

INTERNATIONAL JOURNAL OF RESEARCH IN COMMERCE, ECONOMICS & MANAGEMENT

I
J
R
C
M



A Monthly Double-Blind Peer Reviewed (Refereed/Juried) Open Access International e-Journal - Included in the International Serial Directories

Indexed & Listed at:

Ulrich's Periodicals Directory ©, ProQuest, U.S.A., EBSCO Publishing, U.S.A., Cabell's Directories of Publishing Opportunities, U.S.A.

Open J-Gate, India [link of the same is duly available at Inlibnet of University Grants Commission (U.G.C.)].

Index Copernicus Publishers Panel, Poland with IC Value of 5.09 & number of libraries all around the world.

Circulated all over the world & Google has verified that scholars of more than 1771 Cities in 148 countries/territories are visiting our journal on regular basis.

Ground Floor, Building No. 1041-C-1, Devi Bhawan Bazar, JAGADHRI – 135 003, Yamunanagar, Haryana, INDIA

<http://ijrcm.org.in/>

CONTENTS

Sr. No.	TITLE & NAME OF THE AUTHOR (S)	Page No.
1.	STUDENTS' PERFORMANCE IN SOCIAL STUDIES AS CORRELATES OF MORAL VALUES AND PERCEPTION IN SELECTED SECONDARY SCHOOLS <i>DR. EMMANUEL OLUSOLA ADU, EKIMA TINA SALAKO & IFEOMA R. EZE</i>	1
2.	COMMITMENT AND MOTIVATION OF AIDED COLLEGE TEACHERS IN TAMIL NADU <i>DR. K. CHANDRASEKARAN & SUBRAMANIAN CHANDRAN BABU</i>	5
3.	CORPORATE FINANCE DEVELOPMENT THROUGH INSTITUTE INTERACTIONS IN SERVICE AND NON SERVICE SECTORS, ETHIOPIA <i>DR. M MOSES ANTONY RAJENDRAN</i>	13
4.	PROJECT MANAGEMENT PRACTICE IN PUBLIC SECTOR <i>FAKHRADDIN MAROOFI & SAMIRA DEHGHAN</i>	15
5.	AN ANALYSIS ON THE RESPONDENTS PERCEPTION OF THE RECRUITMENT AND SELECTION PROCESS AND ITS EFFECT ON THE PERFORMANCE OF EMPLOYEES IN THE MICRO- FINANCE INSTITUTIONS IN RWANDA <i>MACHOGU MORONGE ABIUD, LYNET OKIKO & VICTORIA KADONDI</i>	19
6.	ORIGIN AND EVOLUTION OF CORPORATE OWNERSHIP IN JAPAN: A HISTORICAL REVIEW <i>MOHAMMED MEHADI MASUD MAZUMDER</i>	25
7.	INTERACTION OF STOCK MARKET WITH MACROECONOMIC VARIABLES: A STUDY OF KSE 100 INDEX PAKISTAN <i>SHAHZAD KHAN, NIAMAT ULLAH & SHAHZAD ZEB</i>	32
8.	TOWARDS AN INTEGRATED CONCEPTUAL MODEL ON TOURISM COMPETITIVENESS: DOES CLUSTERING WAY FORWARD? <i>IMALI N. FERNANDO</i>	36
9.	EFFECTS OF INDIRECT SOURCES OF ENERGY ON AGRICULTURAL PRODUCTIVITY IN INDIA <i>DR. BIDYADHAR MAJHI & AWADHESH KUMAR</i>	42
10.	THE PROSPECTS AND CHALLENGES IN RURAL MARKETING WITH REFERENCES TO TWO WHEELERS - A STUDY OF KARAD TALUKA OF SATARA DISTRICT <i>DR. H. G. ABHYANKAR & S. N. JAGADALE.</i>	45
11.	A STUDY ON AWARENESS OF SOCIAL SECURITY FOR MIGRANT WORKERS IN INDIA <i>S PRAKASH RAO PONNAGANTI, M. MURUGAN & DR. K.P.V. RAMANA KUMAR</i>	48
12.	CORPORATE ENTREPRENEURSHIP - A BUSINESS STRATEGY <i>C. S. RAMANIGOPAL, G. PALANIAPPAN & G. MURUGESAN</i>	51
13.	DETERMINANTS OF REPAYMENT IN AGRICULTURAL CREDIT IN COIMBATORE DISTRICT <i>DR. S. GANDHIMATHI, DR. P. AMBIGADEVI & K. R. GOMATHI</i>	55
14.	FINANCES OF DECS OF CONVENTIONAL UNIVERSITIES IN ANDHRA PRADESH - AN EVALUATION <i>DR. G. VENKATACHALAM & P.MOHAN REDDY</i>	60
15.	A STUDY OF SOCIO - ECONOMIC VARIABLES FOR TOOTHPASTE BRANDS IN INDORE CITY <i>VISHAL SONI & DR. ANAND SAPRE</i>	65
16.	A REVIEW OF ECONOMIC AND FINANCIAL INCLUSION IN NORTH EASTERN STATES OF INDIA <i>DR. SANJAY TUPE</i>	70
17.	THE EFFECTIVENESS OF MICRO FINANCE INSTITUTIONS ON SOCIO-ECONOMIC DEVELOPMENT OF WOMEN IN KARNATAKA <i>DR. ANURADHA.PS</i>	74
18.	A STUDY OF RELATIONSHIP BETWEEN S&P CNX NIFTY AND EXCHANGE RATE <i>SAURABH SINGH & KIRTI LALWANI</i>	78
19.	SELF HELP GROUPS IN INDIA: AN ANALYSIS <i>DR. MD MOAZZAM NAZRI</i>	82
20.	ANALYSIS OF PRE & POST LIBERALISATION SCENARIO IN EDIBLE OILSEEDS SECTOR IN INDIA <i>DR. SATYA PRASAD VK</i>	87
21.	RURAL TOURISM: A PREVENTIVE WEAPON OF SINKING URBANIZATION AND RURAL ECONOMIC DEVELOPMENT <i>DR. BIDYUT JYOTI BHATTACHARJEE</i>	95
22.	SMEs RISING IN INDIA: AN OVERVIEW <i>BARNASREE CHATTERJEE</i>	100
23.	EVOLUTION OF PUBLIC DISTRIBUTION SYSTEM IN INDIA <i>DR. P. CHENNAKRISHNAN</i>	105
24.	STRATEGIC FACTORS FOR RURAL TOURISM SUSTAINABILITY <i>AASIM MIR & SHAFQAT AJAZ</i>	110
25.	A STUDY ON ENHANCING EFFICIENCY OF UNORGANIZED POWERLOOM SECTOR WITH SPECIAL REFERENCE TO POWERLOOM SECTOR IN INDIA <i>P. S. GURUMURTHY & DR. VASANTI C IYER</i>	113
26.	THE ROLE OF MAHATMA GANDHI NATIONAL RURAL EMPLOYMENT GUARANTEE SCHEME IN POVERTY ALLEVIATION IN INDIA <i>DR. R. MUTHUSAMY</i>	119
27.	CHANGING PARADIGM AND HUMAN RESOURCE DEVELOPMENT: A CASE STUDY OF TATA MOTORS <i>RICHA NANGIA</i>	124
28.	TRADE INDUCED EMPLOYMENT FUNCTION AND EMPLOYMENT MULTIPLIER: A CASE STUDY IN INDO-MYANMAR BORDER TRADE <i>MAYENGBAM LALIT SINGH & DIPALI BOSUMATARI</i>	128
29.	FDI POLICIES OF INDIAN GOVERNMENT SINCE ECONOMIC REFORMS – AN ANALYSIS <i>SIRAJ-UL-HASSAN RESHI</i>	133
30.	ICT AND ECONOMIC GROWTH: THE VARIETY OF DIGITAL DIVIDES LESSONS FROM SOUTHERN AND EASTERN MEDITERRANEAN <i>VAHID RANGRIZ</i>	140
	REQUEST FOR FEEDBACK	146

