦿ Account details. ⦿ KYC of account details. ⦿ IP address of transactions. ⦿ IP Location. ⦿ Device Information. ⦿ Framing previous transactions with similar IP addresses. ⦿ Framing previous transactions with similar KYC addresses.
Vishing Calls	⦿ Fraudster will claim to be a bank officer or pretend to be a government employee/ officer. ⦿ Attractive offers. ⦿ Fraudsters will ask for of personal and financial information.	⦿ Phone number ⦿ Phone number verification ⦿ KYC on the phone number. ⦿ location of callers. ⦿ Account number/Payment details *(In case of money withdrawals)* ⦿ Account Transactions ⦿ Account details. ⦿ KYC of account details. ⦿ IP address of transactions. ⦿ IP Location. ⦿ Device Information. ⦿ Framing previous transactions with similar IP addresses. ⦿ Framing previous transactions with similar KYC addresses.

ATM card skimming	⦿ If any additional device is being placed in the ATM machine. ⦿ An additional keypad is attached to the ATM machine. ⦿ Machine is not updated properly. ⦿ Machine showing an older date. ⦿ No Security guard in the ATM machine.	⦿ Skimming device id. ⦿ Skimmer device model. ⦿ Number/vendors of skimmer devices. ⦿ CCTV footage analysis. ⦿ Interviewing process. ⦿ Payment transactions details. *In case of money withdrawals* ⦿ Account Transactions. ⦿ Account details. ⦿ KYC of account details. ⦿ IP address of transactions. ⦿ IP Location. ⦿ Device Information. ⦿ Framing previous transactions with similar IP addresses. ⦿ Framing previous transactions with similar KYC addresses.
Phishing Links	⦿ Mail from unauthorized person ⦿ No HTTPS/SSL ⦿ Grammar mistakes. ⦿ Such emails contain numerous spelling errors. ⦿ Unknown source. ⦿ Award or lottery winning mail. ⦿ Digital certificate will be missing ⦿ Sometimes short URL on mobile through SMS	⦿ Locating Email Sender ⦿ Location of email sender ⦿ IP address of email sender ⦿ URL detailed analysis of emails. *In case of malware or file* ⦿ Attached file if any ⦿ Attached file analysis (Using sandboxing techniques) ⦿ Operation performed by the files. *In case of money withdrawals from victims* ⦿ Account transactions ⦿ Account details. ⦿ KYC of account details. ⦿ IP address of transactions. ⦿ IP Location. ⦿ Device information. ⦿ Framing previous transactions with similar IP addresses. ⦿ Framing previous transactions with similar KYC addresses.

Frauds due to use of untrusted malicious mobile Applications	⊙ Lottery winning / job offers/ zero investment schemes/ Loan apps. ⊙ Be aware of tempting offers. ⊙ Check message content/ Grammar mistakes. ⊙ Shorten URLs are a big red flag	⊙ Mobile app analysis. ⊙ Details of malware ⊙ Malware analysis. ⊙ IP address of connections. ⊙ Exodus of mobile applications ⊙ Operations performed by that application. ⊙ File or data analysis. ⊙ Command and control access. ⊙ IP address of the server. *Details required from the google play store* ⊙ Hosting details. ⊙ Founder details. ⊙ App hosting tracking. ⊙ IP address of hosting company/user. ⊙ Location of developer or hosting provider. ⊙ Source code analysis. *In case of money withdrawals from victim accounts* ⊙ Account transactions ⊙ Account details. ⊙ KYC of account details. ⊙ IP address of transactions. ⊙ IP Location. ⊙ Device information. ⊙ Framing previous transactions with similar IP addresses. ⊙ Framing previous transactions with similar KYC addresses.
Frauds using Online Selling platforms.	⊙ Be aware of attractive offers. ⊙ Usually, fraudsters pretend to be buyers on these platforms. ⊙ Fake pages /fake websites ⊙ Check the domain name of websites. ⊙ Usually No HTTPS connections.	⊙ Domain analysis for websites. ⊙ Check domain registration ⊙ Domain providers can be contacted for detailed documents. ⊙ Check to host company details. ⊙ Check server information ⊙ IP address analysis. ⊙ Blacklisting of IP address ⊙ Cross verification of IP address ⊙ Mapping of IP address with logs ⊙ Website analysis. ⊙ Registration address mentioned in the domain registrations. ⊙ Mapping of registered addresses with multiple websites. ⊙ File downloaded ⊙ APP.ANY.RUN analysis of the website. ⊙ Country rules and regulations. ⊙ Operations performed by the websites. ⊙ Files or document analysis. ⊙ Malware analysis of documents.

SIM Cloning	⦿ Network outage issues. ⦿ SMS from multiple sources ⦿ Unknown messages. ⦿ Mobile Balance reduction. ⦿ KYC updating messages. ⦿ Fake offers for sim up-gradation. ⦿ Offers for discount coupons. ⦿ Offer for free service.	⦿ SIM operational time ⦿ CDR logs analysis. ⦿ CDR file documents. ⦿ Network outage time. ⦿ KYC details analysis. ⦿ CCTV Footage analysis. ⦿ E-sim verifications. ⦿ OTP bypass. ⦿ Account access time. ⦿ Account access through IP address. ⦿ Details analysis of account owners. ⦿ Mapping of all details and locations. ⦿ Previous mode of Operandi for similar transactions.
Scam through QR scan	⦿ Usually tampering with QR code. ⦿ Sometimes people will use social media or remote systems for payment. ⦿ Quick payment options.	⦿ QR code analysis. ⦿ Phishing web page analysis. ⦿ Domain information for phishing webpages. ⦿ IP address of registrant applicant. ⦿ Location of the registrant. ⦿ Domain registered for similar web pages. ⦿ Malware analysis of websites. ⦿ File access *In case of money withdrawals* ⦿ Account transactions ⦿ Account details. ⦿ KYC of account details. ⦿ IP address of transactions. ⦿ IP Location. ⦿ Device Information. ⦿ Framing previous transactions with similar IP addresses. ⦿ Framing previous transactions with similar addresses.

CONCLUSION

In order to manage cyber security risks and secure vital assets, banks will need to prioritize their efforts and invest in crucial cyber sectors. Separating cyber security from IT solutions and identifying the regions with the biggest vulnerabilities and hazards by severing the value chain might be one of the methods. Banks will be required to categorize risks via fundamental risk analysis (including monitoring), evaluate the overall maturity level of online resilience, and then concentrate on closing any identified gap. MA

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DECEPTION TECHNIQUE USING REMOTE ACCESS APPLICATION

Abstract

Cyber frauds increased during the lockdown period. Remote Apps like Anydesk, TeamViewer are used by fraudsters for executing malicious activity and the victim never knows what has happened. This article brings about an awareness about various tactics used by fraudsters resorting to Remote app technique. Different real time fraud cases are explored to understand the Remote App attack methodology. Customer fraud awareness index is also analyzed to check their responses towards attack simulating techniques. The purpose of the study is to educate people about Remote Access app technique and the preventive measures to avoid financial loss.

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INTRODUCTION

Global economy has been impacted by COVID-19 changing the future of many businesses in financial markets. A nationwide lockdown in all countries restricted the movement of the entire population making public to stay inside their homes to maintain social distance and work culture changed to remote work from home(WFH)(*Pwc, 2020*). Online shopping and payments were increased to avoid touching cash and spreading the disease. This pandemic thus proved to be a catalyst for the people to adopt digital payment modes using mobile banking. It has shown sudden rise in online transactions using digital payments not only in India but throughout the globe. This rise in online transactions prompted the fraudsters to carry out payments-focused scams. It was observed that most of the victims were first-time users of online banking who have opted for online payment mode only due to the pandemic situation and without any detailed knowledge about the functionality and operations were targeted by fraudsters (*Sinha, 2020*). Social engineering techniques are at its peak with new ideas to execute cyber frauds by exploiting human emotions. The top frauds reported are mainly KYC updating, fake cash-back, discount offers, fake-selling, refund*(Bureau, 2021)*.

In all these fraud techniques some sort of an individual's PII (personal identifiable information) gets captured to carry out frauds. It is a type of identity theft or identity fraud in which someone obtains another person's personal data in wrongful way to use it for his economic gain. This personal information captured may then be used to carry out various types of frauds. Most common is fraud is getting account password or PIN and do online transactions by taking over that individual's identity to fraudulently withdraw amounts from their bank accounts, fraudulent use of telephone calling cards or online accounts. *(Justice, 2020)*

Newer and innovative techniques are always adopted by fraudsters to commit identity theft frauds. One of the common techniques is Remote Access App. Remote access applications allow ***users to remotely access another computer or phone from any location.*** This application is actually very useful in various situations for helping any needy person to resolve his technical problems. It gives direct access over the mouse and keyboard of another device and full control to perform any actions from remote location as if on his own device (*DNSstuff, 2020)*. The basic requirement is that the remote access application must be installed on the host device which connects client device to get the control of host. It is commonly used for service issues by technicians to solve the device related problems from a faraway location (*Rosencranc, 2020*). Commonly used free apps are TeamViewer, Anydesk etc.

LITERATURE REVIEW

Direct and indirect effects on society during the pandemic outbreak and the impact of lockdown measures were studied by *Buil-Gil et al., 2021.* Social engineering is considered as one of the most critical issues in cyber security for performing attacks on individuals *(Corradini, 2020).* The various ways of becoming victim is identified by J*ansen & Leukfeldt, 2015*that include responding to a fake e-mail, a fraudulent phone call or by installing a malicious application on a mobile device. The attack methodology in SIM swap attack was studied by *Awale & Gupta, 2019* and it was shown that there is need for spreading awareness among online banking users to prevent such cyber-attacks. Social impact of the pandemic with the changing use of technology was examined in the study by *Monteith et al., 2021. Jansen & Leukfeldt,* (2015) traced the mental stress on the customers who could not stop the process even after finding suspicious conversation with fraudster. *Conteh & Royer, 2016* primarily shed light on the mechanisms involved in the social engineering phenomenon. Use of human mind to capture sensitive and confidential information about organizations and individuals is discussed in the study by *Kumar et al., 2015* by defining what is social engineering. *Flores, (2016)* identifies the factors that affect behavioural governance that make the foundation for behavioural change *Venkatesha et al., (2021)* delved into consequences of increase in soacial engineering attacks due to COVID-19 pandemic and focussed on some techniques to thwart such attacks . The research reported by A*rachchilage & Love, (2014)* examined whether conceptual knowledge or procedural knowledge has a positive effect on computer users' self-efficacy to thwart phishing threats.

OBJECTIVE

1. To analyse the fraud technique using remote access app.
2. To understand the reasons why customers become victims of social engineering attacks using remote access apps.

HYPOTHESIS

H1: People in all age groups respond similarly when there is need to respond for some regulatory compliance.

H2: People in all age groups get attracted towards discount and refund and follow the instructions.

RESEARCH METHODOLOGY

To understand the attack methodology interviews were conducted with the people who were the victims of this type of fraud and lost their money. To check the customer awareness a survey method was used where real time fraud scenarios were given to respondents to check their immediate responses. Stratified sampling technique was used to collect data. Four different age groups were selected to collect the data with equal respondent size of 50 in each group. Data is analysed for a total 200 respondents by using survey method by sharing the link for questionnaire through email and WhatsApp.

TABLE1: AGE WISE DISTRIBUTION OF RESPONDENTS

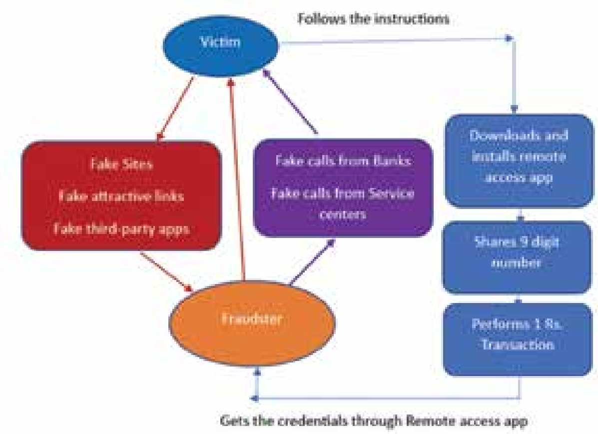
Age Group	Number of samples
18 to 25 Years	50
25 years to 35 years	50
35 years to 45 years	50
Above 45 years	50

ATTACK TECHNIQUE USED IN REMOTE ACCESS APP FRAUDS

The fraudster calls the individuals and behaves as if he is a legitimate person and creates the scenario for fake reasons. Sometimes he is a bank official worried about the KYC updating of the customer account and sometimes he behaves as a legitimate company staff offering cashback or refund of the transaction or attracts the customer to get big discounts. In a convincing discussion, he asks the customer to obey his instructions to download the remote app application on their mobile device or sometimes just provides the link and asks the person to click on it. In both scenarios' the app gets installed on the user device and the fraudster gets the control of the device/ mobile phone. Then he asks the user to make a transaction of Rs.1 by entering UPI PIN details which he monitors carefully remotely or otherwise asks to enter debit card details. Once acquainted with the credentials, the fraudster immediately performs a series of transactions to transfer amounts in various accounts without any assistance of the user. The user gets messages of amounts getting debited from his account and feels bewildered.

FIGURE 1

ACTIVITY FLOW USED WHILE PERFORMING FRAUD USING REMOTE ACCESS APPLICATION



Source- By Author

DATA ANALYSIS

TABLE 2

RESPONSE FOR DIFFERENT FRAUD TECHNIQUES FOR ALL 200 RESPONDENTS.

	Case scenario	*Will follow the instructions(A) (per cent)*	*Will not initiate any action (B) (per cent)*
Case I	KYC completion of bank account	34	66
Case II	Refund or Cashback of amount	43	57
Case III	Heavy discount on the order	16	84
Case IV	Winner of Jackpot and payment link provided	3	97

Source: By Author

Data analysis show that people react immediately when it comes to any regulatory obligations like KYC compliance. ‘Discount’, ’Refund’, ’Cashback’ are the magical phrases which always attract the customer’s attention to follow the instructions. Maximum people become a prey to these types of fake scenarios. Peoples’ reaction on jackpot winning is reduced due to increased awareness about such frauds but the percentage is greater for ‘KYC completion’ or ‘Refund of amount’ techniques.

Data is analysed further among different age groups to check the reaction towards fraud techniques only for those who will follow the instructions as given by the caller. These people are more vulnerable to become a prey to such techniques.

To identify the impact of age towards these attack techniques, hypothesis by using Anova technique was carried out.

TABLE3

AGE WISE ANALYSIS TO CHECK THE USER RESPONSES TOWARDS ATTACK TECHNIQUES.

	Case scenario	*Significance value (Alpha)*
Case I	KYC completion to avoid account blocking	.002
Case II	Refund or cashback of amount	.525
Case III	Heavy discount on the order	.005
Case IV	Winner of Jackpot and payment link provided	.649

Source: SPSS Output

The result shows that two of the four attack techniques have direct relationship between age and their response behaviour. For case I, Alpha value is less than 0.05 so we accept null hypothesis and reject alternative hypothesis. It is evident from the result that people in all age groups do not respond in the same manner when there is need to respond for some regulatory compliance.

For Cases II, III and IV, we reject the Null hypothesis by accepting H1 since the value of Alpha is greater than 0.005. The analysis shows that there is no difference in the user behaviour while reacting towards refund or discount schemes and jackpot winning messages.

We analysed the respondent’s data in Table 1 in ‘A’ category who are more vulnerable to the attack techniques and who agreed that they will follow the instruction due to necessities.

TABLE 4: AGE WISE DISTRIBUTION OF TABLE 1 GROUP A CATEGORY RESPONSES.

Age group	*KYC Fraud (per cent)*	*Refund or cashback (per cent)*	*Heavy discount (per cent)*	*Winner of Jackpot (per cent)*
18 to 25 Years	34	25	47	25
25 years to 35 years	16	25	22	25

35 years to 45 years	24	28	19	28
Above 45 years	25	22	13	22

Source: By Author

The attack methodology shows that the fraudsters are not techno savvy but they make use of fake identity and simple techniques to gain the trust of the victim

The analysis in Table 4 also confirms with the hypothesis testing results of Table 3. It is evident that people in age group of 18 to 25 years are more vulnerable towards KYC frauds and discount techniques due to their lack of knowledge about KYC norms in banks and attraction towards word 'discount'. Also, it is evident that people in all age groups react in the same way when there are attractive phrases like refund or cashback or discount and gets in the fraudster's trap on their own.

CONCLUSION

The attack methodology shows that the fraudsters are not techno savvy but they make use of fake identity and simple techniques to gain the trust of the victim. The best prevention is always not to trust on any unknown person or links and not to share any credentials. It is an alert when someone asks to share any type of number generated on one's mobile device. One should not download any unknown app and should double check the authenticity of any website before using information displayed on it. Human mind always gives some intuitions; one should not overlook them. If unfortunately, one becomes the victim of this attack, immediately the internet connection should be stopped as he realizes of getting attacked and switch off his mobile phone. Then later he can remove the sim card and uninstall all unknown applications on his mobile phone. It is always advisable to change the credentials of his bank account including ATM pin and UPI pin. Awareness and alertness are the only remedy to stay safe in any type of cyber-attacks. MA

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TELEMEDICINE: A MUST FOR DIGITAL HEALTH IN INDIA

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Abstract

India has committed to developing a road map for achieving a resilient health system, with digital health playing an important role. The purpose of this study is to explore the Government initiatives on telemedicine service's contribution to the development of quality of care and the well-being of the citizens. Administration and political will, authoritative help, satisfactory subsidizing, proper innovations, dynamic and designated correspondence methodologies, cooperative methodology, and mindfulness age among individuals to make them e-proficient are all expected for long haul supportability and execution of telemedicine administrations. The future of medicine will become increasingly digital and recognising the importance of digital technology in this field and pandemic preparedness planning has become critical. To sum up, in the future Indian Government is likely to increase the allocation of finance on healthcare, availability of manpower throughout the country, eLiterate among individuals, protection of data and availability of insurance to be strengthened to mitigate the country's future healthcare crisis.

INTRODUCTION

India is a country where acquiring quality healthcare is still a luxury. The Covid-19 pandemic has uncovered the importance of Universal health coverage in India to build a strong health system for the citizens. The lockdowns provoked digital practice amongst both patients and doctors. During this crisis, telemedicine became extremely important in meeting the basic healthcare needs of developing nations. Telemedicine is a technique that enables remote medical consultation (Weinstein et al., 2014). The World Health Organization (2023), defines telemedicine as "the provision of healthcare services, where patients and providers are separated by distances, by healthcare professionals using information and communication technologies for the exchange of valid information for the diagnosis, treatment, and prevention of diseases and injuries, research and evaluation, and continuing education of health professionals, all in the interest of advancing the health of individuals. Even lower and middle-income countries (LMIC) enjoy affordable healthcare services because of the significant cost reductions in hardware, software, and internet, and an increase in the use of ICTs in healthcare (OECD, 2010). The corona virus has accelerated the morbidity and fertility rate which makes healthcare services to be revolutionised by digital technology. The broad term 'digital technology' includes m-health, telehealth, telemedicine, health information technology (IT) and wearable devices (Ding et al., 2020).

Telemedicine is a component of the digital health or "e-health" era, which refers to health services delivered or enhanced via the internet or other information technologies (Marwaha et al., 2022). Telemedicine improves patient satisfaction by providing healthcare access with technical support such as wearable devices, tablets and computers.

