

THIRD ANNUAL REPORT

2006-07

(1st April, 2006 to 31st March, 2007)



JUNAGADH AGRICULTURAL UNIVERSITY

JUNAGADH - 362001

JUNAGADH AGRICULTURAL UNIVERSITY
JUNAGADH - 362 001

THIRD ANNUAL REPORT FOR THE YEAR 2006-07

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|---|---|---|
| Name of the officer under whose direction the Annual Report is prepared | : | Dr. B.K. Kikani, Vice Chancellor, Junagadh Agricultural University, Junagadh |
| Authority under which the Annual Report is prepared | : | Section 49 of the Gujarat Agricultural Universities Act-2004 |
| Signature of the officer preparing the Annual Report | : | Registrar, Junagadh Agricultural University, Junagadh |

The Board of Management in its 12th meeting held on 14.07.2008 has approved the Third Annual Report vide item No. 12.5 of the said meeting and resolved as under:

Item No. 12.5 Approval of Third Annual Report of the Junagadh Agricultural University

“It is resolved that the Third Annual Report of the Junagadh Agricultural University for the year 2006-07 (Dt. 01.04.2006 to 31.03.2007) under the provision of Section-49 of the Gujarat Agricultural Universities Act-2004 be considered and approved.”

D.B. KUCHHADIYA
REGISTRAR
JUNAGADH AGRICULTURAL UNIVERSITY
JUNAGADH

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CHAPTER - I

INTRODUCTION

The Junagadh Agricultural University was established on 1st May, 2004 under Gujarat Agricultural Universities Act-2004. On completion of its third year, Annual Report is published with detailed information about its various activities, targets & achievements, present and future plans.

1.1 Background

The Junagadh Agricultural University came into existence from 1st May, 2004 as a part of process of development of Agricultural Universities in Gujarat through an Act of Gujarat Legislative Assembly. The jurisdiction of this university includes all seven districts of Saurashtra region i.e. Junagadh, Rajkot, Jamnagar, Surendranagar, Bhavnagar, Amreli and Porbandar. The head quarter of this university is located at Junagadh.

1.2 Aim

The aim of Junagadh Agricultural University is to promote agricultural productivity in general and to improve the economic condition of rural community in particular through integration of teaching, research and extension education.

1.3 University Organization

As per the GAUs Act-2004, the Chancellor, Vice Chancellor, Director of Research & Dean PG Studies, Dean Faculty of Agriculture, Dean Faculty of Agricultural Engineering & Technology, Dean Faculty of Fisheries Science, Director of Extension Education, Registrar, Comptroller and Director of Students Welfare, are officers of the university.

His Excellency the Governor of Gujarat acts as the Chancellor of the university. During the period under report, His Excellency the Governor Shri Nawal Kishore Sharma acted as the Chancellor. Dr. B.K. Kikani and Dr. D.B. Kuchhadiya acted as the Vice Chancellor and Registrar of the university respectively.

The details of various activities of the university are as follows:

1.4 Education

The education programme in Junagadh Agricultural University is based on two tier system. The first one covers higher education in Agriculture, Agricultural Engineering & Technology and Fisheries Science, in which UG and PG resident instruction programmes are covered. While the second consists of lower education, i.e., diploma and certificate programmes like Horticulture Diploma, Agriculture Diploma, Bakery Training, Livestock Inspector Training, Mali Training as well as Extension Education Training.

During the period under report, 147 students at UG level and 101 students at PG level were given admission in the various colleges of the university i.e. College of Agriculture, College of Agricultural Engineering & Technology at Junagadh and College of Fisheries Science at Veraval. 81 students at UG level and 81 at PG level have successfully completed their degree courses.

During the year under report, the Second Annual Convocation was held at Junagadh on 2nd February, 2007. Shri Bhupendrasinh Chudasama, Hon'ble Minister of Agriculture and Cooperation, Government of Gujarat, Gandhinagar was the Chief Guest. As many 249 students were awarded Under Graduate and Post Graduate degrees by His Excellency the Governor of Gujarat and Chancellor of this university Shri Nawal Kishore Sharma. 37 students were awarded Gold medals for their outstanding performance at examination, achieving high percentage of marks and stood first on merit in various examinations.

1.5 Research

The various research projects, their monitoring and supervision, planning and implementation of research activities at different research stations as well as the PG teaching programmes and their evaluation in different disciplines were carried out under the guidance of Director of Research & Dean PG studies during the year under report.

Junagadh Agricultural University has seven multidisciplinary main research stations, five main research stations on various crops and eleven sub researches stations/testing centres working in the field of agriculture and animal science for the betterment of the living standards of rural farming community. The research activities have been carried out in Plant Breeding, Soil Science, Cropping System, Water Management, Weed Management, Horticulture, Plant Protection, Social Sciences, Agricultural Entomology, Plant Pathology, Agricultural Engineering and Fisheries etc.

The efforts made by scientists of the university emerged in 33 farmers' recommendations and 86 new technical programmes during the reporting year. It also resulted in emerging four new crop varieties for farmers. Besides this, seed production programmes were also taken up in different crops and varieties. During the year under report, total 21 new research projects were sanctioned by ICAR, Government of India, Government of Gujarat and other agencies.

1.6 Extension Education

Through the extension education activities, total 249 students have completed different certificate/diploma courses *viz.*, Agricultural Diploma, Livestock Inspector Training, Bakery Training, Mali Training etc. The T & V system programmes were also held and about 361 extension workers were given training. Two training programmes were also organised by Centre of Excellence

for Training (Oilseeds) and 54 participants were given training. Through the Transfer of Technology (TOT) Centres, 161 on-campus and 177 off-campus training programmes were organized, wherein 11632 participants received training. Besides this, the TOT centres had planned and organised 2428 extension education activities like symposia, workshops, farmers' days, agricultural exhibitions, fairs, visual programmes, field visits, cattle camps, meetings etc. through which total 521775 people were benefited. In all, 503 FLDs were conducted on various oilseeds and pulses in 225.1 ha through KVKs and the Research Stations. The farmers' problems were solved through personal visit and proper guidance by KVKs. The feed back on farmers' problems is collected and sent to concerned scientist to reform further research.

Through 295 programmes arranged by Farm Advisory Scheme, total 512802 participants were benefited. Under COC scheme, 14 GKSs were formulated and five Khedut Shibirs were organised in which 336 farmers participated. Extension Education Centres viz., LITC, School of Baking and Fisheries Extension Centre benefited 8062 people by organising 404 extension programmes.

The efforts were made to inform farmers/rural people about technological advancement through different media viz., TV, radio and publication of agricultural literature. During the period under the report, 23 TV programmes and 30 radio talks were given by agricultural scientists. Besides this, 47 folders and 1 book were published and 314 subscribers for 'Krushi-Go-Vidya' were registered. University news bulletin "Krushi Vishwa" is being published regularly by the Directorate of Extension Education.

During the year under report, 37 exhibitions on agricultural literature were organised and 81314 farmers and extension workers availed its benefit. During Krushi Mahotsav-2006, the university deputed 7 District Nodal Scientists and 148 Taluka Nodal Scientists, who covered 4223 villages of the Saurashtra region a single month, in which 250602 rural people participated.

1.7 Student Welfare

The university authority is always looking forward to the welfare of the students through different activities like sports, cultural, spiritual programmes, NSS, health, adventure, educational tour with a view to developing personality, character and high human values in UG and PG students of the university.

Total 13 inter-collegiate sports and cultural activities were organised by the university. The university students participated in four inter-university tournaments. Under NSS, 12 programmes were organised. Educational tour was arranged for the students of all the three colleges. Various scholarships were availed by the students. Five spiritual and national spirit programmes were organised. During the year, six programmes of the student welfare were published in different news papers.

1.8 Estate Management

The construction & its related works, repairs & maintenance of buildings & roads, water supply, maintenance of drainage system, street light, electrification, repairing of electrical faults, all these works are looked after by the Executive Engineer of this university.

During the year under report, Construction Committee and Board of Management accorded approval for various works meant for creating new facilities at campus level as well as at other centres of the university.

1.9 Finance and Accounts

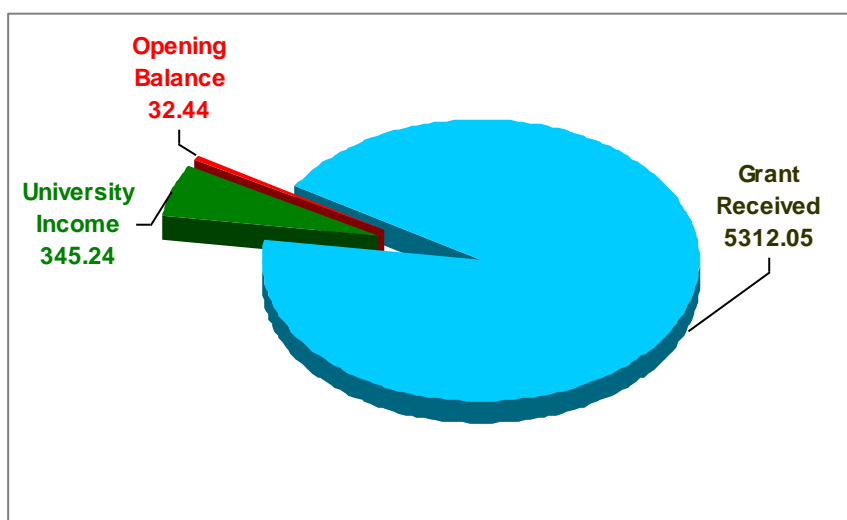
Major sources of finance were Government of Gujarat, Government of India, ICAR and other agencies which sanctioned grant through different schemes. During the period under report, State Government sanctioned Rs. 992.40 lakhs under plan budget and Rs. 2277.22 lakhs under non-plan budget. The revised non-plan budget was put up as per the need of the university, but State Government had not sanctioned the additional grant and hence, there was a deficit of Rs. 10.87 lakhs.

The finance sources, fund and budget

Income:

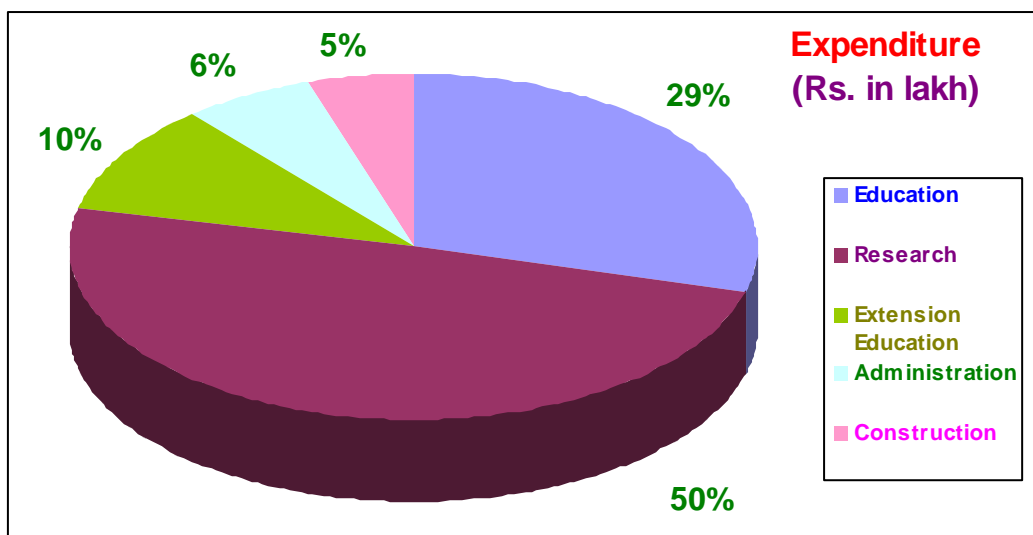
| | | |
|------------------------------------|-----|--------------|
| ▪ Opening balance as on 01.04.2006 | Rs. | 32.44 lakh |
| ▪ Grant received during 2006-07 | | |
| ➤ State Government | Rs. | 3270.39 lakh |
| ➤ ICAR Coordinated Projects | Rs. | 354.14 lakh |
| ➤ ICAR RAWE | Rs. | 2.00 lakh |
| ➤ ICAR Adhoc | Rs. | 393.00 lakh |
| ➤ KVK | Rs. | 218.60 lakh |
| ➤ Other Agencies | Rs. | 1073.92 lakh |
| ▪ University Receipts | Rs. | 345.24 lakh |

Total Rs. 5689.73 lakh



Expenditure:

| | |
|-----------------------|-------------------------|
| ➤ Education | Rs. 1631.51 lakh |
| ➤ Research | Rs. 2744.78 lakh |
| ➤ Extension Education | Rs. 571.54 lakh |
| ➤ Administration | Rs. 343.47 lakh |
| ➤ Construction | Rs. 280.58 lakh |
| Total | Rs. 5571.88 lakh |



The university is entrusted with the work of Internal Audit, Local Fund Audit and AG Audit. During the period under report, the Local Fund, Junagadh had done the audit work for the period 2004-05 and settled the primary audit objections.

The audit work started by the AG Office, Rajkot for the financial year 2004-05 of the university. The internal audit was done by the internal staff at the university.

Stores verification was also carried out by creating internal arrangement.

The pension cases on account of Superannuation, Retirement, Voluntary Retirement of the Officers/employees from the university have been settled by granting the pension/commuted pension and gratuity. Total 47 cases were sanctioned during the year and the payment was made to the staff/officers for their benefit of retirement.

The new PF Accounts were opened for newly appointed employees and 354 cases for Part Final Advance were sanctioned and payments made during the year under the report. Twenty five cases for the PF final payment were sanctioned and payments were made during the year.

1.10 Information Technology

The network at Junagadh Agricultural University connecting all the offices of the campus was established in two phases; one in 1996 and another in 1999. Presently, Internet, E-mail, References Database and File/Printer sharing services have been provided and maintained through Local Area Network (LAN) having VSAT, Leased Line and Dial-up connectivity. These services have greatly boosted the educational, research and extension activities of the university. The centre has also given training to university employees, which covered fundamental aspects of computer operating. Computer training as per Government of Gujarat Module-I and II was given to university employees.

Junagadh Agricultural University has its website having the URL of www.jau.in. The information related to university activities, important announcements, news, UG/PG admission etc. are available online at the website.

The University Library possesses 41000 books, 200 journals and 20000 back volumes. Cyberary with 100 mbps LAN connectivity enables users with online database like AGRICOLA, Indian Harvest etc. Full time internet, scanning and CD writing facilities are available for the students in the Cyberary. The book bank facility also exists for students. The library is marching towards automation through libsys software for the circulation of library materials to users.

CHAPTER - II

UNIVERSITY ADMINISTRATION

2.1 University Set-Up

The university consists of Chancellor, Vice Chancellor, Board of Management, an Academic Council and the Faculties of Agriculture, Agricultural Engineering & Technology, Fisheries Science and Post Graduate Studies with their Boards of Studies. The Honourable Governor of the Gujarat State is the Chancellor of the university. The Honourable Governor Shri Nawal Kishore Sharma continued as a Chancellor of the university for the year under review. The Vice Chancellor is the Principal Executive and Academic Officer of the university and Ex-officio Chairman of the Board of Management and the Academic Council. During the period under review, Dr. B.K. Kikani held the charge as a Vice Chancellor of the university.

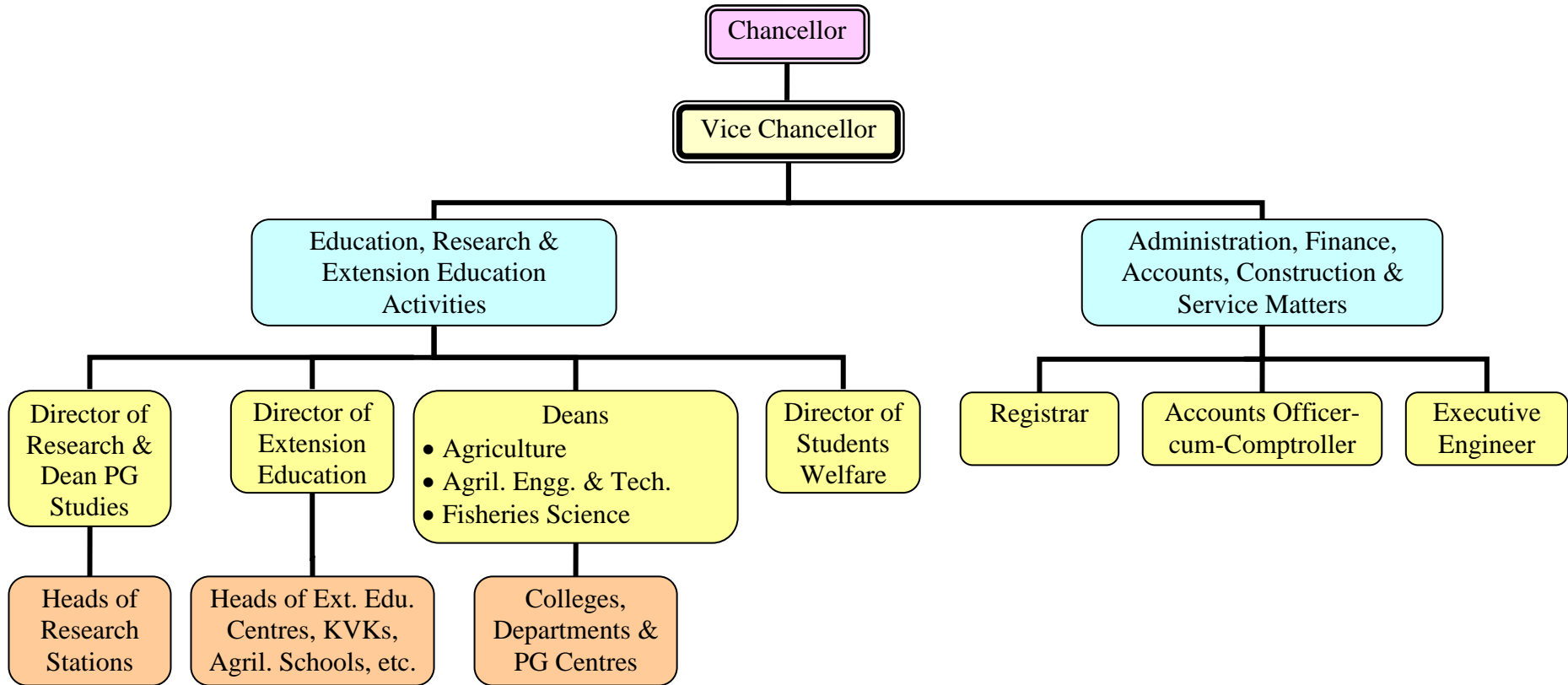
The Gujarat Agricultural University is partitioned into four universities on the basis of agro-climatic conditions representing Saurashtra, Middle Gujarat, South Gujarat and North Gujarat regions. Junagadh Agricultural University comprises Rajkot, Jamnagar, Junagadh, Amreli, Bhavnagar, Surendranagar and Porbandar districts of Saurashtra region. This university is looked after by the Vice Chancellor who coordinates all the education, research and extension education activities of the university.

The university has implemented the principle of decentralization of powers in order to run the administration smoothly and efficiently. Administrative as well as financial powers are delegated to various heads of units and sub-units located at different places in the university. The administrative structure is evolved in such a way as the co-ordination and integration of education, research and extension education at all levels is maintained.

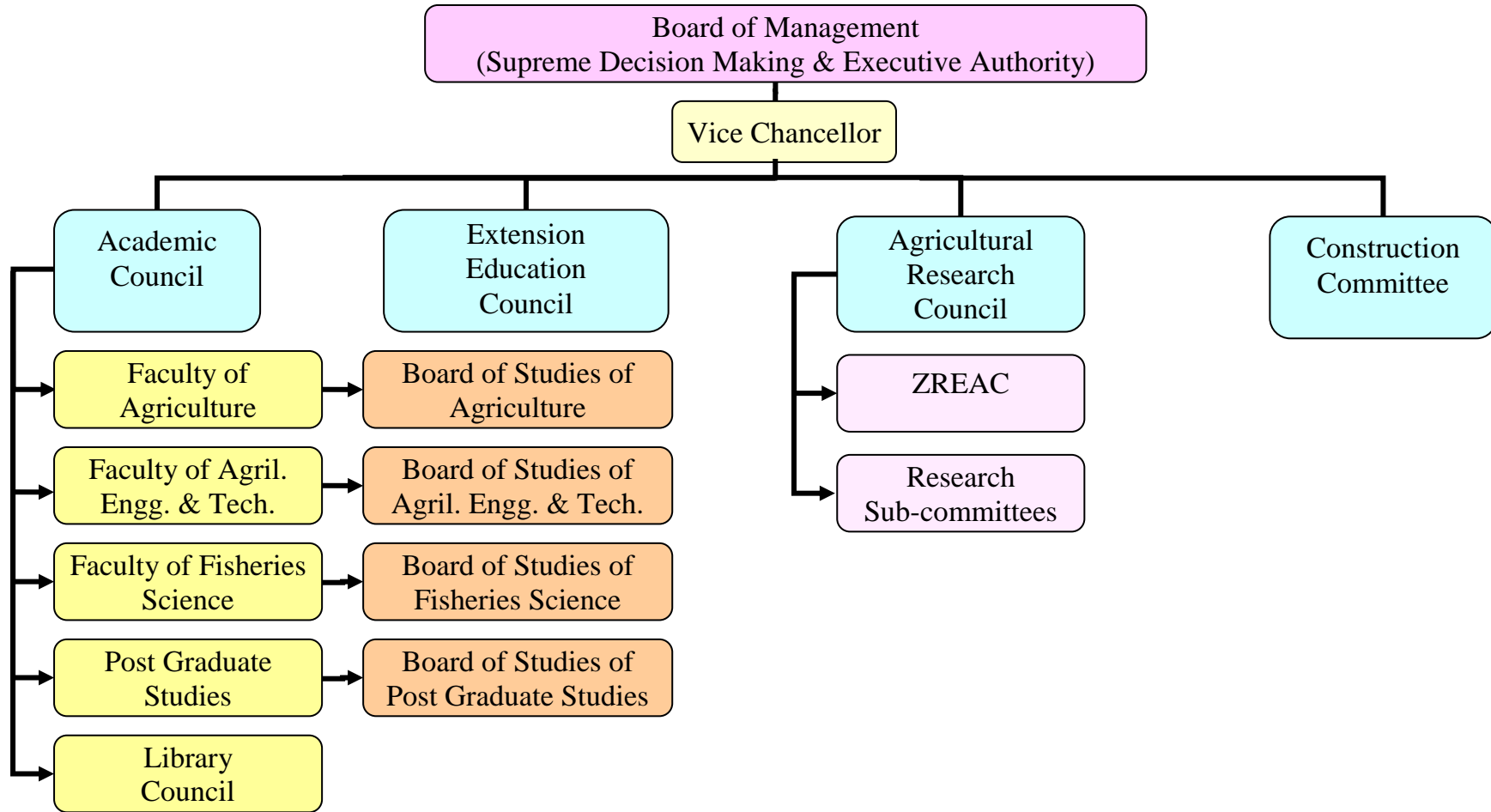
The Vice Chancellor is assisted by Registrar, Director of Research and Dean PG Studies, Director of Extension Education, Accounts Officer-cum-Comptroller, Director of Students Welfare in administrative, financial and other matters. For co-ordination of various faculties, the Vice Chancellor is assisted by Deans of Faculties.

