

**Quantification of Manpower and Financial
Resources Devoted to Research and Development in
Science and Technology from
Higher Education Sector – South Zone**

PROJECT REPORT

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EXECUTIVE SUMMARY

R&D endeavours in the area of S&T constitute the national lifeline of the development of science & Technology - be they in the institutions of higher learning, public sector research organizations, or the industry – private or public sector. The institutions of higher learning are also the major performers of research. Teaching being the primary concern of universities, institutes and colleges, the teachers involved in research activities are to be evaluated by a set of unique science indicators side by side with the conventional measures, used to assess the outcome of research inputs poured in by the funding agencies as well as the industry.

The reluctance to supply data-base by teaching community was overcome, partly by persuasion, and partly by using annual reports and budget estimates to provide database from 99 out of 117 S&T universities/institutes from 8 states and 2 union territories.

The data has been presented in 37 tables in the form of appendices, covering the universities /institutes and 31 figures with 4 summary tables in the text.

The total reported income of 99 universities/institutes of South Zone is around Rs. 4507 crores. In that, 76 states funded universities are occupying Rs.3281 (72.80 %) crores, whereas 15 Central funded universities consume Rs 928 (20.59 %) crores and 8 self-financing universities Rs. 298 (6.61 %) crores

In the total income of 99 southern universities, by source of funding was viz. State Govt. 37.19 %, Central Govt. 22.21 %, Own source 26.98 %, Foreign source 1.24 %, Donations 0.89 %, Industries 1.49 % and others 10.01 %.

In South Zone, the S&T expenditure of higher education sector is amounted to Rs.2886 crores. In that, the expenditure spent for equipment 325 (11.21 %) crores, laboratory 228 (7.86 %) crores, maintenance 236 (8.14 %) crores, visiting faculty 58 (2.00 %) crores, conferences 67 (2.31 %) crores, contingency 709 (24.45 %) crores, salary 1138 (39.21 %) crores and other sources 140 (4.83 %) crores.

The total R&D expenditure in higher education sector, south zone is estimated as Rs. 915 crores out of the total income of Rs.4507 (20.30 % for R&D) crores and S&T expenditure of Rs.2900 (31.55 % for R&D) crores.

In the Total R&D expenditure of Rs. 915 crores, Natural sciences universities occupy the first place with Rs. 246 (26.89 %) crores, while the universities of Engineering sciences follow in expenditure in R&D with spend Rs. 284 (31.04 %) crores, Medical sciences universities with 111 (12.13 %) crores and Agricultural sciences universities with Rs. 274 (29.95 %) crores.

In the total R&D expenditure of Rs. 915 crores, Recurring R&D expenditure takes a share of Rs. 780 (85.25 %) crores whereas the Non-recurring R&D expenditure is of Rs. 135 (14.75 %) crores.

In the Total R&D expenditure of Rs. 915 crores, 759 (82.95%) crores accounts for Intramural R&D expenditure while that of Extramural R&D expenditure stands with Rs.156 (17.05 %) crores.

In the Total R&D expenditure of Rs. 915 crores, the Karnataka state takes the lead with R&D expenditure of 271(29.62%) crores while Tamilnadu remain to be of Rs.189 (20.66%) crores, Maharashtra of Rs.160 (17.49%), Andhra Pradesh of Rs. 104(11.37%) crores, Kerala of Rs. 91 crores (9.94%), Gujarat of Rs. 66(7.21%) crores, Orissa of Rs. 27(2.95%) crores, Chattisgarh of Rs. 1 (0.11%) crores, Pondicherry and Goa the union territories of 3 crores (0.33%).

The average research time spent in the decreasing order goes by agricultural institutes (49.74 %). Natural sciences 33.41 %, Engineering Sciences 40.63% and Medical Sciences 34.64 %.

In the 99 southern universities, the total S&T faculties strength is 16,463 persons. Among them 9,238 are R&D faculties according to their research time. Full Time Equivalent (FTE) faculties strength is worked out to be of 3,486. Total research staff (RA,SRF,JRF,etc) accounted 4,021. Hence, total FTE's available in the southern sector is 7,507. Total Technical Staff strength is 11,113 and non-technical staff strength is 10,648.

In the total FTE of 7507, the male FTE accounts to be of 5932 whereas Female FTE stands to be of 1575. In the total faculties of 16,463, doctorate holders are of 11,845.

In the total research publications of 2001-02 are 11,717. Among them the national publication share is 72.31% while the international one is of 27.69%.

During 2001-02, 3663 Ph.D's, 1699 M.Phil's and 19,619 Post Graduates are graduated in 99 universities under the study. In the 3663 Ph.D.'s, Natural Sciences share is 61.92% while that of Engineering sciences is of 27.08%, Medical Sciences of 0.63% and Agriculture sciences of 10.07 %.

During 2001-02, southern universities have organized 2098 seminars/symposia while the strength of the participated faculties in the other universities is reaching to 5383. Total research projects undertaken are of 3644 and the consultancy projects are of 831 numbers. Within the total research projects, 31.34 % is from Natural sciences while 25.19 % from Engineering sciences, 9.77 % from Medical Sciences and 33.70 % from Agriculture sciences.

During 2001-02, books and monographs published by the different faculty members account to 1338. Total awards received are 814. In that 594 are of national awards and 220 are of international awards. Total technologies developed are of 313.

Introduction

CHAPTER – I

INTRODUCTION

Our country is moving fast in the era of Information Technology. Increasing attention is being paid to invest in science and technology. The social and economic well being of a country is the recognition to such investments. Collection and storage of information regarding any element/object is the essential one for planning the future. Unless and otherwise, one understands thoroughly the if's and but's, of the present status in any field of interest, it is impossible to project the advancement in certain specific field. The preparation of status report not only forms the base for evaluating and assessing the achievement done out of the earlier planning but also it forms an important record to compare ourselves where we are in the world. Such comparison will indicate the mode of changes required in our approach as well as the learning, we have yet to make in the wake of the reflected progress. Behind the way of advancement, there is R&D. R&D becomes nerve line of planning. Realizing the importance, Govt. of India has taken a great stride in assessing the efforts put-up in the R&D sector including the higher education. Such beginning is done first time taking 1997-98 as base year. After having succeeded in such effort, without losing the grip over the attempt, the first up-dating keeping the base year 2001-02 is followed in this presentation. The statistics enable the nature and distribution of R&D activity in a country. In India, it is monitored and analysed by NSTMIS Division of DST, Govt. of India. Such analysed reports are scanned regularly by business centres, academics and international organizations for their own upkeep. Moreover, the data are used for a variety of purposes, including policy formulation, allocation of funds and the determination of priorities for research and development.

After independence, India has made concerted efforts to strengthen the Research and Development (R&D) base of the country. It made a number of Five Year Plans after assessing each stage and the goals achieved. The Department of Science and Technology (DST), Government of India, is the nodal agency for collecting information on Science and Technology. The National Science and Technology Management Information System (NSTMIS) Division of DST could successfully generate large number of S&T statistics of the country. The coverage of national survey conducted by DST was not including higher education sector which is one of the major performers of R&D in producing the S&T manpower.

This was not covered by DST for the reasons well known that the faculty of higher education are involved both in teaching, administration and research. However, one finds it difficult to assess the R&D in the teaching departments, wherein research and teaching are intertwined so compactly. It has become a bottleneck to evolve a suitable methodology for quantification of manpower and financial resources devoted to R&D in S&T from higher education sector. Though DST could not achieve success in their earlier efforts to quantify the manpower and financial resources devoted to R&D in S&T from this sector, it is persistently continued to find out the way to get the things done, as perfect as possible. In order to fill the existing gap, DST felt to go for a project to concentrate in collecting the information of R&D manpower and financial resources of the same in S&T faculties on the basis of the recommendation evolved out of the four B.S.S. conducted in Tamil University, Thanjavur, Pune University, Pune, Gauhati University, Gauhati and Lucknow with the help of Indian Geological Congress. Accordingly, it has decided to share the onerous task of data collection from the universities to universities itself in the form of a National integrated project by dividing the country into first four zones east, west, north and south and subsequently into two zones namely, South and North.

Higher education in this country is achieved through various universities, their constituent and affiliated colleges. Over and above, National Laboratories also supplement a role in higher education. Presently, higher education is supported by the Govt. of India through its agencies like University Grants Commission (UGC), All India Council for Technical Education (AICTE), Indian Medical Council (IMC) and Indian Council for Agricultural and Research (ICAR) and Indian Veterinary Council (IVC). The higher education includes two distinct aspects in colleges and universities. They are the centers of both teaching and research. They are inseparable units. It is rather very difficult to extract any details from this sector on any one of these things. However, R&D is the essential component of furtherance of S&T in any field of interest. DST has felt the necessity of collecting and including the R&D particulars which was hitherto not covered in the National Database.

It is decided to approach the university sector to get the same accomplished. In order to accomplish this, DST visualized a plan to have a wider consultation among the people involved in the higher educational sector. In 1997-98 survey, DST had conducted Brain Storming Sessions (BSS) in the 4 different corners (Thanjavur, Pune,

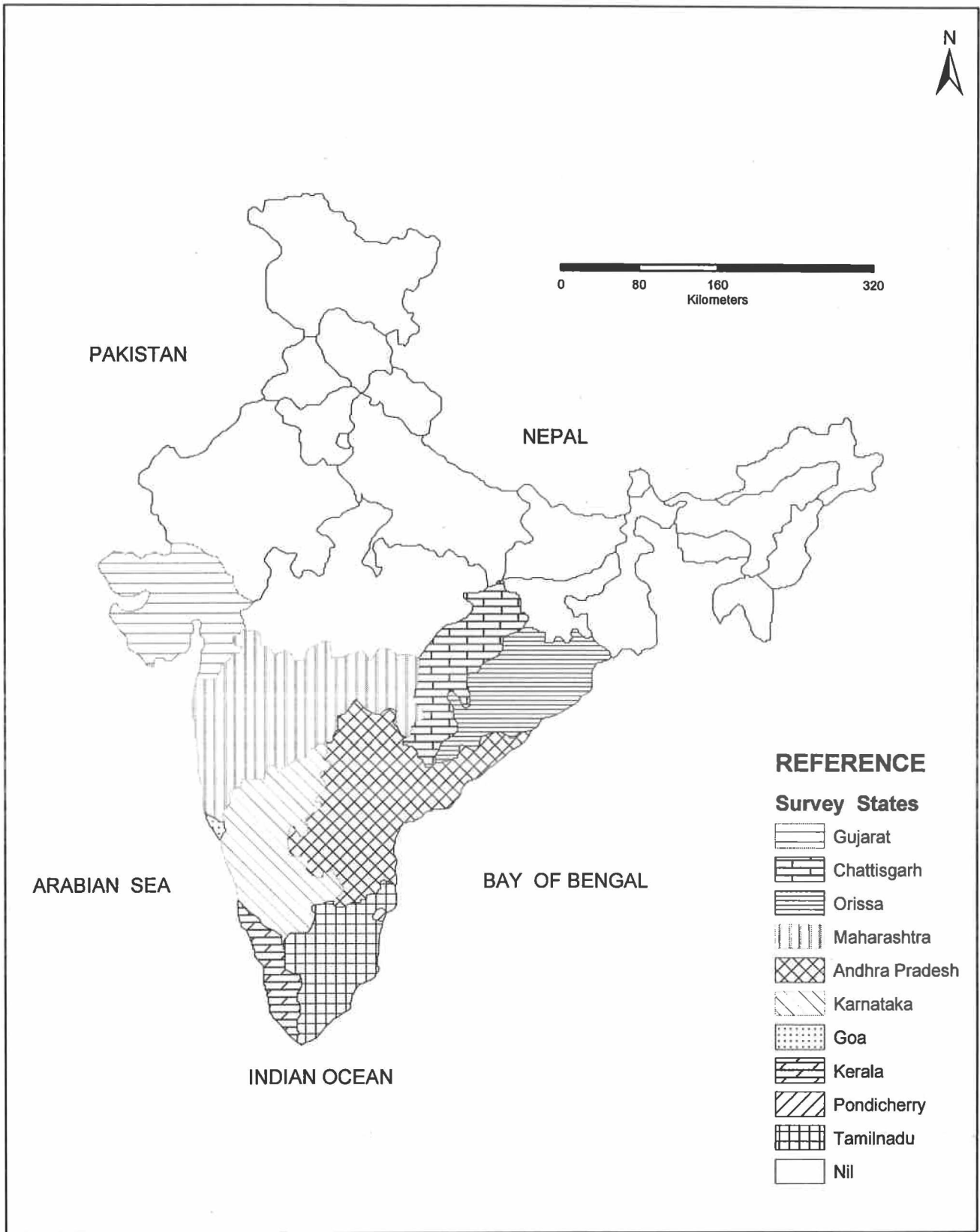
Lucknow and Gauhati) of India. It was helpful to take stock of suggestions and approaches from the leading academicians, scientists, executives, administrators, policy makers and politicians.

In the earlier survey, the valuable outcome of the BSS and the suggestions have been the base for the data collection, methodology development, software preparation and reports generation. The result (outcome) of the first survey of 1997, has been accepted by leading academicians, scientists, executives, administrators, policy makers and politicians.

For the first time, country's R & D statistics 2000-01 included higher education sector data. Even though the nature of the project was complex and laborious, this centre could successfully complete the same. In view of this needed expertise acquired by this centre on this complex area, the present project was sanctioned in July 2003 but with more responsibility. To undertake this survey in a more focused manner, the survey for the Peninsular India (Tamilnadu, Kerala, Andhra Pradesh, Karnataka, Pondicherry, Maharashtra, Goa, Orissa, Gujarat and Chattisgarh (Fig. 1) has been extended further to a wider area.

Hence, we have conducted this survey mostly based on the methodology of 1997 higher education sector survey. In the earlier survey, a detailed investigation for quantification of manpower and financial resources in higher education was carried out by approaching the different universities and institutes with three well prepared questionnaires, one for individual academicians, another for the head of S&T departments and the other for the heads of the institutes. After the hard efforts of various scholars of different zones, at the time of validation, it was noticed that the figures given by various academicians and finance officers in each questionnaire could not match each other and finally, only through budget estimates and annual reports of the respective university/institute the data could be validated and synchronised. So, the required data is extracted as indicated in the earlier survey questionnaire. Such data extraction is tedious task and certain limitations due to the following reasons.

1. We have covered 8 southern states and two union territories of India. In the total allotment of south zone, 60% of Universities prepare their annual reports and budget estimates in the International language(English) in the remaining 40 %, the universities publish in their mother tongue like Kannada, Telugu, Tamil, Marathi, Gujarathi and Hindi. Such multi-linguistic availability of the reports warrants the data extractor to have the knowledge the respective language.



**Fig: 1 Location of the Survey States
South Zone**

2. Another issue is that the presentation pattern of financial figures differs from one University to other. The Universities publish their budget estimates on their own format. And, few Universities do not give their expenses in department-wise. Such mixed pattern effects the extractor to use manipulations and sometimes he has to go to the base data to re-group and re-assess.
3. The DST - NSTMIS division is keen to siphon out the extramural income and expenditure from the intramural. Most of the universities do not mention about such distinction in the expenditure. Extramural expenditure, in their budget estimates do not find a separate place.

The data extraction is based on our previous survey questionnaire shown in the earlier report. The extracted data were crosschecked, validated and fed into our software, prepared in Visual Basic 6.0.

Objectives

1. To quantify the financial resources and expenditure in higher education from the respective universities/Institution's budget estimates.
2. To quantify active R&D manpower on Full Time Equivalence (FTE) by field of science, level, type of institution, state, etc.
3. Quantification of output indicators in the academic excellence as revealed from annual reports.

Scope of the study

In the wake of information explosion, over the past two decades, there is a growing need for an information system and database on science and technology. Especially, in the era of information technology which has realized the concept of global village, it is increasingly felt the need for comprehensive information available on human / financial resources and also the output of such activities measured in terms of productivity, increased economic growth, new product's developed, their large scale diffusion and their impact on society.

With the growing awareness, a number of countries including India have started data collection in the field of Science and Technology. Dept. of Science and Technology (DST) has shouldered the nodal responsibility of providing information on the country's scientific and technical resources, in general, and their deployment for S&T activities, in particular. But, so far, the database is devoid of substantial input from academic sector which represents 277 Universities (including Deemed Universities) in the country, imparting higher education in S&T disciplines. The

academic sector being one of the major performers of research, it is vital to quantify the number of personnel engaged in research and the expenditure on R&D in S&T faculties of the Universities, to assess our scientific growths in comparison to other developed nations.

DST has attempted to quantify the financial and manpower resources devoted to R&D in S&T from higher education sector on few occasions but without fruitful results. Hence, as suggested by the victims in the field of higher education in the country, the present project has been sponsored to collect data on manpower and financial resources through such effort, it succeeded. The completion of such project enabled them to provide the long awaited data concerned to the strength of this country in R&D and pave the way for the future projections. Moreover, it has given different ways and means to understand the different universities through the output indicators which are likely to be derived from the database. The way in which the project is visualized, is expected to provide the feasibility to accommodate the continuity of updating the values through a standardized programme with less cumbersome approach. First time, DST attempted this study through four centers. After assessing the different methods, it is developed to approach the same problem through two centres as well as through the budget estimates and annual reports wished of faculty wise survey. Even in units, there is every possibility to get it done through a single centre with can feed regular updation from the universities budget estimates and annual reports year by year regularly.

The successful completion of this national level study facilitated DST to include for the first time R&D expenditure from higher education Sector in the National Report - Research and Development Statistics, 1998-99. According to this report, India spends about 0.81 % of GNP on R&D. The present effort may enable NSTMIS of DST to update the R&D statistics in higher education regularly in par with developed nations.

Methodology

CHAPTER – II METHODOLOGY

Introduction

The present study covers the Peninsular India viz., Tamil Nadu, Kerala, Karnataka and Andhra Pradesh, Maharashtra, Orissa, Gujarat, Chattisgarh, Pondicherry and Goa. This project aims to collect primary data from the respondents, namely academic sector from the universities and secondary data from UGC, AICTE, ICAR, AIU, and ISTE to build up a comprehensive database.

In the earlier survey, a detailed investigation for quantification of man power and financial resources in higher education was carried out by approaching the different universities and institutes with 3 well prepared questionnaires, one for individual academicians, another for the heads of S&T departments and the other for the heads of the institutes. After having put up a hard effort in the collection of data from different zones, at the time of validation, it is noticed that the figures given by various finance officers and academicians in each questionnaire could not match each other and finally, only through budget estimates and annual reports of the respective university/institute, these data were crosschecked and validated. Software was also prepared in VB.6.0 to extract the sufficient information required to the specific output indicators of different centers. A similar approach is mooted out here. DST has requested the various universities and other institutes already to dispatch their annual reports and budget estimates of the 1999-00, 2000-01 and 2001-02 years. The data is transferred to well set questionnaire adopted in the previous survey but manually. From the questionnaire, the data is entered in the computer using the said software. From that database, the different tables including the output indicators can be extracted. Here, 37 Nos. are of the previous survey are obtained as output.

Present status of R&D

Before going for the definition of methodology, a brief account of status of R&D activities at National and International level is presented here, after going through the voluminous journals, newspapers, different websites and different directories.

National

Traditionally, Universities have been established as major institutions for providing higher education and research opportunities to the youth for shaping their future, and recognized as the most important indicator of a country's future. More recently, the UNESCO World Conference on Higher Education (Paris, 1998) has also observed that higher education and research act as essential components of culture, socio-economic and environmentally sustainable development of individuals, communities and nations, since the society is now becoming increasingly knowledge based. In this backdrop, University education has become crucial in preparing a healthy, skilled and agile intellectual human force with facilities for life-long learning that enables countries to continuously assess, adapt and apply new knowledge. As a result, the development of University education and research has been receiving high priority the world over. Though India has been attaching considerable importance to higher learning all along, a phenomenal growth of the University system in the country has been witnessed only since independence, with the number of Universities increasing from 18 in the year 1947 to 277 now. Indian Universities, like their counterparts elsewhere in the world, have been performing many additional functions now-a-days, e.g., undertaking sponsored R&D and continuing education, providing knowledge-based advice and consultancy, preparation / publication of educational material like books / study reports / research papers and extending services to society. (University Grant Commission, India)

If Indian economy has to survive first and then flourish, it is essential the policy makers in Government, Industry and Academia to be alive to these realities and embark upon actions to correct the situation speedily. The Technology Policy Statement (1983), Government of India, is inadequate to meet the present realities.

S & T policy of a country addresses crucial issues such as national security, meeting of essential needs of people, as well as economic and trade issues. In the modern day context, it is also essential to take into account the rapid pace of changes of businesses as well as technologies. Trade and financial markets have, to a large extent, been globalised. India is slowly joining this integration process. There are subtle and

important differences between the words internationalisation, multinationalisation, and globalisation. (<http://www.tifac.org.in/news/stpol.html>)

Today India has become one of the strongest in the world in terms of scientific manpower in capability and maturity. Hence, we are in a position not only to understand the technologies that we may have to borrow, but also to create our own technologies with extensive scientific inputs of indigenous origin. Basically we have come a long way since our independence, from mere buyers of technology to those of who have made science and technology as an important contributor for national development and societal transformation. In a world where the powers are determined by their share of the world's knowledge, reflected by patents, papers and so on, the WTO starts to play a crucial role in the economic development. It is important for India to put all her acts together to become a continuous innovator and creator of science and technology intensive products, Abdul Kalam (2003).

S&T survey, the India GDP growth rate is greater than 7 % (US\$ 688.7 \$ B) 2005, India has world's second largest S&T manpower. The growth rate of enrollment in higher education is greater than 6 %. The production of science post graduates are of 22 lakhs / year. While Engineering graduates are of 20 lakhs / year and doctorates are of 30 thousand /year. Present growth rate of engineering intake is 21.9 % / year.

International

Research & Experimental Development (R&D) comprise creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of humanity, culture and society, and the use of this stock of knowledge to devise new applications (Frascati Manual, 2002).

Research and development (R&D) statistics and indicators are an important instrument of science and technology policy formulation. Many countries publish quantitative overviews of the performance of their science and technology (S&T) system based on R&D statistics (New Zealand Research and Development Statistics, 1999/2000).

Moreover, R&D expenditure is the most frequently used indicator for measuring research and development activities. Economists often use the ratio of R&D expenditures

to GDP to examine R&D in the context of a nation's overall economy. This ratio reflects the intensity of R&D activity in relation to other economic activity and is often interpreted as a relative measure of a nation's commitment to R&D (<http://www.nsf.gov/statistics/seind04/c4/c4s1.htm#sb1>).

In terms of expenditure on Research & Development (R&D), the less developed countries spent about 19 % of the total world R&D expenditure as compared to their share of 39 % of the world's GDP which is defined as the total output of goods and services for final use produced by an economy, by both residents and non-residents, regardless of the allocation to domestic and foreign claims. It does not include deductions for depreciation of physical capital or depletion and degradation of natural resources (Human Development Report, 2002).

The way in which scientific endeavors are pursued around the world is marked by clear inequalities. Developing countries, for example, generally spend much less than 1 percent of their gross domestic product on scientific research, whereas rich countries devote between 2 and 3 percent. The number of scientists in proportion to population in the developing countries is 10 to 30 times smaller than in developed countries. Ninety five percent of the new science in the world is created in the countries comprising only one-fifth of the world's population. And much of that science - in the realm of health, for example - neglects the problems that afflict most of the world's people (Kofi Annan, Secretary-General of the United Nations, 2003).

The Higher Education sector is composed of "all universities, colleges of technology and other institute of post-secondary education, whatever their source of finance or legal status. It also includes all research institutes, experimental stations and clinics operating under the direct control of, or administered by, or associated with, the higher education establishments" (UNESCO, 2004).

On an average, 1.8 % of national GDP have been spent on Research and Development. The less developed countries devoted less than one percent (0.9 %) of their GDP to R&D, whereas the more developed countries generally spent 2.4 % of GDP, (UNESCO Institute of Statistics, 2003).

The U.S. invests more in Research and Development than any other nation. In 2003, American expenditures for R&D amounted to 284 billion US\$, approximately 40%

of total R&D spending world-wide. In percentage of GDP, the U.S. is ranked sixth among the Organisation for Economic Co-operation and Development (OECD) countries.

Shares of Total World* R&D (2003)

In billions of US \$ and %

Country	Percentage	US \$ (Billions)
US	38	290 B \$
Japan	15	115 B \$
Germany	7	53 B \$
France	5	38 B \$
U.K.	4	31 B \$
Other EU	10	76 B \$
Korea	3	23 B \$
All other OECD	4	31 B \$
Other non-OECD Members	5	38 B \$
China	9	69 B \$

(Source: AAAS Report XXX, Research & Development FY 2006. *World = OECD members plus Argentina, China, Romania, Israel, Russia, Singapore, Slovenia, Taiwan)

Funding of Research and Development

Similar to Switzerland, U.S. R&D financing is mostly provided by private industry (almost two-thirds). In 2003, U.S. industry contributed 180 billion US\$, the federal government more than 85 billion US\$, and universities and colleges almost 11 billion US\$, out of a total of 180 billion US\$ spent on R&D.

Funding of R&D conducted in the U. S., by source (2003)

In billions of US \$ and %

Source of Funding	Percentage	US \$
Industry	63	180 B \$
Federal government	30	85 B \$
Universities and colleges	4	11 B \$
Other non-profit	3	8 B \$

(Source: National Science Foundation, NSF)

Performing of Research and Development

Most of the U.S. R&D is performed by private industry, corresponding to almost 194 billion US\$, followed by universities and colleges with 40 billion US\$ (2003).

R&D expenditure in Iceland in 2001 was about 23 billion ÍKr in 2001 (c. 250 million), amounting to about 3.06 % of GDP. Iceland is ranked 4th among OECD countries for R&D/GDP ratio. The commercial companies spend about 13.5 billion ÍKr annually on R&D (c. 150 million). This constitutes about 60 % of Iceland's total expenditure on R&D (GERD). Around 46 % of the total expenditure on R&D was financed by commercial companies. 34 % is from public institutions and around 18 % from abroad. Between 1999 and 2001, expenditure on R&D is increased by about 40 %, an unique figure among countries in the OECD. By far the largest increase, just under 80 %, is among commercial companies, especially new companies in emerging branches of industry with a heavy basis in R&D. The estimated gross expenditure on R&D for 2002 is about 24 billion ÍKr (c. 260 million) representing a very small increase on 2001 (Rannis, R& D statistics, 2003).

R&D expenditure as a percentage of gross domestic products (GDP) in New Zealand is 1.16 percent in the 2004 reference year, compared with 1.15 % in 2002. The OECD average is 2.25 percent in the 2002 reference year (Statistics New Zealand, 2005).

GERD is the total intramural expenditure on R&D performed on the national territory during a given period. It includes R&D performed within a country and funded from abroad but excludes payments made abroad for R&D (UNESCO Statistical Yearbook, 1999). S&T efforts are far from being evenly distributed around the world. The gross expenditure on research & development, GERD—the total reported by industry, government agencies and other public laboratories, universities and similar higher education institutions, and private institutes in the country—and GERD as a percentage of gross national product (GNP) are indicators of the input into S&T. GNP (Gross national product) comprises GDP plus net factor income from abroad, which is the income residents receive from abroad for factor services (labour and capital), less similar payments made to non-residents who contribute to the domestic economy (Human Development Report, 2002).

According to UNESCO estimates from 2001 (based on data from 1996/97), three quarters of GERD in Sub-Saharan Africa is concentrated in South Africa. For Uganda and Senegal, the only information available is from 1999 and 1997, respectively. South Africa spends approximately nine times more on R&D than Uganda, but seven times less than Spain, which is given as an example of a developed country. The amount of GERD in relation to the size of population (GERD per capita) also ranks South Africa as the highest investor in R&D in Africa.

In Latin America, the situation is better not only in terms of GERD but also in terms of the availability of statistical information, due to the existence of a Science & Technology Ibero-American Indicators Network that has been collecting statistical information for several years. In 1999, Latin America and the Caribbean have accounted for 1.9 % of the worldwide investment in R&D. However, although this figure is low, it represents a 70 % increase compared with a decade ago. This is similar to the increase in investment seen in the USA and higher than the increase of 32 % made by the European Union over the same period. According to UNESCO estimates, Brazil accounts for about half of all Latin American GERD, Mexico for 13 % and Argentina for approximately 7 %. In absolute numbers, Brazil has spent 12 times more than Chile in 2000 and nearly four times more than Argentina. With an expenditure of 0.77 % of GNP in 2000, Brazil devoted the highest amount of its GNP to R&D in Latin America.

Higher Education Expenditure on R&D (HERD)

In New Zealand, higher education expenditure on R&D for the 2004 reference year was estimated at \$ 454.8 million. This compares with \$ 435.8 million for the 2002 reference year. Higher education expenditure accounted for 29 percent of total R&D expenditure in the 2004 reference year, compared with 31 percent in 2002 (Statistics New Zealand, 2005).

Higher education expenditure on R&D (HERD) in Australia in 2002 was estimated to be \$ 3,430 m at current prices. This represented an increase of 22.9 % over 2000. In volume terms, with the effect of changes in prices and wages and salaries removed, R&D expenditure increased by 14.0 % compared with 2000. HERD has steadily increased since 1994 with an average annual rate of growth over this period of

8.2 % in current price terms and 4.9 % in chain volume measures. HERD as a percentage of Gross Domestic Products (GDP) in current prices has increased from 0.42 % in 2000 to 0.45 % in 2002.

S & T Manpower

R&D personnel information was collected on both a headcount and full-time equivalent (FTE) basis. The headcount of R&D personnel included a count of all personnel involved in research activities. This includes both “Full-Time” and “Part-time” employed staff. The FTE measure takes into account each person’s total working time spent on research activities. For example, a full-time employee spending half their time on research activities during the year would contribute 0.5 towards the FTE measure. This data was classified by occupational groups (researchers, technicians, and support staff) and highest qualification levels.