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The Indian Government introduced telemedicine to avoid direct contact between the patient and doctor during the pandemic. The Ministry of Health and Family Welfare (MoH&FW), Government of India (GoI), issued the 'Telemedicine Practice Guidelines' for Registered Medical Practitioners on March 25th, 2020. Although this guideline is expected to transform healthcare delivery, some difficulties may have arisen during its actual implementation in health facilities (MoHFW, 2020). Some healthcare professionals and patients resist acquiring telemedicine services because of traditional thoughts, and the dearth of technological literacy and skills to implement telemedicine (Almathami et al., 2020). The difficulties being encountered by telemedicine have been mitigated by various initiatives of Governments at the State and Central levels. Hence, this study attempts to review the Government initiatives directed towards telemedicine as part of digital health to reach the goal of universal health coverage in India.

INDIAN GOVERNMENT HEALTHCARE CHALLENGES

The Indian healthcare system is a three-level categorised system: Primary care is administered by sub-centres and primary health centers (PHCs), secondary care is provided by community health Centres and sub-district hospitals, and tertiary care is provided by medical colleges and district or general hospitals, all of which provide free or nearly free service. The doctors in PHC are supported by the Accredited Social Health Activist (ASHA) who resides in the same community region. Understanding the relevance of telemedicine in India requires a deeper understanding of the healthcare types in India.

In the fiscal year 2021, the Government of India spent approximately 807 billion Indian rupees on health. The National Health Mission cost approximately 370 billion Indian rupees. According to budget estimates, health spending is expected to rise to INR 862 billion in the fiscal year 2023 (Sanyukta-Kanwal – Statista, 2022). There is a wider difference in per capita expenditure allocated to healthcare in rural is lower than in urban regions in India whereas India spends less than less percentage of GDP on healthcare which leads the citizens to bear the maximum out-of-pocket expenditure (IHME, 2022). India has a 9.3 doctors for every 10000 patients as against threshold of WHO which is 10 doctors per 10000 patients. To meet the global standard and serve its 1.33 billion people, India will need an additional 600,000 doctors and two million nurses (WHO, 2022). Given multiple policies and management constraints such as funding shortages, staff shortages, a weak referral system, and poor logistics, India's health system lacks responsiveness and capacity to deliver good healthcare services (Ramani & Mavalankar, 2006). Telemedicine must be considered to be the immediate policy deliberation to get expert service from all over the country which reduces the pressure primary and secondary hospitals across the cities and to overcome the barriers on doctors shortages.

COVID-GOVERNMENT INITIATIVES AND ROLE OF TELEMEDICINE

In today's era telemedicine is a tremendous approach to healthcare applications. Formerly telemedicine in India was supported by the Department of Information Technology (DIT), Ministry of Health and Family Welfare (MOHFW), ISRO, NEC Telemedicine programs for North-east states, Apollo Hospitals, Asia Heart Foundation, State governments and some of the private organisation also involved in telemedicine. Covid 19 pandemic has provided the full extent of telemedicine and provided maximum coverage with fair results (Monaghesh and Hajizadeh, 2020). During this pandemic, telemedicine had the greatest potential to improve effective epidemiological research, disease management, and control on a larger scale with the least amount of time and personal involvement (Smith et al., 2020; Zhou et al., 2020; Ohannessian, 2015).

The Public authority of India presented different versatile applications, for example, the Registry Administrations Application, AIIMS-WHO CC ENBC, HealthyYou Card, HealthyYou EHR, HealthKartPlus, Safe Pregnancy and Birth, mSwasthya, Management and Proof Based Care, T.B. Recognize, Geo talk, O.B. Insulin (NHP, 2015). A free mobile app ZocDoc was initiated by the government that permits patients to look for specialists, sort by area, strength, and protection acknowledgments, read confirmed patient audits, and right away book an arrangement on the web (Telemedicine Tools Transforming Healthcare. InformationWeek,2012). Telemedicine technology can provide remote consultations for patients in rural areas or during non-business hours (Fiorillo & Leanza, 2020). Rural patients find difficulty in travelling to meet the same doctor as they met previously and this leads to misunderstanding the treatment follow-up and also causes a break in the follow-up here telemedicine plays a major role (Mishra et al., 2009). Telemedicine made the staff and the healthcare providers GET disbursed eventually TO serve the patients widely and increased the availability of doctors by reducing direct appointments and unnecessary emergency room visits. The Government of India's Ministry of Health and Family Welfare issued telemedicine practice guidelines on March 25, 2020, in response to the country's crisis and the need to enforce social distancing and eliminate unnecessary movement of patients into clinics and hospitals. The National Informatics Centre, under the Ministry of Electronics and Information Technology India, has developed the open-source Aarogya Setu app for COVID-19 tracking, syndromic mapping, self-assessment, and remote consultation. This intervention has helped the Government to monitor the worsening healthcare situation through contact tracing. The Ministry of Finance launched an open platform connecting the country's digital health ecosystem under the Ayushman Bharat Digital Health Mission (ABDM) (National digital health platform, 2022–2023). The platform includes digital registries of health providers and facilities, unique health identities, a consent framework, and universal access to health facilities. To reduce the gap of this ratio, telemedicine will become a tool to address this gap which is a fast vehicle to address the patients in rural areas.

DIGITAL HEALTH CARE IN INDIA

The health sector is estimated to increase by $280 billion to serve the population's health needs growing at a rapid rate (Healthcare Industry in India, 2022). Access, affordability, human resource availability and accountability of physicians remain major challenges and even after being a leading nation in IT-enabled services, the country's digitalization of health has been limited (Kasthuri, 2018). The Prime Minister of India has introduced the National Digital Health Mission which allows every citizen to easily shift their doctors enabling the transfer of data, and insurance provided with the unique digital health ID to the individual citizen (Aravindakshan, 2021). There are some examples to show that India has become a digitally prone society such as, the Electronic Urban Health Centre in Andhra Pradesh, a concept that guarantees specialised service and patient satisfaction at the level of urban health centres. Boat clinics in Assam are mobile clinics on water bodies that provide health services to residents of remote islands throughout the State (Indian Express, 2018). This ensures that quality of care and access to healthcare for the unreachable population is possible through this digital healthcare across the country.

DISCUSSION

Many countries may achieve universal coverage of high-quality health services by 2030, including prevention, diagnosis, treatment, rehabilitation and palliative care. Progress towards universal healthcare coverage is measured not only by actual coverage of basic health services and the population's level of social protection but also by indicators such as quality and safety (World Bank, 2019). Consulting the doctor for any disease at the right time improves the quality of services provided. The frequency with which telemedicine equipment is used is critical to achieving a high level of economic efficiency. As a result, the number of telemedicine consultations that allowed for the avoidance of face-to-face ones is a critical situation. Furthermore, an important factor is the complete eradication of the cost of travelling from home to a medical facility, as well as the indirect costs associated with weaning from home/work, etc.

Telemedicine's importance originated from its effectiveness in combating the major challenges confronting the healthcare system. Telemedicine aids in reducing geographical disparities and increasing the efficiency with which medical services are delivered to patients in remote areas (Voskolovich, 2018). The long-term sustainability and implementation of telemedicine services necessitate the availability of several elements such as governance and political will, organisational support, adequate funding, appropriate technologies, active and targeted communication strategies, collaborative approach, and awareness generation among people to make them e-literate (Alami et al., 2016). As telemedicine is the emerging trend in the coming days with the rapid development of medical equipment and technology, the policies, design and facilities need to be flexible so that they can be up to date and modified along with the changes in the upcoming future.

CONCLUSION

Some continue to take initiatives to develop a country-wide telemedicine system whereby the public in rural areas is connected to doctors at urban and semi-urban. However, it requires an innovative solution to meet the healthcare needs of the mass. Many digital health solutions are still in their infancy and need to be improved. The country needs to take major steps to digitalise the economy with strategies. Literacy among the individuals in the country is an impediment that prevents telemedicine from growing at the speed which the Government wants, most important that can be embedded through proper education. Allocation of resources to meet the majority of the people is another factor for digitalisation. Protecting patient information and providing insurance to the people enables the exchange of doctor consultations from country to country. Ensuring quality services and healthy lifestyles for all individuals is the key to universal health coverage. More knowledge can be acquired through telemedicine technology with the development of communication. Despite digital healthcare growth, many stakeholders such as doctors, researchers, policymakers, administrators, and regulators should involve in the growth of telemedicine to serve the people in the nation with better quality care. MA

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REVISITING THE PARADOX IN THE CAPITAL STRUCTURE PRACTICES: EVIDENCE FROM NSE LISTED COMPANIES IN INDIA

Abstract

Capital structure practice becomes an interesting puzzle to be solved in the theory of finance in today's complex corporate world. In this context, this study investigates the determining factors of capital structure pertaining to companies enlisted in NSE in India in the light of various capital structure theories. The inferences of the study indicate that tangibility and liquidity exhibit negative significant association with Leverage and Non-debt Tax Shield (NDTS) shows direct association with leverage. Tangibility and NDTS demonstrates strong dominance in determining degree of leverage during the period. Thus, it is evident that Pecking order theory has more elucidative power in comparison to other theories.

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INTRODUCTION

The financial decision of a firm regarding the determination of optimum capital structure mix is a hot potato in the arena of corporate finance. It is crucial in the sense that the way a firm is financed is instrumental to various stakeholders of any firm like investors, directors etc. as the financing decision of a firm has substantial influence over the value of the entity. The capital structure of an entity embodies the synchronization of numerous internal and external sources to create a pool of funds and the decision regarding capital structure occupies a distinct place in the theory of finance as achieving the suitable capital structure has a significant bearing upon the financial performance of the firm. The capital structure determines combined risk and cost of capital of a firm. For instance, while debt appears as the cheapest form of external capital, with rise in leverage, the advantages of a lower cost of debt reduce owing to expansion in financial risk and greater probability of financial distress and bankruptcy. Thus, a risk-return trade-off is encapsulated in the capital structure decisions. Though devising an optimal capital structure is the main goal of a finance manager, in practice, the optimal capital structure is a misnomer. There is a serious debate on this issue ever since the incubation of the concept of capital structure. In common consensus, capital structure varies from firm to firm and various micro and macro factors play significant role in shaping a suitable capital structure which uplifts the profitability of the firm. It was also observed that the factors which play decisive role in determining the capital structure of an industry or firm may be proved to play dormant role while devising the capital structure of another industry or firm. Thus, there exists a puzzle in the capital structure theory which the financial analysts and researchers are continuously trying to cut the gordian knot.

REVIEW OF LITERATURE

The debate on capital structure initiated with the M-M Irrelevance Theory which throws light on the fact that firm's performance is indifferent to their capital structure. In 1963, Modigliani and Miller have reversed their views and recognized the positive relation between these two factors. Myers (1984) has given rise to a pertinent question "*How do firms choose their capital structure*?" and its ensuing answer "*We don't know*" has, perhaps, prompted contentious, arguable, and riddling subjects in corporate management theory. Trade-off theory propounded by Kraus and Litzenberger opined that a firm's borrowing is limited to the extent where the tax benefit from debt is exactly equivalent to the cost of distress. This theory suggested that there could have finest capital structure by a cost-benefit adjustment in order to choose the quantity of debt and equity financing. This theory has some important inferences which states that firms having relatively safer tangible assets are less susceptible to financial bankruptcy and are likely to borrow more and vice-versa and Firms with more non-debt tax credit will borrow less and vice-versa. Other prominent studies e.g., Bradley et. al. (1984) and Long and Malits (1985) inferred that durable assets, operating risk, NDTS, Growth and Firm size have positive correlation with leverage as a proxy of capital structure. However, insolvency probability, profit viability and exclusivity of the product have negative correlation with leverage. Their findings did not support impact on varied debt ratios arising from non-debt tax shields, variability or growth prospect. Harish and Raviv (1991) observed positive association between leverage and explanatory variables viz., tangibles, non-debt tax shield and firm size, while it poses inverse relation with precariousness/ volatility, advertising or promotional expenditure, profitability and distinctiveness of the product. Rajan and Zingales (1995) argued that larger entities are inclined to be extra-differentiated and are not vulnerable to financial distress. Given this stability, large firms may be in a position to assume more debt.

OBJECTIVES OF THE STUDY

The objectives of the present study are two-fold. These are:

i. To identify the determining factors of capital structure companies enlisted in NSE over the period from 2012 to 2021

ii. To revisit the existing capital structure theories with the help of the inferences drawn from this study.

DATA AND METHODOLOGY

The current study is purely empirical which is entirely reliant on secondary data. The data set encompasses audited and published standalone income statements and annual financial statements which have been gathered from CMIE Prowess IQ database. The sample data set has been gathered from the 50 NSE-listed companies selected on the basis of multistage sampling (multistage elimination) technique from top 100 NSE-listed companies (based on market capitalisation on 31st March 2021) in India for the period of 10 years ranging from 2012 to 2021. For the purpose of analysis of data, the statistical software STATA version 12 has been applied.

TABLE 1: DESCRIPTION OF VARIABLES USED IN THE STUDY

Variables		Measurement
Name	***Type***	
Leverage	Outcome	Total debt / Total assets
Firm size	Predictor	Natural logarithm of Turnover
Tangibility	Predictor	Non-current assets / Total assets
Liquidity	Predictor	Current assets / Current liabilities
Profitability	Predictor	Profit before interest & tax / Total assets
Non-debt tax shield (NDTS)	Predictor	Depreciation / Total assets
Operating ability	Predictor	Operating income / Net fixed assets

Source: Compiled by the researchers

Specification of Econometric Model

$$\text{Leverage}_{it} = \alpha + \beta_1 \text{Firm size}_{it} + \beta_2 \text{Tangibility}_{it} + \beta_3 \text{Liquidity}_{it} + \beta_4 \text{Profitability}_{it} + \beta_5 \text{NDTS}_{it} + \beta_6 \text{Operating Ability}_{it} + \varepsilon_{it}$$

[For all i= 1, 2………50; t= 2012, 2013………2021; α = The intercept or constant term; β_1 …... β_6 = The regression coefficients and ε = The residual error term]

RESULTS AND DISCUSSIONS

The study first employed the pooled OLS model and then F-test is applied to decide whether a Pooled Ordinary Least Square regression or panel setting is appropriate assuming the null hypothesis that there are no firm-specific effects. The resultant P-value is less than 0.05 and hence the study could hardly accept the null hypothesis. Since the panel setting is not considered under OLS regression, the number of observations become (50 X 10) = 500.

Then the study employed the Random effect GLS regression taking into consideration the dataset to be panel with 50 firms for 10 years (2012-2021). Since, Probability (Chi2) < 0.05, the GLS model cannot be rejected. After that the study applied fixed effect regression model. Since Probability (F) < 0.05, the fixed effect model also fits the data. Now in order to compare between fixed effect panel model and random effect with GLS, the study further applied Hausmann test. Since, Probability (Chi2) < 0.05, the test rejects the random effect model and consequently favours of Panel Fixed Effect Model. After declaring the data to be a panel, summary statistics has been considered which accounts for both the cross sectional and time series properties of data relevant to the selected variables. It displays the average value of leverage 0.41 which suggests that the debt-equity ratio in these firms is around 40:60. So the firms are inclined towards equity financing during the period under study. The standard deviation of leverage is 0.19 which oscillates between the minimum of 0.07 and maximum of 1.34. Among the explanatory variables, firm size and operating ability show the higher mean of 8.62 and 3.49 respectively whereas, Profitability and Operating Ability exhibits the higher dispersion.

Diagnostic Tests and Regression Analysis

After Panel Declaration, some diagnostic tests have been conducted for rectification of the bias. First, Breusch-Pagan LM test of independence has been performed and the resultant probability < 0.05, indicated the existence of the problem of cross-sectional dependence. Then the study conducted Wooldridge test of autocorrelation. The resultant Probability (F) < 0.05 guarantees the existence of serial correlation or first order autocorrelation. It is to be pondered that, though this study concluded that there is autocorrelation, it is not a major issue since this study considers a very small panel of only 10 years. Normally, serial correlation test is applied to macro panels. After that, Modified Wald test for groupwise heteroskedasticity has been performed. Since, Probability (Chi2) < 0.05, the study hardly can accept the assumptions of homoskedasticity. Finally, the study applied Harris-Tzavalis unit root test. Here, P < 0.05 shows that the dependent variable is stationary at level signifying no unit root problem.

After conducting all the diagnostic tests, finally the study applied the Robust Estimation technique in order to rectify the estimation bias and the result has been demonstrated below.

TABLE 2: RESULT OF ROBUST FIXED EFFECT (WITHIN) REGRESSION

<table>
<tr><td colspan="5">Number of observations</td><td colspan="2">500</td></tr>
<tr><td colspan="2">Group variable</td><td>Company</td><td colspan="2">Number of groups</td><td colspan="2">50</td></tr>
<tr><td rowspan="3">R-squared:</td><td>Within</td><td>0.0776</td><td rowspan="3">Observation per group:</td><td>Minimum</td><td colspan="2">10</td></tr>
<tr><td>Between</td><td>0.3159</td><td>Average</td><td colspan="2">10.0</td></tr>
<tr><td>Overall</td><td>0.2333</td><td>Maximum</td><td colspan="2">10</td></tr>
<tr><td colspan="5">F (6,49)</td><td colspan="2">19.85</td></tr>
<tr><td colspan="5">Correlation (u_i, Xb)</td><td colspan="2">0.2247</td></tr>
<tr><td colspan="5">Probability > F</td><td colspan="2">0.0100</td></tr>
<tr><td colspan="7">(Standard Error adjusted for 50 clusters in company)</td></tr>
<tr><th>Leverage</th><th>Coefficient</th><th>Robust Standard Error</th><th>T</th><th>P>|t|</th><th colspan="2">[95% Confidence Interval]</th></tr>
<tr><td>Tangibility</td><td>-.2830229</td><td>.1322743</td><td>-2.14</td><td>0.037</td><td>-.5488382</td><td>-.0172077</td></tr>
<tr><td>Liquidity</td><td>-.0254976</td><td>.011713</td><td>-2.18</td><td>0.034</td><td>-.0490357</td><td>-.0019595</td></tr>
<tr><td>Profitability</td><td>-.0014451</td><td>.0010806</td><td>-1.34</td><td>0.187</td><td>-.0036166</td><td>.0007264</td></tr>
<tr><td>NDTS</td><td>.1918637</td><td>.1217427</td><td>1.58</td><td>0.121</td><td>-.0527875</td><td>.4365149</td></tr>
<tr><td>Operating Ability</td><td>-.0107392</td><td>.0054566</td><td>-1.97</td><td>0.055</td><td>-.0217047</td><td>.0002262</td></tr>
<tr><td>Size</td><td>-.0106043</td><td>.0249725</td><td>-0.42</td><td>0.673</td><td>-.0607884</td><td>.0395797</td></tr>
<tr><td>Constant</td><td>.7039504</td><td>.2465896</td><td>2.85</td><td>0.006</td><td>.20841</td><td>1.199491</td></tr>
</table>

sigma_u	.13567712	
sigma_e	.10832111	
rho	.61072383	

Source: Authors' calculation based on sample data

It is seen from the above table that p-value is less than 0.05 that signifies that the model is statistically viable. It has been shown that tangibility, liquidity and operating ability have negative significant impact on firm leverage but, NDTS exerts positive influence on leverage at 1 per cent level of significance. Moreover, it was found the overall R-square value to be 0.23. it suggests that about 23 per cent of the leverage variation is being narrated by the variables under study. The strongest variables among the six explanatory variables are tangibility and NDTS with coefficient of -0.283 and 0.192 respectively and profitability exhibits the minimum value of -0.001. Therefore, the leverage of the firms is mainly dictated by tangibility and NDTS with minimal control of profitability.

