45th Annual Conference of Gujarat Economic Association
(February 13-15, 2015)

Souvenir

Jointly organized by

Agro-Economic Research Centre
Sardar Patel University
Vallabhbhai Vidyanagar, Anand, Gujarat

&

Gujarat Economic Association
An Institution Builder Par Excellence

H. M. Patel, I.C.S. (Retd.)
(August 27, 1904 – November 30, 1993)

Director / Hon. Director of the Centre

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<tr>
<th>Name</th>
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<tr>
<td>Dr. V. S. Vyas</td>
<td>Dr. Mahesh Pathak</td>
</tr>
<tr>
<td>(Founder Director)</td>
<td>(Hon. Director)</td>
</tr>
<tr>
<td>Dr. P. K. Singh</td>
<td>Dr. H. P. Trivedi</td>
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<tr>
<td>(Hon. Director)</td>
<td>(Hon. Director)</td>
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<tr>
<td>(12.09.2006 - 02.08.2008)</td>
<td>(02.08.2008 - 02.05.2010)</td>
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<tr>
<td>Dr. R. H. Patel</td>
<td>Dr. Rajeshree Dutta</td>
</tr>
<tr>
<td>(Director)</td>
<td>(In-charge)</td>
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<tr>
<td>(03.05.2010 - 09.11.2011)</td>
<td>(09.11.2011 - 05.07.2012)</td>
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<tr>
<td>Dr. S. S. Kalamkar</td>
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<tr>
<td>(Director)</td>
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Welcome to the 45th Annual Conference of Gujarat Economic Association at Vallabh Vidyanagar, Anand. This conference has a special significance for us because it is being organized when the Agro-Economic Research Centre has completed the 53rd year of its working at Vallabh Vidyanagar.

We have great pleasure in presenting this Souvenir Volume to the distinguished delegates and other invitees to this Conference. As the people of this region are known for their initiative and enterprise, an attempt has been made here to introduce some of the major institutions working for the cause of rural development in this area. It is hoped that these profiles would indicate how really worthwhile results could be achieved by the people given the vision and a right sense of direction and purpose. Indeed the work of promoting a complex of institutions in and around Vallabh Vidyanagar has been of a pioneering nature. This has been achieved mainly through conscious and planned efforts backed up by sustained hard work.

Organization of this Conference has become possible mainly because of the joint efforts of a complex of institutions working in and around Vallabh Vidyanagar.

We thank the Ministry of Agriculture (MOA), Government of India (GOI); University Grants Commission (UGC), New Delhi and National Bank for Agriculture and Rural Development (NABARD) as well as other agencies for their support in organizing this event.

The financial assistance received from Research and Development fund of National Bank for Agriculture and Rural Development (NABARD) towards publication of Souvenir, lectures and proceedings of conference is gratefully acknowledge.

We gratefully acknowledge the excellent support and cooperation that we have received from various individuals and institutions in organizing this Conference and in preparing this Souvenir Volume.

Editors
The Conference is supported by

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Nice Steel Furniture
Asian Printery
Akshar Agency
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Pustak Mahal
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MESSAGE

In India, considerable progress has been made in the field of basic universal education, gender equality in education, and global economic growth. However there is slow progress in the improvement of health indicators related to mortality, morbidity, and various environmental factors contributing to poor health conditions. Even though the government has implemented a wide array of programs, policies, and various schemes to combat these health challenges, further intensification of efforts and redesigning of outreach strategies is needed to give momentum to the progress toward achievement of the Millennium Development Goals (MDGs).


I hope that the experts on the subject will seriously deliberate on these issues and may come out with critical inputs for development of livelihood of people of our state and country.

I wish the conference a great success.

(Anandiben Patel)

To
Dr. S. S. Kalamkar, Director and Professor
Agro-Economic Research Centre
Sardar Patel University,
Vallabh Vidyanagar 388120, Anand, Gujarat.
The Millennium Development Goals (MDGs) which include eight goals were framed to address the world’s major development challenges with health and its related areas as the prime focus. The overarching vision of cutting the amount of extreme poverty worldwide in half by 2015, anchored in a series of specific goals, has drawn attention and resources to otherwise forgotten issues. Despite the existence and launch of various programs and policies to address the major areas of concern under the MDGs, the progress toward achieving these goals appears to be rather slow in most of the areas, with the exception of education and global economic progress. It has been observed that the utilization of services offered by different programs is rather low. With only about one more year to go toward the set time for achieving these goals, the only way to do so would be to further intensify our efforts in reaching out to the unreached populations and ensuring uniform distribution of resources. Therefore, it is important to discuss the achievements and implications of MDGs in India which would help in drawing the future path.

The themes selected for the deliberations in this conference include (i) Millennium Development Goals: Achievements and Implications and (ii) History of Economic Thoughts: Relevance to World Economic Order. I am certain that Conference will be well attended by the academicians and researchers and they will be able to address the above issues related to above mentioned two selected themes and serve as an appropriate forum for discussing their concerns.

I extend a hearty welcome to the participants of the conference and wish the conference a grand success.
MESSAGE

I am extremely happy in welcoming you all to the 45th Annual Conference of the Gujarat Economic Association (GEA), organized by the Agro-Economic Research Centre (AERC) during February 13-15, 2015 in our University Campus.

I hope that the conference will provide ample opportunities and excellent platform to academicians, researchers, policy makers and corporate managers in our country to review the selected themes for this conference.

I take this opportunity to thank Dr. Harish Padh, Honorable Vice Chancellor of our University and Chairman of AERC, Vallabh Vidyanagar for giving consent to organize this conference. I am also highly thankful to Dr. Mahesh Pathak, Hon. Adviser, AERC for his guidance and support in organizing this event. I thank the Gujarat Economic Association for giving us an opportunity to host this conference in Vallabh Vidyanagar. I thank our supporters, sponsors and well wishers for their special interest, support and cooperation in organizing this Conference.

Last but not least I am highly thankful to all the committee members of this conference and my staff, friends from academic community, who has helped directly and indirectly in organizing this Conference.

Place: Vallabh Vidyanagar
Date: 03.02.2015

(S. S. Kalamkar)
Committees

Conference Advisory Committee:

Dr. Harish Padh, Vice Chancellor, SPU, VVN  
Dr. V. S. Vyas, Former Member, PM Economic Advisory Council  
Dr. Mahesh Pathak, Hon. Adviser, AERC  
Dr. Rohit Shukla, President, GEA  
Prof. A. A. Shaikh, Conference President, GEA  
Dr. Tushar Hathi, Vice President, GEA  
Dr. Kiran Pandya, Vice President, GEA  
Dr. S. S. Kalamkar, Director, AERC, SPU (Convener)

Conference Organizing Committee

Dr. Mohan Patel, Registrar/OSD, SPU, VVN  
Dr. S. Srinivas Rao, Secretary, GEA  
Dr. Gaurang Trivedi, Secretary, GEA  
Dr. S. S. Kalamkar, Director & Professor, AERC  
Dr. S. R. Bhaiya, Field Officer, CCS, AERC

Souvenir Committee:

- Dr. S. S. Kalamkar  
- Dr. Mohan Patel  
- Dr. M. N. Swain  
- Dr. S. R. Bhaiya  
- Mr. Arpit Patadiya (N S Patel)  
- Mr. Deepak Parmar (N S Patel)  
- Shri Deep Patel  
- Mr. Mihir Rana

Publication Committee:

- Dr. Mohan Patel  
- Dr. S. S. Kalamkar  
- Dr. M. N. Swain  
- Dr. S. R. Bhaiya  
- Mr. Arpit Patadiya (N S Patel)  
- Shri Deep Patel  
- Shri Rupesh Mistry

Accommodation & Transport Committee

- Dr. S. R. Bhaiya  
- Shri Gopal Machhi  
- Dr. Dhaval Dave (N S Patel)  
- Shri R. I. Patel  
- Shri Manish Makwana  
- Shri Hemal Padhiyar  
- Shri Hitesh Makwana  
- Shri Manishkant Ojha

Auditorium Arrangement

- Dr. Mrutunjay Swain  
- Shri Hemant Sharma  
- Ms. Kalpana Kapadia  
- Shri Vinod Parmar  
- Shri J. N. Singh  
- Shri Rupesh C. Mistry  
- Shri Mokin S. Patel  
- Ms. Bhoomika S. Padhiyar  
- Ms. Priyanka J. Patel

Food Committee

- Shri Gopal Machhi  
- Dr. Dhaval Dave (NS Patel)  
- Shri Sunil Rajput (NS Patel)  
- Shri R. I. Patel  
- Shri D. N. Thakkar  
- Shri Manish Makwana

Technical Session I

- Dr. S. R. Bhaiya  
- Shri Hemant Sharma  
- Shri Rupesh C. Mistry  
- Shri Thansingh Parihar
## Technical Session II
- Dr. Mrutunjay Swain
- Shri Vinod Parmar
- Shri Mikin S. Patel
- Ms. Kalpana Kapadia
- Mr. Faruk G. Vahora

## Banner display, etc
- Shri Manish Makwana
- Shri N. G. Chauhan

## Newspaper, TV Coverage, Entertainment Programme
- Shri Deep Patel
- Shri Mihir Rana
- Shri Kavit Pandya (N S Patel)
- Shri Brijen Patel (N S Patel)

## Photography Arrangements
- Shri Vinod Parmar
- Shri Thansingh Parihar
- Shri Deep Patel

## Distribution of Kit/Bag
- Shri B. A. Pathak
- Shri A. M. Patel
- Shri Bhavesh Solanki

## Anchor/Announcements
- Shri Brijesh P. Pandya
- Shri Brahmabhatt
- Shri Thansingh Parihar

## Registration Fee Collection, Distribution of receipt
- Shri D. N. Thakkar
- Shri P. J. Patel
- Shri N. J. Amin
- Ms. Priyanka J. Patel

## Certificate distribution
- Shri P. J. Patel
- Shri Bhavesh Solanki
- Shri Deep Patel
- Shri Brijen Patel (NS Patel)
- Ms. Kalpana Kapadia

## Overall Coordination
Dr. S. S. Kalamkar
Dr. S. R. Bhaiya
## Session-wise day to day schedule

<table>
<thead>
<tr>
<th>Date</th>
<th>Time (Hrs)</th>
<th>Activity</th>
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<tr>
<td>13/02/2015</td>
<td>12.00 to 15.00</td>
<td>Registration</td>
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<td>15.00 to 17.30</td>
<td>Inaugural Function</td>
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<td><em>(M.P. Patel Auditorium, Sardar Patel University)</em></td>
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<td>17.30 to 18.00</td>
<td>Tea Break</td>
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<td>18.00 to 19.30</td>
<td>Dr. I.G. Patel Memorial Lecture</td>
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<td>Speaker- Dr. Indira Hirway</td>
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<td>Chair: Dr. Alakanandaben Patel</td>
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<td>19.30 to 20.30</td>
<td>Dinner</td>
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<td>20.30 to 22.00</td>
<td>Cultural Programme (NS Patel Team)</td>
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<td>14/02/2015</td>
<td>08.30 to 09.30</td>
<td>Breakfast</td>
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<td>(Saturday)</td>
<td>09.30 to 11.00</td>
<td>Technical Session I &amp; II - Papers presentation</td>
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<td>Key Papers- Theme I</td>
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<td><em>(Dr. John Parmar &amp; Dr. Neeta Shah)</em></td>
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<td>11.00 to 11.30</td>
<td>Tea Break</td>
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<td>11.30 to 13.30</td>
<td>Technical Session I &amp; II...Continue</td>
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<td>13.30 to 14.30</td>
<td>Lunch</td>
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<td>14.30 to 17.30</td>
<td>Technical Session I &amp; II...Continue</td>
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<td>17.30 to 18.00</td>
<td>Tea-Break</td>
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<td>18.00 to 19.30</td>
<td>Prof. B. R. Shenoy Memorial Lecture</td>
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<td>Speaker- Dr. M. Govind Rao</td>
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<td>Chair: Dr. Himmatbhai Patel</td>
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<td></td>
<td>19.30 to 20.30</td>
<td>Dinner</td>
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<td>20.30 to 21.30</td>
<td>Executive Committee Meeting</td>
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<tr>
<td>15/02/2015</td>
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<td>Breakfast</td>
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<td>(Sunday)</td>
<td>09.30 to 11.00</td>
<td>Panel Discussion</td>
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<td>11.00 to 12.30</td>
<td>Special Lectures</td>
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<td>12.30 to 13.15</td>
<td>Plenary Session <em>(Presentation of Rapporteurs' report)</em></td>
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<td>13.15 to 14.00</td>
<td>General Body Meeting</td>
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<td>14.00 to 15.00</td>
<td>Lunch</td>
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<td>15.00 to 16.00</td>
<td>Certificate Distribution</td>
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Inaugural Session

February 13, 2015

15.00 : University Song

15.05 : Floral Welcome of the Guests

15.10 : Inauguration of Conference by lighting of Lamp by the Dignitaries

15.10 : Welcome by Dr. S.S. Kalamkar, Director, AERC, SPU, VVN

15.25 : About GEA by Dr. Mohan Patel, Secretary, GEA

15.40 : Address by Dr. Rohit Shukla, President, GEA


16.10 : Address by the Chief Guest

16.30 : Address by Conference President Prof. A. A. Shaikh, Former Principal, Nav Gujarat Arts and Commerce College, Ahmedabad and Visiting Faculty, B. K. School of Business Management, Gujarat University, Ahmedabad

17.10 : Remarks by Prof. Harish Padh, Vice Chancellor, SPU, VVN

17.20 : Vote of Thanks – Dr. S. R. Bhaiya, Field Officer, CCS

17.25 : National Anthem
Sardar Patel University, Vallabh Vidyanagar

This University was established on 15 December 1955 by an Act of the Legislative Assembly of the then Bombay Province and survived on its own for 13 long years when it received recognition as a university by the UGC under the Sections 2f and 12 (B) of the UGC Act, vide their letter No. F.13-7/68 (CD) dated 9 October 1968.