CHIEF PATRON

PROF. K. K. AGGARWAL

Chancellor, Lingaya's University, Delhi
Founder Vice-Chancellor, Guru Gobind Singh Indraprastha University, Delhi
Ex. Pro Vice-Chancellor, Guru Jambheshwar University, Hisar

FOUNDER PATRON

LATE SH. RAM BHAJAN AGGARWAL

Former State Minister for Home & Tourism, Government of Haryana
Former Vice-President, Dadri Education Society, Charkhi Dadri
Former President, Chinar Syntex Ltd. (Textile Mills), Bhiwani

CO-ORDINATOR

DR. BHAVET

Faculty, M. M. Institute of Management, MaharishiMarkandeshwarUniversity, Mullana, Ambala, Haryana

ADVISORS

DR. PRIYA RANJAN TRIVEDI

Chancellor, The Global Open University, Nagaland

PROF. M. S. SENAM RAJU

Director A. C. D., School of Management Studies, I.G.N.O.U., New Delhi

PROF. M. N. SHARMA

Chairman, M.B.A., HaryanaCollege of Technology & Management, Kaithal

PROF. S. L. MAHANDRU

Principal (Retd.), MaharajaAgrasenCollege, Jagadhri

EDITOR

PROF. R. K. SHARMA

Professor, Bharti Vidyapeeth University Institute of Management & Research, New Delhi

CO-EDITOR

DR. SAMBHAV GARG

Faculty, M. M. Institute of Management, MaharishiMarkandeshwarUniversity, Mullana, Ambala, Haryana

EDITORIAL ADVISORY BOARD

DR. RAJESH MODI

Faculty, Yanbu Industrial College, Kingdom of Saudi Arabia

PROF. SIKANDER KUMAR

Chairman, Department of Economics, HimachalPradeshUniversity, Shimla, Himachal Pradesh

PROF. SANJIV MITTAL

UniversitySchool of Management Studies, Guru Gobind Singh I. P. University, Delhi

PROF. RAJENDER GUPTA

Convener, Board of Studies in Economics, University of Jammu, Jammu

PROF. NAWAB ALI KHAN

Department of Commerce, Aligarh Muslim University, Aligarh, U.P.

PROF. S. P. TIWARI

Head, Department of Economics & Rural Development, Dr. Ram Manohar Lohia Avadh University, Faizabad

DR. ANIL CHANDHOK

Professor, Faculty of Management, Maharishi Markandeshwar University, Mullana, Ambala, Haryana

DR. ASHOK KUMAR CHAUHAN

Reader, Department of Economics, Kurukshetra University, Kurukshetra

DR. SAMBHAVNA

Faculty, I.I.T.M., Delhi

DR. MOHENDER KUMAR GUPTA

Associate Professor, P.J.L.N. Government College, Faridabad

DR. VIVEK CHAWLA

Associate Professor, Kurukshetra University, Kurukshetra

DR. SHIVAKUMAR DEENE

Asst. Professor, Dept. of Commerce, School of Business Studies, Central University of Karnataka, Gulbarga

ASSOCIATE EDITORS

PROF. ABHAY BANSAL

Head, Department of Information Technology, Amity School of Engineering & Technology, Amity University, Noida

PARVEEN KHURANA

Associate Professor, Mukand Lal National College, Yamuna Nagar

SHASHI KHURANA

Associate Professor, S.M.S. Khalsa Lubana Girls College, Barara, Ambala

SUNIL KUMAR KARWASRA

Principal, Aakash College of Education, Chanderkalan, Tohana, Fatehabad

DR. VIKAS CHOUDHARY

Asst. Professor, N.I.T. (University), Kurukshetra

TECHNICAL ADVISORS

DR. MOHITA

Faculty, Yamuna Institute of Engineering & Technology, Village Gadholi, P. O. Gadholi, Yamunanagar

AMITA

Faculty, Government M. S., Mohali

FINANCIAL ADVISORS

DICKIN GOYAL

Advocate & Tax Adviser, Panchkula

NEENA

Investment Consultant, Chambaghat, Solan, Himachal Pradesh

LEGAL ADVISORS

JITENDER S. CHAHAL

Advocate, Punjab & Haryana High Court, Chandigarh U.T.

CHANDER BHUSHAN SHARMA

Advocate & Consultant, District Courts, Yamunanagar at Jagadhri

SUPERINTENDENT

SURENDER KUMAR POONIA

CALL FOR MANUSCRIPTS

We invite unpublished novel, original, empirical and high quality research work pertaining to recent developments & practices in the area of Computer, Business, Finance, Marketing, Human Resource Management, General Management, Banking, Insurance, Corporate Governance and emerging paradigms in allied subjects like Accounting Education; Accounting Information Systems; Accounting Theory & Practice; Auditing; Behavioral Accounting; Behavioral Economics; Corporate Finance; Cost Accounting; Econometrics; Economic Development; Economic History; Financial Institutions & Markets; Financial Services; Fiscal Policy; Government & Non Profit Accounting; Industrial Organization; International Economics & Trade; International Finance; Macro Economics; Micro Economics; Monetary Policy; Portfolio & Security Analysis; Public Policy Economics; Real Estate; Regional Economics; Tax Accounting; Advertising & Promotion Management; Business Education; Management Information Systems (MIS); Business Law, Public Responsibility & Ethics; Communication; Direct Marketing; E-Commerce; Global Business; Health Care Administration; Labor Relations & Human Resource Management; Marketing Research; Marketing Theory & Applications; Non-Profit Organizations; Office Administration/Management; Operations Research/Statistics; Organizational Behavior & Theory; Organizational Development; Production/Operations; Public Administration; Purchasing/Materials Management; Retailing; Sales/Selling; Services; Small Business Entrepreneurship; Strategic Management Policy; Technology/Innovation; Tourism, Hospitality & Leisure; Transportation/Physical Distribution; Algorithms; Artificial Intelligence; Compilers & Translation; Computer Aided Design (CAD); Computer Aided Manufacturing; Computer Graphics; Computer Organization & Architecture; Database Structures & Systems; Digital Logic; Discrete Structures; Internet; Management Information Systems; Modeling & Simulation; Multimedia; Neural Systems/Neural Networks; Numerical Analysis/Scientific Computing; Object Oriented Programming; Operating Systems; Programming Languages; Robotics; Symbolic & Formal Logic and Web Design. The above mentioned tracks are only indicative, and not exhaustive.

Anybody can submit the soft copy of his/her manuscript **anytime** in M.S. Word format after preparing the same as per our submission guidelines duly available on our website under the heading guidelines for submission, at the email address: infoijrcm@gmail.com.

GUIDELINES FOR SUBMISSION OF MANUSCRIPT

1. **COVERING LETTER FOR SUBMISSION:**

DATED: _____

THE EDITOR
IJRCM

Subject: SUBMISSION OF MANUSCRIPT IN THE AREA OF.

(e.g. Finance/Marketing/HRM/General Management/Economics/Psychology/Law/Computer/IT/Engineering/Mathematics/other, please specify)

DEAR SIR/MADAM

Please find my submission of manuscript entitled ' _____ ' for possible publication in your journals.

I hereby affirm that the contents of this manuscript are original. Furthermore, it has neither been published elsewhere in any language fully or partly, nor is it under review for publication elsewhere.

I affirm that all the author (s) have seen and agreed to the submitted version of the manuscript and their inclusion of name (s) as co-author (s).

Also, if my/our manuscript is accepted, I/We agree to comply with the formalities as given on the website of the journal & you are free to publish our contribution in any of your journals.