CONCLUSION

In an attempt to riddle-out the above paradox, it was observed that two variables namely asset tangibility and liquidity are statistically significant and have influence over the decision regarding leverage profiling of these firms. It has also been found that NDTS has positive impact on leverage. It was observed that the considered variables are in a position to explain around 23 per cent of the total variability in the leverage profile of the firms. It indicates that a large chunk of other qualitative firm-specific factors as well as a plethora of macroeconomic variables like GDP, inflation, recession, legal framework, political environment, corporate governance etc. are controlling the leverage decision of the firms. It should also to be noted here that tangibility and NDTS play vital role in shaping the debt-equity structure of these entities. The present study analysed the choice of capital structure in the light of three prominent theories namely, Pecking order theory, Agency cost theory and Trade-off theory. From the findings, it was seen that, tangibility and liquidity have negative significant link with leverage which is congruent with the Pecking Order theory. Profitability also validates the Pecking Order theory by having unfavourable influence on capital structure. This relationship is also consistent with other empirical research conducted by Jensen and Meckling (1976); Rajan and Zingales (1995) and many others. Among the predictor variables, profitability has the lowest negative impact on leverage as profitable firms are less tilted towards debt financing as anticipated by Pecking Order theory. NDTS exhibits positive connection with leverage which contrasts the inferences of Trade-off theory prescribing firms with more NDTS tend to utilize less debt and vice-versa. The firms under study prefer internal financing option to external financing. This phenomenon also contradicts both agency cost theory as well as Trade-off theory. Thus, the result is convincingly in favour of Pecking Order theory and other two theories cannot explain the leverage profile of these firms. MA

The capital structure determines combined risk and cost of capital of a firm

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CORPORATE GOVERNANCE CHARACTERISTICS AND INTANGIBLE ASSET DISCLOSURE: A STUDY ON SELECTED COMPANIES

Abstract

This study investigates the impact of corporate governance features (size of the Board, independency of the Board, frequency of meetings, gender diversity) on intangible asset disclosure in the top Indian automobile sector companies listed under the NSE 500. The results demonstrate that the overall impact of the corporate governance attributes on intangible asset disclosure is significant and positive. Nevertheless, at the individual level, board size and firm size positively and significantly influence intangible asset disclosure. Further, the independent directors and Board meetings negatively and significantly impact intangible asset disclosure.

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INTRODUCTION

Recently, due to the failure of large corporates worldwide, the codes of conduct and governance practices of companies have received enormous attention from policymakers, investors, academicians as well as researchers. In general, the Board of Directors is charged with the responsibility of governance and resource allocation, which is performed by them through supervision of managerial decision making as well as judiciously accruing significant assets for the organization (*Shahzad et al.2019, Mariano and Walter, 2015 Nadeem et al., 2019;*). Today's competitive business environment, is dominated because of knowledge-based economies (*Mariano and Walter, 2015, Tejedo and Araujo, 2016 Bontis and Fitz-enz, 2002, Olander et al. 2015*) as a result the corporates must aim at making adequate disclosures regarding their intangibles, to win the confidence of the stakeholders in the market and enjoy a competitive edge (*Tejedo and Araujo, 2016)*. International Accounting Standards (IAS, 38) allow companies to identify and declare intangible assets in their financial statements for the benefit of accounting users. According to *Patel and Narain* (2009), companies with greater intangible assets outperform during the financial crisis. A strong governance system with a large Board, consisting of a greater number of independent and women directors, conducting meetings on a regular basis might establish and promote an adequate disclosure mechanism.

This study examines the potential elements of corporate governance (size of the Board, independency of the Board, Female representation, meeting frequency) that might affect corporations in India to disclose intangible assets adequately in their annual reports.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Some Board qualities and the extent of transparency have an important influence in reducing asymmetry in company annual reports (*Cormier et al., 2010*). The objective of this study is to discover the relationship between Board-specific features such as size of the Board, independency of Board, Board female representation, meeting frequency, and intangible asset disclosure.

Expanding the number of members of the Board improves the Board's ability to oversee the management actions and enrich company's disclosure of details (*Gandia, 2008*). *Lins and Lemmon, 2003* argued a solid governance system backed by several independent directors is crucial in monitoring and managing agency concerns that might harm the firm's intangible assets. These monitoring methods are based on the Board of directors, which oversees scrutinising management in order to protect the interests of shareholders. (*Gandia, 2008*). Having more independent members on the Board, according to agency theory, helps organisations to collect and convey more data. (Cheng *and Courtenay, 2006; Patteli and Principe, 2007, Donnelly and Mulcahy, 2008)*.

Regular meetings provide tight oversight by the directors over business operations, which enhances the company's decision-making, performance, and transparency standards

Disclosures and Board size have a substantial beneficial relationship, according to *Cheng and Courtenay (2006*) and *Adams and Hossain* (*1998*). In contrast, *Abdelsalam and Street (2007)* and *Eng and Mak (2003)* assert the relationship to be negative. According to research, the percentage of directors who are independent seems to have no significant positive link with the level of voluntary disclosure. *(Haniffa and Cooke, 2002; Ho and Wong, 2001). Eng and Mak, (2003),* found that a higher number of independent directors reduces voluntary disclosure.

On the other hand, women offer different attributes to the Board, which makes them more effective in monitoring managerial decision-making. In their study, *Jamali et al. (2007)* revealed that gender diversity in the Board leads to higher performance and disclosure. Women, according to *Sirinidhiet et al. (2011),* make more conscientious decisions, tolerate less unethical behaviour and take less risks. As a result, they may be able to monitor managers' decisions more closely, detecting all kinds of anomalies in management reporting methods. Women on Boards, according to *Nielsen and Huse (2010),* can help to prevent conflict and assure the high quality of Board development activities. Gender diversity, according to *Bueno et al. (2018),* enhances voluntary communication. Similarly, *Nadeem et al. (2019)* discovered a substantial impact of female participation on the Boards of 500 UK-listed companies on intellectual capital disclosure.

Board meetings are seen as a primary parameter of Board of Directors' capacity to exercise influence over senior leadership and defend owners' interests (*Ntim et al.,2017*). Furthermore, regular meetings provide tight oversight by the directors over business operations, which enhances the company's decision-making, performance, and transparency standards (*Mangena and Tauringana, 2008 and Vafeas* 2003). Several studies indicate that frequent meetings may result in poor performance since most meetings are dominated by procedures, particularly for independent directors who will spend the most of their time trying to know the business problems (*Vafeas, 1999).* The following null hypotheses are constructed based on prior literature:

H_{01} Goodwill is not influenced by size of the Board, independency of Board, female representation in Board, and meeting frequency

H_{02} Other intangible assets are not influenced by the size of the Board, independency of Board, female representation in Board, and frequency of meetings

RESEARCH METHODOLOGY

Sample Size and Design

The study consists of 27 automobile sector companies listed under NSE 500. However, seven companies are excluded due to a lack of information. Finally, the study considered 20 automobile companies listed under the NSE 500 group.

Sample Period

The study period is 10 years, i.e., from 2013 to 2022, to measure the association between corporate governance attributes and intangible asset disclosure.

Variables for the study

TABLE 1: MEASUREMENT OF VARIABLES

	Variables	*Symbol*	*Definition/Proxy*
Independent variables	Board size	BS	The ratio of current directors to the maximum number of directors on a Board.
	Independent Director	ID	The percentage of independent Directors to total Board Directors
	Women Director	WD	The share of female directors is measured in relation to the total number of directors
	Meetings	MT	The total of Board meetings held in a year in contrast to the maximum number of Board meetings
Control variable	Firm Size	F.S.	Total asset natural logarithms
Dummy variable	Leverage	LEV	Firms with more than the standard norm of leverage 2:1 is assigned 1 or else 0.
Dependent variables	Goodwill	GL	Percentage of goodwill disclosed in financial al statements to total asset
	Other Intangible Assets	OIA	Percentage of other intangible assets disclosed in financial statements to total asset

Source: Self-compiled

Econometric Model

$GL_{it} = \beta_0 + \beta_1 BS_{it} + \beta_2 ID_{it} + \beta_3 WD_{it} + \beta_4 MT_{it} + \beta_5 FS_{it} + \beta_6 DLEV_{it} + \varepsilon_{it}$ ---------------- Model 1

$OIA_{it} = \beta_0 + \beta_1 BS_{it} + \beta_2 ID_{it} + \beta_3 WD_{it} + \beta_4 MT_{it} + \beta_5 FS_{it} + \beta_6 DLEV_{it} + \varepsilon_{it}$ ---------------- Model 2

Where, β_0= Intercept for the regression model

$\beta_1 - \beta_6$= slopes of independent variables

i = Number of companies, i.e., 20 companies

t = Time Period of the Study, i.e., from 2013-2022

ε_{it} = *Error term* of 20 companies over 10 years period, i.e., from 2013-2022

Data Analysis Techniques

Linearity test, Normality test, Multicollinearity test, Heteroskedasticity test, Autocorrelation test, Hausman test, and Panel regression model are used to analyse the data.

DATA ANALYSIS, RESULTS & DISCUSSIONS

TABLE 2: CLASSICAL ASSUMPTION TESTS

	Linearity Test	Normality test	Heteroskedasticity test	Autocorrelation Test
Dependent Variables	*P-value*	*P-value*	*P-value*	*D -W Statistics*
Goodwill	0.1866	0.4437	0.2385	1.8436
Other intangible assets	0.1599	0.5775	0.1356	1.9418

Source: Self-complied

TABLE 3: MULTICOLLINEARITY TEST

Variables	VIF
BS	3.546
ID	3.344
WD	1.177
MT	1.152
FS	1.181
LEV	1.037

Source: Self-complied

Tables 2 and 3 exhibit all the required assumptions of linearity, normality (*Jarque-Bera* Test), heteroscedasticity (*White's* test), autocorrelation (*Durbin Watson Statistics),* multicollinearity are satisfied before performing the panel regression analysis.

TABLE 4: HAUSMAN TEST

Variables	P- value
Goodwill (G.L.)	0.0111
Other Intangible Assets (OIA)	0.0391

Source: Self-compiled

H_0 = Random effect model is adequate.

H_1 = Fixed effect model is suitable.

Table 4 shows that the p–value of goodwill and other intangible assets is less than the acceptable benchmark of 0.05 (*Wooldridge, 2013).* We cannot, therefore accept the null hypothesis. As a result, the alternative hypothesis is accepted, implying that the fixed effect model is acceptable.

TABLE 5: FIXED EFFECT MODEL ESTIMATION

	Dependent Variable	
	GL	**OIA**
	Co-efficient	**Co-efficient**
Intercept	−1.71094* (0.0975)	−3.53011** (0.0462)
BS	3.36955*** (0.0000)	3.58753*** (0.0088)
ID	−3.07157** (0.0132)	−3.81037* (0.0628)
WD	−0.755346 (0.6155)	2.91273 (0.2450)
MT	−0.304094** (0.0317)	−0.29523 (0.2027)
FS	0.530745*** (0.0000)	0.71975*** (0.0000)
D_LEV	0.380791 (0.1431)	−0.07570 (0.8597)
R^2	0.9162	0.8973
Prob (F- Statistic)	0.0000	0.0000
Observation	200	200
Durbin-Watson	1.8436	1.9418

(Source: Self- Compiled)

Note

P-values are given in brackets. The symbols *, **, and *** imply significance levels of 10, 5, and 1 per cent, respectively.

Table 5 shows the F test results, which simultaneously reveal that Board size, independent director, women director, Board meetings, firm size, and leverage significantly influence goodwill and other intangible asset.

Based on the findings of the panel regression study, the following econometric model 1 was developed:

$$GL_{it} = -3.5301 + 3.3695\ BS_{it} - 3.0715\ ID_{it} - 0.7553\ WD_{it} - 0.3040\ MT_{it} + 0.5307\ FS_{it} + 0.4807\ DLEV_{it} + \boldsymbol{\varepsilon}_{it}$$

The above equation shows that the value of goodwill is equal to -1.7109, keeping all other variables constant. The corporate governance attributes significantly influence the goodwill except for women director. Here, Board size shows a positive impact of 3.3695 on goodwill, which means a 1 unit change in Board size leads to a 3.3695 unit change in goodwill; thus, larger the Board size, the higher the goodwill. Independent directors and Board meetings influence goodwill negatively and significantly. The control variable firm size affects goodwill at a 1 per cent significance level. The dummy variable leverage does not exhibit any association with goodwill. Here, the R^2 is 91.62 per cent. It shows that the model explains to the extent of 91.62 per cent by the four explanatory variables of corporate governance, one control, and a dummy variable.

$$OIA_{it} = -3.5301 + 3.5875\ BS_{it} - 3.8103\ ID_{it} + 2.9127\ WD_{it} - 0.2952\ MT_{it} + 0.7197\ FS_{it} - 0.0757\ DLEV_{it} + \boldsymbol{\varepsilon}_{it}$$

Model 2 shows that the value of other intangible assets is equal to -3.5301, keeping all other variables constant. The Board size positively and significantly impacts other intangible assets while independent director influences negatively. The women director and Board meetings do not significantly impact other intangible assets. The control variable firm size affects the other intangible asset positively and significantly. The R2 indicates the model's explanatory strength. According to the given results, all variables impact the other intangible asset by up to 89.73%.

FINDINGS

- The goodwill of the sample automobile sector companies is significantly influenced by the Board size, independent directors, board meetings, and firm size.
- Board size, independent directors, and firm size significantly influence other intangible assets.
- The presence of women director does not significantly impact the corporate governance attributes of the sample automobile sector companies

of India.

- The leverage position of the sample companies does not have any role in improving the intangible asset disclosure.

CONCLUSION

In a knowledge-based economy, intellectual capital is a significant source of wealth generation. Intangible assets, like physical assets, are thought to be a source of competitive advantage. The current research examines the effect of corporate governance traits (size of Board, independency of Board, female participation, and meeting frequency) on intangible asset disclosure (goodwill and other intangible assets) of leading Indian automobile industry businesses listed on the NSE 500 during a ten-year period (2013 to 2022). According to the findings, there is a significant positive relationship between Board size, and intangible asset disclosure. Larger Boards can use their expertise and skills to improve efficiency, which is in line with the concept of resource dependency and previous research. (*Ho* and *Williams, 2003, Musalli* and *Ismail, 2012; Adeabah et al 2003)*

Further, independent directors and Board meetings negatively and significantly impact intangible asset disclosure. These findings contrast the findings of *Dahya et al., (2008), Kor and Sundaramurthy,* (2009) which might be owing to various conditions in which those studies were done, such as in industrialised nations versus India, which is a developing country. Women directors and leverage have no significant influence on intangible asset disclosure. This finding is inconsistent with the conclusions of *Broadbridge et al., (2006) Campbell and Mínguez-Vera, (2008;),* who argued that gender diversity on Board significantly impacts creativity and innovation in the products and services offered by firms. Due to non-availability of data, this study has considered 20 automobile firms to establish the association. Further, future researchers may consider other proxies of the intangible asset, corporate governance attributes, and control variables to extend this study. MA

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MEASURING COST EFFICIENCY OF INDIAN LIFE INSURANCE COMPANIES DURING THE POST-LIBERALISATION ERA: A FARRELL APPROACH

Abstract

This article estimates the cost efficiencies of all Indian life insurance companies during the post-liberalisation era based on Farrell (1957) approach. Data on input and output variables and input price variables for all 24 companies have been collected from IRDA's handbook on Indian insurance statistics. It is seen that the Indian life insurance sector is 63.5 per cent cost efficient. While LIC, Edelweiss Tokio, IndiaFirst, SBI Life, Canara HSBC OBC and HDFC Life consistently projected high cost efficiency, Future Generali, Bajaj Allianz, Aviva Life, Bharti AXA, Shriram and Reliance Nippon Life failed to achieve cost efficient status.

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INTRODUCTION

Insurance sector being a key element of Indian financial system has always been given emphasis in Government's policy initiatives. Early 1990s economic reforms also led to liberalisation of the insurance industry. With a view to lay a roadmap for the insurance sector reforms, a Committee under the chairmanship of Mr. R.N. Malhotra was constituted by the Central Government in the year 1993 *(Saha, 2021)*. In its 1994 report, the Committee advocated for the gradual liberalisation of the insurance market in India; separation of life insurance businesses from their non-life counterparts and implementation of prudential solvency based insurance sector regulations *(Malhotra, 1994)*. With a view to establishing the required regulatory framework to give effect to these changes, the Insurance Regulatory and Development Authority (IRDA) Act, 1999 was enacted. Simultaneously, a new regulatory body known as the Insurance Regulatory and Development Authority of India (IRDAI) was established to monitor and control the insurance market *(Saha and Roy, 2021)*.

Out of all the insurance reforms that revolutionised the Indian life insurance space, permitting private players and allowing foreign direct investment (FDI) in the sector was perhaps the most significant one. Since 2001, new private life insurance companies have been entering into the market breaking the 44-year monopoly of the Life Insurance Corporation of India Ltd. (LIC) *(Acharyya and Parida, 2017)*. In this backdrop, the present article is an attempt to find out the relative cost efficiencies of all the 24 life insurance companies during the post-reform era using a frontier model offered by *Farrell (1957)*.

REVIEW OF LITERATURE

Past Studies

Efficiency, as discussed in the past studies explains how the resources are utilized by a decision making unit (DMU) *(Cooper et al. 2006)*. Cost efficiency is an important measure for evaluating cost effectiveness of the companies under allocative models. A few studies on cost efficiency are worth mentioning in this respect. *Cummins, et al. (1999)* examined the relationship between mergers and acquisitions (M&A), efficiency and scale economies in the United States (US) life insurance companies. They estimated cost and revenue efficiencies during the period 1988-95 using data envelopment analysis (DEA). They observed that merged firms attain better efficiency as compared to others that did not go for M&A. *Tone and Sahoo (2005)* applied a new variant of DEA to evaluate efficiency of Life Insurance Corporation of India (LIC). A significant heterogeneity in the cost efficiency of LIC was observed over a period of 19 years. *Cummins, et al. (2010)* investigated into the economies of scope in the US insurance industry during the period from 1993 to 2006. They estimated cost, revenue and profit efficiencies of the companies using DEA and regressed them against specific control variables and an indicator for strategic focus. Life insurers were subject to cost and revenue diseconomies. Using a distinct set of manufacturing possibilities as its foundation, *Tone (2002)* offered a new way to quantify cost effectiveness. The investigation discovered that Tone's measure collected more accurate cost efficiency measurements than Farrell's measure. The findings of the Tobit regression analysis in *Sinha (2013)* showed that the relationship between cost effectiveness and product mix was positive and that relationship between cost effectiveness and channel mix was negative (both Farrell and Tone measure).

Research Gap

The relevant literature reviewed so far reveals that cost efficiency is a significant measure to analyse the cost effectiveness of a company, especially when it is involved in the financial services. Most of the studies reviewed so far have estimated cost efficiencies of the life insurance companies using Farrell's and Tone's approach. While a few authors have contributed a few papers on the cost efficiency of LIC or select other private life insurers for a brief period, trends in the cost efficiency of all life insurers during the entire post-reforms era perhaps have not been analysed yet. Keeping this gap in view, the current study is made to estimate the cost efficiency of all the 24 life insurance companies currently operating in India during the entire post-reforms era using Farrell's approach.

RESEARCH OBJECTIVES

The major objectives of the present study are to:

i. estimate the cost efficiency of each life insurance company operating in India in each year during post-reform era;

ii. rank the life insurance companies based on their average cost efficiency scores and volatility in the cost efficiency scores during the post-reforms era; and

iii. identify the trend of average cost efficiency and volatility in cost efficiency scores of the life insurance industry during the post-reforms era.

RESEARCH METHODS

Study Units and Period

Cost efficiency of all the 24 life insurance companies, considered as decision making units (DMUs) is measured in each year following the economic liberalisation in this sector (2001-02 to 2020-21).