During the year under review followings were officers of the university.

ORGANIZATIONAL SET-UP



Organizational Chart & Decision Channel



| No. | Designation | Name | Period |
|-----|---|---|---|
| 1 | Chancellor | Shri Nawal Kishore Sharma | 01.04.06 onward |
| 2 | Vice Chancellor | Dr. B.K. Kikani | 01.04.06 onward |
| 3 | Director of Research & Dean PG Studies | Dr. D.B. Kuchhadiya | 01.04.06 onward |
| 4 | Dean, Agriculture Faculty | Dr. Ashok Mishra Dr. P.G. Butani | 01.04.06 to 31.05.06 01.06.06 onward |
| 5 | Dean, Agril. Engg. & Tech. Faculty | Dr. N.C. Patel | 01.04.06 onward |
| 6 | Dean, Fisheries Science Faculty | Dr. A.Y. Desai | 01.04.06 onward |
| 7 | Director of Extension Education | Dr. D.B. Kuchhadiya Dr. K.B. Jadeja Dr. A.M. Parakhia | 01.04.06 to 28.08.06 29.08.06 to 30.09.06 01.10.06 onward |
| 8 | Registrar | Shri K.P. Joshipura Shri J.R. Soni Shri B.P. Joshi Dr. D.B. Kuchhadiya | 01.04.06 to 31.05.06 01.06.06 to 30.06.06 01.07.06 to 29.08.06 30.08.06 onward |
| 9 | Accounts Officer-cum- Comptroller | Shri J.R. Soni Dr. H.J. Vyas Shri P.R. Jadeja | 01.04.06 to 03.09.06 04.09.06 to 30.11.06 01.12.06 onward |
| 10 | Director of Students Welfare | Dr. P.V. Patel Dr. K.B. Jadeja | 01.04.06 to 20.05.06 21.05.06 onward |

2.2 University Authorities

Following authorities were functioning under the provisions of section-17 of the Gujarat Agricultural Universities Act-2004 during the year under report.

1. The Board of Management
2. The Academic Council
3. The Faculties and Board of Studies
 - 1) Agriculture
 - 2) Agricultural Engineering & Technology
 - 3) Fisheries Science
 - 4) Post Graduate Studies

1. The Board of Management

i) Constitution

The Board of Management is the highest decision making and executive authority of the university consisting of the following members, namely

Class-I Ex-officio Members

- (1) The Vice Chancellor,
- (2) The Secretary to the Government of Gujarat, Agriculture & Co-operation Department or an officer not below the rank of Deputy Secretary of that Department designated by the Secretary,

- (3) The Secretary to the Government of Gujarat, Education Department or an officer not below the rank of Deputy Secretary of that Department designated by the Secretary,
- (4) The Secretary to the Government of Gujarat, Finance Department,
- (5) The Director of Agriculture, Gujarat State,
- (6) The Director of Animal Husbandry, Gujarat State,
- (7) The Director of Horticulture, Gujarat State, and
- (8) One member nominated by the Vice Chancellor by rotation in the prescribed manner from amongst the Deans of Faculties.

Class-II Ordinary Members

Five persons, not being officers, to be nominated as follows, namely

- (a) To be nominated by the State Government
 - (1) One member of the Gujarat Legislative Assembly,
 - (2) Two Agricultural Scientists having background of Agricultural Research or Education,
 - (3) One farmer,
- (b) One representative nominated by the Director General of Indian Council of Agricultural Research

The Vice Chancellor and Registrar are the Chairman and Secretary, respectively in the Board of Management. The term of office of the nominated members is of three years.

The Board of Management is the principal executive autonomous authority of the university, which considers and reviews all the financial, administrative and academic matters of the university. The Board is assisted by the Vice Chancellor, Academic Council, Board of Studies and Officers of the university in taking decisions and deciding policy matters.

ii) Members of the Board of Management

List of Members of the Board of Management during the year 2006-07

| No. | Name | Designation |
|------------|---------------------|---|
| 1. | Dr. B.K. Kikani | Vice Chancellor (Chairman) |
| 2. | Dr. Avinash Kumar | Additional Chief Secretary, Agriculture & Co-operation Department |
| 3. | Shri P. Paneervel | Secretary, Education Department |
| 4. | Shri A.K. Joti | Secretary, Finance Department (Expenditure) |
| 5. | Dr. R.A. Sherashiya | Director, Agriculture |
| 6. | Dr. R.B. Shukla | Director, Animal Husbandry |
| 7. | Dr. B.R. Shah | Director, Horticulture |
| 8. | Dr. M.S. Basu | Director, NRCG, Junagadh |
| 9. | Dr. D.B. Kuchhadiya | Dean, PG Studies |
| 10. | Dr. D.B. Kuchhadiya | I/c Registrar (Secretary) |

iii) Meeting of the Board of Management

During the period under report, two regular meetings of the Board of management were held.

| Sr. No. | Meeting No. | Date | Place | Chairman |
|---------|-------------|------------|----------|-----------------|
| 1. | Sixth | 10.08.2006 | Junagadh | Dr. B.K. Kikani |
| 2. | Seventh | 01.02.2007 | Junagadh | Dr. B.K. Kikani |

2. The Academic Council

The academic council has the control and general regulation of, and be responsible for, maintenance of the standards of teaching and examinations of the university.

i) Constitution

The Academic Council consists of the following members, namely

- (1) The Vice Chancellor (Ex-officio)
- (2) The Director of Research and Dean Faculty of Post Graduate Studies (Ex-officio)
- (3) The Deans of Faculties (Ex-officio)
- (4) The Director of Extension Education (Ex-officio)
- (5) Six members nominated by the Vice Chancellor by rotation in the prescribed manner from amongst the Heads of Departments of the Faculties and the Research Scientists of the university.
- (6) It may co-opt for such period as may be prescribed as its additional members not more than ten persons representing different disciplines of agriculture & allied sciences irrespective of whether they are connected with the university as its members, teachers or otherwise.

The Vice Chancellor and Registrar are the Chairman and Secretary, respectively in the Academic Council. The term of office of the members of the Academic Council other than ex-officio members shall be of three years.

ii) Members of the Academic Council

List of Members of the Academic Council during the year 2006-07

| No. | Name | Designation | |
|-------------------------------|-----------------|----------------------------|--|
| 1. | Dr. B.K. Kikani | Vice Chancellor (Chairman) | |
| Director | 2. | Dr. D.B. Kuchhadiya | Director of Research & Dean PG Studies |
| | 3. | Dr. A.M. Parakhia | Director of Extension Education |
| Dean | 4. | Dr. P.G. Butani | Dean, Agriculture Faculty |
| | 5. | Dr. N.C. Patel | Dean, Agril. Engg. & Tech. Faculty |
| | 6. | Dr. A.Y. Desai | I/c Dean, Fisheries Science Faculty |
| HOD/Re search Scientist | 7. | Dr. M.N. Kapadia | Professor & Head, Agril. Entomology |
| | 8. | Dr. M.N. Popat | Professor & Head, Agril. Extension |
| | 9. | Prof. J.B. Savani | Professor & Head, Farm Machinery & Power |

| | | | |
|------------------|-----|---------------------|--|
| | 10. | Dr. R.L. Savalia | Professor & Head, Plant Pathology |
| | 11. | Prof. R.H. Ghaghda | Research Scientist, Agril. Engg. |
| | 12. | Dr. V.K. Poshia | Research Scientist, Chick pea |
| Co-opted members | 13. | Dr. K.B. Jadeja | I/c Director of Students Welfare |
| | 14. | Dr. J.N. Sutaria | Former President, Bhavnagar District Cooperative Bank |
| | 15. | Dr. B.L. Joshi | Retd. Research Scientist, Chick pea |
| | 16. | Shri M.L. Savalia | Retd. Principal, Shri Mahila Arts & Commerce College, Joshipara |
| | 17. | Shri K.P. Thomas | Retd. Director, HMG Industries Ltd. |
| | 18. | Shri S.B. Patel | Sr. Vice President, Jain Irrigation Systems Ltd. |
| | 19. | Dr. K. Jankiraman | Retd. Director of Research, GAU |
| | 20. | Dr. R.A. Khimani | Registrar, Gujarat Vidyapeeth |
| | 21. | Dr. V.P. Vadodaria | Principal, College of Veterinary & Animal Husbandry, Sardarkrushinagar |
| | 22. | Prof. S.N. Usadadia | Retd. Scientist, Horticulture |
| | 23. | Dr. D.B. Kuchhadiya | I/c Registrar (Secretary) |

ii) Meeting of the Academic Council

The Academic Council held two meetings during the period of 01.04.2006 to 31.03.2007 as under.

| Sr. No. | Meeting No. | Place | Date |
|---------|-------------|---|------------|
| 1. | Fifth | Meeting Hall, Office of the Vice Chancellor, Junagadh | 05.08.2006 |
| 2. | Sixth | Manhar Kutir (Guest House), Junagadh | 31.01.2007 |

3. Faculties

Section 23 of the GAUs Act-2004 provides that there shall be faculties of Agriculture and allied sciences and such other faculties as may be prescribed. Accordingly, Faculty of Agriculture, Agricultural Engineering & Technology and Fisheries Science were constituted.

4. Board of Studies

Section 24 of the GAUs Act-2004 provides that there shall be a Board of Studies for every subject or group of subjects or as may be prescribed. Accordingly, the following Board of Studies were constituted.

- 1) Board of Studies of Post Graduate Studies
- 2) Board of Studies of Agriculture
- 3) Board of Studies of Agricultural Engineering & Technology
- 4) Board of Studies of Fisheries Science

During the year under report, one meeting of the Board of Studies of Post Graduate Studies was held. The venue of the meeting and date etc. were as under.

| Sr. No. | Name of Board of Studies | Meeting No. | Venue | Date |
|----------------|---------------------------------|--------------------|--------------|-------------|
| 1. | Post Graduate Studies | Second | Junagadh | 19.01.2007 |

3.1 General

The concept of education is based on two-tier system. The first one consists of the higher agricultural education covering Agriculture, Agricultural Engineering & Technology and Fisheries Science, which includes the graduate and post graduate resident instruction programmes. The second consists of lower education programme provided at the Horticulture School, Agricultural School, School of Baking, Livestock Inspector Training Centre, Mali Training Centre and Extension Education Training Centres. The higher education programmes are looked after by the Registrar and diploma/certificate programme by the Director of Extension Education at the university level.

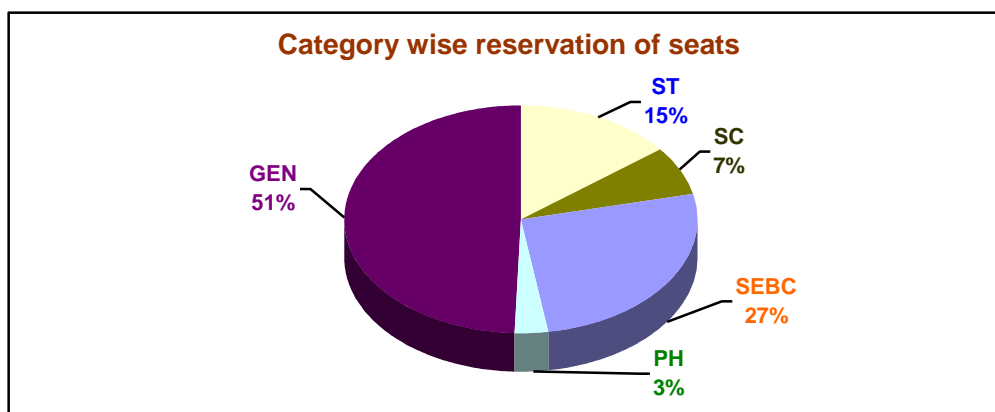
3.2 Under Graduate Programmes

(1) Procedure of Admission

The admission criteria in the Under Graduate programmes in Junagadh Agricultural University are purely on merit basis i.e. percentage of marks obtained in science subjects like Physics, Chemistry and Biology/Mathematics at HSCE with English as a compulsory subject in science or vocational stream. For admission to B.Sc. (Agri.) and B.F.Sc., Physics, Chemistry and Biology, while for B.Tech. (Agril. Engg.), Physics, Chemistry and Mathematics subjects are compulsory. Among the seats allotted for admission, 49% seats are reserved for various Classes, i.e. 15% for Schedule Tribes, 7% for Schedule Caste and 27% for Socially and Educationally Backward Communities as declared under Baxi Commission (Mandal Panch). The students of CBSE, who have passed their examination in Gujarat state, are considered eligible as per prorata. Moreover, 3% seats are reserved for disabled (physically handicapped) candidates as per the directives from the Hon. Supreme Court of India. There is provision of reserved seats for Kashmiri Migrants also. Additional 15% seats are reserved for ICAR candidates, who have cleared All India Entrance Examination conducted by ICAR.

Weightage of marks for participation in sports is given during admission. The admission procedure is centrally administered by the Registrar at university level. Weightage of 5% marks is given to farmer's son/daughter and students of vocational stream who have passed HSCE with Agriculture subject in addition to Physics, Chemistry and Biology for admission to B.Sc. (Agri.) degree course. In B.F.Sc. degree course, 12% seats are reserved for Fisherman's son/daughter and weightage of 15% marks is also given for admission. Weightage of 5% marks is given to farmer's son/daughter for admission to B.F.Sc.

From the academic year 2003-04, the Board of Management resolved to fill up 10 seats each in all the Under Graduate courses as NRI/NRI Sponsored/ Payments Seats with a fees of 3500 US Dollar per semester for NRI/NRI Sponsored candidates and Rs. 25000 per semester for payment seat.

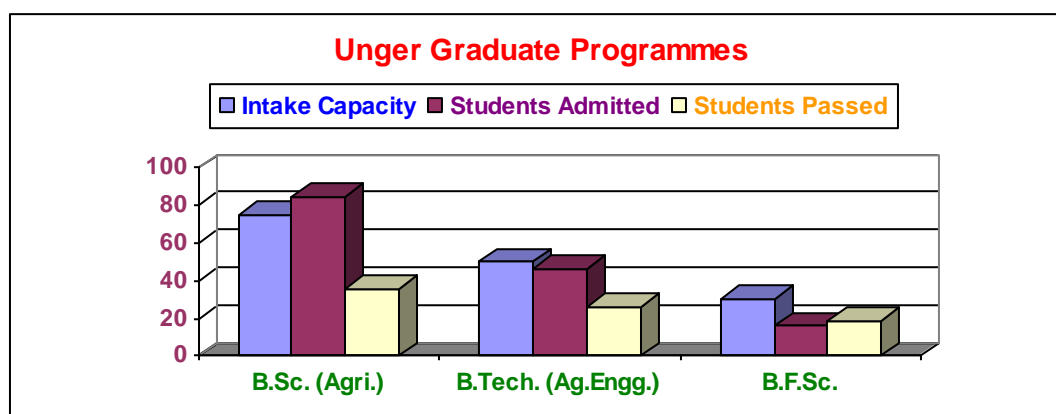


(2) Academic Programmes Offered at UG Level

Intake capacity, admission and students graduated from various faculties at under graduate level in the university for the academic year 2006-07 are given in Table 3.1.

Table 3.1: Under Graduate Programmes

| Sr. No. | Degree course and duration | College where course offered | Intake capacity | Students admitted | Students passed |
|---------|--|---|-----------------|-------------------|-----------------|
| 1 | B.Sc.(Agri.) 4 years (8 semesters) | College of Agriculture, Junagadh | 75 | 85 | 36 |
| 2 | B.Tech. (Agril. Engg.) 4 years (8 semesters) | College of Agricultural Engg. & Tech., Junagadh | 50 | 46 | 26 |
| 3 | B.F.Sc. 4 years (8 semesters) | College of Fisheries Science, Veraval | 30 | 16 | 19 |



3.3 Post Graduate Programmes

The Junagadh Agricultural University imparts Post Graduate instructions with the help of the PG recognized teachers of the university.

(1) Procedure of Admission

- (A) A candidate for admission to the Master's degree should possess Bachelor's degree with an OGPA not less than 6.00 (10.00 basis) or its equivalent in aggregate as well as in the subject in which admission is sought.
- (B) A candidate for admission to the Ph.D. degree programme should possess Master's degree with an OGPA of not less than 6.50 (10.00 basis) or its equivalent.
- (C) A candidate for admission shall have to pass entrance test and admission is given on merit based on marks obtained in the entrance test.
- (D) Relaxation of 5% marks is given in eligibility and entrance test to ST, SC and SEBC candidates for admission to Master/Ph.D. degree.

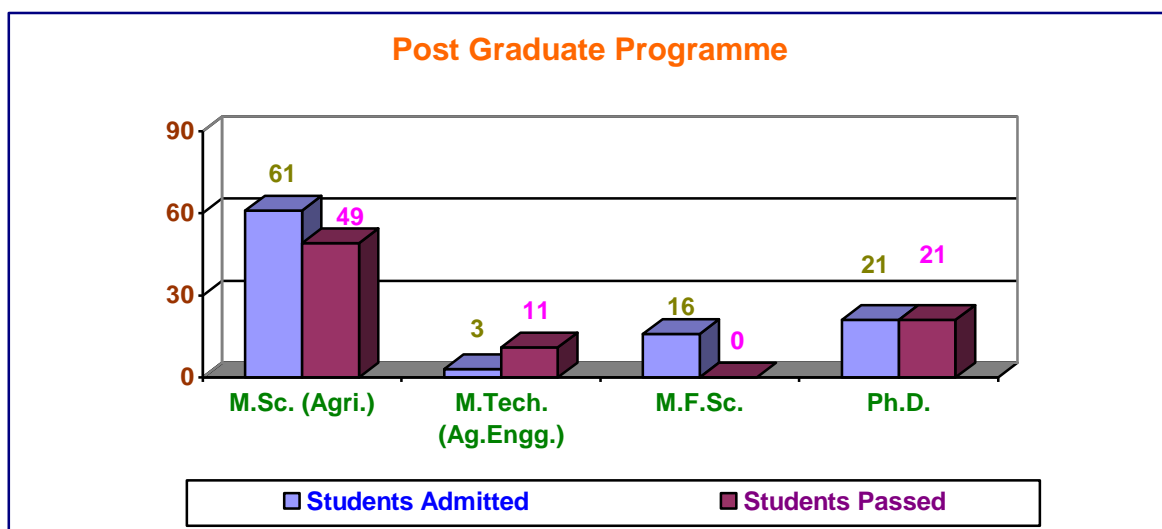
Seats for candidates from out of state, ICAR and Govt. of India nominees, ST, SC, SEBC, Gujarat State nominees, in-service candidates and candidates having degrees from basic science are reserved as per university rules.