In United States 2001 R&D manpower survey in the S&T field, 168200 staff available in the higher education sector. In that 125600 academic faculties (56700 Professors, 34800 Assistant Professors and 34100 junior faculties). Research and supportive manpower accounts 22120. The Post doctorates 15700 persons. The part time staff’s consume 4580 persons (Academic Research and Development Survey, NSF Report 2004).

In New Zealand, the number of R&D staff was estimated at 21,410 FTEs in the 2004 reference year. Seventy-three percent of R&D staff in 2004 were researchers, 15 percent were technicians, and the remaining 12 percent were support staff. There were 3,448 FTEs involved in R&D in the government sector during the 2004 reference year, comprised of 1,845 researchers, 1,153 technicians, and 450 support staff. Moreover, there were 6,440 FTEs involved in business R&D in the 2004 reference year, comprised of 4,022 researchers, 1,409 technicians and 1,008 support staff (Statistics New Zealand, 2005).

Human resources devoted to R&D in Australia in 2002 by higher education organizations are estimated to be 49,612 person years. This represents an increase of 7.2 % over 2000 and an average annual rate of growth of 2.7 %, since 1994.

and output indicators. The programmers from south zone could install the software in IIM. The pilot survey has also been conducted in the Lucknow University. The PI's of both zones have agreed upon the distribution status of the different states for their survey of this project.

The Zonal PI's meeting has been conducted on 12th September 2003 at Technology Bhavan, DST, New Delhi under the chairmanship of Dr. Laxman Prasad, Advisor & Head of NSTMIS Division, DST. In that meeting, the methodology for this project has been standardized and finalized. Sh. R. Chetal, Advisor, Dr. G.J. Samathanam, Director, Sh. Parveen Arora, Director and Dr. A.N. Rai, Scientist-D have participated. During the meeting Prof. G.V. Rajamanickam, PI, South Zone, has made a brief presentation and shared the experience gained during the preparation of the national report on the Higher Education Sector survey conducted during the period 1997-98. He has also explained the objectives, methodology and views of the various Experts/VC's of the Universities/ Zonal PAC participants, in shaping and refining the methodology, leading to the various questionnaires, used for collection of the desired data and its analysis in the Higher Education Sector.

The LPAC meeting of North zone was held on 2nd January 2004 at Indian Institute of Management, Lucknow. The Zonal PI's, DST representatives have also participated. The main focus of the meeting is to develop an effective operational mechanism in view of budget / time constraint to achieve the desired objective.

The LPAC meeting with invited experts (Annexure - II) of south zone has been held on 10th March 2004 at SASTRA Deemed University, Thanjavur. Dr. Laxman Prasad, Advisor and Shri. R. Chetal, Advisor from DST have also participated. Dr. Laxman Prasad has emphasized on the importance of this project to the DST and also conveyed the expectations of the DST from the higher education sector through this project. The Committee has pointed out that the Contingency expenditure reflected by the universities is high and so they have desired to work out the possibilities of listing the break up of contingency expenditure, at least from few representative Universities in order to arrive at the total R&D expenditure figure. The project Assistants from north zone have stayed for a week in Thanjavur to get more exposure on the operations of project software, method of data collection and methodology concepts.

The Zonal PI's meeting has been held on 28th October 2004 at Technology Bhavan, DST. The purpose of the meeting is to discuss the progress of the project. In the meeting, the milestone has been fixed for the respective Project Zone in consultation with the DST to complete the project activities as per schedule.

Mr. Sanjeev Gupta, Project Assistant from North zone visited to Thanjavur during 17th and 18th of February 2005. During the visit, the programmers from south zone have once again demonstrate thoroughly the methodology, concepts and report generation.

Data Collection

Head, NSTMIS of DST has circulated an appeal to all the institutes of higher education to submit their annual reports and budgetary estimates of 1999-2000, 2000-01 and 2001-02 direct to them. However, it has been accepted that the PI has to pursue the different universities in person to collect the same from the concerned authorities. The budgetary estimates and annual reports of the different centers of higher education form the main source, in addition to the minimum of 10 % responses from the faculties to the questionnaire circulated. Moreover, the institute's local bulletins, project reports, 10th plan proposals and NAAC reports have also been used as secondary sources.

As there are no details in budgetary estimates and annual reports, regarding the time spent by academicians in the respective institutions, the PI has taken effort to distribute and collect the faculty questionnaire (Annexure – IIIa) individually from the respective academicians from each university to the tune of at least 10 % of the total strength of the academics in that respective university. This is badly needed to evaluate the Full Time Equivalence (FTE) in the universities. As there are many universities imparting knowledge with teaching and research together, it is a must to evolve the academician's role in R&D.

Field surveys have been carried out in the universities of Peninsular India covering eight states and two union territories namely Tamil Nadu, Karnataka, Andhra Pradesh, Kerala, Maharashtra, Orissa, Gujarat, Pondicherry and Goa, in a phased manner, the details of which are listed separately (Annexure-V). The visits made for different investigators are 441 days. The details of each individual are provided separately (Annexure – IV).

However, when the programmers have visited the following universities they have been informed about the absence of any kind of research activities in S&T as no higher education degree is offered in these universities in S & T disciplines. These institutes are :

1. Kannada University, Bellary
2. Dr. B.R. Ambedkar Open University, Hyderabad
3. Rashtriya Sanskrit Vidyapeeth, Tirupati
4. Maulana Azad National Urdu University
5. Potti Sri Ramalu Telugu University
6. Indira Kala Sangeet Vishwavidyalaya
7. Dr. Babasahib Ambedkar Open University, Ahmedabad
8. Gujarat Vidyapeeth, Ahmedabad
9. Tata Institute of Social Sciences, Mumbai
10. International Institute of Population Sciences, Mumbai
11. Indira Gandhi Institute of Development Research, Mumbai
12. Tilak Maharashtra Vidyapeeth, Pune
13. Dakshina Bharat Hindi Prachar Sabha
14. Tamil nadu Dr. Ambedkar Law university
15. Gokhale Institute of politics and economics
16. Mahatma Gandhi Antarrashtriya Hindi Vishwavidyalaya
17. Shri Jagannath Sanskrit Vishwavidyalaya
18. Indra Gandhi Krishi Vishwavidyalaya, Raipur, Chattisgarh
19. National Law School of India University, Bangalore
20. Sree Sankaracharya University of Sanskrit, Kalady, Kerala.
21. Indian Institute of Management, Kozhikode
22. Central Institute of English and Foreign Languages
23. National Academy of Legal studies and research university

Data extraction

The required data as indicated in the earlier survey questionnaire have been extracted from the annual reports and budget estimates. The extracted data have been filled in the Income and Expenditure questionnaire and Output indicator questionnaire (Annexure-III-B, III-C & III-D). The data extraction is based on our previous survey questionnaire. The data extraction was a cumbersome process due to the non-availability of uniform budget estimates presented by different universities in their respective annual reports, multi linguistic nature of the annual reports and lack of adequate quantum of data in the annual reports.

To overcome the linguistic barrier, our university students, who belong to different states of India, were engaged to do the data extraction from the annual reports and budget estimates on a part-time basis. However, the extracted data have been crosschecked, validated in the questionnaire itself and fed into the Ms-Access database through our software prepared in Visual Basic 6.0.

Data Codification

Data of all extracted questionnaires have been codified for easy computation and analysis. Following universal standard practices, codes are given by including state, university, subject, department and gender.

In the previous survey, we had codification in 20 digits. Presently also the same is adopted. In the department code, the difficulties faced last survey have been eliminated. However, the Departments Code is brought to 5 digits instead of earlier 3 digits. Now, the departments are grouped under 13 different branches and the departments changed from 857 to 308. For example: The Department of Physics will be denoted by the branch of Physical Sciences (10). The Physics code is (241). Total branch code is (10241). In the previous survey, the finalization of the R&D output indicators could not be made Branch – wise, because, the data was entered Department-wise. There were Departments Mathematics, Statistics, Mathematics and Statistics, Mathematics and Astronomy, Statistics and Business Mathematics, Mathematics and computers, statistics and computers, etc. While retrieving the data, it was difficult to get the group data. So, now while entering itself all these different subjects have been brought under one group of Mathematical Sciences.

Such changes may also help to stratify the basic disciplines like medical, engineering and natural sciences, the one suggested in the last LPAC Meeting in the North Zone at Lucknow. Further, this system is adopted by CSIR for NET exams and ISCA also maintains such a decision.

Calculation of S&T and R&D Expenditure

S&T expenditure comprises of two components: S&T Exp.1 and S&T Exp.2: **S&T Exp.1**, contains expenditures on such facilities, which are commonly used for teaching

and research in the departments, such as equipment, laboratory, maintenance & materials, visiting faculty, seminars, symposia/conferences, and contingency; while **S&T Exp.2** comprises salary component of teaching staff-members. These two components are further used in computing expenditure on research & development (R&D). The R&D Exp.1 provides the expenses of the R&D component in respect of research staff and is given by:-

$$\mathbf{R\&D\ Exp.1 = [S\&T\ Exp.1/(PG + RS)] \times RS}$$

Where, PG = number of PG students, and

RS = number of research scholars

Another component of R&D expenses has been referred as **R&D Exp.2** which includes the R&D expenses on salary of staff on the basis of full-time-equivalent (FTE) of teaching staff together with FTE of Research Staff (including scientific officers, field officers and others, if any).

One can obtain Research Time Equivalent of a faculty member from the percentage of time reported by him/her that had been spent on research work (t_r) (Annexure-III a). Summation of such values ($\sum t_r$)/100 of all the responding faculties (N_{RF}) of an institute gives Full Time Equivalent of Responding Faculty FTE (RF) of that institution. It is a number signifying the apportioned staff towards research. One can thus calculate FTE per faculty of an institute by dividing FTE (RF) by Number of Responded Faculty (N_{RF}) and obtain a factor.

$FTE(RF)/N_{RF}$ for each institution, representing average FTE per faculty

From S&T Exp2, one can then obtain R&D Exp2 by calculating a segment of expenditure on the apportioned staff, i.e.,

$$\mathbf{R\&D\ Exp2 = R\&D\ Exp2(RF) + R\&D\ Exp2(RS), \text{ ----- (1) \quad Where,}}$$

$$\mathbf{R\&D\ Exp2(RF) = S\&T\ Exp2 \times (FTE(RF)/N_{RF}) \text{ ----- (2)}}$$

And $R\&D\ Exp2(RS) = 100\%$ salary of Research Staff (RS) (including Pool Officers, Research Associates, SRF, JRF)

FTE Calculation

FTE is indeed a very crucial information, which Project Monitoring Committee has also considered essential. It is related to **the percentage of time devoted by the teacher towards research or extension work**. In India teaching positions are sanctioned in terms of teaching-load, although the teachers are supposed to do research for the betterment of their professional career to satisfy their academic urge and improve their teaching capabilities.

FTE – (Full Time Equivalent) is obtained from the responses responses available. The average of the total responses is the FTE (Annexure- III a) by those faculty members, who have responded to the query at least 10%. Here, care is taken to see that the total number of responses do not reach less than 10% of the total S&T faculties. Except few, mostly the responses collected form more than 50%. The responded faculties average research time is applied to all faculties of the particular university to calculate R&D expenditure.. Hence, the summation of faculties research time divided by 100 is the FTE number. That value of an institution has been referred to as FTE factor of that University.

Final Database

A structured database has been created using Microsoft database like MS-Access in PC-Pentium IV processors after giving a thought to the needs of the present study after giving the due corrections to the problems encountered in the last survey in generating the tables. The suggestions of the experts and LPAC members have been carefully incorporated to avoid the errors in output. The data collected during the course of different field works to all the nine southern states and two union territories have been stored in a database file named DB3.mdb. A graphical user interface programming like VB-6.0 has been developed for data entry, updating, query processing and report generation. The information gathered has been grouped into a number of fields as per the requirements of the three different earlier survey questionnaires. The Microsoft Data Base (MDB) consists of more than 75 input and output Tables. Those tables are linked

with each other with the help of common 20 digit number ID. The required information is extracted through this ID.

The Access Database is connected with the front end tool Visual Basic (VB) 6.0 is used for faster retrieval and compilation of the information. An extensive structured programming in VB has helped us for analysing the information in three categories of table generation.

1. R&D Expenditure
2. R&D Manpower (FTE)
3. Research outputs

An user friendly screen is developed for viewing and printing the tables.

Database file DB3.mdb- 80.00 MB

Program file repo1.vbp- 4.40 MB.

The following are the structures of data retrieval in the programme.

Type of Data Retrieval

1. Overcome 'absurd' data like:
 - 1.1 Total R&D expenditure of University is less than total S&T and total expenditure of University.
 - 1.2 Compatibility between total expenditure of the University / Institution, total expenditure of S&T departments, total R&D expenditure of S&T departments, total R&D expenditure of S&T departments and test whether they are in order.
 - 1.3 The nature of usage to codify the information under 'Reactions and Responses'
 - 1.4 Internal consistency of data is important.
2. Tabulation Analyses on Input to R&D derived from the Academic Sector Questionnaires as detailed below:
 - 2.1 Tabulations similar to what contained in 'R&D Statistics' of DST for Govt. and Industry:
 - 2.1.1 National R&D Expenditure in Academic Sector for the survey Periods Year wise. Each one should quantify and make a national total. Here, it may be required to extrapolate/estimate for non-response. Non-coverage and work out Statistical error and Confidence Interval for such estimation – may be for each Zone: (Compare Table 1 of R&D Statistics)

- 2.1.2 Total Academic Sector R&D expenditure as percentage of GNP and as percentage of total expenditure of the academic (higher education) sector (Compare Table 2 of R&D Statistics of DST)
- 2.1.3 Total Academic Sector R&D expenditure at current and constant prices (compare Table 3 of R&D Statistics of DST)
- 2.1.4 Science and Technology Expenditure of Academic Sector by the type of work-Basic Research. Applied Research Experimental Development and Other Table 8 of R&D Statistics of DST)
- 2.1.5 Science and Technology Expenditure of Academic Sector by Objectives (Table 13 of R&D Statistics of DST)
- 2.1.6 Science and Technology Expenditure of Academic Sector by Field of Science (Table 14 of R&D Statistics of DST)
- 2.1.7 Full time equivalent (FTE) of Manpower employed in R&D in Academic Sector as on 01-04-2001 and 01-04-2002 (Survey years) (Table 15 of R&D Statistics of DST) FTE of Faculty + Research Staff primarily engaged in R&D, Personnel in Auxiliary Activities and Personnel in Administrative activities.
- 2.1.8 Similar Table as explained in 3.1.7 for Women (Table 16 of R&D Statistics of DST)
- 2.1.9 Educational Qualifications X Field of Specializations of R&D Personnel (Faculty & Research Staff) in Academic Sector (Table 17 of R&D Statistics of DST) Separately for faculty and Research Staff.

*R&D manpower in academic sector includes faculty and research staff.
- 2.1.10 Similar Table as explained in 3.1.9 for women R&D personnel. (Table 18 of R&D Statistics of DST)
- 2.1.11 Annual Gross emoluments of R&D personnel (Faculty and Research Staff separately) (Table 19 of R&D Statistics of DST)
- 2.1.12 Total R&D expenditure by current (recurring) and capital (non-recurring)

- 2.1.13 Total expenditure, Total Expenditure for S&T Fields & Total Expenditure for R&D in Academic Sector for Survey Years. Disaggregated data for PG colleges and Departments etc.
- 2.1.14 R&D expenditure of academic sector as % of total expenditure and % of total expenditure for S&T education.
- 2.1.15 R&D expenditure-annual rate of change
- 2.1.16 R&D expenditure by Source of Funds-Federal, State, Industry, UGC, Own funds, etc.
- 2.1.17 R&D expenditure - Intramural & Extramural. (for total and PG colleges)
- 2.1.18 Masters/Ph.D or equivalent degrees awarded during survey period by discipline by sex.
- 2.1.19 R&D intensity-classification of universities based on the following two indices:
- i) R&D expenditure as % of total expenditure
 - ii) R&D personnel per thousand employees
- 2.1.20 Is it possible to estimate total personnel engaged in R&D work for non-response and non-coverage and work out statistical error and confidence interval?
- 2.1.21 R&D personnel by level of occupation
- 2.1.22 R&D expenditure by ranges and number of institutions in each range
- 2.1.23 R&D Personnel by ranges and number of institutions in each range
- 2.1.24 R&D personnel by sex and by age
- 2.1.25 R&D personnel by sex and by experience
- 2.1.26 Average (mean, median, mode) % of time spent in research by Faculty by level and by discipline
- 2.1.27 Average (mean, median, mode) % of time spent in research on the whole

3. Other relevant Tabulations

3.2.1 Total number of faculty in universities and PG colleges

3.2.2 Total number of faculty by sex and by level in total and in PG colleges

3.2.3 Total number of faculty in S&T departments by level and by sex and by qualification

3.2.4. R&D personnel in the universities

3.2.5. University/Department profile:

Age arranged by number and by R&D expenditure and by number of R&D personnel. Status arranged by number and by R&D expenditure and by number of R&D personnel. Mode of selection by number & by R&D expenditure & by number of R&D personnel. Total equipment cost by number, by R&D expenditure & by number of R&D personnel. Number of equipments above Rs.5 lakhs, by number of institutions, by R&D expenditure, and by number of R&D personnel.

3.2.6. Major source of support for Ph.D students

3.2.7. Number of extra mural project by number of institutions and R&D expenditure and R&D personnel.

3.2.8. Number of extra mural project by total costs, by name of institutions, by source funding.

3.2.9. Number of extra mural projects with total cost by discipline, by R&D expenditure and R&D personnel.

3.2.10. Research staff-total by sex, by discipline, by category, by number of institution.

3.2.11. Supporting personnel (technical and administrative) per R&D person

3.2.12. List of institutions with R&D personnel arranged in descending order

3.2.13. List of institutions with R&D expenditure arranged in descending order

3.2.14. Basic information on S&T education of institutions (also for medical institutions /PG colleges):

PG/equivalent students roll by S&T subjects
PG/equivalent students out-turn by S&T subjects
Ph.D./equivalent students roll by S&T subjects
Ph.D./equivalent students out-turn by S&T subjects
M.Phil./equivalent students roll by S&T subjects
M.Phil./equivalent students out-turn by S&T subjects
Total expenditure of the institutions by source of funds
Total expenditure for S&T departments of the institutions/
PG colleges
Total expenditure for S&T departments, department wise
Total faculty on roll including PG colleges
Total faculty in S&T departments, department wise/
PG college wise
Faculty in S&T departments including PG colleges by sex, by
level, by qualification, by age, by discipline, etc.
Percentage of time spent for research by faculty, PG
colleges/department wise/ level wise
Research scholars/research staff by sex, by disciplines-total and
PG colleges
Number of extramural projects with total cost, department wise/P
college wise
Major facilities/equipments available department wise/P
colleges
along with number/cost.
Status of the institutions/departments PG colleges
R&D expenditure arranged as 'high, medium, low' by number of
institutions
R&D personnel arranged as 'high, medium, low' by number of
institutions

3.2.15. Faculty in S&T departments by primary responsibilities-Research,
Teaching, others quantified by percentage of time.

3.2.16. Speciality wise in patient capacity available

3.2.17. State of art treatment available

3.2.18. Advancement in treatment/diagnostics

3.2.19. Surgical treatments developed and / or started

4. Tabulations/Analyses on Output of R&D derived from the Academic Sector Questionnaires as detailed below:
 - 4.1. R&D Output for the survey period year wise/institution wise are as under:
 - 4.1.1. Research output by field:
 - Papers (refereed) published and % in world output
 - Other Papers
 - Books/Monograph published
 - Other reports like proceedings etc. published
 - Patents filed and sealed
 - Ph.D.s or equivalent produced
 - M.Phil.s or equivalent
 - Research (extramural and intramural) completed with number and funding
 - Consultancy completed
 - Technologies developed
 - Awards both National and International
 - Fellowship awarded
 - Advancement in treatment/diagnostics/ Surgical treatments developed and / or started
 - 4.1.2. Other achievements/research competence:
 - Editorial responsibilities
 - Membership of professional bodies awarded
 - Visiting faculty-National and International
 - Evaluation of Research
 - Membership of national, state, local S&T committees
 - New S&T initiative / promotion
 - External examinership for Masters and above degrees
 - Participation in research for a
 - Involvement in other science related activities
 - Collaborative research with other institutions – India and abroad
 - Conference/training/seminar/work shop (national and international) Organized
 - Speciality wise in patient capacity available
 - State of art treatment available
5. The levels of Reports produced.
 - National Document
 - Zonal Documents
 - University level document including PG colleges
 - University, PG colleges, Medical Institutions levels of Reports.

Table-1. Response profile of annual reports and budget estimates collected for the present study

State/ Union Territories	Annual Reports Collected	Budget Estimates Collected	Faculties Entered
Tamil Nadu	52	21	3055
Andra Pradesh	37	14	1525
Karnataka	43	15	1626
Kerala	22	8	501
Maharashtra	50	19	1343
Chattisgarh	6	2	51
Orissa	8	8	485
Gujarath	29	10	531
Pondicherry	3	1	48
Goa	3	1	73
Total	253	99	9238

From the responses, 37 different tables have been generated indicating the individual institutions' input and output as well as the combined total for each and every table. The abbreviation of the terms used in the present work (Annexure-I) is given.

Definitions of Terms

R&D Activities

Research and Development (R&D) activities can be defined as any systematic and creative work undertaken in order to increase the stock of knowledge and the use of this knowledge to devise new applications. R&D activities include any one or more of the categories of research, such as basic research, applied research, and experimental development.

Basic Research

Basic research may be defined as any experimental or theoretical work undertaken primarily to acquire new knowledge of the underlying foundations of phenomena and observable facts without any particular or specific application or use in view.

Applied Research

Applied Research may be defined as any original investigation undertaken in order to acquire new knowledge. It is, however, directed primarily towards a specific practical aim or objective.

Experimental Development

Experimental development may be defined as any systematic work, drawing on existing knowledge gained from research and/or practical experience that is directed to produce new materials, products and devices, to install new processes, systems and services, and to improve substantially those already produced or installed.

Auxiliary Activities/ Supportive Technical

Auxiliary activities refer to the tasks such as maintenance and operation of specialised R&D (or S&T) equipment and machinery, preparing materials and equipment and carrying out experiments, tests and analyses. For example, the activities carried out by medical assistants, computer programmers, surveyors, draftsmen, survey interviewers and investigators can be classified as auxiliary activities.

Non-Technical Activities

Non-technical activities refer to those tasks which are clerical, secretarial and essential services. For example, personnel providing services such as security, sanitorial and maintenance.

Intramural Grants and Expenditure

Intramural grants and expenditure of an institution cover the grants of its own sources and the expenditure incurred, therefrom.

Extramural Grants and Expenditure

Extramural grants and expenditure cover the funds received by an institution for undertaking R&D projects sponsored by outside organisations, such as Central and State Government Departments/Agencies, International Agencies, Public/Private Industries, etc., and the expenditure, therefrom.

Revenue/ Recurring Expenditure

Revenue or recurring expenditure includes salaries and wages, minor equipment, expendable supplies and expenditure on office and labour, materials, books, journals, rent of buildings, travel and postal services.

Capital / Non – Recurring Expenditure

Capital / non – recurring expenditure includes costs on purchase of major installations , machinery and equipment , land for building , new buildings or large – scale improvements / modifications / repairs to buildings and fixed installations , land improvement works, etc.

Full Time Equivalence (FTE)

One **Full – Time equivalent** may be thought of as one person – year. Thus, a person who normally spends 30 % of his/her time on R&D and the rest on other activities (such as teaching, university administration and student counseling) should be considered as 0.3 FTE. It should be used to convert figures relating to the number of part – time workers into the equivalent number of full time workers.

Researcher

The professionals engaged in the conception or creation of new knowledge, products, processes, methods and, systems and also in the management of the projects concerned. Postgraduate students at the Ph.D., level engaged in R&D should be considered as researcher.

Results & Discussion

CHAPTER – III

RESULTS AND DISCUSSION

The present survey of South Zone(SZ), total allotment of 135 Universities, we have covered 99 S&T universities, including Agricultural, Medical and Engineering and Natural Sciences Universities / Institutions. The universities receive grants-in-aid from one or the other government (State/Union) and on the other hand, there are certain Universities/ Institutes established by private trusts, which are recognized by the Government through University Grants Commission (UGC), New Delhi or Medical Council of India(MCI), Indian Council of Agricultural Research (ICAR), etc., and referred to as “Deemed Universities”; these also have come under the purview of this survey. An alphabetical list of 99 universities of South Zone, including Deemed Universities, is given in Appendix -1 along with source of income.

The universities improve resources through fees collected from students, sale of prospectus, application forms, brochures, etc., and interests earned on their long-term deposits, including the endowment funds. Funds are received towards Plan Expenditure or Non-Plan Expenditure (NP). Funds for Plan Expenditure are provided by the governments for building, equipments, library, campus developments etc., which form the capital, or assets of the institution, usually on a Five-Year-Plan period basis.

By and large, these belong to the expenditure of Non-Recurring (NR) type. The non-plan grants, on the other hand, cover largely the Recurring (R) expenses, in which the establishment is making the largest component. Other non-plan grants include the books and journals, laboratory, equipments, chemical & supplies, medicines, power-supply and other campus needs. Contributions from industrial consultancy, foreign sources, or donation come usually under endowment deposits. They are invariably not available for expenditure, save of minor nature. Only engineering universities and technological institutes earn income through industrial consultancy of worth-mentioning levels. The total income given above is distributed by the universities to its departments, including administration, campus development along with healthcare, power, water-supply, library and S&T departments as well as non-S&T departments.

Source of Funds

The continued reliance of the academic sector on a variety of funding sources for support of its R&D activities requires continuous monitoring of such contributions to those sources. Institutional R&D funds may be derived from (1) general-purpose state or local government appropriations, particularly for public institutions; (2) general-purpose grants from industry, foundations, or other outside sources; (3) tuition fees; (4) endowment income; and (5) gifts that are not restricted by the donor to conduct research. Other potential sources of institutional funds are income from patents or licenses and income from patent care revenues.

The Total expenditure for Higher Education Sector – South Zone, as gathered from the Financial Accounts of 99 Institutions, is reckoned to Rs.4507 Crores (Appendix -1). In that, Central and State Governments have a share of 22.21 % and 37.19 %, respectively. However, Industrial contribution to academia represents only 1.49 %. It reflects, a negligible role of industries in the Higher Education Sector (Fig.1) whereas the countries like Canada, the industrial contribution is accounted by 14.44 % (Science & Technology Indicators, Canada, 2000). Education being in the state schedule, the major funding for Universities is rightly pointing to a higher input of fund from the state and central governments. As the Government grants to higher education sector is being slashed down appreciably, Universities are forced to raise their funds to compensate the grant reduction. It is done mainly through the raise of tuition fees. Otherwise it is the mode of raising their own source. The University's own source is represented by 26.98 %. It directs the possibility of higher cost of education in this country. In USA, the Federal Government provides 60 % of funding for higher education sector, but it is much reduced from its peak of 73 % in 70's (NSF Report, 2005).

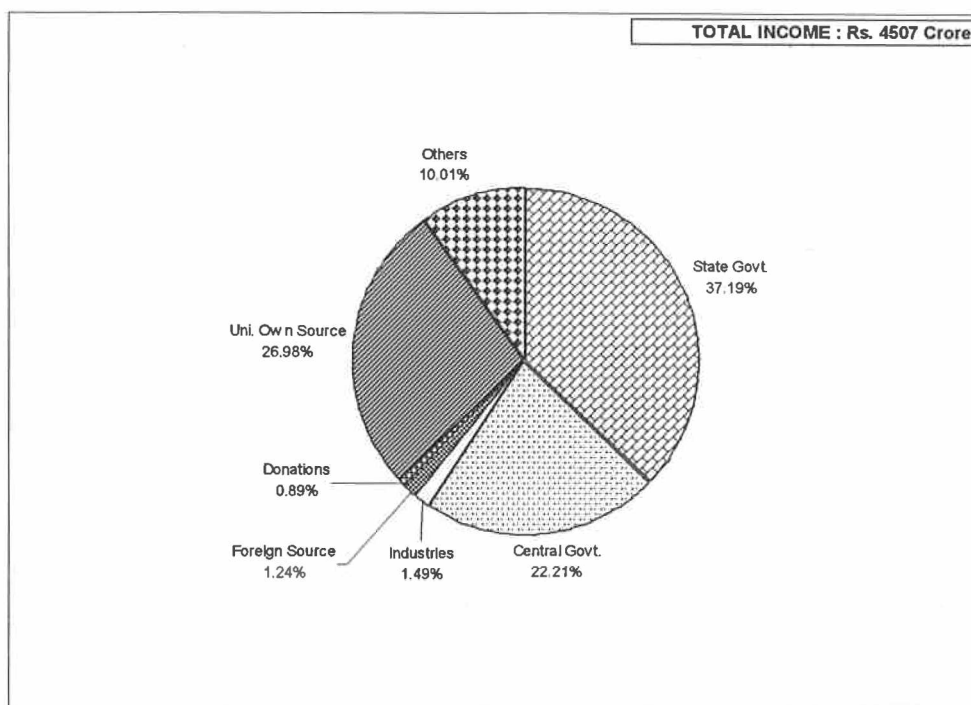


Fig.2. Source of grants for total expenditure

In the developed nations, most of the expenditures, are supported only by industries either by means of consultancy projects or sponsored R&D programmes of the industries. The present statistics of industrial contribution of 1.49 % clearly points out that the higher education sector has to be tuned to exploit the Indian industries more and more or the Indian industries should be made to realize the necessity of higher R&D input from their profits through the different academic bodies either by sponsored research programmes or by means of tax relief schemes from Govt. of India. This further emphasizes the need for encouraging more of Industry – Institutional collaborative programmes of the government sector. A comparison with USA shows that industries contribute 7% of expenditure in higher education sector. (NSF Report, 2005).