Model

The cost efficiency model was first discussed in *Farrell (1957)* and was later explained in *Färe et al. (1985)*, and was extended in *Tone (2002)*. The purpose of this model was to adjust the input combinations and production costs to a level, at which it produces an output with maximum cost efficiency.

Färe et al. (1985) which an extension of *Farrell (1957)* proposed a model for computing cost efficiency which required information about output, input and input prices, so as to understand the cost efficiency of a DMU. The cost efficiency model as proposed by *Färe et al. (1985)* is:

$$
\begin{aligned}
&\Rightarrow \; min && \sum_{i=1}^{m} p_i^0 \tilde{x}_{i0} \\
&\Rightarrow \; subject\ to && \sum_{j=1}^{n} \lambda_i x_{ij} - \tilde{x}_{i0} \le 0 \quad i = 1, \ldots, m \qquad \ldots\ldots(1) \\
& && \sum_{j=1}^{n} \lambda_j y_{rj} - y_{r0} \ge 0 \quad r = 1, \ldots, s \\
& && \lambda_j \ge 0 \quad j = 1, \ldots, n
\end{aligned}
$$

Where, $X = (x_1 \ldots x_n)$ and $Y = (y_1 \ldots y_n)$, and λ be a unit row vector

The production possibility set be defined as –

$$\Rightarrow \quad P = \{(x, y) | x \geq X\lambda, y \leq Y\lambda, \lambda \geq 0\} \qquad \text{..} (2)$$

The model (1) was used to compute the minimum cost, which was the outcome of the optimization problem. Thereafter, the minimum cost was used to calculate the cost efficiency as follows –

$$\Rightarrow \quad \text{Cost Efficiency} = \frac{\sum_{i=1}^{m} p_i^0 x_{i0}^*}{\sum_{i=1}^{m} p_i x_i} \qquad \text{..} (3)$$

If the cost efficiency score is equal to 1, then the DMU is cost efficient and if it is less than 1, then it is cost inefficient. However, the model was developed for one input and one output. One limitation of the model is that, if multiple input prices were to be taken, the cost efficiency of the DMUs might be same. This is possible only when constant input prices are considered for all DMUs.

Selection of Input and Output Variables

The input and output variables selected for the study was made following the approaches in *Eling and Luhnen (2010); Leverty and Grace (2010) and Sinha (2021)*.

TABLE 1. INPUT, OUTPUT AND INPUT PRICE VARIABLES

Input (I)	Input Price (C)	Output (O)
Number of offices	Operating Expenses per office	Net Premium Income
Claims incurred	Unity	Policyholders' investments

Source: Sinha (2021)

Data Collection and Analysis

Data on the input and output variables for all the 24 life insurance companies during the period of 2001-02 to 2020-21 has been collected from the IRDAI Handbook on Indian Insurance Statistics. Estimation of cost efficiency score is done using DEA Frontier. Mean and standard deviation (SD) of efficiency scores have been computed using MS Excel.

RESULTS AND DISCUSSION

Addressing Objective-1: Estimating Cost Efficiency Scores of Individual Companies

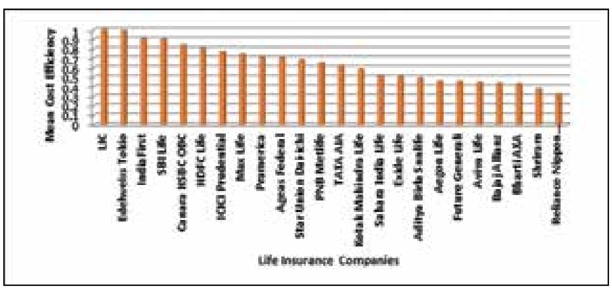
Cost efficiency (CE) scores are estimated based on *Färe et al. (1985)* which is an extension of *Farrell (1957)* model. During the entire post-liberalisation period, life insurance industry is 63.5 per cent cost efficient. It indicates that there is still room for reduction in input costs to the tune of 37.5 per cent. However, CE is not significantly volatile (11.4 per cent) during the period.

LIC was cost efficient (score=1) during the entire study period. SBI Life was also cost efficient for almost 11 years. In the other years too, it was marginally cost inefficient. Other companies, such as Edelweiss Tokio, IndiaFirst, Canara HSBC OBC, HDFC Life, ICICI Prudential, Max Life Pramerica and Ageas Federal were also efficient for atleast 3 or more years during the study period. Aegon Life, Future Generali, Bharti AXA, Shriram, Pramerica and Ageas Federal might have been the most affected ones by the GFC, as their CEs went down drastically in 2009-10. However, even during this period, LIC, IndiaFirst, SBI Life and Star Union Dai-Ichi reported comparatively better CE scores. On the other hand, Kotak Mahindra Life, Exide Life, Aditya Birla Sunlife, Future Generali, Bajaj Allianz, Aviva Life, Bharti AXA and Reliance Nippon Life had never become cost efficient during the entire period. Out of them Aviva Life, Bajaj Allianz, Reliance Nippon Life and Shriram projected poor CE in most of the years during the study period. Star Union Dai-Ichi, PNB Metlife, and TATA AIA projected average CE during the entire period. In the year 2021, Reliance Nippon projected least CE scores.

Addressing Objective-2: Ranking Life Insurance Companies based on Cost Efficiency

Based on mean CE scores, the life insurance companies have been ranked. LIC being the market leader tops the list. However, comparatively smaller private companies, such as Edelweiss Tokio, IndiaFirst, SBI Life, Canara HSBC OBC and HDFC Life also projected high CE scores with lower volatility in their efficiency scores. Edelweiss Tokio had a very less S.D. (0.026) during the period. Therefore, it seems to be the most cost-efficient private life insurance company.

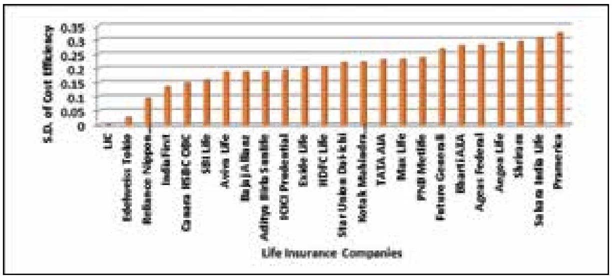
CHART 1: RANKING LIFE INSURANCE COMPANIES BASED ON MEAN COST EFFICIENCY



(Source: Compilation of secondary data using DEA Frontier)

The worst companies based on the mean CE scores were Future Generali, Bajaj Allianz, Aviva Life, Bharti AXA, Shriram and Reliance Nippon Life. Pramerica, Sahara India Life, Ageas Federal were also suffering from fluctuations in the CE scores. The worst company in terms of CE seems to be Reliance Nippon Life, as it had the lowest S.D. in its CE score in this group. These companies require attention in improving their CE *(Chart 1 and 2)*.

CHART 2: RANKING LIFE INSURANCE COMPANIES BASED ON VOLATILITY IN COST EFFICIENCY

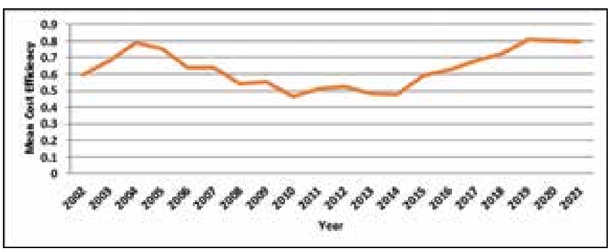


(Source: Compilation of secondary data using DEA Frontier)

Addressing Objective-3: Identifying the Trend in Cost Efficiency of the Life Insurance Sector

The mean CE during the period exhibits almost a flatter trend. The mean CE continued to drop from 2006-07 reaching its minimum (0.467) in 2009-10. Global financial crisis (GFC) could perhaps be the reason behind such drop.

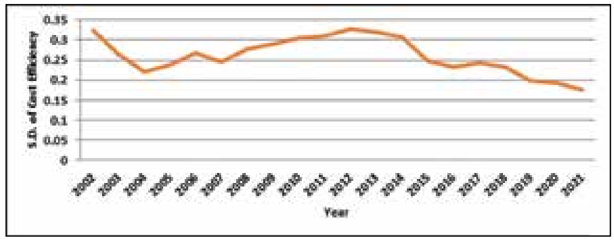
CHART 3: TREND OF MEAN COST EFFICIENCY DURING THE STUDY PERIOD



(Source: Compilation of secondary data using DEA Frontier)

While a lot of regulatory intervention post-GFC led to improvement in the CE scores, a slight fall in the efficiency score was observed in the years 2011-12 and 2012-13, perhaps due to the major sell-offs in the market. However, subsequent budget announcement with respect to increase in foreign direct investment (FDI) limit allowed the industry to thrive which eventually had a positive impact on their cost efficiency score as well (Chart 3).

CHART 4: TREND OF VOLATILITY OF EFFICIENCY DURING THE STUDY PERIOD



(Source: Compilation of secondary data using DEA Frontier)

Inter-company fluctuations in CE scores started to rise from 2007 and reached its maximum in 2013. GFC and its subsequent sell-offs perhaps made the fluctuations more acute. However, following the higher FDI announcement, this internal volatility started to stabilize and recently it was found to be only 17.6 per cent (*Chart 4)*.

CONCLUSION AND POLICY IMPLICATIONS

It has been observed that the mean cost efficiency of the sector has declined during global financial crisis and subsequent sell-offs in the market. However, life insurance market flourished in the year 2015-16 when FDI cap into the sector became high. A company-specific analysis also demonstrates that the LIC has noticeably maintained its cost efficient status during the study period. However, SBI Life or Edelweiss Tokio with their high mean cost efficiency and low volatility have marked their presence just after the LIC as the most cost-effective private firms. The outcome of the study also has important operational ramification in identifying companies with lower cost efficiency, such as Reliance Nippon, Future Generali, Bajaj Alliance, etc.

From the policy point of view, SBI Life or Edelweiss Tokio may consider reducing their input prices to some extent to achieve cost efficient status in the long run. However, as far as Reliance Nippon, Future Generali, Bajaj Alliance, etc. are concerned, the managements may consider complete overhaul of the input costs or consider closing down some of the units. Since economic turbulence or significant policy interventions noticeably impacted

Out of all the insurance reforms that revolutionised the Indian life insurance space, permitting private players and allowing foreign direct investment (FDI) in the sector was perhaps the most significant one

the cost efficiency of the life insurance companies, the companies should try to forecast such events and prepare them for any sort of uncertainties by reducing wasteful costs. MA

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IS THE NEW TAX REGIME BETTER THAN THE OLD FOR SALARIED INDIVIDUALS? (WITH SPECIAL REFERENCE TO UNION BUDGET 2023-24)

Abstract

Salaried individuals are generally baffled by the new and the old tax regimes, especially after the Union Budget 2023-24. This Budget has discouraged the individuals who believe in savings and focused more on section 115BAC amendments to captivate individuals by its exemption limit of Rs. 7,00,000 through section 87A rebate and low rate of tax. It doesn't mean that old tax regime will be discarded by individuals.

This article demonstrates how the old tax regime is still a better option for individuals under the umbrella of different kinds of deductions and exemptions. A comparative calculation has been computed in this article to opt for appropriate tax regime by individuals under various circumstances effectively and efficiently.

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INTRODUCTION

The Union Budget 2023-24 has attracted many salaried taxpayers to opt the new tax regime if their gross salary is up to Rs. 7,00,000. No doubt, section 115BAC would be the best option for them to avail and make their tax liability nil. The Union Minister for Finance and Corporate Affairs, Smt.Nirmala Sitharaman has focused more on middle-class people in her budget and notified amendments pertaining to section 87A and current tax slabs. Seemingly, it can be concluded that even where the salary income is up to Rs. 8,00,000, the tax liability may be nil with the help of standard deduction and the deduction under section 80CCD(2). This article highlights the journey of seemingly to genuine tax concerns with following objective.

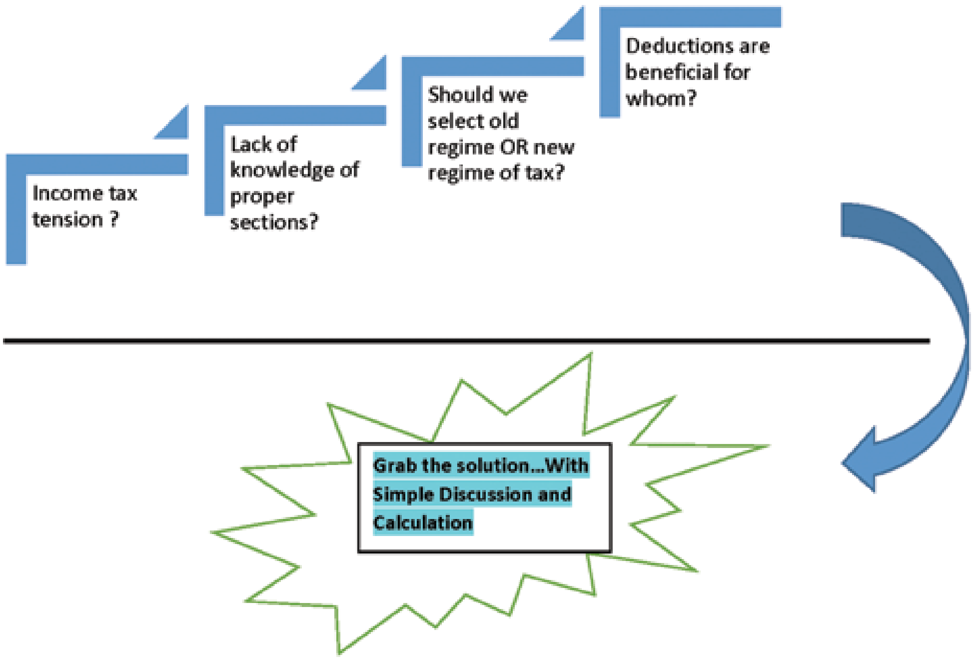
OBJECTIVES

This article concerns with the following objectives:

- To compare old tax and new tax regimes for individuals on the basis of Union Budget 2023-24.
- To determine which regime is better among various groups of salaried individuals.
- To discuss the reasons behind ignoring savings and investments in the new tax regime i.e. section 115BAC.

LIMITATION

Only individuals' salaried income has been considered for this article where salaried taxpayers are facing following questions:



POSSIBLE DEDUCTIONS UNDER THE OLD TAX REGIME

Chapter VIA has various sections that can be availed by salaried taxpayers to claim investment and expenditure based deductions so as to reduce the taxable income. Apart from these deductions, they can also have deduction under sections 16, 24(b) etc. They are as follows:

POSSIBLE DEDUCTIONS UNDER THE NEW TAX REGIME

Section 115BAC provides for few prominent deductions from gross salary and they are standard deduction and section 80CCD(2) deduction in lieu of employers contribution towards NPS. However, the new tax regime has become attractive due to extension of the exemption limit from Rs. 2,50,000 to Rs. 3,00,000. Individual's tax liability could be nil up to income of Rs. 7,00,000 through section 87A rebate (i.e. maximum rebate increased from Rs. 12,500 to Rs. 25,000) and lower tax rate under different income slab as compared to old tax regime.

COMPARISON BETWEEN THE OLD AND THE NEW TAX REGIMES

In order to select the best option for salaried taxpayers, it would be better to understand this with the help of a case study. The calculation shown below in the table will make crystal clear as to how deductions under the umbrella of the old tax regime may be exploited to save tax by the salaried individual for the A.Y. 2024-25. The new tax regime is ineffective under the given salary structure if a Government employee (aged 40 years) has interest liability on home loan (more than Rs. 3.5 Lakhs) and other deductions under Chapter VI-A as shown hereunder:

Old Tax Regime (P.Y. 2023-24 & A.Y. 2024-25)			New Tax Regime (P.Y. 2023-24 & A.Y. 2024-25)		
Particulars	**Per Month Amount (Rs.)**	**Amount P.A. (Rs.)**	**Particulars**	**Per Month Amount (Rs.)**	**Amount P.A. (Rs.)**
Basic	61,200	7,34,400	Basic	61,200	7,34,400
DA	20,808	2,49,696	DA	20,808	24,9696

HRA	9,792	1,17,504	HRA	9,792	1,17,504
CLA	270	3,240	CLA	270	3,240
NPS/EPF	11,481	1,37,772	NPS/EPF	11,481	1,37,772
Special Allowance	1,200	14,400	Special Allowance	1,200	14,400
Conveyance Allowance	3,600	43,200	Conveyance Allowance	3,600	43,200
Medical Allowance	1,000	12,000	Medical Allowance	1,000	12,000
Total Gross Earning		13,12,212	Total Gross Earning		13,12,212
Deduction under Section:	**Heads**	**Possible Deductions**	**Deduction under Section:**	**Heads**	**Possible Deductions**
16ia	Standard Deduction	50,000	16ia	Standard Deduction	50,000
16ii*	Entertainment Allowance	5,000	16ii	Entertainment Allowance	NIL
16iii	Professional Tax/Tax on employment	2,400	16iii	Professional Tax/Tax on employment	NIL
24(b)	Interest on HL	2,00,000	24(b)	Interest on HL	NIL
80C+80CCC+80CCD(1)		1,50,000	80C+80CCC+80CCD(1)		NIL
80CCD(1B)	National Pension Scheme	50,000	80CCD(1B)	National Pension Scheme	NIL
80CCD(2)	Contribution to pension scheme by employer	98,410	80CCD(2)	Contribution to pension scheme by employer	98,410
80D**	Medi-claim	75,000	80D	Medi-claim	NIL
80EE/**80EEA**	Interest on HL	**1,50,000**	80EE/80EEA	Interest on HL	NIL
80EEB	Interest on loan for purchase of electric vehicle	1,50,000	80EEB	Interest on loan for purchase of electric vehicle	NIL
80TTA*** (It can be claimed if interest on saving a/c is received)	Interest on deposits in saving bank A/c	10,000	80TTA	Interest on deposits in saving bank A/c	NIL
Total possible deduction		9,40,810	Total possible deduction		1,48,410
Taxable Income		3,71,402	Taxable Income		11,63,802
Tax on above income		6,070	Tax on above income		84,570
Rebate u/s. 87A		6,070	Rebate u/s. 87A		NIL
Tax Payable		NIL	Tax Payable (HEC is 4% to be calculated)		84,570
Rebate up to Rs. 12,500 can be claimed as taxable income is less than or equal to Rs. 5 Lakhs			Rebate up to Rs. 25,000 can't be claimed as taxable income is not less than or equal to Rs. 7 Lakhs		
Thus it can be seen that the old tax regime is better in the above case					

*In the case of entertainment allowance, it can only be claimed by Central/State Government employees and not by private sectors employee. In the above example, the disabled individuals can avail more benefits than the able-bodied. Interest on education loan can also be claimed under the old tax regime as per section 80E.

**For section 80D generally the assesse is < 60 yrs & parents are > 60 years. This combination has been considered.

***For senior citizen, section 80 TTB deduction up to Rs. 50,000 can be claimed against any interest on saving a/c or FD.

NOTES

1. Section 80CCD(1B)

This section gives additional benefit up to Rs. 50,000 over and above of Rs. 1,50,000 deduction under sections 80C and 80CCD(1). It deals with employees' excess contribution towards NPS. The important aspect is that any individual can contribute to the NPS to avail the deduction.

2. Section 80 CCD(2)

State Government & Private Sector Employees	*Central Government Employees*
Deduction can be claimed lower of :	Deduction can be claimed lower of :
Actual employer's contribution towards NPS of CG	Actual employer's contribution towards NPS of CG
OR	OR
10 per cent of (Basic Salary + DA)	14 per cent of (Basic Salary + DA)

3. Section 80D

This tax-benefit is available within the maximum deduction limit of Rs 25,000 (in case of no parents) to Rs 1,00,000, as the case may be.