(2) Academic Programmes Offered at Post Graduate Level

Number of admissions and passed out students from various faculties at post graduate level in the university for the academic year 2006-07 are given in Table 3.2

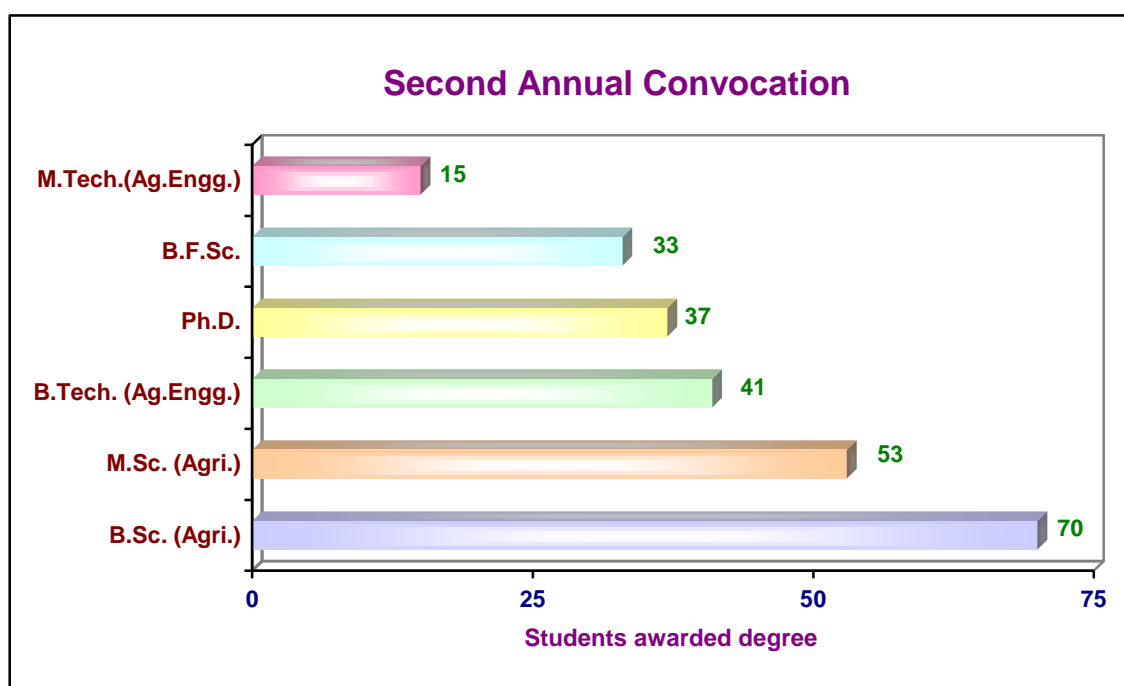
Table 3.2 Post Graduate Programmes

| Sr. No. | Degree course | Duration | College | Students admitted | Students passed |
|---------|------------------------|----------------------------------|---|-------------------|-----------------|
| 1 | M.Sc. (Agri.) | 2 years divided into 4 semesters | College of Agriculture, Junagadh | 61 | 49 |
| 2 | M.F.Sc. | 2 years divided into 4 semesters | College of Fisheries Science, Veraval | 16 | - |
| 3 | M.Tech. (Agril. Engg.) | 2 years divided into 4 semesters | College of Agricultural Engineering & Technology, Junagadh | 3 | 11 |
| 4 | Ph.D. | 3 years divided into 6 semesters | College of Agriculture, Junagadh and College of Agricultural Engineering & Technology, Junagadh | 21 | 21 |



3.4 Annual Convocation

The Second Annual Convocation was held at Junagadh on 2nd February, 2007. Shri Bhupendrasinh Chudasama, Hon'ble Minister of Agriculture and Cooperation, Government of Gujarat, Gandhinagar was the Chief Guest. As many 249 students were awarded Under Graduate and Post Graduate degrees by His Excellency the Governor of Gujarat and Chancellor of this university Shri Nawal Kishore Sharma. 37 students were awarded Gold medals for their outstanding performance at examination, achieving high percentage of marks and stood first on merit in various examinations.



CHAPTER - IV

RESEARCH

4.1 Agricultural Research Council

The Agricultural Research Council was constituted according to the provision of the Gujarat Agricultural Universities Act-2004 in exercise of the power vested under Section 62(1) in pursuance of Section 17(5). The members of Agricultural Research Council during 2006-07 were as under.

| No. | Name | Designation |
|------------|----------------------|--|
| 1 | Dr. B.K. Kikani | Vice Chancellor (Chairman) |
| 2 | Dr. D. B. Kuchhadiya | Director of Research & Dean PG Studies (Secretary) |
| 3 | Dr. A.M. Parakhia | Director of Extension Education |
| 4 | Dr. P.G. Butani | Dean, Agriculture Faculty |
| 5 | Dr. N.C. Patel | Dean, Agril. Engineering & Technology Faculty |
| 6 | Dr. A.Y. Desai | I/c Dean, Fisheries Science Faculty |
| 7 | Dr. H.J. Vyas | Associate Director of Research |
| 8 | Dr. I.U. Dhruj | Associate Director of Research |
| 9 | Dr. D.R. Padmani | Associate Director of Research |
| 10 | Dr. V.K. Poshiya | Research Scientist (Chickpea) |
| 11 | Prof. B.A. Kunadia | Research Scientist (Groundnut) |
| 12 | Dr. C.J. Dangaria | Research Scientist (Millet) |
| 13 | Dr. K.L. Dobaria | Research Scientist (Sugarcane) |
| 14 | Dr. K.L. Jetani | Research Officer (Fisheries) |
| 15 | Dr. P.U. Gajbhiye | Research Scientist (Animal Genetics) |
| 16 | Dr. G.R. Sharma | Research Scientist (Agril. Engg.) |
| 17 | Dr. V.D. Khanpara | Professor & Head, Agronomy |
| 18 | Prof. J.B. Savani | Professor & Head, Farm Machinery & Power |
| 19 | Dr. R.L. Shiyani | Professor & Head, Agricultural Economics |
| 20 | Dr. P.M. Chauhan | Professor & Head, Renewable Energy |
| 21 | Dr. B.A. Golakiya | Professor & Head, Biochemistry |

4.2 Brief Report of Research Activities

The Junagadh Agricultural University comprises seven districts covering one-third area of the state. The university is functioning in a typical arid and semi-arid situation where frequent droughts, erratic rainfall, low fertility, salinity ingress are the major constraints for productivity and prosperity of agriculture. The university represents two agro-climatic zones *viz.*, North and South Saurashtra Agro-climatic Zones.

Junagadh Agricultural University has seven multidisciplinary main research stations, five main research stations on various crops and 11 sub research stations/testing centres spread over in North Saurashtra Agro-climatic Zone and South Saurashtra Agro-climatic Zone. These research stations are working in the field of Agriculture, Agricultural Engineering, Animal Science

and Fisheries Science for catering the needs of farmers, artisans, livestock holders, fishermen and rural masses for their upliftment. At these research stations, scientists are working hard with sincere efforts for the development of high yielding varieties, new improved agronomical practices and pest & diseases management eco-friendly strategies. The research work is also undertaken on natural resource management (bio-diversity, land & water uses), improved farm equipments, post harvest processes and renewable energy. The region is endowed with 788 km long sea coast. Research efforts are continuing for improvement of cattle breeds, nutritive cattle feeds, fisheries and allied industries. Apart from this, agricultural information is disseminated through five *Krishi Vigyan Kendras* of the university. The research activities, research accomplishments and recommendations, achievements made by the Junagadh Agricultural University during 2006-07 are given herein.

I. PLANT BREEDING

The plant breeding group has taken up the seed multiplication programme for *Virginia* runner, *Virginia* and *Spanish* bunch groundnut cultivars and HPS type bold seeded varieties. In castor crop, work continued on development of medium duration hybrids, male monoecious and pistillate lines. Development of high yielding varieties and testing of vegetables new lines; early maturing with high yield and oil content varieties development in sesame; development of rust resistant and breeding for thermo tolerant varieties suitable for early sowing in wheat crop is in progress. Work has been done on development of early maturing high yielding and resistant variety against biotic and abiotic stress with better grain quality in chickpea at state and national level. In *bajra*, crop development, maintenance & conservation of cytoplasmic male sterile lines (CMS) and different hybrids were evaluated after performance of grain yield. Different varieties of cotton at state & national level and somaclonal variation in callus culture in medicinal plants were tested.

Four new crop varieties were recommended for cultivation to the farmers during 2006-07. The *bajra* variety GHB-538 was released for summer/pre-rabi cultivation in Saurashtra and North Gujarat. The wheat variety GW-366 has high degree of resistance to leaf & stem rust and the performance of variety is better in terms of grain quality and yield parameters. The variety has already been released for the entire Gujarat state. The garlic variety GG-4 was released for cultivation in Saurashtra and Middle Gujarat. The bulbs are compact and contain higher soluble solids as compared to check variety. The castor variety GC-3 was released for cultivation in the entire Gujarat state. The variety has displayed high level of *Fusarium* wilt resistance.

II. NATURAL RESOURCE MANAGEMENT

Natural Resource Management group accomplished the study on not to apply inorganic fertilizers in legumes, apply gypsum in addition to recommended dose of fertilizer for obtaining higher yield in *kharif* pearl millet, recommendation to apply elemental sulphur for higher bulb yield production in *rabi* onion, apply recommended dose of fertilizer for getting higher bulb yield in *kharif* onion, apply gypsum besides recommended dose of fertilizer for higher net return in *kharif* groundnut and advised to apply K_2O and $ZnSO_4$ as basal dose in cotton crop, advised the irrigation schedules in summer pearl millet, weed control practices for garlic & *kharif* groundnut were recommended. Cropping system diversification was advised for higher production and net returns. One recommendation for scientific community on economics and yield potential of summer groundnut under different irrigation methods and 11 recommendations for farming community emerged through this group are given as under.

1. Nutrient Management

Legumes

The farmers of North Saurashtra Agro-climatic Zone applying enriched compost @ 6 t/ha or vermicompost @ 2 t/ha need not to apply inorganic fertilizers in legumes.

Pearl millet

The farmers of North Saurashtra & West Gujarat Agro-climatic Zones growing *kharif* pearl millet in saline sodic soil with marginal sulphur status are advised to apply 250 kg gypsum/ha in addition to recommended dose of fertilizer (80:40 kg NP/ha) for obtaining higher yield and net realization.

Bajra (*kharif*)

The farmers of North Saurashtra Agro-climatic Zone growing *kharif bajra* (var. GHB-558) on soil deficient in available Fe and Zn are advised to follow soil application of $FeSO_4$ @ 15 kg/ha and $ZnSO_4$ @ 8 kg/ha or micronutrient mixture grade having Fe-2%, Mn-0.5%, Zn-5%, Cu-0.2% and B-0.5% equivalent to Govt. notified Grade-V as soil application @ 20 kg/ha at the time of sowing to get higher yield and net return. Alternatively, farmers are advised to spray 1% foliar grade of multi-micronutrients having Fe-4%, Mn-1%, Zn-6%, Cu-0.5% and B-0.5% equivalent to Govt. notified Grade-IV (for Fe and Zn deficiency) at 20, 30 and 40 DAS.

Onion (*rabi*)

The farmers of South Saurashtra Agro-climatic Zone utilizing urea as a source of nitrogen in *rabi* onion are recommended to apply 20 kg sulphur/ha through phospho-gypsum at the time of sowing or as elemental sulphur at 20 to 25 days before transplanting for getting higher bulb yield.

Onion (*kharif*)

The farmers of South Saurashtra Agro-climatic Zone growing *kharif* onion (Agri Found Dark Red) are recommended to apply 75:50:25 kg NPK/ha, of which 50 per cent nitrogen and full doses of phosphorus & potash should be applied as basal and remaining 50 per cent nitrogen should be top dressed one month after transplanting for getting higher yield.

Groundnut (*kharif*)

The farmers of the coastal area of South Saurashtra Agro-climatic Zone growing *kharif* groundnut on saline-sodic soil are advised to apply gypsum @ 5 t/ha (50% of GR) besides recommended dose of fertilizer for obtaining higher net return.

Cotton

The farmers of South Saurashtra Agro-climatic Zone growing cotton in medium black calcareous soils are advised to apply 120 kg K₂O and 50 kg ZnSO₄ per hectare as basal in addition to recommended dose of nitrogen for getting maximum net return.

2. Water Management

Pearl millet

The farmers of North Saurashtra Agro-climatic Zone (AES-X) growing hybrid pearl millet (GHB-558) in summer are advised to give 13 irrigations each of 40 mm depth at 6-7 days interval for obtaining higher yield and net return. Under limited water availability, they are advised to give 11 irrigations each of 40 mm depth at 7-8 days interval.

3. Weed Control

Garlic

The farmers of North Saurashtra Agro-climatic Zone (AES-X) growing garlic (GG-3) in *rabi* season are advised to apply oxyfluorfen @ 0.12 kg/ha or pendimethalin @ 0.6 kg/ha as pre emergence + one hand weeding at 40 DAS. If labours are available, the crop should be kept weed free through hand weeding for obtaining higher yield of garlic and additional net return.

Groundnut

The farmers of South Saurashtra Agro-climatic Zone harvesting wheat through combined harvester are advised to incorporate wheat straw in soils using rotavator for better weed control and net return along with maintenance of soil fertility in *kharif* groundnut.

4. Cropping System Diversification

Groundnut (*kharif*)-Onion (*rabi*)-Green gram (summer)

The farmers of South Saurashtra Agro-climatic Zone having assured irrigation facility are advised to adopt groundnut (*kharif*)-onion (*rabi*)-green gram (summer) sequence for obtaining higher production and net return.

III. HORTICULTURE

The Horticulture group worked out the drip irrigation schedule for coconut. They also advised the doses of fertilizer for coconut hybrid. The trials on extending shelf life of mango, effect of manures & fertilizers on fruit bearing in sapota, evaluation of pruning treatment in *Cordia* sp., varietal screening in custard apple & chrysanthemum and fertilizer management in drum stick crop are in progress. Applications of chemical fertilizers through drip irrigation in guava, citrus and coconut were also studied. The varietal screening, papain production in relation to fruit age, effect of organic & inorganic fertilizers and uniform fruits with extended shelf life trials in papaya crop were carried out. The studies on low cost green house, use of different nets in net house, leafy vegetables cultivation and coconut seedling raising in net house are in progress. The investigation on effect of mulching in coconut and sapota is also continued. Four recommendations were released from this group.

Banana

The farmers of South Saurashtra Agro-climatic Zone growing banana are advised to grow variety “Gandevi Selection” for higher yield and income per hectare.

Papaya

Papaya growers of Saurashtra region are advised to grow *Madhubindu* variety for maximum papain production. Further, they are advised to extract papain from papaya at 80 days old fruits for getting maximum fresh and dry weight of latex (crude papain).

Papaya growers of Saurashtra region are advised that the fresh harvested fruits of papaya cv. *Madhubindu* should be dipped for five minutes in the solution of GA₃ 100 ppm (100 mg/l) followed by packing in perforated polyethylene bag, which enhanced shelf life, marketability and quality of fruits up to six days of storage.

Kagzi Lime

Farmers of Saurashtra region growing acid lime cv. Kagzi lime are advised to apply 80 per cent recommended dose of fertilizers for more production and higher income from adult tree. Out of which nitrogen in form of urea 2.6 kg per plant in 12 equal splits should be applied at monthly interval through drip irrigation, while phosphorus and potash should be applied as soil

application in two splits (SSP-3.75 kg & MOP-2.00 kg/tree) in June and October. The drip system should be operated at 0.8 PEF for 3 h daily during October to February and 5 h from March onwards with 4 drippers, each having discharge of 4 l/h (1 kg/cm² pressure) keeping dripper 1.0 m away from trunk of lime plant to save 33.19 per cent irrigation water.

Sapota

Sapota (Cv. *Kalipatti*) growers of South Saurashtra region are advised to apply 72 l water/tree/day in summer (March to June) and 52 l water/tree/day in winter (October to February) to the adult sapota tree (15 to 20 years old) through drip irrigation system (0.6 PEF) keeping four drippers/tree which can save of 32.6 per cent of water without any reduction in the yield. The drip system should be operated 4 hours and 30 minutes in summer and 3 hours 15 minutes in winter, with 1 kg/cm² pressure keeping four drippers/tree having capacity of 4 LPH. The drippers should be kept one metre away from the trunk of tree.

IV. PLANT PROTECTION

The research work is carried out by plant protection group on developing the economically viable technologies for increasing production of agricultural commodities without any adverse effect on the environment and livelihood of the people. Five recommendations from Agricultural Entomology group and three from Plant Pathology group were released. Two recommendations were released for scientific community.

Seed treatment @ 10 g/kg seed + soil application @ 2.5 kg/ha at the time of sowing with *Pseudomonas fluorescens* strain Pf 1 or *Pseudomonas fluorescens* strain Pf 2- CHAO strain was found effective for management of bacterial blight of cotton and seed treatment @ 10 g/kg seed + foliar spray @ 0.2% of the above strain at 30, 60 and 90 days after sowing significantly reduced the bacterial leaf blight of cotton variety G.Cot.Hy-10 and the intensity of powdery mildew (*Oidium erysiphoides*) of ber increased with the decrease in maximum temperature below 35°C, minimum temperature below 20°C and morning relative humidity.

1. Agricultural Entomology

Coriander

For effective and economical management of aphids in coriander, farmers of South Saurashtra region are advised to apply seed treatment with thiamethoxam 70% WS @ 4.2 g/kg seed (CBR 1:4.94).

Fenugreek

For effective and economical management of jassids in fenugreek, farmers of South Saurashtra region are advised to treat the seed with thiamethoxam 70% WS @ 2.8 g/kg seed (CBR 1:2.12).

Sesame

Farmers of North Saurashtra Agro-climatic Zone growing sesame are advised to take plant protection measures from 28 days after sowing (DAS) for the control of leaf roller and 42 DAS for gall fly. Moreover, the farmers are further advised to take care that the leaf roller infestation is found more when there is high rainfall/rainy days and gall fly infestation is more when there is low rain/dry period.

Chickpea

For effective and economic management of *Helicoverpa armigera* in chickpea, farmers of South Saurashtra Agro-climatic Zone are advised to spray fenvalerate 0.02% at 50% flowering followed by second spray of endosulfan 0.07% at 50% pod formation (CBR 1:9.85).

For effective and economic management of gram pod borer in chickpea, farmers of South Saurashtra Agro-climatic Zone are advised to apply three sprays of profenophos @ 750 g a.i./ha (1.5 l/ha) (CBR 1:2.47) or go for alternate spray of NSKE 5%, Bt 1 kg/ha and profenophos 750 g a.i./ha (1.5 l/h) (CBR 1:1.98) at 10 days interval starting from 50% flowering.

2. Plant Pathology

Chickpea

Farmers of South Saurashtra Agro-climatic Zone are advised to apply phosphate solubilizing microorganism cultures either PBA-13 (*Bacillus coagulans*) (CBR 1:28.79) or PBA-20 (*Aspergillus* spp.) (CBR 1:22.95) or PBA-10 (*B. coagulans*) (CBR 1:21.60) (10^8 viable cells/g) as seed treatment @ 30 g/kg seed in chickpea crop in place of phosphatic fertilizer.

Groundnut-Castor Relay Crop

Farmers of South Saurashtra Agro-climatic Zone are advised to sow groundnut with castor as relay crop (row ratio of 2:1) along with soil application of carbofuran 3 G @ 1 kg a.i./ha (Furadan 3G @ 33 kg/ha) to reduce the root knot nematode disease (*Meloidogyne arenaria*) and to get higher yield (CBR 1:2.35).

Garlic

Farmers of South Saurashtra Agro-climatic Zone growing garlic are advised to apply three sprays of thiophanate methyl 70% WP @ 0.05% (CBR 1:7.85) or hexaconazole 5% EC @ 0.008% (CBR 1:6.48) at 10 days interval starting from initiation of powdery mildew (*Leveillula taurica*) disease during *rabi* season for its economic and effective management. However, those who are interested in organic farming can use wettable sulphur 80% WP @ 0.30% (ICBR 1:8.67).

V. PLANT PHYSIOLOGY & BIOCHEMISTRY

Jivanti

The nurserymen and medicinal plant growers of Saurashtra region are advised to grow *dodi (Jivanti)* seed immediately after removal from follicle for obtaining maximum germination. The seeds sown up to three weeks after removal from follicle germinate up to 65 per cent.

VI. SOCIAL SCIENCE

Agricultural economics, extension and social science concentrated on cost of cultivation of important crops, problems and performance of regulated market of Saurashtra region and economic analysis of major summer vegetable in Saurashtra, economic impact of integrated pest management in cotton cultivation in Saurashtra region, to work out the compound growth and instability indices in area, production and productivity of major crops of Gujarat state and study the export competitiveness of groundnut crop at global level. Extension educationists conducted study on awareness of farmers about value added products and diversified use of groundnut and knowledge & perception of respondents towards organic farming.

VII. AGRICULTURAL ENGINEERING

The Agricultural Engineering group accomplished the studies on design, development and fabrication of agricultural machinery, equipments, tools and processes.

1. Soil and Water Engineering

In the soil and water engineering, the research work was focussed on groundwater recharge, modelling of meteorological data, impact of seawater intrusion on the qualitative parameters of groundwater, determination of aquifer properties, impact of watershed management on qualitative parameters of groundwater, assessment of groundwater contamination in industrial areas, performance evaluation of irrigation pumps used in Saurashtra regions, standardization of design and installation of drip system for horticultural & castor crops and effect of land configuration on groundnut yield.

2. Agricultural Process Engineering

The major research works carried out were development of Agro-Processing Centre, design & development of cleaner-cum-grader for cumin, effect of different drying methods on seed quality of groundnut, storage and processing of custard apple, integrated pest management in coriander & products from groundnut, design & development of sapota grader, processing & preservation of vegetable, dehydration & storage study of vegetables, standardization of packaging technology of fresh and processed guava fruits, development of low cost cleaner-cum-grader for peanut pods and kernels,

assessment of harvest & post harvest losses of crops/commodities, storage study of wheat harvested by combine harvester and threshed by thresher, preparation of value added products from groundnut: salted-roasted groundnut pods and forced air ventilated storage of onion.

3. Farm Machinery and Power

In the farm machinery and power, the thrust was given on design & development of tractor operated hay rake-cum-loader, modification and evaluation of agricultural residue shredder, development & adoption of vertical conveying harvesting unit for mini tractor, development of tractor drawn groundnut digger-cum-shaker and groundnut pod exposure, development of bullock drawn pod exposure and modification of semi-automatic gap filler.

4. Renewable Energy and Rural Engineering

Works on modified atmospheric storage of fruits, vegetables & medicinal plants, energy evaluation of forced convection solar assisted drying of tomato and green house for drying and dehydration of fruit & vegetables, utilizing bio-filter in food industry and bio-degradable mulch film for onion production in comparison of normal plastic film were carried out in renewable energy and rural engineering area.

Agricultural Engineering group has released five recommendations for farming community.