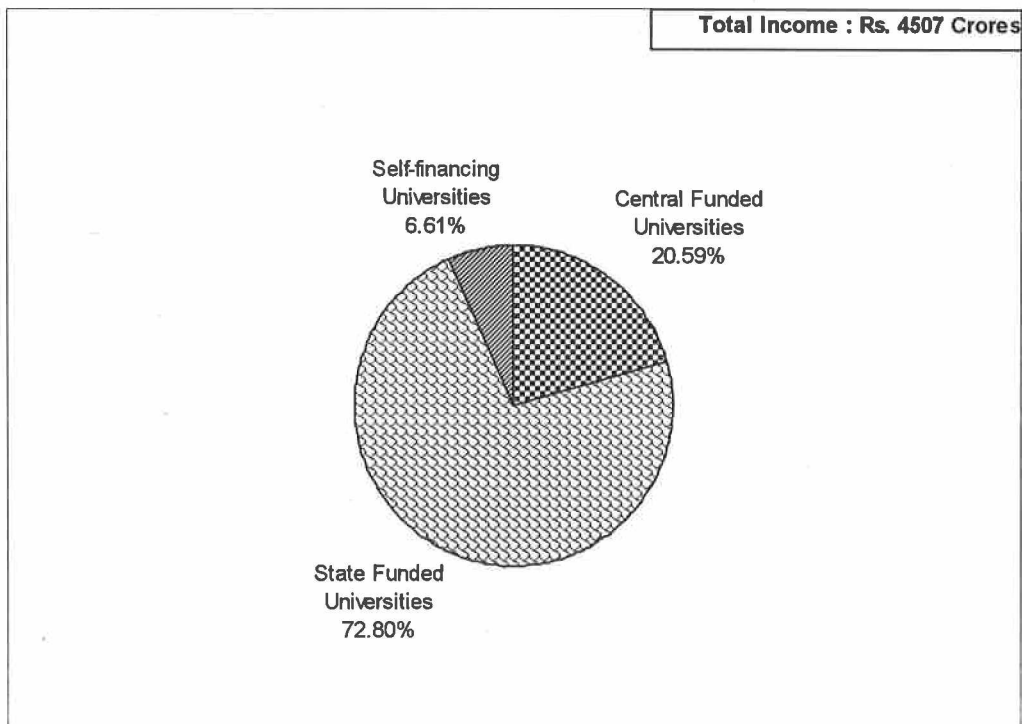


Fig. 3. Break-up of universities by source of funds

Fig.3 shows that the South Zone Universities have consumed nearly Rs. 4507 Crores of expenditure towards higher education. In that, state funded universities are occupying 72.80 % (Rs. 3281 Crores), whereas Central funded universities consume 20.59 % (Rs. 928 Crores) and self-financing universities 6.61 % (Rs. 298 Crores).

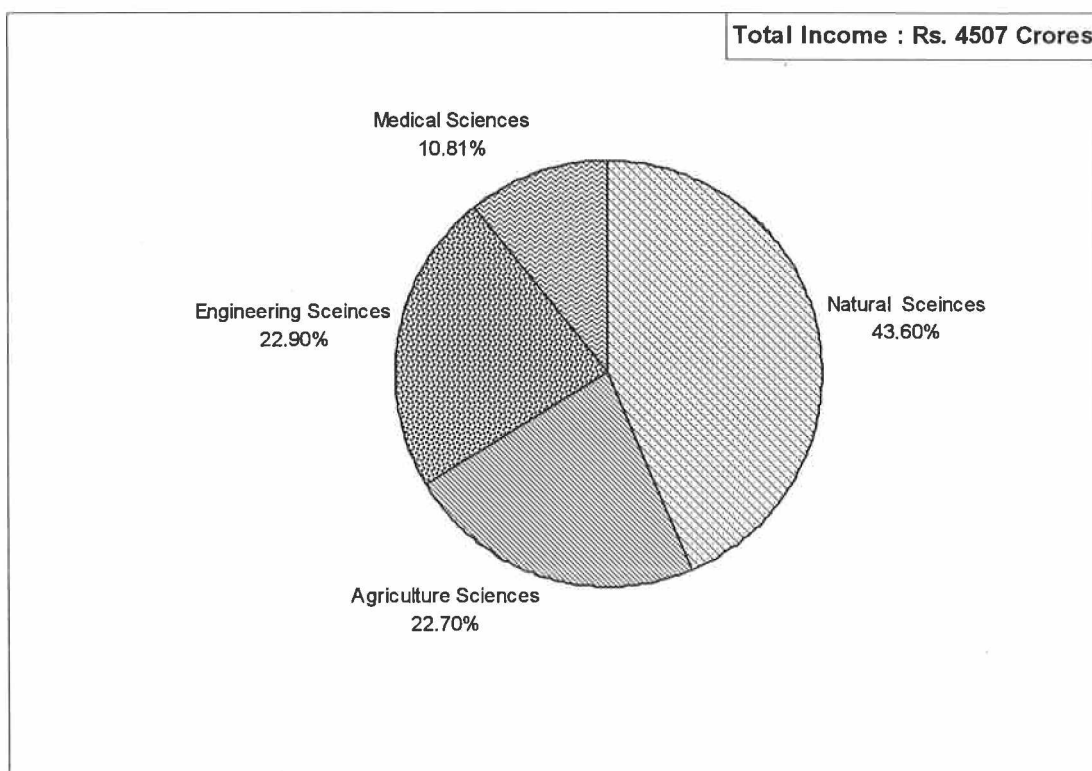


Fig. 4. Universities total expenditure by field of sciences

Fig.4 displays a break-up of total expenditure according to the field of science. A majority of academic expenditure goes to the Natural Sciences (43.60 %). While the next one is for Engineering Sciences 22.90% followed by Agricultural Sciences (22.70 %) and Medical Sciences (10.81 %).

S&T Expenditure

In South Zone, the S&T expenditure of higher education sector is amounted to Rs.2900 crores (Appendix-2 & 3). When S&T Expenditure is scanned to know the different heads (Fig.5), under which it has been utilized, the salary part consumes 39.21 % of the total S&T expenditure. During the survey, every university has complained about the lack of manpower as the main hurdle for the research but the expenditure shows the lion's share of expenditure in the salary itself. In other words, it indicates a red signal for further enhancement in this line. In S&T expenditure generally, the expenditure towards laboratory and equipment are expected to consume in any growing center, but the present expenditure shows a major part in contingency (24.45 %). Physical infrastructure for academic R&D, especially the state of research facilities meant for equipment and levels and sources of funding for these two key components, remains a serious concern today. The expenditure suggests that expenses

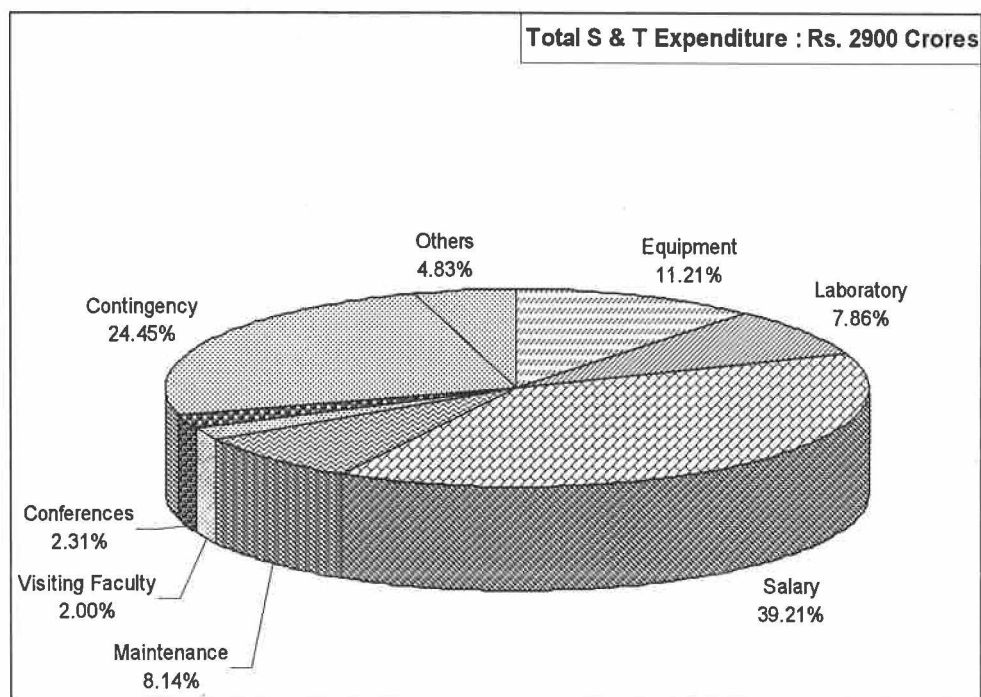


Fig. 5. Head-wise details of S&T expenditure

involved contingency is on a higher side (24.45 %) than that of equipments (11.21 %). Another issue is, the Universities do not maintain separate heads in contingency towards the research projects, consultancy projects, administrative expenses for Science departments, suspense account and university functions. The laboratory expenditure consume 7.86 %. The applied research is mainly based on the laboratory work, and so, one has to increase the expenditure towards laboratory work, for which enhancement of the allocation of funds meant for laboratory is a must. The poor allocation to academic activities like conferences(2.31%) and visiting faculty(2.00 %), in addition to the above observations on salary, contingency and maintenance, projects the possible deterioration in R&D sector of Higher Education.

R&D Expenditure

According to the methodology developed in this study, the total R&D Expenditure in Higher Education Sector, South Zone is estimated as Rs. 915 crores out of the total expenditure of Rs. 4507 crores and S&T expenditure of Rs.2900 crores (Appendix-10). As per the Indian R&D statistics (1998 - 99), the share of higher education sectors in the total R&D expenditure was 2.9 %. Countries differ in the expenditure proportion of their research and development that is performed through institutions of higher education. R&D performed in the academic sector in

2002, as a proportion of total R&D spending, is 26.78% in the Australia, 14% in the United States, 46.24 % in Canada.

A majority of academic R&D expenditure (Appendix-9) is going to the Engineering Sciences (31.04 %). The next largest block of expenditure is spent in Natural Sciences (26.89 %). This is followed by 29.95 % for Agricultural Sciences and 12.13 % for Medical Sciences. (Fig.6).

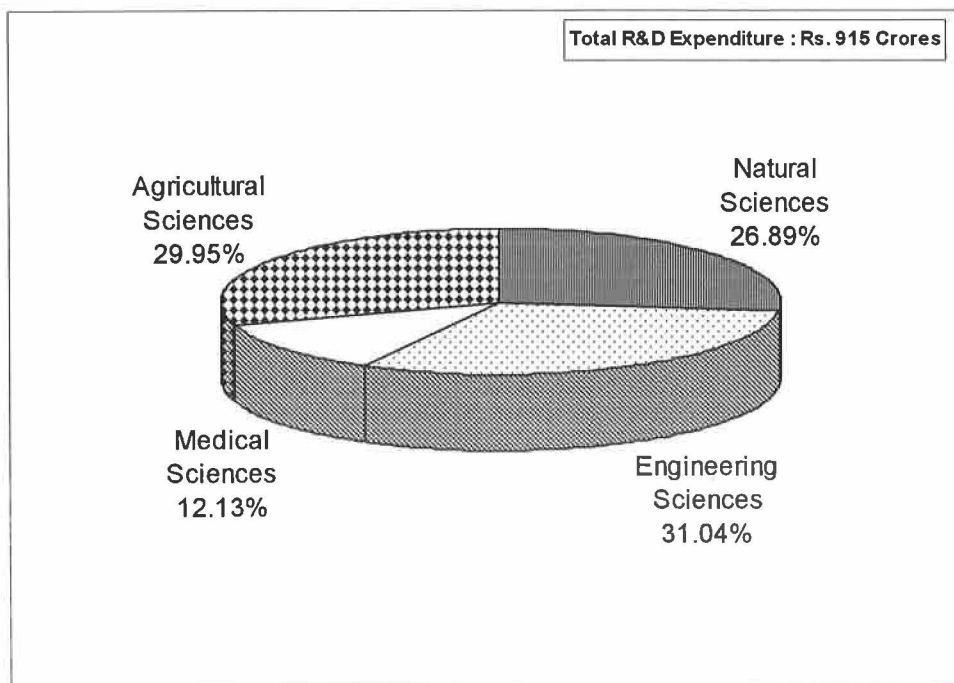


Fig.6. R&D expenditure by field of sciences

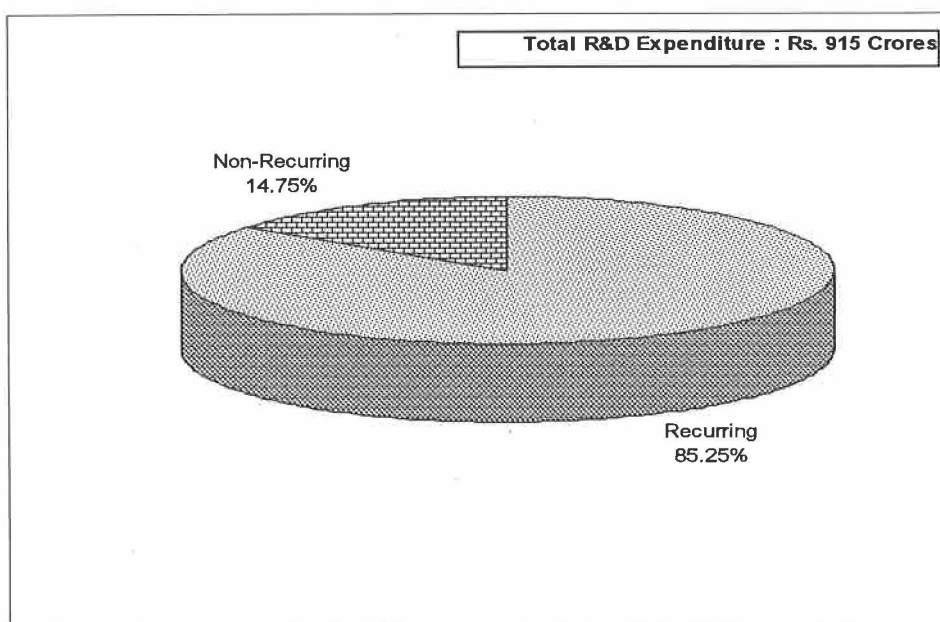


Fig.7. R& D expenditure by recurring & non-recurring

The overall percentage of recurring expenditure in total R&D expenditure is constituting 85.25 % (Appendix-7 & Fig. 7). In this, salary component alone is found to be of 61.62 %.

Most academic R&D is concentrated in relatively few of the 99 higher educational institutions. The top10 institutions spend 45.57 % of total academic R&D funds. In the Top 10 Institutions, Indian Institute of Science ranks first with a R&D expenditure of about Rs.136 Crores. The top 10 institutions include 5 Agricultural Universities, 3 Institutes of National Importance and 2 Medical Institutes. (Table-2).

University Name	Rs.in'000
University Name	Total R&D Expenditure
Indian Institute of Science, Bangalore	1358838
Indian Institute of Technology, Chennai	412737
Gujarat Agricultural University, Sardarkrushinagar	383251
Tamil Nadu Agricultural University, Coimbatore	339671
Kerala Agricultural University, Trichur	329447
Acharya N.G. Ranga Agricultural University, Hyderabad	317817
Manipal Academy of Higher Education, Manipal	288719
National Institute of Mental Health and Neuro Sciences, Bangalore	256181
Indian Institute of Technology, Bombay	249768
Agricultural Sciences, Bangalore	237857
Total	4174286
Others Total	4980010
Grand Total	9154296

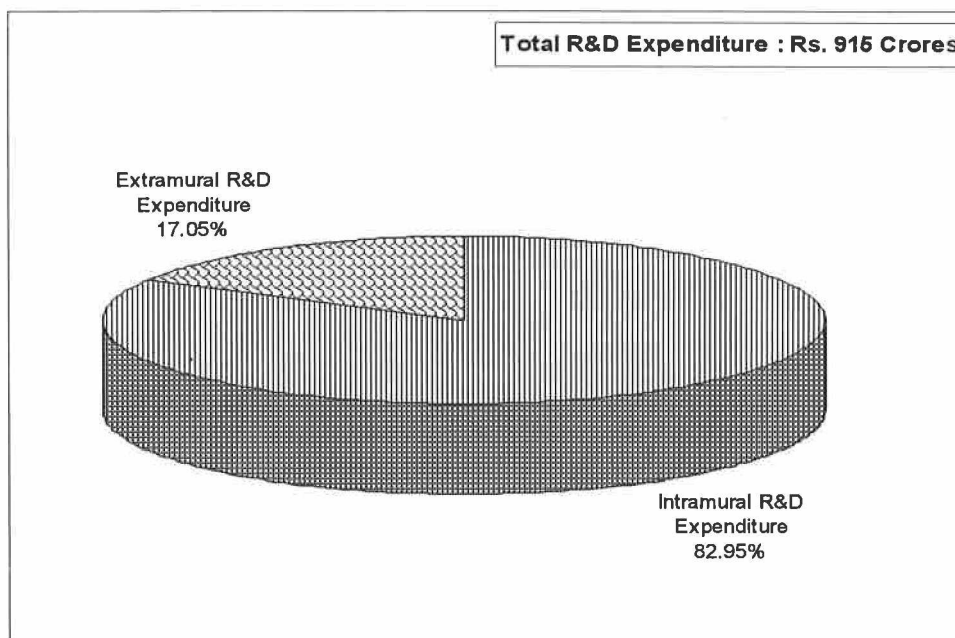


Fig.8. R&D expenditure by intramural and extramural

The break-up of R&D Expenditure in terms of Intramural (I) and Extramural (E) contributions is provided in Appendix-8 (Fig.8). Intramural sources include the university's own source, such as donation, consultancy, sale of publication, documents, etc., and the budgeted grants-in-aid from the state government or the central. All other grants like Research projects, Consultancy projects, Foreign Sources, etc are considered as extramural. In the Higher Education Sector, Intramural expenditure constitutes 82.95 % (Rs. 659 Crores) and Extramural expenditure (Rs.156 Crores) accounts for 17.05 %, including the Full Time Research Staff salary.

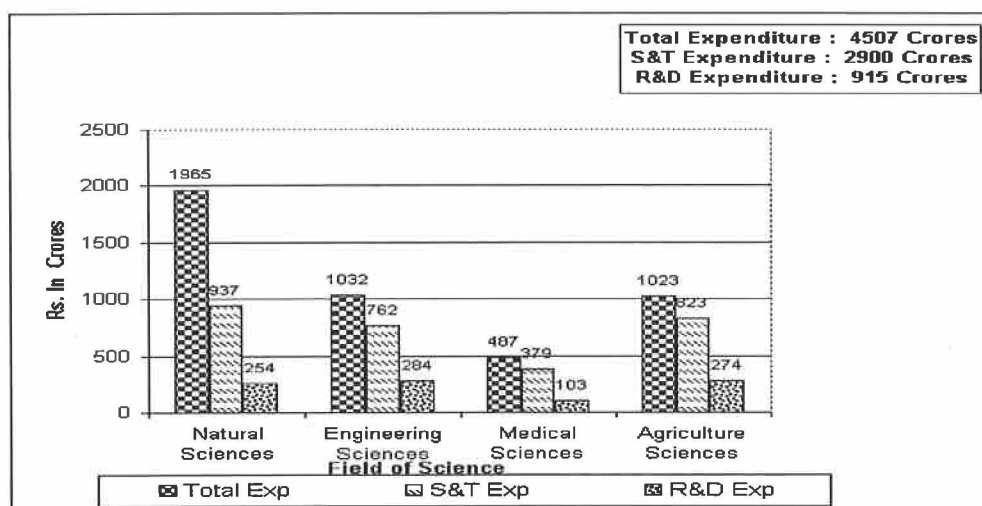


Fig.9. Comparison of Total, S&T and R&D expenditure

The status of Total, S&T and R&D expenditures is reflected in the diagram Fig.9 & Table-10. It is interesting to note that more than half of the expenditure is diverted to S&T whereas the quantum spared for R&D is much less.

The diagram is highlighting the technological universities as the one spending more for R&D (37.27%) in their S&T expenditure. While comparing with other fields of sciences, it is found that Medical sciences register to 27.18% and Agriculture sciences to 33.29%. As far as the Natural sciences universities accounted the spending for R&D out of their S&T expenditure is much less.

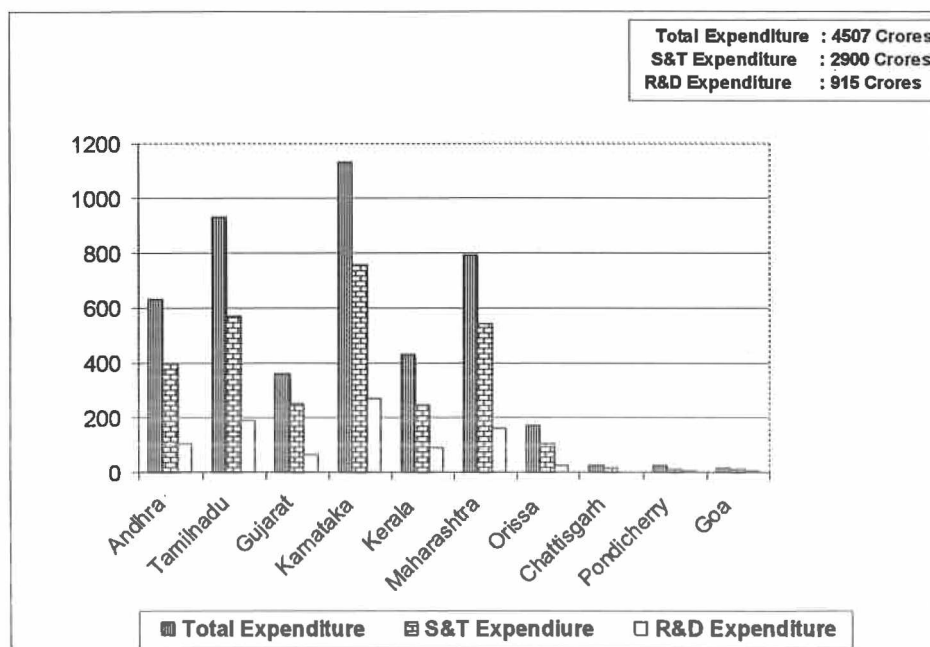


Fig.10. State-wise comparison of Total, S&T and R&D expenditure

The Fig.10 reflects the state-wise comparison of Total , S&T and R&D expenditure of Higher education sector. In this, the Karnataka spends more expenditure on Total, S&T and R&D expenditure. So, the Government could more concentrate to spend expenditure on higher education sector to the states which are spending lower expenditure on Total , S&T and R&D.

Research Time

The research time calculated from researchers are professionals engaged in the conception or creation of new knowledge, products, processes, methods and systems and also in the management of the projects concerned. The students at the Ph.D., M.Phil., M.Tech / M.E. and MS/MD level engaged in R&D should be considered as researchers.

One Full-time equivalent (FTE) may be thought of as one person-year. Thus, a person who normally spends 30% of his/her time on R&D and the rest on other activities (such as teaching, university administration and student counselling) should be considered as 0.3 FTE. Similarly, if a full-time R&D worker is employed at an R&D unit for only six months, this results in an FTE of 0.5. However, for reporting purposes, the total sum of FTEs should be rounded to the next integer, avoiding the reporting of decimals. A number of restrictions apply to the actual measurement of FTE.

What normally is called “extension” in agricultural and engineering sector is the activity labeled as hospital, or field-duties, by medical institutes and field-work by many institutes of natural sciences. Time spent on research and extension, too, has been counted towards research occupation.

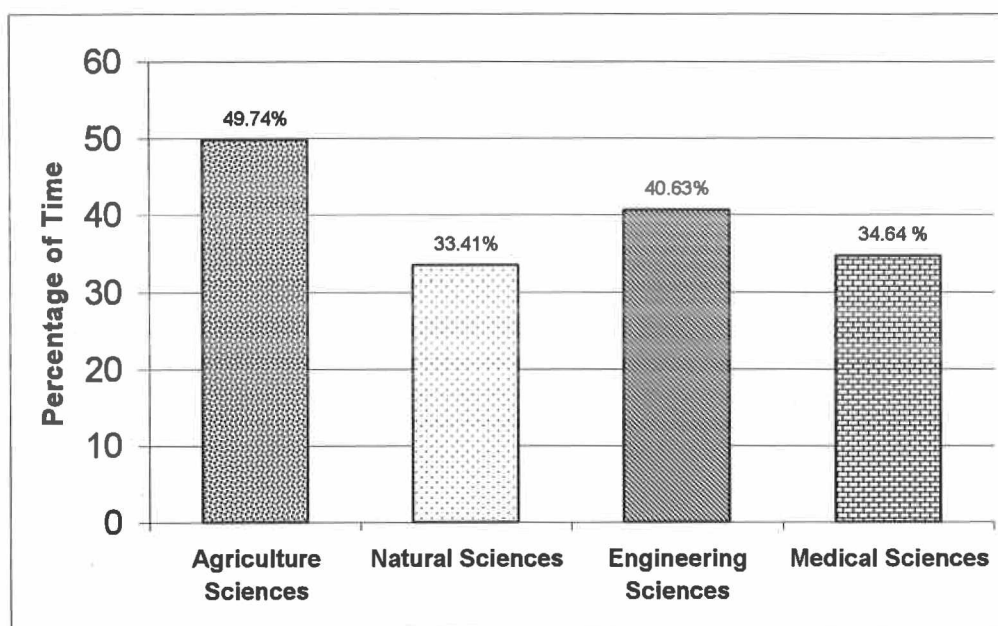


Fig. 11. Field-wise average research time spent by faculty

The estimated percentage of research time per week devoted by the faculty members in various fields of sciences with the mean values reported by responding faculties is shown in Fig.11. It is significant that 49.74 % time of the faculty is spent in research in agricultural institutes, compared to 33.41% in natural sciences, 40.63% in Engineering Sciences and 34.64 % in Medical Sciences .

R&D Manpower

Apart from teaching, which is one of the major activities, the faculty members are expected to do is research which not only enriches teaching but also keep the faculties abreast of the latest developments in the respective fields. Scientific & Technical manpower constitutes one of the major input resources to Scientific and Technological activities. It is also an indirect measurement of strength of the country because of its activities. In the present study, the total number of S&T faculty members has been covered as 16,463 and the faculty personal data available in the annual report 9238 (56.12 %) persons (Fig.12 & Appendix- 14)

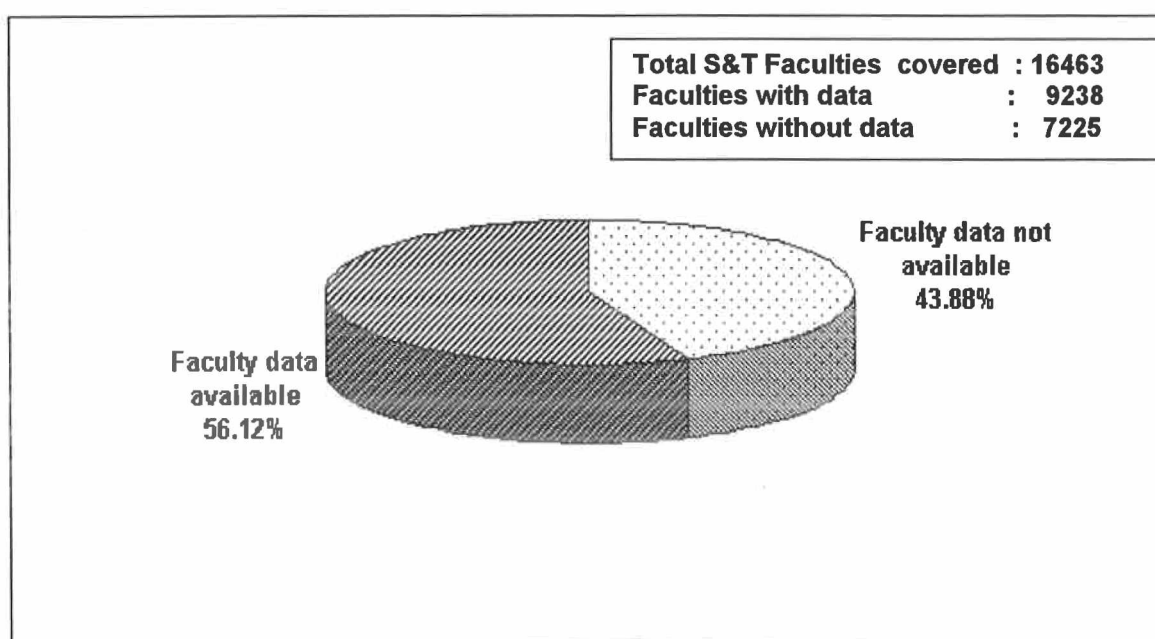


Fig. 12. Faculties personal data availability in percentage

Gender Issues

FTE data is derived based on the response received from 7876 male and 1362 female faculty (Fig.13) of higher education sector which have been converted as 2990 male and 492 female FTE R&D personnel (Fig.14) based on their response. In the total FTE of R&D man power, male dominates in all categories of the faculty (Table-3).