Assesse		*Assesse pays medi-claim premium of parent from his own bank A/c*	*Parent*		*Total Claim u/s 80 D*
Age	Maximum Eligible Amount (Rs.)	+	Age	Maximum Eligible Amount (Rs.)	Maximum Eligible Amount (Rs.)
< 60 yrs	25000	+	< 60 yrs	25000	50000
< 60 yrs	25000	+	> 60 yrs	50000	75000
> 60 yrs	50000	+	> 60 yrs	50000	100000

4. Section 80EE/ 80EEA

Section 80EEA deduction is over and above the deduction under section 24(b). (Not eligible to claim deduction under sections 80EE and 80EEA simultaneously)

Conditions	*Section 80EE*	*Section 80 EEA*
Basic criteria	First Home	First Home
Loan sanctioned between:	FY 2016-17 and 2017-18.	April 1, 2019 to March 31, 2022.
House value (80ee) & stamp duty value (section 80EEA):	Less than or equal to Rs.50,00,000	Less than or equal to Rs.45,00,000
Loan sanction amount by financial institution:	Less than or equal to Rs.35,00,000	Not specified by this section, It could be more than Rs. 35,00,000
Deductible interest on loan:	Rs. 50,000	Rs. 1,50,000

5. Section 80EEB

Criteria	*Section 80 EEB*
Purpose	Purchase of electric vehicle
Loan sanctioned between	April 1, 2019 to March 31, 2023.
Deductible interest on loan	Rs.1,50,000

WHICH OPTION TO BE SELECTED BY SALARIED TAXPAYERS FOR THE F.Y. 2023-24?

The following Table will help to decide which option to choose for the assessment year 2023-24:

Situations	Old Tax Regime to be Opted	New Tax Regime to be opted
Income up to Rs. 5 Lakhs with no deduction	✓	✓
Income up to Rs. 6 Lakhs with no deduction		✓
Income up to Rs. 7 Lakhs with no deduction		✓
Income up to Rs. 8 Lakhs with no deduction		✓
Income up to Rs. 8 Lakhs with deduction u/s 16IA & 80CCD(2)		✓
Income up to Rs. 8 Lakhs with deduction up to Rs. 3 Lakhs	✓	✓
Income up to Rs. 9 Lakhs with no deduction	✓	✓
Income up to Rs. 9 Lakhs with deduction up to Rs. 4 Lakhs	✓	✓
Income up to Rs. 10 Lakhs with no deduction	✓	✓
Income up to Rs. 10 Lakhs with deduction up to Rs. 5 Lakhs	✓	✓
Income up to Rs. 11 Lakhs with no deduction	✓	✓
Income up to Rs. 11 Lakhs with deduction up to Rs. 6 Lakhs	✓	✓
Income up to Rs. 12 Lakhs with no deduction	✓	✓
Income up to Rs. 12 Lakhs with deduction up to Rs. 7 Lakhs	✓	✓
Income up to Rs. 13 Lakhs with no deduction	✓	✓
Income up to Rs. 13 Lakhs with deduction up to Rs. 8 Lakhs	✓	✓
Income up to Rs. 14 Lakhs with no deduction	✓	✓
Income up to Rs. 14 Lakhs with deduction up to Rs. 9 Lakhs	✓	✓
Income up to Rs. 15 Lakhs with no deduction	✓	✓
Income up to Rs. 15 Lakhs with deduction up to Rs. 10 Lakhs, especially high HRA deduction//80GG deduction in case of private sector employees	✓	
Income upto Rs. 16 Lakhs with no deduction	✓	✓
Income upto Rs. 16 Lakhs with deduction upto Rs. 11 Lakhs, especially high HRA deduction/80GG deduction in case of private sector employees	✓	
Income upto Rs. 17 Lakhs with no deduction	✓	✓
Income upto Rs. 17 Lakhs with deduction upto Rs. 12 Lakhs, especially high HRA deduction//80GG deduction in case of private sector employees	✓	

Gross income minus total deduction under umbrella of old tax regime should be less than or equal to Rs. 5 Lakhs.	✓	
Gross income minus total deduction under umbrella of new tax regime should be less than or equal to Rs. 7 Lakhs.		✓
In case of all other cases	Calculate tax liability on Income Tax Portal and then decide which option is to be selected i.e. old or new tax regime	

Result

Gross income - Total deduction under umbrella of old tax regime ≤ Rs. 5 *Lakhs (Opt old tax regime)*

Gross income - total deduction under umbrella of new tax regime ≤ Rs. 7 Lakhs *(Opt New Tax Regime)*

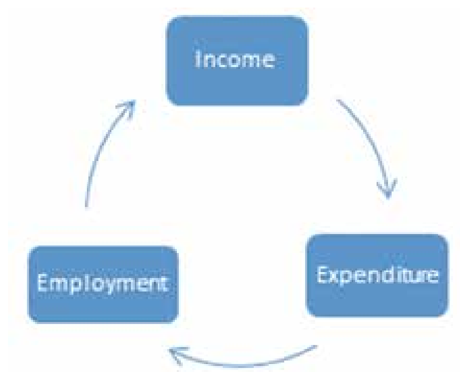
Gross income is high and no deduction ***(****Opt New Tax Regime)*

ARE SAVINGS & INVESTMENTS DISCOURAGED UNDER SECTION 115BAC?

According to the detailed analysis of the new tax regime, it seems that the Government has ignored the "savings and investments" generally resorted to by salaried taxpayers for their future and adverse times Moreover, the Government might desire maximum spending in the Indian economy that would boost the employment in the country. Indians have the habit of saving and such habit is not beneficial under new tax regime. Economists may compare these two regimes in the following manner:

Under Old Tax Regime

Under New Tax Regime



However, the new tax regime may benefit a large number of individuals out of the total population as this regime has higher exemption limit and lower rate of tax. It may be concluded that in the coming years savings and investment would be less.

CONCLUSION

At present, India is a huge market for various forms of trade and commerce and Indians have an innate habit of savings and investments but the new tax regime may discourage it completely. Still, salaried individuals have the option to select either the new tax regime or the old tax regime based on the deductions available to them. Salary income could be different among individuals and hence, it would be better if they calculate their tax liability on income tax portal under both the schemes and thereafter decide which regime is to be opted. An example has been incorporated above to understand how deductions play vital role in deciding which option is better. Ultimately, for selecting any regime by salaried taxpayers, calculations should be made first and then decision to be taken accordingly. MA

The new tax regime may benefit a large number of individuals out of the total population as this regime has higher exemption limit and lower rate of tax

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5. *https://enps.nsdl.com/eNPS/NationalPensionSystem.html*
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THE INSTITUTE OF COST ACCOUNTANTS OF INDIA

(Statutory Body under an Act of Parliament)

12, SUDDER STREET, KOLKATA – 700 016.

April 30, 2023

NOTIFICATION

No. EL–2023/20(W) : In pursuance of sub-rules (1) and (2) of Rule 13 of the Cost and Works Accountants (Election to the Council) Rules, 2006 as amended, the names of persons whose nominations from Western India Regional Constituency for the next (Twenty-first) election to the Council of the Institute of Cost Accountants of India to be held on 1st July, 2023, have been accepted as valid, are hereby published for information of all concerned.

List of Valid Nominations for Election to the Council – 2023.

WESTERN INDIA REGIONAL CONSTITUENCY

1. **Dalwadi, Ashwinkumar Gordhanbhai**
   Dalwadi & Associates
   403, Ashirwad Complex,
   Behind Sardar Patel Seva Samaj,
   Nr. Mithakhali Six Roads,
   AHMEDABAD – 380006

2. **Dave, Dushyant Chandrakant**
   1101 Dalamal Tower,
   Nariman Point,
   MUMBAI – 400021.

3. **Deshpande, Harshad Shamkant**
   403, Kumar Millennium
   Shivatirtha Nagar Kaman,
   Paud Road, Kothrud,
   PUNE – 411038.

4. **Joshi, Neeraj Dhananjay**
   `CMA Pride, 1st Floor, Plot No. 6,
   S. No. 16/6, Erandawana Hsg. Soc.
   Erandawana,
   PUNE – 411004.

5. **Mahankaliwar, Shriram Narayan**
   A/15, NIT Complex, Opp. Sudama Theatre,
   Gokulpeth,
   NAGPUR – 440010

6. **Mitra, Debasish**
   301, Sharavati, Konkan Rail Vihar
   Narul,
   NAVI MUMBAI – 400706

7. **Thatte, Ashish Prakash**
   504, Juniper Everest World,
   Kolshet Road, Near Dhohali Naha,
   THANE (WEST) – 400607

Sd/-
(Kaushik Banerjee)
Returning Officer

Copy to : All the above candidates

THE INSTITUTE OF COST ACCOUNTANTS OF INDIA
(Statutory Body under an Act of Parliament)
12, SUDDER STREET, KOLKATA – 700 016.

April 30, 2023

NOTIFICATION

No. EL–2023/20(S) : In pursuance of sub-rules (1) and (2) of Rule 13 of the Cost and Works Accountants (Election to the Council) Rules, 2006 as amended, the names of persons whose nominations from Southern India Regional Constituency for the next (Twenty-first) election to the Council of the Institute of Cost Accountants of India to be held on 1st July, 2023, have been accepted as valid, are hereby published for information of all concerned.

List of Valid Nominations for Election to the Council – 2023.

SOUTHERN INDIA REGIONAL CONSTITUENCY

1. **Annamraju, Venkatanarsimha Satya Nageswararao**
30-1569/2 (Plot 35), Anantanagar Colony,
Neredmet,, P.O. R.K. Puram,
SECUNDERABAD - 500056

2. **Gunjalli, Suresh Rachappa**
No.11 Ground Floor, 2nd Main, 1st Cross,
Shivanagar, Rajajinagar
BENGALURU - 560010

3. **Kalavalapalli, Sanyasi Rao**
Flat No.440, Abhiram Blue Heavens, Gallavani Palem, Aganampudi
VISAKHAPATNAM - 530046

4. **Manikyala, Venkateshwarlu**
H. No. 1-2-24, Flat No.403, Venkat Kripa Apartments, Domalguda,
Gaganmahal Street No.16
HYDERABAD - 500029

5. **Murali, V**
Partner, Victor Grace & Co.
Spencer Plaza, O-704, 7th Floor, Phase-1, 769,
Anna Salai, CHENNAI - 600002

6. **Murthy, K Ch A V S N**
8-3-976/29, Shalivahana Nagar,
HYDERABAD - 500073

7. **Murugan, A Mayil**
12A/A7A, Lakshmi Road, Srinivasa Cross Street,
TVS Nagar,
MADURAI - 625003

8. **P, Vinayaranjan**
40-7-31, Mogalrajapuram,
VIJAYAWADA - 520010

9. **Panicker, Sankar P**
Panicker & Co., 64/768, Jaikunj, Chittoor Road,
KOCHI - 682035

10. **Ramachandra, Sreepada Heggodu**
No. 39, 2nd Cross, 1st Main, 1st Phase, 5th Stage, B E M L Layout, R.R. Nagar,
BENGALURU - 560098

11. **Rao, Pinnamaraju Venkata Subrahmanya Jagan Mohan**
Flat No. 308, Himasai Gardens, Gulmohar Block,
Jawahar Nagar, RTC Cross Roads,
HYDERABAD - 500020

12. **Satish, Jyothi**
No. 5, Thames, Pacific City, Akshaya,
62, Guruswamy Road, Nolumbur,
Madhuravoyal,
CHENNAI – 600095.

13. **Srinivasa Prasad, T C A**
Flat No. 4, "Thangam Kutil", 16/14, Manickam Street, West Mambalam,
CHENNAI - 600033

Sd/-
(Kaushik Banerjee)
Returning Officer

Copy to : All the above candidates

ELECTIONS- 2023

THE INSTITUTE OF COST ACCOUNTANTS OF INDIA

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12, SUDDER STREET, KOLKATA – 700 016.

April 30, 2023

NOTIFICATION

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List of Valid Nominations for Election to the Council – 2023.

EASTERN INDIA REGIONAL CONSTITUENCY

1. **Banerjee, Ashis**
   Kalitala Road, Near Nabagram,
   Old Electric Office,
   BARA BAHERA - 712246
   Dist: Hooghly, W.B.

2. **Basu, Arundhati**
   CA 168, Sector - I, Salt Lake,
   KOLKATA - 700064

3. **Chattopadhyay, Chittaranjan**
   86/C, G.T. Road (Sirishtala),
   SERAMPORE - 712201

4. **Chaubey, Mukesh**
   Plot No. 951/1, At/P.O.- Bankual,
   Tankpani Road,
   BHUBANESWAR - 751002

5. **Goswami, Avijit**
   Flat No. 4A, Fourth Floor, 68-C/1, Dr. Suresh Chandra Banerjee Road, Beleghata,
   KOLKATA - 700010

6. **Mukherjee, Somnath**
   14-E/5, Rajmohan Road,
   UTTARPARA - 712258
   Dt. Hooghly, W.B.

7. **Nayak, Bibhuti Bhushan**
   Matru Krupa, Plot No.- 1857/3747, At/ Post - Kalarahanga, Via - Kiit, Near Sabitri Mandap
   BHUBANESWAR - 751024

-

Sd/-
(Kaushik Banerjee)
Returning Officer

Copy to : All the above candidates

THE INSTITUTE OF COST ACCOUNTANTS OF INDIA
(Statutory Body under an Act of Parliament)
12, SUDDER STREET, KOLKATA – 700 016.

April 30, 2023

NOTIFICATION

No. EL–2023/20(N) : In pursuance of sub-rules (1) and (2) of Rule 13 of the Cost and Works Accountants (Election to the Council) Rules, 2006 as amended, the names of persons whose nominations from Northern India Regional Constituency for the next (Twenty-first) election to the Council of the Institute of Cost Accountants of India to be held on 1st July, 2023, have been accepted as valid, are hereby published for information of all concerned.

List of Valid Nominations for Election to the Council – 2023.

NORTHERN INDIA REGIONAL CONSTITUENCY

1. **Anand, Manoj Kumar**
K-81, Sarita Vihar,
NEW DELHI - 110076

2. **Bhalla, Rakesh**
4551-C, Sector 70, S.A.S. Nagar,
MOHALI - 160059

3. **Bhati, Rajendra Singh**
Office No.10A, Second Floor, Sanjivani Ananda,
Manji Ka Hata, Paota,
JODHPUR - 342001

4. **Bhatt, Sandeep Kumar**
83 B Pocket 4, Mayur Vihar, Phase-1
NEW DELHI - 110091

5. **Choudhary, Rakesh**
STC-1/804, Sun Tower, Shipra Sun City
Indirapuram
GHAZIABAD - 201014

6. **Gupta, Yogesh Kumar**
D-1050, New Friends Colony,
NEW DELHI - 110025

7. **Jain, Navneet Kumar**
2-D, OCS Apartments, Mayur Vihar, Phase - I
Extn, NEW DELHI - 110091

8. **Paliwal, Shailendra Kumar**
5/474, Viram Khand, Gomti Nagar,
LUCKNOW - 226010

9. **Sharma, Anil**
H. No. ,142, Sector - 23A,
CHANDIGARH - 160023

10. **Tara, Harkesh**
M-175, Second Floor, Guru Harkishen Nagar,
Paschim Vihar,
NEW DELHI - 110087

Sd/-
(Kaushik Banerjee)
Returning Officer

Copy to : All the above candidates

THE INSTITUTE OF COST ACCOUNTANTS OF INDIA
(**Statutory body under an Act of Parliament**)
12, SUDDER STREET, KOLKATA – 700 016.

April 30, 2023

N O T I F I C A T I O N

No.: EL-2023/21(W) : In pursuance of sub-rules (1) and (2) of Rule 13 of the Cost and Works Accountants (Election to the Council) Rules, 2006 as amended and Regulation 118 of the Cost and Works Accountants Regulations, 1959 as amended, the names of persons whose nominations from Western India Regional Constituency for the elections to the Regional Councils of the Institute of Cost Accountants of India to be held on 1st July, 2023, have been accepted as valid, are hereby published for information of all concerned.

List of Valid Nominations for Elections to the Regional Councils – 2023

WESTERN INDIA REGIONAL COUNCIL

1. **Agrawal, Manisha Sanjay**
238, Shrivam Shyam Towers
Near NIT, Sadar
Nagpur-440001

2. **Bhalerao, Vivek Gajanan**
F-24, O:2, Sector No. 4,
Vrindavan CHS, Sanpada,
Navi Mumbai - 400705

3. **Bhavsar, Ashishkumar Sureshchandra**
916, Shiromani Complex,
S. M. Road, Opp. Ocean Park,
Nehrunagar,
Satellite Road,
Ahmedabad - 380015

4. **Bhombe, Mahendra Tulshiram**
Flat No:16 3rd Floor,
Sai Namdev Park,
Part 1B, CTS No 5595 S. No:151,
Behind City International,morwadi,
Pimpri School
Pune - 411018

5. **Goswami, Arindam**
D-16, Bhawna Nagar
Khamardih
Shankar Nagar
Raipur - 492007

6. **Gurjar, Bhanwar Lal**
Office No-15, 1st Floor
SMC Shopping Centre
Bal Shahid Circle
Nr. Rupam Cinema Hall,
Salabatpura
Surat - 395003

7. **Jain, Rahul**
210, Centrum IT Park
Near TMC Office
Wagle Estate
Thane - 400604

8. **Kulkarni, Vinayak Balkrishna**
18/603, Neelkanth CHSL,
Nehru Nagar,
Kurla (East),
Mumbai - 400024

9. **Mohrir, Chaitanya Laxmanrao**
507, "Kamdhenu Siddhi",
S No. 54 / 5, 54 / 6,
Lane No. 4, Mahatma Society,
Kothrud
Pune - 411038

10. **Pandit, Sanket Raghuveer**
N 4 E 40
Behind MIT Hospital
CIDCO,
Aurangabad - 431003

11. **Saha, Arunabha**
C-602, Shantiban Co-op. Hsg. Soc.,
Opp. Castle Mill,
Azadnagar No. 1,
Thane (West) - 400601

12. **Shah, Nanty Nalinkumar**
301, Gopinath Apt,
Jadakhadi, Mahidharpura
Surat - 395003

Contd.....p/2

THE INSTITUTE OF COST ACCOUNTANTS OF INDIA
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12, SUDDER STREET, KOLKATA – 700 016.

: 2:

13. **Vaidya, Meena Niteen**
Flat No. 7
Kshitij Apartments,
Lane No. 3, Dahanukar Colony,
Kothrud,
Pune - 411038

14. **Vaze, Prashant Sudhakar**
Manisha
79-B/3, Prabhat Road,
Pune - 411004

15. **Verma, Anil Bajaranglal**
Plot No. 73, 207
Subhashish Square
Above Tanishq Jewellers,
Shradhanadpeth Square
Nagpur - 440022

16. **Vyas, Mihir Narayan**
C - 1, Rushabh Tenament,
Nr. Vinod Vatika Society,
Manjalpur,
Vadodara - 390011

Sd/-
(Kaushik Banerjee)
Returning Officer

Copy to: All the above candidates

ELECTIONS- 2023

THE INSTITUTE OF COST ACCOUNTANTS OF INDIA

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12, SUDDER STREET, KOLKATA – 700 016.