Motto: “Shīl vṛitta phalam śhritām: Character and Conduct are the Fruits of Learning.”

Vision

To keep in pursuit of academic excellence and regeneration of rural Indian life with the application of the study and research in all the disciplines of knowledge in concurrence with the modern global developments.

Mission

To achieve global standards of quality through innovative teaching and learning, quality research, and enhanced developmental activities by imparting high class customized academic and vocational training, striving to develop citizens with knowledge, skills, attitudes and values with a view to effectively contribute towards national development through societal transformation, industrial growth and rural development.

Other Distinctive Features of the University

- 09 of the 25 PG Departments in the University identified and funded under UGC programmes such as SAP (DRS), COSIST, FIST etc.
- The first and the only university in Gujarat and one of the 17 universities in the country to gain the status of “Centre for Excellence in Applied Polymers” from the UGC in 2004-2009.
- The first university in Gujarat to sign an MoU with Pennsylvania State University and offer an Integrated MSc (Information, Science and Technology from the academic year 2009-10.
- The first among the universities in Gujarat and Rajasthan to gain accreditation from the NAAC in 2000, re-accreditation in 2009, and enhanced grade points on a successful appeal to NAAC in 2011.
- One of the first two universities in the country to have signed a Memorandum of Understanding (MoU) with Prasar Bharati for the establishment of a Community Radio Station (that has been functioning since 2005).
Some of the Other Achievements and Features of the University

- Engaged in the pursuit of academic excellence and regeneration of rural Indian life through study of and research in contemporary disciplines like IT, Computer Applications, Genetics, Materials Science, Nano Technology etc.

- Has a constituent college alongside 26 Postgraduate Departments and 91 affiliated colleges/institutions.

- Engaged in the study of and research in 11 Faculty Disciplines like Arts, Commerce, Management, (Structural) Engineering, Pharmacy, Medicine, Homeopathy, Home Science, Law, and Education. Postgraduate and Undergraduate Degree Courses, PG Diploma Courses, Diploma Courses and Advanced Certificate Courses are on offer in all these faculty disciplines.

- One of the special features of the University are supportive services like Central Library, University Scientific Instrumentation Centre (USIC), Agro-Economic Research Centre, Sardar Patel Renewable Energy Research Institute (SPRERI), International Students Centre (ISC), Computer Centre (with UGC-INFONET connectivity), University Museum, University Health Centre, University Press, Community Science Centre, University Canteen etc. This helps in satisfying the R&D needs of the University and Industry.

- This is the first and the only university in India to publish a collection of 30 volumes of scholarly works on all aspects of knowledge of the world and experience under the title “Gyan Gangotri” in Gujarati.

A. Chairs

The University has established the following chairs:

- MBA Chair (Sponsor: Corporation Bank)
- Bhaikaka Chair
- Sri Aurobindo Chair of Integral Study
- Dr Baba Saheb Ambedkar Chair
- Shri Mota Chair of Extension of Educational Thinking
- CVM Centre for Gandhian Studies
- Sardar Patel Chair
- UGC Gandhian Studies Centre
- Sardar Vallabhbhai Patel Studies Centre

These chairs have been established to bring in community orientation to the activities undertaken by the University. The University (a) has provided infrastructural facilities for the establishment of Kendriya Vidyalaya (Central School) on the University Staff Colony campus; (b)
supports a small organization called “Sanskar Mandal” to carry out community orientation activities throughout the year; and (c) arranges endowment lectures for the same purpose.

B. Centres

Centre of Excellence in Applied Polymers and Related Areas

The University had set up a Centre for Excellence in Applied Polymers and Related Areas with recognition from the UGC with a generous support of Rs.5 crore to utilize the existing potential and strengths of faculty members from diverse fields with the aim of: (a) developing high performance polymers for defence, atomic energy, electronics, transport and consumer, and public and public systems-related industries; (b) modelling and computer simulation of synthesis and structure of new polymers; (c) teaching and training; (d) characterizing, testing and evaluating; and (e) developing optimal solutions for industrial and allied problems. The participating Departments are those of Chemistry, Biosciences, Computer Science, Physics and Materials Science. It completed 5 years in 2009. We have now applied to the UGC under University with Potential for Excellence (UPE) recently.

UGC Centre for Advanced Studies in Carbon Composites and Carbon Nano Material

GUJCOST Centre of Excellence in Nano Science and Materials

Recognizing the research achievement of the Department of Materials Science in the area of carbon related research, the UGC has accorded the Department the status of Centre for Advanced Studies in Carbon Composites and Carbon Nano Materials. The Government of Gujarat has also accorded the Department the status of a Centre of Excellence in Nano Science and Materials. We propose to strengthen the activities of the Department to extend the work on application of Nano Materials in Composites and other advanced areas of strategic importance under the programme.

University Computer Centre

The computer centre of Sardar Patel University is the central hub for providing software and hardware solutions to the entire campus. All the major tasks of various sections like Establishment, Examination, Academic, USIC and Accounts are computerized with the help of the Computer Centre. Payroll processing, Examination Results Processing (Pre, On and Post), Budget preparation, major report preparation, Centralized Admission process, etc. are some of the key activities at the computer centre. Internet connectivity under UGC-Info net is provided to various Departments and sections of the University by the computer centre. It includes new connections, maintenance of existing connections
and anti-virus solutions. Apart from the regular MIS activities, the computer centre provides assistance in purchasing of computer hardware and software to the entire university. The computer centre conducts practical for the postgraduate students of Departments of Bio-Sciences and Home Sciences. The same facility is extended to BEd students also. The computer centre also conducts training and orientation programmes for Teaching faculty and Non-teaching staff.

**Community Science Centre**

We believe that a Community Science Centre (CSC) is a common place where children, their teacher and general citizen can come and know about Science and Technology. We perceive such a centre as one that can become an oasis of knowledge, information and public awareness by providing us with a common platform for discussing issues related to Science and Technology. The working of the CSC is generally informal and usually it aims to strengthen science education through various activities. The general objectives of the CSC in the University are (1) to carry out activities that motivates the students of school and colleges towards a sound learning of science; (2) to inculcate broad scientific view, love for nature and care for the environment in the society in general; (3) to provide a forum for healthy discussion on aspects of education, training and researches in Science and Technology; and (4) to celebrate specific occasions like National Nutritional Week, Wild Life Week, National Science Day, National Technology Day etc with appropriate programmes. Its functional objectives are (a) to promote dissemination of knowledge in science and Technology to our rural as well as urban communities, particularly to children in an entertaining manger; (b) to communicate to our society, the impact of these scientific developments; (c) to give suitable programmes and activities for students, teachers and common public; and (d) to collaborate with other organizations and institutions on specific programmes.

**International Students Centre**

High quality of education, need-based specialized contemporary programmes and a highly professional work culture in self-financed institutes and programmes have started attracting a large number of students from outside Gujarat. The International Students Centre (ISC) of this University was founded in June 2004 in the academic year 2004-05. It was established by the University: (a) to assist the International Student Community by providing information about the various courses offered, admission procedure, eligibility criteria, fees charged etc, and (b) to arrange for their admissions, help them settle down quickly and happily in their studies, and take care of their welfare.

The University attracts quite a good number of foreign students every year. Since its inception, the ISC coordinates all the activities related to the admission of international students through a Single Window System.
The ISC also coordinates with Indian Council for Cultural Relations (ICCR), Ministry of External Affairs (MEA), and with different Embassies and Consulates for various purposes including assisting the international students to obtain Student Visa, Scholarships etc. The ISC participated in PIHEAD Programme at the Higher Education Fair organized jointly by UGC and FICCI in Kenya, Mauritius, and Ethiopia etc (representative: Professor Narsimhachari) and in Sudan (representative: the late Professor R K Prabhakar) in 2004-05. Professor H J Jani represented the University in such a Fair organized in Mauritius in 2005-06. Professor J H Khan is the current Honorary Director, International Students Centre in the University.

This Centre has been handling admissions to foreign/NRI/NRI-Sponsored students under a single-window system since its inception in 2004. The number of students had increased over a period of time.

**Centre for Training and Research in Language and Communication**

The Centre for Training and Research in Language and Communication (CTRLC) was set up along with the ISC to complement the work of the latter. Catering to the development of Communication Skills in English has a two-fold aim: (1) to provide training in language and communication to foreign students, various sections of the society such as students from academic institutions, personnel drawn from corporate organizations and industries etc so as to help them develop fluency and accuracy in language use and to overcome the problems faced in communication, and (2) to engage in further research in language and communication on the basis of the feedback it gets on the effectiveness of its programmes through its faculty and trainees on the one hand and client organizations on the other. Established in 2004, the Centre has trained three batches of a total of 29 students on a three-month Advanced Certificate Course in Communication Skills in English, besides training 18 Thai and 2 Chinese scholars from the ISC; 11 Doctors and 03 Doctors’ spouses on a request from Anand Consultant Doctors’ Association, Anand; 16 members of the mid-level technical and managerial staff of IDMC, Vitthal Udyognagar. Today, it also serves as a centre for imparting training in Academic Writing and Presentation Skills to M Phil and PhD scholars under CELT Project – an initiative taken by the Honourable Vice Chancellor of the University.

**Centre for Excellence under the Government of Gujarat**

The Department of Political Science was awarded a Centre for Excellence by the Government of Gujarat for a project of Research, Writing and Publication on the theme Ethics in Indian Politics and Public Administration with Special Reference to the Lives, Thoughts, and Contributions of Mahatma Gandhi, Sardar Patel, Vitthalbhai Patel and H M Patel.
Centre for Canadian Studies

The University has recently established a Centre for Canadian Studies as a collaborative initiative taken by the Departments of English and Political Science of the University. While the Department of English has been given the responsibility of coordinating the activities of the Centre, all Departments of the University participate in the activities undertaken by the Centre. The Department of English has taken up studies in Multiculturalism.

Women's Studies Centre

The establishment of the Women's Studies Centre in the Department of Home Science was made possible in the X-Plan period thanks to a generous grant of Rs.50 lac vide UGC letter No: C/X-Plan/WS/Home Sci./7518 dated 15 February 2005. The Centre has devoted itself to field studies, organised seminars and expert lectures on various aspects of women’s studies, and is currently in the process of getting two books commissioned by it on history translated from Gujarati into English. The Gujarati and the English versions of the books will be published by the University Press at Sardar Patel University. The centre aims at capacity building in the educated, employed woman with regard to managerial abilities such as communication skills, administrative skills, confidence building etc and along with this facilitating support systems such as research, day-care-centres, old age homes etc. on one hand and on the other, the centre will focus upon entrepreneurship skill building in unemployed women from a slighter wider age group such as adolescents, college girls, housewives and others from different SES. The Centre has identified two categories, namely the educated and employed women and the unemployed women, college goers, teens etc ranging from the literate to the illiterate. Computer literacy has also been identified as an essential skill, which needs to be imparted to women.