NAME OF CORRESPONDING AUTHOR:

Designation:

Affiliation with full address, contact numbers & Pin Code:

Residential address with Pin Code:

Mobile Number (s):

Landline Number (s):

E-mail Address:

Alternate E-mail Address:

NOTES:

- a) The whole manuscript is required to be in **ONE MS WORD FILE** only (pdf. version is liable to be rejected without any consideration), which will start from the covering letter, inside the manuscript.
- b) The sender is required to mention the following in the **SUBJECT COLUMN** of the mail:
New Manuscript for Review in the area of (Finance/Marketing/HRM/General Management/Economics/Psychology/Law/Computer/IT/Engineering/Mathematics/other, please specify)
- c) There is no need to give any text in the body of mail, except the cases where the author wishes to give any specific message w.r.t. to the manuscript.
- d) The total size of the file containing the manuscript is required to be below **500 KB**.
- e) Abstract alone will not be considered for review, and the author is required to submit the complete manuscript in the first instance.
- f) The journal gives acknowledgement w.r.t. the receipt of every email and in case of non-receipt of acknowledgment from the journal, w.r.t. the submission of manuscript, within two days of submission, the corresponding author is required to demand for the same by sending separate mail to the journal.

2. **MANUSCRIPT TITLE:** The title of the paper should be in a 12 point Calibri Font. It should be bold typed, centered and fully capitalised.

3. **AUTHOR NAME (S) & AFFILIATIONS:** The author (s) **full name, designation, affiliation (s), address, mobile/landline numbers, and email/alternate email address** should be in italic & 11-point Calibri Font. It must be centered underneath the title.

4. **ABSTRACT:** Abstract should be in fully italicized text, not exceeding 250 words. The abstract must be informative and explain the background, aims, methods, results & conclusion in a single para. Abbreviations must be mentioned in full.

5. **KEYWORDS:** Abstract must be followed by a list of keywords, subject to the maximum of five. These should be arranged in alphabetic order separated by commas and full stops at the end.
6. **MANUSCRIPT:** Manuscript must be in **BRITISH ENGLISH** prepared on a standard A4 size **PORTRAIT SETTING PAPER**. It must be prepared on a single space and single column with 1" margin set for top, bottom, left and right. It should be typed in 8 point Calibri Font with page numbers at the bottom and centre of every page. It should be free from grammatical, spelling and punctuation errors and must be thoroughly edited.
7. **HEADINGS:** All the headings should be in a 10 point Calibri Font. These must be bold-faced, aligned left and fully capitalised. Leave a blank line before each heading.
8. **SUB-HEADINGS:** All the sub-headings should be in a 8 point Calibri Font. These must be bold-faced, aligned left and fully capitalised.
9. **MAIN TEXT:** The main text should follow the following sequence:

INTRODUCTION**REVIEW OF LITERATURE****NEED/IMPORTANCE OF THE STUDY****STATEMENT OF THE PROBLEM****OBJECTIVES****HYPOTHESES****RESEARCH METHODOLOGY****RESULTS & DISCUSSION****FINDINGS****RECOMMENDATIONS/SUGGESTIONS****CONCLUSIONS****SCOPE FOR FURTHER RESEARCH****ACKNOWLEDGMENTS****REFERENCES****APPENDIX/ANNEXURE**

It should be in a 8 point Calibri Font, single spaced and justified. The manuscript should preferably not exceed **5000 WORDS**.

10. **FIGURES & TABLES:** These should be simple, crystal clear, centered, separately numbered & self explained, and **titles must be above the table/figure. Sources of data should be mentioned below the table/figure.** It should be ensured that the tables/figures are referred to from the main text.
11. **EQUATIONS:** These should be consecutively numbered in parentheses, horizontally centered with equation number placed at the right.
12. **REFERENCES:** The list of all references should be alphabetically arranged. The author (s) should mention only the actually utilised references in the preparation of manuscript and they are supposed to follow **Harvard Style of Referencing**. The author (s) are supposed to follow the references as per the following:
 - All works cited in the text (including sources for tables and figures) should be listed alphabetically.
 - Use **(ed.)** for one editor, and **(ed.s)** for multiple editors.
 - When listing two or more works by one author, use --- (20xx), such as after Kohl (1997), use --- (2001), etc, in chronologically ascending order.
 - Indicate (opening and closing) page numbers for articles in journals and for chapters in books.
 - The title of books and journals should be in italics. Double quotation marks are used for titles of journal articles, book chapters, dissertations, reports, working papers, unpublished material, etc.
 - For titles in a language other than English, provide an English translation in parentheses.
 - The location of endnotes within the text should be indicated by superscript numbers.

PLEASE USE THE FOLLOWING FOR STYLE AND PUNCTUATION IN REFERENCES:**BOOKS**

- Bowersox, Donald J., Closs, David J., (1996), "Logistical Management." Tata McGraw, Hill, New Delhi.
- Hunker, H.L. and A.J. Wright (1963), "Factors of Industrial Location in Ohio" Ohio State University, Nigeria.

CONTRIBUTIONS TO BOOKS

- Sharma T., Kwatra, G. (2008) Effectiveness of Social Advertising: A Study of Selected Campaigns, Corporate Social Responsibility, Edited by David Crowther & Nicholas Capaldi, Ashgate Research Companion to Corporate Social Responsibility, Chapter 15, pp 287-303.

JOURNAL AND OTHER ARTICLES

- Schemenner, R.W., Huber, J.C. and Cook, R.L. (1987), "Geographic Differences and the Location of New Manufacturing Facilities," Journal of Urban Economics, Vol. 21, No. 1, pp. 83-104.

CONFERENCE PAPERS

- Garg, Sambhav (2011): "Business Ethics" Paper presented at the Annual International Conference for the All India Management Association, New Delhi, India, 19–22 June.

UNPUBLISHED DISSERTATIONS AND THESES

- Kumar S. (2011): "Customer Value: A Comparative Study of Rural and Urban Customers," Thesis, Kurukshetra University, Kurukshetra.

ONLINE RESOURCES

- Always indicate the date that the source was accessed, as online resources are frequently updated or removed.

WEBSITES

- Garg, Bhavet (2011): Towards a New Natural Gas Policy, Political Weekly, Viewed on January 01, 2012 <http://epw.in/user/viewabstract.jsp>

ANALYSIS OF PRE & POST LIBERALISATION SCENARIO IN EDIBLE OILSEEDS SECTOR IN INDIA

DR. SATYA PRASAD VK
ASST. PROFESSOR
IBS
HYDERABAD

ABSTRACT

Edible oil is an item of mass consumption and an essential commodity; oilseeds are the basic raw material for manufacturing edible oils. Post Liberalisation there have been immense changes in the edible oil sector in India - from a country which was almost self-sufficient, it became one of the largest importer of edible oils. This paper focuses on Edible oilseeds sector and tries to find out reasons for this turnaround and tries to analyse as to what happened to our major oilseed crops like Groundnut, Soya, Sunflower, and Mustard after liberalization and whether there was any shift in cultivation, which might have impacted the Edible oil Industry. The study is based on secondary data collected from reports of Ministry of Agriculture, Government of India.

KEYWORDS

Liberalization, edible oilseeds.

INTRODUCTION

India is one of the largest producers of oilseeds in the world. India contributes about 9 per cent of the world oilseeds production, is the 4th largest edible oil economy in the world and this sector occupies an important position in the agricultural economy. Due to its vast diversity of climatic conditions, India produces various types of oilseeds. The oilseeds area and output is concentrated in Central and southern parts of India, mainly in Madhya Pradesh, Gujarat, Rajasthan, Andhra Pradesh and Karnataka. The nine major oilseeds cultivated in India are groundnut, mustard/rapeseed, sesame, safflower, linseed, niger seed, castorseed, soyabean and sunflower. Coconut is the most important source of edible oil amongst plantation crops, while in non-conventional oils, rice bran oil and cottonseed oil are the most important. Groundnut, soyabean and mustard together contribute about 85 percent of the country's oilseeds production.

REVIEW OF LITERATURE

Ndiame Diop, John Beghin and Mirvat Sewadeh¹ analyzed the Groundnut crop on a global scale in their study "Groundnut Policies, Global Trade Dynamics and the Impact of Trade Liberalization". Their study concentrated on the major Groundnut producing countries China, India, Senegal and Gambia, United States, Argentina. It analyzed the policies followed by these countries with regard to Groundnut crop and examined the effect of trade liberalization on Groundnut sector. Their study revealed that global export of edible groundnuts increased by 2.2 percent over the last 20 years, exports of groundnut oil and meal declined by 1 and 2.5 percent annually despite growing global consumption of these two products. The study found that since the mid 1990s, all major exporters had been liberalizing their groundnut sectors, to fulfill their commitments under WTO agreements.