Peanut Butter

The entrepreneurs/farmers interested in value addition in peanut are recommended to select the GG-20 cultivar (in comparison to GG-2, GG-7, GG-11 and GG-13) of peanut for the production of good quality peanut butter.

Cleaner-cum-Grader for Cumin

The cumin cleaner-cum-grader machine developed by Junagadh Agricultural University has cleaning efficiency of 75 per cent at the capacity of 50 kg/h and a low cost of cleaning (Rs. 0.31 per kg). It is recommended for the use of farmers, processors and other users.

Residue Shredder

Agricultural residue shredder developed by Junagadh Agricultural University is recommended for the use of farmers and industries for shredding the plant stalks of castor, cotton and pigeon pea. The machine is operated with 6 HP diesel engine having capacity of about 170 to 190 kg/h, producing pieces of stalks in size 10 to 75 mm length. The volume of plant stalks reduces to about 80 per cent due to shredding with the value addition of about 170 to 230 per cent.

Rainfall-Runoff Relationships for Mahi Basin

The mathematical model and nomograph of rainfall intensity-duration-frequency relationships for *Mahi* basin developed by Junagadh Agricultural University are recommended to the designers, planners, NGOs and Govt. agencies involved in watershed development projects for the design of structures.

$$\text{Mathematical Model: } I = 113.3211 (T)^{0.2156} (t+1.4275)^{1.0132}$$

Where, I = rainfall intensity (mm/h); T = return period (years);
t = duration (hours).

Rainfall Intensity-Duration-Frequency Relationships

The mathematical model and nomograph of rainfall intensity-duration-frequency relationship for Junagadh region developed by Junagadh Agricultural University are recommended to the designers, planners, NGOs and Govt. agencies involved in watershed development projects for the design of structures.

$$\text{Mathematical Model: } I = 68.86 T^{0.265}/(t+0.86)^{1.022}$$

Where, I = rainfall intensity (mm/h); T = return period (years);
t = duration (hours).

VIII. FISHERIES SCIENCE

The fisheries group is continuing the work on bioassay test on industrial effluent released in marine coastal area, preliminary study of culture potentials of *Brachionus* sp. for live seed, feasibility of culture of marine red algae *Kappaphycus advarezi* (Schmits) on the Saurashtra region, induced breeding of grey mullet through hypophysation, heavy metal deposition in cephalopod and fish at Okha and Dwarka landing centre, case studies on marine national park, Gulf of Kutchh, Jamnagar, studies on pollution potential from fishing harbours to coastal areas with respect to Veraval Fishing Harbour, socio-economic profiles of fisher-folk in coastal Saurashtra, estimation of microbial pollution at fish landing centre, Veraval, application of magnetized diet on growth characteristics of fish, study of seasonal variation in population densities of important diatoms on Jhaleswar and Chorwad coast. This group released two recommendations for fish farmers.

Mullet Fish Culture

It is recommended to incorporate *Prosopis juliflora* pod powder @ 20% along with fish meal 10%, soybean meal 40%, wheat bran 15% and cotton seed oil cake 15% in pelleted feed for higher production as well as greater survival rate in mullet fish culture.

Shrimp

It is recommended to incorporate probiotics (*Lactobacillus acidophilus*) @ 20 per cent in feed during culture of shrimp for higher production.

IX. ANIMAL PRODUCTION & HEALTH

In animal production & health discipline, six non plan, eight plan and two ICAR schemes and total 16 schemes are in operation at Cattle Breeding Farm, Junagadh. These schemes are aimed at genetic improvement in these bovines maintained at the farm and also in the field through supply of genetically superior bulls with breeding and improvement of *Gir* and *Jaffarabadi* bovines. This group has released one recommendation for farmers.

Milk Replacer

Milk replacer containing the following ingredients is useful to replace 50 per cent of whole milk for feeding weaned *Gir* calves, without any adverse effect on body growth. Ingredient composition for one kg milk replacer is wheat flour 100 g, soybean meal 120 g, groundnut cake meal 400 g, skim milk powder 130 g, coconut oil 100 g, butyric acid 3 g, molasses/jaggary 65% 100 g, mineral mixture 32 g and citric acid 15 g.

X. BREEDER SEED PRODUCTION

The production of different breeder seeds by Junagadh Agricultural University for need of private and public sectors are given in the table. Moreover as per the demand of the Agriculture Department of the State, 100 per cent nucleus seed was produced in the different crops. In collaboration of the scientists of state and the country, the nucleus and breeder seeds were inspected by different committees which were approved as per regulations.

Breeder seed production of state released varieties during the year 2006-07

| Sr. No. | Crop | Name of Variety | Production (Qtls.) |
|---------|-----------|-----------------|--------------------|
| 1. | Groundnut | GG-2 | 117.34 |
| | | GG-3 | 14.56 |
| | | GG-5 | 117.00 |
| | | GG-6 | 10.82 |
| | | GG-7 | 41.80 |
| | | SB-XI | 20.20 |
| | | GG-20 | 378.52 |
| | | GAUG-10 | 25.00 |
| | | GG-11 | 30.00 |
| | | GG-13 | 15.99 |
| | | GG-14 | 44.55 |
| | | GG-21 | 19.00 |

| | | | |
|-----|--------------|-----------------------------|----------------|
| 2. | Pearl millet | Parent seed | 10.89 |
| 3. | Sesame | Gujarat Til-2 | 2.90 |
| | | Gujarat Til-10 | 0.35 |
| 4. | Sunflower | Gujarat Sunflower-1 | 0.50 |
| 5. | Gram | GG-1 | 32.50 |
| | | GG-2 | 31.02 |
| | | GG-4 | 1.80 |
| 6. | Cotton | Gujarat Cotton-19 (Nucleus) | 0.61 |
| | | Gujarat Cotton-15 (Nucleus) | 0.42 |
| | | Gujarat Cotton-21 | 9.60 |
| | | Cotton Deviraj | 0.14 |
| 7. | Cumin | Gujarat Cumin-4 | 0.60 |
| 8. | Garlic | Gujarat Garlic-4 | 0.80 |
| 9. | Castor | GC-3 | 0.07 |
| 10. | Wheat | GW-366 | 104.40 |
| | | GW-366 (Basic Seed) | 415.20 |
| | | GW-503 | 14.00 |
| | | Lok-1 | 112.50 |
| | | GW-496 | 89.50 |
| | | Grand Total | 1662.58 |

New research programmes sanctioned during 2006-07

| No. | Agency | Research Programmes |
|-----|-----------------------|---------------------|
| 1 | ICAR | 3 |
| 2 | Government of India | 1 |
| 3 | Government of Gujarat | 2 |
| 4 | Other Agencies | 15 |
| | Total | 21 |

CHAPTER - V

EXTENSION EDUCATION

5.1 Directorate of Extension Education

The Directorate of Extension Education was established according to the Chapter-3 Part-IX vide Section 14.1(3) of the Gujarat Agricultural Universities Act-2004, for dissemination of the research findings and technical information through extension education programmes. The main function of the Directorate is to plan, coordinate, organize and guide the extension education programmes of the university and to ensure efficient working of the extension activities in close coordination with other line departments and state voluntary organizations, other officers and scientists of the university. Dr. D.B. Kuchhadiya continued as an in-charge Director of Extension Education up to 28.08.2006 and then Dr. A.M. Parakhia was posted as Director of Extension Education. They supervised and guided the extension education activities.

5.2 Extension Education Council

The Extension Education Council was constituted according to the provision of the Gujarat Agricultural Universities Act.2004 in exercise of the power vested under sec. No. 62(1) in pursuance of section 17(5). The members of Extension Education Council during 2006-07 were as under.

| No. | Name | Designation |
|------------|---------------------|---|
| 1 | Dr. B.K. Kikani | Vice Chancellor (Chairman) |
| 2 | Dr. A.M. Parakhia | Director of Extension Education (Secretary) |
| 3 | Dr. D.B. Kuchhadiya | Director of Research & Dean PG Studies |
| 4 | Dr. P.G. Butani | Dean, Agriculture Faculty |
| 5 | Dr. N.C. Patel | Dean, Agril. Engg. & Tech. Faculty |
| 6 | Dr. A.Y. Desai | I/c Dean, Fisheries Science Faculty |
| 7 | Dr. S.M. Dadhania | Associate Director of Extension Education |
| 8 | Prof. B.A. Kunadia | Research Scientist (Groundnut) |
| 9 | Dr. V.K. Poshiya | Research Scientist (Chickpea) |
| 10 | Dr. P.U. Gajbhiye | Research Scientist (Animal Genetics) |
| 11 | Prof. R.H. Ghaghada | Research Scientist (Agril. Engg.) |
| 12 | Dr. V.B. Gadhiya | Training Organizer, KVK |
| 13 | Dr. K.L. Jetani | Research Officer (Fisheries) |
| 14 | Dr. K.A. Khunt | Research Scientist (Agril. Economics) |
| 15 | Dr. M.N. Popat | Professor & Head, Agril. Ext. Edu. |
| 16 | Dr. A.H. Raval | Professor & Head, Agril. Engg. Ext. Edu. |
| 17 | Dr. A.V. Barad | Professor & Head, Horticulture |
| 18 | Dr. B.R. Karkar | Asstt. Ext. Edu., SSK |
| 19 | Dr. L.B. Ranaparia | Asstt. Ext. Edu., Horticulture Diploma School |

5.3 Extension Education and Training Centres

| Sr. No. | Type | Location |
|--|--|---|
| I. Diploma/Certificate Courses | | |
| 1. | Agriculture Diploma School | Halvad, Dhari |
| 2. | Horticulture Diploma School | Junagadh |
| 3. | Livestock Inspector Training Centre | Junagadh |
| 4. | School of Baking | Junagadh |
| 5. | Mali Training Centre | Junagadh |
| II. Training Programmes for Extension Workers | | |
| 1. | Training & Visit System Training Centre | Junagadh, Targhadia |
| 2. | Centre of Excellence for Training (Oilseeds) | Junagadh |
| III. Training Programmes for Farmers/Farm Women | | |
| 1. | Krishi Vigyan Kendra | Jamnagar, Targhadia, Amreli, Khapat, Nana Kandhasar |
| 2. | Sardar Smruti Kendra | Junagadh |
| IV. Extension Education Programmes for Rural People | | |
| 1. | Farm Advisory Service Centre | Junagadh |
| 2. | Extension Programme for Fisheries | Okha |

5.4 Extension Education and Training Programmes

(I) Diploma/Certificate Courses for Farm Youths

The Junagadh Agricultural University continued various Diploma/Certificate courses during the year under report as per the details given below.

| Sr. No. | Name of Course | Duration | Location | No. of Students Completed the Course |
|---------|----------------------------------|----------|-------------------------|--------------------------------------|
| 1) | Horticulture Diploma | 2 years | Junagadh | 27 |
| 2) | Agriculture Diploma | 2 years | Halvad, Junagadh, Dhari | 53 |
| 3) | Livestock Inspector Training | 1 year | Junagadh | 28 |
| 4) | Bakery Training | | | |
| | ➤ Basic Course in Baking Science | 20 weeks | Junagadh | 19 (2 Batches) |
| | ➤ Special Training to Women | 1 week | Junagadh | 117 (6 Batches) |
| 5) | Mali Training | 6 months | Junagadh | 5 (1 Batch) |

All these courses are being run to impart skill oriented practical training to farmer's son/daughter in order to provide an opportunity for self-employment, and employment in different organizations. There is a provision of monthly stipend in all the courses.

(II) Training Programmes for Extension Workers

(A) Training & Visit System

Junagadh Agricultural University has taken-up the task of training the extension personnel of the Department of Agriculture and Horticulture through T & V System. The details about number of bimonthly workshops, pre-seasonal training workshops and short-term training programmes organized for the extension personnel of the Department of Agriculture and the number of SMSs/AEOs who attended the programmes is as under.

| Sr. No. | Type of programme | Programmes | No of Participants |
|----------------|---------------------------------|-------------------|---------------------------|
| 1) | Bimonthly Workshop | 4 | 49 |
| 2) | Pre-seasonal Training Programme | 2 | 59 |
| 3) | Short Duration Course | 8 | 253 |
| Total | | 14 | 361 |

(B) Centre of Excellence for Training (Oilseeds)

The centre has continued to provide better training to the extension personnel to improve their technical competency in the area of oilseeds production. This centre organizes the national workshop-cum-seminar on oilseeds production technology. The centre also plans the training programmes for the Master Trainers and SMSs. The details about numbers of workshops/training for the extension personnel of the State Department and number of SMSs/AEOs who attended the programme are as under.

| Sr. No. | Name of Workshop/Training | Duration | Programmes | No. of Participants |
|----------------|--|-----------------|-------------------|----------------------------|
| 1 | Advanced Crop Production Technologies in Horticultural Crops | 4 days | 1 | 30 |
| 2 | Training Identified Area for Technical Personnel of KVKs | 3 days | 1 | 24 |
| Total | | | 2 | 54 |

(III) Training/Extension Education Programmes for Farmers/Farm Women

(A) Training Programmes

Training is essential to increase the efficiency of farmers, farm women, rural youths etc. On-campus as well as off-campus training programmes were organized based on the need and interest of the farming community.

Through the Transfer of Technology (TOT) Centres, 161 on-campus and 177 off-campus training programmes were organized, wherein 11632 participants received training. The details are depicted in Table 5.1.

Table 5.1: Training programmes organized by the Transfer of Technology Centres for farmers/farm women during the year 2006-07

| Sr. No. | TOT Centre | No. of Trig. Prog. | No. of participants | | | | Total | |
|--------------------|---------------------|--------------------|---------------------|-------------|-------------|------------|------------|--------------|
| | | | Male | Female | Rural Youth | Other | | |
| (i) | KVK, Jamnagar | A | 58 | 1562 | 717 | - | - | 2279 |
| | | B | 66 | 1936 | 821 | - | - | 2757 |
| (ii) | KVK, Targhadia | A | 51 | 788 | 248 | 37 | 136 | 1209 |
| | | B | 37 | 820 | 39 | 217 | - | 1076 |
| (iii) | KVK, Amreli | A | 11 | 174 | 93 | - | - | 267 |
| | | B | 26 | 1284 | 291 | - | 106 | 1681 |
| (iv) | KVK, Khapat | A | 11 | 232 | - | - | - | 232 |
| | | B | 20 | 508 | 73 | - | - | 581 |
| (v) | KVK, Nana Kandhasar | A | 12 | 188 | 46 | - | - | 234 |
| | | B | 24 | 501 | 68 | - | - | 569 |
| (vi) | SSK, Junagadh | A | 18 | 370 | 202 | - | - | 572 |
| | | B | 4 | - | 175 | - | - | 175 |
| Total | | A | 161 | 3314 | 1306 | 37 | 136 | 4793 |
| | | B | 177 | 5049 | 1467 | 217 | 106 | 6839 |
| Grand Total | | | 338 | 8363 | 2773 | 254 | 242 | 11632 |
| A= On-campus | | B=Off campus | | | | | | |

(B) Extension Activities

The TOT centres also planned and organized extension activities like seminar/workshop/symposium, field/farmer's day, agriculture fair/exhibition, film/slide/video show, field visit, cattle camp, farmers' group/demonstration meeting etc. by which total 521775 beneficiaries benefited. The details of the extension activities organized and number of participants are given in Table 5.2

KVKs play an important role to provide an opportunity for income generation to the farmers by imparting skill oriented trainings. Besides this, the KVKs conduct variety of extension activities, on farm testing etc.

The KVKs are also collecting feed back on farmers' problems, which are sent to the concerned scientists as these feed backs provide guideline in reforming further research.

(C) Frontline Demonstrations

The frontline demonstration aims to demonstrate the production potentialities of newly released and pre-released production technologies of pulses and oilseeds on farmer's fields.

In all, 503 FLDs were conducted on various oilseeds and pulses viz., castor, mustard, groundnut, sesamum, cotton, gram, wheat, pearl millet and cumin in 225.1 ha during *kharif* and *rabi* seasons through KVKs. The results are appended in Table 5.3.

Table 5.2: Extension activities carried out by TOT centres during 2006-07

| Sr. No. | Name of activity | KVK | | | | | SSK, Junagadh | Total |
|--------------|---|----------------|-----------------|------------|--------------|----------------|----------------|--------------------------------|
| | | Jamnagar | Targhadia | Amreli | Khapat | Nana Kandhasar | | |
| 1) | Farmers'/ Field Day | 44 (1766) | 28 (802) | 3 (24) | 3 (66) | 9 (244) | - | 87 (2902) |
| 2) | Agril. Fair/ Exhibition | 1 (759) | 1 (2697) | | - | 4 (395) | 43 (331564) | 49 (335415) |
| 3) | <i>Khedut Shibir</i> / Group Discussion | 121 (5897) | 29 (1947) | (53) | 36 (1060) | - | 58 (100375) | 297 (109279) |
| 4) | Agril. Tour/ Field Visit | 91 (315) | 45 (10545) | - | - (81) | - | - | 136 (10941) |
| 5) | Seminar/Workshop/ <i>Kisan Gosti</i> | - | 16 (15294) | - | 2 (15) | - | - | 18 (15309) |
| 6) | Cattle camp | 6 (348) | 2 (336) | - | - | 7 (121) | - | 15 (805) |
| 7) | Film/Slide/Video Show/ Radio Talk/TV Prog. etc. | 3 | 19 | 3 | 1 | 3 | - | 29 |
| 8) | Guidance through Letters/Personal Contact | 525 | 65 | 85 | 155 | 64 | 157 | 1051 |
| 9) | Publication and Distribution of Farm Literature | - | 17 * (37000) | - | 4 (650) | 6 (1965) | - | 27 (39615) |
| 10) | Press Notes Released | 6 | 78 | 2 | 8 | 2 | - | 96 |
| 11) | Demonstrations | 120 | 58 | 7 | - | 65 | - | 250 |
| 12) | <i>Krush-Go-Vidya</i> Subscriber Registered | - | - | - | - | - | 314 | 314 |
| 13) | Escorting the Visitors | - (1683) | - | 4 (91) | 3 (165) | 47 (845) | - (4616) | 54 (7400) |
| 14) | Extension of Research Prog. | | 2 | 3 (109) | - | - | - | 5 (109) |
| Total | | | | | | | | 2428 (521775) |

Figures in parenthesis indicates no. of beneficiaries/copies * Books & folders

(D) Farm Advisory Service Scheme

The Farm Advisory Service Scheme has been continued at SSK, Junagadh with a view to provide guidance and the latest information to the farmers on scientific farming. The farmers were advised regarding their farm problems through correspondence and field visit. This centre acted as a link among research scientists, extension workers and farmers. During the year under report, various extension activities carried out by the centre are given below.

| Sr. No. | Name of activity | No. of activity | No. of participants |
|---------|---|-----------------|---------------------|
| 1) | Agril. Fair | 6 | 250250 |
| 2) | Agril. Exhibitions (participation) | 37 | 80862 |
| 3) | <i>Khedut/Mahila Shibir</i> /Group Meeting/Crop Seminar | 58 | 100375 |
| 4) | Spot Guidance/Guidance through Letters | 157 | 0 |
| 5) | Agril. Literature Exhibition | 37 | 81314 |
| | | 295 | 512801 |

Table 5.3: Performance of frontline demonstrations organized during 2006-07

| Sr. No | Centre | Crop | Variety | No. of FLDS | Area (ha) | Av. yield (Q/ha) | | Increase in yield (%) | |
|--------------|---------------------------|----------------------|----------|-------------|--------------|------------------|-------------|-----------------------|--|
| | | | | | | Demo. | Local check | | |
| 1) | KVK, Targhadia | <i>Kharif</i> | | | | | | | |
| | | Groundnut | GG-20 | 20 | 8.0 | 6.31 | 5.25 | 20.19 | |
| | | Black gram | T-9 | 10 | 4.0 | 7.19 | 5.88 | 22.28 | |
| | | Green gram | K-851 | 10 | 4.0 | 5.23 | 4.38 | 19.41 | |
| | | Cotton | Bt | 10 | 4.0 | 20.88 | 18.31 | 14.04 | |
| | | <i>Rabi</i> | | | | | | | |
| | | Mustard | GM-2 | 12 | 4.8 | 16.56 | 14.69 | 12.73 | |
| | Cumin | GC-4 | 12 | 4.8 | 5.52 | 4.84 | 14.05 | | |
| 2) | KVK, Jamnagar | <i>Kharif</i> | | | | | | | |
| | | Groundnut | GG-5 | 20 | 10.0 | 24.80 | 21.35 | 16.16 | |
| | | Sesamum | GT-2 | 20 | 10.0 | 11.60 | 10.20 | 13.73 | |
| | | Castor | GCH-6 | 20 | 10.0 | 37.00 | 33.50 | 10.45 | |
| | | Pearl millet | GHB-577 | 40 | 20.0 | 24.50 | 20.70 | 18.36 | |
| | | <i>Rabi</i> | | | | | | | |
| | | Mustard | GM-3 | 20 | 10.0 | 27.60 | 22.30 | 23.77 | |
| | Gram | GG-2 | 10 | 5.0 | 16.40 | 14.30 | 14.69 | | |
| | Wheat | GW-496 | 40 | 20.0 | 56.40 | 50.40 | 11.90 | | |
| 3) | KVK, Amreli | <i>Kharif</i> | | | | | | | |
| | | Groundnut | GG-20 | 12 | 5.0 | 7.00 | 6.00 | 16.67 | |
| | | Sesamum | GT-2 | 12 | 5.0 | 4.00 | 3.50 | 14.29 | |
| | | Green gram | GG-4 | 12 | 5.0 | 6.00 | 5.00 | 20.00 | |
| | | Pearl millet | GHB- 558 | 12 | 5.0 | 25.00 | 22.00 | 13.64 | |
| | | <i>Rabi</i> | | | | | | | |
| | | Wheat | GW-496 | 36 | 14.5 | 46.11 | 38.41 | 20.05 | |
| | Cumin | GC-4 | 10 | 4.0 | 4.81 | 3.93 | 22.39 | | |
| | Gram | GG-2 | 12 | 5.0 | 7.95 | 6.62 | 20.09 | | |
| 4) | KVK, Khapat | <i>Kharif</i> | | | | | | | |
| | | Castor | GCH-6 | 10 | 5.0 | 26.61 | 23.64 | 12.56 | |
| | | <i>Rabi</i> | | | | | | | |
| | | Wheat | GW-496 | 25 | 10.0 | 49.21 | 44.62 | 10.29 | |
| | | Gram | GG-2 | 20 | 10.0 | 14.26 | 12.67 | 12.55 | |
| | | Cumin | GC-4 | 25 | 10.0 | 12.13 | 10.79 | 12.42 | |
| | | Mustard | GM-2 | 8 | 4.0 | 23.88 | 21.63 | 10.40 | |
| 5) | KVK, Nana Kandhasar | <i>Kharif</i> | | | | | | | |
| | | Groundnut | GG-7 | 3 | 1.2 | 9.70 | 8.00 | 21.25 | |
| | | | GG-20 | 7 | 2.8 | 6.60 | 5.70 | 15.79 | |
| | | Cotton | Bt. | 2 | 0.8 | 18.25 | 17.00 | 7.35 | |
| | | Cotton (irri.) | Bt. | 8 | 3.2 | 22.50 | 19.13 | 17.62 | |
| | | <i>Rabi</i> | | | | | | | |
| | | Mustard | GM-2 | 10 | 5.0 | 14.20 | 12.40 | 14.52 | |
| | | Gram | GG-2 | 10 | 5.0 | 15.00 | 13.25 | 13.21 | |
| | | Cumin | GC-4 | 13 | 5.2 | 6.42 | 5.30 | 21.13 | |
| | Wheat | GW-322 | 5 | 2.0 | 38.90 | 34.70 | 12.10 | | |
| | | GW-496 | 7 | 2.8 | 31.71 | 26.57 | 19.35 | | |
| Total | | | | 503 | 225.1 | | | | |

1) Farmers group meeting on “Jatropha Crop and its Uses”

In co-ordination with KRIBHCO, Shri Khambhaliya Farmers Cooperative Society Ltd. and Junagadh Agricultural University organized a farmers group meeting on “Jatropha Crop and its Uses” on 27.06.2006 at Sarsai (Ta: Visavadar). Total 1200 farmers and 50 farm women participated in this programme. Subject experts from JAU gave talk on cultivation of jatropha in Saurashtra region; its usefulness in human being, use in ayurved/medicine, importance and broad use of jatropha plant. Discussion between farmers and scientists was also arranged.