Centre for Diaspora Studies

The Centre for Diaspora was established in the Department of Sociology in the X-Plan period thanks to a generous grant of Rs.10 lac for the period up to 31 March 2007. The Centre devoted itself to field studies, and expert lectures covering the Indian Diaspora, and published monographs through the University Press at Sardar Patel University. The Centre organised (a) International Seminar on Indian Diaspora sponsored jointly by the UGC and ICSSR on 4-5 January 2005; and (b) International Conference on Indian Diaspora Profile, Position Diaspora Profile, Position and Problems of Indian Diaspora 21-22 January 2006. Both the Seminar and Conference attracted a large number of delegates from abroad. It completed Phase-II on 31 March 2014.
Agro-Economic Research Centre for Gujarat and Rajasthan (AERC)

The Directorate of Economics and Statistics, Ministry of Agriculture, Government of India established AERC at Sardar Patel University, Vallabh Vidyanagar in 1961. It has a full-time Professor appointed exclusively to guide and supervise its activities as Director. The centre has been functioning in close collaboration with the PG Department of Economics, Sardar Patel University ever since its inception. This association has been mutually beneficial to the Centre and the Department, with the result that it has helped the Department in strengthening its teaching and research in Economics substantially. The Ministry of Agriculture, Government of India has also assigned work of Cell called the Cost of Cultivation of Principal Crops in Gujarat (CCS) to the Sardar Patel University in 1970. AERC has been locking after the work of CCS. The Centre has played a vital role in shaping the agricultural policies for the state of Gujarat, Rajasthan as well as all India policy.

UGC-NET/SLET Training Centres

The UGC, New Delhi has sanctioned two Coaching Centres for NET/NET-JRF for students from SC/ST and Minority Communities to prepare them for National Eligibility Test (NET) so that sufficient number of candidates are available for selection of Lecturer in the University System under X – Plan. Besides this, the University also has UGC Remedial Coaching Centre for SC/ST and Minorities.

C. Cells

Internal Quality Assurance Cell

The university has instituted an Internal Quality Assurance Cell (IQAC) with the following objectives, roles and functions assigned to it, under the Chairmanship of the Vice Chancellor. The objectives of the IQAC are two-fold: (a) To ensure continuous improvement in the entire operations of the institutions, and (b) To assure stakeholders connected with higher education – namely students, parents, teachers, staff, would-be employers, funding agencies and society in general – of the accountability of the institution for its own quality and probity. It looks into/provides for/takes steps to foster (i) timely, efficient and progressive performance of academic, administrative and financial tasks; (ii) the relevance and quality of academic and research programmes; (iii) equitable access to and affordability of academic programmes for various sections of the society; (iv) optimization and integration of modern methods of teaching and learning; (v) the credibility of evaluation procedures; (vi) the adequacy, maintenance and proper allocation of support structure and services; and (vii) research sharing and networking with other institutions in India and abroad. Some of the functions being performed by the IQAC are: (a) development and application of quality
benchmarks/parameters in various activities of the institution; (b) dissemination of information on quality aspects; (c) organising discussions, workshops, seminars and promotion of quality circles; (d) recording and monitoring quality measures of the institution; (e) working as a nodal agency of the institution for quality relation activities; and (f) preparing the Annual Quality Assurance Report and such other reports as may be decided from time to time.

**University-Industry Interaction Cell**

The University-Industry Interaction Cell (U&I Interaction Cell) has been established to promote co-operation amongst Faculty members of the University and the leaders of the Industry to achieve technical proficiency and excellence. The U&I Interaction Cell works with the following specific objectives: (a) to create data base on Need Analysis of Industries in the state; (b) to create data base on expertise/facilities on the campus; (c) to coordinate R & D projects/consultancy/ sponsored projects/problem solving between the University Departments and Industries in the area of Product/Process development and technology transfer; (d) to assist in signing of MoU, promote patent awareness and development of IPR/Patents by the University faculty based on their products and processes; (e) to help testing material characterization; (f) to offer training programmes relating to professionally oriented fields for small/medium scale industries; and (g) to keep liaison with various funding agencies and government organizations.

**Environment Conservation and Management Cell**

Sardar Patel University is the first university in the state to frame its Environment Policy and constitute an Environment Conservation and Management Cell, which is actively pursuing the goals and action, programmes detailed in the policy. The highlights of the policy include: environment as a part of the 3-dimensional activities of the university; motivating senior students to carry out small projects of study on data collection and scientific analysis, etc; motivating departments/institutions to take up environmental research, through major and minor projects with funding from various agencies; joining hands with other universities/institutions and also NGOs for education, training and research on environmental aspects etc.

**SC/ST Cell**

Our SC/ST Cell, constituted in conformity with the norms laid down by the UGC, has initiated programmes to implement the reservation policy for weaker sections (ie, SC/ST) in the University and colleges so as to provide special facilities to students from these communities for their betterment and welfare as per instructions/orders by the Government of India. The Cell takes necessary steps to display all Notifications/Circulars on all the Notice Boards and provides guidance to the students belonging
to SC/ST. It is actively engaged in strictly following and implementing important decisions taken by the University Standing Committee for SC/ST. Besides this, it is involved in the administration of government scholarship to students under these categories.

D. Other Facilities

NBHM Regional Mathematics Library

In recognition of the committed efforts of the Department of Mathematics in Research, Teaching and Extension, the National Board of Higher Mathematics, Department of Atomic Energy, Government of India has set up a Regional Mathematics Library for Higher Mathematics in the Department of Mathematics. This is a National facility created on the campus. This library caters to the needs of Mathematicians in the Western Region.

EDUSAT (CEC- UGC, New Delhi): Higher Education Programme and EDUSAT (Gujarat Government): College to Career Programme

Sardar Patel University is one of the 58 Institutes of Higher Education of India to be connected with EDUSAT in the first phase. It was inaugurated at CEC, New Delhi on 27 July 2005. The University provides the facility of EDUSAT to the teachers and students at Computer Centre. The College to Career Programme initiated by the Department of Science and Technology (DST), State Government of Gujarat, and Department of Technical Education, State Government of Gujarat, implemented through Gujarat Informatics Ltd (GIL), a State Government of Gujarat informatics company, enables online case-based training on the popular technologies in computer science i.e., JAVA Technology and DOT NET Technology to the final year students of the various BE and MCA institutes within the state of GUJARAT.

UGC-Infonet Programme

Internet connectivity has been provided at Sardar Patel University, Vallabh Vidyanagar by the UGC, New Delhi with a grant of Rs.25 lac in collaboration with ERNET and INFLIBNET under the UGC Infonet programme. The university has been provided internet connectivity of 512 kbps SCPC through VSAT. This programme is bringing qualitative changes in academic infrastructure through resource sharing, access to e-journals, e-learning and helping us in linkages with other Academic and Research Networks the world over.

Bhaikaka Library: the Central Library

A unique feature of the library system in Sardar Patel University is that there is a Central Library (Bhaikaka Library) with satellite libraries in the
form of departmental libraries in each department. Named after the illustrious founder of the educational township as well as the University, Shri Bhaikaka, Bhaikaka Library came into existence in 1957, with the purchase of 3000 books. The present Library building was inaugurated by the Late Prime Minister, Shri Lal Bahadur Shastri on 31 October 1964. It has two large reading rooms with a capacity to seat 750 students. The stack area, divided into four parts, has the capacity of up to 3,00,000 documents like books, periodicals, theses, dissertation, Reference Books, CDs, DVDs, Video and Audio Cassettes, books donated to the library etc. Its membership is open to students, teaching staff non-teaching staff not only in the university departments but also those in affiliated colleges. Computer automation has been initiated with 2,60,000 of the books in the acquisition entered in the computer using SOUL software. Bar-Codes enable the issue counter to scan a document before issuing it out. Facilities like Reading Room, Internet, Women’s Reading Room, Inter-Library Loan Services, Photocopiers, Reference Services and Online Public Access Catalogue (OPAC). One can access UGC-INFONET journals. The Library subscribes to 208 Indian and 115 International Journals, making it a total of 323 Journals in all. Its Publication Section publishes 7 Journals and a Monthly University Newsletter. It has published 158 books so far. This is over and above the departmental library in almost all departments caters to the specific needs of respective department.

NSS/NCC

The university has National Service Scheme (NSS) in 22 affiliated Colleges. The main aim of National Service Scheme is to extend dimensions to the Higher Education System and orient the students youth to community services while they are studying in education institutions. NSS activities have been divided in two major groups; they are regular NSS activities and Special Camping Programmes. NCC is short for National Cadet Corps and there is a sizeable section of students in the University enrol in it.

Learn and Earn Scheme

A Learn and Earn Scheme has been introduced for students studying in Sardar Patel University or those residing in the University Hostels. It allows such to take up assignments like administrative work of various kinds like supervision of the reading rooms/halls in Bhaikaka Library, work related to computers like word processing, and such other administrative work in their spare time over and above their academic work with the aim of enabling young men and women to raise economic output on their own while reading toward their respective degrees.

Free-Studentships in Self-finance Programmes

The total number of free-studentships available in each department is 5% of the total strength of the department. Free-studentships are awarded to
the postgraduate students reading for their Master’s degree, who are otherwise not eligible for the Economically Backward Class Free-studentships or Scholarships for the Scheduled Caste, Scheduled Tribe and other Backward Class students.

**Apna Bazaar**

The university has set up a separate consumers’ cooperative society viz. Sardar Patel University Employees Consumers Cooperative Store (Apna Bazaar) to provide grocery and other items at the economic rates.

**Free Studentship to Wards of Cadres III and IV University Employees**

The wards of Cadres III and IV employees of the University who are studying in the University are reimbursed the full tuition fees in case they are under the grant-in-aid system and 50% of the tuition fees in case of those in the self-financed system.

**E. Support Services**

- **University Museum**

  The multi-disciplinary University Museum was established in 1949 as the Museum of Art and Archaeology by the founders of Vallabhbh Vidyanagar. It became a part of the University on 1 July 1960. In its nascent stage, it received a unique gift of 2,600 metal antiquities and other works of art collected from various countries of South East Asia, by Dr N A Thoothi who was then Reader in Sociology at the University of Bombay. The founder of the township of Vallabhbh Vidyanagar and the first Vice Chancellor of this University, Shri Bhaikaka, was blessed with good knowledge of Sanskrit and Archaeology. He himself found some important antiquities for the museum like specimen of minerals, rocks, fossils, synthetic and natural crystals, herbariums, paleoliths, microliths, old bricks, post-shreds, old coins, sculptures in stone, wood and metal and also utensils, religious articles, arms, shields, a palanquin, a grain of rice with painting of Lord Mathavira, anatomical specimens of humans. It houses a Gallery on Life and works of Sardar Patel and there are letters of felicitations received by Veer Vitthalbhai Patel and Shri Bhaikaka. The museum has received gifts like coins, manuscripts, big and small sculptures made of metal or stone from people and gathered some of it through field work as well. The museum holds exhibitions regularly.

- **University Health Centre**

  The University has a very good Health Centre, which was established in 1962. It has been recently renovated and updated. The main objective of the centre is to provide primary prevention
against diseases, and to take care of routine health problems. Free medical check-up is carried out for all the staff members and all the students of the University and affiliated colleges. Free medication is also provided for general and common ailments. University Health Centre carries out detailed evaluation of all aspects, for Hypertension and Diabetes Mellitus. It maintains separate files for all the enrolled patients. Regular check up, necessary investigation, counselling, health education, essential advice and treatment are provided free of cost to all Hypertensive and other patients. Further it also organizes various check-up programmes to rule out Diabetes Neuropathy, Diabetes Nephropathy, and Diabetes Retinopathy for all diabetes and hypertensive patients. The Centre screens all diabetes patients with the help of ophthalmologist on first Sunday of every month. The Health Centre has the facility of Electrocardiogram (E.C.G.) and I.V. Fluid Supplement to patients suffering from Cerebral Malaria, Typhoid, and Dehydration due to Vomiting and Diarrhoea etc. It carried out screening of Bone Mass Density (BMD) for osteoporosis.