J.W.Mattson, Changyou, Won W.Koo² examined the world markets of edible oil in their study 'Analysis of the World Oil Crops Market'. Their study revealed that, although there are many importing countries in international market, India and China are dominant countries. The demand in these countries has influenced the market dramatically. In contrast to countries like Japan, which has stable imports, imports by India and China are fluctuating in recent years. The reasons for this, were not analyzed. This research gap was taken up for the present study.

Ramesh Chand³ in his study "Impact of Trade Liberalization and Related Reforms on India's Agricultural Sector, Rural Food Security, Income and Poverty" revealed that there have been significant changes in agriculture sector with regard to imports and exports pre and post WTO. In the post WTO period, export of oil, groundnut, spices, tea, and coffee has been adversely affected.

Jayanti Kajale⁴ in her study "Magic Beans Turning into Tragic Beans: Impact of soyabean farmers in WTO regime" looked into various aspects of the edible oil sector in India and assessed the impact of international and national developments on the domestic soyabean sector. Her findings show that the crop is doing well and there has been new investment in the sector.

Devinder Sharma⁵ examined the edible oilseeds/oils sector in his article "India's Oilseed Revolution". He revealed that India achieved spectacular result from yellow revolution but after that, the initiative has been lost. He points that Government, ignoring the ground realities and following the World Bank's prescription due to its commitments under Structural Adjustment Programme, started the process of liberalization in the edible oil sector and after becoming a member of WTO it accelerated the liberalization process. He reveals that this liberalization allowed the flooding of Indian market with palm and soya oils by Malaysia, Indonesia and Brazil.

IMPORTANCE OF STUDY

Edible oil is an essential commodity and item of mass consumption. The basic raw materials for producing Edible Oils are Oilseeds. Edible oil Industry is dependent on Oilseeds sector and a vibrant Oilseeds sector goes a long way in strengthening the Edible Oil sector in leading the country towards self-reliance in Edible Oils.

OBJECTIVE OF THE STUDY

To analyze the performance of edible oilseeds sector in India in pre & post liberalization period

HYPOTHESIS

The following hypothesis is tested in this paper. 'There has been a shift in Cropping Pattern in oilseed crops Post-WTO in India'.

RESEARCH METHODOLOGY

Data: This study is based purely on secondary data which was collected from various reports of Ministry of Agriculture, Government of India.

Parameters: The parameters used for analysis are Area, Production and Yield of Oilseed crops. First, the cumulative analysis of all nine oilseeds is done, followed by in depth analysis of four major crops i.e., Groundnut, Soyabean, Rapeseed/Mustard and Sunflower.

Time Period: Area of Production, Production of Oilseeds and yield per acre in major oilseeds crops in India are analyzed for the period 1980-81 to 2004-05. The analysis is linked to the significant changes in the Indian economy. While the period of 1980-81 to 1990-91 was identified as yellow revolution period, the period 1991-1999 was recognized as Reforms and WTO transition period; similarly 2000-2005 is recognized as Post WTO period. The changes in each major oilseed crops are analysed in accordance with these periods.

Analysis Tools: The data was analyzed using simple percentages.

BACKGROUND OF OIL SEED CROPS IN INDIA**GROUNDNUT**

Groundnut botanically known as *Arachis hypogaea* belongs to leguminous family. Groundnut contains on an average 40.1 Per cent fat, 25.3 Per cent protein and is fairly a rich source of calcium, iron and vitamin B complex like thiamine, riboflavin, niacin and vitamin A.

It is believed by many historians that South America was the place, from where cultivation of Groundnut originated and spread in Brazil, Southern Bolivia and North-western Argentina. Groundnut was introduced by the Portuguese from Brazil to West Africa and then to South-western India in the 16th century. Groundnut is called as the 'king' of oilseeds. It is also called as wonder nut and poor men's cashew nut. Groundnut is the 13th most important food crop of the world. It is the world's 4th most important source of edible oil and 3rd most important source of vegetable protein. Groundnut is cultivated in more than 60 countries in the world. It is grown on 26.4 million ha worldwide with a total production of 36.1 million metric tons, and an average productivity of 1.4 metric tons ha⁻¹ (FAO, 2004).

Major groundnut producers in the world are: China, India, USA, Nigeria, Indonesia and Senegal. India is the 2nd largest producer of groundnuts after China. It is the largest oilseed in India in terms of production. The three southern states of Andhra Pradesh, Tamil Nadu, Karnataka and the western state of Gujarat together account for close to 80 per cent of the annual output in India. About 70-75 per cent of the crop is Kharif, grown during summer rainy season (planted during May-July and harvested in September-mid December). In the Rabi (winter) season planting is during mid September to November and harvesting during March and April.

SOYABEAN

Soybean is known as the "Golden Bean" of the 20th century. It is also popularly called as miracle bean. Nearly 310-320 million tons of oilseeds are produced annually, soybean production alone stands at 170-190 million tons, contributing to over 55 per cent of the global oilseeds production. During the last decade, the production of the commodity grew at the rate of 5.35 per cent at the global level. USA, followed by Brazil and Argentina are the major producing countries; India and China are among other producers.

About 82-85 per cent of the global soybean production is crushed for oil and meal, while the rest is consumed either in the form of 'bean' itself or for value-added soybean snack foods. USA, Brazil, Argentina, China and European Union countries constitute for the bulk of World's annual soybean consumption. Mexico, Japan, India and Taiwan are among the other major consumers. During the past five years', global consumption of soybean has grown at the rate of 5.25 per cent, higher than the production growth rate of 5.19 per cent. (FAO 2004)

India produces annually 5.0-5.4 million tons of soybean, it constitutes nearly 25 per cent of the country's total oilseed production. It is the second largest oilseed in India after groundnut. Commercial production of Soybean began in 1971-72 in India.

Of the total bean produced, 6-7 lakh tons goes for direct consumption in the form of 'bean' itself (sowing, human consumption as bean itself), leaving the rest of the quantity for crushing- for meal and oil. While the country imports soy oil, it is a leading exporter of meal in the Asian region.

Madhya Pradesh is the largest producer of soybean in India, contributing 65-70 per cent of the country's soybean production, followed by Maharashtra and Rajasthan. Karnataka, Uttar Pradesh, Andhra Pradesh and Gujarat also produce in small quantities.

RAPESEED/MUSTARD

Cultivation of mustard-rapeseed dates back to 2000 B.C. both in sub-tropical and tropical countries. Mustard- rapeseed plants grow all over the world but their cultivation is mainly confined to India, China, Canada, Germany, France, Australia, USA, etc. Rapeseed was cultivated in Europe since 13th century. Mustard-rapeseed is grown in more than 50 countries in Asia, Europe, America and Australia with a production at about 36778 thousands tones during 2003. (FAO)

In India, the mustard - rapeseed is the most important oil seed crop after groundnut accounting around 25 per cent of total oilseed production. It is one of the important oilseed crops of the Indo -gangetic plains. Among all types of mustard -rapeseed, Indian mustard is cultivated in Assam, Gujarat, Haryana, Himachal Pradesh, Madhya Pradesh, Orissa, Punjab, Rajasthan and West Bengal. The brown variety (Sarson) is grown in Kashmir and Himachal valley, whereas, the yellow sarson is grown in Eastern Uttar Pradesh, Assam, Bihar and West Bengal, Rajasthan, Uttar Pradesh, Haryana, West Bengal, Madhya Pradesh, Gujarat, Assam are major producers of Mustard.