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List of Valid Nominations for Elections to the Regional Councils – 2023

SOUTHERN INDIA REGIONAL COUNCIL

1 **Agastya, Vijay Kiran**
Building No. 9
Opp. Westin
Raheja Mhidspace
HYDERABAD-500081

2 **Bhat, Vishwanath**
No.2243,
"Vishishta Arcade", 3rd Floor,
23rd Cross Road,
Banashankari 2nd Stage
BENGALURU-560070

3 **Darapaneni, Munisekhar**
6-3-349/15/17, Flat No :301
Sai Brundavan Apts, Behind Sai Baba Temple,Dwarakapuri Colony
Panjagutta
HYDERABAD-500082

4 **Iyer, Rajesh Sai**
25/13, Madhuban,
Ritherdon Road,
CHENNAI-600007

5 **K R, Vijaya Lakshmi**
No. 7/1, N.M. Lane
Cotton Pet, 1st Cross,
BENGALURU-560018

6 **Kambadaraya, Girish**
36, Chatura Homes, 2nd Main,
Meenakshinagar,
Near Krishna Kalyana Mantapa,
Basaveshwaranagar,
BENGALURU-560079

7 **Kandasamy, Gomathisankar**
H1, Sipcot Industrial Park
Irrungattukottai
Sriperumbudur Taluk
CHENNAI-602117

8 **Kumar, Praveen**
Vellannur House, "Aiswaria",
P.O. Thaikkattussery
Ollur
THRISSUR-680322

9 **Kumararajan, Sethurajan**
Kumararajans
Plot No.651
14th East Cross Street
Aringar Anna Nagar
MADURAI-625020

10 **Lavanya, Kandala Venkata Naga**
38B, Bansilalpet,
Near Bible House,
SECUNDERABAD-500003

11 **Mannem, Suneel Kumar**
15/320, 2nd Floor, K C V Spectrum
Kotak Mahindra Bank Upstairs
Babu Icecream Opposite Road
Brindavanam
NELLORE-524001

12 **Narayanan, Padmavathi**
23/7, S. S. Sahib Street
Aminjikarai
CHENNAI-600029

Contd…..p/2

THE INSTITUTE OF COST ACCOUNTANTS OF INDIA
(**Statutory body under an Act of Parliament**)
12, SUDDER STREET, KOLKATA – 700 016.

: 2 :

13 **R, Satish**
No.31, Opp To No.733,
6th Cross, Nethaji Nagar,
Chokkasandra, T. Dasarahalli,
BENGALURU-560057

14 **Rajanala, Chandra Sekhar**
Plot No288/289, Allada Suvarna Leela
Enclave, Flat No- G4,
Sardar Patel Nagar,
Near Jntu,
HYDERABAD-500085

15 **Ramasubramania Raja, Arraguntala Rajasankar**
3. Sundaram Brothers Layout,
Opp To All India Radio,
Ramanatahpuram
COIMBATORE-641045

16 **Rao, K Pandu Ranga**
Plot No. 70
D. No. 59A-8/4-6A
Sri Vasavinagar Colony
Polytechnic Post Office
VIJAYAWADA-520008

17 **Ravisankar, Rakesh Shankar**
Plot No.1761, Second Floor
1st Street, Vasantha Colony
Anna Nagar West, (18th Main Road)
CHENNAI-600040

18 **S, Manjula B**
No.732, I Main, I A Cross,
Banashankari I I I Stage
I I Phase, Vii Block,
BENGALURU-560085

19 **Santhosh Kumar, Vettiyattil**
Sivam
Kariparambil Lane
S R M Road,Ernakulam
COCHIN-682018

20 **Selva Raja, V G**
Selva & Associates,
205, Anand Block, 2nd Floor,
9, Choolaimedu High Road,
CHENNAI-600094

21 **Srinivasa Rao, Yadlapalli**
H. No. 16 - 3 - 1323
Haranadhapuram
2nd Lane
Nagasai Mandiram Road
NELLORE-524002

22 **Sugumar, Govindarajan**
No 1, Arumugam Naicken Street
TF 2, Terrace Floor, The Habeeba Arcade
Complex
Near State Bank Street, Mount Road
CHENNAI-600002

23 **Sukumar, Divya**
No 29 Devadi Street Mylapore
CHENNAI-600004

24 **Vijji, Ayyappa**
C/o. V.V.V. Ramana
Door No. 45-35-3,
Near Sangam Office Bus Stop
Akkayyapalem,
VISAKHAPATNAM-530016

Sd/-
(Kaushik Banerjee)
Returning Officer

Copy to: All the above candidates

ELECTIONS- 2023

THE INSTITUTE OF COST ACCOUNTANTS OF INDIA
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12, SUDDER STREET, KOLKATA – 700 016.

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List of Valid Nominations for Elections to the Regional Councils – 2023

EASTERN INDIA REGIONAL COUNCIL

1 **Chakraborty, Subhasish**
17B, Hindusthan Road,
1st Floor,
KOLKATA-700029

2 **Chattopadhyay, Saibal**
Hooghly Cochin Shipyard Limited
Nazirgunj
HOWRAH-711109

3 **Dutta, Abhijit**
47F, P.M. Sarani,
P. O. Haltu
KOLKATA-700078

4 **Ganguly, Arati**
Ganguly Villa
Shib Mandir Road, New Upper Chelidanga
ASANSOL-713304

5 **Kanrar, Tapas Kumar**
Tapas Kanrar & Associates,
Asha Villa, 127/6, Kasundia Road,
HOWRAH-711101

6 **Mishra, Damodara**
O P T C L , Finance Wing
Janapath ,Bhoi Nagar
BHUBANESWAR-751022

7 **Mukherjee, Kallol**
45, Moore Avenue
Ramkrishna Apartment, 3rd Floor
KOLKATA-700040

8 **Nayak, Uttam Kumar**
Plot No-65,
Forest Park
BHUBANESWAR-751009

9 **Prasad, Bidyadhar**
Ground Floor, Anurag Apt.
Ashok Prasth Colony, Near Dibdih
Flyover, Dibdih,
RANCHI-834002

10 **Singh, Abhishek Kumar**
Officers Campus Alipore
Quarter No.4, Type V B
KOLKATA-700053

11 **Singh, Sunita**
30, Ganesh Chandra Avenue
2nd Floor, Flat 6
KOLKATA-700013

12 **Tripathy, Alok**
NALCO Bhawan
Pi: Nayapalli
BHUBANESWAR-751013

13 **Udeshi, Harsh Satish**
24/25, Rupchand Roy Street,
@nd Floor,
KOLKATA-700007

Sd/-
(Kaushik Banerjee)
Returning Officer

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List of Valid Nominations for Elections to the Regional Councils – 2023

NORTHERN INDIA REGIONAL COUNCIL

1. **Chandra, Jeewan**
Flat 302, Plot 25,
Reliance Residency
Block F, Sector 3,
Vaishali
Ghaziabad - 201013

2. **Chauhan, Pramod**
85, Ground Floor, Pocket A,
Gate No. 4,
Sarita Vihar
Delhi - 110076

3. **Farooque, Umar**
Block-C-5, Quarter No-502,
PWO Apartment
Sector 43
Land Mark-Opposite Huda City
Center Metro Station
Gurgaon - 122009

4. **Goel, Sandeep**
410, Pratap Bhawan
5, Bahadur Shah Zafar Marg
New Delhi - 110002

5. **Gupta, Mithlesh**
Office No.- T-7 Pankaj Mayur Plaza-1
Opp. Ryan International School,
Mayur Vihar Phase-3
Delhi - 110096

6. **Jagdeep**
House No. 7/1,
V. P. O, Qutab Garh Extention
New Delhi - 110039

7. **Jat, Parash Ram**
12, D. K. Nagar,
Khatipura Road,
Jhotwara,
Jaipur - 302012

8. **Jha, Mrigesh Kumar**
E-10/ C
Near Jawahar Pak
Laxmi Nagar
Delhi - 110092

9. **Kandpal, Manish**
10D, Sector-7
Pocket-1
New Delhi - 110075

10. **Kashyap, Madhuri**
Plot No. C-234
2nd Floor
Sector Xu I
Greater Noida - 201310

Contd.....p/2

THE INSTITUTE OF COST ACCOUNTANTS OF INDIA
(**Statutory body under an Act of Parliament**)
12, SUDDER STREET, KOLKATA – 700 016.

: 2:

11. **Kumar, Subodh**
Flat No.1007, v3s Indralok
Nyay Khand-1,
Near Gaur Green Vista
Indrapuram
Ghaziabad - 201014

12. **Malpani, Deepak**
Deepak Malpani & Associates
House No. 186A,
Sector 11D,
Faridabad - 121006

13. **Mittal, Satya Narayan**
1350, Basant Vihar
Kota - 324009

14. **Pandey, Mukesh**
895, Sector - 12 A
Panchkula - 134115

15. **Pant, Santosh**
312, Nipun Plaza
Vaishali Sec-4
Sahibabad - 201010

16. **Prasad, Deepika Bhugra**
Plot 506, Basement Floor,
Sector 19, Dwarka
Delhi - 110075

17. **Raghav, Saurabh Singh**
B - 744, 1st Floor
Green Field Colony
Faridabad - 121010

18. **Singh, Honey**
First Floor, 53/1, Chander Nagar,
Alambagh
Lucknow - 226005

19. **Soni, Hemendra**
10/287, Near Gautam Buddha Park
Indira Nagar
Lucknow - 226016

20. **Srivastava, Vikas**
B-417/1, Rajaji Puram,
Lucknow - 226017

21. **Tiwary, Pawan Kumar**
Pawan Tiwary & Co.
L - 4/166, Vinay Khand,
Gomti Nagar,
Lucknow - 226010

22. **Varshney, Prashant**
Shiv Cololy
Gali No. 1
Chamad Gate , Tarfara Road
Near Tata Tower
Hathras - 204101

23. **Yadav, Prahalad Sahai**
Vill. - Loharwara
Teh. - Chomu
Chomu - 303807
Dist.- Jaipur

24. **Yadav, Rakesh**
72/240, Vinayak Path
Mansarovar
Jaipur - 302020

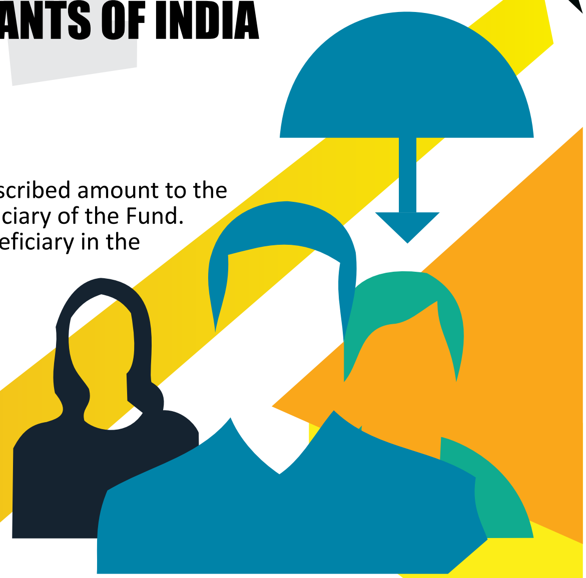
Sd/-
(Kaushik Banerjee)
Returning Officer

Copy to: All the above candidates

Benevolent Fund

FOR THE MEMBERS OF THE INSTITUTE OF COST ACCOUNTANTS OF INDIA

CMA Bhawan, 12 Sudder Street, Kolkata - 700016



OBJECTIVE

The Fund has been created to provide outright grant of prescribed amount to the member in the event of critical illness of a member / beneficiary of the Fund. It is also for outright grant of prescribed amount to the beneficiary in the event of death of a member of the Fund.

LIFE MEMBERSHIP FEE

Onetime payment of ₹7500/-

BENEFITS

- ***Income Tax Benefit under section 80G***
- ***Outright grant not exceeding ₹3,00,000.00/- in each case to the beneficiary in the event of death of the member.***
- ***Outright grant not exceeding ₹1,50,000.00/- in each case to the member and beneficiary for critical illness duly certified by the doctor under whom the treatment is continuing.***

Coverage of Critical Illness, leading to hospitalization, may cover the following -

- Cancer / Malignancy
- Coronary Artery Bypass Graft Surgery
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Direct & Indirect Tax Updates - April 2023

DIRECT TAXES

- **Notification No. 16 dated 1st April 2023:** In exercise of the powers conferred by clause (46) of section 10 of the Income-tax Act, 1961 (43 of 1961), the Central Government hereby notifies for the purposes of the said clause, 'Bhadohi Industrial Development Authority', (PAN AAALB0141M), an Authority constituted by the state government of Uttar Pradesh, in respect of the following specified income arising to that Authority:

  (a) Money received from the disposal of land/90 year's lease of immovable properties (b) Money received by the way of lease rent & fees or any other charges from the disposal/90 years lease of immovable properties (c) The amount of interest/penalties received on the deferred payment received from the allottees of various immovable properties (d) Water, sewerage and other municipal charges from the allottees of various immovable properties and (e) Interest earned on (a) to (d) above.

  This notification shall be effective subject to Bhadohi Industrial Development Authority:(a) shall not engage in any commercial activity (b) activities and the nature of the specified income shall remain unchanged throughout the financial years and (c) shall file return of income in accordance with the provision of clause (g) of sub-section (4C) of section 139 of the Income-tax Act, 1961.

- **Notification No. 17 dated 6th April 2023:** In exercise of the powers conferred by section 285BA of the Income-tax Act, 1961 read with sub-clause (ii) of clause (D) of the Explanation to clause (6) of rule 114F of the Income-Tax Rules, 1962 (hereinafter referred to as "said sub-clause"), the Central Board of Direct Taxes, hereby makes amendment in the notification of the Government of India, Ministry of Finance (Department of Revenue), Central Board of Direct Taxes, published in the Gazette of India, Extraordinary, Part I, Section 1 vide Notification No. 78/2018 dated the 5th November, 2018 in the Table specifying jurisdictions for the purpose of the said sub-clause, which shall be substituted.

- **Notification No. 18 dated 10th April 2023:** In exercise of the powers conferred by clause (46) of section 10 of the Income-tax Act, 1961 (43 of 1961), the Central Government hereby notifies for the purposes of the said clause, 'Greater Noida Industrial Development Authority', (PAN AAALG0129L), an Authority constituted by the state government of Uttar Pradesh, in respect of the following specified income arising to that Authority.

  (a) Moneys received from the disposal of land, building, and other properties, movable and immovable; (b) Moneys received by the way of rent & fees or any other charges from the disposal of land, building, and other properties, movable and immovable; (c) The amount of interest/penalties received on the deferred payment received from the allottees of various movable or immovable properties; (d) Water, sewerage and other municipal charges from the allottees of various immovable properties; and (e) Interest earned on (a) to (d) above.

  This notification shall be effective subject to Greater Noida Industrial Development Authority: - (a) shall not engage in any commercial activity; (b) activities and the nature of the specified income shall remain unchanged throughout the financial years; and (c) shall file return of income in accordance with the provision of clause (g) of sub-section (4C) of section 139 of the Income-tax Act, 1961.

- **Notification No. 19 dated 10th April 2023:** In exercise of the powers conferred by clause (46) of section 10 of the Income-tax Act, 1961 (43 of 1961), the Central Government hereby notifies for the purposes of the said clause, 'Central Board of Secondary Education', Delhi (PAN AAAAC8859Q), a Board constituted by the Central Government, in respect of the following specified income arising to that Board.

  (a) Examination Fees; (b) Affiliation Fees; (c) Sale of Text Books & Publications; (d) Registration fees, Sports fees, Training fees and Other Academic receipts; (e) Receipts from CBSE Projects/Programmes; (f) Interest on income tax refunds; and (g) Interest earned on (a) to (f) above.

  This notification shall be effective subject to Central Board of Secondary Education, Delhi:- (a) shall not engage in any commercial activity; (b) activities and the nature of the specified income shall remain unchanged throughout the financial years; and (c) shall file return of income in accordance with the provision of clause (g) of sub-section (4C) of section 139 of the Income-tax Act, 1961.

- **Notification No. 21 dated 10th April 2023:** In exercise of the powers conferred by clause (v) of the Explanation to section 48 of the Income-tax Act, 1961 (43 of 1961), the Central Government hereby makes the following further amendments in the notification of the Government of India, Ministry of Finance (Department of Revenue), Central Board of Direct Taxes, published in the Gazette of India, Extraordinary, vide number S.O. 1790(E), dated the 5th June, 2017. In the said notification, in the TABLE, after serial number 22, the following serial number and entries relating thereto, shall be inserted, Serial No 23 for Financial Year 2023-24 Cost Inflation Index 348.

- **Notification No. 22 dated 17th April 2023:** In exercise of the powers conferred by clause (46) of section 10 of the Income-tax Act, 1961 (43 of 1961), the Central Government hereby makes the following amendments in the notification of the Government of India, Ministry of Finance, Department of Revenue, Central Board of Direct Taxes No.34/2020 dated the 23rd June, 2020. In the said notification, in Paragraph 1, after clause (l), the following clauses shall be inserted and shall be deemed to have been inserted with effect from 23rd June, 2020, namely:- "(m) Profit on sale of fixed assets; (n) Charges collected for the personal use of office vehicle by employees; (o) Interest on Income tax Refund; and (p) Interest earned on Government Securities.
- **Notification No. 23 dated 21st April 2023:** In exercise of the powers conferred by clause (ii) of sub-section (1) of section 35 of the Income-tax Act, 1961 (43 of 1961) read with Rules 5C and 5E of the Income-tax Rules, 1962, the Central Government hereby approves 'National Institute of Design, Ahmedabad (PAN: AAATN1137D)' under the category of 'University, College or Other Institution' for 'Scientific Research' for the purposes of clause (ii) of sub-section (1) of section 35 of the Income-tax Act, 1961 read with rules 5C and 5E of the Income-tax Rules, 1962.
- **Circular No. 04 of 2023 Dated 5th April 2023**: Clarification regarding deduction of TDS under section 192 read with sub-section (IA) of section 115BAC of the Income-tax Act, 1961. In exercise of powers conferred under section 119 of the Act, hereby directs that a deductor, being an employer, shall seek information from each of its employees having income under section 192 of the Act regarding their intended tax regime and each such employee shall intimate the same to the deductor, being his employer, regarding his intended tax regime for each year and upon intimation, the deductor shall compute his total income, and deduct tax at source thereon according to the option exercised. If intimation is not made by the employee, it shall be presumed that the employee continues to be in the default tax regime and has not exercised the option to opt out of the new tax regime. Accordingly, in such a case, the employer shall deduct tax at source, on income under section 192 of the Act, in accordance with the rates provided under sub-section (lA) of section 115BAC of the Act.