2) Symposium on “Mango Crop Production, Quality and Value Addition”

In co-ordination with Horticulture Development Parishad, Anand, Agricultural Produce Market Committee, Talala and Junagadh Agricultural University organized Saurashtra level symposium on “Mango Crop Production, Quality and Value Addition” on 18.03.2007 at Market Yard, Talala. Total 450 growers actively participated. Scientists from concerned discipline delivered lecture on various themes i.e. cultivation practices, plant protection measures, maintenance of quality for export etc.

(E) Extension Activities under Centre of Communication (COC) Scheme

Objectives of COC Scheme

- a. To establish the *Gram Kisan Samiti* (GKS) in the rural areas.
- b. To train the members of *Gram Kisan Samiti* in leadership communication and cooperation for transfer of technologies.
- c. To disseminate the latest agricultural and allied technologies through *Gram Kisan Samiti* in rural areas.
- d. To carry out different extension activities through GKS in different villages.
- e. To know the feedbacks from the farmers.

Formulation of *Gram Kisan Samiti* during the year 2006-07

| Sr. No. | District | No. of GKS |
|--------------|---------------|------------|
| 1 | Junagadh | 3 |
| 2 | Porbandar | 2 |
| 3 | Rajkot | 3 |
| 4 | Jamnagar | 2 |
| 5 | Amreli | 1 |
| 6 | Surendranagar | 2 |
| 7 | Bhavnagar | 1 |
| Total | | 14 |

***Khedut Shibirs* organized during the year 2006-07 under COC scheme**

| Sr. No. | Name of the village | No. of <i>shibirs</i> | No. of participants | Subject covered |
|--------------|-----------------------|-----------------------|---------------------|--|
| 1 | Pipalag (Amreli) | 1 | 48 | Agriculture, Horticulture, Animal Husbandry |
| 2 | Halariya (Amreli) | 1 | 43 | |
| 3 | Makhavad (Rajkot) | 1 | 84 | |
| 4 | Shrinathgadh (Rajkot) | 1 | 105 | |
| 5 | Mandav (Junagadh) | 1 | 56 | |
| Total | | 5 | 336 | |

(F) Extension Activities carried out by Extension Education Centres

Extension activities carried out by various Extension Education Centres during the year are as shown in Table 5.4.

Table 5.4: Extension activities carried out by Extension Education Centres during 2006-07

| Sr. No. | Name of activity | LITC, Junagadh | School of Baking, Junagadh | Fisheries Res. Station, Okha | Total |
|--------------|--|-----------------------|----------------------------|------------------------------|-----------------------|
| 1) | Diagnostic and Treatment Services through Mobile Ambulatory Clinic | 42 (72) | - | - | 42 (72) |
| 2) | Farmers/Animal Owners Visit | 20 (920) | - | - | 20 (920) |
| 3) | Farmers' Meeting/ <i>Shibirs</i> /Seminar, etc. | 25 (285) | - | 2 (63) | 27 (348) |
| 4) | Guidance on Farm | - | - | 19 (365) | 19 (365) |
| 5) | Guidance through letters | 37 | - | 16 | 53 |
| 6) | Literature Published | 2 | - | 3 | 5 |
| 7) | Literature Distribution | (1452) | - | (500) | (1952) |
| 8) | Off Campus Training | 1 | - | - | 1 |
| 9) | On Campus Training: | | | | |
| a) | <i>Gopal Mitra</i> Certi. Course (4 months) | 1 (9) | - | - | 1 (9) |
| b) | B.V.Sc. Internship | 13 (62) | - | - | 13 (62) |
| c) | BRS Internship (1 month) | 4 (15) | - | - | 4 (15) |
| d) | NGO Representatives | 1 (80) | - | - | 1 (80) |
| 10) | One Day Camp | - | 6 (395) | - | 6 (395) |
| 11) | Film/Slide/Video Show | - | - | 10 (125) | 10 (125) |
| 12) | TV Programmes | 2 | - | - | 2 |
| 13) | Radio Talk | 2 | - | 8 | 10 |
| 14) | Guidance to Visitors | - | 57 (1893) | 133 (1826) | 190 (5719) |
| Total | | 150 (2895) | 63 (2288) | 191 (2879) | 404 (8062) |

5.5 Radio Talk and TV Programme

The scientists of the university delivered radio talks from time to time on various agricultural and allied subjects from All India Radio, Rajkot. Moreover, the agricultural messages were also broadcasted from All India Radio, Rajkot. During the year under report, nearly 30 such talks were delivered on different topics related to agriculture, horticulture, agricultural engineering, fisheries, animal husbandry, etc.

In all, 23 television programmes covering various aspects of agriculture, animal husbandry, agricultural engineering, horticulture, fisheries, home science, etc. were telecasted through Doordarshan Kendra, Rajkot in “*Gram Jagat*” programme regularly for the benefit of farming community.

5.6 Publication of Extension Education Literature

During the year under report, total 48 publications (47 folders and 1 book) were published by different departments as mentioned below.

| Sr. No. | Name of Office | Type of Publication | | Total |
|---------|--|---------------------|----------|-----------|
| | | Folder | Books | |
| 1. | Directorate of Ext. Edu., JAU, Junagadh | 4 | - | 4 |
| 2. | Sardar Smruti Kendra, JAU, Junagadh | 20 | 1 | 21 |
| 3. | Wheat Research Station, JAU, Junagadh | 1 | - | 1 |
| 4. | Dry Farming Research Station, JAU, Targhadia | 4 | - | 4 |
| 5. | Cattle Breeding Farm, JAU, Junagadh | 2 | - | 2 |
| 6. | Krishi Vigyan Kendra, JAU, Targhadia | 5 | - | 5 |
| 7. | Krishi Vigyan Kendra, JAU, Nana Kandhasar | 6 | - | 6 |
| 8. | Krishi Vigyan Kendra, JAU, Khapat | 4 | - | 4 |
| 9. | Research Scientist (Agril. Engg.), JAU, Junagadh | 1 | - | 1 |
| | Total | 47 | 1 | 48 |

University news bulletin “*Krushvi Vishwa*” is being published regularly by Directorate of Extension Education.

5.7 Agriculture Literature Exhibition

During the year under report, 37 agricultural literature exhibitions were arranged for farmers and extension workers. Total 81314 farmers and farm women participated in agricultural literature exhibitions.

5.8 Coordination of Extension Activities with Department of Agriculture, Horticulture, Animal Husbandry and Other Line Departments

Junagadh Agricultural University planned and organized various extension education programmes/activities in coordination with different line departments of the state. The structural linkages exist under T & V system by constituting the technical committee at district, zonal and state level. The agricultural programmes of All India Radio as well as Doordarshan were finalized by such coordinated efforts. In AGRESCO, the officers of other departments are the members and they contribute in formulation of technical programmes as well as in finalizing the recommendations for the farmers. The functional linkages also exist under T & V system through bi-monthly workshops, pre-seasonal workshops, fortnightly training, diagnostic team, state level crop seminars/workshop, etc. The coordination exists in follow-up programmes as well as in planning of farm trials. For transfer of technologies to the farmers, the farmer's day, *krushi mela*, group discussion, film show, etc. were organized through collaborative efforts.

5.9 Orientation Training Programme

During the year under report, 10 scientists/teachers of the university were deputed for orientation training outside the Gujarat state to upgrade knowledge and skill for improving their faculty competence in respective disciplines.

5.10 *Krushi Mahotsav-2006*

It is important that the innovations in agricultural field should reach the farmers at the earliest. Revolution could be brought in agriculture only if such recommendations are used by the farmers in their fields and hence stress was laid that these recommendations reach the farmers through '*Krushi Rath*' along with agricultural scientists with their new recommendations. Meetings with farmers in villages were held by these scientists to appraise them of the new techniques and even their problems were solved in the meetings. With the help of transfer of technology, 250602 farmers were benefited as given below.

| No. | District | No. of taluka | No. of beneficiaries |
|-----|---------------|---------------|----------------------|
| 1 | Junagadh | 14 | 33556 |
| 2 | Rajkot | 14 | 36673 |
| 3 | Bhavnagar | 11 | 38661 |
| 4 | Amreli | 11 | 25321 |
| 5 | Surendranagar | 10 | 61986 |
| 6 | Jamnagar | 10 | 48260 |
| 7 | Porbandar | 3 | 6145 |
| | Total | 73 | 250602 |

CHAPTER - VI

STUDENTS WELFARE

6.1 Directorate of Students Welfare

The Directorate of Students Welfare was established with effect from 09.08.2004 after the formation of Junagadh Agricultural University. This office is looking after various students' activities/facilities including sports, cultural, fellowships, residential, recreation, health, adventure, counselling, placement etc. Moreover, dignitaries of different fields are invited to share their thoughts, experiences and views among staff and students. Dr. K.B. Jadeja continued as in-charge Director of Students Welfare since 21.05.2006.

6.2 Students Union

In the colleges of Junagadh Agricultural University, the Student Representative Council (SRC) were formed by Principal of respective colleges by selecting the sincere and leading students in sports, cultural, debate and adventure activities. The Principal also nominate the Chairman and staff advisors. Principal acts as the president of SRC. During 2006-07, 9 advisors were nominated in SRC of College of Agricultural Engineering & Technology, while 11 advisors and 13 students' representatives were nominated in SRC of College of Fisheries Science, Veraval.

6.3 Students Facilities

All the undergraduate and postgraduate students are provided with hostel facilities with an attached mess. A central library near the hostel area is utilised by students for reference, reading and net surfing. A sports complex also exists near the hostels and interested students utilize the facilities according to their choice of games. After inception of Junagadh Agricultural University two modern volleyball grounds are prepared surrounded with fencing and flood light facilities. During the period under the report, basketball ground as per the new measurement is also prepared.

A Student Counselling & Placement Cell is working in the university. Campus interviews were arranged for Agriculture faculty, through which six students in State Bank group and nine students in Pest Control India were selected. While, 51 students of Agricultural Engineering & Technology faculty were selected in private sector through Placement Cell.

6.4 Physical Education Programme

1. Inter Collegiate Sports and Cultural Activities

During the year 2006-07, inter collegiate sports and cultural activities were organized as given here under.

| Sr. No. | Game/ Event | No. of players | Date of tournament | Host | Winner |
|--|---------------------|----------------|--------------------|---|--|
| 1. | Badminton | 5 | 02.09.06 | College of Agril. Engg. & Tech. | College of Agriculture |
| 2. | Volleyball | 11 | 02.09.06 | | College of Agriculture |
| 3. | Table Tennis | 4 | 30.09.06 | College of Fisheries Science | College of Fisheries Sci. |
| 4. | Debate | 6 | 30.09.06 | | College of Agril. Engg. & Tech. (Favour) |
| College of Agril. Engg. & Tech (Against) | | | | | |
| College of Agri. (Elocu.) | | | | | |
| 5. | Essay | 4 | 30.09.06 | College of Agriculture | |
| 6. | Weight lifting | 10 | 07.10.06 | College of Agril. Engg. & Tech. | College of Agriculture |
| 7. | Kabaddi | 12 | 07.10.06 | | College of Agriculture |
| 8. | Kho-Kho | 12 | 07.10.06 | | College of Agriculture |
| 9. | Chess | 5 | 23, 24, 25.11.06 | College of Agriculture | College of Agriculture |
| 10. | Basketball | 11 | 23, 24, 25.11.06 | | College of Agriculture |
| 11. | Cricket | 14 | 23, 24, 25.11.06 | | College of Agriculture |
| 12. | Culture Activities: | | | | |
| | (a) Drama | 7 | 15.02.07 | College of Agril. Engg. & Tech. | College of Agril. Engg. & Tech. |
| | (b) Fancy dress | 2 | 15.02.07 | | College of Agriculture (1 st) |
| | | | | | College of Agril. Engg. & Tech. (2 nd) |
| | (c) Mono acting | 2 | 15.02.07 | | College of Agriculture (1 st) |
| | | | | College of Fisheries Science (2 nd) | |
| 13. | Athletics | 15 | 16, 17.02.07 | College of Agriculture, | College of Agriculture |

2. Inter University Participation

- (a) Twenty one students participated in the events - volleyball, badminton and athletics in 8th All India Agricultural Universities Sports and Games Meet-2007 organised by Punjab Agricultural University held at Ludhiana during 23-26.02.2007.
- (b) From this year Sports and Cultural Meet of Gujarat State Agricultural Universities (GAUs) is also started. Accordingly 15 students participated in cultural, debate and essay competition held at AAU, Anand on 09.02.2007. Students of JAU secured first position in debate (Miss Sunita Meena), fancy dress (Dhirajsingh Rathore) and essay (Dhirajsingh Rathore).
- (c) The GAUs Sports Competition was organised by SDAU, Sardar krushinagar during 21-22.03.2007. Twenty nine students of JAU participated in this sports meet and secured second position in Kabaddi and Kho-Kho.

- (d) The university cricket team participated in Chimanbhai Patel All Gujarat Inter University Cricket Tournament organised by Sardar Parivar Colleges at Ahmedabad on 17.01.2007.

3. Adventure Activity

Students of College of Agriculture as well as College of Agricultural Engineering & Technology participated in Basic Rock Climbing Camp organised by the State Mountaineering Institute, Girnar, Junagadh.

6.5 NSS

The brief information about NSS activities carried out during 2006-07 in each college is as follows.

(1) College of Agriculture

The enrolled number of students was as under.

| Regular activity | | | Special Activity | | |
|------------------|-------|-------|------------------|-------|-------|
| Boys | Girls | Total | Boys | Girls | Total |
| 195 | 14 | 209 | 147 | 10 | 157 |

- Volunteers participated in “Wall Slogan” on 08.09.2006 World Literacy Day.
- Volunteers participated in “Pulse Polio Motivation” campaign arranged by Civil Hospital, Junagadh on 21-24.05.2006.
- Forty three volunteers participated in Cycle Rally to join in “Gir Mahotsav” on 02.06.2006 under the Celebration of *Pravasan* Year.
- All the volunteers participated in “Adolescent Quiz” on 05.08.2006 under health and development project.
- Thelasma Test and Blood Grouping Camp was organised on 27.12.2006 for all volunteers.

(2) College of Agricultural Engineering & Technology

The enrolled number of students was as under.

| Regular activity | | | Special Activity | | |
|------------------|-------|-------|------------------|-------|-------|
| Boys | Girls | Total | Boys | Girls | Total |
| 78 | 10 | 88 | 44 | 06 | 50 |

- A one day Vehicle Driving Licence Camp was organised in collaboration with RTO, Junagadh on 02.12.2006, through which 300 students/staff members got licence very comfortably.
- Thelasma Test and Blood Grouping Camp was organised on 12.01.2007 in collaboration with Sarvoday Blood Bank, Junagadh in which all new students participated.
- A special camp was arranged at Mota Kajaliala (Taluka- Vanthali) from 22.03.2007 to 31.03.2007, in which 100 volunteers participated in two batches. The activities like village sanitation, women education, water

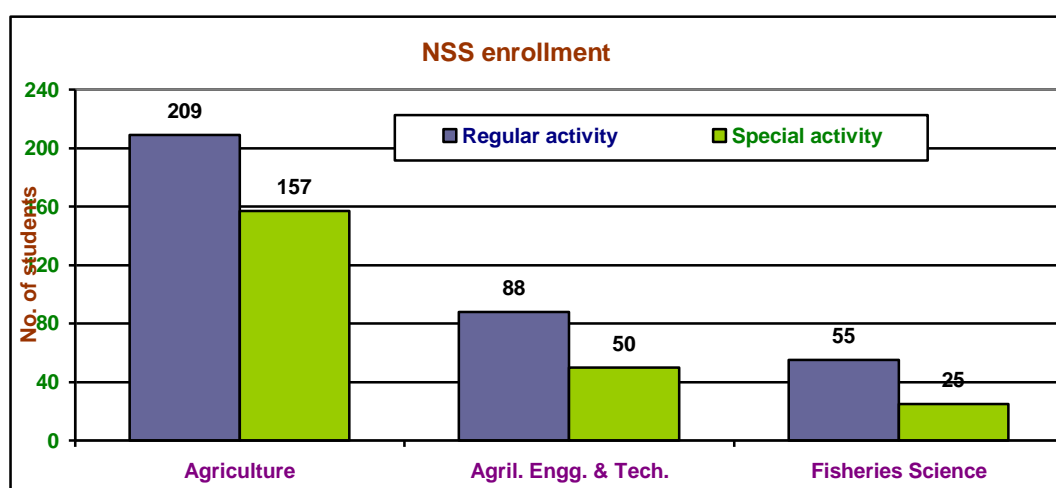
storage, environment & health awareness etc. were carried out by volunteers. The volunteers visited local farms and got information about mango and sapota cultivation.

(3) College of Fisheries Science, Veraval

The enrolled number of students was as under.

| Regular activity | | | Special Activity | | |
|------------------|-------|-------|------------------|-------|-------|
| Boys | Girls | Total | Boys | Girls | Total |
| 49 | 06 | 55 | 21 | 04 | 25 |

- Second phase training to HIV Core Group was arranged on 19.08.2006.
- Forty volunteers participated in primary work of HIV AIDs Core Group and in “Prabhat Pheri” on 15.08.2006.



(4) NSS Activities at University Level

- Programme Coordinator (NSS) participated in a YUVA (Youth United for Victory on Aids) programme launched by Ministry of Youth Affairs and Sports, Government of India held at New Delhi on 27.06.2006.
- Twenty six volunteers and students of Horticulture School participated in a *Shram Yagna* at Vagheshwari Talav, Junagadh along with Satyam Seva Yuvak Mandal on 25.06.2006. Hon'ble Vice Chancellor Dr. B.K. Kikani and Hon. Minister of Irrigation, Govt. of Gujarat Shri Ratibhai Sureja also attended this programme to motivate the students.

6.6 NCC

At present the NCC activities are not being conducted by the university. College of Agriculture has requested to NCC officer to reactivate NCC programme.

6.7 Students' Magazine

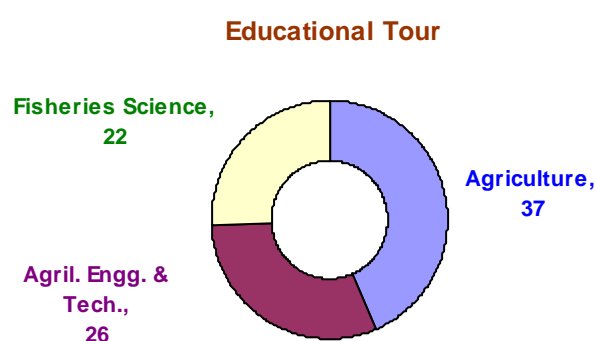
The College of Agriculture has published the College Magazine during this period.

6.8 Educational Tour

The colleges of Junagadh Agricultural University are conducting the educational tour under RAWE programme every year. The aim of this tour is to show directly the location specific activities of research and education of different centres.