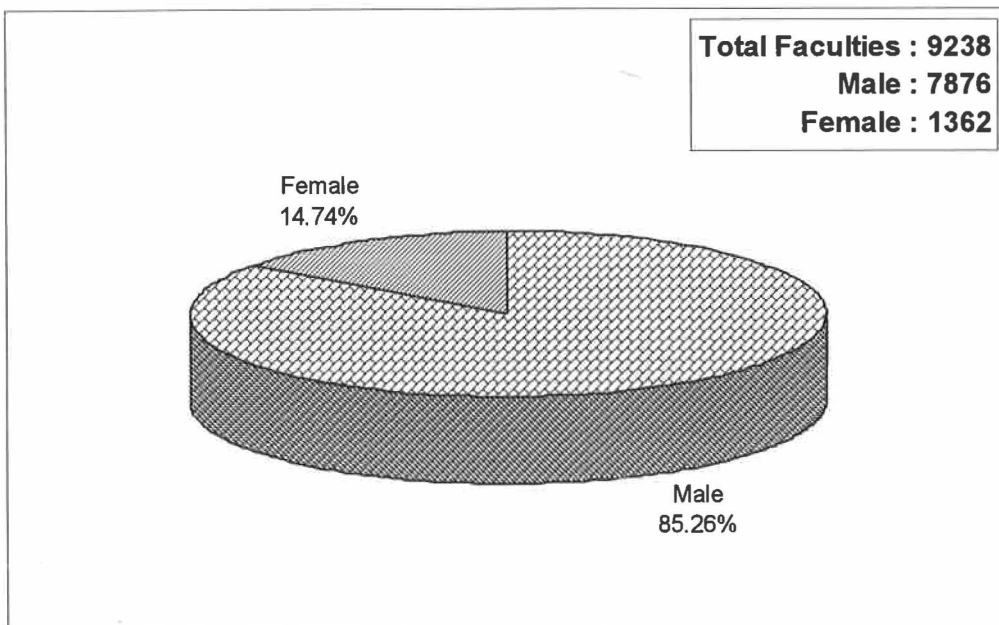


Fig.13. Faculty personnel by gender

Table 3. R&D FTE Personnel by Category and Gender

Category	Male	Female	Total
Professor and above	1635	187	1822
Reader / Equivalent	745	134	879
Lecturer / Equivalent	503	135	638
Tutor /Scientist/ Equivalent	111	36	147
Pool Officer	10	1	11
Research Associate	634	210	844
SRF	870	296	1166
JRF	1424	576	2000
Total	5932	1575	7507

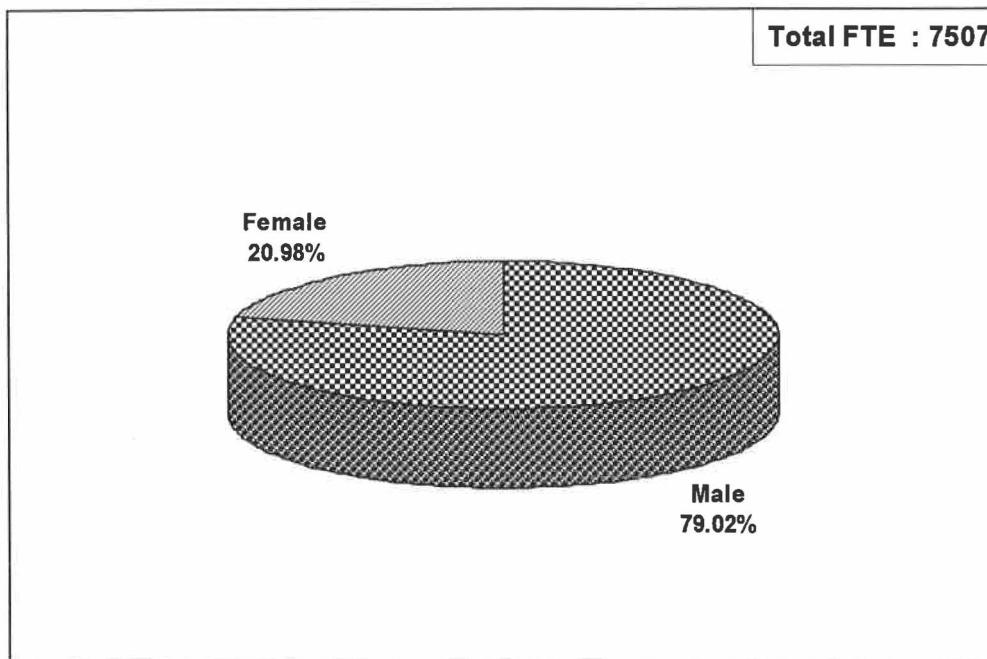


Fig. 14. Percentage of R&D personnel by gender

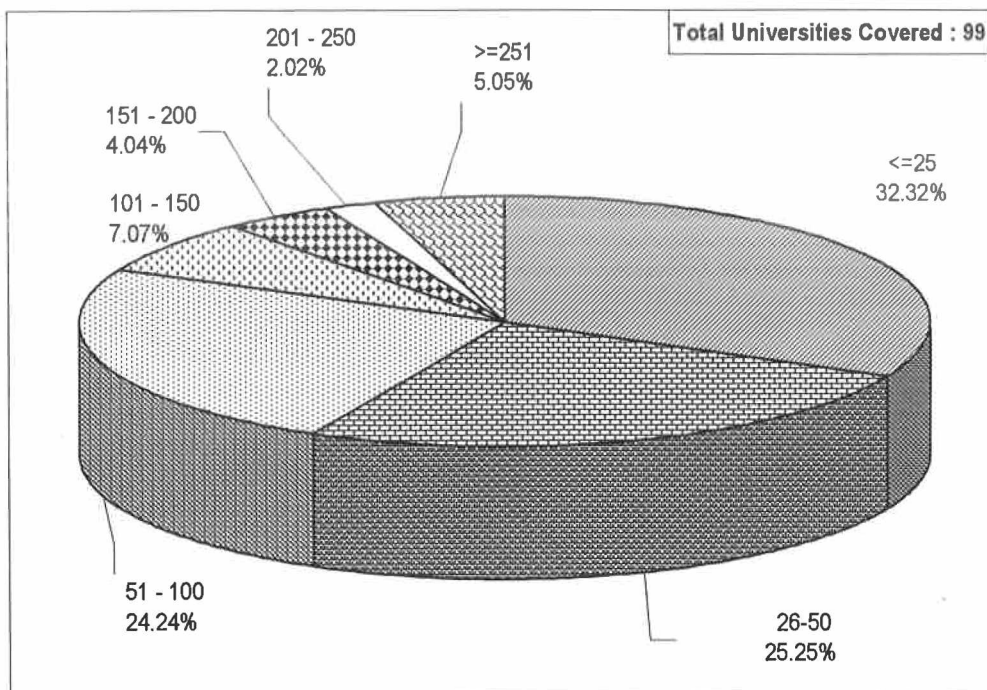


Fig.15. FTE of R&D personnel by range and number of institutions

An increase of women representation in research scholars like SRF, JRF, is reflected (Appendix-15). However, male category continues to dominate R&D personnel of all categories. In the different categories, Professor level R&D personnel is in maximum number, followed by Reader. With regard to R&D FTE personnel by

range and number of institutions, more than 32.32% of the institutions have R&D Personnel less than 25 persons. Greater than 250 R&D personnels are observed only in 5.05% of the institutions (Fig.15 & Table-5).

Table 5. R&D FTE Personnel by range and number of institutions

Range of R&D FTE Personnel	Number of Institutions
<=25	32
26-50	25
51 – 100	24
101 – 150	7
151 – 200	4
201 – 250	2
>=251	5
Total	99

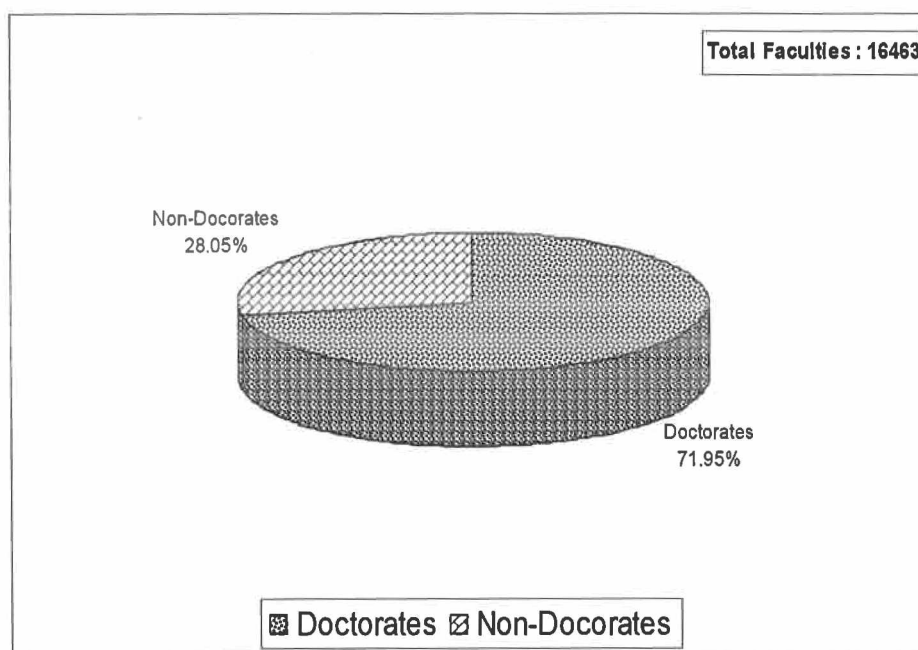


Fig.16. Faculty qualification doctorats verses non-doctorats

One of the parameters considered for evaluating the quality of education in a country is the educational qualification of S&T faculty (Fig.16). Therefore, information on the level of education of R&D personnel can reflect as a valuable indicator of the competitive potential of country's workforce and the quality of S&T students. In the qualification of faculty available in the annual report doctorates counted 11845 (71.95%) and non-doctorates counted 4618 (28.05%). The Indian universities have to take steps to decrease the non-doctorate holders in the higher education.

Auxiliary Staff

In the Fig. 17, details of the total S&T faculty, total auxiliary and administrative staff for the 99 universities are given (Appendix-21). In the S&T departments of higher education sector, the teaching faculty share is 43.07%, the administrative staff share is 27.86% and technical staff share is 29.07%. The teaching faculty and technical staff ratio is 3:2.

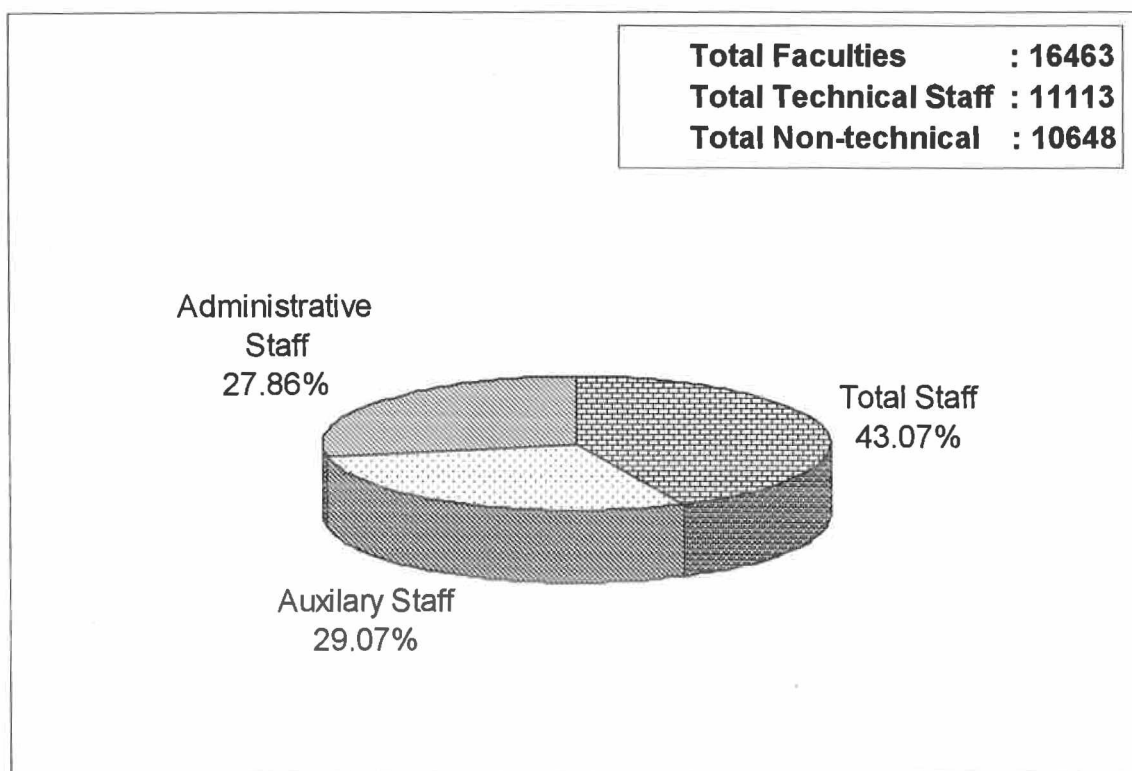


Fig.17. Faculty member Vs supportive manpower engaged in R&D

Output Indicators

The publication of research findings increases the pool of knowledge and helps in inculcating new knowledge. In recent years, several quantitative methods have been developed to analyse the publication output from scientific activities. The primary output of university research is new knowledge which is difficult to conceptualise and measure. In this study, an attempt has taken made to quantify the various output indicators emerged in the Brain Storming Sessions recommendations organized during 1997 and extracted from the annual reports. The output indicators given here are for the period of 1999-2002.

In the previous survey (1997-98), the output indicator's figures presented based on the individual faculty questionnaire(QIII). The responded faculties only 21.70% out of total faculties. So, the output indicators figures are not treated as good representation . In the present survey, the output indicators are extracted from the annual reports. So, the figures are likely to be accurate and authenticated.

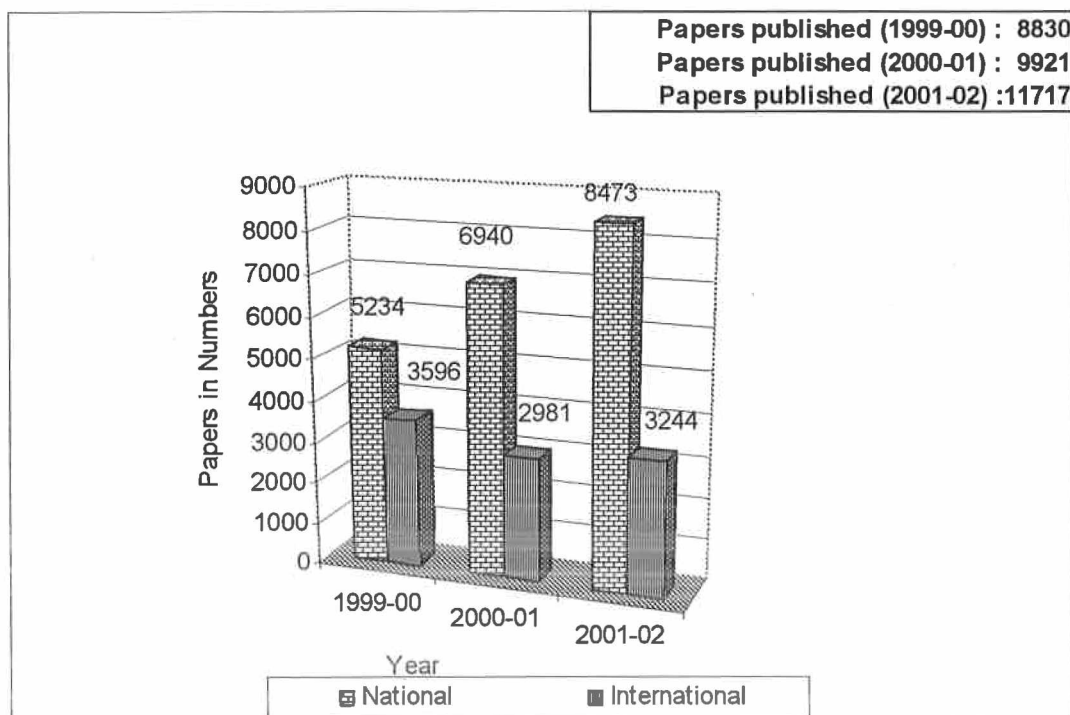


Fig.18. Research papers published by the R&D faculty (1999-02)

The fig.18 represents the paper publication of faculties (Appendix-22) during last three years. The total publication of paper is in ascending order. The average annual growth rate of paper publication is 15.23 %.

In the total publication 11717 (Fig.19), the share of national papers 72.31% while the rest share of international papers amounting to 27.69%. So, it indicates that Indian faculties take interest to publish papers in international journals.

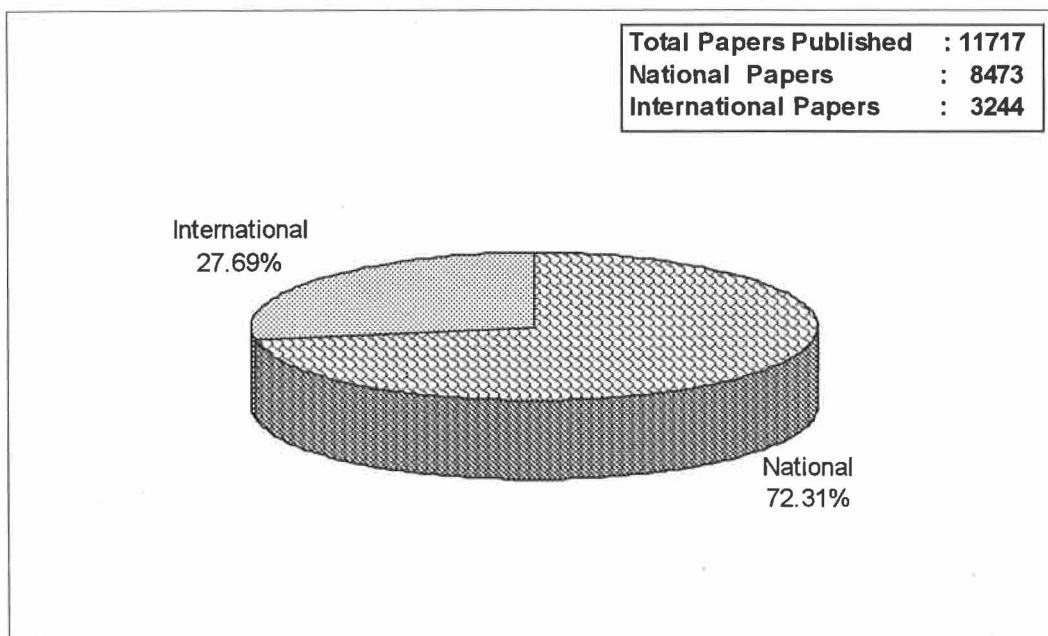


Fig.19. Papers published by faculty members (2001- 02)

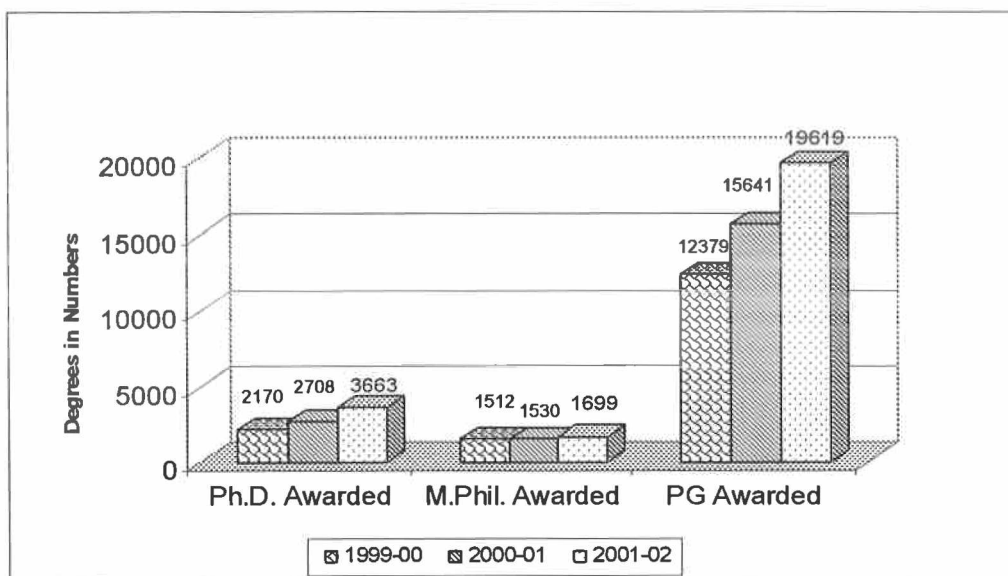


Fig.20. Doctorates/masters produced by R&D faculty

The fig.20. shows the degrees awarded in the university/institute level during 1999-2002 (Appendix-23). The Post graduate degrees awarded approximately five times higher than the Ph.D. level. Both degrees are in the ascending order. The average annual growth rate is 30.03% for Ph.D. and 25.89% for PG. The M.Phil. is not in ascending order due to the students are not showing much interest to pursue M.Phil degrees as compared with PG and Ph.D.

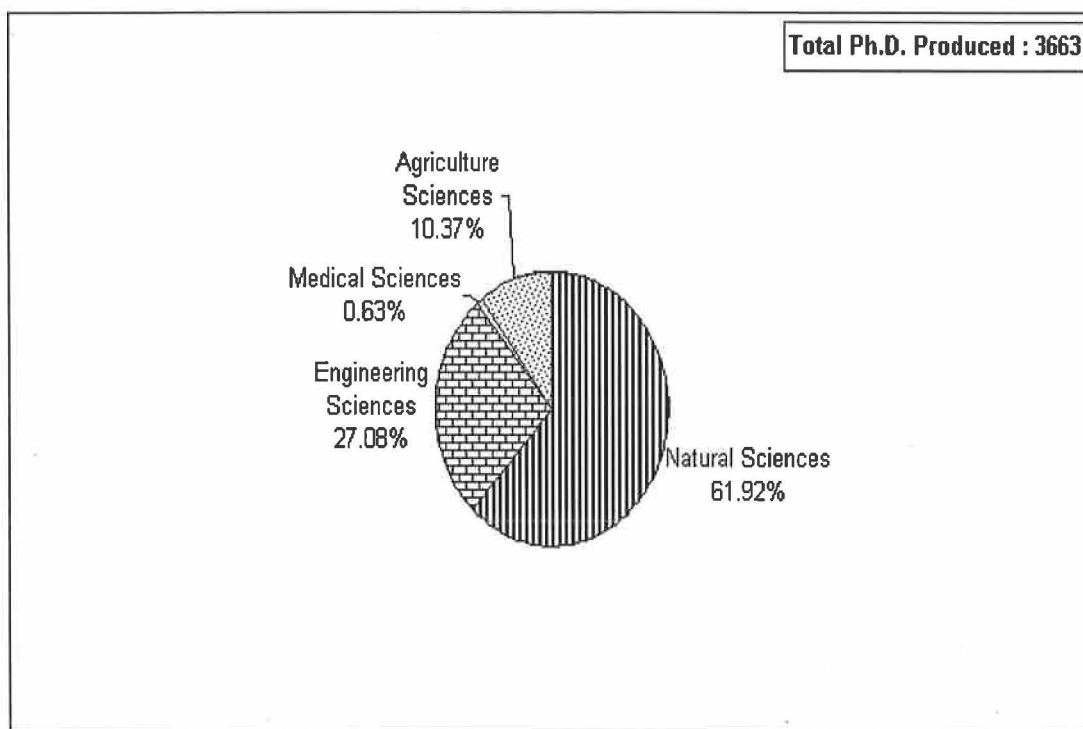


Fig.21. Field-wise Ph.D., produced by faculty members(2001– 02)

The fig.21. shows that the Doctorates awarded during 2001-02. The Natural Sciences takes in higher percentage 61.92 % and it follows Engineering Sciences of 27.08% and Agriculture Sciences of 10.37 %. Here, Medical Sciences shares very low percentage of 0.63 %.

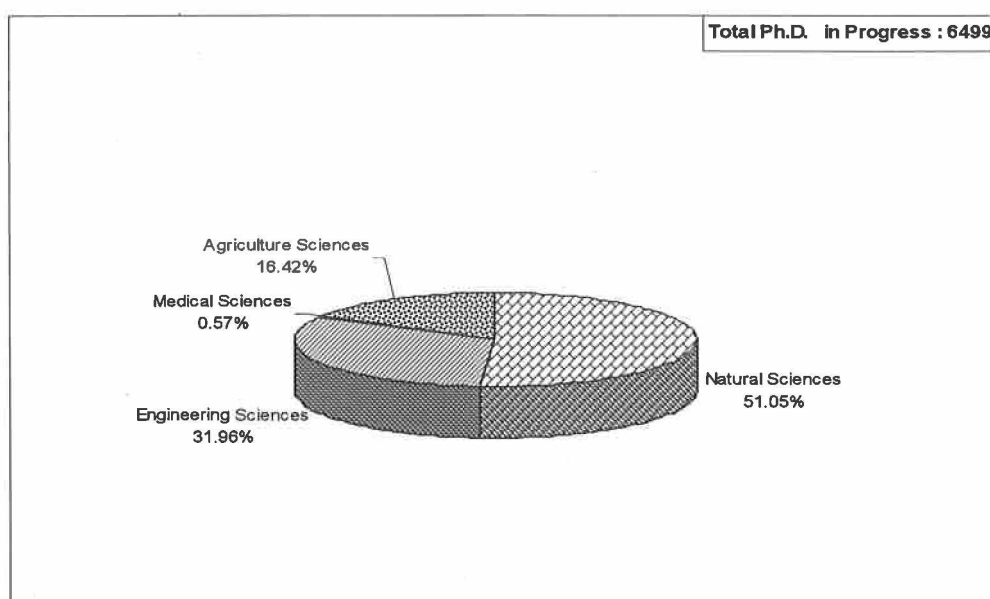


Fig.22. Field-wise Ph.D., in progress by faculty members (2001– 02)

The fig.22. shows that the Doctorates in progress during 2001-02. The Natural Sciences takes in higher percentage 51.05% and it follows Engineering Sciences sharing 31.96% , Agriculture Sciences to 16.42 % and Medical Sciences shares very low percentage of 0.57%. The annual growth rate is 12.07 %. When compared with the Ph.D. produced, percentage the Ph.D., in progress is increased in engineering and agriculture sciences.

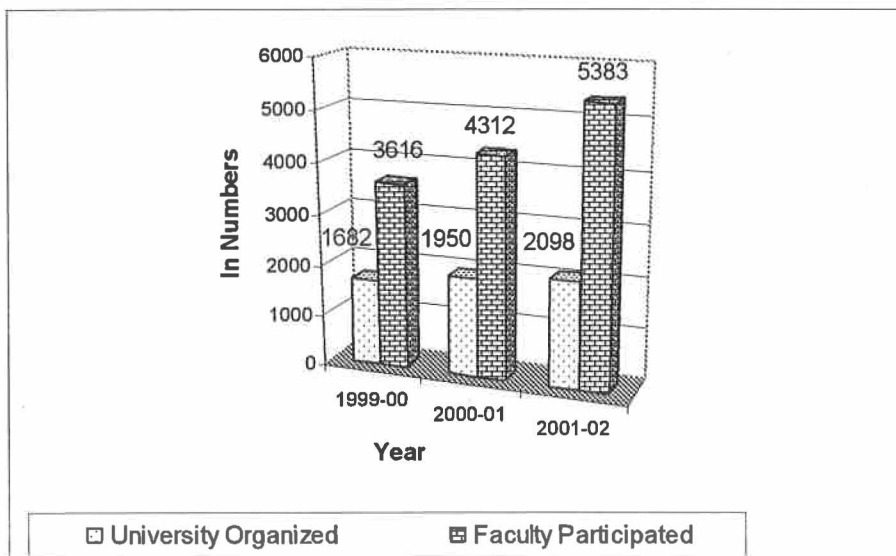


Fig. 23. Conferences organized participated by the faculty members.

The fig.23. shows the seminar and symposia organized by the university and institutes, and the faculties were participated in various seminar activities either National or International(Appendix-26). Both are in increasing order. The average annual growth rate is 11.76% for universities organized seminars/symposia while 22.04% for the faculties participation have been increasing every year.

The fig.24 represents the research and consultancy projects undertaken by the universities during 1999-2002 (Appendix-28 & 29). The consultancy projects are in lower level because of industries collaborating with the academics is in less percentage. So, the industries have to come forward to collaborate with the Indian

universities with higher level.

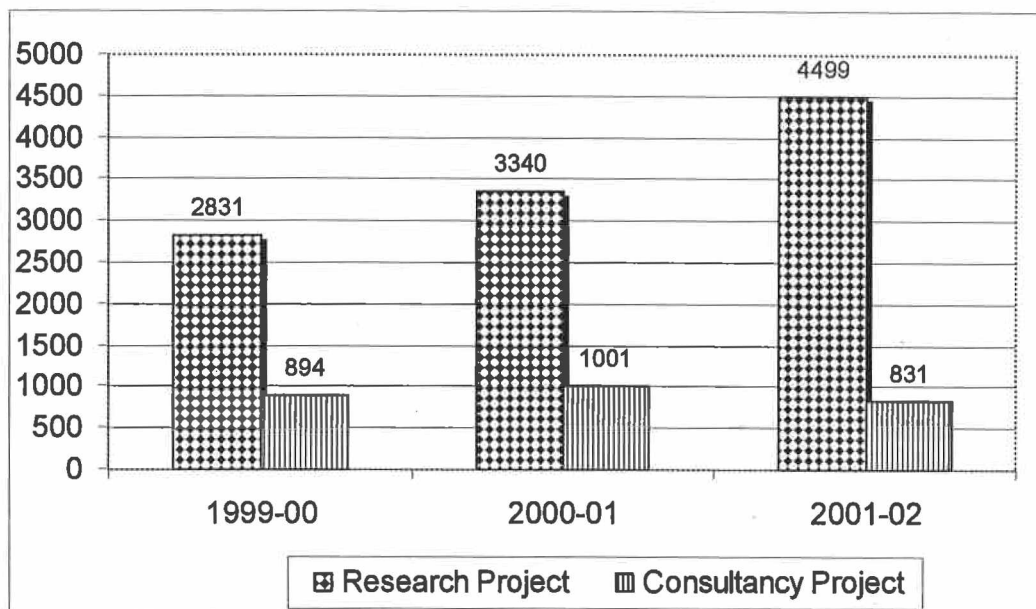


Fig.24. Research and consultancy projects available in the southern universities during 1999-2002

The number of research projects are in higher level because of the Indian government funding agencies like DST,DOD,AICTE,DRDO,DBT,ISRO,UGC and MHRD are spending more funds to do the research in the university/institute level, other than that of few foreign countries which are also collaborating with Indian universities through INDO-GERMAN, INDO-US AND INDO-UK research schemes. The total research projects are classified in the following field of science-wise (fig.25).