INDIRECT TAXES

CUSTOMS

- **NOTIFICATION No. 21/2023-Customs dated 1st April 2023:** Regarding implementation of Advance Authorisation Scheme under Foreign Trade Policy, 2023
- **NOTIFICATION No. 22/2023-Customs dated 1st April 2023:** Regarding implementation of Advance Authorisation Scheme for deemed export under Foreign Trade Policy, 2023
- **NOTIFICATION No. 23/2023-Customs dated 1st April 2023:** Regarding implementation of Advance Authorisation Scheme for annual requirement under Foreign Trade Policy, 2023
- **NOTIFICATION No. 24/2023-Customs dated 1st April 2023:** Regarding implementation of Advance Authorisation Scheme for export of prohibited goods under Foreign Trade Policy, 2023
- **NOTIFICATION No. 25/2023-Customs dated 1st April 2023:** Regarding implementation of Duty Free Import Authorisation Scheme under Foreign Trade Policy, 2023
- **NOTIFICATION No. 26/2023-Customs dated 1st April 2023:** Regarding implementation of EPCG Scheme under Foreign Trade Policy, 2023
- **NOTIFICATION No. 27/2023-Customs dated 1st April 2023:** Regarding Exemption for import of fabrics under Special Advance Authorization Scheme under para 4.04A of Foreign Trade Policy, 2023 for manufacture and export of garments.
- **NOTIFICATION No. 28/2023-Customs dated 1st April 2023:** Seeks to amend Notifications of G&J and EOU schemes-reg, 2023.
- **NOTIFICATION No. 29/2023-Customs dated 3rd April 2023:** In exercise of the powers conferred by sub-section (1) of section 25 of the Customs Act, 1962 (52 of 1962), the Central Government, being satisfied that it is necessary in the public interest so to do, hereby makes the following further amendment in the notification of the Government of India, Ministry of Finance (Department of Revenue), No. 40/2015-Customs, dated the 21st July, 2015. In the said notification, in the Table, after serial number 5 and the entries relating thereto, the following serial number and entries shall be inserted, namely: - "6. Gemological Science International Pvt. Ltd., Mumbai, Maharashtra.
- **NOTIFICATION No. 30/2023-Customs dated 10th April 2023:** In exercise of the powers conferred by sub-section (1) of section 25 of the Customs Act, 1962 (52 of 1962), the Central Government, on being satisfied that it is necessary in the public interest so to do, hereby makes the following amendments in the notification of the Government of India in the Ministry of Finance (Department of Revenue), No. 55/2022-Customs, dated the 31stOctober 2022. In the said notification, in the TABLE, -(i) against S. No. 1, in column (2), for the entry, the entry "1006

10 90" shall be substituted;(ii)after S. No. 1 and the entries relating thereto, the following S. No. and entries shall be inserted, namely:

1A	1006 10 10	Rice in the husk (paddy or rough), of seed quality	Nil

- **NOTIFICATION No. 31/2023-Customs dated 20th April 2023:** In exercise of the powers conferred by sub-section (1) of section 25 of the Customs Act, 1962 (52 of 1962), the Central Government, on being satisfied that it is necessary in the public interest so to do, hereby makes the following amendments in the notification of the Government of India in the Ministry of Finance (Department of Revenue), No. 55/2022-Customs, dated the 31st October 2022. In the said notification, inthe Annexure, against Condition number 1, in the Condition(s), for the word "Sonauli", the words "Sonauli or Nepalgunj Road" shall be substituted.
- **NOTIFICATION No. 32/2023-Customs dated 26th April 2023:** Amending Customs Notifications to implement the "Amnesty Scheme for one time settlement of default in export obligation by Advance and EPCG authorization holders" notified by DGFT.
- **NOTIFICATION No. 33/2023-Customs dated 27th April 2023:** Seeks to amend notification Nos. 11/2022-Customs and 12/2022-Customs dated 01.02.2022 with respect to PMP of wearable and hearable devices.
- **NOTIFICATION No. 34/2023-Customs dated 29th April 2023:** Seeks to amend various electronics related notifications in order to align the HS Codes of the said notifications with the Finance Act, 2023, w.e.f. 01.05.2023.
- **NOTIFICATION No. 35/2023-Customs dated 29th April 2023:** Seeks to amend 50/2017-Customs in order to align the HS Codes of the said notifications with the Finance Act, 2023, w.e.f. 01.05.2023.
- **NOTIFICATION No. 36/2023-Customs dated 29th April 2023:** Seeks to amend the various Customs Tariff notifications in order to align the HS Codes of the said notifications with the Finance Act, 2023, w.e.f. 01.05.2023.
- **Circular No. 10/2023-Customs dated 11th April 2023:** Online filing of AEO-LO applications: Launch of Version 3.0 of web- application for filing, real-time monitoring, and digital certification.

CENTRAL EXCISE

- **Notification No.16/2023-Central Excise dated 3rd April 2023**: In exercise of the powers conferred by section 5A of the Central Excise Act, 1944 (1 of 1944) read with section 147 of the Finance Act, 2002 (20 of 2002), the Central Government, on being satisfied that it is necessary in the public interest so to do, hereby makes the following further amendments in the notification of the Government of India in the Ministry of Finance (Department of Revenue), No. 18/2022-Central Excise, dated the 19th July, 2022. In the said notification, in the Table,-(i)against S. No. 1, for the entry in column (4), the entry "Rs. Nil per tonne" shall be substituted.
- **Notification No.17/2023-Central Excise dated 3rd April 2023:** In exercise of the powers conferred by section 5A of the Central Excise Act, 1944 (1 of 1944) read with section 147 of Finance Act, 2002 (20 of 2002), the Central Government, on being satisfied that it is necessary in the public interest so to do, hereby makes the following further amendments in the notification of the Government of India in the Ministry of Finance (Department of Revenue), No. 04/2022-Central Excise, dated the 30th June, 2022. In the said notification, in the Table,-(i)against S. No. 2, for the entry in column (4), the entry "Rs. 0.50 per litre" shall be substituted.
- **Notification No.18/2023-Central Excise dated 18th April 2023:**
  In exercise of the powers conferred by section 5A of the Central Excise Act,1944(1of1944) read with section147 of the Finance Act,2002 (20of2002), the Central Government, on being satisfied that it is necessary in the public interest so to do, hereby makes the following further amendments in the notification of the Government of India in the Ministry of Finance (Department of Revenue),-No.18/2022-Central Excise, dated the19 th July, 2022. In the said notification, in the Table,-(i)against S.No.1,for the entry in column (4),the entry"Rs.6400 per tonne" shall be substituted.
- **Notification No.19/2023-Central Excise dated 18th April 2023:** In exercise of the powers conferred by section 5A of the Central Excise Act,1944 (1of1944) read with section 147 of Finance Act, 2002(20of2002),the Central Government, on being satisfied that it is necessary in the public interest so to do,hereby makes the following further amendments in the notification of the Government of India in the Ministry of Finance (Department of Revenue),No.04/2022-Central Excise, dated the30th June,2022. In the said notification, in the Table, -(i) against S.No.2,for the entry in column(4), the entry "Rs.Nil per litre" shall be substituted.
- **Notification No.20/2023-Central Excise dated 26th April 2023:** Seeks to amend Notification No. 22/2003 & 23/2003 Central Excise dated 31.03.2003. MA

Sources: *incometax.gov.in, cbic.gov.in*

THE INSTITUTE OF COST ACCOUNTANTS OF INDIA
(Statutory Body under an Act of Parliament)
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NOTIFICATION

Ref. No. G/128/4/2023-24 Dated April 24, 2023

Sub: Qualification based RECIPROCAL EXEMPTION SCHEME- under Syllabus 2022 between the Institute of Cost Accountants of India and the Institute of Company Secretaries of India.

The Council of the Institute at its 337th Meeting held on 11th September, 2022 has approved the following RECIPROCAL EXEMPTION SCHEME to grant qualification based subject exemption to the students of the Institute of Company Secretaries of India (ICSI) be made effective for Syllabus 2022 as given below, as per signed Memorandum of Understanding (MOU) by both the Institute dated April, 24, 2023.

Qualification-based RECIPROCAL EXEMPTION SCHEME under Syllabus 2022 between the Institute of Cost Accountants of India and the Institute of Company Secretaries of India (under Syllabus 2022).

Exemption to ICSI passed candidates from papers of the Institute of Cost Accountants of India under Syllabus 2022*	Exemption to the Institute of Cost Accountants of India passed candidates from papers of ICSI under Syllabus 2022
Foundation Course- Full/Complete exemption.	**Foundation Course**- Full/Complete exemption.
Intermediate Course	**Executive Programme**
Group I: **Paper 7- Direct and Indirect Taxation (DITX)**	**Group 1:** **Paper 4- Corporate Accounting and Financial Management**
Group II: **Paper 10- Corporate Accounting and Auditing (CAA)**	**Group 2:** **Paper 7-Tax Laws and Practice**
Final Course	**Professional Programme**
Group III: **Paper 13- Corporate and Economic Laws (CEL)**	**Group 2:** **Paper 5- Strategic Management and Corporate Finance**
Group IV: **Paper 19- Indirect Tax Laws and Practice (ITLP)**	**Group 1:** **Elective Paper 4.2** **Internal and Forensic Audit**
Group IV: Elective Paper **Paper 20B-Risk Management in Banking and Insurance (RMBI)**	**Group 2:** **Elective Paper 7.2** **Goods and Services Tax & Corporate Tax Planning**
	Elective Paper 7.4 **Banking & Insurance –Laws & Practice** **(eligible for one exemption out of 7.2 and 7.4)**

*Further, the subject exemption fee for each paper is fixed at Rs. 1,000/- (Rupees One Thousand only).

(CMA Kaushik Banerjee)
Secretary

THE INSTITUTE OF COST ACCOUNTANTS OF INDIA

(Statutory Body under an Act of Parliament)

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Advisory for Renewal of Certificate of Practice For 2023-24

The members of the Institute holding Certificate of Practice (CoP) having validity up to 31st March, 2023 are requested to comply with the following guidelines for renewal of their Certificate of Practice:

1. The following changes consequent to amendment of the Cost and Works Accountants Regulations, 1959 vide Notification dated 4th February, 2011 published in the Gazette of India may be noted:
   a. The validity of a Certificate of Practice (CoP) is for the period 1st April to 31st March every year unless it is cancelled under the provisions of the Cost and Works Accountants Act and Regulations, 1959 as amended.
   b. The Certificate of Practice issued shall automatically be renewed subject to submission of prescribed Form M-3 (duly filled in) and payment of renewal fee* and annual membership fee*.
   c. From the year 2011-12 onwards, letter for renewal Certificate of Practice is not being issued. However, the members concerned may download the renewal status from the Institute's website www.icmai.in.
   Link: https://eicmai.in/MMS/Login.aspx?mode=EU

2. It may please be noted that under Section 6 of the Cost and Works Accountants Act, 1959, **both the Annual Membership Fee* and Fee for Renewal of Certificate of Practice*** falls due on 1st April each year.

3. Special attention is invited to the fact that the validity of a Certificate of Practice expires on **31st March** each year unless it is renewed on or before the date of expiry in terms of the amended Regulation 10 of the Cost and Works Accountants Regulations, 1959. Hence, a member shall be required to renew the certificate of Practice within **31st March** every year.

4. **If the Certificate of Practice of a member is not renewed within 31st March, 2023, his/her status of CoP from 1st April 2023 till the date of renewal would be "Not Active".**

5. Subject to what has been mentioned in Sl. No. 3 & 4 above, a member can get his/her Certificate of Practice for 2023-24 renewed within **30th June, 2023.** If application for renewal of Certificate of Practice is made after 30th June, 2023, the member's Certificate of Practice for 2023-24 will not be renewed but will be considered as a case of restoration of Certificate of Practice till 31/03/2024. This restoration is applicable only to the CoP holders whose CoP is valid till 31/03/2023. For restoration of Certificate of Practice, he/she has to pay Rs.500/-* as restoration fee in addition to the **prescribed fees * along with duly filled in form 'M-3'.**

6. It may please be noted that mere payment of fees * alone will not be sufficient for renewal of Certificate of Practice. Application in prescribed Form M-3 is to be used for Renewal of Certificate of Practice duly filled in and signed is **mandatory.**The soft copy of prescribed Form M-3 for Renewal of Certificate of Practice can be downloaded from Institute's website www.icmai.in.
   Link: https://eicmai.in/external/PublicPages/WebsiteDisplay/PractitionersForms.aspx

7. The Institute has introduced a scheme of Continuing Education Programme (CEP) and the same is mandatory in accordance with provision to sub-regulation (1) of Regulation 10 of the Cost and Works Accountants Regulations, 1959, as amended, whereby no Certificate of Practice and renewal thereof shall be issued unless a member has

undergone minimum number of hours of such training. The detailed guidelines in this connection are available on Institute's website www.icmai.in.
Link: https://icmai.in/upload/Institute/CPD/CEP_Guidelines_01042021_31032024.pdf

8. For renewal and application of new CoP issued on and from 1st February, 2019, please refer to Notification **F. No. CWA/21/2019 dated 1st February, 2019 and subsequent corrigendum dated 8th March, 2019.** Link: https://icmai.in/icmai/news/5435.php). Accordingly new CoP holders on and from 1st February, 2019 are required to comply with Mandatory Capacity Building Training (MCBT) requirement for renewal of CoP for the FY 2023-24.

9. Other relevant issues for Renewal of Certificate of Practice are as follows:

a. Application for renewal of Certificate of Practice upto 31st March, 2024 has to be made in prescribed Form M-3 which may be filled online or through hard Copy of form duly filled in and signed on both sides together with Renewal Certificate of Practice fee of Rs.2,000/-* and all other dues to the Institute on account of annual membership fees * and entrance fees *.
b. The annual membership fee for Associate and Fellow members are Rs.1,000/-* and Rs.1,500/-* respectively. The entrance fee * for Associate and Fellow members is Rs. 1,000/-* each payable at a time at the time of application for admission to Associateship or advancement to Fellowship, as the case may be.
c. The fees * may be paid online or by Demand Draft/at par cheque payable at Kolkata if remitted by post to the Headquarters of the Institute.
d. Members should note that the **renewal of Certificate of Practice can be effected only after receipt of the prescribed fees * along with duly filled in form at the Headquarters of the Institute and on meeting the stipulated CEP credit hours.** Mere submission of the same at the Regional Councils or Chapters will not be sufficient. Members are advised to make payment directly to the Headquarters or use the online facility of submission of application and payment to avoid any delay.

All practising members are advised to send their application for renewal of Certificate of Practice for the year 2023-24 along with other requirements as indicated above immediately so as to reach the Institute's Office at Kolkata well in advance to enable the Institute to issue the renewal of Certificate by 31st March, 2023.

Renewal of Part-time Certificate of Practice

1. For renewal of part-time Certificate of Practice, it is also essential to furnish a certificate from the employer in the following form or in a form as near thereto as possible if the practising member has undertaken any employment or there has been a change in employment:

"Shri/Smt ……………………………………………….............. is employed as designation)

…………………….. and (name of Organisation) …………………….………………… he/she is

permitted, notwithstanding anything contained in the terms of his/her employment, to engage himself/herself in the practice of profession of Cost Accountancy in his/her spare time in addition to his/her regular salaried employment with us.

Signature of Employers with seal of Organisation"

2. It may be noted that members holding Part-time Certificate of Practice (CoP) are not eligible to undertake statutory assignments like Cost Audit, Central Excise Audit, etc.

**GST is applicable against payment*

THE INSTITUTE OF COST ACCOUNTANTS OF INDIA

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Kolkata, the 11th April, 2023

NOTIFICATION

11–CWR(681-713)/2023: In pursuance of sub-Regulation (3) of Regulation 11 of the Cost and Works Accountants Regulations, 1959, it is hereby notified that the Certificates of Practice granted to :

1. Shri Suraj Kumar Agarwal,BCOM HONS, ACMA, 1, Narayan Pally, A. K. Mukherjee Road, Kolkata-700090 (Membership No-47862) is cancelled from 27th July, 2022 to 31st March,2023 at his own request,
2. Shri Raunak Gupta, BCOM, ACS, ACMA, P-7, Dobson Lane, Howrah, 5th Floor, Near: Bank Of India, Kolkata-711101 (Membership No-44765) is cancelled from 27th July, 2022 to 31st March,2023 at his own request,
3. Shri Shambhu Singh, BCOM HONS, ACMA, 11 / 1 Pitamber Banerjee Lane, Bally, Bally-711201 (Membership No-50116) is cancelled from 21st September, 2022 to 31st March,2023 at his own request,
4. Smt Khushboo Bansal, BCOM HONS, ACMA, 798, D - Block, Howrah, Saraswati Vihar, Pitampura, Delhi-110034 (Membership No-48107) is cancelled from 07th October, 2022 to 31st March,2023 at her own request,
5. Smt Bhawna Sharma Chandla, BCOM HONS, ACMA, Flat No 653, Block D-6, Penta Homes,Vip Road, Zirakpur-140603 (Membership No-35642) is cancelled from 13rd October, 2022 to 31st March,2023 at her own request,
6. Shri Aniket Alkeshbhai Modi, BCOM, FCMA, 1 st Floor, Vikram - III, Plot No. 155, Sector - 1/A, Off. Tagore Road, Gandhidham-370201 (Membership No-36432) is cancelled from 15th October, 2022 to 31st March,2023 at his own request,
7. Shri Manish Malik, BCOM, ACMA, D - 368, Anand Vihar, Delhi-110092 (Membership No-38321) is cancelled from 27th October, 2022 to 31st March,2023 at his own request,
8. Shri Jagdish R Bhavsar, BCOM(HONS), FCMA, C-56, Krishna Krupa, Shankar lane, Kandivali (W), Mumbai-400067 (Membership No-8000) is cancelled from 29th October, 2022 to 31st March,2023 at his own request,
9. Shri Vivek Laddha, BCOM, ACA, ACMA, Shop No 2, Basement, Ganpati Plaza, Bajar No 3, Near Hari Bhai Kachori, Near Haribhai Kachori,, Bhilwara-311101 (Membership No-36722) is cancelled from 30th October, 2022 to 31st March,2023 at his own request,
10. Smt Samira Mohd Ayub Khan, BCOM, ACMA, FS 22 M 5/8 Adarsh Nagar, R.A. Kidwai Road, Wadala - West, Mumbai-400031 (Membership No-47672) is cancelled from 31st October, 2022 to 31st March,2023 at her own request,
11. Shri Mukesh Pandey MCOM, ACMA, # 908, Sector - 12 A, Panchkula-134115 (Membership No-42173) is cancelled from 10th November, 2022 to 31st March,2022 at his own request,
12. Shri Nava Teja Kota, BCOM, ACMA, 1-485, Mainroad, Near Hanuman Statute, Atchampet, Guntur-522409 (Membership No-50844) is cancelled from 28th November, 2022 to 31st March,2023 at his own request,
13. Shri Asok Kumar Mozumdar, MA(ECON), LLB, FCMA, 364, Bhuban Mohan Roy Road,, Green Park, Silpara, Behala,, Kolkata-700008 (Membership No-9508) is cancelled from 29th November, 2022 to 31st March,2023 at his own request,
14. Shri Vineet More, BCOM HONS, ACMA, Vivekananda Marg, P O - Srikanthapur, Near Hotel Odissi, Baleswar Sadar, Balasore-756001 (Membership No-47184) is cancelled from 01st December, 2022 to 31st March,2023 at his own request,
15. Shri Chandra Prakash Rathi, BCOM HONS, ACMA, S/o Govind Ram Rathi, Chopara Bazar, Rathi Sukh Sadan, Sarvodaya Bhawan Gali, Chhapar-331502 (Membership No-48579) is cancelled from 02nd December, 2022 to 31st March,2023 at his own request,