- University Science Instrumentation Centre (USIC)
- University Press
- Community Radio Station
- University Guest Houses and Hostels
- Sardar Patel Maidan
- Employment Bureau
- Banking Services
- Postal Services
- University Canteen
- Sports and Cultural Programmes
**Agro-Economic Research Centre, Vallabh Vidyanagar**

The Agro-Economic Research Centre (AERC) for the states of Gujarat and Rajasthan was established in July 1961 at the Sardar Patel University (SPU), Vallabh Vidyanagar by the Directorate of Economics and Statistics (DES), Ministry of Agriculture (MOA), Government of India (GOI), New Delhi. It was late Shri H.M. Patel (ICS retd.) who not only provided the vision for establishing such an Institute but also ensured the much needed support and encouragement for its growth at Vallabh Vidyanagar. AERC has been working as an associate institution of S. P. University and enjoying autonomy status in its working. The Centre has completed 53 glorious years (1961-2014) of its journey marked by both achievements and challenges. During these years, the Centre has emerged as a strong policy feedback centre of the Ministry of Agriculture, Government of India due to hard work and strong commitment of the staff in the Centre. The focus of research effort in the initial stage was on comprehensive village surveys and resurveys in order to understand the process and direction of change at the village level. Subsequently, the emphasis of research has shifted to problem oriented studies.

The Centre has by now completed 154 problem-oriented studies, 21 village surveys and 4 village resurveys. Most of these research projects have been taken up by Centre on the recommendation of the Government of India and State Governments of Gujarat and Rajasthan. Some of the projects have also been sponsored by other national and international organizations. During its long journey, the Centre has brought remarkable improvement in every aspects of research including methodological base of the studies. The studies have come out with useful findings and policy implications for agricultural and rural development of the states of Gujarat and Rajasthan. Many seminars and conferences were organized by the Centre (jointly with Department of Economics) during these years.

Since 1970, the Centre has been also organizing the work of *Comprehensive Scheme to Study Cost of Cultivation of Principal Crops in Gujarat* entrusted to the S P University by the Ministry of Agriculture, Government of India. Ever since its inception, the Centre has been working in close collaboration with the Post-graduate Department of Economics of the S. P. University and so far it has helped/supported about 35 scholars to successfully complete their Ph.D. work in agricultural economics.

The principle objectives of the Centre have been as follows:

1. To make continuous study of the change in rural economy by means of surveys of villages each year, to be repeated after an interval of five years.
2. To conduct adhoc investigation on problems of interest to the Ministry of Agriculture and Irrigation and the State Governments under their jurisdiction.
3. To undertake research on fundamental problems relating to the agricultural economy of the country, and
4. To give technical advice to the Government of India and to the State Governments on such important issues as, with mutual agreement, may be referred to the Centre.

**Cost of Cultivation Scheme**

Studies on cost of production of agricultural commodities have been of interest to research workers and policy-makers. The need for reliable and representative estimates about cost of production of agricultural crops is obvious for formulating an appropriate strategy for planned agricultural development.

In a vast country like India with marked variations in agro-climatic conditions, it becomes essential to collect State-wise, region-wise data on cost of production of various crops on a continuous basis. Recognizing the importance of such studies, the Directorate of Economics and Statistics, Ministry of Agriculture (MoA), Government of India, evolved a permanent arrangement for collection of cost of cultivation data on a continuous and uniform basis for all important crops in the country. The Directorate of Economics and Statistics decided to establish the Comprehensive Scheme for studying the cost of cultivation of principal crops in different states of India in 1968-69. The Directorate entrusted one such cost scheme to the Sardar Patel University for collecting cost of cultivation data in Gujarat. The University entrusted this Scheme to the Agro-Economic Research Centre. Since 1970, the AERC and the Comprehensive Scheme are working together in close collaboration for serving the needs of the Directorate of Economics and Statistics of Ministry of Agriculture, Government of India. The data base generated through the “Comprehensive Scheme for Studying Cost of Cultivation of Principal Crops in Gujarat” is used not only for the primary purpose of providing cost estimates for determination of Minimum Support Prices (MSP) but for a wide variety of other important purposes like ‘Compilation of National Accounts Statistics’, Wholesale Price Indices (WPI) and research studies relating to cost of cultivation and farm income.

Up to 1982, cost of cultivation data in Gujarat were collected from 480 sample cultivators spread over 40 clusters of villages through cost accounting method. Under the old arrangement (known as single crop approach) the clusters were changed every year retaining only a sub-sample of 10 to 20 clusters. Since 1983, the single crop approach has been replaced by crop complex approach under which the numbers of clusters have been increased from 40 to 60 thereby providing a wider and varied base for generation of reliable estimates. Now ten principal
crops of Gujarat Viz., Bajra, Groundnut, Cotton, Arhar and Onion, Paddy, Wheat, Maize, and Rapeseed/Mustard and Sesamum are being studied continuously and simultaneously for three consecutive years in the same clusters of villages. At present, there is a sample of 600 cultivators (10 each from selected clusters) drawn from different size groups of holdings. The farm size groups are marginal (below 1.0 hectare), small (1.0 to 2.0 hectare), semi-medium (2.0 to 4.0 hectare), medium (4.0 to 6.0 hectare), and large (6.0 hectare and above).

The work of this Scheme is being looked after by 78 persons, out of which 60 are permanently posted in the villages spread over entire State of Gujarat. This Scheme is being fully financed by the Government of India.

**AERC Governing Body**

- **Dr. Harish Padh**  
  Vice Chancellor,  
  Sardar Patel University,  
  Vallabh Vidyanagar -388120, Anand, Gujarat.

- **Ms. Sangeeta Verma**  
  Economic and Statistical Adviser  
  Directorate of Economics & Statistics,  
  Department of Agriculture and Cooperation,  
  Ministry of Agriculture, Government of India,  
  Krishi Bhavan, New Delhi -110 001.

- **Dr. V. S. Vyas**  
  Professor Emeritus,  
  Institute of Development Studies,  
  Jaipur 302 004, Rajasthan;  
  Former Member, PM Economic Advisory Council

- **Dr. Y. K. Alagh**  
  Professor Emeritus,  
  Sardar Patel Institute of Economic and Social Research, Ahmedabad, 380 054; &  
  Chancellor, Central University of Gujarat, Sector 30, Gandhinagar 382 030, Gujarat.

- **Dr. Amrita Patel**  
  Former Chairman, NDDB &  
  Chairman,  
  Charutar Arogya Mandal  
  Gokal Nagar, Karamsad - 388 325, Anand, Gujarat
• Shri Raj Kumar, IAS
  Principal Secretary,
  Department of Agriculture and Cooperation,
  Government of Gujarat, New Sachivalaya,
  Gandhinagar - 382010, Gujarat.

• The Principal Secretary,
  Department of Agriculture,
  Government of Rajasthan,
  Sachivalaya, Jaipur 302 005, Rajasthan.

• Dr. Tushaar Shah
  Senior Fellow
  International Water Management Institute
  (IWMI), C/o INREM Foundation,
  Behind IRMA Mangalpura,
  Anand 388001, Gujarat, India

• Dr. Sudarshan Iyengar
  Former Vice Chancellor,
  Gujarat Vidyapith,
  Ahmedabad - 380 014, Gujarat.

• Dr. S. S. Acharya
  Professor Emeritus,
  Institute of Development Studies, Jaipur (Raj);
  Former Chairman, Commission for Agriculture
  Cost and Prices (CACP), GOI

• Dr. D. J. Chauhan
  Professor and Head,
  Post Graduate Department of Economics,
  Sardar Patel University,
  Vallabh Vidyanagar 388 120, Anand, Gujarat

• Dr. Mahesh Pathak
  Honorary Advisor,
  Agro-Economic Research Centre
  Sardar Patel University,
  Vallabh Vidyanagar 388 120, Anand, Gujarat.

• Dr. S.S. Kalamkar
  Director,
  Agro-Economic Research Centre,
  Sardar Patel University,
  Vallabh Vidyanagar 388 120, Anand, Gujarat.
Distinguished Personalities Associated with Centre:

The AERC, Vallabh Vidyanagar was singularly fortunate to have Dr. V. S. Vyas as its founder Director, whose pioneering efforts, has established rich traditions of research in agricultural economics. This tradition was nurtured in the subsequent phase of three and half decades by Dr. Mahesh Pathak who served as Hon. Director during 1972-2006.

Another unique strength of the Centre has been the association of some of the most distinguished personalities of our Country, such as

- Shri H. M. Patel (ICS retired)
- Prof. M. L. Dantwala
- Dr. D. T. Lakdawala
- Prof. M. V. Mathur
- Dr. Amrita Patel
- Prof. R. K. Amin
- Dr. V. S. Vyas
- Dr. Y. K. Alagh
- Dr. Mahesh Pathak
- Dr. Tushaar Shah
- Shri J. S. Sarma
- Dr. M. S. Bhatia
- Shri Mahendra Desai
- Dr. N. S. Jodha
- Dr. V. N. Misra
- Dr. S.L. Bapna
- Dr. D. S. Tyagi
- Dr. B. M. Desai
- Dr. Arun S. Patel
- Dr. H. G. Patel
- Dr. Dilip Bagchi
- Dr. Sudarashan Iyenger
- Dr. S. S. Acharya
- Dr. Amita Shah
- Dr. Surjit Singh
- Dr. P. K. Singh
- Dr. H. P. Trivedi
- Dr. Dilip Chauhan

### Director / * Hon. Director of the Centre

<table>
<thead>
<tr>
<th>Name</th>
<th>Period</th>
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<tbody>
<tr>
<td>Dr. V.S. Vyas <em>(Founder Director)</em></td>
<td>01.07.1961-30.06.1972</td>
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<tr>
<td>Dr. Mahesh Pathak*</td>
<td>01.07.1972-12.09.2006</td>
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<tr>
<td>Dr. P. K. Singh*</td>
<td>12.09.2006-02.08.2008</td>
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<td>Dr. H. P. Trivedi *</td>
<td>02.08.2008-02.05.2010</td>
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<tr>
<td>Dr. R. H. Patel</td>
<td>03.05.2010-09.11.2011</td>
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<tr>
<td>Dr. Rajeshree Dutta (In-charge)</td>
<td>09.11.2011-05.07.2012</td>
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<tr>
<td>Dr. S.S. Kalamkar</td>
<td>05.07.2012-Till date</td>
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### Honorary Joint Director

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### Honorary Advisor

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<tr>
<td>Dr. Mahesh Pathak</td>
<td>12/09/2006-Till date</td>
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**AERC Vallabhbh Vidyanagar at a Glance**

- Jurisdiction: Gujarat and Rajasthan state
- Founder Director: Dr. V. S. Vyas
- Sanctioned Staff Strength: 15
- Research Studies Completed for MOA, GOI: 154
- Research Studies Completed for Planning Commission, GOI: 06
- Special Cost Study for MOA, GOI: 01
- Village Surveys conducted: 21
- Village Resurveys conducted: 04
- Research Studies in Progress: 09
- Publications of the Centre: 11 (English) and 04 (Gujarati)
- Seminars, Conferences, Workshops Organized (jointly with PG Department of Economics, SPU, VVN) : 22
- Academic Activities:
  - Research Studies
  - AERC Foundation Day Lecture Series
  - Invited Guest Lecture/Talk Series
  - H.M. Patel Memorial Lecture Series
  - Faculty Seminar Series
  - Working Paper Series
  - Guidance to Ph.D. Student
  - Teaching – ‘Certificate Course in Economic Analysis and Report Writings’, Guest Faculty in Colleges,
  - Organization of Conferences/Seminar/Workshop
  - Training Programme for Ph.D. Student & University/College teachers
- Award/Prize
  - Dr. V. S. Vyas Felicitation Prize

**CCS, Gujarat at a Glance**

- Jurisdiction: Gujarat State
- Total Sanctioned Staff Strength: 78
- Selection of Sample Villages: Stratified Random Sampling
- Total No. of Agro-Climatic Zones covered in Sampling: 08 (All)
- Total No. of Selected Sample Talukas : 60
- Total No. of Selected Sample Villages/ Village Clusters: 60
- Total No. of Selected Farmers: 600
- Method of Data Collection: Crop Complex Approach with Cost Accounting Method
- No. of Selected Study Crops: Total 11 crops.
- Block Year under Progress: 2014-15 to 2016-17
- Activities:
  - Workshop cum Training Programme for Field staff
  - Standing Administrative Affairs Committee (SAAC)
  - Best Fieldman/Agriculture Assistant' Award
Charutar Vidya Mandal, Vallabh Vidyanagar

Shri S.M. Patel
Hon. Secretary, C.V.M

Inspired by Sardar Patel, Bhailalbhai Patel, an engineer of eminence endearingly called 'Bhaikaka', and Bhikhabhai Patel, an esteemed educationist, popularly called 'Bhikhabhai Saheb', resolved to plant a township of education in a place where highwaymen held sway. They did so in order to make education available at the doorstep of the villagers who were sunk in squalor, abject poverty, illiteracy and superstition. The duo convinced the landowners how their donation of land would bear fruit when they would be able to worship the twin goddesses of knowledge and wealth.