The educational tour schedule of different colleges were as under:

| No. | College | No. of students | Period |
|-----|-----------------------------------|-----------------|----------------------|
| 1. | College of Fisheries Science | 22 | 02.05.06 to 22.05.06 |
| 2. | College of Agriculture | 37 | 07.11.06 to 27.11.06 |
| 3. | College of Agril. Engg. and Tech. | 26 | 05.02.07 to 25.02.07 |



6.9 Financial Assistance to Students

In Junagadh Agricultural University following scholarships are awarded to the students.

1. National Talent Scholarship (NTS)

Awarded to students of other states nominated by ICAR on the basis of merit and written test @ Rs. 12000 per student per annum. During the period, 12 students received this scholarship.

2. Merit cum Means Scholarship (MCM)

Awarded by ICAR to five meritorious students in each faculty. The amount of this scholarship is Rs. 2040 per student per annum. During the period not a single student received this scholarship.

3. JAU UG Scholarship

Awarded by Junagadh Agricultural University to five girl students in each faculty @ Rs. 6000 per student per annum. If girl candidates are not available, it is awarded to economically backward students on the basis of merit.

4. JAU PG Scholarship

Awarded by Junagadh Agricultural University on the basis of merit to four students for Master degree @ Rs. 12000 and two students for Ph.D. @ Rs. 18000 per student per annum.

5. Merit & Poor Merit Scholarship

This scholarship is awarded to economically backward students by the Department of Social Welfare of the state @ Rs. 720 per student per year. During the report period, 24 students received this scholarship.

6.10 Students Discipline

The high standards, discipline, noble character build up, sportsman-spirit, harmony and unity are developed among students through sports, cultural, spiritual, NSS and adventurous activities. No serious incidence of indiscipline was recorded during the year.

6.11 Other Activities

(A) Medals Awarded in Second Convocation

The second convocation of Junagadh Agricultural University was held on 02-02-2007 in which 37 medals were awarded to meritorious students as mentioned below.

❖ Chancellor Gold Medal

1. Awarded to Shri Hirpara Vipulkumar Hirjibhai for overall best performance at Post Graduate level in Agriculture faculty for the year 2005-06.
2. Awarded to Miss Patel Mitalben Bhikhubhai for overall best performance at Post Graduate level in Agricultural Engineering & Technology faculty for the year 2005-06.

❖ Vice Chancellor Gold Medal

1. Awarded to Shri Rahul Tiwari for overall best performance in Agricultural faculty for the year 2004-05.
2. Awarded to Shri Asit Baran Mazumdar for overall best performance in Agricultural Engineering & Technology faculty for the year 2004-05.
3. Awarded to Shri Solanki Jitesh Babubhai for overall best performance in Fisheries Science faculty for the year 2004-05.

❖ Donor's Gold Plated Silver Medal

Faculty of Agriculture

1. Late Devang B. Bhatt and Rajesh D. Kuchhadiya gold plated silver medal was awarded to Shri Ajay Singh for the highest GPA in Agril. Economics in B.Sc. (Agri.) degree course for the year 2004-05.
2. Shrimati Ushaben B. Bhatt and Shri B.U. Bhatt gold plated silver medal was awarded to Shri Ajay Singh for the highest OGPA in B.Sc. (Agri.) degree course for the year 2004-05.

3. Shri Jerambhai Veljibhai Timbadiya, Kheti Vikas Kendra, Junagadh gold plated silver medal was awarded to Shri Ajay Singh for the highest GPA in the subject of Agril. Entomology and Plant Pathology in B.Sc. (Agri.) degree course for the year 2004-05.
4. Akshay Seed Tech Co., Junagadh gold plated silver medal was awarded to Shri Ajay Singh for the highest OGPA in B.Sc. (Agri.) degree course for the year 2004-05.
5. Dr. T.L. Dholariya gold plated silver medal was awarded to Shri Ajay Singh for the highest GPA in the subject of Agril. Botany, Plant Breeding & Genetics in B.Sc. (Agri.) degree course for the year 2004-05.
6. Western Agri. Seeds (P) Ltd. gold plated silver medal was awarded to Shri Ajay Singh for the highest GPA in the subject of Plant Breeding & Genetics in B.Sc. (Agri.) degree course for the year 2004-05.
7. Late Shri Ahir Rambhai Jivabhai Der gold plated silver medal was awarded to Shri Ajay Singh for the highest GPA in the subject of Agril. Chemistry & Soil Science in B.Sc. (Agri.) degree course for the year 2004-05.
8. Late Shri Shersiya Alibhai Jalalabhai gold plated silver medal was awarded to Shri Ajay Singh for the highest GPA in the subject of Agril. Entomology and Plant Pathology in B.Sc. (Agri.) degree course for the year 2004-05.
9. Shri B.J. Jadeja gold plated silver medal was awarded to Shri Ajay Singh for the highest GPA in the subject of Agronomy in B.Sc. (Agri.) degree course for the year 2004-05.
10. Agril. Scientist Late Prof. Vallabhbhai J. Patel gold plated silver medal was awarded to Shri Ajay Singh for the highest GPA in the subject of Plant Breeding & Genetics (including Botany) and Plant Physiology in B.Sc. (Agri.) degree course for the year 2004-05.
11. Dr. P.A. Bhalani gold plated silver medal was awarded to Shri Ajay Singh for the highest GPA in the subject of Agril. Entomology in B.Sc. (Agri.) degree course for the year 2004-05.
12. Late Shri Gordhanbhai G. Patel gold plated silver medal was awarded to Shri Ajay Singh for the highest GPA in the subject of Horticulture in B.Sc. (Agri.) degree course for the year 2004-05.
13. Shri Laljibhai H. Ghelani gold plated silver medal was awarded to Shri Ajay Singh for the highest GPA in the subject of Agronomy & Soil Science in B.Sc. (Agri.) degree course for the year 2004-05.

14. Late Dr. V. J. Vora gold plated silver medal was awarded to Shri Pethani Bharatkumar Govindbhai for the highest GPA in Agril. Entomology in M.Sc. (Agri.) degree course for the year 2005-06.

Faculty of Agricultural Engineering and Technology

15. Dr. J.S. Patel memorial ISAE gold plated silver medal was awarded to Shri Kunadiya Bhaveshkumar Vinodbhai for the highest OGPA in B.Tech. (Agril. Engg.) degree course for the year 2004-05.
16. Shri M.M. Patel (Morbi) Ex. Agricultural Engineer gold plated silver medal was awarded to Shri Kunadiya Bhaveshkumar Vinodbhai for the highest OGPA in B.Tech. (Agril. Engg.) degree course for the year 2004-05.
17. Late Smt. Kamladevi Ugamraj Mehta gold plated silver medal was awarded to Shri Asit Baran Mazumdar for the highest GPA in the subject of Farm Machinery & Power in B.Tech. (Agril. Engg.) degree course for the year 2004-05.
18. Param Poojya Pragdasbapa's Ramvadi No. 1 Annakshetra Trust (Junagadh) & Atmiya Anantharsh Bhagvandas Memorial Trust (Juna Manka) Dist. Patan (NG) gold plated silver medal was awarded to Shri Asit Baran Mazumdar for the highest GPA in the subject of Agril. Process Engineering in B.Tech. (Agril. Engg.) degree course for the year 2004-05.
19. Late Shrimati Kamlaben Jagjivanbhai Gondhiya, Shilpin Electronics, Junagadh gold plated silver medal was awarded to Shri Kunadiya Bhaveshkumar Vinodbhai for the highest GPA in the subject of Renewable Energy in B.Tech. (Agril. Engg.) degree course for the year 2004-05.
20. CAET Alumni Association, Junagadh gold plated silver medal was awarded to Shri Kunadiya Bhaveshkumar Vinodbhai for the highest GPA in the subject of Soil & Water Engineering in B.Tech. (Agril. Engg.) degree course for the year 2004-05.

Faculty of Fisheries Science

21. Late Shri Dharmdas Choithram Gagvani gold plated silver medal was awarded to Shri Solanki Jitesh Babubhai for the highest OGPA in B.F.Sc. degree course for the year 2004-05.
22. The Sea Food Exporters Association of India, Veraval gold plated silver medal was awarded to Shri Solanki Jitesh Babubhai for the highest OGPA in B.F.Sc. degree course for the year 2004-05.

Medals Awarded to GAU Students at the Second Convocation of JAU

1. Vice Chancellor gold medal was awarded to Shri Kaushlendra for overall best performance in Agricultural Engineering & Technology faculty for the year 2002-03.
2. Vice Chancellor gold medal was awarded to Shri Kotadia Hasanali Shahbuddin for overall best performance in Fisheries Science faculty for the year 2002-03.
3. Dr. J.S. Patel memorial ISAE gold plated silver medal was awarded to Shri Kaushlendra for the highest OGPA in B.Tech. (Agril. Engg.) degree course for the year 2002-03.
4. Shri M.M. Patel (Morbi) Ex. Agricultural Engineer gold plated silver medal was awarded to Shri Kaushlendra for the highest OGPA in B.Tech. (Agril. Engg.) degree course for the year 2002-03.
5. Shri Khedut Sahkari Khand Udyog Mandali Ltd. gold plated silver medal was awarded to Shri Kamani Jeetendrakumar Mansukhlal for the highest GPA in the subject of Agronomy in B.Sc. (Agri.) degree course for the year 2002-03.
6. Dr. D.H. Chavda gold plated silver medal was awarded to Shri Saini Kunal Mahendrapalsinh for the highest GPA in the subject of Plant Breeding in B.Sc. (Agri.) degree course for the year 2002-03.
7. Dr. Ranchhodbhai M. Patel gold plated silver medal was awarded to Shri Saini Kunal Mahendrapalsinh for the highest GPA in the subject of Plant Breeding & Genetics B.Sc. (Agri.) degree course for the year 2002-03.
8. Late Devang B. Bhatt and Rajesh D. Kuchhadiya gold plated silver medal was awarded to Shri Hirpara Vipulkumar Hirjibhai for the highest GPA in Agri. Economics in B.Sc. (Agri.) degree course for the year 2002-03.
9. Late Prof. R.J. Patel gold plated silver medal was awarded to Shri Hirpara Vipulkumar Hirjibhai for the highest GPA in Agril. Economics in B.Sc. (Agri.) degree course for the year 2002-03.
10. Late Shri Dharmdas Choithram Gagvani gold plated silver medal was awarded to Shri Suresh Kumar Verma for the highest OGPA in B.F.Sc. degree course for the year 2002-03.

(B) Spiritual and National Spirit Programmes

- A welcome programme to motivate the cycle rally of soldier of 18, Rajputana Rifles was arranged on 24.08.2006.
- The lessons of a spiritual programme entitled “Self Management and Easy Rajyog” were arranged on 11-12.09.2006 at Ladies Community Hall. This was a part of the self management with meditation programme

of Prajapita Bhrahma Kumari Ishvariya Vishvavidyalay, Mount Abu held on 24-28.08.2006.

- A special talk on “*Gauvigyan Adhunik Paripexama*” (Medicinal use of urine, milk, ghee, gobar of cow in modern age) was delivered by Dr. Hitesh Jani, a faculty member of Ayurved University, Jamnagar on 30.08.2006.
- The students and staff members of the university enthusiastically participated in mass singing of our national song “Vande Mataram” on 07.09.2006.
- A programme on “*Bharat Ko Jano, Bharat Ko Mano, Bharat Ke Bano, Bharat Ko Banao*” was arranged by college students in collaboration with DSW on 09.09.2006 at ‘Vinay’ hostel.

(C) Activities Published in News Papers

- i) A welcome programme to motivate Cycle Rally of Soldiers in JAU, in Akila, Sandesh, Saurashtra Bhumi and Kesari, Date 25.08.2006.
- ii) A special talk on “*Gauvigyan Adhunik Paripexama*” in JAU, in Kesari, Date 01.09.2006; Jay Hind, Date 02.09.2006; Sandesh, Date 04.09.2006.
- iii) Thelasamia Test & Blood Grouping Camp in JAU, in Fulchhab, Date 03.01.2007; Sandesh, Date 07.01.2007.
- iv) Inter College Athletic-cultural Programme, in Fulchhab, Date 23.02.2007; Sandesh, Date 23.02.2007; Ajkal, Date 26.02.2007.
- v) Inter Agril. University (Gujarat) Cultural-Debate-Essay Competition, in Ajkal, Date 22.02.2007; Fulchhab, Date 23.02.2007.
- vi) 8th Inter Agril. University Sports Meet-2007, in Sandesh, Date 23.02.2007

(D) Students Training Class

A Spoken English Class for university students was conducted during 12-26.11.2006 with an aim to improve language knowledge, in which 66 students participated.

CHAPTER - VII

ESTATE MANAGEMENT

7.1 Estate Department

Under the guideline and direction of Vice Chancellor, the Executive Engineer, Deputy Engineer and Junior Engineers are working for construction & its related works as well as repairs & maintenance of buildings & roads at campus level and at sub-centres of the university. Shri J.D. Hadiyal is working as the Executive Engineer of Junagadh Agricultural University.

The main function of this department is water supply, maintenance of drainage system, street light, electrification, repairing of electrical faults, maintenance & repairs of the university office buildings, residential quarters, internal roads, etc. The office of the Executive Engineer is also working as a custodian of the university properties. Besides this, maintenance of university guest house and allotment of quarters to university employees/officers is also done by this office.

7.2 Construction Committee

A committee constituted for the purpose of construction work during 2006-07 was as given hereunder.

| Sr. No. | Name | Designation | Status |
|----------------|---------------------|---|---------------|
| 1. | Dr. B.K. Kikani | Vice Chancellor | Chairman |
| 2. | Dr. D.B. Kuchhadiya | Director of Research & Dean PG Studies | Member |
| 3. | Dr. N.C. Patel | Dean, Agril. Engineering & Technology Faculty | Member |
| 4. | Shri P.R. Jadeja | Account Officer-cum-Comptroller | Member |
| 5. | Shri J.D. Hadiyal | Executive Engineer | Secretary |

Six meetings were held by the committee on the following dates.

| Sr. No. | Meeting No. | Date | Place | Chairman |
|----------------|--------------------|-------------|--------------|-----------------|
| 1. | Seventh | 06.05.2006 | Junagadh | Dr. B.K. Kikani |
| 2. | Eighth | 03.08.2006 | Junagadh | Dr. B.K. Kikani |
| 3. | Ninth | 20.09.2006 | Junagadh | Dr. B.K. Kikani |
| 4. | Tenth | 30.10.2006 | Junagadh | Dr. B.K. Kikani |
| 5. | Eleventh | 05.01.2007 | Junagadh | Dr. B.K. Kikani |
| 6. | Twelfth | 31.01.2007 | Junagadh | Dr. B.K. Kikani |

7.3 Quarters Allotment Committee

A committee constituted for the allotment of quarters during 2006-07 was as given below.

| Sr. No. | Name | Designation | Status |
|---------|---------------------|---|-----------|
| 1. | Dr. D.B. Kuchhadiya | Director of Research & Dean PG Studies | Chairman |
| 2. | Dr. D.B. Kuchhadiya | Registrar | Member |
| 3. | Dr. A.M. Parakhia | Director of Extension Education | Member |
| 4. | Dr. P.G. Butani | Dean, Agriculture Faculty | Member |
| 5. | Dr. N.C. Patel | Dean, Agril. Engineering & Technology Faculty | Member |
| 6. | Shri J.D. Hadiyal | Executive Engineer | Secretary |

One meeting was held by the committee during the year under report.

| Sr. No. | Meeting No. | Date | Place | Chairman |
|---------|-------------|------------|----------|---------------------|
| 1. | First | 07.07.2006 | Junagadh | Dr. D.B. Kuchhadiya |

7.4 Construction Works

Junagadh Agricultural University is aided by the Government of Gujarat. The Indian Council of Agricultural Research, New Delhi as well as many other agencies are also allotting grant and funds for the purpose of Education, Research and Extension Education.

Details of expenditure for construction work during the year 2006-07 under different budget heads are given hereunder.

| Sr. No. | Budget Head | Name of Work | Expenditure (Rs.) |
|-------------------|-------------|---|-------------------|
| PLAN WORKS | | | |
| 1. | 1534 | Minor Original Works | 10,34,988 |
| 2. | 10501 | Construction of Adm. Building for VC at Junagadh | 53,52,450 |
| 3. | 10502 | Recarpeting of Existing Road at Main Campus at Junagadh | 30,37,535 |
| 4. | 10503 | Modernization of Biochemistry Building at Junagadh | 10,52,642 |
| 5. | 10504-01 | Expansion of Health Centre at JAU, Junagadh | 15,47,336 |
| 7. | 10505-01 | Providing Streetlight Facility to Main Campus at Junagadh | 9,05,837 |
| | 10505-02 | Renovation of Auditorium Building at Junagadh | 17,19,595 |
| 8. | 10506 | Expansion of Community Hall at Junagadh | 21,42,567 |
| 9. | 10507 | Renovation of Existing SSK Building at Junagadh | 5,66,861 |
| 10. | 10508-01 | Construction of Agricultural Technology Information Centre Building at Junagadh | 24,65,878 |

| Sr. No. | Budget Head | Name of Work | Expenditure (Rs.) |
|---------------------------|--------------------|--|--------------------------|
| 11. | 10509 | Construction of Rat-proof Godown for Pulse Research Station, Junagadh | 1,12,745 |
| 12. | 10510 | Construction of Rat-proof Godown for Cotton Research Station, Junagadh | 1,02,142 |
| 13. | 10511 | Construction of Farm Pond and New Bore-well at Amreli | 1,92,980 |
| 14. | 10512 | Construction of Farm Compound Wall at Amreli | 4,77,465 |
| 15. | 10513-01 | Renovation of Snowdam at Sagadividi, Junagadh | 3,98,276 |
| 16. | 10513-02 | Renovation of Store Godown and Fodder Shed at Sagadividi, JAU, Junagadh | 6,64,195 |
| 17. | 10514 | Construction of Rat-proof Godown for Botany Department at Motibaug, JAU, Junagadh | 77,514 |
| 18. | 10515 | Adjoining Civil Work for VC's Bungalow at JAU, Junagadh | 1,86,674 |
| 19. | 10516 | Construction of New Well for Grass-land Research Station, JAU, Dhari | 4,14,800 |
| 20. | 10517-02 | Construction of Office-cum-Laboratory Building at JAU, Nana Kandhasar | 5,31,653 |
| 21. | 10518-01 | Construction of Farm Pond at JAU, Jam Khambhalia | 65,350 |
| 22. | 10518-02 | Construction of Rat-proof Godown at JAU, Jam Khambhalia | 1,22,558 |
| 23. | 10519 | Construction of Office-cum-Laboratory Building at JAU, Junagadh | 12,42,612 |
| 24. | 10520 | Renovation of Cattle Shed at Cattle Breeding Farm, JAU, Junagadh | 7,76,311 |
| 25. | 10521 | Construction of Fish Pond and Hatchery Shed at Junagadh | 9,82,665 |
| 26. | 10600 | Classified Works at Campus/Farm | 8,09,054 |
| ICAR – WORKS | | | |
| 1. | 2002-05 | Construction of Openwell for Millet Farm at Jamnagar | 5,31,084 |
| 2. | 2704-02 | Construction of Farmers Hostel at Junagadh | 21,73,612 |
| 3. | 2704-13 | Construction under KVK Project at Khapat | 32,26,073 |
| 4. | 2704-14 | Construction under KVK Project at Amreli | 31,28,440 |
| 5. | 2704-18 | Construction under KVK Project at Nana Kandhasar | 39,03,464 |
| 6. | 17500 | Construction of Ladies Hostel for Fisheries College at Veraval | 18,65,950 |
| 7. | 21501 | Renovation and Repairing of Hostel Academic Block of Agriculture College at Junagadh | 3,72,515 |
| 8. | 21502 | Renovation and Repairing of Hostel Academic Block of CAET at Junagadh | 2,49,775 |
| 9. | 21503 | Renovation and Repairing of Hostel Academic Block of Fisheries College at Veraval | 74,992 |
| OTHER AGENCY WORKS | | | |
| 1. | 18127-02 | Construction of Food Testing Laboratory at Junagadh | 11,18,153 |
| 2. | 18127-02 | Construction of Seed Godown for Mega Seed Project at Junagadh | 13,99,320 |

| Sr. No. | Budget Head | Name of Work | Expenditure (Rs.) |
|----------------|--------------------|---|--------------------------|
| 3. | 18127-02 | Construction of Implement Shed, Threshing Floor and Dryshed for Oilseeds Section at Junagadh | 2,58,106 |
| 4. | 18127-02 | Renovation of Store Godown for Khapat | 71,586 |
| 5. | 18127-02 | Renovation of Training Hall of Old Farm Engineering Department at Junagadh | 3,47,890 |
| 6. | 18127-02 | Construction of Floor cum Dryshed for Sagadividi, Agronomy and Cotton Section at Junagadh | 2,04,738 |
| 7. | 18127-02 | Construction of Got Sample Store (conditional) in Old Farm Engineering Department at Junagadh | 3,71,879 |
| 8. | 18127-02 | Renovation of Godown for of Pulses Section at Junagadh | 98,302 |
| 9. | 18127-02 | Renovation of Godown for of Wheat Section at Junagadh | 98,502 |
| 10. | 18127-02 | Construction of Extension of Seed Processing Storage Unit for Vegetable Section at Junagadh | 4,89,689 |
| 11. | 18127-02 | Seed production in Agriculture and Horticulture Crops | 5,47,785 |

CHAPTER - VIII

FINANCE AND ACCOUNTS

8.1 General

Junagadh Agricultural University has become functional from 01.05.2004 after the bifurcation of Gujarat Agricultural University into four separate Universities. The arrangement has been made for university finance administration as per the Resolution Chapter-11. The office work of the Accounts Officer-cum-Comptroller has been started under the control of Vice Chancellor.