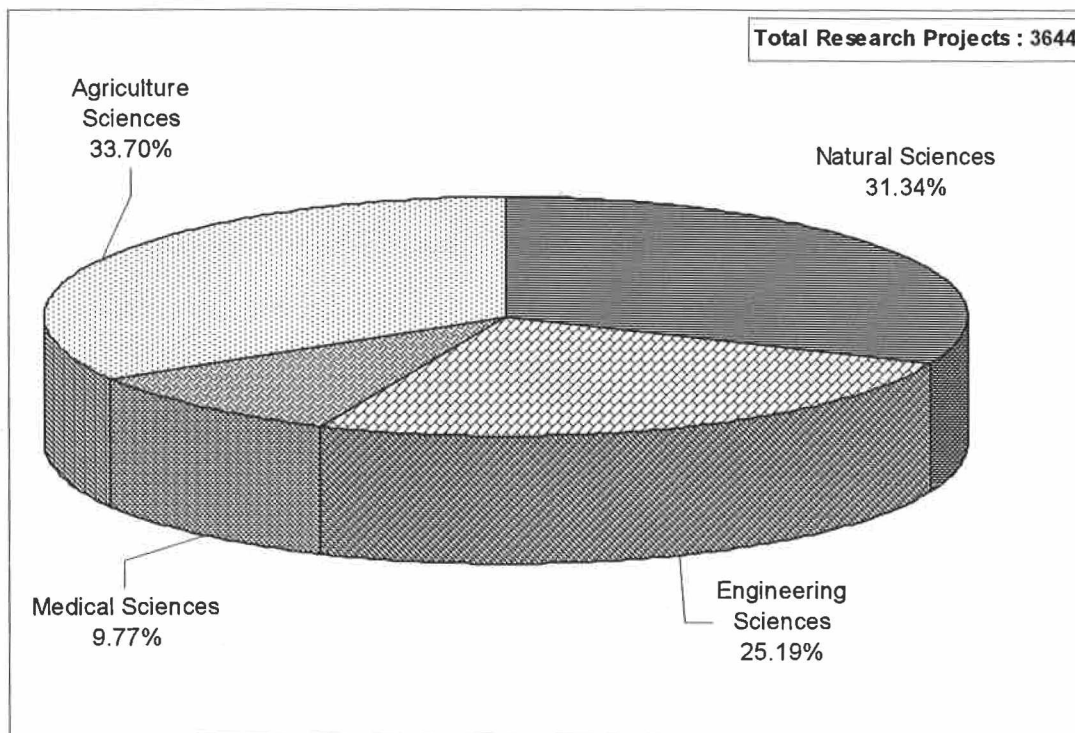


Fig. 25. Field-wise share of research projects in the southern universities(2001 – 02)

The Fig.26. displays that Books and monographs published by teaching faculty(Appendix-30). In that Natural sciences share is in higher level (63.15 %). It follows with Agriculture sciences (16.29 %), Medical sciences (14.57 %) and Engineering sciences (5.98%).

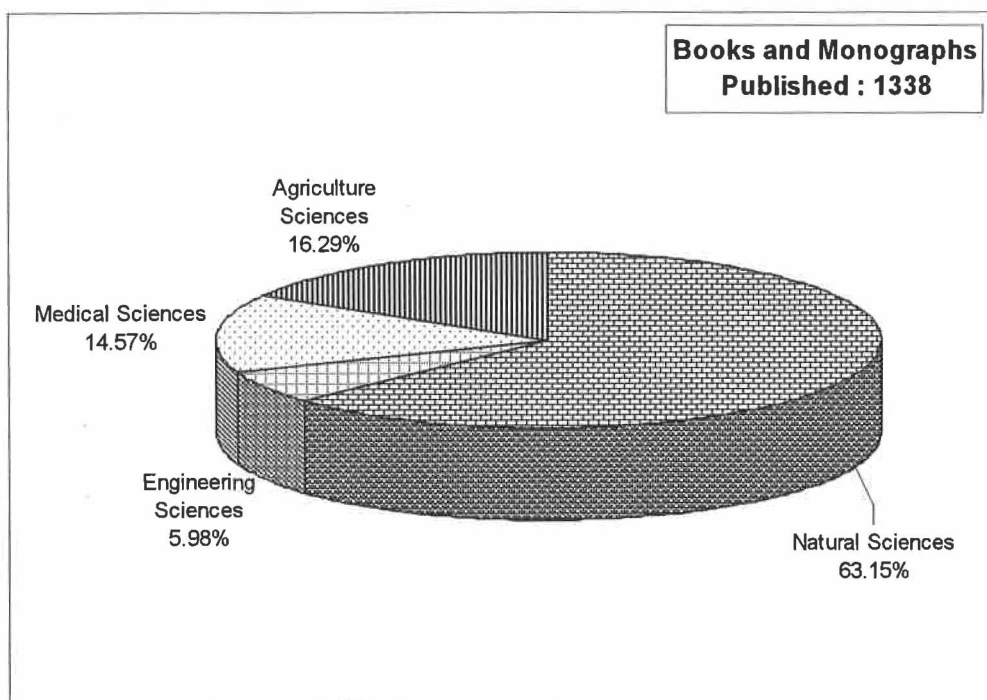


Fig. 26. Field-wise books and monographs published

The fig.27 (Appendix-31) points of the field-wise awards received by the faculty members. The Natural Sciences (42.87 %) shows in higher level compared to the other fields. The agriculture (7.49 %) faculties concentration is very less rather than technology developed, etc. The Medical sciences share is 20.02% , Engineering sciences is 29.61%.

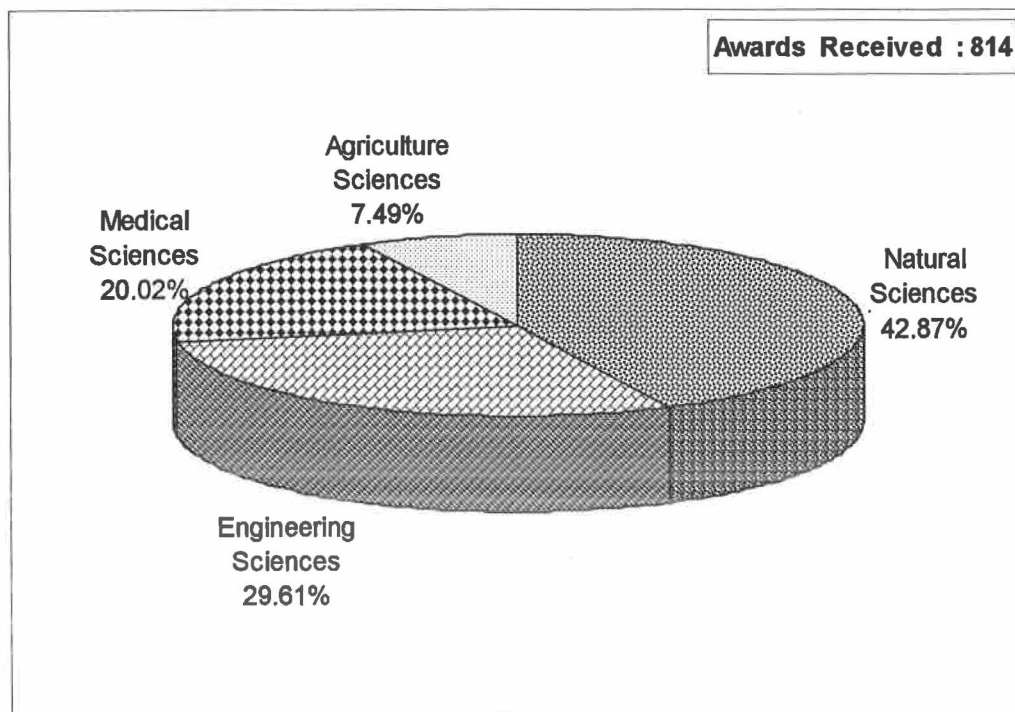


Fig.27. Field-wise share of awards received

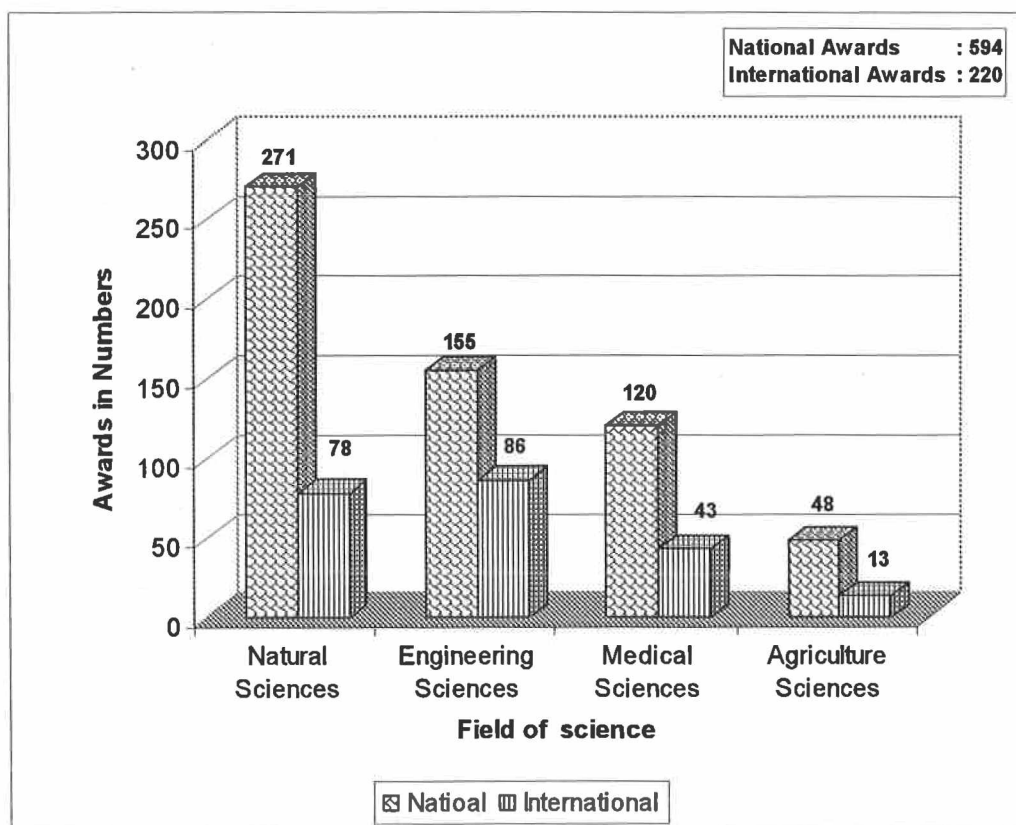


Fig.28. Break-up of awards received by field(2001-02)

The fig.29. represents the field-wise share of technologies developed during 2001-02(Appendix-32). The technologies are such as improved varieties/ breeds/ processes/ equipments/ machinery/ Tools/ New Materials/ drugs. The Agriculture Sciences takes higher percentage (41.21%) , followed by Natural Sciences (24.28%), Engineering Sciences (25.24%) and Medical Sciences (9.27%).

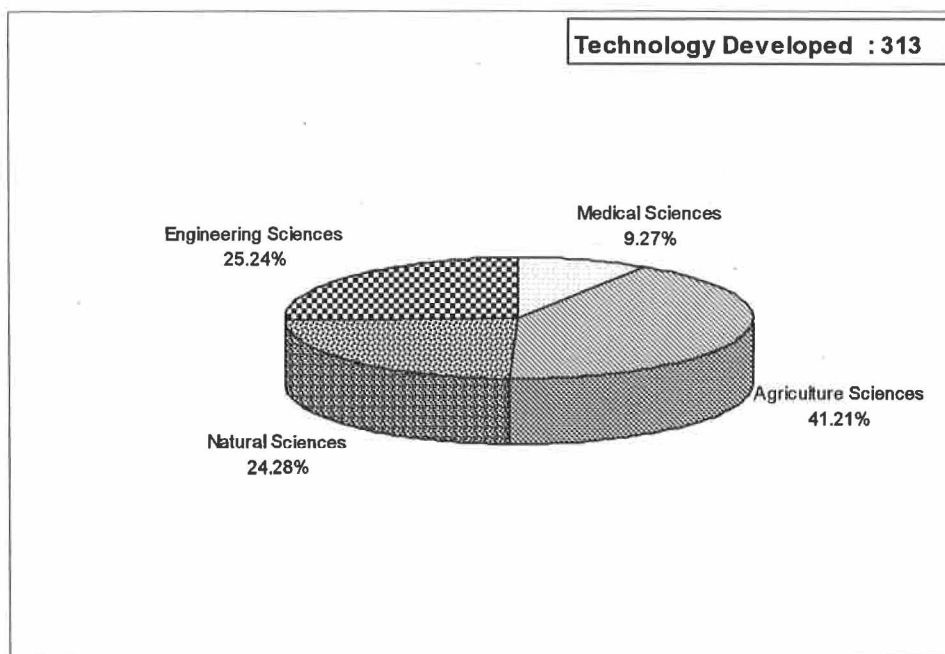


Fig.29. Field-wise technology developed

The fig.30 is highlighting the Indian faculties interests in the science related promotional activities such as Science Quiz, Exhibitions, Science Day, T.V. Interviews, Radio Talks, etc (Appendix-33). While comparing the four field of sciences, the Agriculture sciences takes in higher percentage (64.95%). It followed by Natural sciences (24.99%), Engineering sciences (5.96%) and Medical Sciences (4.10 %). The diagram specifies that the medical faculties have to take more interest to create awareness among the people through media's like T.V. , Radio and video-conferencing.

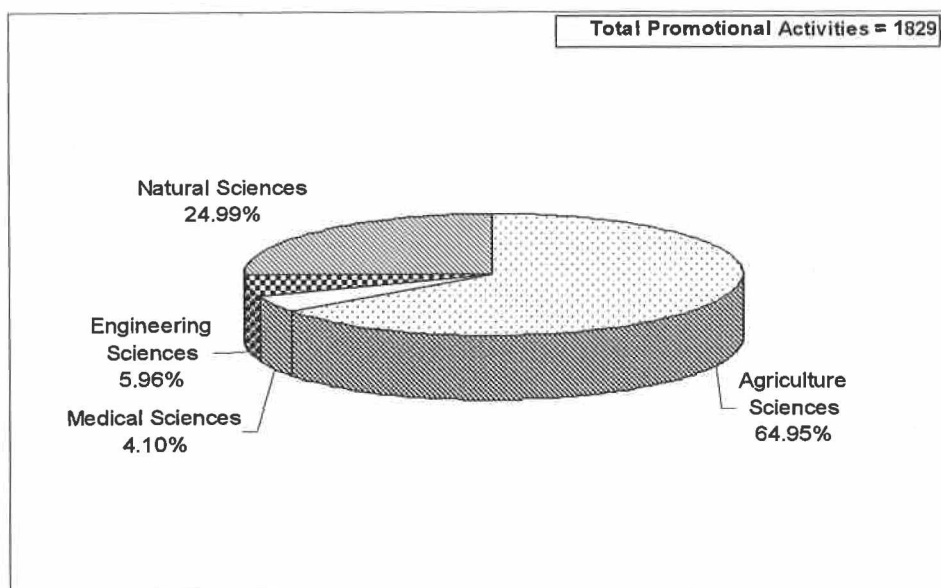


Fig.30. Field-wise science related promotional activities

Conclusion

CONCLUSION

The present survey has been carried out in eight states including two union territories allotted for south zone. Among the 135 universities, 23 universities have no S&T departments in the constitution, 5 universities sanctioned within the three years period and 8 universities have not responded. 99 universities data have been included in the evaluation for the years 1999-2000, 2000-01 and 2001-02.

Unlike last survey, this time the compilation has been done from the annual reports and budget estimates of the respective university for the respective year. For FTE alone, the personal information data has been collected directly from the faculties. From this data sheet, FTE of the respective university has been evaluated and the same value has been used for all the subsequent derivation.

The compilation indicates the total income of the universities as Rs. 4507 crores. The S&T expenditure is worked out to be of Rs. 2900 crores. On the basis of PG student and Research scholars proportion, the R&D expenditure-1 is worked out to be of Rs. 434 crores and on the basis of total faculties Vs. FTE ratio, the R&D expenditure-2 of Rs. 481 crores has been derived out from the respective S&T expenditure,. The total R&D expenditure from the southern zone is computed to be of Rs. 915 crores which is equal to 20.21 % of the total expenditure of the southern universities.

From the annual reports and the data sheets gathered from the Registrar information, the output indicators like research degrees awarded, faculties strength, publication made by the faculties, the faculties organized as well as participation of seminar and symposia etc. The information like the books and monographs, technical bulletin, awards to the faculties, membership of the faculties of the professional bodies have been brought out year-wise.

The method of survey has been simplified from the personal interviews through three different types of questionnaires to two zones and the derivation of the data through only annual reports and budget estimates. The success by which the present method of extraction of data has given way to suggest the possibility of doing the survey from one centre with marginal additional budget of that zone. Further, if such effort is succeeded, the same centre can be asked to update the data regularly to the needs of NSTMIS Division of DST.

LIMITATIONS

- The collection of annual report and budgetary estimates is a tiresome job. One can achieve success only by repeated requests, in many cases by personal approach. The method of presentation both in annual reports and budgetary estimates is not in uniform pattern in all institutions. One has to synchronise sometimes, by interpolation and, in certain cases, personal enquiry and apply the same to evolve through the database provided.
- In the questionnaire circulated, we must get back the sincere response on the time spent by the academicians.
- From the present type of extraction through the Annual Reports, we have certain limitations. For example: age of the employee is not provided. So, we cannot extract the table concerned to age and FTE, age group and FTE.
- The data concerned on ethical values and socio-economic aspects cannot be extracted.
- We have covered 8 southern states and two union territories of India. In the total allotment of south zone, 60% of Universities, they have prepared their annual reports and budget estimates in the International language (English), remaining 40 % of universities published the annual report and budget estimates on their mother tongue like Kannada, Telugu, Tamil, Marathi, Gujarathi and Hindi. Unless and otherwise, the data extractor is expected to know these languages, data extraction may not be feasible.
- The method of presentation in the annual reports and budget estimates is not in uniform pattern. The universities have published their budget estimates on their own format. And, few universities do not give the department-wise expenses. At this juncture, it is rather very difficult to extract the data in the department-wise.
- The DST-NSTMIS division is keenly interested to know the intramural source without the overlapping of extramural income and expenditure, but most of the universities don't mention their extramural expenditure in their budget estimates.
- As the Post Graduate Colleges in the South Zone are not included in the coverage because, it is not coming as a factor in the North Zone, further the Colleges most of Government status do not have any separate budget and annual reports. Whatever annual reports are made available are in the form of magazine.

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Annexures

ANNEXURE – I

LIST OF ABBREVIATIONS

AICTE	-	All India Council for Technical Education
Agri. Univ.	-	Agricultural Universities
AIIMS	-	All Indian Institute of Medical Sciences
AIU	-	Association of Indian Universities
BSS	-	Brain Storming Session
CAG	-	Comptroller Audit General
CAS	-	Centre for Advanced Study
CIS	-	Commonwealth of Independent States
Col	-	Colleges
CSIR	-	Council of Scientific & Industrial Research
CNRS	-	Centre National de la Recherche Scientific Research Centre
DST	-	Department of Science & Technology
EU	-	European Union
FRS	-	Full Time Research Staff
FTE	-	Full Time Equipment
GDP	-	Gross Domestic Product
GERD	-	Gross Expenditure on R&D
GNP	-	Gross National Product
HOD	-	Head of the Department
ICAR	-	Indian Council of Agricultural Research
IISc	-	Indian Institute of Science
IIT	-	Indian Institute of Technology
IMC	-	Indian Medical Council
IMD	-	Institute for Management and Development
INI	-	Institute of National Importance
ISTE	-	Indian Society for Technical Education
JRF	-	Junior Research Fellow
LPAC	-	Local Project Advisory Committee
MDB	-	Microsoft Data Base
NIT	-	National Institute of Technology
NSTMIS	-	National Science & Technology Management Information System
NSF	-	National Science Foundation
OECD	-	Organisation for Economic Cooperation and Development
OST	-	Onservatoires des Sciences et des Techniques
PSO	-	Principal Scientific Officer
SSO	-	Senior Scientific Officer
PI	-	Principal Investigator
QI	-	Questionnaire I
QII	-	Questionnaire II
QIII	-	Questionnaire III
RA	-	Research Associate
R&D	-	Research & Development
REC	-	Regional Engineering College
RF	-	Responded Faculty
RSE	-	Research Scientist and Engineers

S&T	-	Science & Technology
S&E	-	Science & Engineering
SRF	-	Senior Research Fellow
UNESCO	-	United Nations Educational Scientific and Cultural Organization
UGC	-	University Grants Commission
US	-	United States
VB.6	-	Visual Basic – 6

ANNEXURE - II
LIST OF LPAC MEMBERS

Nagercoil.

1. Prof.R.Sethuraman
Vice-Chancellor
SASTRA Deemed University
Thanjavur – 613 402.
2. Dr.Laxman Pradsad
Advisor, DST, Govt. of India
New Delhi.
3. Dr.Parveen Arora
Director, DST, Govt. of India
New Delhi.
4. Dr.A.N.Rai
PSO, DST, Govt. of India
New Delhi.
5. Prof.Dr.N.Balakrishnan
Director, Information Science
Division
Super Computer Education &
Research Centre
Indian Institute of Science
Bangalore 560 012.
6. Prof.Dr.V.Kanagasabai
Head of Civil Engineering
Department
Annamalai University
Annamalainagar – 608 002.
7. Prof.Dr.S.Antony Raj
Dean, Agricultural College
Manaparai Road
Trichy.
8. Prof.Dr.N.Chandrasekar
Head of Marine Science and
Technology
Manonmaniam Sundaranar
University Campus
Rajakkamangalam – 629 502
9. Prof.Dr.P.Seralathan
School of Marine Sciences
Cochin University of Science and
Technology
Foreshore Road
Ernakulam
Kerala.
10. Prof.Dr.R.Kandaswamy
Registrar
SASTRA Deemed University
Thanjavur – 613 402.
11. Prof.S.Ananthapadmanaban
Dean, School of Civil Engineering
SASTRA Deemed University
Thanjavur – 613 402.
12. Dr.S.P.Singh
PI-North Zone
Indian Institute of Management
Lucknow - 226 013.
13. Mr.Hariharan
Finance Officer
Bharathidasan University
Palkalainagar
Trichy - 620 024.
14. Prof.Dr.P.T.Naidu
Department of Geology
Sri Venkateswara University
Tirupati – 517 502
Andhra Pradesh.
15. Prof.Dr.G.Victor Rajamanickam
PI-South Zone
SASTRA Deemed University
Thanjavur – 613 402.

ANNEXURE – III - A

Questionnaire for Academics to estimate the FTE
Personal Information

Name : _____

Designation : _____

Qualification : _____

Area of Specialization/Interest _____

Address : _____

Phone No : (O) _____ (R) _____

Email _____

Are you carrying out Teaching and Research[√]: Yes No

If Yes,

Estimated of time spent for Research

Research [√]: < 10% < 30% < 50% Above 50%

Grant received from the Research Projects(2001-2002) **In Lakhs**

Grants received from the Consultancy Projects(2001 – 2002) **In Lakhs**

ANNEXURE - iii-B

Worksheet for Science & Technology Department Only		Year of Establishment :		Completed / Awarded/ Published		Awards Received		Patents Filed / sealed		Research Fora (RF) - University organized, faculty attended		Faculty Qualification (Doc versus Non Doctorate)		External Examination		Editorial Responsibilities		Fellowships/ Titles Conferred		Science related Promotional				
S.No.	Ph.D. (Completed verses Ongoing)	M.Phil. (Comp. Verses Ongoing)	PG Stud	Res. Proj.	Consultancy Projects	Research Papers	Books Monographs	Tech- nology Develop ed(TD)	Awards Received	N	I	N	I	Uni	Fac	Doc	Ndoc							
																						Co.	On.	Co.
1																								
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
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16																								
17																								
18																								
19																								
20																								
21																								
22																								
23																								
24																								
Total																								

Barbie

TD - improved varieties / breeds/processes/ equipments/ machinery/ Tools/ New Materials/ drugs
 RF - Participation in Conferences / Seminars / Workshops/ Symposia / Invited lectures/ Refresher Courses(Organized or attended)
 N - National * I - International
 SRPA - Science Quiz, Exhibitions, Science Day, Popular Articles, T.V. Interviews, Radio Talks, etc

ANNEXURE - III-C

Worksheet for Science & Technology Department Only											
Staff Name:											
Total Departments :		Science & Technology Departments :									
		Enrollment / All Yrs									
		Ph. D.	M.Phil	PG	Teach.	Techni- cal	Admin.	Res.			
S.No	Department Name	Stud	stud.	Stud	Faculty	Staff	Staff	Staff	Staff	Staff	Staff
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23											
24											
Total											
Research Staff - RA, SRF, JRF, Research Assistant											

ANNEXURE – III - D

DATA - QUESTIONNAIRE

Total Deptts. In the Universities (including Humanities) :			
Total Science & Technology Departments	:		
Total Science Faculty Members	:		
Total Technical Staff	:		
Total Administrative Staff	:		
Total P.G.Students	:		
Total Research Scholars	:	M.Phil:	Ph.D :
Total Research Staff's	:		
Pool Officers :	Research Associates's :	SRF's :	JRF's :

FINANCIAL DETAILS

TOTAL EXPENDITURE (2001-02)

SOURCE OF FUNDS	AMOUNT (In Thousands)
STATE GOVT.	:
CENTRAL GOVT.	:
INDUSTRIAL SECTOR	:
FOREIGN SOURCES	:
DONATIONS	:
UNIVERSITY'S OWN SOURCE	:
OTHERS	:
TOTAL	: _____

TOTAL EXPENDITURES OF SCIENCE DEPARTMENTS (2001-02)

SOURCE	INTRAMURAL AMOUNT ('000)	EXTRAMURAL AMOUNT ('000)
EQUIPMENT	:	
LABORATORY	:	
SALARY	:	
Maintenance & Materials including Stationary	:	
Visiting Faculty/s	:	
Seminars and Symposia	:	
Contingency	:	
Others	:	
TOTAL	: _____	: _____
GRAND TOTAL	: _____	: _____
Extramural Research Project Grant Received (2001 – 2002)	:	: _____
General Administration & Maintenance Charges: (VC Office, Registrar office, Examination wing, etc)		

ANNEXURE - IV

Details of Data Collection visits made by the Project PI and Project Staff

Name of Person	Place of Visit	Duration	No. of Days	Reason for Visit
Dr.G.V.Rajamanickam	Lucknow	27th Aug' 03 to 30th Aug' 03	4	Zonal Meeting
J. Senthil Kumar	Lucknow	26th Aug' 03 to 31st Aug '03	6	Zonal Meeting
D.Sundararajan	Lucknow	26th Aug' 03 to 31st Aug '03	6	Zonal Meeting
Dr.G.V.Rajamanickam	New Delhi	11th Sep' 03 to 13th Sep' 03	3	Meeting
J. Senthil Kumar	Coimbatore	2nd Nov' 03 to 8th Nov' 03	7	Data Collection
D.Sundararajan	Madurai,Thirunelveli, Kodikannal	12th Nov' 03 to 23rd Nov' 03	12	Data Collection
Dr.G.V.Rajamanickam	Salem	21st Nov' 03	1	Data Collection
J. Senthil Kumar	Chennai	23rd Nov' 03 to 4th Dec' 03	12	Data Collection
D.Sundararajan	Chennai	23rd Nov' 03 to 4th Dec' 03	12	Data Collection
J. Senthil Kumar	Pondicherry, Chidambaram, Trichy, Salem	1st Jan' 04 to 14th Jan' 04	14	Data Collection
D.Sundararajan	Gandhigram, Coimbatore, Salem	23rd Jun' 04 to 7th Jul' 04	15	Data Collection
J. Senthil Kumar	Chennai, Trichy, Thanjavur	13th Jun' 04 to 30th Jun' 04	18	Data Collection
D.Sundararajan	Kerala State	24th Dec' 03 to 13th Jan' 04	21	Data Collection
Dr.G.V.Rajamanickam	Lucknow	1st Jan' 04 to 3rd Jan' 04	3	LPAC Meeting
D.Sundararajan	Hyderabad	28th Jan'04 to 16th Feb'04	20	Data Collection
J. Senthil Kumar	Bangalore, Mysore	8th Feb'04 to 26th Feb' 04	19	Data Collection
D. Sundararajan	Mumbai	10th Apr' 04 to 3rd May' 04	24	Data Collection
J. Senthil Kumar	Mangalore, Manipal,	27th Mar' 04 to 18th Apr' 04	23	Data Collection
D. Sundararajan	Tirupathi, Kuppam	1st Aug' 04 to 23rd Aug' 04	23	Data Collection
J. Senthil Kumar	Pune, Nashik	31st Jul' 04 to 22nd Aug' 04	23	Data Collection
D. Sundararajan	Visak, Hyderabad, Warangal,	18th Sep' 04 to 14th Oct' 04	27	Data Collection
J. Senthil Kumar	Nanded, Parbani, Ahmednagar, Gulbarga,	25th Sep' 04 to 17th Oct' 04	23	Data Collection
Dr.G.V.Rajamanickam	New Delhi	27th Oct' 04 to 29th Oct' 04	3	Zonal Meeting
D. Sundararajan	New Delhi	26th Oct' 04 to 30th Oct' 04	5	Zonal Meeting
J. Senthil Kumar	Lucknow, Nagpur,Akola, Amravathi, Aurangabad,	26th Nov' 04 to 23rd Dec' 04	28	Data Collection
D. Sundararajan	Gujarat State	28th Nov' 04 to 5th Jan' 05	39	Data Collection
D. Sundararajan	Chathisgarh State	16th Jan' 05 to 6th Feb'05	24	Data Collection
J. Senthil Kumar	Orissa State	12th Feb' 05 to 9th Mar' 05	26	Data Collection
Total Manpower day Utilised for Data Collection			441	