Bhaikaka and Bhikhabhai, the bravehearts, lived in a hut and installed themselves in their ‘office chamber’, with Lord Brahma, the Super Creator, inspiring the two creators, under a mango tree. They established in 1947 Vitthalbhai Patel Mahavidyalaya (Arts & Science College), the first college, despite a lot of problems, mostly financial. The following year, came up Birla Vishwakarma Mahavidyalaya (College of Engineering). Bhikhabhai Jivabhai Vanijya Mahavidyalaya (Commerce College) succeeded it in 1950. Bhaikaka and Bhikhabhai did not stop there. They founded Sardar Vallabhbhai Vidyapeeth (now Sardar Patel University) only eight years after the birth of first college and Bhaikaka led the university as the founder Vice-Chancellor. Thirteen years after the establishment of Vallabh Vidyanagar Bhaikaka entered active politics and handed over the reins of administration of the Mandal to Shri H M Patel, an ICS officer of great renown.

H.M.Patel provided able leadership to the Mandal for three decades and a half. He established several colleges and added to the facilities for students and staff. He played a prominent role in the affairs of the university. He founded Vitthal Udyognagar with a view to arresting the exodus of the educated rural youth to cities in search of livelihood. In order to improve the health of rural population he set up an ultramodern hospital and medical college near Karamsad, Sardar Patel’s native village. Like Bhaikaka, he too entered active politics to root out corruption in public life and to ensure rule of law. After Shri H.M.Patel’s sad demise, Dr. C.L.Patel, the present Chairman, came forward to serve the Charutar Vidya Mandal

Dr. C.L.Patel, the man who acts as fast as he thinks, has added in quick succession new institutions of education and new courses of study, some of which are unconventional. Not only this, he created a new, well-planned campus, New Vallabh Vidyanagar which boasts of, in addition to colleges of Engineering, another college of Engineering for women, Pharmacy and Biotechnology, a college of Ayurveda and Ayurvedic hospital, a College of Commerce and Management and a College of
Architecture and Interior design. Keeping pace with the changing times he has established new schools, refurbished the already existing hostels and college buildings and constructed new hostels, staff quarters and sports complex, all this within a short span of twenty years. The secret of Dr. C.L.Patel's visionary stewardship lies in the fact that he has deep faith in God and that academicians, donors and institutions have immense faith in his practical idealism. Recipient of numerous he never rests. He marches ahead and scales greater heights.

It is noteworthy that Birla Vishwakarma Mahavidyalaya (Engineering College) celebrated its Diamond Jubilee in the august presence of Dr. A P J Abdul Kalam, former President of India, and Shri Narendra Modi, Chief Minister of Gujarat. Dr. Kalam greeted the college for completing sixty years of commendable educational mission. He observed how Bhaikaka and Bhikhabhai, the great visionaries, and G.D. Birla, the generous donor, have made significant difference in the socio-economic condition of the area and thereby of the country by establishing a beautiful educational complex like Vallabh Vidyanagar and a renowned engineering college like BVM. Shri Narendra Modi paid rich tribute to the founders in creating Vallabh Vidyanagar and the college. In its sixty years the college has contributed a great deal to the progress of the Gujarat State and the country, he added.

The Vision of CVM is to add significantly to our enduring civilization tradition of pioneering excellence in learning, knowledge, enlightenment and self-realization, in a University relevant context.

CVM is dedicated to the perpetuation of our Founders’ Vision of providing the infrastructure facilities, operating conditions and overall environment conducive to the education of young scholars, alongwith the desired physical, mental and character building inputs; we firmly renew our commitment to providing value added, globally relevant Education with an emphasis on the Techno-Management domain, to ensure that our scholars fruitfully exercise their knowledge, skills and values in the global economy.
Charutar Arogya Mandal, Karamsad

An outcome of a dream cherished by late Dr. H M Patel, a former Union Finance and Home Minister, Charutar Arogya Mandal (CAM) is a registered society and a public trust established as a 136 bedded hospital in 1981 with the primary focus of catering to the health care needs of women and children of the Charutar region (comparing Anand and Kheda districts). This noble initiative has today, grown into its philosophy to provide quality health care, quality medical & paramedical education and carry out medical research. A 100 acre, well developed, lush green campus comprises of a 550 bed hospital, Shree Krishna Hospital, state-of-the-art Cancer Centre with facilities for Chemotherapy and Radiation, a modern Cardiac Centre, a Bone Marrow Transplant Unit Which is expected to open shortly, Ramanbhai Gokal Privilege Centre – a sophisticated facility for personalized medical care and attention, a medical college with bachelors and masters degree programmes, a nursing providing diploma and degree in Nursing, a Medical Laboratory Technology institute offering graduate and postgraduate medical laboratory courses and fellowship programmes.

Patient Care:

Shree Krishna Hospital

The hospital is a 550 bedded multi-specialty set up with all kinds of diagnostics and treatment facilities supported with a modern Trauma Centre, Operation Theatres, Intensive Care Units, Dialysis, wards etc. The hospital can boast of the quality of care provided here which is accorded with the accreditations to its kitty, the NABH for hospital, Blood Bank and Imaging Services and the NABH for its Laboratories.

Ramanbhai Gokal Privilege Centre

The recent opening of the Ramanbhai Gokal Privilege Centre, an exclusive facility to deliver medical care and attention in a more personalized manner on out-patient and indoor basis. Our comprehensive health check-up programme, Hello-Health is a preventive health check-up programme adds to the range of patient care facilities at the hospital operated through this modern set-up. A range of services in Neurology, Nephrology, Pulmonology, Diabetology, Neuro-interventional procedure, Neurosurgery Gastroenterology, Endoscopic Procedure, Pediatric Surgery, Plastic Surgery, Vascular Surgery, Urology, Spine Surgery, Joint Replacement, Arthroscopy, Shoulder Replacement, Hand Reconstructive Surgery, Cochlear Implant, etc are provided through the Privilege centre.
Manibhai Shivabhai Patel Cancer Centre

The Mandal has been battling with the deadly disease of cancer for over last two decades. The Manibhai Shivabhai Patel Cancer Centre has played a pivotal role in reviving the spirits of cancer victims with its modern treatment facilities including state-of-the-art facilities for Radiation Therapy, Radio surgery and Chemotherapy. A panel of experts specialized in onco surgeries provide their services at the centre.

Bhanubhai & Madhuben Patel Cardiac Centre

Our modern cardiac centre has earned its repute for treating the most complicated congenital cardiac conditions in newly born, infants and adults with success. The diagnostics and therapeutic infrastructure at the centre competes with the best of its kind across the nation. Complete with facilities of a Cath Lab, Operation Theatres separates ICUs and step-down ICUs for adults and children. The centre is manned by dedicated team of experts including Interventional Cardiologists, Pediatric Interventional Cardiologist, Cardio Thoracic Surgeon, Pediatric Cardiac Surgeon, Intensivists, Pediatric Intensivists, Neonatologists and trained paramedical staff.

Shri Dinesh J Patel Centre For Bone Marrow Transplant

An upcoming facility: The hospital is soon to extended services of stem Cell Transplant with the functioning of Shri Dinesh J Patel Centre for Bone Marrow Transplant. To be headed by the experts of field and with latest infrastructure the centre would one of the very few in the state providing transplants of stem cell, a promising medical technology to cure blood cancers, thalassemia, serious anemia and other blood related diseases.

Extension Centres:

Shree Krishna Hospital’s extension to community includes seven health centre located in the smaller towns of the Kheda and Anand district which includes Sevaliya, Bhadaran, Petlad, Bhalej, Ardi, Agas, Anand Agriculture University and GIDC.

Social Security Programme (Krupa):

A social security programme run by the Mandal, Krupa is s unique programme which provides hospitalization benefits worth Rs 5000/- with a nominal subscription fee of just Rs 99. The total membership base of the programme as on date is close to 45,000. A family floater scheme, Krupa parivaar is a recent addition to this programme which provides hospitalization benefit worth Rs. 20,000 to a family four on a single annual premium of Rs. 499.
Medical Education:

Pramukhswami Medical College:

Pramukhswami Medical College (PSMC) was established in 1987, affiliated to the Sardar Patel University it has been accorded recognition by the Medical Council of India (MCI). With intake of 100 students every year. PSMC differs from other medical colleges in the way the curriculum is designed. It lays more emphasis on integrated teaching and learning, making it the only medical college in the country, where different faculties (Pre-clinical and clinical) come together to teach the students a given topic or system in an integrated fashion, thereby ensuring that the information given is neither fragmented nor repetitive but is complete and thorough in every way. It comes as a matter of pride to us that since 2010, PSMC has become one of the 11 amongst 330 medical colleges in India to be accorded the status of a Regional Training Centre for Medical Education Technologies by MCI. Further to this, the PSMC has also been accorded the recognition of being the first education centre of FAIMER in India.

H.M Patel Institute of Postgraduate Studies:

The HM Patel Institute of post Graduate studies (HMPIPGS) run three year degree courses in Anesthesiology, Community Medicine, Dermatology, Venereology and Leprosy, General Medicine, General Surgery, Obstetrics and Gynecology, Ophthalmology, Orthopedics’, Otorhinolaryngology, Pediatrics, Pathology, Radio diagnosis, Respiratory Medicine, Pharmacology, Biochemistry and Microbiology. Two year diploma courses are conducted in Anesthesiology (DA), Dermatology, Venereology and Leprosy (DDVL), Obstetrics and Gynecology (DCO), Public Health (DPH), Ophthalmology (DO), Orthopedics (D.Ortho), Otorhinolaryngology (DLO), Pathology (DCP), Pediatrics (DCH), Industrial Hygiene (DIH), Radio-diagnosis (DMRD), Tuberculosis & Respiratory Medicine (DTCD) and Microbiology (D-Micro). In addition, a two year postgraduate degree course-MSc (Medical) after MBBS is also available in for Anatomy, Physiology, Biochemistry, Microbiology and Pharmacology. Doctor of Philosophy (PhD) courses are available in the departments of Anatomy, Physiology, Biochemistry, Microbiology, Pharmacology and Preventive & Social Medicine.

GH Patel School of Nursing:

To ensure that the treatment facilities of Mandal get efficient nursing care, the GH Patel School of Nursing was established in the year 1980. This school not only helps us prepare them to meet our superior quality standards, but also mould them to have the required sensitivity and right attitude towards the rural folk that forms the majority of our patient populace. GHPSN is affiliated to Sardar Patel University and is
recognized by Gujarat Nursing Council for its 25 Seats in GNM and 30 seats for B.Sc Nursing.

**KM Patel Institute of Physiotherapy:**

KM Patel Institute of Physiotherapy (KMPIP) was started in 1999. It offers 30 seats for its 4.5 years Bachelor of Physical Therapy (BPT) course and five seats for the two year Master of Physical Therapy (MPT) course; both affiliated to the Sardar Patel University. The institute also facilitates PhD programs in Physiotherapy under the Faculty of Medicine, Sardar Patel University. The institute has been recognized by the Indian Association of Physiotherapists, which is the only official national body for physiotherapists in India and is a member of world Confederation for Physical Therapists. The National Accessment and Accrediation Council (NAAC) has accreddited KMPIP with ‘B’ Grade.