SUNFLOWER

Sunflower is also another major oilseed crop in India. Sunflower or *Helianthus annuus* L. (Botanical Name) is native of southern United States, from where it was taken to Spain before the middle of the sixteenth century. Sunflower seed contains linoleic acid (an essential fatty acid); it is also an excellent source of dietary fiber, protein, Vitamin E, and minerals such as magnesium and selenium. It is high in cholesterol-lowering phytosterols, hence considered good for heart. Commercial cultivation of sunflower as an oilseed crop began in the former Soviet Union and the majority of the present day varieties grown all over the world trace back their origin to the USSR. According to FAO statistics, (2005), major sunflower seed producers in the World are Russia with 6.3 MMT, Ukraine 4.7 MMT, Argentina 3.7 MMT, followed by China and India with 1.9 MMT. Sunflower crop was one of the new oilseed crops that were introduced in the late 1960's in our country. Major Sunflower Producing States in the country are Karnataka, Andhra Pradesh, Maharashtra, and Uttar Pradesh. and Bihar.

ANALYSIS, RESULTS & DISCUSSION**AREA, PRODUCTION AND YIELD CHANGES IN MAJOR OILSEED CROPS IN INDIA DURING 1980- 81 TO 2004-05**

Area of Production, Production of Oilseeds and yield per acre in major oilseeds crops in India are analysed for the period 1980-81 to 2004-05. The analysis is linked to the significant changes in the Indian economy. While the period of 1980-81 to 1990-91 was identified as yellow revolution period, the period 1991-1999 was recognized as Reforms and WTO transition period; similarly 2000-2005 is recognized as Post WTO period. The changes in each major oilseed crops are analysed in accordance with these periods.

The parameters used for analysis are Area, Production and Yield of Oilseed crops. First, the cumulative analysis of all nine oilseeds is done, followed by indepth analysis of four major crops i.e., Groundnut, Soyabean, Rapeseed/Mustard and Sunflower.

Table 1 gives us the data relating to nine major oilseeds produced by India, it consists of data relating to Area, Production and Yield starting from 1980-81 and culminating in 2004-05.

TABLE 1: ALL INDIA AREA, PRODUCTION AND YIELD OF NINE OILSEEDS FROM 1980-81 TO 2004-05

Years	Area-Million Hectares		Production-Million Tonnes		% area under Irrigation
	Area	Production	Yield	Yield-Kg./Hectare	
1980-81	17.60	9.37	532	14.5	
1981-82	18.91	12.08	639	15.4	
1982-83	17.76	10.00	563	15.6	
1983-84	18.69	12.69	679	17.0	
1984-85	18.92	12.95	684	19.6	
1985-86	19.02	10.83	570	17.3	
1986-87	18.63	11.27	605	17.9	
1987-88	20.13	12.65	629	20.6	
1988-89	21.90	18.03	824	22.3	
1989-90	22.80	16.92	742	22.1	
1990-91	24.15	18.61	771	22.9	
1991-92	25.89	18.60	719	25.5	
1992-93	25.24	20.11	797	24.1	
1993-94	26.90	21.50	799	22.8	
1994-95	25.30	21.34	843	25.0	
1995-96	25.96	22.11	851	26.0	
1996-97	26.34	24.38	926	26.3	
1997-98	26.12	21.32	816	24.3	
1998-99	26.23	24.75	944	23.2	
1999-00	24.28	20.72	853	25.2	
2000-01	22.77	18.44	810	23.0	
2001-02	22.64	20.66	913	24.3	
2002-03	21.49	14.84	691	22.7	
2003-04	23.66	25.19	1064	24.5	
2004-05	27.52	24.35	885	NA	

Source: Various Issues of Statistics at Glance, Ministry of Agriculture, Government of India.

YELLOW REVOLUTION PERIOD AND CHANGES IN NINE OIL CROPS – AN ANALYSIS

From table 1, it can be observed that production of oilseeds in 1980-81 was 9.37 MT and it increased to 18.61 MT in 1990-91 i.e. the production doubled when compared to 1980-81.

Area of oilseeds in 1980-81 was 17.60 Mha and it increased to 24.15 Mha in 1990-91 i.e. the area increased by 40 per cent when compared to 1980-81.

Yield which was 532 kg/hectare in 1980-81, increased to 771 kg/hectare in 1990-91 i.e., yield increased by 45 per cent.

Various factors may be attributed to the performance of oilseeds in this decade; the Government took many initiatives like setting up of (1) Oilseeds Growers Co-operative Project 1979-80 on the same lines of white revolution, with NDDB being entrusted with the task of replicating white revolution in oilseeds sector. (2) Setting up of Technology Mission on Oilseeds in 1986, - it consisted of four mini missions. The first mini-mission focused on the coordination and acceleration of varietal and agronomic research on oilseed crops, with the Directorate of Oilseed Research, Hyderabad as the nodal agency. The second mini-mission centered on technological improvements in oilseed processing, with the Council for Scientific and Industrial Research as the nodal agency, and the promotion of both cooperative and private sector involvement in oilseed processing activities. The third mini-mission sought to improve the delivery of inputs and support services, particularly extension services for improved production technologies, to farmers. The fourth mini-mission focused on oilseed market development and price support operations.

*This period was also characterized by the introduction of new crops like soybean and sunflower, and improved technology was introduced in the traditional oilseeds --rapeseed-mustardseed and groundnut. New, improved seed varieties released during the 1970s and 1980s were adapted to a larger variety of agro-ecological conditions, with higher yields but also improved resistance to various diseases and moisture stress, shorter duration cycles (rapeseed: Bhavani, PT-303, TL15; and mustardseed: RH-819) which facilitated their inclusion into existing cropping systems, an additional crop. These included over 65 groundnut, rapeseed-mustard seed, 39 sesame, 23 linseed, 14 safflower, 11 sunflower, 10 castor and 10 nigerseed varieties.

Improved Irrigation was also one of the reasons. Significantly the edible oil imports were also lowered by the Government.

TABLE 2: COMPOUND GROWTH RATES IN PERCENT PER ANNUM OF NINE OILSEEDS AND TOTAL FOOD GRAINS

Years	Nine Oil Seeds			Total Food Grains		
	Area	Prdn	Yield	Area	Prdn	Yield
1981-90	2.47	5.36	2.49	-0.23	2.85	2.74

Source: Statistics at Glance-2004, DES, Min. of Agriculture, GOI

Table 2 reveals that during 1981-90, the increase in area in nine oilseeds together was more than the total food grains put together and the production of oilseeds was double than that of total food grains, however the yield per hectare of oilseeds was lower than that of all food grains put together.

Reforms and WTO transition period – analysis of changes in nine oilseed crops

The production of oilseeds in 1990-91 which was 18.61 MT decreased to 18.44 MT in 2000-01. Area of oilseeds in 1990-91 was 24.15 Mha and it decreased to 22.77 Mha in 2000-01 i.e. a decrease of 10 per cent when compared to 1990-91. Yield which was 771 kg/hectare in 1990-91, increased to 810 kg/hectare in 2000-01 i.e., yield increased by 5 per cent.

Various factors may be attributed to the fall in production, a shift in cultivation may be one of the reasons, (An observation from Table 2 and Table 3. shows that area of oilseeds has decreased) WTO oriented liberalization of edible oil sector, which led to flow of cheaper edible oils may also be a strong reason. Reduced efficacy of Government Programmes may also be another contributing factor. According to CACP Report (2006) "Post 1995-96, Technology Mission on Oilseeds & Pulses (TMOP) failed to make any meaningful impact on oilseeds production scenario, as evident from the depressed and inconsistent domestic supply, consequently the import dependence of Indian edible oil economy increased manifold during this period."

1. (M.V.R. Prasad, 1993, "Improved Agro-Economic and Management Practices for Annual Oilseed Crops in India," in R.S. Paroda and M. Rai (eds), *Oilseeds in the Asia-Pacific Region*, Bangkok, Thailand: Regional Office for Asia and the Pacific, FAO, pp. 44-58)

TABLE 3: COMPOUND GROWTH RATES IN PERCENT PER ANNUM OF NINE OILSEEDS AND TOTAL FOOD GRAINS

Years	Nine Oil Seeds			Total Food Grains		
	Area	Prdn	Yield	Area	Prdn	Yield
1991-00	0.17	1.42	1.42	-0.07	2.02	1.52

Source: Statistics at Glance-2004, DES, Min. of Agriculture, GOI

Table 3 reveals that the Area under cultivation of nine oilseeds registered a compound growth rate of 0.17 per cent in 1991-2000, which is 93 per cent less compared with 1981-90, which registered 2.46 per cent. Similarly the production of nine oilseeds registered a growth rate of 1.42 per cent per annum, which 73 per cent lower is compared with 1981-90 growth rate of 5.36 per cent.