16. Smt Soniya Balasubramanian, BCOM, ACMA, 797, Keelakkottai Street, Ambalapattu south post, Orathanadu taluk, Tanjavur--614626 (Membership No-44780) is cancelled from 02nd December, 2022 to 31st March,2023 at her own request,
17. Smt P Padmaja, BCOM HONS, ACMA, Mission Para, Adra Adra--723121 (Membership No-51252) is cancelled from 03rd December, 2022 to 31st March,2023 at her own request,
18. Shri L Kathiresan, BCOM, FCA, CMA(USA), FCMA, 41/20, Kamarajar Road, Ramakrishna Nagar, Chennai-600087 (Membership No-1922) is cancelled from 15th December, 2022 to 31st March,2023 at his own request,
19. Shri Jugal Kishore Budhiraja, MCOM, FCS, FCMA, House No. F - 1084 (F F), Chittaranjan Park (C R Park), New Delhi-110019 (Membership No-10364) is cancelled from 26th December, 2022 to 31st March,2023 at his own request,
20. Shri Prince Soni, MCOM, MBA, ACMA, 152/5 PrempurI, Behind Shamli Bus Stand, Muzaffar Nagar-251002 (Membership No-52037) is cancelled from 03rd January, 2023 to 31st March,2023 at his own request,
21. Shri Srikanth Yerravally, BCOM,ACMA, H. No. 8-13, Village Aloor, Mandal Chevella,Rangareddy Dist.,Hyderabad-501503 (Membership No-48020) is cancelled from 6th January, 2023 to 31st March,2023 at his own request,
22. Shri Swarup Roy Chowdhury, BCOM, ACMA, Flat No. - 604, Tower G8, Eros Sampoornam, Sector – 2, Greater Noida(West), Gautam Buddha Nagar, Greater Noida -201306 (Membership No-24160) is cancelled from 6th January, 2023 to 31st March,2023 at his own request,
23. Shri Harish Agarwal,BCOM (HONS),ACMA, H No 2A Mahavir Market, H B Road Fancy Bazar, Opp Shoppers Point, Assam – 781001, (Membership No.- 52152), is cancelled from 9th January, 2023 to 31st March,2023 at his own request,
24. Smt Haseeba Mammu, MCOM, ACMA, 51/1714, Fort Light Complex, Fort Road, Kannur-670001 (Membership No-41906) is cancelled from 16th January, 2023 to 31st March,2023 at her own request,
25. Shri Ajay Joshi, BA(HONS), FCMA, 152/5 Ajay Joshi & Associates, Muzaffar Nagar-251002 (Membership No-5876`) is cancelled from 16th January, 2023 to 31st March,2023 at his own request,
26. Shri Nageswararao Paladugu, BCOM, MBA, ACMA, S/o. Paladugu Rambabu, Brahaman Bazar, Jujjuru, Krishna-521181 (Membership No-35064) is cancelled from 27th January, 2023 to 31st March,2023 at his own request,
27. Smt Manisha Vinay Taparia, BCOM, ACMA, Ghar No.16, sachin nagar, saras nagar, behind Market yard, ahmednagar, Ahmednagar-414001 (Membership No-37183) is cancelled from 28th January, 2023 to 31st March,2023 at her own request,
28. Shri Sellappan Nagarajan, MCOM, M PHIL, FCMA, 13/34, Nehru Nagar (West), Kalapatti (Po), Coimbatore-641048 (Membership No-39449) is cancelled from 1st February, 2023 to 31st March,2023 at his own request,
29. Smt K R Haripriya, BCOM, ACMA, G-11, Anugraha Apartments, Kamarajar Road, Peelamedu, Coimbatore-641.0004 (Membership No-50451) is cancelled from 1st February, 2023 to 31st March,2023 at her own request,
30. Shri Sastry V L N Somanchi, BCOM, MBA, ACMA, 8-4-368/g/4, Plot No. 4, Gouthampuri Colony, Adj. To Don Bosco High School, Erragadda, Hyderabad - 500018 (Membership No-50235) is cancelled from 12th February, 2023 to 31st March,2023 at his own request,
31. Smt Zarna Pankaj Thakar, earlier named as "Zarna Nishant Shah", BCOM, ACMA, 23/A, Shreenagar Society, Opp. Punjab National Bank, Nr. Cow(Gaye) Circle, Akota, Vadodara -390020 (Membership No-45876) is cancelled from 13th February, 2023 to 19th February, 2023 at her own request,
32. Shri Gaurav Sharma, MCOM, ACMA, 306, Masjid Moth, South Extension Part – 2, New Delhi - 110049 (Membership No-36514) is cancelled from 21st February, 2023 to 31st March,2023 at his own request,
33. Shri Vikram Kumar Murarka, BCOM(HONS), FCMA, 71, Canning Street, 4th Floor, B-410, Kestopur,New Kolkata - 700101 (Membership No-37356) is cancelled from 21st February, 2023 to 31st March,2023 at his own request.

Banerjee

(Kaushik Banerjee)
Secretary

THE INSTITUTE OF COST ACCOUNTANTS OF INDIA

(STATUTORY BODY UNDER AN ACT OF PARLIAMENT)

RESCHEDULED TIME TABLE & PROGRAMME– JUNE 2023

FOUNDATION COURSE EXAMINATION

(Multiple Choice Questions through offline OMR based from Centre)

Day & Date	Foundation Course Examination Syllabus-2016	
	Time 10.00 A.M. to 12.00 Noon. Paper – 1 & 2 (200 Marks)	**Time 2.00 P.M. to 4.00 P.M. Paper – 3 & 4 (200 Marks)**
Sunday, 16th July, 2023	**Paper – 1 :** Fundamentals of Economics & Management (100 Marks 50 Multiple Choice Questions) **Paper – 2 :** Fundamentals of Accounting (100 Marks 50 Multiple Choice Questions)	**Paper – 3 :** Fundamentals of Laws & Ethics (100 Marks 50 Multiple Choice Questions) **Paper – 4 :** Fundamentals of Business Mathematics & Statistics (100 Marks 50 Multiple Choice Questions)
	Foundation Course Examination Syllabus-2022	
	Time 10.00 A.M. to 12.00 Noon. Paper – 1 & 2 (200 Marks)	**Time 2.00 P.M. to 4.00 P.M. Paper – 3 & 4 (200 Marks)**
	Paper – 1 : Fundamentals of Business Laws and Business Communication (100 Marks 50 Multiple Choice Questions) **Paper – 2 :** Fundamentals of Financial and Cost Accounting (100 Marks 50 Multiple Choice Questions)	**Paper – 3 :** Fundamentals of Business Mathematics and Statistics (100 Marks 50 Multiple Choice Questions) **Paper – 4 :** Fundamentals of Business Economics and Management (100 Marks 50 Multiple Choice Questions)

The Institute has decided to conduct June 2023 Foundation Examination through offline OMR centre based.

Examination Fees

Foundation Course Examination	**Inland Candidate**	**₹1200/-**
	Overseas Candidate	**US $ 60**

1. Application Forms for Foundation Examination has to be filled up through online and fees will be accepted through online mode (including Payfee Module of IDBI Bank).
2. STUDENTS FROM OVERSEAS HAVE TO APPLY OFFLINE AND SEND DD ALONG WITH THE FORM.
3. (a) Students can login to the website www.icmai.in and apply online through payment gateway by using Credit/Debit card or Net banking.
   (b) Students can also pay their requisite fee through pay-fee module of IDBI Bank.
4. **Last date for receipt of Examination Application Forms is 16th May, 2023.**
5. **The Foundation Examination will be conducted in M.C.Q Mode through offline OMR based from Centre.**
6. **Each paper will carry 100 marks 50 Multiple Choice Questions (Each Question will carry 2 Marks). Each session will have a total of 100 Multiple Choice Questions of 200 marks.**
7. **All Candidates/students are to appear in the Foundation examination through offline OMR centre based.**
8. **A candidate/student who is completing all conditions for appearing in the examination as per Regulations will only be allowed to appear for the examination.**
9. **There is no negative marking.**
10. **Detailed instructions will be provided along with Admit Card.**
11. **Examination Centres: Adipur-Kachchh (Gujarat), Agartala, Agra, Ahmedabad, Akurdi, Allahabad, Angul Talcher, Asansol, Aurangabad, Bangalore, Bankura, Baroda, Berhampur – Ganjam (Odisha), Bharuch Ankleshwar, Bhilai, Bhilwara, Bhopal, Bewar City(Rajasthan), Bhubaneswar, Bilaspur, Bikaner (Rajasthan), Bokaro, Calicut, Chandigarh, Chennai, Coimbatore, Cuttack, Dindigul, Dehradun, Delhi, Dhanbad, Duliajan (Assam), Durgapur, Ernakulam, Erode, Faridabad, Gaya, Ghaziabad, Guntur, Gurgaon, Guwahati, Haridwar, Hazaribagh, Hosur, Howrah, Hyderabad, Indore, Jaipur, Jabalpur, Jalandhar, Jammu, Jamshedpur, Jodhpur, Kalyan, Kannur, Kanpur, Kanchipuram, Kolhapur, Kolkata, Kollam, Kota, Kottakkal (Malappuram), Kottayam, Lucknow, Ludhiana, Madurai, Mangalore, Meerut, Mumbai, Mysore, Nagpur, Naihati, Nasik, Nellore, Neyveli, Noida, Palakkad, Palghar, Panaji (Goa), Patiala, Patna, Pondicherry, Port Blair, Pune, Raipur, Rajahmundry, Ranchi, Rourkela, Salem, Sambalpur, Serampore, Shillong, Shimla, Siliguri, Singrauli (Vindhyanagar), Solapur, Srinagar, Surat, Thrissur, Tiruchirapalli, Tirunelveli, Tirupati, Trivandrum, Udaipur, Vapi, Vashi, Vellore, Vijayawada, Visakhapatnam and Overseas Centres at Bahrain, Dubai and Muscat.**
12. **Probable date of publication of result: To be announced in due course.**

* The Candidates/students are advised to keep regularly in touch with the website of the Institute for further notifications and announcements relating to Foundation Examination of June 2023 and in case of any query or clarification can e-mail us at- exam.helpdesk@icmai.in

CMA Kaushik Banerjee
Secretary

THE INSTITUTE OF COST ACCOUNTANTS OF INDIA

(STATUTORY BODY UNDER AN ACT OF PARLIAMENT)

RESCHEDULED INTERMEDIATE AND FINAL EXAMINATION TIME TABLE & PROGRAMME – JUNE 2023

ATTENTION: INTERMEDIATE & FINAL EXAMINATION (JUNE – 2023 TERM) WILL BE HELD ON ALTERNATE DATES FOR EACH GROUP.

Day & Date	FINAL (Time: 10.00 A.M. to 01.00 P.M.)		INTERMEDIATE (Time: 2.00 P.M. to 05.00 P.M.)	
	PROGRAMME FOR SYLLABUS 2016	**PROGRAMME FOR SYLLABUS 2022**	**PROGRAMME FOR SYLLABUS 2016**	**PROGRAMME FOR SYLLABUS 2022**
Saturday, 15th July, 2023	Corporate Laws & Compliance **(P-13)**	Corporate and Economic Laws **(P-13)**	Financial Accounting **(P-05)**	Business Laws and Ethics **(P-05)**
Sunday, 16th July, 2023	Corporate Financial Reporting **(P-17)**	Cost and Management Audit **(P-17)**	Operations Management & Strategic Management **(P-09)**	Operations Management and Strategic Management **(P-09)**
Monday, 17th July, 2023	Strategic Financial Management **(P-14)**	Strategic Financial Management **(P-14)**	Laws & Ethics **(P-06)**	Financial Accounting **(P-06)**
Tuesday, 18th July, 2023	Indirect Tax Laws & Practice **(P-18)**	Corporate Financial Reporting **(P-18)**	Cost & Management Accounting and Financial Management **(P-10)**	Corporate Accounting and Auditing **(P-10)**
Wednesday, 19th July, 2023	Strategic Cost Management – Decision Making **(P-15)**	Direct Tax Laws and International Taxation **(P-15)**	Direct Taxation **(P-07)**	Direct and Indirect Taxation **(P-07)**
Thursday, 20th July, 2023	Cost & Management Audit **(P-19)**	Indirect Tax Laws and Practice **(P-19)**	Indirect Taxation **(P-11)**	Financial Management and Business Data Analytics **(P-11)**
Friday 21st July, 2023	Direct Tax Laws and International Taxation **(P-16)**	Strategic Cost Management **(P-16)**	Cost Accounting **(P-08)**	Cost Accounting **(P-08)**
Saturday, 22nd July, 2023	Strategic Performance Management and Business Valuation **(P-20)**	**Electives (Any one of three Papers) :** (i) Strategic Performance Management and Business Valuation **(P-20A)** (ii) Risk Management in Banking and Insurance **(P-20B)** (iii) Entrepreneurship and Start up **(P-20C)**	Company Accounts & Audit **(P-12)**	Management Accounting **(P-12)**

Group (s)		Final Examination	Intermediate Examination
One Group	(Inland Centres)	₹1400/-	₹1200/-
	(Overseas Centres)	US $ 100	US $ 90
Two Groups	(Inland Centres)	₹2800/-	₹2400/-
	(Overseas Centres)	US $ 100	US $ 90

1. **Application Forms for Intermediate and Final Examination has to be filled up through online only and fees will be accepted through online mode only (including Payfee Module of IDBI Bank). No Offline form and DD payment will be accepted for domestic candidate.**
2. **STUDENTS OPTING FOR OVERSEAS CENTRES HAVE TO APPLY OFFLINE AND SEND DD ALONGWITH THE FORM.**
3. **(a) Students can login to the website www.icmai.in and apply online through payment gateway by using Credit/Debit card or Net banking.**
   (b) Students can also pay their requisite fee through pay-fee module of IDBI Bank.
4. **Last date for receipt of Examination Application Forms is 15th May, 2023.**
5. **The mode of examination will be offline-centre based.**
6. **The provisions of Direct Tax Laws and Indirect Tax Laws, as amended by the Finance Act, 2022, including notifications and circulars issued up to 30th November, 2022, are applicable for June, 2023 term of examination for the Subjects:**
   Paper 7 - Direct Taxation, Paper 11 - Indirect Taxation (Intermediate), Paper 16 - Direct Tax laws and International Taxation and Paper 18 - Indirect Tax Laws & Practice (Final) under Syllabus 2016, &Paper 7 (Section A) – Direct Taxation, Paper 7 (Section B) – Indirect Taxation (Intermediate), Paper 15 - Direct Tax laws and International Taxation and Paper 19 - Indirect Tax Laws and Practice (Final).
   The relevant Assessment Year is 2023-24. For statutory updates and amendments please refer to the links:
   Syllabus 2016 : https://icmai.in/studentswebsite/Syl-2016.php Syllabus 2022:https://icmai.in/studentswebsite/Supplementary_Syllabus_2022_June_2023.php
7. **Companies (Cost Records and Audit) Rules, 2014 as amended up to 30th November, 2022 is applicable for June, 2023 term of examinations under Syllabus 2016: Paper 12- Company Accounts and Audit (Intermediate Level)and Paper 19 - Cost and Management Audit (Final Level) & under Syllabus 2022: Paper 10 – Corporate Accounting and Auditing (Intermediate Level) and Paper 17 - Cost and Management Audit (Final Level). For updates and amendments please refer to the links:**
   Syllabus 2016 : https://icmai.in/studentswebsite/Syl-2016.php and Syllabus 2022https://icmai.in/studentswebsite/Supplementary_Syllabus_2022_June_2023.php
8. **The provisions of the Companies Act 2013 are applicable for Paper 6 - Laws and Ethics (Intermediate Level) and Paper 13 - Corporate Laws and Compliance (Final Level) under Syllabus 2016 &**
   for Paper 5 – Business Laws and Ethics (Intermediate Level) and Paper 13 - Corporate and Economic Laws (Final Level) under Syllabus 2022 to the extent notified by the Government of India up to 30th November, 2022 are applicable for June, 2023 term of examinations.
   Please refer to the links: Syllabus 2016 : https://icmai.in/studentswebsite/Syl-2016.php and Syllabus 2022 https://icmai.in/studentswebsite/Supplementary_Syllabus_2022_June_2023.php
9. **For amendments and supplementary up to 30th November,2022 in Paper 5 - Financial Accounting, Paper 12 - Company Accounts and Audit (Intermediate Level) and Paper 17 - Corporate Financial Reporting (Final Level) of Syllabus 2016 &**
   Paper 6 - Financial Accounting, Paper 10 – Corporate Accounting and Auditing (Intermediate Level) and Paper 18 - Corporate Financial Reporting (Final Level) of Syllabus 2022, applicable for June, 2023 term of examinations please refer to the following links:
   Syllabus 2016 : https://icmai.in/studentswebsite/Syl-2016.php and Syllabus 2022 https://icmai.in/studentswebsite/Supplementary_Syllabus_2022_June_2023.php
10. **Examination Centres: Adipur-Kachchh (Gujarat), Agartala, Agra, Ahmedabad, Akurdi, Allahabad, Angul Talcher, Asansol, Aurangabad, Bangalore, Bankura, Baroda, Berhampur – Ganjam (Odisha), Bharuch Ankleshwar, Bhilai, Bhilwara, Bhopal, Bewar City(Rajasthan), Bhubaneswar, Bilaspur, Bikaner (Rajasthan), Bokaro, Calicut, Chandigarh, Chennai, Coimbatore, Cuttack, Dindigul, Dehradun, Delhi, Dhanbad, Duliajan (Assam), Durgapur, Ernakulam, Erode, Faridabad, Gaya, Ghaziabad, Guntur, Gurgaon, Guwahati, Haridwar, Hazaribagh, Hosur, Howrah, Hyderabad, Indore, Jaipur, Jabalpur, Jalandhar, Jammu, Jamshedpur, Jodhpur, Kalyan, Kannur, Kanpur, Kanchipuram, Kolhapur, Kolkata, Kollam, Kota, Kottakkal (Malappuram), Kottayam, Lucknow, Ludhiana, Madurai, Mangalore, Meerut, Mumbai, Mysore, Nagpur, Naihati, Nasik, Nellore, Neyveli, Noida, Palakkad, Palghar, Panaji (Goa), Patiala, Patna, Pondicherry, Port Blair, Pune, Raipur, Rajahmundry, Ranchi, Rourkela, Salem, Sambalpur, Serampore, Shillong, Shimla, Siliguri, Singrauli (Vindhyanagar), Solapur, Srinagar, Surat, Thrissur, Tiruchirapalli, Tirunelveli, Tirupati, Trivandrum, Udaipur, Vapi, Vashi, Vellore, Vijayawada, Visakhapatnam and Overseas Centres at Bahrain, Dubai and Muscat.**
11. **A candidate who is fulfilling all conditions specified for appearing in examination will only be allowed to appear for examination.**
12. **Probable date of publication of result: Inter & Final – 26th September, 2023.**

*** The candidates/students are advised to keep regularly in touch with the website of the Institute for further notifications and announcements relating to Examination of June 2023 and in case of any query or clarification can e-mail us only at exam.helpdesk@icmai.in**

CMA Kaushik Banerjee
Secretary

To
ALL MEMBERS OF THE INSTITUTE

You are requested to send the duly filled in and signed form printed below to the **Secretary, The Institute of Cost Accountants of India, CMA BHAWAN 12, Sudder Street, Kolkata - 700016** by post or coloured scanned copy of the filled up form through email attachment to membership.response@icmai.in. This will be maintained at the Institute's end and used for verification as and when required.
Clear coloured scanned copy preferably in pdf format is only acceptable.

(Kaushik Banerjee)
Secretary

THE INSTITUTE OF COST ACCOUNTANTS OF INDIA

(STATUTORY BODY UNDER AN ACT OF PARLIAMENT)

SPECIMEN SIGNATURE CARD

Members of the Institute are requested to provide their specimen in the following format and send the same positively

PLEASE AFFIX ONE RECENT PASSPORT SIZED PHOTOGRAPH HERE
SIGNATURE IN BLACK INK

(Please affix one recent passport-size photograph and sign below the same in black ink. Please don't sign across the photograph)

I, Shri/Ms.. am giving below my specimen signature for the Institute's record.

Previous Signature :	

Current Specimen Signature	
1.	**2.**
3.	**4.**

Salutation	Mr. / Mrs. / Ms. / Dr.	**FULL NAME OF THE APPLICANT**
First *		
Middle		
Last *		

Membership No. *		Date of Birth *	Day	Month	Year

Mobile		Email	

ISD Code		STD Code		Phone No.	

Place :

Date :

Signature of Member
(In Black Ink)

Note:

- (*) marked fields are mandatory.
- The above form should be sent to the **Secretary, The Institute of Cost Accountants of India, CMA BHAWAN, 12, Sudder Street, Kolkata – 700016** or coloured scanned copy of the filled up form through email attachment to **membership.response@icmai.in**.
- Please use **Black Ink** for signature.
- Please put your **specimen signature in all the 4 boxes.**
- Please intimate your Email-id and Mobile No.

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