**Smt. LP Patel Institute of Medical Laboratory Technology:**

Smt LP Patel Institute of Medical Laboratory Technology is established to provide training to the prospective candidates who desire to pursue their post- BSc career in the field of medical diagnostics as laboratory personnel in hospitals, clinical laboratories and medical research centres. The Institute, through its post-graduate programmes, DMLT & MSc Medical Technology (in clinical Laboratory Technology), provides a unique opportunity to candidates to acquire not only knowledge and skill in the Laboratory techniques; but also to sharpen the edge in laboratory-based research by undertaking an in-house research project as a compulsory PG dissertation in MSc programme. The Institute has also introduced graduate courses, BSc-Medical Technology, to impart training to the students in a variety of specializations such as Clinical Laboratory Technology, Imaging Technology, Respiratory Care Technology, Radiotherapy Technology and Operation Theatre & Anaesthesia Technology. Student are Trained in respective department at shree Krishna Hospital.
Sardar Patel Education Trust, Anand

The title of trust itself commemorate Late Shri Vallabhbhai Patel, the Iron man of India world famous as SARDAR PATEL. We believe in his ideology and try to do some good for society at large. The trust is registered as public trust in 1969, catering to the needs of the community through 15 educational institutions under its umbrella, from K. G. to Doctorate & Research in various discipline/faculties which covers Arts, Commerce, Education, IT / Computer Science and Management, Social welfare etc. for last 44 years. We venture out in the field of Paramedical and Science under the title B. N. Patel Institute of Paramedical and Science launched successfully in 2010. Kidney (HEAMO) dialysis center has been started in April 2010. We have state of the art modern dialysis center equipped with latest technology dialysis machinery. We offer dialysis services to kidney failure patients on a subsidized rate. Our intention was to impart education in the field of dialysis technology and prepare dialysis technicians. To support the dialysis process we also have full fledge clinical laboratory to carry out required investigations for dialysis. Students are provided practical training on our dialysis centre. Since kidney failure cases are increasing day by day there is need of such dialysis centre to serve the people at large. With increase in number of dialysis centre, requirement of dialysis technicians also increases. Now the dialysis technicians are in demand within the country as well as abroad. Thus, future of dialysis technician is very bright & after undergoing the course successfully all the students will get job through placement with a very good salary package.

We are proud to have on our campus 11000 plus students undergoing education in various faculties. We have around 350 well qualified, experienced and dedicated teaching faculties imparting quality education and 150 administrative staff to take care of office administration.

SPET believe in services to humanity and so provides social services to the society through its paramedical division. It has a fully fledged fully equipped Dialysis Centre, Digital X-Ray and Mammography Centre, Clinical Lab, Physiotherapy and Laser Centre, Fitness Centre etc. Gujarat Kidney Foundation – Ahmedabad and Infocus Radiology Centre – Ahmedabad provide their technical expertise to this institute. SPET has also joined hands with the Zydus Hospital – Anand, a full fledge 250 bed modern multi utility hospital for Operation Theatre, paramedical training and support services in the field of education and social cause.

SPET with a noble motto to develop world class and well equipped dental lab facility in the milk city has set up B. N. Patel Dental CAD/CAM Lab Tech Institute with high tech equipment for the lab has been imported from Amman Girrabach (Germany) to provide prompt & quality dental services. We have successfully established a Dental CAD-CAM Lab and commenced production of crowns, bridges, tooth etc. as a part of academic activities and training programs for CAD-CAM technicians.
We serve the community at large on a various platform through our paramedical division, where it has undertaken various health check-up camp for students, senior citizens, police officers and employees of collectorate office. Paramedical Division has also undertaken above 500 free mammography for women.

The vision of Shri B. N. Patel, Managing Trustee-Secretary is to provide education facility to Girl Child on our campus free of cost as a part of our community services. The SPET Parivar is committed to achieve such goals in the interest of education and social services.

**NRG Centre, Anand Managed by Sardar Patel Education Trust**

Gujarat State Non-Resident Foundation (GSNRGF) is a State Government grant in aid society engaged in the work of live interaction with Non-Resident Gujaratis spread all over the World. Sardar Patel Education Trust is registered as a Public Trust working for the development of education and society. GSNRGF considered and granted NRG Centre to Sardar Patel Education Trust to provide services to Non Resident Gujaratis, in particular to provide services in the form of a help desk centre at Anand. The NRG Centre is working for NRGs and provide assistance.

During the year 2012-13, a high level delegation of Punjab Government headed by the Secretary, NRI Division visited NRG Centre, Anand. Their visit was to understand functioning of NRG Centres in Gujarat so as to replicate & start NRG Centers’ in the state of Punjab. Shri B. N. Patel, Managing Trustee and Secretary along with Shri Rajesh B. Patel, Vice Chairman, NRG Centre welcome the delegates and provided desired information. The delegation appreciated the activities of NRG Centre and cooperation extended during their visit.

Another delegation from State Bank of India, NRI division headed by the Chief Manager visited NRG Centre, ANAND. They have appreciated the efforts being made by the NRG Centre for NRGs. They have offered their services as and when required.

NRG Centre, ANAND and Gujarat State Non-Resident Gujaratis Foundation (GSNRGF), Gandhinagar jointly organized one seminar on “NRI Marriages and Gujarat Card” on 22nd Feb. 2013 at Chanchalbaa Auditorium. Shri Bhikhubhai N. Patel Managing Trustee & Secretary presided over the function. The seminar was well received by the delegates and the gesture of NRG Centre was appreciated.
The Institute of Rural Management Anand (IRMA), also known as the “House that Kurien built”, boasts a verdant sixty-two acre campus set against a near bucolic backdrop. Launched in 1979 at Anand (Gujarat) IRMA happens to be a front runner in rural management education and has striven “to promote sustainable, eco-friendly and equitable socio-economic development of rural people through professional management of their institutions...”since its inception.

Academic courses

IRMA’s flagship Programme in Rural Management (PRM) equips students with skills to assume responsibilities associated with challenges besetting rural cooperatives and development organizations. A two-year fully residential programme leading to a Postgraduate Diploma in Rural Management (PGDRM), PRM is recognized as equivalent to a Master’s degree by the Association of Indian Universities (AIU) and has been approved by the All India Council for Technical Education (AICTE). Those dedicated to scholarship, research or teaching in specialized areas of rural management apply to the FPRM or Fellow Programme in Rural Management, which has a minimum residency requirement of three years. FPRM is approved by the AICTE as a fellow programme in rural management.

PRM Curricular Structure

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Activity</th>
<th>Major Emphasis</th>
<th>Credits</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.</td>
<td>Remedial Classes (for select weak students)</td>
<td>Nil</td>
<td></td>
<td>1 week</td>
</tr>
<tr>
<td>1.</td>
<td>Induction /Orientation (including village stay of 5 days)</td>
<td>Inculcates Institutional values &amp; principles; Exposure to villages Nil</td>
<td></td>
<td>1 week plus</td>
</tr>
<tr>
<td>2.</td>
<td>Classroom term 1</td>
<td>Foundation courses</td>
<td>6.5</td>
<td>12 weeks</td>
</tr>
<tr>
<td>Sr. No.</td>
<td>Activity</td>
<td>Major Emphasis</td>
<td>Credits</td>
<td>Duration</td>
</tr>
<tr>
<td>---------</td>
<td>----------</td>
<td>----------------</td>
<td>---------</td>
<td>----------</td>
</tr>
<tr>
<td>3.</td>
<td>Village Fieldwork Segment (VFS)</td>
<td>Firsthand experience of village life and development of skills to interface with rural communities while deepening the experiential knowledge of rural realities</td>
<td>3</td>
<td>8 weeks</td>
</tr>
<tr>
<td>4.</td>
<td>Classroom Term 2</td>
<td>Functional area plus development courses</td>
<td>7</td>
<td>13 weeks</td>
</tr>
<tr>
<td>5.</td>
<td>Classroom Term 3</td>
<td>Functional area plus integrative development courses</td>
<td>7</td>
<td>13 weeks</td>
</tr>
<tr>
<td>6.</td>
<td>Development Internship Segment (DIS)</td>
<td>Understanding the philosophy and practice of development interventions</td>
<td>3</td>
<td>8 weeks</td>
</tr>
<tr>
<td>7.</td>
<td>Classroom Term 4</td>
<td>Integrative and specialization courses</td>
<td>7</td>
<td>13 weeks</td>
</tr>
<tr>
<td>8.</td>
<td>Management Traineeship Segment (MTS)</td>
<td>Developing practical skills and gain a realistic idea of the managerial functions of rural organizations</td>
<td>4</td>
<td>9 weeks</td>
</tr>
<tr>
<td>9.</td>
<td>Classroom Term 5</td>
<td>Integrative and specialization courses</td>
<td>6.5</td>
<td>13 weeks</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>44</strong></td>
<td><strong>90 weeks</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note:* 1 credit is equivalent to 30 contact sessions of 70 minutes each and 80-90 hours of work (studies, preparations, assignments etc.) outside the class.

**FPRM Curricular Structure**

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Activity</th>
<th>Major Emphasis</th>
<th>Credits</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Induction /orientation (including village stay of 5 days)</td>
<td>Inculcates institutional values &amp; principles; exposure to villages</td>
<td>Nil</td>
<td>1 week plus</td>
</tr>
<tr>
<td>2.</td>
<td>Classroom term 1</td>
<td>Foundation courses</td>
<td>6.5</td>
<td>12 weeks</td>
</tr>
<tr>
<td>3.</td>
<td>Village Fieldwork Segment (VFS)</td>
<td>Firsthand experience of village life and development of skills to interface with rural communities while deepening the experiential knowledge of rural realities</td>
<td>3</td>
<td>8 weeks</td>
</tr>
<tr>
<td>4.</td>
<td>Classroom Term 2</td>
<td>Functional area plus development courses</td>
<td>7</td>
<td>13 weeks</td>
</tr>
<tr>
<td>5.</td>
<td>Classroom Term 3</td>
<td>Functional area plus integrative development courses</td>
<td>7</td>
<td>13 weeks</td>
</tr>
<tr>
<td>6.</td>
<td>Development Internship Segment (DIS)</td>
<td>Understanding the philosophy and practice of development interventions; case study of an organization &amp; its environment</td>
<td>3</td>
<td>8 weeks</td>
</tr>
<tr>
<td>7.</td>
<td>Classroom Term 4</td>
<td>Doctoral-level courses</td>
<td>6</td>
<td>12 weeks</td>
</tr>
<tr>
<td>8.</td>
<td>Classroom Term 5</td>
<td>Doctoral-level courses; preparation &amp; presentation of thesis proposals</td>
<td>4</td>
<td>13 weeks</td>
</tr>
<tr>
<td>9.</td>
<td>Classroom Term 6</td>
<td>Additional courses / readings, if any as determined by TAC Comprehensive Qualifying Examinations; finalization of thesis proposal</td>
<td>13 weeks</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>Fieldwork, thesis writing and submission</td>
<td></td>
<td>1-2 years</td>
<td></td>
</tr>
</tbody>
</table>
Placement

IRMA’s placement record is impeccable with 100% placement. The Campus Placement Programme for each graduating batch ensures that all the students secure meaningful and challenging career opportunities.

Management Development Programmes

IRMA also conducts training programmes for working professionals that help them upskill and progress in their careers. IRMA’s sought-after Management Development Programmes (MDPs) have benefited executives and managers alike in enterprises including cooperatives, not-for-profit organizations, and government and semi-government organizations engaged in rural development through both open and custom-designed short and long-term MDPs.

Another core programme, geared entirely towards the management of voluntary organizations, has become an important IRMA signet over the years. Popularly known by its acronym, VOLAG-MAP, the Management Appreciation Programme for Voluntary Agencies is targeted at senior functionaries of voluntary agencies. Participants usually hail from voluntary organizations of developing countries. IRMA has trained more than 500 participants in over 180 NGOs through VOLAG-MAP for the last twenty-odd years.

Centres of Excellence

In order to create a facilitating environment for knowledge enhancement IRMA has set up five Centres of Excellence approved by the Government of India. These are:

1. Centre for Sustainable Livelihoods
2. Centre for Rural Infrastructure and Corporate Social Responsibility
3. Centre for Social Entrepreneurship and Enterprises
4. Centre for Public Policy and Governance
5. Centre for Rural Dynamics

Figure 3.

IRMA Placement 2014

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooperative Societies and Associated</td>
<td>22%</td>
</tr>
<tr>
<td>Agribusiness and Technology</td>
<td>27%</td>
</tr>
<tr>
<td>NGO</td>
<td>11%</td>
</tr>
<tr>
<td>Agri and Microfinance</td>
<td>15%</td>
</tr>
<tr>
<td>Social Entrepreneurs</td>
<td>3%</td>
</tr>
<tr>
<td>Agribusiness and technology</td>
<td>27%</td>
</tr>
<tr>
<td>Government Agencies</td>
<td>22%</td>
</tr>
</tbody>
</table>
Grameen Gyan Kosh (GGK)

A repository of knowledge catering to the rural sector this web-based portal is committed to knowledge creation commissioned in the form of books, monograph, e-sources, new forms of data, films/documentaries on emerging sectors on which knowledge is limited.