The yield growth rate is 1.42 per cent, which is lower by 43 per cent compared to 1981-90 period.

POST-WTO AND CHANGES IN NINE OIL SEED CROPS – AN ANALYSIS

Production which was 18.44 MT in 2000-01 fell to 15.06 MT in 2002-03 and it rose to 25.19 MT in 2003-04, falling to 24.35 MT in 2004-05, it shows that oilseeds production is erratic and same trend is reflected with regard to area and yield, which are also fluctuating. However, the yield achieved in 2003-04, that is 1064 kg/hectare is the highest till date.

AREA PRODUCTION AND YIELD CHANGES IN GROUNDNUT CROP DURING 1980-81 TO 2004-05

Table 4, displays the data relating to Area, Production and Yield of Groundnut crop from 1980-81 to 2004-05.

TABLE 4.4: ALL INDIA AREA, PRODUCTION AND YIELD OF GROUNDNUT FROM 1980-81 TO 2004-05

Years	Area-Million Hectares			Production-Million Tonnes			Yield-Kg./Hectare		
	Area	Prdn.	Yield	Area	Prdn.	Yield	Area	Prdn.	Yield
1980-81	6.80	5.01	736						
1981-82	7.43	7.22	972						
1982-83	7.22	5.28	732						
1983-84	7.54	7.09	940						
1984-85	7.17	6.44	898						
1985-86	7.12	5.12	719						
1986-87	6.98	5.88	841						
1987-88	6.84	5.85	855						
1988-89	8.53	9.66	1132						
1989-90	8.71	8.10	930						
1990-91	8.31	7.51	904						
1991-92	8.67	7.09	818						
1992-93	8.17	8.56	1049						
1993-94	8.32	7.83	941						
1994-95	7.85	8.06	1027						
1995-96	7.52	7.58	1007						
1996-97	7.60	8.64	1138						
1997-98	7.09	7.37	1040						
1998-99	7.40	8.98	1214						
1999-00	6.87	5.26	766						
2000-01	6.56	6.41	977						
2001-02	6.24	7.03	1127						
2002-03	5.95	4.36	733						
2003-04	5.99	8.13	1357						
2004-05	6.64	6.77	1020						

Source: Various Issues of Statistics at Glance, Ministry of Agriculture, Government of India.

YELLOW REVOLUTION PERIOD AND CHANGES IN GROUNDNUT CROP – AN ANALYSIS

Table 4 reveals that production of groundnut in 1980-81 was 5.01 MT and it increased to 7.51 MT in 1990-91 i.e. the production increased by 50 per cent when compared to 1980-81. Area of groundnuts in 1980-81 was 6.80 Mha and it increased to 8.31 Mha in 1990-91 i.e. the area increased by 22 per cent when compared to 1980-81. Yield which was 736 kg/hectare in 1980-81, increased to 904 kg/hectare in 1990-91 i.e., yield increased by 45 per cent.

TABLE 5: COMPOUND GROWTH RATES OF GROUNDNUT IN PER CENT PER ANNUM

Years	Area	Prdn	Yield
1981-90	1.67	3.76	2.06

Source: Statistics at Glance-2004, DES, Min. of Agriculture

Table 5 shows the compound growth rates of groundnut and it reveals that area was growing at 1.67 per cent per annum, production at 3.76 per cent and yield at the rate of 2.06 per cent, this growth rate was more than that of total food grains.

This performance may be attributed to the various programmes launched by the Government like Technology Mission on Oilseeds, Oil Seed Growers Cooperative Project, and Higher Minimum Support Price for farmers, etc. added to it, the Government also kept a check on imports.

REFORMS AND WTO TRANSITION PERIOD – ANALYSIS OF CHANGES IN GROUNDNUT CROP

It can be observed from Table 4 that the production of groundnut in 1990-91 which was 7.51 MT decreased to 6.41 MT in 2000-01. Area of groundnut in 1990-91 was 8.31 Mha and it decreased to 6.56 Mha in 2000-01 i.e. a decrease of 21 per cent when compared to 1990-91. Yield which was 904 kg/hectare in 1990-91, increased to 977 kg/hectare in 2000-01 i.e., yield increased by 8 per cent.

TABLE 6: COMPOUND GROWTH RATES GROUNDNUT IN PER CENT PER ANNUM

Years	Area	Prdn	Yield
1991-00	-2.31	-1.25	1.08

Source: Statistics at Glance-2004, DES, Min. of Agriculture

Table 6 reveals the CAGR of groundnut for 1991-2000 and we can observe that the area was decreasing by -2.31 per cent every year, so also production was also decreasing at 1.25 per cent, there was also slow down in growth rate of yield.

It clearly shows that there was Shift in cultivation of crop, away from groundnut. Government of India's liberalization policy in line with WTO commitments which opened up the edible oil sector; leading to import of cheaper oils may also be one of the strongest causes for this shift. (ANNEXURES1,2)

POST-WTO AND CHANGES IN GROUNDNUT CROP – AN ANALYSIS

Production which was 6.41 MT in 2000-01 fell to 4.36 MT in 2002-03; it increased to 6.77 MT in 2004-05. This implies that production has been fluctuating. Area of groundnut which was 6.56 Million Hectares in 2000-01 fell to 5.95 Million Hectares in 2002-03; it increased to 6.77 Million Hectares in 2004-05. Yield which was 977 Kg./hectare in 2000-01 fell to 733 Kg./hectare in 2002-03, again it increased to 1020 Kg./hectare in 2004-05

AREA PRODUCTION AND YIELD CHANGES IN SOYA BEAN CROP DURING 1980-81 TO 2004-05

After groundnut, the next major oilseed crop that is analyzed is soyabean; it was one of the new crops introduced in the 1970's in India. Table 7 shows that data relating to area, production and yield of soyabean crop from 1980-81 to 2004-05.

TABLE 7: ALL INDIA AREA, PRODUCTION AND YIELD OF SOYABEAN FROM 1980-81 TO 2004-05

Years	Area	Prod.	Yield
1980-81	0.61	0.44	728
1981-82	0.48	0.35	741
1982-83	0.77	0.49	637
1983-84	0.84	0.61	735
1984-85	1.24	0.95	768
1985-86	1.34	1.02	764
1986-87	1.53	0.89	584
1987-88	1.54	0.90	582
1988-89	1.73	1.55	892
1989-90	2.25	1.81	801
1990-91	2.56	2.60	1015
1991-92	3.18	2.49	782
1992-93	3.79	3.39	894
1993-94	4.37	4.75	1086
1994-95	4.32	3.93	911
1995-96	5.04	5.10	1012
1996-97	5.45	5.38	987
1997-98	5.99	6.46	1079
1998-99	6.49	7.14	1100
1999-00	6.22	7.08	1138
2000-01	6.42	5.28	822
2001-02	6.34	5.96	940
2002-03	5.87	4.56	777
2003-04	6.50	7.85	1208
2004-05	7.57	6.87	908

Source: Various Issues of Statistics at Glance, Ministry of Agriculture, Government of India.

YELLOW REVOLUTION PERIOD AND CHANGES IN SOYABEAN CROP– AN ANALYSIS

From table 7 we can see that the area under soyabean cultivation which was just 0.61 Mha in 1980-81 is 2.56 Mha in 1990-91, this shows the phenomenal growth in area under cultivation. The growth rate is 420 per cent. Production which was 0.44 MT in 1980-81 is 2.60 MT in 1990-91. A growth of 600 per cent. Yield which was 728 kg/hectare in 1980-81 is 1015 kg/hectare an increase of 40 per cent.