ANNEXURE - V
Data Collection Details in Universities / Institutes

Sr.N o.	University / Institute	Data collected			Faculty Questionnaire Collected
		No. of Annual Reports	Annual Report year details	Budget Estimate / Questionnaire	
1	Acharya Dr.N.G.Range Agricultural University, H	2	99-00,00-01	Yes	Yes
2	Agiriculturalal Sciences, Bangalore	3	99-00,00-01,01-02	Yes	Yes
3	Agriculture University, Coimbatore	3	99-00,00-01,01-02	Yes	Yes
4	Agriculture University, Dharwad	3	99-00,00-01,01-02	Yes	Yes
5	Alagappa University, Karaikudi	3	99,00,01	Yes	Yes
6	Amravathi University	3	99-00,00-01,01-02	Yes	Yes
7	Andhra University, Visak	3	99-00,00-01,01-02	Yes	Yes
8	Anna University	3	99-00,00-01,01-02	Yes	Yes
9	Annamalai University, Chidambaram	1	2002-03	Yes	Yes
10	Avinasilingam Institute of Home Science	3	99-00,00-01,01-02	Yes	Yes
11	Bangalore Agriculture University	2	99-00,01-02	Yes	Yes
12	Bangalore University	2	99-00,00-01,01-02	Yes	Yes
13	Berhampur University	3	99-00,00-01,01-02	Yes	Yes
14	Bharath Institute of Science and Technology	1	01-02	Yes	Yes
15	Bharathi Vidyapeeth, Pune	3	99-00,00-01,01-02	Yes	Yes
16	Bharathiar University, Coimbatore	2	99-00,00-01	Yes	Yes
17	Bharathidasan University, Trichy	1	01-02	Yes	Yes
18	Bhavnagar University, Bhavnagar	3	99-00,00-01,01-02	Yes	Yes
19	BPU, University, Rourkela		Not Available	Yes	Yes
20	Calicut Regional Engineering College(NITC)	3	99-00,00-01,01-02	Yes	Yes
21	Calicut University, Calicut	3	99-00,00-01,01-02	Yes	Yes
22	Central Institute of Fisheries Education, Mumbai	3	99-00,00-01,01-02	Yes	Yes
23	Cochin University of Science and Technology	2	99-00,00-01	Yes	Yes
24	Deccan College of PG and Research Institute	3	99-00,00-01,01-02	Yes	Yes
25	Dr. BANU, Aurangabad	3	99-00,00-01,01-02	Yes	Yes
26	Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akol	3	99-00,00-01,01-02	Yes	Yes
27	Dravidan University, Kupum	3	99-00,00-01,01-02	Yes	Yes
28	Fakir Mohar University, Balasore		Not Available	Yes	Yes
29	Gandhigram Rural Institutes, Gandhigram	3	99-00,00-01, 01-02	Yes	Yes
30	Goa University	3	99-00,00-01,01-02	Yes	Yes
31	Gujarat Agricultural University, Dantiwada	2	99-00,01-02	Yes	Yes
32	Gujarat Ayurved University, Jamnagar	3	99-00,00-01,01-02	Yes	Yes
33	Gujarat University, Ahmedabad	3	99-00,00-01,01-02	Yes	Yes
34	Gulbarga University	3	98-99,00-01,01-02	Yes	Yes
35	Guru Ghasidas University, Bilaspur	3	99-00,00-01,01-02	Yes	Yes
36	Hyderabad University	3	99-00,00-01,01-02	Yes	Yes
37	IIT Bombay, Mumbai	3	99-00,00-01,01-02	Yes	Yes
38	Indian Institute of Science	3	99-00,00-01,01-02	Yes	Yes
39	Indian Institute of Technology, Chennai	3	99-00,00-01,01,02	Yes	Yes
40	Jawaharl Nehru Technological University, Hydera	3	99-00,00-01,01-02	Yes	Yes
41	Jawaharlal Nehru Centre for advanced research	3	99-00,00-01,01-02	Yes	Yes
42	Kakatiya University	3	99-00,00-01,01-02	Yes	Yes
43	Kalinga Institute of Industrial Technology		Not Available	Yes	Yes
44	Kannur University	2	99-00,01-02	Yes	Yes
45	Karnatak University	3	99-00,00-01,01-02	Yes	Yes
46	Karnataka Open University	3	99-00,00-01,01-02	Yes	Yes
47	Karunya Institute of Technology, Coimbatore	3	01-02	Yes	Yes
48	Kerala Agriculture University	3	99-00,00-01,01-02	Yes	Yes
49	Kerala University	3	99,00,01	Yes	Yes
50	Madurai Kamarj University	3	99-00,00-01,01-02	Yes	Yes
51	Maharashtra Animal and Fishery Scienc Univ. Na	1	Project Report	Yes	Yes
52	Maharashtra University of Health Sciences	3	99-00, 00-01,01-02	Yes	Yes

53	Mahatma Gandhi University	2	99-00,01-02	Yes	Yes
54	Mahatma Phule Krishi Vidyapeeth, Ahmednagar	3	99-00,00-01,01-02	Yes	Yes
55	Mangalore University, Mangalagangothri	3	99-00,00-01,01-02	Yes	Yes
56	Manipal academy of higher education	2	99-00,01-02	Yes	Yes
57	Marathwada Krishi Vidyapeeth, Parbhani	3	99-00,00-01	Yes	Yes
58	Mother Theresa Woman's University	2	00-01,01-02	Yes	Yes
59	MS University of Baroda	3	99-00,00-01,01-02	Yes	Yes
60	MS University, Tirunelveli	3	99-00,00-01,01,02	Yes	Yes
61	Mysore University	3	99-00,00-01,01-02	Yes	Yes
62	Nagarjuna University	3	99-00,00-01,01-02	Yes	Yes
63	Nagpur University, Nagpur	3	99-00,00-01,01-02	Yes	Yes
64	National institute of Mental health and Neuro sci	3	99-00,00-01,01-02	Yes	Yes
65	National Institute of Technology, Warangal	3	99-00,00-01,01-02	Yes	Yes
66	National Institute of Technology, Trichy	1	02-03	Q1	Yes
67	Nizam Institute of Medical Science, Hyderabad	2	00-01,01-02	Yes	Yes
68	North Gujarat University, Patna	3	99-00,00-01,01-02	Yes	Yes
69	NTR, Health Science, Vijayawad	2	99-00,00-01	Yes	Yes
70	Orissa University Agriculture & Tech, Bhubanesw	2	98-2000,2000-01	Yes	Yes
71	Osmania University, Hyderabad	3	00-01,01-02	Yes	Yes
72	Pandit Ravishankar Sukla University, Rajpur	3	99-00,00-01,01-02	Yes	Yes
73	PDK Vidyapeeth, Akola	3	99-00,00-01,01-02	Yes	Yes
74	Pondicherry University	3	99-00,00-01,01-02	Yes	Yes
75	Ragivgandhi University of Health sciences	3	99-00,00-01,01-02	Yes	Yes
76	Sambalpur University	3	99-00,00-01,01-02	Yes	Yes
77	Sardar Patel University	3	99-00,00-01,01-02	Yes	Yes
78	Sardar Vallabhbai NIT, Surat	3	99-00,00-01,01-02	Yes	Yes
79	Saurashtra University, Rajkot	3	99-00,00-01,01-02	Yes	Yes
80	Shimoga University	3	99-00,00-01,01-02	Yes	Yes
81	SNDT Women's University, Mumbai	3	99-00,00-01,01-02	Yes	Yes
82	South Gujarat Univ, Surat	3	99-00,00-01,01-02	Yes	Yes
83	Sree Chitra Tirunal Institute for Medical Science	3	99-00,00-01,01-02	Yes	Yes
84	SRI Krishnadevaraya University	3	99-00,00-01,01-02	Yes	Yes
85	Sri Ramachandra Medical College and Deemed	3	99-00,00-01, 01-02	Q1	
86	Sri Ramachandra Medical College and Research Institute		99-00,00-01,01-02	Yes	Yes
87	Sri Venkateswara University, Tirupati	3	99-00,00-01,01-02	Yes	Yes
88	SRM Institute of Science	1	01-02	Yes	Yes
89	Swami Ramanan Teerth Mahathwada Univ, Nand	3	99-00,00-01,01-02	Yes	Yes
90	Tamil University	3	99-00,00-01,01-02	Yes	Yes
91	Tamilnadu Vetrinary and Animal Science Univers	3	99-00,00-01,01,02	Yes	Yes
92	University of Calicut	2	99-00,01-02	Yes	Yes
93	University of Madras	3	99-01,00-01,01,02	Yes	Yes
94	University of Mumbai	3	99-00,00-01,01-02	Yes	Yes
95	University of Pune	2	99-00,01-02	Yes	Yes
96	Utkal University, BBSR	1	96-97	Yes	Yes
97	Visvesvariah Technological University, Belgaum	2	99-00,01-02	Yes	Yes
98	VNIT Nagpur	3	99-00,00-01,01-02	Yes	Yes
99	Yeswantrao Chavan Maharashtra Open Universit	3	99-00,00-01,01-02	Yes	Yes

Appendixes

Appendix 1. Source of Funds (2001 - 02)

In Rs. ' 000

University / Institution	State Govt.	Central Govt.	Industries Total	Foreign Sources	Donations	University Source		Others	Total
						University	Own Source		
Acharya N.G. Ranga Agricultural University, Hyderabad	842218	155010	21259	34011	1194	117670	108745	1280107	
Agricultural Sciences, Bangalore	475498	170763	8110	0	605	53000	54000	761976	
Agricultural Sciences, Dharwad	455739	94014	41980	0	0	35748	6875	634356	
Alagappa University, Karaikudi	56309	14220	1400	750	250	42609	8795	124333	
Amravati University, Amravati	99100	18018	0	0	100	75653	10229	203100	
Andhra University, Visakhapatnam	679086	53888	0	0	1241	109028	25302	868545	
Anna University, Chennai	416665	78964	16128	17732	0	100761	0	630250	
Annamalai University, Chidambaram	448596	43682	0	0	0	982571	27646	1502495	
Avinashilingam Institute of Home science and higher education for women, Coimbatore	12780	54059	0	0	0	72594	2271	141704	
Bangalore University, Bangalore	257400	249500	0	0	0	226900	77800	811600	
Berhampur University	114880	39718	0	0	0	23016	0	177614	
Bharath Institute of Science and Technology, Chennai	0	0	0	0	0	35000	0	35000	
Bharathiar University, Coimbatore	50787	10915	1000	0	500	281990	91966	437158	
Bharathidasan University, Trichy	34606	208029	0	0	0	135979	56660	435274	
Bharati Vidyapeeth, Pune	0	1735	0	0	0	217244	52454	271433	
Bhavnagar University, Bhavnagar	67489	48655	0	0	2000	28020	7632	153796	
Biju Patnaik University of Technology, Rourkela	0	0	0	0	0	30000	0	30000	
Calicut University, Calicut	399000	27995	8224	100	0	132565	3830	571714	
Central Institute of Fisheries Education, Mumbai	0	196473	830	0	0	2257	2989	202549	
Cochin University of Science and Technology, Cochin	139300	30380	40292	33400	161041	164490	172170	741073	

University / Institution	State Govt.	Central Govt.	Industries Total	Foreign Sources	Donations	University Own Source	Others	Total
Deccan College Post Graduate and Research Institute	11559	4175	0	0	0	16883	0	32617
Dr. Babasaheb Ambedkar Marathwada University, Aurangabad	199324	16627	0	0	0	120049	0	336000
Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola	490048	236463	0	0	392	176848	195711	1099462
Dravidian University	41500	0	0	0	0	0	1500	43000
Fakir Mohan University, Balasore	27132	0	0	0	100	14588	179	41999
Gandhigram Rural Institute, Dindugal	66862	17501	0	0	0	11139	535	96037
Goa University, Panjim	78638	16805	441	582	0	28803	17645	142914
Gujarat Agricultural University, Sardarkrushinagar	875738	205062	93372	0	3178	195562	271747	1644659
Gujarat Ayurved University, Jamnagar	55795	45300	5500	4500	0	16400	20050	147545
Gujarat University, Ahmedabad	105893	50204	8500	0	0	42788	5692	213077
Gulbarga University, Gulbarga	145500	42625	0	0	1500	75000	2000	266625
Guru Ghasidas University	67278	9639	0	0	0	32870	1316	111103
Hyderabad University, Hyderabad	0	313973	76596	0	0	98338	177387	666294
Indian Institute of Science, Bangalore	110	2178486	243700	115208	8000	121959	1032618	3700081
Indian Institute of Technology, Bombay	0	660749	8953	0	0	229965	352000	1251667
Indian Institute of Technology, Chennai	0	1060713	47461	33346	0	209994	0	1351514
Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore	0	71000	1000	10167	0	2933	26900	112000
Jawaharlal Nehru Technological University, Hyderabad	305047	113857	0	0	0	105000	0	523904
Kakatiya University, Warangal	168701	36188	0	0	0	46540	29876	281305
Kalinga Institute of Industrial Technology, Bhubaneswar	0	0	0	0	0	163300	0	163300
Kannur University	130000	0	0	0	0	10158	1573	141731

University / Institution	State Govt.	Central Govt.	Industries Total	Foreign Sources	Donations	University Own Source	Others	Total
Karnatak University, Dharwad	351394	65057	0	0	2035	86593	19981	525060
Karnataka State Open University	500	11377	0	0	255	121698	2968	136798
Karunya Institute of Technology, Coimbatore	0	655	0	0	0	102541	0	103196
Kerala Agricultural University, Trichur	652758	121025	4700	25404	450	259180	84573	1148090
Kerala University, Trivandrum	545196	40975	0	733	165	100150	54072	741291
Kuvempu University, Shimogha	145952	9531	0	0	0	72330	42028	269841
Madras University, Chennai	157686	151157	0	135	0	385646	85217	779841
Madurai Kamaraj University, Madurai	256892	61018	12750	0	6020	238933	79466	655079
Maharashtra Animal and Fishery Sciences University, Nagpur	151426	51719	0	0	0	2729	1976	207850
Maharashtra University of Medical Sciences	17800	0	0	0	0	79251	0	97051
Mahatma Gandhi University, Kottayam	195300	8000	0	0	0	40864	36175	280339
Mahatma Phule Krishi Vidyapeeth	586865	141193	500	0	0	82661	0	811219
Mangalore University, Mangalore	165000	34675	0	0	0	103362	9955	312992
Manipal Academy of Higher Education, Manipal	18789	16879	5545	0	3625	1391286	68183	1504307
Manonmanian Sundaranar University, Tirunelveli	31651	20744	0	0	6125	200771	46171	305462
Marathwada Krishi Vidyapeeth, Parbhani	381531	76065	2726	2726	0	0	42621	505669
Mother Teresa Womens University, Kodaikanal	11417	7890	0	0	1016	11958	7415	39696
MS University of Baroda, Vadodara	554215	33152	0	0	7435	29661	5200	629663
Mumbai University, Mumbai	17070	14444	4456	0	5400	725563	0	766933
Mysore University, Mysore	300255	52779	0	0	0	92400	87905	533339
N T R University of Health Science	150533	40693	0	0	0	50316	24248	265790

University / Institution	State Govt.	Central Govt.	Industries Total	Foreign Sources	Donations	University Own Source	Others	Total
Nagarjuna University, Vijayawada	163061	52088	0	0	6429	61310	11651	294539
Nagpur University, Nagpur	234231	64900	200	0	75	145600	1700	446706
National Institute of Mental Health and Neuro Sciences, Bangalore	109705	481300	0	268255	6874	76422	0	942556
National Institute of Technology, Calicut	33070	116198	1758	0	0	27237	3809	182072
National Institute of Technology, Rourkela	36116	98459	0	0	0	27110	0	161685
National Institute of Technology, Tiruchirappalli	41860	76600	0	0	0	35700	0	154160
National Institute of Technology, Warangal	0	40000	0	0	0	0	0	40000
Nizams Institute of Medical Sciences	272007	0	1559	0	206	219845	12950	506567
North Gujarat University, Patan	24530	6831	0	0	127	14356	0	45844
Orissa University of Agriculture and Technology, Bhubaneswar	169713	172152	0	0	0	69888	6968	418721
Osmania University, Hyderabad	622717	44051	0	0	0	119900	19900	806568
Pandit Ravishankar Shukla University, Raipur	74314	18696	0	0	0	39572	8091	140673
Pondicherry University, Pondicherry	2595	158053	0	0	0	73662	4059	238369
Pune University, Pune	148600	242123	10600	0	9667	9500	20000	440490
Rajiv Gandhi University of Health Sciences	12200	1883	1000	0	1500	183300	79900	279783
Sambalpur University, Jyotibihar	141836	20145	0	0	16954	6880	67465	253280
Sardar Patel University, Vallabh Vidyannagar	131500	33636	0	11300	19842	13896	0	210174
Sardar Vallabhbhai Regional College of Engg. & Tech., Surat	52251	93938	0	0	0	8694	45000	199883
SASTRA Deemed University, Thanjavur	0	8565	0	0	0	113940	35000	157505
Saurashtra University, Rajkot	108105	32737	0	0	26315	37048	0	204205
Shivaji University, Kolhapur	182342	14874	0	0	815	156078	142838	496947

University / Institution	State Govt.	Central Govt.	Industries Total	Foreign Sources	Donations	University Own Source	Others	Total
SNDT Womens University, Mumbai	263422	0	0	0	314	98907	19906	382549
South Gujrat University, Surat	75600	35000	0	0	0	32700	20200	163500
Sree Chitranil Institute for Medical Sciences and Technology, Trivandapuram	0	216000	4000	6000	0	186859	87728	500587
Sri Krishnadevaraya University, Anantapur	149117	150	0	0	6027	17367	6280	178941
Sri Padmavati Mahila Viswavidyalayam, Tirupati	43810	2963	0	0	0	10755	1806	59334
Sri Ramchandra Medical College and Research Institute, Chennai	10072	3300	200	0	60090	470607	84134	628403
Sri Venkateswara University, Tirupati	363256	60359	0	0	0	54798	1500	479913
SRM Institute of Science & Technology, Chennai	0	0	0	0	0	116832	1834	118666
Swami Ramanand Teerth Marathwada University, Nanded	21299	0	0	0	0	45697	7955	74951
Tamil Nadu Agricultural University, Coimbatore	656590	199949	0	0	12619	72500	136983	1078641
Tamil University, Thanjavur	51457	4515	0	0	0	35029	0	91001
TamilNadu Veterinary and Animal Sciences University, Chennai	334873	50908	0	0	0	54406	278	440465
Utkal University, Vani Vihar	160267	47318	0	0	14945	101663	137569	461762
Visvesvaraya National Institute of Technology, Nagpur	51660	76707	0	0	0	32308	0	160675
Visveswaralal Technology University, Belgaum	4500	0	0	0	80	498861	0	503441
Yashwantrao Chavan Maharashtra Open University, Nashik	1000	0	0	0	0	129654	0	130654
Total	16758484	10008811	674740	564349	395506	12162986	4509751	45074627

Source : DST questionnaire - I/ Annual budget

Note : Source of income is rounded figure.

Appendix 2. S&T Expenditure of different Institutions (2001 - 02) In Rs. ' 000

University / Institution	Total
Acharya N.G. Ranga Agricultural University, Hyderabad	960285
Agricultural Sciences, Bangalore	566190
Agricultural Sciences, Dharwad	429442
Alagappa University, Karaikudi	48403
Amravati University, Amravati	120254
Andhra University, Visakhapatnam	460918
Anna University, Chennai	498228
Annamalai University, Chidambaram	298956
Avinashilingam Institute of Home science and higher education for women, Coimbatore	116145
Bangalore University, Bangalore	218487
Berhampur University	75185
Bharath Institute of Science and Technology, Chennai	30600
Bharathiar University, Coimbatore	191504
Bharathidasan University, Trichy	195612
Bharati Vidyapeeth, Pune	213110
Bhavnagar University, Bhavnagar	88237
Biju Patnaik University of Technology, Rourkela	16600
Calicut University, Calicut	112618
Central Institute of Fisheries Education, Mumbai	117153
Cochin University of Science and Technology, Cochin	450866
Deccan College Post Graduate and Research Institute	20962
Dr. Babasaheb Ambedkar Marathwada University, Aurangabad	85006
Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola	1055793
Dravidian University	5838
Fakir Mohan University, Balasore	37831
Gandhigram Rural Institute, Dindugal	36131
Goa University, Panjim	104041

University / Institution	Total
Gujarat Agricultural University, Sardarkrushinagar	1282311
Gujarat Ayurved University, Jamnagar	96212
Gujarat University, Ahmedabad	118262
Gulbarga University, Gulbarga	129194
Guru Ghasidas University	68659
Hyderabad University, Hyderabad	200649
Indian Institute of Science, Bangalore	2854231
Indian Institute of Technology, Bombay	792713
Indian Institute of Technology, Chennai	1109535
Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore	106259
Jawaharlal Nehru Technological University, Hyderabad	369015
Kakatiya University, Warangal	200635
Kalinga Institute of Industrial Technology, Bhubaneswar	155101
Kannur University	15846
Karnatak University, Dharwad	190896
Karnataka State Open University	7599
Karunya Institute of Technology, Coimbatore	73278
Kerala Agricultural University, Trichur	776998
Kerala University, Trivandrum	368992
Kuvenpu University, Shimogha	192162
Madras University, Chennai	310825
Madurai Kamaraj University, Madurai	417683
Maharashtra Animal and Fishery Sciences University, Nagpur	187465
Maharashtra University of Medical Sciences	50932
Mahatma Gandhi University, Kottayam	107359
Mahatma Phule Krishi Vidyapeeth	610321
Mangalore University, Mangalore	128824
Manipal Academy of Higher Education, Manipal	1403294
Manonmanian Sundaranar University, Tirunelveli	136960

University / Institution	Total
Marathwada Krishi Vidyapeeth, Parbhani	498741
Mother Teresa Womens University, Kodaikanal	6926
MS University of Baroda, Vadodara	409650
Mumbai University, Mumbai	399604
Mysore University, Mysore	342101
N T R University of Health Science	216487
Nagarjuna University, Vijayawada	213340
Nagpur University, Nagpur	236979
National Institute of Mental Health and Neuro Sciences, Bangalore	578408
National Institute of Technology, Calicut	176586
National Institute of Technology, Rourkela	146932
National Institute of Technology, Tiruchirappalli	81053
National Institute of Technology, Warangal	39421
Nizams Institute of Medical Sciences	269768
North Gujarat University, Patan	18056
Orissa University of Agriculture and Technology, Bhubaneswar	344844
Osmania University, Hyderabad	569845
Pandit Ravishankar Shukla University, Raipur	59471
Pondicherry University, Pondicherry	123437
Pune University, Pune	315506
Rajiv Gandhi University of Health Sciences	204600
Sambalpur University, Jyotibihar	110142
Sardar Patel University, Vallabh Vidyanagar	162504
Sardar Vallabhbhai Regional College of Engg. & Tech., Surat	176022
SASTRA Deemed University, Thanjavur	156534
Saurashtra University, Rajkot	78884
Shivaji University, Kolhapur	223028
SNDT Womens University, Mumbai	215069
South Gujarat University, Surat	86844

University / Institution	Total
Sree Chitratriunal Institute for Medical Sciences and Technology, Trivandapuram	450638
Sri Krishnadevaraya University, Anantapur	99613
Sri Padmavati Mahila Viswavidyalayam, Tirupati	44849
Sri Ramchandra Medical College and Research Institute, Chennai	517097
Sri Venkateswara University, Tirupati	289034
SRM Institute of Science & Technology, Chennai	62251
Swarni Ramanand Teerth Marathwada University, Nanded	53437
Tamil Nadu Agricultural University, Coimbatore	976706
Tamil University, Thanjavur	18312
TamilNadu Veterinary and Animal Sciences University, Chennai	428712
Utkal University, Vani Vihar	171769
Visvesvaraya National Institute of Technology, Nagpur	121870
Visveswaraiiah Technology University, Belgaum	200064
Yashwantrao Chavan Maharashtra Open University, Nashik	92878
Total	29004617

Source : University budget estimates

Note : Based on Responded Questionnaires

Appendix 3. Head-wise details of S&T expenditure of Universities/Institutions (2001 - 02)

In Rs. ' 000

University / Institution	Equipment	Laboratory	Maintenance	Visiting Faculty	Conferences	Contingency	S&T EXP1	S&T EXP2	Others	Total
Acharya N.G. Ranga Agricultural University, Hyderabad	119047	101491	100760	16720	20221	261808	620047	293007	47231	960285
Agricultural Sciences, Bangalore	2950	11372	4491	9163	500	118086	146562	365628	54000	566190
Agricultural Sciences, Dharwad	31279	21341	33241	12142	1761	45059	144823	262854	21765	429442
Alagappa University, Karaikudi	3723	8473	2571	570	320	12493	28150	15030	5223	48403
Amravati University, Amravati	8321	12242	17448	562	35	42616	81224	39030	0	120254
Andhra University, Visakhapatnam	30833	26484	65417	7200	9338	111881	251153	195283	14482	460918
Anna University, Chennai	11780	11752	58211	14260	26396	90716	213115	282632	2481	498228
Annamalai University, Chidambaram	37562	18933	120	36569	19568	147143	259895	16513	22548	298956
Avinashilingam Institute of Home science and higher education for women, Bangalore University, Bangalore	34957	29769	4122	460	50	13485	82843	33302	0	116145
Berhampur University	20600	6035	2976	1300	5000	65013	100924	117563	0	218487
Bharath Institute of Science and Technology, Chennai	3240	1195	1700	400	600	15569	22704	52481	0	75185
Bharathiar University, Coimbatore	4500	4000	6000	100	100	400	15100	13600	1900	30600
Bharathidasan University, Trichy	25555	25440	18000	5000	5000	67473	146468	33093	11943	191504
Bharati Vidyapeeth, Pune	76475	1140	1300	1000	1000	86789	167704	26908	1000	195612
Bhavnagar University, Bhavnagar	61315	12500	9992	423	1000	7900	93130	117802	2178	213110
	9474	13367	9926	2874	2104	30605	68350	10456	9431	88237

University / Institution	Equipment	Laboratory	Maintenance	Visiting Faculty	Conferences	Contingency	S&T EXP1	S&T EXP2 Salary	Others	Total
Biju Patnaik University of Technology, Rourkela	4200	1000	6700	500	0	2000	14400	1700	500	16600
Calicut University, Calicut	3060	4830	665	318	25	44403	53301	50517	8800	112618
Central Institute of Fisheries Education, Mumbai	15200	13700	12400	2000	3000	36321	82621	29532	5000	111713
Cochin University of Science and Technology, Cochin	14153	4198	668	5000	26035	133949	184003	138132	128731	450866
Deccan College Post Graduate and Research Institute	538	648	90	0	0	4765	6041	14921	0	20962
Dr. Babasaheb Ambedkar Marathwada University, Aurangabad	3197	1957	223	88	44	43255	48764	35842	400	85006
Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola	43907	31708	61885	43038	13124	188292	381954	496991	176848	1055793
Dravidian University	1525	3550	300	0	0	213	5588	250	0	5838
Fakir Mohan University, Balasore	9274	9174	856	0	0	13344	32648	5183	0	37831
Gandhigram Rural Institute, Dindugal	2753	2500	120	0	450	12081	17904	14653	3574	36131
Goa University, Panjim	18103	15305	4936	320	105	32197	70966	33075	0	104041
Gujarat Agricultural University, Sardarkrushinagar	172567	189801	194267	2750	4500	334895	898780	383531	0	1282311
Gujarat Ayurved University, Jamnagar	17750	13172	9050	2750	2600	14772	60094	30643	5475	96212
Gujarat University, Ahmedabad	15953	14402	10451	2451	1899	42262	87418	30844	0	118262
Gulbarga University, Gulbarga	3600	1900	15910	200	300	12475	34385	81654	13155	129194
Guru Ghasidas University	7990	4743	4743	689	628	22739	41532	22467	4660	68659
Hyderabad University, Hyderabad	10779	4680	9728	1225	5096	5534	37042	62170	101437	200649