Research & Consultancy

Research work is conducted at IRMA by faculty members, visiting fellows, and students. Students’ research work is mostly available in the form of reports that are prepared on the basis of work undertaken during fieldwork, Development Internship Segment, and Management Traineeship Segment. The research work conducted by IRMA’s faculty is mostly in response to the needs expressed by client organizations that include rural producers’ organizations, government bodies, NGOs, funding agencies, and other development organizations. Our faculty also conducts research in the areas of their professional interest. Much of IRMA’s research is in the form of consultancy, which is undertaken for its client organizations that bear the expenses. Our faculty members provide consulting services to a large number of national and international organizations including the National Dairy Development Board, Gujarat Milk Marketing Federation, NABARD, World Bank, Ford Foundation, Swiss Development Corporation, among many others.
HISTORY

In the forties, Institute of Agriculture was established at Anand by the Iron Man of India, Sardar Vallabhbhai Patel not as merely an educational institution, but as a mission, a cause, primarily conceived to revitalize agriculture, following Gandhiji’s call for village regeneration. In 1972, the Institute was taken over by Govt. of Gujarat which became one of its campuses when Gujarat Agriculture University was established. The Anand Agricultural University (AAU), carved out of the erstwhile Gujarat Agricultural University by the Government of Gujarat on 4th March, 2004. AAU provides support to the farming community in all the three facets, namely education, research and extension education activities in agriculture and all its allied fields. AAU has seven Colleges, one PG Institute, five Polytechnics and, 28 research stations and projects in middle Gujarat’s eight districts for teaching, research and extension.

(I) EDUCATION


B. A. College of Agriculture:

This is one of the oldest colleges of agriculture in the country, started in 1947. It provides degree programmes at under graduate and post graduate levels. The students who pass Std.XII examination with physics, chemistry, biology and english and entrance test conducted by the Government are eligible for admission in graduate degree programme. Two independent wings one each for agriculture and horticulture offering UG programme were also started in 2012 under B.A. College of Agriculture to cater to the needs of growing demand of students.

Sheth M.C. College of Dairy Science:

This college was started in 1961. The students in the college are awarded the Degree of B.Tech. in Dairy Technology and PG degree in different branches of dairy science. The students who pass Std.XII examination with physics, chemistry, mathematics and english and JEE examination are eligible for admission in graduate degree programme.
College of Veterinary Science & Animal Husbandry:

The College of Veterinary Science and Animal Husbandry, Anand was established in 1964. It is playing key role in augmenting growth of livestock sector in state by producing high skilled technical manpower and conducting high quality research to address problems of livestock sector. The college offers degree programme at UG and PG levels. The students who pass Std. XII examination with physics, chemistry, biology and english and entrance test conducted by the Government are eligible for admission in graduate degree programme.

College of Food Processing Technology & Bio Energy:

This college has been established during eleventh five year plan to cater the huge demand of specialized human resource for the fast growing food industry. College offers B.Tech. and master degrees in Food Processing Technology. The students who pass standard XII examination with physics, chemistry, mathematics & english and JEE examination are eligible for admission.

College of Agricultural Information Technology:

The college was established in the year 2009 with a vision to harvest the fruits of applications of Information and Communication Technology in Agriculture and allied sectors through a technically skilled workforce. The college offers a four year undergraduate residential B.Tech. (Agricultural Information Technology) degree program in Agricultural Information Technology, which is first of its kind in Gujarat state and second in the entire country.

International Agri-Business Management Institute:

The institute was established in 2008 and it offers two years professional P.G. degree "Master of Business Administration" in International Agribusiness (MBA-IAB) with a core focus on agribusiness and international trade. The programme is aimed to craft professional business leaders and entrepreneurs in the food and agri-business sector. The students who pass Bachelor's degree in Agriculture and allied disciplines are eligible for admission. The institute has excellent placement records (100 %) from its inception.

College of Agricultural Engineering and Technology:

The college has been started in July 2008 at Godhra about 90 km away from Anand. The college offers four years B.Tech degree programme. The students who pass Std. XII examination with physics, chemistry, mathematics and english and JEE examination are eligible for admission.
Institute of Distance Education, Anand:

This institute was established during 2011-12 with a prime objective to accomplish distance education in the field of agriculture in the State. At present Masters courses in M.Sc, Agricultural Journalism and M.Sc., Agricultural Marketing are being offered. Diploma course on “Diploma in Agricultural Extension Services for Input Dealers” (DAESI) is also the most sought after programme of the institute.

The Anand Agricultural University also has following polytechnics within its domain.

1. Polytechnic in Agriculture at Anand and Vaso.
2. Polytechnic in Agricultural Engineering, Dahod.
4. Polytechnic in Food Science and Home Economics, Anand.

(II) RESEARCH

Research activities of AAU focus on productivity, sustainability and improvement of the socio-economic condition of the farming community. These goals of AAU encompass newer areas such as Biotechnology and Nano technology, Organic Farming, Seed technology, Climate change, Soil Health Card, growing medicinal plants along with the conventional crops and processing of food products. It has been focused on distance hybridization on field and fruit crops including vegetable crops. High quality research like identification of genome for preventive and curative measures against infection/infestation of diseases adversely affecting higher productivity in poultry / livestock has been started in veterinary field besides different measures in animal nutrition. Emphasis is given on uplifting the standards of milk and milk products to compete at international level under the Dairy Technology research. Food Processing Technology and Bio Energy are new and promising areas in Post Harvest Technology, Food Irradiation and Bio Fuel. It has the distinction of developing an end-to-end integrated processing plant. The university has ultra modern laboratories with sophisticated instruments and excellent trained research staff besides well managed farms at different locations.

Anand Agricultural University has developed and released three poultry breeds for commercial exploitation viz., Anand Commercial Layer for commercial egg production, Anand Synthetic White Leghorn for higher egg weight and Anand Bentamized White Leghorn for better feed efficiency. Key technologies developed at the University includes Anubhav Liquid Biofertilizer Technology, Yield Improvement in Paneer Making Processes, Date Palm Tissue Culture Technology, Technology for Production of Ready to Puff Rice.
(III) AGRICULTURAL EXTENSION

The Directorate of Extension Education has to plan, coordinate, organize and guide the extension education programs in the university and to ensure efficient working of the extension education activities in close coordination with the development departments, voluntary and private organizations. The Extension Education Council recommends the extension education programmes of the university. The Directorate of Extension Education has a Zonal Research and Extension Advisory Committee which comprises the Director of Extension Education, Director of Research, Deans of the faculties, Crop and Subject Matter Specialists, members of development departments, co-operative sectors, industries and progressive farmers. The Directorate also has Extension Education Institute which imparts the extension training to improve upon the job performance of middle level functionaries of various development departments of western zone states of the country. The University also has started T&V training centres to impart the training to the extension personnel of the Department of agriculture.

The AAU also has started following six certificate courses.

- Food Processing Technology
- Organic Farming
- Weed Management
- Integrated Pest Management
- Medicinal & Aromatic plants
- Seed Production

Path Breaking Activities of the University:

**Soil Health Card:** AAU has the distinction of developing the Soil Health Card for the entire State with headquarters at AAU Anand. The card is a result of soil health data collected from farmers fields across Gujarat. An exclusive software providing a decision support to any farmer across the State is achieved just by logging at the specially created website.

**Krushi Mahotsav:** The Government of Gujarat started a new programme called *Krushi Mahotsav* in 2005 for connecting the farmers with agricultural scientists in order to have a sincere and faithful interaction. This one month long programme is organized every year during the month of May and June. So far seven *Krushi Mahotsavs* have been organized in the state. The programme has the following objectives: (i) Creating awareness amongst the rural masses regarding scientific innovations in crop production practices, farms implements, water conservation, irrigation methods, animal husbandry etc. and taking these innovations to the farming community through the concept of people's participation. (ii) Bringing agricultural and rural development programmes at village level for the betterment of peasants implemented by various State Government Organizations and thereby to create an atmosphere to motivate the farmers for their participation in such programmes. (iii) The ultimate objective of the whole programme is to make the farmer's income double in a span of five years.
The Gujarat Cooperative Milk Marketing Federation Ltd, Anand (Amul) is the largest food products marketing organisation of India. It is the apex organization of the Dairy Cooperatives of Gujarat. This State has been a pioneer in organizing dairy cooperatives and its success has not only been emulated in India but serves as a model for rest of the World. Over the last Six and a half decades, Dairy Cooperatives in Gujarat have created an economic network that links more than 3.5 million village milk producers with millions of consumers in India and abroad through a cooperative system that includes 17,025 Village Dairy Cooperative Societies (VDCS) at the village level, affiliated to 17 District Cooperative Milk Producers’ Unions at the District level and GCMMF at the State level. These cooperatives collect on an average 150 Lakhs Liters of milk per day from their producer members, more than 70% of whom are small, marginal farmers and landless labourers and include a sizeable population of tribal folk and people belonging to the scheduled castes.

Ever since the movement was launched Sixty-eight years ago, Gujarat’s Dairy Cooperatives have brought about a significant social and economic change to our rural people. The Dairy Cooperatives have helped in ending the exploitation of farmers and demonstrated that when our rural producers benefit, the community and Nation benefits as well.

The Gujarat Cooperative Milk Marketing Federation Ltd. cannot be viewed simply as a business enterprise. It is an institution created by the milk producers themselves to primarily safeguard their interest economically, socially as well as democratically. Business houses create profit in order to distribute it to the shareholders however, in the case of GCMMF the surplus is ploughed back to farmers through the District Unions as well as the village societies. This circulation of capital with value addition within the structure not only benefits the final beneficiary – the farmer – but eventually contributes to the development of the village community. This is the most significant contribution the Amul Model cooperatives, of which, the Federation is the apex body, has made in building the Nation.

Today Amul is a symbol of many things. Of high-quality products sold at reasonable prices. Of a vast co-operative network. Of the triumph of indigenous technology. Of the marketing savvy of a farmers' organisation. Above all, it has emerged as the most successful model of dairy development.
The turnover of GCMMF (AMUL) during 2013-14 was Rs. 18143 crores. It markets the products, produced by the district milk unions in 54 dairy plants, under the renowned AMUL brand name. The combined processing capacity of these plants is 240 Lakhs Liters Per Day, with Six dairy plants having processing capacity in excess of 10 Lakhs Liters Per Day. The farmers of Gujarat own the largest state of the art dairy plant in Asia – Mother Dairy, Gandhinagar, Gujarat - which can handle 35 Lakhs Litres of milk per day and process 160 MTs of milk powder daily. All its products are manufactured under the most hygienic conditions. All dairy plants of the unions are ISO 9001 and HACCP certified. GCMMF (AMUL)'s Total Quality Management ensures the highest quality of products right from the starting point (milk producer) through the value chain until it reaches the consumer.

But, all this did not happen overnight. It took years of relentless struggle, vision and commitment to reach where we are today.

The seeds of this unusual saga were sown more than 68 years back in Anand, a small town in the state of Gujarat in western India. The exploitative trade practices followed by the local trade cartel triggered off the cooperative movement. Angered by unfair and manipulative practices followed by the trade, the farmers of the district approached the great Indian patriot Sardar Vallabhbhai Patel (who later became India’s first Dy. Prime Minister) for a solution. He advised them to get rid of middlemen and form their own co-operative, which would have procurement, processing and marketing under their control. In the summer of 1946, the farmers of this area went on a milk strike refusing to be cowed down by the cartel. Under the inspiration of Sardar Patel, and the guidance of nationalistic leaders like Morarji Desai and Tribhuvandas Patel, they formed their own cooperative in December 1946. This co-operative, the Kaira District Co-operative Milk Producers Union Ltd. ultimately went on to become the role model for India’s dairy co-operative movement.

The birth of Amul at Anand provided the impetus to the cooperative dairy movement in the country. The Cooperative was further developed & managed by Dr. V Kurien along-with Shri H M Dalaya. The first modern dairy of the Kaira Union was established at Anand (which popularly came to be known as AMUL dairy after its brand name). Indigenous R&D and technology development at the Cooperative had led to the successful production of skimmed milk powder from buffalo milk – the first time on a commercial scale anywhere in the world. The foundations of a modern dairy industry in India were thus laid since India had one of the largest buffalo populations in the world.