During the period under the report, Shri P.R. Jadeja as in-charge Accounts Officer-cum-Comptroller looked after the responsibility of budget, accounts, internal audit and physical verification of stores etc.

The management of funds started separately after establishment of Junagadh Agricultural University. The funds were obtained from the State Government, Central Government and Other Agencies. During the period of report, the State Government provided the budget for the plan and non-plan separately for the university.

8.2 Budget

The State Government sanctioned Rs. 992.40 lakhs under plan budget and Rs. 2277.22 lakhs under non-plan budget. The revised non-plan budget was put up as per the need of the university, but State Government has not sanctioned additional grant and hence, there was a deficit of Rs. 10.87 lakhs.

8.3 Audit

The university is entrusted with the work of Internal Audit, Local Fund Audit and AG Audit.

During the report period, the Local Fund, Junagadh has done the audit work for the period 2004-05 and settled the primary audit objections.

The audit work started by the AG Office, Rajkot for the financial year 2004-05 of the university.

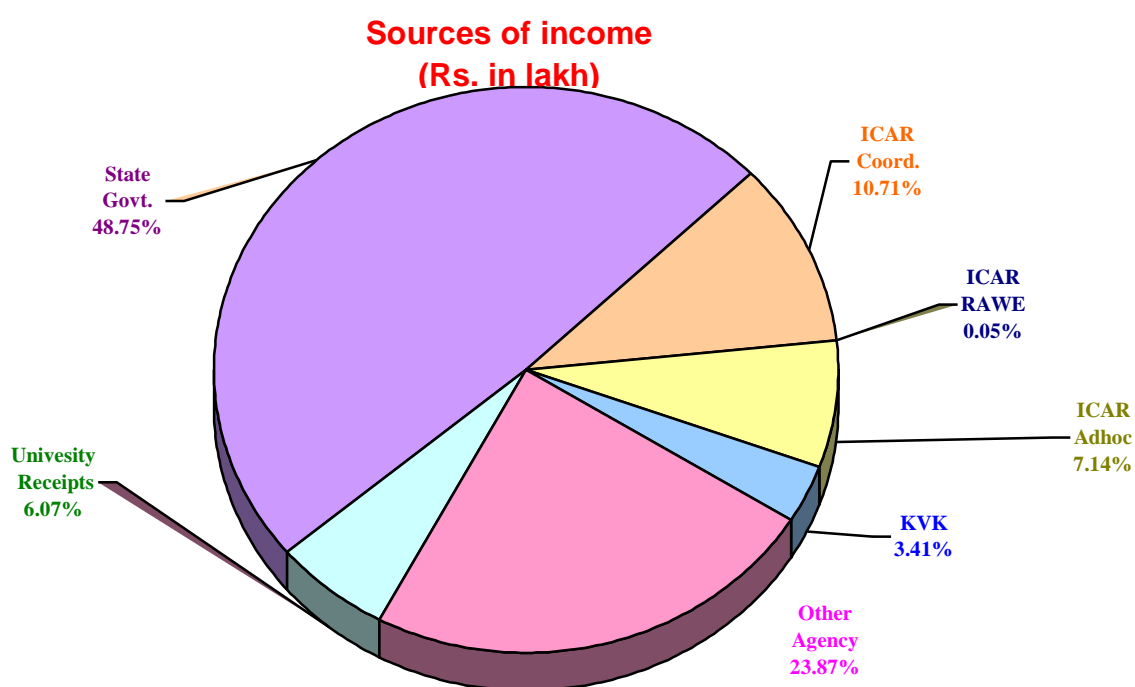
The internal audit was done by the internal staff of the university.

8.4 Sources of Income and Expenditure

The statement showing the details of source of income and expenditure of the university for the year 2006-07 is given below.

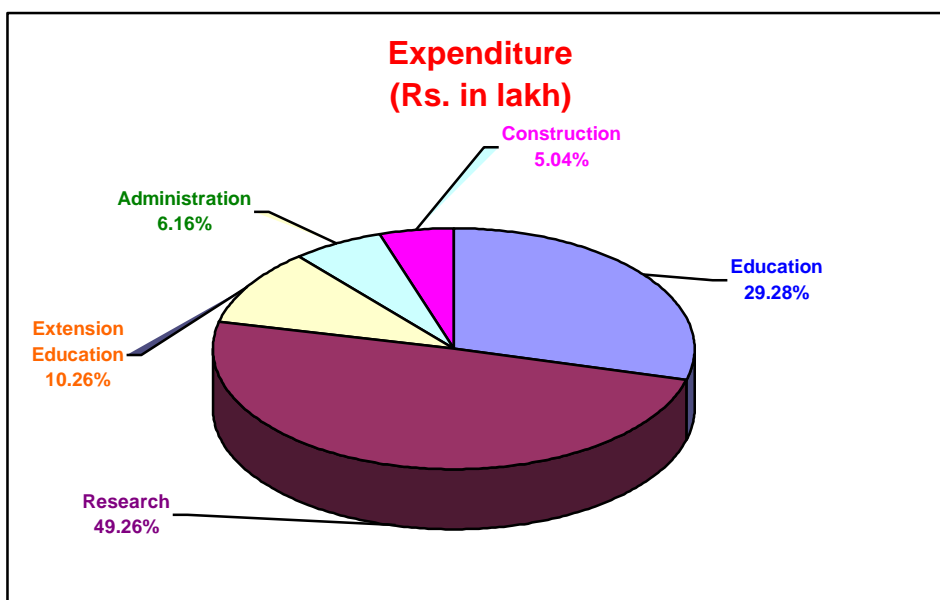
Source-wise income (Rs. in lakh)

| Sr. No. | Details | Opening balance | Grant received | Total grant | Percentage of total grant |
|---------|---------------------|-----------------|----------------|----------------|---------------------------|
| 1. | State Govt. | (-) 496.62 | 3270.39 | 2773.77 | 48.75 |
| 2. | ICAR Coord. | 255.44 | 354.14 | 609.58 | 10.71 |
| 3. | ICAR RAWE | 0.94 | 2.00 | 2.94 | 0.05 |
| 4. | ICAR Adhoc | 13.32 | 393.00 | 406.32 | 7.14 |
| 5. | KVK | (-) 24.079 | 218.60 | 193.81 | 3.41 |
| 6. | Other Agency | 284.15 | 1073.92 | 1358.07 | 23.87 |
| 7. | University Receipts | 0.00 | 345.24 | 345.24 | 6.07 |
| | Total | 32.44 | 5657.29 | 5689.73 | 100.00 |



The Details of Expenditure (Rs. in lakh)

| Sr. No. | Details | Expenditure | Percentage of total expenditure |
|---------|----------------------------|----------------|---------------------------------|
| 1 | Education | 1631.51 | 29.28 |
| 2 | Research | 2744.78 | 49.26 |
| 3 | Extension Education | 571.54 | 10.26 |
| 4 | Administrative Expenditure | 343.47 | 6.16 |
| 5 | Construction | 280.58 | 5.04 |
| | Total | 5571.88 | 100.00 |



8.5 Physical Store Verification

The university was not given permanent staff for Physical Store Verification after its establishment, but looking to necessity, it was started with the internal arrangement of staff

8.6 Pension

The pension cases on account of Superannuation, Retirement, Voluntary Retirement of the officers/employees from the university settled granting the pension/commuted pension and gratuity. Total 47 cases were sanctioned during the year and the payment was made to the staff/officers for their benefits of retirement.

8.7 Provident Fund

The financial arrangement for provident fund of staff was done as per the sanction received from the State Government with the help of District Treasury with PL Accounts. The new PF accounts were opened for newly appointed employees and 354 cases for Part-final Advance were sanctioned and payments made during the year under the report. Twenty five cases for the PF final payment were sanctioned and payments made during the year.

Non-Plan, Plan, ICAR and Other Agency Schemes during 2005-06

| No. | B.H. | Name of scheme | Centre |
|-------------------------------|---------|--|----------|
| Govt. Non-Plan Schemes | | | |
| 1. | 3126-01 | Establishment of Agril. College | Junagadh |
| 2. | 3226 | Scheme of Design of Experiment | Junagadh |
| 3. | 4500 | Vice Chancellor Office & Registrar Section | Junagadh |
| 4. | 4501 | Director of Research Section | Junagadh |
| 5. | 4502 | Comptroller Section | Junagadh |
| 6. | 4503 | Executive Engineer Office | Junagadh |
| 7. | 4504 | Director of Students Welfare Section | Junagadh |

| No. | B.H. | Name of scheme | Centre |
|-----|---------|---|---|
| 8. | 4505 | Director of Extension Education Section | Junagadh |
| 9. | 4506 | Medical Office | Junagadh |
| 10. | 4510 | Maintenance & Repairs to University Buildings | Junagadh |
| 11. | 4511 | House Rent Receipt | Junagadh |
| 12. | 4801-A | Award of Fellowship College of Agril. Engg. & Tech. | Junagadh |
| 13. | 4807 | Inter College Cultural Activities, College of Agril. Engg. & Tech. | Junagadh |
| 14. | 4862 | Inter College/University Sport Tournament, College of Agriculture/Agril. Engg. & Tech./Fisheries Science | Junagadh, Veraval |
| 15. | 4862-01 | Inter Agril. School's Sports | Junagadh, Halvad |
| 16. | 4862-02 | Inter Sport Tournament, LITC | Junagadh |
| 17. | 5002 | Research in Bajra | Jamnagar, Mahuva |
| 18. | 5004 | Research in Wheat | Junagadh, Mangrol |
| 19. | 5006 | Research in Jowar | Targhadia |
| 20. | 5007 | Scientific Works for Improvement of Cereals | Junagadh |
| 21. | 5008 | Oilseed Research | Junagadh, Amreli, Jamnagar, Kodinar, Manavadar |
| 22. | 5009 | Strengthening of Research in Cotton, Investigation of Fibre Crops other than Cotton, Development of Remie Fibre | Amreli, Khapat, Junagadh |
| 23. | 5011 | Research in Sugarcane | Kodinar |
| 24. | 5012 | Research in Grasses | Dhari |
| 25. | 5013 | Strengthening of Research in Vegetable (Tomato) | Junagadh |
| 26. | 5014 | Research and Improvement in Fruit Crops | Mangrol, Mahuva, Junagadh |
| 27. | 5018 | Research Studies in Agril. Economics | Junagadh |
| 28. | 5020 | Research in Agril. Chemistry & Soil Science | Junagadh |
| 29. | 5025 | Mechanized Commercial Farm | Junagadh |
| 30. | 5026 | Research in Plant Diseases | Junagadh |
| 31. | 5042 | Strengthening of Dry Farming Research Station | Ratia, Targhadia, Jam Khambhalia, Vallabhipur, Nana Kandhasar, Dhari, Sagdividi, Khapat, Junagadh |
| 32. | 5044 | Expansion of Plant Pathology Research | Junagadh |
| 33. | 5046 | Study of Biology & Control of Weeds | Junagadh |
| 34. | 5073 | Research in Agricultural Engineering | Junagadh |
| 35. | 5075 | Establishment of Seed Technology Cell | Junagadh |
| 36. | 5106 | Strengthening of Departments by Providing Additional Equipments in View of Semester System | Junagadh |
| 37. | 5116 | Establishment of Sardar Smruti Kendra | Junagadh |

| No. | B.H. | Name of scheme | Centre |
|---------------------------|----------|--|---|
| 38. | 5228 | Project for Agricultural School | Junagadh, Halvad, Dhari |
| 39. | 5252 | Farm Mechanic-cum-Artisan Centre | Junagadh |
| 40. | 5302 | Research in Cattle Breeding Farm | Junagadh |
| 41. | 5353 | Livestock Research Station | Junagadh |
| 42. | 5711 | Establishment of Library | Junagadh |
| 43. | 5810 | Project for Heath Centre | Junagadh |
| 44. | 6110-01 | Strengthening of P.G. Teaching | Junagadh |
| 45. | 6119 | Instructional Farm at Agril. College | Junagadh |
| 46. | 6221 | Farm Advisory Service | Junagadh |
| 47. | 6228-01 | Establishment of School of Bakery | Junagadh |
| 48. | 6316 | Research of Bull Calves at Depot Attached to Cattle Breeding Farm | Junagadh |
| 49. | 6502-01 | Department of Farm Engineering | Junagadh |
| 50. | 6503-03 | Department of Horticulture | Junagadh |
| 51. | 6503-04 | Department of Bio-chemistry | Junagadh |
| 52. | 7082 | NARP | Junagadh, Jam Khambhalia, Jamnagar, Dhari |
| 53. | 7115 | Establishment of College of Agriculture | Junagadh |
| 54. | 7228-01 | Strengthening of Extension, School of Baking | Junagadh |
| 55. | 7253 | Establishment of Livestock Inspector Training Centre | Junagadh |
| 56. | 7401 | Fisheries Research Scheme | Okha |
| 57. | 7402 | Fisheries Research Scheme | Sikka |
| 58. | 8126-07 | Fisheries Research Scheme | Veraval |
| 59. | 9091 | NARP Phase-II | Junagadh, Jonpur |
| 60. | 19002 | Pension & Gratuity to Retired University Employees | Junagadh |
| Govt. Plan Schemes | | | |
| 1. | 10001 | Ear Marked Information Technology | Junagadh |
| 2. | 10002 | Strengthening of Research in Millet | Jamnagar |
| 3. | 10006 | Strengthening of Research in Sorghum | Targhadia |
| 4. | 10007 | Strengthening of Research in Pulses | Junagadh |
| 5. | 10008 | Strengthening of Research in Oilseeds (Groundnut) | Junagadh, Manavadar |
| 6. | 10009 | To Establish Centres of Excellence for Cotton Research | Junagadh, Amreli, Ratia |
| 7. | 10013 | Research in Vegetable Crops | Junagadh |
| 8. | 10027 | Management of Salt Affected Soils & Poor Quality of Under Ground Water | Junagadh |
| 9. | 10044-01 | Research in Bio-technology | Junagadh |
| 10. | 10078 | Strengthening of Research in Dry Farming | Targhadia, Ratia |
| 11. | 10092 | Strengthening of Tissue Culture Research & Development | Junagadh |
| 12. | 10093 | Project on Fertigation in Horticultural Crops | Junagadh |
| 13. | 10094 | Research for Integrated Pest management in Fruit Crops | Junagadh |

| No. | B.H. | Name of scheme | Centre |
|------------|-------------|--|--------------------|
| 14. | 10095 | Strengthening of Horticulture Research & Development Activities | Junagadh |
| 15. | 10096 | Research on Micro-irrigation System in Saurashtra Region | Junagadh |
| 16. | 10101-01 | Centre of Excellence on Soil and Water Management | Junagadh |
| 17. | 10101-02 | Centre of Excellence on Soil and Water Management | Targhadia |
| 18. | 10101-03 | Centre of Excellence on Soil and Water Management | Mangrol |
| 19. | 10101-04 | Centre of Excellence on Soil and Water Management | Mahuva |
| 20. | 10115 | Strengthening of College of Agril. Engg. & Technology | Junagadh |
| 21. | 10126-02 | Modernization of the Departments of Agril. College | Junagadh |
| 22. | 10127 | Establishment of Instructional Farm for College of Agril. Engineering & Technology | Junagadh |
| 23. | 10128 | Lift Irrigation Project for Sugarcane Research Station | Kodinar |
| 24. | 10131 | Research on Eco-friendly Biological Fertilizer | Junagadh |
| 25. | 10133 | Establishment of New Sub-centre for Research in Garlic | Junagadh, Jamnagar |
| 26. | 10134 | Expansion of Planning & Evaluation Cell | Junagadh |
| 27. | 10135 | Establishment of Department of Plant Physiology, Tissue Culture | Junagadh |
| 28. | 10136 | Library Facilities | Junagadh |
| 29. | 10137 | Strengthening of Department of Aquaculture | Veraval |
| 30. | 10138 | Strengthening of Fish Processing Technology Department | Veraval |
| 31. | 10139 | Strengthening of College Library | Veraval |
| 32. | 10228-04 | Upgrading of the Existing Agriculture School | Junagadh, Halvad |
| 33. | 10253 | Establishment of Livestock Inspector Training Centre | Junagadh |
| 34. | 10303-05 | Establishment of Gir Cattle & Jaffarabadi Buffaloes | Junagadh |
| 35. | 10303-13 | Research for Improvement of Jaffarabadi Buffaloes in Saurashtra Area | Junagadh |
| 36. | 10318 | Strengthening of Mobile Ambulatory Clinic | Junagadh |
| 37. | 10389 | Optimization of Various Economics Traits in Relation to Maximizing Profit Function in Gir Cattle | Junagadh |
| 38. | 10505 | Strengthening of Directorate of Extension Education | Junagadh |
| 39. | 10507 | Upgrading of Existing Sardar Smruti Kendra | Junagadh |
| 40. | 10508 | Establishment of Mali Training Centre | Junagadh |
| 41. | 10561 | JAU Fellowship to UG Students of Various Faculties | Junagadh |

| No. | B.H. | Name of scheme | Centre |
|------------|-------------|---|-------------------|
| 42. | 10562 | Establishment of WTO Cell | Junagadh |
| 43. | 10563 | Addition of the Existing Facilities for Organizing Rural Agricultural Work Experience Programme | Junagadh |
| 44. | 10564 | Strengthening of Facilities for Sericulture, Apiculture and Mushroom Cultivation | Junagadh |
| 45. | 10565 | Establishment of Modern Green House | Junagadh |
| 46. | 10566 | PG Programme in College of Agricultural Engineering & Technology | Junagadh |
| 47. | 10567 | Establishment of Central Instrument Centre | Junagadh |
| 48. | 10568 | Strengthening and Modernization of the Existing Health Centre | Junagadh |
| 49. | 10569 | Establishment of Department of Fisheries Engineering & Computer Laboratory | Veraval |
| 50. | 10570 | Centre of Communication Network | Junagadh |
| 51. | 10571-01 | Establishment of Transfer of Technology Centre | Junagadh |
| 52. | 10571-02 | Establishment of Transfer of Technology Centre | Targhadia |
| 53. | 10571-03 | Establishment of Transfer of Technology Centre | Jamnagar |
| 54. | 10571-04 | Establishment of Transfer of Technology Centre | Amreli |
| 55. | 10572-01 | Agricultural Technology Information Centre | Junagadh |
| 56. | 10572-02 | Agricultural Technology Information Centre | Targhadia |
| 57. | 10572-03 | Agricultural Technology Information Centre | Jamnagar |
| 58. | 10572-04 | Agricultural Technology Information Centre | Amreli |
| 59. | 10573 | Research on Tillage Technology | Junagadh |
| 60. | 10574 | Research on Rejuvenation of Degraded Costal Agro-eco-systems of Saurashtra | Junagadh |
| 61. | 10575 | Strengthening Research in Sesamum | Amreli |
| 62. | 10576 | Research on Post Harvest Technology of Important Crops of Saurashtra | Junagadh |
| 63. | 10577 | Value Added Products from Fish/Shellfish | Veraval |
| 64. | 10578 | Establishment of Inland Fisheries Research Centre | Junagadh |
| 65. | 10703 | JAU Fellowship for PG Students in Various Faculties | Junagadh, Veraval |
| 66. | 10710-D | Establishment of Balmandir | Junagadh |
| 67. | 10711 | Project for Library | Junagadh |
| 68. | 10712-02 | Landscaping at Different Campuses | Junagadh |
| 69. | 10712-03 | Creating of the Computer Communication Facilities at Different Campuses | Junagadh |
| 70. | 10712-05B | Campus Development (On Campus) | Junagadh |
| 71. | 10712-06 | Creation of Additional Posts as per SC Orders | Junagadh, Veraval |
| 72. | 10865 | Upgrading of the Students Facilities | Junagadh, Veraval |
| 73. | 10901 | Strengthening of Extension Programme in Fisheries | Okha |

| No. | B.H. | Name of scheme | Centre |
|---------------------|-------------|--|-------------------------------|
| 74. | 10902 | Creation of Infrastructure Facility & Manpower for Research in Agril. Statistics | Junagadh |
| 75. | 10903 | Establishing Organic Farming Cell | Junagadh |
| 76. | 10905 | Research on Watershed Management | Targhadia, Junagadh, Dhari |
| 77. | 10906 | Centre of Excellence for Soil & Water Management Technology | Mahuva |
| 78. | 10907 | Strengthening of Agro-meteorology | Jamnagar, Mahuva |
| 79. | 10926 | Modernization of Departments of Agril. College | Junagadh |
| 80. | 10927 | Establishment of Agro-meteorological Cell at Agril. College | Junagadh |
| 81. | 10929 | Establishment of Department of Agril. Engg. Extension Education at CAET | Junagadh |
| 82. | 10929-01 | Establishment of Microbiology Cell at Department of Plant Pathology | Junagadh |
| 83. | 10931 | Establishment of New Research Centre on Onion Crop | Junagadh, Mahuva |
| 84. | 10940 | Establishment of Centre of Agril. Extension Information System | Junagadh |
| 85. | 10950 | Establishment & Development of Research in Fisheries | Okha |
| 86. | 10953 | Strengthening of Livestock & Veterinary Component | Junagadh |
| 87. | 10967 | Modernizing the Student Facilities, College of Agriculture/Fisheries Science/DSW | Junagadh, Veraval |
| ICAR Schemes | | | |
| 1. | 2002 | AICRP on Millet | Jamnagar |
| 2. | 2002-04 | Impact of Common Peafowl in Agricultural Landscape | Veraval |
| 3. | 2002-05 | Protection of Plant Varieties & Farmer's Rights Legislation | Jamnagar |
| 4. | 2004 | AICRP on Wheat | Junagadh |
| 5. | 2004-01 | FLD on Wheat | Junagadh |
| 6. | 2008-01 | AICRP on Oilseeds | Junagadh, Amreli |
| 7. | 2008-03 | FLD on Sesamum | Amreli |
| 8. | 2008-08 | Production of Breeder Seeds of Annual Oilseed Crops | Junagadh |
| 9. | 2008-12 | Breeder Seed Production of Oilseed Crop (ICAR Revolving Fund) | Junagadh, Amreli |
| 10. | 2009 | AICRP on Cotton | Junagadh |
| 11. | 2009-04 | Seed Production Technology in Cotton | Junagadh |
| 12. | 2009-06 | FLD on Cotton | Junagadh |
| 13. | 2013-01 | Project Directorate Vegetable Scheme | Junagadh |
| 14. | 2025 | Experiments on Cultivator's Field | Junagadh |
| 15. | 2026-02 | AICRP on Nematode Pest | Junagadh |
| 16. | 2030-01 | AICRP on Long Term Fertilizer Experiments | Junagadh |
| 17. | 2042-01 | AICRP on Dryland Agriculture | Targhadia |