TABLE 8: COMPOUND GROWTH RATES IN PERCENT PER ANNUM OF SOYABEAN

Years	Area	Prdn	Yield
1981-90	17.10	17.96	0.73

Source: Statistics at Glance-2004, DES, Min. of Agriculture

Table 8 reveals CAGR of soyabean, we can observe that it is growing at 17.10 per cent per annum in terms of area, 17.96 per cent in production, however, the yield growth rate is lower at 0.73 per cent per annum, which reflects that the increase in production is due to increase in area.

REFORMS AND WTO TRANSITION PERIOD – ANALYSIS OF CHANGES IN SOYA BEAN CROP

Table 7 reveals that the area in 1990-91 is 2.56 Mha., which increased to 6.42 Mha in 2000-01, a increase of 250 per cent. Production doubled during this period. This is in sharp contrast to Groundnut, whose area has declined.

TABLE 9: COMPOUND GROWTH RATES IN PERCENT PER ANNUM OF SOYABEAN

Years	Area	Prdn	Yield
1991-00	10.23	13.06	2.56

Source: Statistics at Glance-2004, DES, Min. of Agriculture

Table 9 reveals that in the decade of 1991-2000, soyabean had CAGR of 10.23 per cent in area, 13.06 per cent in production in 2.56 per cent in yield terms. It is in sharp contrast to groundnut. Another interesting point is that the yield growth is high compared to 1981-90. Higher yield may be one of the reasons for farmers persisting with soyabean crop.

POST-WTO AND CHANGES IN SOYA BEAN CROP – AN ANALYSIS

It is observed from table 7 that area under soyabean cultivation which was 6.42 Mha in 2000-01 fell to 5.87 Mha in 2002-03, after that it shows an increasing trend, touching a figure of 7.57 Mha in 2004-05. Correspondingly, production also showed the same pattern with decrease in 2002-03 and increasing in 2004-05. However, soyabean achieved a high yield of 1208 kg/hectare in 2003-04.

AREA PRODUCTION AND YIELD CHANGES IN RAPESEED & MUSTARD CROP DURING 1980- 81 TO 2004-05

Table 10 depicts the data relating to area, production and yield for Rapeseed & Mustard crop for the period 1980-81 to 2004-05

TABLE 10: ALL INDIA AREA, PRODUCTION AND YIELD OF RAPESEED & MUSTARD FROM 1980-81 TO 2004-05

Area-Million Hectares
Production-Million Tonnes
Yield-Kg./Hectare

Years	Area	Prdn.	Yield
1980-81	4.11	2.30	560
1981-82	4.40	2.38	541
1982-83	3.83	2.21	577
1983-84	3.87	2.61	673
1984-85	3.99	3.07	771
1985-86	3.98	2.68	674
1986-87	3.72	2.60	700
1987-88	4.62	3.45	748
1988-89	4.83	4.38	906
1989-90	4.97	4.13	831
1990-91	5.78	5.23	904
1991-92	6.55	5.86	895
1992-93	6.19	4.80	776
1993-94	6.29	5.33	847
1994-95	6.01	5.76	958
1995-96	6.55	6.00	916
1996-97	6.55	6.66	1017
1997-98	7.04	4.70	668
1998-99	6.51	5.66	869
1999-00	6.03	5.79	960
2000-01	4.48	4.19	935
2001-02	5.07	5.08	1002
2002-03	4.52	3.92	866
2003-04	5.06	5.83	1152
2004-05	7.32	7.59	1038

Source: Statistics at Glance, Ministry of Agriculture, Government of India.

YELLOW REVOLUTION PERIOD AND CHANGES IN RAPESEED & MUSTARD CROP – AN ANALYSIS

Table 10 reveals that the area under Rapeseed & Mustard which was 4.11 Mha in 1980-81 is 5.78 Mha in 1990-91. This shows the growth in area under cultivation to an extent of 40 per cent. Production which was 2.30 MT in 1980-81 is 5.23 MT in 1990-91. A growth of 227 per cent, Yield which was 560 kg/hectare in 1980-81 is 904 kg/hectare an increase of 61 per cent.

TABLE 11: COMPOUND GROWTH RATES IN PERCENT PER ANNUM OF RAPESEED & MUSTARD

Years	Area	Prdn	Yield
1981-90	1.95	7.28	5.22

Source: Statistics at Glance, Ministry of Agriculture, Government of India.

Table 11 shows the CAGR of Rapeseed & Mustard during the decade of 1981-90. Area had 1.95 per cent growth per annum, while production was growing at 7.28 per cent and yield at 5.22 per cent per annum. The point of interest is the CAGR of Rapeseed & Mustard is more than that of Groundnut during the same period.

REFORMS AND WTO TRANSITION PERIOD – ANALYSIS OF CHANGES IN RAPESEED & MUSTARD CROP

It can be observed from table 10 that the area in 1990-91 is 5.78 Mha, which decreased to 4.48 Mha in 2000-01 a decrease of 22 per cent. Production also decreased by 20 per cent, from 5.23 MT to 4.19 MT. Table 12 below reflects the trends; it is observed that the CAGR of Area is 0.71 per cent, production was growing at 0.78 per cent and yield at a small .07 per cent. But the interesting fact is that there is no decline in area like the groundnut crop.

TABLE 12: COMPOUND GROWTH RATES IN PERCENT PER ANNUM OF RAPESEED & MUSTARD

Years	Area	Prdn	Yield
1991-00	0.71	0.78	0.07

Source: Statistics at Glance-2004, DES, Min. of Agriculture, GOI

POST-WTO AND CHANGES IN RAPESEED & MUSTARD CROP–AN ANALYSIS

Area, Production and Yield have shown an increasing trend in this period (except for year 2002-03, where there is decrease). Area has increased from 4.48Mha to 7.32 Mha, production has increased from 4.19 MT to 7.59 MT. Yield in 2003-04 was the highest in last two and half decades.

AREA PRODUCTION AND YIELD CHANGES IN SUNFLOWER CROP DURING 1980-81 TO 2004-05

Sunflower was one of the new oilseed crops introduced in India in late 1970's. Table 13 depicts the data relating to area, Production and yield of sunflower in India from 1990-91 to 2004-05.

TABLE 13: ALL INDIA AREA, PRODUCTION AND YIELD OF SUNFLOWER FROM 1990-91 TO 2004-05

Years	Area	Prdn.	Yield
1980-81	0.12	0.07	555
1981-82	0.28	0.16	564
1982-83	0.46	0.23	497
1983-84	0.70	0.30	431
1984-85	0.84	0.44	527
1985-86	0.75	0.28	374
1986-87	1.02	0.42	411
1987-88	1.65	0.64	385
1988-89	1.10	0.37	335
1989-90	1.19	0.63	529
1990-91	1.63	0.87	535
1991-92	2.11	1.19	565
1992-93	2.09	1.18	567
1993-94	2.67	1.35	505
1994-95	2.00	1.22	610
1995-96	2.12	1.26	593
1996-97	1.93	1.25	646
1997-98	1.74	0.89	548
1998-99	1.82	0.94	517
1999-00	1.29	0.69	538
2000-01	1.07	0.65	602
2001-02	1.18	0.68	577
2002-03	1.63	0.91	557
2003-04	2.01	1.09	539
2004-05	2.17	1.19	549

Source: Statistics at Glance, Ministry of Agriculture, Government of India.

YELLOW REVOLUTION PERIOD AND CHANGES IN SUNFLOWER CROP – AN ANALYSIS

Table 13 reveals that area under sunflower cultivation which was 0.12 Mha in 1980-81 is increased to 1.63 Mha in 1990-91. This shows a very significant growth in area under cultivation to an extent of 1350 per cent.

Production which was .07 MT in 1980-81 increased to .87 MT in 1990-91., a growth of 1250 per cent. Yield which was 555 kg/hectare in 1980-81 is reduced 535 kg/hectare an in 1990-91. The increase in production of sunflower may be attributed to area expansion.