The success of the dairy co-operative movement spread rapidly in Gujarat. Within a short span five other district unions – Mehsana, Banaskantha, Baroda, Sabarkantha and Surat were organized. In order to combine forces and expand the market while saving on advertising and
avoid a situation where milk cooperatives would compete against each other it was decided to set up an apex marketing body of dairy cooperative unions in Gujarat. Thus, in 1973, the Gujarat Co-operative Milk Marketing Federation was established. The Kaira District Co-operative Milk Producers’ Union Ltd. which had established the brand name AMUL in 1955 decided to hand over the brand name to GCMMF (AMUL). With the creation of GCMMF (AMUL), we managed to eliminate competition between Gujarat’s cooperatives while competing with the private sector as a combined stronger force. GCMMF (AMUL) has ensured remunerative returns to the farmers while providing consumers with quality products under the brand name AMUL.

This was possible due to the dedicated and committed leadership of the founder Chairman of AMUL, Tribhuvandas Patel and the vision and professionalism of the father of the White Revolution, Dr. Verghese Kurien who worked as a professional manager at AMUL.

Dr. Verghese Kurien, the World Food Prize and the Magsaysay Award winner, is the architect of India’s White Revolution, which helped India emerge as the largest milk producer in the world. His professional life has been dedicated to empowering Indian farmers through co-operatives. Dr. Kurien’s vision has helped to lay the foundation of democratic enterprises at the grass roots and shown the way to ensure economic justice is with people’s participation. He believes that by placing technology and professional management in the hands of the farmers, the standard of living of millions of our poor people can be improved.

The three-tier ‘Amul Model’ in which Village Dairy Cooperative Societies procure milk, district level Milk Union process the milk and State level Federation sales milk and milk products has been instrumental in bringing about the White Revolution in the country. As per the assessment report of the World Bank on the Impact of Dairy Development in India, the ‘Anand Pattern’ has demonstrated the following benefits:

- The role of dairying in poverty reduction
- The fact that rural development involves more than agricultural production
- The value of national ‘ownership’ in development
- The beneficial effects of higher incomes in relieving the worst aspects of poverty
- The capacity of dairying to create jobs
- The capacity of dairying to benefit the poor at low cost
- The importance of commercial approach to development
- The capacity of single-commodity projects to have multi-dimensional impacts
- The importance of getting government out of commercial enterprises
- The importance of market failure in agriculture
- The power & problems of participatory organisations
**AMUL Brand Building:**

AMUL is derived from the Sanskrit word ‘AMULYA’ which means priceless. It denotes and symbolizes the pride of *swadeshi* (nationalistic) production. It is also short, catchy and can effectively be used as an acronym for Anand Milk Union Ltd.

AMUL stands for a set of values. AMUL today is not only a brand name. It is much beyond that. It represents the spirit of the true Indian farmer. It reflects the spirit of the consumers’ faith in the country’s most recognizable brand. AMUL to a consumer is a top class quality product at a reasonable price. The consumer sees AMUL as a guarantor of assured quality and of value for their hard earned money. It represents the national commitment for self-reliance and development of human resources and values based on sustainable developmental process. It has made an enormous difference in the lives of millions of farmers bolstering their livelihoods and offering steady income in regions where agriculture still depends on rainfall and the gamble of monsoons.

Today AMUL is The Taste of India, and is available in every nook and corner of the country. Wherever you go, whether it is the fashionable trendy malls or the corner mom-n-pop stores, you are bound to find some AMUL product or the other.

AMUL is also the largest exporter of dairy products in the country. AMUL is available today in over 46 countries of the world. We are exporting a wide variety of products which include Whole and Skimmed Milk Powder, Cottage Cheese (*Paneer*), UHT Milk, Clarified Butter (*Ghee*) and Indigenous Sweets. The major markets are USA, West Indies, and countries in Africa, the Gulf Region, and our SAARC neighbours, Singapore, The Philippines, Thailand, Japan and China.

We have demonstrated that if a level playing field is granted, Indian dairy products are successful in the global market. Growth in consumer pack exports has been creditable and we have consolidated our exports of UHT milk in particular.

AMUL is a matter of pride to every Indian. Our nation takes pride in AMUL as proof that our own Indian vision, backed by hard work, management skill and honest capable leadership can achieve miracles.
Sardar Patel Renewable Energy Research Institute, Vallabhbh Vidyanagar

Sardar Patel Renewable Energy Research Institute (SPRERI) was established in 1979 at Vallabh Vidyanagar, Gujarat. It is an autonomous and not-for-profit organization managed by a Board comprising leading technologists, scientists, industrialists and representatives of Central and State Governments. It is recognized by the Department of Scientific and Industrial Research, GoI, as a Scientific and Industrial Research Organization. It generates most of its operating funds through projects given to it on merit by government and non-government organizations. SPRERI's service activities like consultancy, technology evaluation, testing and training supplement the project funds to make it self-supporting. It is a renowned renewable energy (RE) research institution and is recognized for post-graduate research by Sardar Patel University, Vallabh Vidyanagar, Junagadh Agricultural University, Junagadh and many other academic institutions.

SPRERI is pursuing the following Missions:

- To set-up a world class “Centre for advanced research in biomass conversion technologies”
- To develop environment friendly technologies for conversion of biomass into bio-fuels, energy (including electricity) and useful chemicals
- To develop technologies for utilization of bioconversion waste
- To develop technologies for application of solar energy
- To develop business models for promoting use of RE technologies
- To provide knowledge based insights to influence policies and programmes of the government for utilization of biomass and solar energy technologies for meeting energy requirements
- To provide specialized training in RE technologies to engineers and scientists and guidance and facilities to research students
- To provide extension support and consultancy to RE programmes
- To test and evaluate RE technologies

Institute activities:

a) **Solar Energy Division** carries out design, development, evaluation, refinement and testing of solar thermal and PV systems.
b) **Bio-Conversion Division** pursues basic studies and development of technologies and systems for conversion of biomass to energy carriers through various biological routes and their utilization for thermal application and power generation.

c) **Thermo-Chemical Conversion Division** is engaged in basic studies and development of technologies and systems for efficient conversion of biomass to energy through thermo-chemical/mechanical pathways and their use for thermal applications and power generation.

d) **Regional Test Centre** is supported by MNRE (GOI), approved by BIS and accredited by NABL. It carries out testing of solar thermal devices such as solar cookers, solar water heaters, etc. So far 168 flat plate collector and 156 evacuated tube collector based solar water heaters, 76 box solar cookers and many other gadgets have been tested and report provided to MNRE/BIS/respective firms.

e) **Technology Transfer Unit** facilitates promotion of renewable energy technologies through field evaluation and demonstrations, trainings and entrepreneurship development, awareness programmes and integrated development of selected villages in the tribal region.

SPRERI continues its research and development in renewable energy technologies. One of the important research projects it has been working on and which concluded during the year was “Conversion of crop residues to ethanol and methane for use as transport fuel”. A low cost mild alkali pretreatment process for ligno-cellulosic biomass, in-house fungal strain for enzyme production by solid-state fermentation of rice straw including a scaled-up facility for enzyme production and a highly efficient cellulosic fungus for saccharification of rice straw have been developed for ethanol production. An ethanol yield of 196 ml per kg of rice straw has been obtained under laboratory/bench scale conditions.

Another project of significance was “Value chain on biomass (crop residues) based decentralized power generation for agro-enterprises” which also concluded during the year. A crop residue briquettes gasification based distributed power generation system of 100 kWe capacity for rural domestic and agro-industrial applications was developed and a complete system has been installed and commissioned in a village in Madhya Pradesh for long duration trials.

In addition, a grid independent solar drying system for rural application was developed and is being evaluated at a selected user’s site. Work on implementation of a research project “Renewable energy based refrigeration technology for on-farm transient storage of horticulture produce” is in progress. Under this project a solar energy and biogas based cooling facility has been set-up for transient storage of upto 10 tons of common fruits/vegetables of the region.
The Institute continued working actively in five selected tribal villages of Vadodara and Dahod districts for the fifth consecutive year to study the impact of introducing useful renewable energy technologies such as biogas plants (Fig. 1), improved biomass cook stoves (Fig. 2), solar lantern, provision of the natural sun light into the tribal homes etc. on the socio-economic life of the communities. The Agro-Economic Research Centre, Sardar Patel University is actively associated with SPRERI for carrying out the socio-economic impact analysis of introduction of the renewable energy devices in the selected tribal villages.

Fig. 1 : A happy woman using biogas for cooking

Fig. 2 : Improved biomass chulha – a success story

Many renewable energy devices and systems developed at SPRERI are now manufactured by selected industries for meeting requirements of the end users. The manufacturing and marketing rights of the SPRERITECH improved biomass cook stoves have been transferred to three firms. These cook stoves are now available commercially in three different models to meet the requirements for domestic as well as community/ small commercial applications.
Important SPRERI technologies available for use/commercialization are as follows:

- Solar refrigerator
- Low tunnel solar drying system; grid connected/stand alone
- Forced circulation solar drying system
- Roof integrated unglazed solar drying system
- Conversion of fruit and vegetable residues to biogas and manure
- Conversion of kitchen residues to biogas and manure
- Biogas generation from agro-industrial effluents
- Open core down draft gasifier systems for thermal and power applications
- Biomass combustor-cum-hot air generator
- Improved biomass cook stoves; batch and continuous operations
- Movable platform type wood cutter for preparing feedstock for gasifier

Contact details:
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Phone : 91 – 02692 – 231332, 235011,
Fax : 91 – 02692 – 237982
Email : info@spreri.org
Website : www.spreri.org
Announcement

Agro-Economic Research Centre
Sardar Patel University,
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Certificate Course in Economic Analysis and Report Writings

Objective: To familiarize the researcher, students with the frequently used statistical techniques and skill of report/thesis writing and presentation.

PART I: About Statistics and Data (Four Lectures)
Introduction to Statistics, Scope and Functions of Statistics, Planning and Executing of Survey, Types of Data, Sources of data, Collection old Data, Types and method of collecting data, Grouping and Displaying Data, Databases: International and National: Data published from governmental sources, from apex institutions like International Monetary Fund, World Bank, Reserve Bank of India, Planning Commission, Security and Exchange Board of India, Insurance Regulatory and Development Authority, etc. Data published by Industry Associations Data published by periodicals, e.g. Economic and Political Weekly etc. Data published by research institutes. Internet Resources.

PART II: Frequently used Statistical Techniques (Eight Lectures)
Tabulation of Data, Data Cleaning Approximations, Interpolation, Extrapolation Fitting Distributions to Data Measures of Central Tendency and Dispersion Correlation and Regression analysis, partial and multiple correlation/regression

PART III: Time Series Data and Index Number (Four Lectures)
Time Series and Forecasting: Analysis of Time Series data- Trend Analysis, Cyclical variation, Seasonal Variation, Irregular Variation, time series analysis in forecasting; measuring trend by logarithms
Index Number: Classification and methods of constructing index numbers-Un-weighted and Weighted Aggregated Index, averages of relative methods, issues in constructing and using index numbers
PART IV : Computer Use in Research (Four Lectures + Two Lectures on R)

Computer Use in Research: Use of mathematical and statistical functions, Creating graph, Data Management, Creating and using simple macros, Working with multiple sheets, Creating systems
Introduction to SPSS and R, Exploratory Data Analysis using R, internet and search engines; Effective browsing, Power searching, Download Management/Online storage, Writing and Collaboration tools, Introduction to agri-portals like agriwatch.com, agmarknet.nic.in, echaupal.com

PART V : Report Writing and Presentations (Four Lectures)

• Organising the matter and its distribution across chapters, sections and sub-sections.
• Presentation of tables: Numbering, description
• Presentation of equations
• Cross-referencing
• Literature Survey
• Harvard System of reference citation
• Journal of Economic Literature (J.E.L.) classification
• Materials to be placed in Appendixes / Annexures
• Executive Summary / Abstract Preparations

Suggested Readings
• Farnsworth, Grant V.(2008), Econometrics in R (http://cran.r-project.org/doc/contrib/Farnsworth-EconometricsInR.pdf)
• Gupta, S.P. (1997), Statistical Methods, Sultan Chand and Sons, New Delhi.
• Venkatasubramanian V. (1999), Introduction to Research Methodology in Agricultural and Biological Sciences. SAGE Publ.

Notes:
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