| No. | B.H. | Name of scheme | Centre |
|-----------------------------|----------|--|---|
| 18. | 2076-02 | Breeder Seed Production for National Seed Project | Jamnagar |
| 19. | 2076-03 | Central Sector Special Food Grain, Production of Breeder Seed | Junagadh |
| 20. | 2076-05 | Research & Development Efforts on Hybrids in Selected Crop, Millet | Jamnagar |
| 21. | 2258 | Studies on Harvest & Post Harvest Technology | Junagadh |
| 22. | 2258-A | AICRP on Ground Water Utilization | Junagadh |
| 23. | 2258-B | AICRP on Application of Plastics in Agriculture | Junagadh |
| 24. | 2259 | Grant for recurring and Non-recurring under Bajra | Jamnagar, Mahuva |
| 25. | 2303-08 | Germplasm Unit (Gir) | Junagadh |
| 26. | 2305-03 | Network Project on Buffaloes | Junagadh |
| 27. | 2305-04 | Identification & Dev. of Perennial Forage for Developing the Under-utilized Cultivable Wastelands & Coastal Saline Area of Gujarat | Junagadh |
| 28. | 2374 | AICRP on Pulses | Junagadh |
| 29. | 2374-01 | FLD on Pulses | Junagadh |
| 30. | 2374-05 | AICRP on Pigeon Pea | Junagadh |
| 31. | 2704-01 | Creation of Database Systems and Organising Training Workshop and TA/DA | Junagadh |
| 32. | 2704-02 | Construction of Farmers' Hostel | Junagadh |
| 33. | 2704-15 | Mustard Crop Demonstration Training Organizer | Jamnagar, Amreli, Targhadia, Nana Kandhasar, Khapat |
| 34. | 2704-20 | FLD on Cropping System Research | Targhadia |
| 35. | 2704-23 | FLD on Oilseed & Revolving Fund | Junagadh, Amreli |
| 36. | 2704-24 | FLD on Pulse Crops | Junagadh, Amreli, Targhadia, Nana Kandhasar, Khapat |
| 37. | 2704-40 | FLD on Groundnut | Junagadh, Amreli |
| 38. | 2704-43 | FLD on Pearl Millet | Jamnagar |
| Other Agency Schemes | | | |
| 1. | 18005-01 | National Centre for Medium Range Weather Forecasting (NCMRWF) | Junagadh, Targhadia |
| 2. | 18005-07 | IFAD-TAG 532 ICRISAT | Junagadh |
| 3. | 18005-08 | Agricultural Technology Management Agency Project (ATMA) | Junagadh, Amreli |
| 4. | 18008-32 | Biovita in Groundnut | Junagadh |
| 5. | 18008-35 | Testing of Folicare 250 EC in Groundnut | Junagadh |
| 6. | 18009-06 | Testing for New Molecules | Junagadh |
| 7. | 18009-08 | Evaluation of Cotton Hybrid Entries under AICCIP | Amreli |
| 8. | 18009-09 | BT Cotton Trial and Protocol | Junagadh |
| 9. | 18009-10 | Comparative Evaluation of BT Cotton Hybrid and Nutritional Requirement of BT Cotton Hybrids | Junagadh |

| No. | B.H. | Name of scheme | Centre |
|-----|----------|---|----------|
| 10. | 18009-11 | Bio-efficacy of Verticel (liquid & powder formulation) Against Pests of Cotton | Junagadh |
| 11. | 18009-13 | Testing Fee for Bt Cotton | Junagadh |
| 12. | 18009-14 | Monitoring of MLT & LSTs of Bt Cotton | Junagadh |
| 13. | 18011-14 | Monitoring Protocol for the Use of Distillery Effluent for Irrigation | Junagadh |
| 14. | 18011-15 | Establishment of Tissueculture Laboratory | Junagadh |
| 15. | 18011-16 | Groundnut Response to Borate | Junagadh |
| 16. | 18011-17 | Rapid Tissue Testing Laboratory for Horticulture crops | Junagadh |
| 17. | 18014-21 | Project on Development of Tree Borne Oilseeds | Junagadh |
| 18. | 18020 | Establishment of Food Testing laboratory | Junagadh |
| 19. | 18021 | Construction and Equipments for Food Testing Laboratory | Junagadh |
| 20. | 18043-06 | <i>In Vitro</i> Multiplication of <i>Chlorophytum boruviianum</i> & <i>Piper longer</i> for High Quality Planting Material in Gujarat | Junagadh |
| 21. | 18053 | Creation of Permanent Machinery for Studying the Cost of Cultivation, Production of Principal Crops Growing in Gujarat State | Junagadh |
| 22. | 18056 | Customer Satisfaction Survey | Junagadh |
| 23. | 18072-03 | Collaborative Research Project on the Yield Forecasting of Standing Groundnut through Satellite Based Information with Space Application Centre | Junagadh |
| 24. | 18126-01 | Model Nursery for Large Scale Production of Planting Material of Foods and Agro-plants | Junagadh |
| 25. | 18126-02 | Centrally Sponsored Scheme National Horticulture Mission | Junagadh |
| 26. | 18126-12 | Establishment of Small Nursery | Junagadh |
| 27. | 18126-13 | Establishment of Small Nursery | Mahuva |
| 28. | 18126-14 | Establishment of Small Nursery | Dhari |
| 29. | 18126-15 | Raising of Nursery for Fruit and Vegetable at KVK | Amreli |
| 30. | 18127 | Seed Production Agril. Crops & Fisheries (Oilseeds) | Junagadh |
| 31. | 18128 | Seed Production Agril. Crops & Fisheries (Horticulture) | Junagadh |
| 32. | 18128-01 | Item of Works (Horticulture Crops) for Different Research Stations, Research Engineering | Junagadh |
| 33. | 18128-02 | Item of Works (Horticulture Crops) for Different Research Stations, Executive Engineer | Junagadh |
| 34. | 18128-03 | Item of Works (Horticulture Crops) for Different Research Stations, Department of Agril. Botany | Junagadh |

| No. | B.H. | Name of scheme | Centre |
|------------|-------------|---|---------------|
| 35. | 18129 | Seed Production Agril. Crops & Fisheries (Fishery) | Okha |
| 36. | 18246 | T & V Scheme | Junagadh |
| 37. | 18246-05 | Krusha Mahotsav | Junagadh |
| 38. | 18246-08 | Establishment of Centres of Training under NARP-II | Junagadh |
| 39. | 18246-15 | FLDs on Vegetable Crops | Junagadh |
| 40. | 18246-16 | Testing Programme for Entrepreneurship in Tissueculture under HRD | Junagadh |
| 41. | 18246-87 | Artificial Insemination Training Programme | Junagadh |
| 42. | 18246-88 | Human Resources Development in Horticulture | Junagadh |
| 43. | 18246-89 | Experiential Learning: Setting up of Facilities for Hands on Training on Mashroom, Bioagents and Vermicompost Production and Processing | Junagadh |
| 44. | 18246-90 | Experiential Learning: Setting up of Facilities for Hands on Training on Seafood Processing Centre for Value Added Products and By-products | Veraval |
| 45. | 18246-91 | Experiential Learning: Setting up of Facilities for Hands on Training on Production and Management of Alternative/Renewable Sources of Energy | Junagadh |
| 46. | 18246-92 | Experiential Learning: Setting up of Facilities for Hands on Training on Design, Planning and Evaluation of Watershed | Junagadh |
| 47. | 18246-93 | Experiential Learning: Setting up of Facilities for Hands on Training on Machinery Management, Custom Hiring and Mobile Workshop | Junagadh |
| 48. | 18303 | Cattle & Buffalo Development | Junagadh |
| 49. | 18303-05 | Veterinary Clinic/Biotechnology/Modernization of Lab. | Junagadh |
| 50. | 18375 | Training & Camp for Livestock Inspector of the Department of Animal Husbandry | Junagadh |
| 51. | 18803-01 | Item for Field Crops for Different Research Stations, Agronomy Farm | Junagadh |
| 52. | 18803-02 | Item for Field Crops for Different Research Stations, Sagdividi Farm | Junagadh |
| 53. | 18803-03 | Item for Field Crops for Different Research Stations, Grass Research Station | Dhari |
| 54. | 18803-04 | Item for Field Crops for Different Research Stations, Oilseeds Research Station | Junagadh |
| 55. | 18803-05 | Item for Field Crops for Different Research Stations, Wheat Research Station | Junagadh |
| 56. | 18803-06 | Item for Field Crops for Different Research Stations, KVK | Amreli |

| No. | B.H. | Name of scheme | Centre |
|------------|-------------|---|---------------|
| 57. | 18803-07 | Item for Field Crops for Different Research Stations, Agril. Research Station | Manavadar |
| 58. | 18803-08 | Item for Field Crops for Different Research Stations, Agril. Research Station | Amreli |
| 59. | 18803-09 | Item for Field Crops for Different Research Stations, Cotton Research Station | Junagadh |
| 60. | 18803-10 | Item for Field Crops for Different Research Stations, Sugarcane Research Station | Kodinar |
| 61. | 18803-11 | Item for Field Crops for Different Research Stations, Pulses Research Station | Junagadh |
| 62. | 18803-12 | Item for Field Crops for Different Research Stations, Research Engineering | Junagadh |
| 63. | 18804-01 | Item of Horticulture Crops for Defferent Research Stations, Department of Horticulture | Junagadh |
| 64. | 18804-02 | Item of Horticulture Crops for Defferent Research Stations, Department of Agril. Botany | Junagadh |
| 65. | 18804-03 | Item of Horticulture Crops for Defferent Research Stations, Fruit Research Station | Mahuva |
| 66. | 18804-04 | Item of Horticulture Crops for Defferent Research Stations, Agril. Research Station | Mangrol |
| 67. | 18805 | Item for Field Crops for Different Research Stations, Fisheries Research Station | Okha |

CHAPTER - IX

INFORMATION TECHNOLOGY

9.1 Network Services

The network at Junagadh Agricultural University connecting all the offices of the campus was established in two phases; in 1996 and 1999. Presently, Internet, E-mail, References Database and File/Printer sharing services have been provided and maintained through Local Area Network (LAN) having VSAT, Leased Line and Dial-up Connectivity. These services have greatly boosted the education, research and extension education activities of the university.

9.2 Beneficiaries

Most of the staff and UG/PG students have taken benefit of ITC facilities like network services, internet, e-mail, scanning of photographs, reference abstract service, printing, CD writing etc. These services have been useful for those engaged in education, research and extension activities.

9.3 Training

Training to the university personnel is given by ITC in collaboration with Department of Agricultural Statistics. The basic training covering fundamental aspects of operating computer system is given to the university staff. Computer training as per Government of Gujarat Module-I and II was organised for university employees.

9.4 Network Implementation and Management

For smooth and error free implementation of network, all the departments of the campus are connected by switches, UTP cable and optic fibre cable. All the switches and network connectivity are centrally managed from ITC Server Room. The ITC is responsible for installation and maintenance of the network of the university. A sizable amount of money has been saved by using a free Network Operating System i.e. Linux/Fedora. The network is continuously monitored and the problem, if any, is attended and rectified. The Network Operating System is up-graded regularly by adding the useful features. Because of the network, sharing of the information has become fast and reduced the paper work to some extent.

9.5 Presentations/Lectures

The infrastructure facilities LCD projector, screen, laptop computer etc. for online presentation/lecture are managed by ITC during various conferences, meetings, seminars, workshops etc. The help is also provided to the UG/PG students and university personnel for preparing effective presentation.

ITC prepared many multimedia presentations covering various activities of JAU, which were updated during the year. These presentations have been shown or displayed during the visits of the guests, meetings of Board of Management/Academic Council/Board of Studies, Agricultural Exhibitions/Fairs and Government level meetings.

9.6 Reference Services

All the available agricultural data base reference services are provided online by ITC in collaboration with the Campus Library to UG/PG students for their research projects and to university personnel engaged in research and teaching work. This enables the end user to get quick information through computer on any reference related to agricultural research published from 1972 to 2006 through network. This is unique kind of the service provided free of cost to the scientists and the students of the university. This has made the reference services very fast and has saved a lot of time of the scientists and the students.

9.7 University Web Site

The web site (www.jau.in) prepared by ITC is presently kept at server of ITC and university domain name www.jau.in is registered for five years. This web site includes various aspects and activities of Junagadh Agricultural University like Administration, Education, Research, Extension Education, Library facility, important announcements/events, tenders, advertisements, RTI, telephone directory, etc. Further, a Web Mail Service has been incorporated in the web site enabling the user to read and reply e-mail from any computer of LAN. There are about 300 e-mail users at campus taking advantage of this service. The web site was maintained and updated regularly during the year.

9.8 Leased Line Connectivity

Presently two leased line connectivity are available at ITC for providing network services. The leased line connectivity providers are from Gujarat State Wide Area Network (GSWAN), Gandhinagar and Education and Research Network (ERNET), New Delhi.

9.9 Qualified Personnel

All the services at ITC are managed by IT trained personnel of the university.

9.10 Visitors

The ITC has been visited by a number of eminent persons who have appreciated the activities in fullest terms. The students of IT courses of various colleges of Junagadh city are taking frequent visit as a part of their project work. They have remarked that JAU is a front-runner in IT activities amongst all universities of Gujarat state.

9.11 University Library

The university library provides services to the students and staff of constituent colleges as well as research stations and extension education centres.

Collection: It is a rich library with double storeyed stack room with capacity of 1.5 lakh books. It possesses around 41000 books. These books are very valuable and helpful in studies, research and preparation for competitive examinations. It provides 200 Indian & Foreign journals and around 20000 back volumes.

Services: Cyberary with 100 mbps LAN connectivity facilitates users with online journal database like AGRICOLA, Indian Harvest etc. are accessed. Full time internet, scanning and CD writing facilities are available for the students in the Cyberary. The internet access through GSWAN and existing database facilities and other IT enabled students to update their General Knowledge along with latest information in their respective disciplines. This facility is being extensively utilized by both faculty and students on an average of daily 80 to 100 users for about 12 hours per day. Students are provided with books of their concerned subject of their respective semesters through book bank facility. The library is marching towards automation process through libsys software for the circulation of library materials to users.

The library renders its services to the users from 8:00 to 18:10 h and cyberary renders its services from 8:00 to 20:00 h. The circulation counter, the cyberary and other services are open to the readers during working days.

CHAPTER - X

OTHER ACTIVITIES

10.1 Activities of Vice Chancellor

The Vice chancellor of Junagadh Agricultural University has to look after the overall administration, development, discipline and appropriate functioning of the university as per the Gujarat Agricultural Universities Act-2004. The Vice Chancellor has to run the administration as per university rules and regulations. He is also responsible for financial activities of the university. He maintains coordination between Teaching, Research and Extension Education activities conducted by the university. A brief summery of the activities done by the Vice Chancellor during 2006-07 are as under.

Dr. B.K. Kikani was appointed as the first Vice Chancellor of Junagadh Agricultural University and he took over the charge from 20.05.2004. Looking to the overall development activities and better performance, the Government of Gujarat has given him tenure from 04.09.2006. Dr. B.K. Kikani is Ph.D. in Plant Pathology discipline. He has higher educational qualification and good contribution in research. He showed interest in new activities, programmes and developmental works to make Junagadh Agricultural University a model university.

He always made efforts to improve the education standards and strengthened the departments and laboratories of College of Agriculture, Agricultural Engineering and Fisheries Science to provide more facilities to the students. Moreover, the state and national level games and sports facilities were introduced for the students. Due to this, Junagadh Agricultural University has got facilities like J-GATE, J.CCC, CAB, AGRIS, AGRICOLA and Journals of National and International level were subscribed. By taking the help from donors, several medals were instituted to encourage the students. Further, campus interviews were arranged for the graduates and post graduates of the university to avail placement in the Nationalized Banks, Companies and other related organizations.

After the establishment of the university, to satisfy the needs of the farmers of the Saurashtra, the research activities were accelerated by encouraging the scientists involved in research, satisfying the needs of the research centres, developing new infrastructure and by establishing new schemes and research centres. Thus, the Vice Chancellor has sincerely tried to make university activities more and more farmers oriented. Under the guidance of Dr. Kikani, the new research projects have achieved their targets. Mega Seed Project, Tree Borne Oilseed Project, Inland Fisheries, Centre of Excellence in Soil & Water Management are the few new emerging projects showing good

progress. During this period, 40 scientists/teachers were sent to attend training/winter/summer school, 170 have attended seminar/symposium/ conference at state and national level, 97 attended the workshops and group meets of their projects and 151 were sent for different academic works. Under the leadership of Dr. B.K. Kikani, the efforts made by scientists of the university were translated in 33 farmers' recommendations and 86 new technical programmes during the reporting year. It also resulted in emerging four new crop varieties for farmers. Junagadh Agricultural University has organized three national level seminars /convention/symposium/group meetings during 2006-07.

Krusha Mahotsav-2006

Under the able guidance of Hon'ble Chief Minister of Gujarat, Shri Narendrabhai Modi, *Krusha Mahotsav-2006* (30th April to 29th May, 2006) was organized. The Junagadh Agricultural University has contributed a lot in successful organization of this programme under the leadership of Hon'ble Vice Chancellor Dr. B.K. Kikani.

The Research Scientists, Professors and other technical staff participated in the *Krusha Mahotsav-2006*. The team of scientists, officers from the state line departments, bankers and other related agencies have approached each village of Saurashtra region for providing first hand information to the farmers, village artisans and rural agro-based industries. The university had deputed 7 District Nodal Scientists and 148 Taluka Nodal Scientists, who have covered 4223 villages of the Saurashtra region in one month. The sincere efforts made by the university have brought fruitful results and the farmers have been benefited from this approach.

Soil Health Cards

The planning of crops could be done on the basis of soil health cards in Saurashtra region. For preparation of soil health cards and planning of crops in Saurashtra, seven agricultural scientists act as district nodal officers and 73 as taluka nodal officers.

10.2 Planning Branch

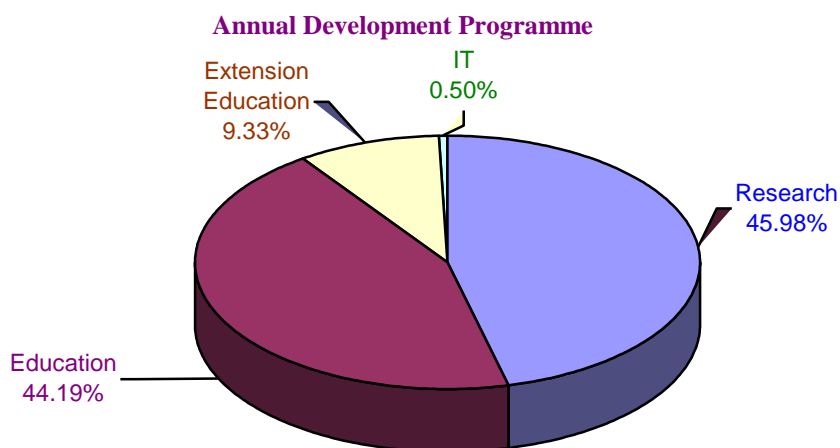
1. State Government Plan Programme

A. Fund Allocation

State Government allocates the funds for education, research and extension education programmes of agricultural university as per the requirements of funds for the schemes of various fields suggested in the draft annual plan of the university.

In the Annual Development Programme (2006-07), the provision of Rs. 1000.00 lakh was made for education, research and extension education of Junagadh Agricultural University. The allocation was reduced to Rs. 996.90 lakh by the State Government. The activity wise allocation of fund is as under.

| Sr. No. | Programme | Annual Development Programme 2006-07 (Rs. in lakh) | |
|--------------|---------------------|---|-------------------|
| | | Original provision | Revised provision |
| 1 | Research | 458.35 | 458.35 |
| 2 | Education | 443.65 | 440.55 |
| 3 | Extension Education | 93.00 | 93.00 |
| 4 | Earmarked for IT | 5.00 | 5.00 |
| Total | | 1000.00 | 996.90 |



Thus, for agricultural education, research and extension education programmes, State Government has released Rs. 992.40 lakh against the sanctioned grant of Rs. 996.90 lakh. However, the total expenditure was Rs. 963.90 lakh and unspent amount of Rs. 52.12 was carried forward as spill over grant for construction up to December-2007 as per grant in aid rules.

B. Monitoring

The monthly and quarterly progress reports were collected from the concerned heads of the schemes, compiled and submitted to the Government quarterly. The problems of the scheme were solved satisfactorily by discussions between scientists and the Hon'ble Vice Chancellor in two meetings held during the month of December-2006 and March-2007 for monitoring the progress and expenditure of plan schemes and reallocation of the funds.

2. Development Programme by ICAR for Education

Under the scheme "Development and Strengthening of State Agricultural Universities" ICAR released a grant of Rs. 393.00 lakh. The university has utilized Rs. 386.32 lakh from this fund.