University / Institution	Equipment	Laboratory	Maintenance	Visiting Faculty	Conferences	Contingency	S&T EXP1	S&T EXP2 Salary	Others	Total
Indian Institute of Science, Bangalore	192106	24775	140486	63200	180000	1212396	1812963	891268	150000	2854231
Indian Institute of Technology, Bombay	154534	76890	32375	720	2200	129200	395919	351944	44850	792713
Indian Institute of Technology, Chennai	55492	70870	43715	19315	21012	289530	499934	594081	15520	1109535
Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore	15850	33500	9650	800	7400	15661	82861	23398	0	106259
Jawaharlal Nehru Technological University, Hyderabad	4020	21124	12640	940	400	28691	67815	292325	8875	369015
Kakatiya University, Warangal	17150	22785	25195	1820	1570	58562	127082	50563	22990	200635
Kalinga Institute of Industrial Technology, Bhubaneswar	18657	2889	10516	16	892	3086	36056	44202	74843	155101
Kannur University	2280	2880	1850	225	105	2250	9590	5006	1250	15846
Karnatak University, Dharwad	2684	2352	44985	1063	1000	91170	143254	47142	500	190896
Karnataka State Open University	347	166	133	111	300	2142	3199	4100	300	7599
Karunya Institute of Technology, Coimbatore	654	13188	6874	0	165	0	20881	40409	11988	73278
Kerala Agricultural University, Trichur	114345	99728	74725	16220	22577	164994	492589	265730	18679	776998
Kerala University, Trivandrum	42638	22457	12673	4137	20138	94367	196410	139856	32726	368992
Kuempu University, Shimogha	29620	21861	25265	1892	8540	58093	145271	45390	1501	192162
Madras University, Chennai	23666	12604	2744	100	400	152506	192020	108258	10547	310825
Madurai Kamaraj University, Madurai	36478	22976	70059	3320	12100	165870	310803	101731	5149	417683
Maharashtra Animal and Fishery Sciences	2150	982	3822	3448	0	56333	66735	120225	505	187465

University / Institution	Equipment	Laboratory	Maintenance	Visiting Faculty	Conferences	Contingency	S&T EXP1	S&T EXP2 Salary	Others	Total
University, Nagpur										
Maharashtra University of Medical Sciences	1026	1760	19383	0	42	2109	24320	7210	19402	50932
Mahatma Gandhi University, Kottayam	18005	17938	7427	461	120	21558	65509	39259	2591	107359
Mahatma Phule Krishi Vidyapeeth	71234	37216	98172	12341	21325	73502	313790	255180	41351	610321
Mangalore University, Mangalore	4732	602	450	39	0	88296	94119	34705	0	128824
Manipal Academy of Higher Education, Manipal	208229	209301	186163	38161	47068	13120	702042	686252	15000	1403294
Manonmanian Sundaranar University, Tirunelveli	2290	1600	14535	2500	5000	79982	105907	26053	5000	136960
Marathwada Krishi Vidyapeeth, Parbhani	36472	11458	31022	13300	12612	137810	242674	217202	38865	498741
Mother Teresa Womens University, Kodaikanal	2185	771	25	0	1275	714	4970	1703	253	6926
MS University of Baroda, Vadodara	21891	74191	38385	5291	13609	57203	210570	186220	12860	409650
Mumbai University, Mumbai	49600	38756	31436	1241	796	129321	251150	148454	0	399604
Mysore University, Mysore	94381	50491	12110	1642	9200	80598	248422	81179	12500	342101
N T R University of Health Science	19393	18430	14115	0	2392	25800	80130	129446	6911	216487
Nagarjuna University, Vijayawada	18885	16660	19173	11470	1550	77502	145240	63282	4818	213340
Nagpur University, Nagpur	29217	51920	43617	6100	3200	31777	165831	63988	7160	236979
National Institute of Mental Health and Neuro Sciences, Bangalore	31140	54407	32208	3896	1408	181268	304329	220735	53344	578408
National Institute of Technology, Calicut	28902	40226	1615	1453	1000	16284	89480	87106	0	176586

University / Institution	Equipment	Laboratory Maintenance	Visiting Faculty	Conferences	Contingency	S&T EXP1	S&T EXP2 Salary	Others	Total	
National Institute of Technology, Rourkela	32869	5540	10311	1000	645	16732	67097	79835	0	146932
National Institute of Technology, Tiruchirappalli	25000	10000	1470	155	1000	17200	54825	26228	0	81053
National Institute of Technology, Warangal	30000	5330	1000	0	0	350	36680	2741	0	39421
Nizams Institute of Medical Sciences	64600	5096	37164	0	375	28605	135840	125968	7960	269768
North Gujarat University, Patan	1135	4344	2835	750	235	2002	11301	6755	0	18056
Orissa University of Agriculture and Technology, Bhubaneswar	29455	21341	29455	11605	2240	29455	123551	220873	420	344844
Osmania University, Hyderabad	72687	54983	94798	11584	13275	84706	332033	223549	14263	569845
Pandit Ravishankar Shukla University, Raipur	7538	8849	2648	1070	1134	15882	37121	18612	3738	59471
Pondicherry University, Pondicherry	26661	7514	11703	344	133	32426	78781	43656	1000	123437
Pune University, Pune	18000	11100	10000	191	1700	217813	258804	56602	100	315506
Rajiv Gandhi University of Health Sciences	38000	60000	72500	1000	4000	3700	179200	24400	1000	204600
Sambalpur University, Jyotibihar	22689	12955	157	11	39	40894	76745	33197	200	110142
Sardar Patel University, Vallabh Vidyanagar	19759	22555	17734	4162	2366	48369	114945	45382	2177	162504
Sardar Vallabhbhai Regional College of Engg. & Tech., Surat	47143	8414	54909	20	250	17570	128306	47716	0	176022
SASTRA Deemed University, Thanjavur	25404	2813	4188	646	924	68966	102941	53593	0	156534
Saurashtra University, Rajkot	10125	7784	10006	1380	1070	27910	58275	19072	1537	78884
Shivaji University, Kolhapur	3059	6570	493	143	24	93670	103959	77818	41251	223028

University / Institution	Equipment	Laboratory	Maintenance	Visiting Faculty	Conferences	Contingency	S&T EXP1	S&T EXP2 Salary	Others	Total
SNDT Womens University, Mumbai	35745	30080	7649	967	377	66659	141477	73592	0	215069
South Gujrat University, Surat	7114	14830	11337	2700	900	24127	61008	25836	0	86844
Sree Chitratriunal Institute for Medical Sciences and Technology, Trivandapuram	36940	26246	41862	11655	3843	36400	156946	293692	0	450638
Sri Krishnadevaraya University, Anantapur	20252	2188	1628	1000	255	26476	51799	46350	1464	99613
Sri Padmavati Mahila Viswavidyalayam, Tirupati	7393	545	5214	357	342	11971	25822	19027	0	44849
Sri Ramchandra Medical College and Research Institute, Chennai	121071	71214	21870	114600	11600	48564	388919	127466	712	517097
Sri Venkateswara University, Tirupati	62184	64976	19708	2567	7869	35025	192329	80945	15760	289034
SRM Institute of Science & Technology, Chennai	595	1117	3174	90	0	6962	11938	49813	500	62251
Swami Ramanand Teerth Marathwada University, Nanded	14388	2055	156	65	0	9423	26087	27350	0	53437
Tamil Nadu Agricultural University, Coimbatore	183969	53134	31599	19479	36902	299367	624450	340356	11900	976706
Tamil University, Thanjavur	4243	1871	2761	89	50	4567	13581	4731	0	18312
TamilNadu Veterinary and Animal Sciences University, Chennai	52961	11177	34100	2463	334	48040	149075	262274	17363	428712
Utkal University, Vani Vihar	32149	739	34222	1500	712	33162	102484	68343	942	171769
Visvesvaraya National Institute of Technology, Nagpur	3561	5477	1871	500	500	15356	27265	94605	0	121870
Visveswaraiah Technology University, Belgaum	10864	26678	32644	265	1500	57421	129372	60116	10576	200064
Yashwantrao Chavan Maharashtra Open University, Nashik	10709	10709	10709	200	21417	21417	75161	17617	100	92878
Total	3254675	2278780	2358685	577854	666206	7093415	16229615	11378999	1396003	29004617

Appendix 4. Computation of R&D expenditure(RD1) of Universities/Institutions (2001 - 02) (In Rs. ' 000)

University / Institution	S&T EXP1	No. of PG student	No. of research Scholars	R&D EXP1
Acharya N.G. Ranga Agricultural University, Hyderabad	620047	308	115	168571
Agricultural Sciences, Bangalore	146562	905	389	44059
Agricultural Sciences, Dharwad	144823	484	120	28773
Alegappa University, Karaikudi	28150	227	76	7061
Amravati University, Amravati	81224	700	105	10594
Andhra University, Visakhapatnam	251153	909	71	18196
Anna University, Chennai	213115	1779	798	65994
Annamalai University, Chidambaram	259895	2432	648	54679
Avinashilingam Institute of Home science and higher education for women, Coimbatore	82843	465	113	16196
Bangalore University, Bangalore	100924	1478	452	23636
Berhampur University	22704	491	103	3937
Bharath Institute of Science and Technology, Chennai	15100	700	14	296
Bharathiar University, Coimbatore	146468	301	137	45813
Bharathidasan University, Trichy	167704	335	207	64049
Bharati Vidyapeeth, Pune	93130	420	21	4435
Bhavnagar University, Bhavnagar	68350	870	355	19808
Biju Patnaik University of Technology, Rourkela	14400	40	4	1309

University / Institution	S&T EXP1	No. of PG student	No. of research Scholars	R&D EXP1
Calicut University, Calicut	53301	225	367	33043
Central Institute of Fisheries Education, Mumbai	82621	120	78	32548
Cochin University of Science and Technology, Cochin	184003	729	348	59455
Deccan College Post Graduate and Research Institute	6041	10	72	5304
Dr. Babasaheb Ambedkar Marathwada University, Aurangabad	48764	556	84	6400
Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola	381954	750	203	81361
Dravidian University	5588	13	1	399
Fakir Mohan University, Balasore	32648	180	27	4258
Gandhigram Rural Institute, Dindugal	17904	314	108	4582
Goa University, Panjim	70966	482	174	18823
Gujarat Agricultural University, Sardarkrushinagar	898780	357	97	192030
Gujarat Ayurved University, Jamnagar	60094	150	44	13630
Gujarat University, Ahmedabad	87418	625	34	4510
Gulbarga University, Gulbarga	34385	212	94	10563
Guru Ghasidas University	41532	325	9	1119
Hyderabad University, Hyderabad	37042	528	347	14690
Indian Institute of Science, Bangalore	1812963	1630	1423	845020
Indian Institute of Technology, Bombay	395919	976	389	112830

University / Institution	S&T EXP1	No. of PG student	No. of research Scholars	R&D EXP1
Indian Institute of Technology, Chennai	499934	1367	699	169145
Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore	82861	86	60	34052
Jawaharlal Nehru Technological University, Hyderabad	67815	393	9	1518
Kakatiya University, Warangal	127082	968	184	20298
Kalinga Institute of Industrial Technology, Bhubaneswar	36056	97	4	1428
Kannur University	9590	85	5	533
Karnatak University, Dharwad	143254	781	229	32480
Karnataka State Open University	3199	700	4	18
Karunya Institute of Technology, Coimbatore	20881	330	14	850
Kerala Agricultural University, Trichur	492589	280	206	208793
Kerala University, Trivandrum	196410	452	408	93181
Kuvenpu University, Shimogha	145271	360	188	49837
Madras University, Chennai	192020	568	628	100827
Madurai Kamaraj University, Madurai	310803	996	188	49350
Maharashtra Animal and Fishery Sciences University, Nagpur	66735	112	15	7882
Maharashtra University of Medical Sciences	24320	10	2	4053
Mahatma Gandhi University, Kottayam	65509	436	101	12321
Mahatma Phule Krishi Vidyapeeth	313790	549	134	61563

University / Institution	S&T EXP1	No. of PG student	No. of research Scholars	R&D EXP1
Mangalore University, Mangalore	94119	588	57	8317
Manipal Academy of Higher Education, Manipal	702042	1571	68	29127
Manonmanian Sundaranar University, Tirunelveli	105907	180	74	30855
Marathwada Krishi Vidyapeeth, Parbhani	242674	190	47	48125
Mother Teresa Womens University, Kodaikanal	4970	93	2	105
MS University of Baroda, Vadodara	210570	766	70	17631
Mumbai University, Mumbai	251150	980	957	124084
Mysore University, Mysore	248422	1228	103	19224
N T R University of Health Science	80130	54	7	9195
Nagarjuna University, Vijayawada	145240	667	96	18274
Nagpur University, Nagpur	165831	254	279	86805
National Institute of Mental Health and Neuro Sciences, Bangalore	304329	78	84	157800
National Institute of Technology, Calicut	89480	92	313	69154
National Institute of Technology, Rourkela	67097	341	41	7202
National Institute of Technology, Tiruchirappalli	54825	618	30	2538
National Institute of Technology, Warangal	36680	618	30	1698
Nizams Institute of Medical Sciences	135840	27	7	27967
North Gujrat University, Patan	11301	79	12	1490

University / Institution	S&T EXP1	No. of PG student	No. of research Scholars	R&D EXP1
Orissa University of Agriculture and Technology, Bhubaneswar	123551	435	51	12965
Osmania University, Hyderabad	332033	909	218	64226
Pandit Ravishankar Shukla University, Raipur	37121	418	42	3389
Pondicherry University, Pondicherry	78781	483	149	18573
Pune University, Pune	258804	854	218	52630
Rajiv Gandhi University of Health Sciences	179200	331	21	10691
Sambalpur University, Jyotibihar	76745	427	102	14798
Sardar Patel University, Vallabh Vidyanagar	114945	563	82	14613
Sardar Vallabhbhai Regional College of Engg. & Tech., Surat	128306	49	16	31583
SASTRA Deemed University, Thanjavur	102941	294	45	13665
Saurashtra University, Rajkot	58275	527	53	5325
Shivaji University, Kolhapur	103959	830	153	16181
SNDT Womens University, Mumbai	141477	196	44	25937
South Gujrat University, Surat	61008	493	51	5720
Sree Chitratrinal Institute for Medical Sciences and Technology, Trivandapuram	156946	210	80	43295
Sri Krishnadevaraya University, Anantapur	51799	557	278	17246
Sri Padmavati Mahila Viswavidyalayam, Tirupati	25822	304	46	3394
Sri Ramchandra Medical College and Research Institute, Chennai	388919	191	95	129186

University / Institution	S&T EXP1	No. of PG student	No. of research Scholars	R&D EXP1
Sri Venkateswara University, Tirupati	192329	549	146	40403
SRM Institute of Science & Technology, Chennai	11938	222	31	1463
Swami Ramanand Teerth Marathwada Univesity, Nanded	26087	240	48	4348
Tamil Nadu Agricultural University, Coimbatore	624450	714	258	165749
Tamil University, Thanjavur	13581	0	71	13581
TamilNadu Veterinary and Animal Sciences University, Chennai	149075	206	52	30046
Utkal University, Vani Vihar	102484	674	144	18041
Visvesvaraya National Institute of Technology, Nagpur	27265	604	22	958
Visveswaraiiah Technology University, Belgaum	129372	84	12	16172
Yashwantrao Chavan Maharashtra Open University, Nashik	75161	68	105	45618
Total	16229615	49452	15615	4345487

Source : University Annual Reports and Budget estimates

Note : Based on responded Questionnaires

S&T EXP1: Expenditure of Equipment, Laboratory, Maintenance & Materials, Visiting Faculty, Seminar & Symposium and Contingency
R&D EXP1 = (S&T EXP1/PGSTUDENTS + RESEARCH SCHOLARS) * RESEARCH SCHOLARS

Appendix 5. R&D expenditure(RD2) of Universities/Institutes (2001-02) (In Rs. '000)

University / Institution	S&T EXP2	Responded Faculty	FTE Faculty	R&D EXP2
Acharya N.G. Ranga Agricultural University, Hyderabad	293007	104	52	149246
Agricultural Sciences, Bangalore	365628	101	52	193798
Agricultural Sciences, Dharwad	262854	52	26	132207
Alagappa University, Karaikudi	15030	28	7	5746
Amravati University, Amravati	39030	17	5	15215
Andhra University, Visakhapatnam	195283	272	124	91938
Anna University, Chennai	282632	408	167	118662
Annamalai University, Chidambaram	16513	612	182	6403
Avinashilingam Institute of Home science and higher education for women, Coimbatore	33302	70	16	8445
Bangalore University, Bangalore	117563	130	45	45308
Berhampur University	52481	48	15	19181
Bharath Institute of Science and Technology, Chennai	13600	14	4	3886
Bharathiar University, Coimbatore	33093	53	17	11536
Bharathidasan University, Trichy	26908	28	11	14953
Bharati Vidyapeeth, Pune	117802	157	62	47494
Bhavnagar University, Bhavnagar	10456	24	7	3772
Biju Patnaik University of Technology, Rourkela	1700	2	1	850
Calicut University, Calicut	50517	59	20	18981
Central Institute of Fisheries Education, Mumbai	29532	21	13	18967
Cochin University of Science and Technology, Cochin	138132	82	34	62753
Deccan College Post Graduate and Research Institute	14921	12	3	4270
Dr. Babasaheb Ambedkar Marathwada University, Aurangabad	35842	35	10	10858
Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola	496991	31	9	146280

University / Institution	S&T EXP2	Responded Faculty	FTE Faculty	R&D EXP2
Dravidian University	250	2	1	125
Fakir Mohan University, Balasore	5183	16	5	1620
Gandhigram Rural Institute, Dindugal	14653	38	8	4058
Goa University, Panjim	33075	73	19	11928
Gujarat Agricultural University, Sardarkrushinagar	383531	85	42	191221
Gujarat Ayurved University, Jamnagar	30643	28	8	9518
Gujarat University, Ahmedabad	30844	44	13	10077
Gulbarga University, Gulbarga	81654	55	19	29166
Guru Ghasidas University	22467	37	7	4494
Hyderabad University, Hyderabad	62170	79	26	21966
Indian Institute of Science, Bangalore	891268	407	216	513818
Indian Institute of Technology, Bombay	351944	280	106	136938
Indian Institute of Technology, Chennai	594081	198	75	243592
Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore	23398	49	22	13600
Jawaharlal Nehru Technological University, Hyderabad	292325	22	8	106575
Kakatiya University, Warangal	50563	87	26	18115
Kalinga Institute of Industrial Technology, Bhubaneswar	44202	56	16	12629
Kannur University	5006	16	6	1937
Karnatak University, Dharwad	47142	15	5	16314
Karnataka State Open University	4100	6	2	1367
Karunya Institute of Technology, Coimbatore	40409	8	1	5839
Kerala Agricultural University, Trichur	265730	80	36	120654
Kerala University, Trivandrum	139856	72	26	51569
Kuvenpu University, Shimogha	45390	49	19	19753

University / Institution	S&T EXP2	Responded Faculty	FTE Faculty	R&D EXP2
Madras University, Chennai	108258	139	50	62407
Madurai Kamaraj University, Madurai	101731	106	12	15571
Maharashtra Animal and Fishery Sciences University, Nagpur	120225	9	5	66792
Maharashtra University of Medical Sciences	7210	5	2	2884
Mahatma Gandhi University, Kottayam	39259	52	15	12635
Mahatma Phule Krishi Vidyapeeth	255180	261	142	139490
Mangalore University, Mangalore	34705	60	25	16532
Manipal Academy of Higher Education, Manipal	686252	591	200	259592
Manonmanian Sundaranar University, Tirunelveli	26053	41	14	11694
Marathwada Krishi Vidyapeeth, Parbhani	217202	81	28	75718
Mother Teresa Womens University, Kodaikanal	1703	7	2	555
MS University of Baroda, Vadodara	186220	61	27	83970
Mumbai University, Mumbai	148454	63	20	47128
Mysore University, Mysore	81179	72	22	32088
N T R University of Health Science	129446	144	43	38789
Nagarjuna University, Vijayawada	63282	53	17	21773
Nagpur University, Nagpur	63988	43	13	19345
National Institute of Mental Health and Neuro Sciences, Bangalore	220735	16	7	98381
National Institute of Technology, Calicut	87106	109	40	33591
National Institute of Technology, Rourkela	79835	124	45	31480
National Institute of Technology, Tiruchirappalli	26228	121	45	10086
National Institute of Technology, Warangal	2741	118	46	1193
Nizams Institute of Medical Sciences	125968	139	53	48150
North Gujrat University, Patan	6755	14	4	2453

University / Institution	S&T EXP2	Responded Faculty	FTE Faculty	R&D EXP2
Orissa University of Agriculture and Technology, Bhubaneswar	220873	100	48	108478
Osmania University, Hyderabad	223549	263	76	69079
Pandit Ravishankar Shukla University, Raipur	18612	34	7	4413
Pondicherry University, Pondicherry	43656	47	15	15126
Pune University, Pune	56602	102	35	22678
Rajiv Gandhi University of Health Sciences	24400	10	3	7740
Sambalpur University, Jyotibihar	33197	59	10	7480
Sardar Patel University, Vallabh Vidyanagar	45382	91	36	18744
Sardar Vallabhbhai Regional College of Engg. & Tech., Surat	47716	99	39	19277
SASTRA Deemed University, Thanjavur	53593	236	71	16123
Saurashtra University, Rajkot	19072	38	11	6135
Shivaji University, Kolhapur	77818	81	24	24712
SNDT Womens University, Mumbai	73592	16	6	28280
South Gujrat University, Surat	25836	47	17	10134
Sree Chitratriunal Institute for Medical Sciences and Technology, Trivandapuram	293692	31	9	91891
Sri Krishnadevaraya University, Anantapur	46350	92	30	16349
Sri Padmavati Mahila Viswavidyalayam, Tirupati	19027	52	16	6458
Sri Ramchandra Medical College and Research Institute, Chennai	127466	268	110	52927
Sri Venkateswara University, Tirupati	80945	98	43	39992
SRM Institute of Science & Technology, Chennai	49813	12	4	17164
Swami Ramanand Teerth Marathwada University, Nanded	27350	16	5	9347
Tamil Nadu Agricultural University, Coimbatore	340356	548	274	173922
Tamil University, Thanjavur	4731	12	4	2273
TamilNadu Veterinary and Animal Sciences University, Chennai	262274	88	47	140805

University / Institution	S&T EXP2	Responded Faculty	FTE Faculty	R&D EXP2
Utkal University, Vani Vihar	68343	80	24	22653
Visvesvaraya National Institute of Technology, Nagpur	94605	109	44	40279
Visveswaraiah Technology University, Belgaum	60116	13	4	19303
Yashwantrao Chavan Maharashtra Open University, Nashik	17617	5	2	7407
Total	11378999	9238	3485	4809088

Source : DST Questionnaire university annual reports and budget estimates

Note : Based on responded Questionnaires

EXP2 - Expenditure of salary of Teaching staff

R&D EXP2 = ((S&T EXP2/RESPONDENT_FACULTY)* FTE_FACULTY)+RESEARCH_STAFF_SALARY

Appendix 6. Computation of R&D expenditure of Universities/Institutions (2001 - 02) (In Rs. ' 000)

University / Institution	R&D EXP1	R&D EXP2	Total
Acharya N.G. Ranga Agricultural University, Hyderabad	168571	149246	317817
Agricultural Sciences, Bangalore	44059	193798	237857
Agricultural Sciences, Dhanwad	28773	132207	160980
Alagappa University, Karaikudi	7061	5746	12807
Amravati University, Amravati	10594	15215	25809
Andhra University, Visakhapatnam	18196	91938	110134
Anna University, Chennai	65994	118662	184656
Annamalai University, Chidambaram	54679	6403	61082
Avinashilingam Institute of Home science and higher education for women, Coimbatore	16196	8445	24641
Bangalore University, Bangalore	23636	45308	68944
Berhampur University	3937	19181	23118
Bharath Institute of Science and Technology, Chennai	296	3886	4182
Bharathiar University, Coimbatore	45813	11536	57349
Bharathidasan University, Trichy	64049	14953	79002
Bharati Vidyapeeth, Pune	4435	47494	51929
Bhavnagar University, Bhavnagar	19808	3772	23580
Biju Patnaik University of Technology, Rourkela	1309	850	2159
Calicut University, Calicut	33043	18981	52024
Central Institute of Fisheries Education, Mumbai	32548	18967	51515
Cochin University of Science and Technology, Cochin	59455	62753	122208
Deccan College Post Graduate and Research Institute	5304	4270	9574
Dr. Babasaheb Ambedkar Marathwada University, Aurangabad	6400	10858	17258
Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola	81361	146280	227641
Dravidian University	399	125	524
Fakir Mohan University, Balasore	4258	1620	5878
Gandhigram Rural Institute, Dindugal	4582	4058	8640
Goa University, Panjim	18823	11928	30751

University / Institution	R&D EXP1	R&D EXP2	Total
Gujarat Agricultural University, Sardarkrushinagar	192030	191221	383251
Gujarat Ayurved University, Jamnagar	13630	9518	23148
Gujarat University, Ahmedabad	4510	10077	14587
Gulbarga University, Gulbarga	10563	29166	39729
Guru Ghasidas University	1119	4494	5613
Hyderabad University, Hyderabad	14690	21966	36656
Indian Institute of Science, Bangalore	845020	513818	1358838
Indian Institute of Technology, Bombay	112830	136938	249768
Indian Institute of Technology, Chennai	169145	243592	412737
Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore	34052	13600	47652
Jawaharlal Nehru Technological University, Hyderabad	1518	106575	108093
Kakatiya University, Warangal	20298	18115	38413
Kalinga Institute of Industrial Technology, Bhubaneswar	1428	12629	14057
Kannur University	533	1937	2470
Karnatak University, Dharwad	32480	16314	48794
Karnataka State Open University	18	1367	1385
Karunya Institute of Technology, Coimbatore	850	5839	6689
Kerala Agricultural University, Trichur	208793	120654	329447
Kerala University, Trivandrum	93181	51569	144750
Kuvempu University, Shimogha	49837	19753	69590
Madras University, Chennai	100827	62407	163234
Madurai Kamaraj University, Madurai	49350	15571	64921
Maharashtra Animal and Fishery Sciences University, Nagpur	7882	66792	74674
Maharashtra University of Medical Sciences	4053	2884	6937
Mahatma Gandhi University, Kottayam	12321	12635	24956
Manatma Phule Krishi Vidyapeeth	61563	139490	201053
Mangalore University, Mangalore	8317	16532	24849
Manipal Academy of Higher Education, Manipal	29127	259592	288719

University / Institution	R&D EXP1	R&D EXP2	Total
Manonmanian Sundaranar University, Tirunelveli	30855	11694	42549
Marathwada Krishi Vidyapeeth, Parbhani	48125	75718	123843
Mother Teresa Womens University, Kodaikanal	105	555	660
MS University of Baroda, Vadodara	17631	83970	101601
Mumbai University, Mumbai	124084	47128	171212
Mysore University, Mysore	19224	32088	51312
N T R University of Health Science	9195	38789	47984
Nagarjuna University, Vijayawada	18274	21773	40047
Nagpur University, Nagpur	86805	19345	106150
National Institute of Mental Health and Neuro Sciences, Bangalore	157800	98381	256181
National Institute of Technology, Calicut	69154	33591	102745
National Institute of Technology, Rourkela	7202	31480	38682
National Institute of Technology, Tiruchirappalli	2538	10086	12624
National Institute of Technology, Warangal	1698	1193	2891
Nizams Institute of Medical Sciences	27967	48150	76117
North Gujrat University, Patan	1490	2453	3943
Orissa University of Agriculture and Technology, Bhubaneswar	12965	108478	121443
Osmania University, Hyderabad	64226	69079	133305
Pandit Ravishankar Shukla University, Raipur	3389	4413	7802
Pondicherry University, Pondicherry	18573	15126	33699
Pune University, Pune	52630	22678	75308
Rajiv Gandhi University of Health Sciences	10691	7740	18431
Sambalpur University, Jyotibihar	14798	7480	22278
Sardar Patel University, Vallabh Vidyanagar	14613	18744	33357
Sardar Vallabhbhai Regional College of Engg. & Tech., Surat	31583	19277	50860
SASTRA Deemed University, Thanjavur	13665	16123	29788
Saurashtra University, Rajkot	5325	6135	11460
Shivaji University, Kolhapur	16181	24712	40893

University / Institution	R&D EXP1	R&D EXP2	Total
SNDT Womens University, Mumbai	25937	28280	54217
South Gujrat University, Surat	5720	10134	15854
Sree Chitratriunal Institute for Medical Sciences and Technology, Trivandapuram	43295	91891	135186
Sri Krishnadevaraya University, Anantapur	17246	16349	33595
Sri Padmavati Mahila Viswavidyalayam, Tirupati	3394	6458	9852
Sri Ramchandra Medical College and Research Institute, Chennai	129186	52927	182113
Sri Venkateswara University, Tirupati	40403	39992	80395
SRM Institute of Science & Technology, Chennai	1463	17164	18627
Swami Ramanand Teerth Marathwada Univesity, Nanded	4348	9347	13695
Tamil Nadu Agricultural University, Coimbatore	165749	173922	339671
Tamil University, Thanjavur	13581	2273	15854
TamilNadu Veterinary and Animal Sciences University, Chennai	30046	140805	170851
Utkal University, Vani Vihar	18041	22653	40694
Visvesvaraya National Institute of Technology, Nagpur	958	40279	41237
Visveswaraiah Technology University, Belgaum	16172	19303	35475
Yashwantrao Chavan Maharashtra Open University, Nashik	45618	7407	53025
Total	4345487	4809088	9154575

Source : University Annual Reports and Budget Estimates

Based on responded Questionnaires

Note : S&T EXP1 : Expenditure of Equipment, Laboratory, Maintenance & Materials, Visiting Faculty, Seminar & Symposium and Contingency

R&D EXP1 = (S&T EXP1/PGSTUDENTS + RESEARCH SCHOLARS) * RESEARCH SCHOLARS

S&T EXP2 : Expenditure of salary of Teaching staff

R&D EXP2 =((EXP2/RESPONDENT_FACULTY)* FTE_FACULTY)*RESEARCH_STAFF_SALARY

Appendix 7. Recurring & Non-Recurring R&D Expenditure of the Universities/Institutions (2001 - 02)

(In Rs. ' 000)