TABLE 14: COMPOUND GROWTH RATES IN PERCENT PER ANNUM OF SUNFLOWER

Years	Area	Prdn	Yield
1981-90	25.69	21.32	-3.47

Source: Statistics at Glance-2004, DES, Min. of Agriculture, GOI.

REFORMS AND WTO TRANSITION PERIOD – ANALYSIS OF CHANGES IN SUNFLOWER CROP

Area under cultivation in 1990-91 was 1.63 Mha and it showed an increasing trend till 1995-96 and then it began to decline reaching a low of 1.07 Mha in 2000. Production also shows a similar trend of increase till 1995-96 and decline thereafter, touching 0.65 MT in 2000. The reason for decline may be attributed to liberal imports of refined edible oils after opening up of edible oil sector in 1995, in line with WTO commitments.

TABLE 15: COMPOUND GROWTH RATES IN PERCENT PER ANNUM OF SUNFLOWER

Years	Area	Prdn	Yield
1981-90	25.69	21.32	-3.47
1991-00	-2.97	-3.20	-0.24

Source: Statistics at Glance-2004, DES, Min. of Agriculture, GOI.

Table 15 reveals that there is a significant decline in Area of sunflower crop in the decade 1991-2000, just like groundnut crop. One of the reasons may be shift in cultivation from sunflower to some other crop.

POST-WTO AND CHANGES IN SUNFLOWER CROP – AN ANALYSIS

Table 13 reveals that area under sunflower cultivation is showing a growing trend, from 2001-02; it has increased from 1.18 Mha to 2.17 Mha in 2004-05. Production also is following the same trend and has increased from .68 MT to 1.19 MT in 2004-05.

CONCLUSIONS

- The decade of 1980-81 to 1990-91 was the best decade for oilseeds, which led the country towards self-reliance in Oils. This growth was achieved with the concerted effort of the Government, which started the Yellow Revolution with the help of Technology Mission on Oilseeds and Pulses (TMOP).
- During the decade of 1990-91 to 2000-01, there is significant decrease in performance of oilseeds, characterized by poor and fluctuating yields. The momentum of yellow revolution could not be sustained. This decade was characterized by liberalization of edible oil sector, which allowed cheaper imports of edible oils into the country.
- The fall of groundnut and Rise of soyabean i.e. a shift in cultivation has taken place, post-WTO.
- Only a marginal Improvement in production of Oilseeds post-WTO, compared to period of yellow revolution.
- In order to meet the demand for edible Oil for the future (2009-10) production of Oilseeds needs to be doubled.

SUM UP

This paper concentrated on the Edible Oilseeds sector and analyzed its performance spanning two and half decades beginning with 1980-81 and ending with 2004-05, it found that the decade of 1981-90 was the best for the oilseeds sector, which led the country to near self-sufficiency in edible oils; it was the period of yellow revolution. After liberalisation was initiated in the decade of 1991-2000, it was found that the momentum of yellow revolution could not be sustained and there is considerable decrease in production of oilseeds.

REFERENCES

1. Department of Food and Public Distribution, Government of India, Annual Reports – 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005
2. Devinder Sharma, *India's Oilseeds Revolution*, published in The Hindu Business Line, Internet Edition dated October 01, 2001.
3. J.W. Mattson, Changyou, Won W. Koo, *Analysis of the World Oil Crops Market*, Agribusiness & Applied Economics Report No.529, Center for Agricultural Policy and Trade studies, North Dakota State University, USA, 2004.
4. Jayanti Kajale, *Magic Beans Turning into Tragic Beans: Impact of Soybean Farmers in WTO Regime*, Gokhale Institute of Politics and Economics, Pune, 2002.
5. Ndiame Diop, John Beghin, and Mirvat Sewadeh, *Groundnut Policies, Global Trade Dynamics and the Impact of Trade Liberalization*, working paper for CARD, Iowa State University, USA, 2004.
6. Ramesh Chand, *Impact of Trade Liberalisation and Related Reforms on India's Agricultural Sector, Rural Food Security, Income and Poverty*, paper presented at Global Development Network, Fifth Annual Conference, New Delhi, 2004.
7. Various Issues of 'Statistics at a Glance' Ministry of Agriculture, Government of India, 1996 to 2004
8. World Bank Report, "The Indian Oilseeds Complex: Capturing Market Opportunities, 1997.

ANNEXURES

ANNEXURE - 1

A chronology of measures taken by Government of India in IMPORT policy of Edible Oils is as follows:

- 1994-95: Quantitative Restrictions on import of Edible oil were removed by placing RBD Palm oil in Open General License with 65 per cent Import duty.
 1996-97: Import duty lowered to 22 per cent.
 1998-99: Further reduction in Import duty to 15 per cent.
 1999-00: Import duty raised to 16.5 per cent.
 2000:
 June: Import duty on Crude Oils raised to 25 per cent and on refined oils to 44 per Cent.
 November: Import duty on refined Palm oil raised to 71 per cent.
 2001:
 April: Import duty on crude oils raised to 75 per cent, for RBD Palm oil duty was 85 per cent, for Soyabean Oil the duty was raised to 45 per cent.
 November: Import duty on CPO reduced to 65 per cent, similarly for the refined oils like mustard, colza the duty was reduced to 50 per cent upto an aggregate of 1, 50,000 MT (TRQ)
 2003: Import duty on Refined Palm Oil and RBD Palm Oil reduced from 85 per cent to 70 per cent.
 2004: Import duty on Refined Palm Oil and RBD Palm Oil raised from 70 per cent to 75 per cent
 2005: Import duty on CPO raised from 65 to 80 per cent, and duty on RBD Palmole in raised to 90 per cent.

ANNEXURE-2: DEMAND, DOMESTIC PRODUCTION, IMPORTS OF EDIBLE OILS IN INDIA DURING 1990-91 TO 2004-05

Oil year Nov-Oct	Demand in lakh MT	Domestic Production in lakh MT	Import in lakh MT	Self-sufficiency Percentage
1990-91	60.26	54.00	6.26	90
1991-92	62.85	52.40	10.45	83
1992-93	65.59	58.10	7.49	89
1993-94	67.20	61.70	5.50	92
1994-95	69.80	62.54	7.26	89
1995-96	76.29	64.68	11.61	85
1996-97	85.06	70.90	14.16	83
1997-98	72.98	60.32	12.66	83
1998-99	95.83	69.61	26.22	73
1999-00	102.11	60.15	41.96	59
2000-01	96.76	54.99	41.77	57
2001-02	104.68	61.46	43.22	58
2002-03	90.93	47.28	43.65	52
2003-04	124.04	71.09	52.95	57
2004-05	117.10	73.10	44.00	63

Sources: Compiled from various Reports of Directorate of Vansapati, Vegetable oils and fats, Government of India.

REQUEST FOR FEEDBACK

Dear Readers

At the very outset, International Journal of Research in Commerce, Economics and Management (IJRCM) acknowledges & appreciates your efforts in showing interest in our present issue under your kind perusal.

I would like to request you to supply your critical comments and suggestions about the material published in this issue as well as on the journal as a whole, on our E-mail info@ijrcm.org.in for further improvements in the interest of research.

If you have any queries please feel free to contact us on our E-mail infoijrcm@gmail.com.

I am sure that your feedback and deliberations would make future issues better – a result of our joint effort.

Looking forward an appropriate consideration.

With sincere regards

Thanking you profoundly

Academically yours

Sd/-

Co-ordinator

ABOUT THE JOURNAL

In this age of Commerce, Economics, Computer, I.T. & Management and cut throat competition, a group of intellectuals felt the need to have some platform, where young and budding managers and academicians could express their views and discuss the problems among their peers. This journal was conceived with this noble intention in view. This journal has been introduced to give an opportunity for expressing refined and innovative ideas in this field. It is our humble endeavour to provide a springboard to the upcoming specialists and give a chance to know about the latest in the sphere of research and knowledge. We have taken a small step and we hope that with the active co-operation of like-minded scholars, we shall be able to serve the society with our humble efforts.

Our Other Journals