University / Institution	Recurring R&D Expenditure	Non-Recurring R&D Expenditure	Total
Acharya N.G. Ranga Agricultural University, Hyderabad	257859.56	59957.14	317816.70
Agricultural Sciences, Bangalore	233551.76	4305.45	237857.21
Agricultural Sciences, Dharwad	150525.48	10454.30	160979.78
Alagappa University, Karaikudi	9747.66	3059.06	12806.72
Amravati University, Amravati	23127.30	2682.13	25809.43
Andhra University, Visakhapatnam	105981.22	4152.56	110133.78
Anna University, Chennai	177368.73	7286.98	184655.71
Annamalai University, Chidambaram	49196.25	11885.96	61082.21
Avinashilingam Institute of Home science and higher education for women, Coimbatore	11986.90	12654.04	24640.94
Bangalore University, Bangalore	62706.25	6237.83	68944.08
Berhampur University	22348.86	769.03	23117.89
Bharath Institute of Science and Technology, Chennai	4015.41	166.67	4182.08
Bharathiar University, Coimbatore	41398.56	15950.49	57349.05
Bharathidasan University, Trichy	49359.68	29642.63	79002.31
Bharati Vidyapeeth, Pune	48413.76	3515.00	51928.76
Bhavnagar University, Bhavnagar	16960.32	6619.23	23579.55
Biju Patnaik University of Technology, Rourkela	1686.36	472.73	2159.09
Calicut University, Calicut	47132.75	4891.27	52024.02
Central Institute of Fisheries Education, Mumbai	40129.82	11384.85	51514.67
Cochin University of Science and Technology, Cochin	116278.44	5929.57	122208.01
Deccan College Post Graduate and Research Institute	8532.93	1041.37	9574.30
Dr. Babasaheb Ambedkar Marathwada University, Aurangabad	16581.81	676.46	17258.27
Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola	211533.74	16106.87	227640.61
Dravidian University	161.64	362.50	524.14
Fakir Mohan University, Balasore	3472.17	2406.26	5878.43
Gandhigram Rural Institute, Dindugal	7295.70	1344.37	8640.07

University / Institution	Recurring R&D Expenditure	Non-Recurring R&D Expenditure	Total
Goa University, Panjim	21890.03	8861.27	30751.30
Gujarat Agricultural University, Sardarkrushinagar	305828.85	77422.24	383251.09
Gujarat Ayurved University, Jamnagar	16134.33	7013.24	23147.57
Gujarat University, Ahmedabad	13021.07	1566.12	14587.19
Gulbarga University, Gulbarga	38039.17	1689.54	39728.71
Guru Ghasidas University	5270.02	343.10	5613.12
Hyderabad University, Hyderabad	30525.20	6130.60	36655.80
Indian Institute of Science, Bangalore	1257750.09	101088.00	1358838.0
Indian Institute of Technology, Bombay	183816.06	65951.60	249767.66
Indian Institute of Technology, Chennai	369984.46	42752.68	412737.14
Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore	27371.64	20280.82	47652.46
Jawaharlal Nehru Technological University, Hyderabad	107530.32	562.93	108093.25
Kakatiya University, Warangal	32034.31	6378.51	38412.82
Kalinga Institute of Industrial Technology, Bhubaneswar	13203.65	853.31	14056.96
Kannur University	2183.11	286.67	2469.78
Karnatak University, Dharwad	47652.54	1141.83	48794.37
Karnataka State Open University	1382.26	2.91	1385.17
Karunya Institute of Technology, Coimbatore	6125.47	563.34	6688.81
Kerala Agricultural University, Trichur	238708.11	90738.76	329446.87
Kerala University, Trivandrum	113867.28	30882.28	144749.56
Kuvempu University, Shimogha	51929.13	17661.36	69590.49
Madras University, Chennai	144188.77	19044.78	163233.55
Madurai Kamaraj University, Madurai	55481.15	9440.33	64921.48
Maharashtra Animal and Fishery Sciences University, Nagpur	74304.17	369.92	74674.09
Maharashtra University of Medical Sciences	6473.00	464.33	6937.33
Mahatma Gandhi University, Kottayam	18195.83	6760.23	24956.06
Mahatma Phule Krishi Vidyapeeth	179776.33	21277.16	201053.49
Mangalore University, Mangalore	24378.12	471.38	24849.50

University / Institution	Recurring R&D Expenditure	Non-Recurring R&D Expenditure	Total
Manipal Academy of Higher Education, Manipal	271396.04	17322.78	288718.82
Manonmanian Sundaranar University, Tirunelveli	41415.49	1133.31	42548.80
Marathwada Krishi Vidyapeeth, Parbhani	114338.12	9505.11	123843.23
Mother Teresa Womens University, Kodaikanal	597.40	62.23	659.63
MS University of Baroda, Vadodara	93556.32	8045.14	101601.46
Mumbai University, Mumbai	127558.49	43653.43	171211.92
Mysore University, Mysore	40101.26	11210.98	51312.24
N T R University of Health Science	43643.90	4340.34	47984.24
Nagarjuna University, Vijayawada	35574.73	4472.24	40046.97
Nagpur University, Nagpur	63678.26	42471.34	106149.60
National Institute of Mental Health and Neuro Sciences, Bangalore	211823.52	44357.70	256181.22
National Institute of Technology, Calicut	49319.83	53424.85	102744.68
National Institute of Technology, Rourkela	34559.08	4122.43	38681.51
National Institute of Technology, Tiruchirappalli	11003.82	1620.37	12624.19
National Institute of Technology, Warangal	1255.50	1635.65	2891.15
Nizams Institute of Medical Sciences	61767.88	14349.18	76117.06
North Gujrat University, Patan	3220.74	722.51	3943.25
Orissa University of Agriculture and Technology, Bhubaneswar	116112.78	5330.44	121443.22
Osmania University, Hyderabad	108609.73	24695.71	133305.44
Pandit Ravishankar Shukla University, Raipur	6306.10	1496.20	7802.30
Pondicherry University, Pondicherry	25642.29	8057.08	33699.37
Pune University, Pune	69390.19	5917.72	75307.91
Rajiv Gandhi University of Health Sciences	12584.32	5846.59	18430.91
Sambalpur University, Jyotibihar	15404.96	6872.76	22277.72
Sardar Patel University, Vallabh Vidyanagar	27977.71	5379.45	33357.16
Sardar Vallabhbhai Regional College of Engg. & Tech., Surat	37184.45	13675.57	50860.02
SASTRA Deemed University, Thanjavur	26042.12	3745.62	29787.74
Saurashtra University, Rajkot	9823.62	1636.51	11460.13

University / Institution	Recurring R&D Expenditure	Non-Recurring R&D Expenditure	Total
Shivaji University, Kolhapur	39394.09	1498.72	40892.81
SNDT Womens University, Mumbai	42149.53	12067.92	54217.45
South Gujarat University, Surat	13796.25	2057.25	15853.50
Sree Chitratriunal Institute for Medical Sciences and Technology, Trivandapuram	117755.83	17430.62	135186.45
Sri Krishnadevaraya University, Anantapur	26123.61	7471.04	33594.65
Sri Padmavati Mahila Viswavidyalayam, Tirupati	8808.47	1043.28	9851.75
Sri Ramchandra Medical College and Research Institute, Chennai	118242.49	63870.89	182113.38
Sri Venkateswara University, Tirupati	53682.18	26712.75	80394.93
SRM Institute of Science & Technology, Chennai	18416.99	209.77	18626.76
Swami Ramanand Teerth Marathwada University, Nanded	10954.33	2740.50	13694.83
Tamil Nadu Agricultural University, Coimbatore	276736.33	62934.75	339671.08
Tamil University, Thanjavur	9740.00	6114.00	15854.00
TamilNadu Veterinary and Animal Sciences University, Chennai	157924.09	12927.04	170851.13
Utkal University, Vani Vihar	34904.62	5789.57	40694.19
Visvesvaraya National Institute of Technology, Nagpur	40919.57	317.63	41237.20
Visveswaraiah Technology University, Belgaum	30781.75	4692.75	35474.50
Yashwantrao Chavan Maharashtra Open University, Nashik	40025.58	12999.36	53024.94
Total	7804641.89	1349935.07	9154576.96

Source : Based on University annual reports and budget

Note :
Recurring R&D Expenditure : Expenditure of Instrument Maintenance & Materials, Visiting Faculties, Symposium & Seminar and Contingency proportionate to student and scholar ratio. The Expenditure of departmental research & Expenditure of salary of teaching staff proportionate to time spent on research and salary of research staff.

Non Recurring R&D Expenditure : Expenditure on Equipment and laboratory proportionate to PG student & scholar ratio

Appendix 8. Intramural / Extramural R&D Expenditure of Universities / Institutions (2001 - 02)

(In Rs. '000)

University / Institution	Intramural R&D Expenditure	Extramural R&D Expenditure	Total
Acharya N.G. Ranga Agricultural University, Hyderabad	290843.20	26973.50	317816.69
Agricultural Sciences, Bangalore	198879.20	38978.02	237857.21
Agricultural Sciences, Dharwad	154076.00	6903.77	160979.79
Alagappa University, Karaikudi	9071.16	3735.56	12806.72
Amravati University, Amravati	20168.39	5641.04	25809.43
Andhra University, Visakhapatnam	103299.90	6833.87	110133.78
Anna University, Chennai	155163.50	29492.18	184655.70
Annamalai University, Chidambaram	58589.61	2492.60	61082.21
Avinashilingam Institute of Home science and higher education for women, Coimbatore	17040.77	7600.18	24640.95
Bangalore University, Bangalore	61588.08	7356.01	68944.09
Berhampur University	18569.47	4548.42	23117.89
Bharath Institute of Science and Technology, Chennai	4182.08	0.00	4182.08
Bharathiar University, Coimbatore	54408.79	2940.26	57349.05
Bharathidasan University, Trichy	66808.91	12193.40	79002.31
Bharati Vidyapeeth, Pune	50238.14	1690.62	51928.76
Bhavnagar University, Bhavnagar	20487.22	3092.33	23579.55
Biju Patnaik University of Technology, Rourkela	2159.09	0.00	2159.09
Calicut University, Calicut	42091.76	9932.26	52024.02
Central Institute of Fisheries Education, Mumbai	42418.52	9096.15	51514.67
Cochin University of Science and Technology, Cochin	96692.02	25515.99	122208.01
Deccan College Post Graduate and Research Institute	5188.44	4385.85	9574.29
Dr. Babasaheb Ambedkar Marathwada University, Aurangabad	16136.37	1121.91	17258.28
Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola	212272.20	15368.44	227640.61
Dravidian University	524.14	0.00	524.14
Fakir Mohan University, Balasore	5878.43	0.00	5878.43
Gandhigram Rural Institute, Dindugal	4886.98	3753.09	8640.07

University / Institution	Intramural R&D Expenditure	Extramural R&D Expenditure	Total
Goa University, Panjim	20456.05	10295.25	30751.30
Gujarat Agricultural University, Sardarkrushinagar	362992.30	20258.80	383251.08
Gujarat Ayurved University, Jamnagar	22079.57	1068.00	23147.57
Gujarat University, Ahmedabad	12873.51	1713.68	14587.19
Gulbarga University, Gulbarga	36913.08	2815.63	39728.71
Guru Ghasidas University	5138.73	474.40	5613.13
Hyderabad University, Hyderabad	34411.80	2244.00	36655.80
Indian Institute of Science, Bangalore	767501.40	591336.63	1358838.0
Indian Institute of Technology, Bombay	221154.60	28613.04	249767.66
Indian Institute of Technology, Chennai	341691.60	71045.55	412737.14
Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore	39833.32	7819.15	47652.47
Jawaharlal Nehru Technological University, Hyderabad	107661.30	432.00	108093.25
Kakatiya University, Warangal	30814.58	7598.24	38412.82
Kalinga Institute of Industrial Technology, Bhubaneswar	14056.96	0.00	14056.96
Kannur University	2373.78	96.00	2469.78
Karnatak University, Dharwad	46684.97	2109.39	48794.36
Karnataka State Open University	1385.18	0.00	1385.18
Karunya Institute of Technology, Coimbatore	5762.19	926.62	6688.81
Kerala Agricultural University, Trichur	290844.90	38601.96	329446.87
Kerala University, Trivandrum	112071.20	32678.37	144749.56
Kuvempu University, Shimogha	62341.60	7248.90	69590.50
Madras University, Chennai	98306.65	64926.90	163233.55
Madurai Kamaraj University, Madurai	53635.30	11286.17	64921.47
Maharashtra Animal and Fishery Sciences University, Nagpur	69796.13	4877.95	74674.08
Maharashtra University of Medical Sciences	6937.33	0.00	6937.33
Mahatma Gandhi University, Kottayam	21767.08	3188.98	24956.06
Mahatma Phule Krishi Vidyapeeth	197791.40	3262.05	201053.49
Mangalore University, Mangalore	17959.50	6889.99	24849.49

University / Institution	Intramural R&D Expenditure	Extramural R&D Expenditure	Total
Manipal Academy of Higher Education, Manipal	246822.50	41896.33	288718.81
Manonmanian Sundaranar University, Tirunelveli	16820.69	25728.10	42548.79
Marathwada Krishi Vidyapeeth, Parbhani	111608.70	12234.55	123843.23
Mother Teresa Womens University, Kodaikanal	537.63	122.00	659.63
MS University of Baroda, Vadodara	96054.58	5546.88	101601.46
Mumbai University, Mumbai	164075.70	7136.25	171211.92
Mysore University, Mysore	38638.57	12673.67	51312.24
N T R University of Health Science	47620.11	364.13	47984.24
Nagarjuna University, Vijayawada	32622.02	7424.95	40046.97
Nagpur University, Nagpur	105015.30	1134.32	106149.59
National Institute of Mental Health and Neuro Sciences, Bangalore	200383.30	55797.93	256181.23
National Institute of Technology, Calicut	95565.92	7178.76	102744.68
National Institute of Technology, Rourkela	34115.91	4565.60	38681.51
National Institute of Technology, Tiruchirappalli	11748.97	875.22	12624.19
National Institute of Technology, Warangal	2687.15	204.00	2891.15
Nizams Institute of Medical Sciences	72904.15	3212.91	76117.06
North Gujrat University, Patan	2992.60	950.64	3943.24
Orissa University of Agriculture and Technology, Bhubaneswar	116715.20	4728.00	121443.23
Osmania University, Hyderabad	122131.90	11173.57	133305.44
Pandit Ravishankar Shukla University, Raipur	7070.31	732.00	7802.31
Pondicherry University, Pondicherry	24586.72	9112.65	33699.37
Pune University, Pune	47954.86	27353.06	75307.92
Rajiv Gandhi University of Health Sciences	17771.25	659.66	18430.91
Sambalpur University, Jyotibihar	16161.42	6116.29	22277.71
Sardar Patel University, Vallabh Vidyanagar	29848.64	3508.52	33357.16
Sardar Vallabhbhai Regional College of Engg. & Tech., Surat	50068.02	792.00	50860.02
SASTRA Deemed University, Thanjavur	29787.73	0.00	29787.73
Saurashtra University, Rajkot	9924.13	1536.00	11460.13

University / Institution	Intramural R&D Expenditure	Extramural R&D Expenditure	Total
Shivaji University, Kolhapur	35149.74	5743.06	40892.80
SNDT Womens University, Mumbai	48149.78	6067.67	54217.45
South Gujarat University, Surat	13413.56	2439.94	15853.50
Sree Chitratrinal Institute for Medical Sciences and Technology, Trivandapuram	119269.20	15917.24	135186.45
Sri Krishnadevaraya University, Anantapur	28270.51	5324.15	33594.66
Sri Padmavati Mahila Viswavidyalayam, Tirupati	8864.80	986.95	9851.75
Sri Ramchandra Medical College and Research Institute, Chennai	179918.80	2194.59	182113.39
Sri Venkateswara University, Tirupati	69017.50	11377.43	80394.93
SRM Institute of Science & Technology, Chennai	17664.23	962.53	18626.76
Swami Ramanand Teerth Marathwada University, Nanded	12207.00	1487.83	13694.83
Tamil Nadu Agricultural University, Coimbatore	252721.50	86949.61	339671.06
Tamil University, Thanjavur	11324.00	4530.00	15854.00
TamilNadu Veterinary and Animal Sciences University, Chennai	166481.50	4369.61	170851.13
Utkal University, Vani Vihar	37443.87	3250.33	40694.20
Visvesvaraya National Institute of Technology, Nagpur	37607.31	3629.88	41237.19
Visveswaralah Technology University, Belgaum	34310.50	1164.00	35474.50
Yashwantrao Chavan Maharashtra Open University, Nashik	52424.95	600.00	53024.95
Total	7593370.99	1561205.91	9154576.92
Source :	University Budget Estimates and Annual Reports		
Intramural -	(Intramural expenditure of Equipment, Laboratory, Maintenance & Materials, Visiting Faculty, Seminar & Symposium and Contingency by proportionate of time spent on Research) + (Intramural expenditure of salary of teaching staff by proportionate of time spent on Research)		
Extramural -	(Extramural expenditure of Equipment, Laboratory, Maintenance & Materials, Visiting Faculty, Seminar & Symposium and Contingency by proportionate of time spent on Research) + (Extramural expenditure of salary of Research staff)		

Appendix 9. Total R&D expenditure by field of Sciences (2001 - 02)

In Rs. '000

Field of Sciences	R&D EXP1	R&D EXP2	Total
Natural Sciences	1347816	1114371	2462187
Engineering Sciences	1436330	1407638	2843968
Medical Sciences	478876	629501	1108377
Agricultural Sciences	1082465	1657578	2740043
Total	4345487	4809088	9154575

Source : University Budget estimates and Annual Reports

Note : Based on responded Questionnaires

EXP1 - Expenditure of Equipment, Laboratory, Maintenance & Materials, Visiting Faculty, Seminar & Symposium and Contingency

R&D EXP1 = (EXP1/PGSTUDENT + RESEARCH SCHOLAR) * RESEARCH SCHOLAR

EXP2 - Expenditure of salary of Teaching staff

R&D EXP2 = ((EXP2/RESPONDENT_FACULTY)* FTE_FACULTY)+RESEARCH_STAFF_SALARY

Appendix 10. Basic data on expenditure and share of R&D expenditure of Universities/Institutions (2001 - 02) (Rs. In ' 000)

University / Institution	Total Expenditure Rs.'000	S&T Expenditure Rs.'000	R&D Expenditure Rs.'000	R&D Expenditure in Percent of Total Expenditure	R&D Expenditure in Percent of S&T Expenditure
Acharya N.G. Ranga Agricultural University, Hyderabad	1280107	960285	317817	24.83	33.10
Agricultural Sciences, Bangalore	761976	566190	237857	31.22	42.01
Agricultural Sciences, Dharwad	634356	429442	160980	25.38	37.49
Alagappa University, Karaikudi	124333	48403	12807	10.30	26.46
Amravati University, Amravati	203100	120254	25809	12.71	21.46
Andhra University, Visakhapatnam	868545	460918	110134	12.68	23.89
Anna University, Chennai	630250	498228	184656	29.30	37.06
Annamalai University, Chidambaram	1502495	298956	61082	4.07	20.43
Avinashilingam Institute of Home science and higher education for women, Coimbatore	141704	116145	24641	17.39	21.22
Bangalore University, Bangalore	811600	218487	68944	8.49	31.56
Berhampur University	177614	75185	23118	13.02	30.75
Bharath Institute of Science and Technology, Chennai	35000	30600	4182	11.95	13.67
Bharathiar University, Coimbatore	437158	191504	57349	13.12	29.95
Bharathidasan University, Trichy	435274	195612	79002	18.15	40.39
Bharati Vidyapeeth, Pune	271433	213110	51929	19.13	24.37
Bhavnagar University, Bhavnagar	153796	88237	23580	15.33	26.72
Biju Patnaik University of Technology, Rourkela	30000	16600	2159	7.20	13.01
Calicut University, Calicut	571714	112618	52024	9.10	46.20
Central Institute of Fisheries Education, Mumbai	202549	117153	51515	25.43	43.97

University / Institution	Total Expenditure Rs.'000	S&T Expenditure Rs.'000	R&D Expenditure Rs.'000	R&D Expenditure in Percent of Total Expenditure	R&D Expenditure in Percent of S&T Expenditure
Cochin University of Science and Technology, Cochin	741073	450866	122208	16.49	27.11
Deccan College Post Graduate and Research Institute	32617	20962	9574	29.35	45.67
Dr. Babasaheb Ambedkar Marathwada University, Aurangabad	336000	85006	17258	5.14	20.30
Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola	1099462	1055793	227641	20.70	21.56
Dravidian University	43000	5838	524	1.22	8.98
Fakir Mohan University, Balasore	41999	37831	5878	14.00	15.54
Gandhigram Rural Institute, Dindugal	96037	36131	8640	9.00	23.91
Goa University, Panjim	142914	104041	30751	21.52	29.56
Gujarat Agricultural University, Sardarkrushinagar	1644659	1282311	383251	23.30	29.89
Gujarat Ayurved University, Jamnagar	147545	96212	23148	15.69	24.06
Gujarat University, Ahmedabad	213077	118262	14587	6.85	12.33
Gulbarga University, Gulbarga	266625	129194	39729	14.90	30.75
Guru Ghasidas University	111103	68659	5613	5.05	8.18
Hyderabad University, Hyderabad	666294	200649	36656	5.50	18.27
Indian Institute of Science, Bangalore	3700081	2854231	1358838	36.72	47.61
Indian Institute of Technology, Bombay	1251667	792713	249768	19.95	31.51
Indian Institute of Technology, Chennai	1351514	1109535	412737	30.54	37.20
Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore	112000	106259	47652	42.55	44.85
Jawaharlal Nehru Technological University, Hyderabad	523904	369015	108093	20.63	29.29
Kakatiya University, Warangal	281305	200635	38413	13.66	19.15
Kalinga Institute of Industrial Technology, Bhubaneswar	163300	155101	14057	8.61	9.06

University / Institution	Total Expenditure Rs.'000	S&T Expenditure Rs.'000	R&D Expenditure Rs.'000	R&D Expenditure in Percent of Total Expenditure	R&D Expenditure in Percent of S&T Expenditure
Kannur University	141731	15846	2470	1.74	15.59
Karnatak University, Dharwad	525060	190896	48794	9.29	25.56
Karnataka State Open University	136798	7599	1385	1.01	18.23
Karunya Institute of Technology, Coimbatore	103196	73278	6689	6.48	9.13
Kerala Agricultural University, Trichur	1148090	776998	329447	28.70	42.40
Kerala University, Trivandrum	741291	368992	144750	19.53	39.23
Kuvempu University, Shimogha	269841	192162	69590	25.79	36.21
Madras University, Chennai	779841	310825	163234	20.93	52.52
Madurai Kamaraj University, Madurai	655079	417683	64921	9.91	15.54
Maharashtra Animal and Fishery Sciences University, Nagpur	207850	187465	74674	35.93	39.83
Maharashtra University of Medical Sciences	97051	50932	6937	7.15	13.62
Mahatma Gandhi University, Kottayam	280339	107359	24956	8.90	23.25
Mahatma Phule Krishi Vidyapeeth	811219	610321	201053	24.78	32.94
Mangalore University, Mangalore	312992	128824	24849	7.94	19.29
Manipal Academy of Higher Education, Manipal	1504307	1403294	288719	19.19	20.57
Manonmanian Sundaranar University, Tirunelveli	305462	136960	42549	13.93	31.07
Marathwada Krishi Vidyapeeth, Parbhani	505669	498741	123843	24.49	24.83
Mother Teresa Womens University, Kodaikanal	39696	6926	660	1.66	9.53
MS University of Baroda, Vadodara	629663	409650	101601	16.14	24.80
Mumbai University, Mumbai	766933	399604	171212	22.32	42.85
Mysore University, Mysore	533339	342101	51312	9.62	15.00

University / Institution	Total Expenditure Rs.'000	S&T Expenditure Rs.'000	R&D Expenditure Rs.'000	R&D Expenditure in Percent of Total Expenditure	R&D Expenditure in Percent of S&T Expenditure
N T R University of Health Science	265790	216487	47984	18.05	22.16
Nagarjuna University, Vijayawada	294539	213340	40047	13.60	18.77
Nagpur University, Nagpur	446706	236979	106150	23.76	44.79
National Institute of Mental Health and Neuro Sciences, Bangalore	942556	578408	256181	27.18	44.29
National Institute of Technology, Calicut	182072	176586	102745	56.43	58.18
National Institute of Technology, Rourkela	161685	146932	38682	23.92	26.33
National Institute of Technology, Tiruchirappalli	154160	81053	12624	8.19	15.57
National Institute of Technology, Warangal	40000	39421	2891	7.23	7.33
Nizams Institute of Medical Sciences	506567	269768	76117	15.03	28.22
North Gujarat University, Patan	45844	18056	3943	8.60	21.84
Orissa University of Agriculture and Technology, Bhubaneswar	418721	344844	121443	29.00	35.22
Osmania University, Hyderabad	806568	569845	133305	16.53	23.39
Pandit Ravishankar Shukla University, Raipur	140673	59471	7802	5.55	13.12
Pondicherry University, Pondicherry	238369	123437	33699	14.14	27.30
Pune University, Pune	440490	315506	75308	17.10	23.87
Rajiv Gandhi University of Health Sciences	279783	204600	18431	6.59	9.01
Sambalpur University, Jyotibihar	253280	110142	22278	8.80	20.23
Sardar Patel University, Vallabh Vidyanagar	210174	162504	33357	15.87	20.53
Sardar Vallabhbhai Regional College of Engg. & Tech., Surat	199883	176022	50860	25.44	28.89
SASTRA Deemed University, Thanjavur	157505	156534	29788	18.91	19.03
Saurashtra University, Rajkot	204205	78884	11460	5.61	14.53

University / Institution	Total Expenditure Rs.'000	S&T Expenditure Rs.'000	R&D Expenditure Rs.'000	R&D Expenditure in Percent of Total Expenditure	R&D Expenditure in Percent of S&T Expenditure
Shivaji University, Kolhapur	496947	223028	40893	8.23	18.34
SNDT Womens University, Mumbai	382549	215069	54217	14.17	25.21
South Gujarat University, Surat	163500	86844	15854	9.70	18.26
Sree Chitratriunal Institute for Medical Sciences and Technology, Trivandapuram	500587	450638	135186	27.01	30.00
Sri Krishnadevaraya University, Anantapur	178941	99613	33595	18.77	33.73
Sri Padmavati Mahila Viswavidyalayam, Tirupati	59334	44849	9852	16.60	21.97
Sri Ramchandra Medical College and Research Institute, Chennai	628403	517097	182113	28.98	35.22
Sri Venkateswara University, Tirupati	479913	289034	80395	16.75	27.82
SRM Institute of Science & Technology, Chennai	118666	62251	18627	15.70	29.92
Swami Ramanand Teerth Marathwada University, Nanded	74951	53437	13695	18.27	25.63
Tamil Nadu Agricultural University, Coimbatore	1078641	976706	339671	31.49	34.78
Tamil University, Thanjavur	91001	18312	15854	17.42	86.58
TamilNadu Veterinary and Animal Sciences University, Chennai	440465	428712	170851	38.79	39.85
Utkal University, Vani Vihar	461762	171769	40694	8.81	23.69
Visvesvaraya National Institute of Technology, Nagpur	160675	121870	41237	25.66	33.84
Visveswaraiah Technology University, Belgaum	503441	200064	35475	7.05	17.73
Yashwantrao Chavan Maharashtra Open University, Nashik	130654	92878	53025	40.58	57.09
Total	45074627	29004617	9154575	20.31	31.56

Source : Based on Annual budget / Questionnaire-I

Note : 1. Expenditure given in rounded figures.

2. Percent rounded to two decimal places.

Appendix 11. Institutions arranged in ascending order of R&D Expenditure In Rs. ' 000

University / Institution	R&D Expenditure
Indian Institute of Science, Bangalore	1358838
Indian Institute of Technology, Chennai	412737
Gujarat Agricultural University, Sardarkrushinagar	383251
Tamil Nadu Agricultural University, Coimbatore	339671
Kerala Agricultural University, Trichur	329447
Acharya N.G. Ranga Agricultural University, Hyderabad	317817
Manipal Academy of Higher Education, Manipal	288719
National Institute of Mental Health and Neuro Sciences, Bangalore	256181
Indian Institute of Technology, Bombay	249768
Agricultural Sciences, Bangalore	237857
Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola	227641
Mahatma Phule Krishi Vidyapeeth	201053
Anna University, Chennai	184656
Sri Ramchandra Medical College and Research Institute, Chennai	182113
Mumbai University, Mumbai	171212
TamilNadu Veterinary and Animal Sciences University, Chennai	170851
Madras University, Chennai	163234
Agricultural Sciences, Dharwad	160980
Kerala University, Trivandrum	144750
Sree Chitratruinal Institute for Medical Sciences and Technology, Trivandapuram	135186
Osmania University, Hyderabad	133305
Marathwada Krishi Vidyapeeth, Parbhani	123843
Cochin University of Science and Technology, Cochin	122208
Orissa University of Agriculture and Technology, Bhubaneswar	121443
Andhra University, Visakhapatnam	110134
Jawaharlal Nehru Technological University, Hyderabad	108093
Nagpur University, Nagpur	106150
National Institute of Technology, Calicut	102745
MS University of Baroda, Vadodara	101601
Sri Venkateswara University, Tirupati	80395
Bharathidasan University, Trichy	79002
Nizams Institute of Medical Sciences	76117
Pune University, Pune	75308

R&D Expenditure

University / Institution	R&D Expenditure
Maharashtra Animal and Fishery Sciences University, Nagpur	74674
Kuvempu University, Shimogha	69590
Bangalore University, Bangalore	68944
Madurai Kamaraj University, Madurai	64921
Annamalai University, Chidambaram	61082
Bharathiar University, Coimbatore	57349
SNDT Womens University, Mumbai	54217
Yashwantrao Chavan Maharashtra Open University, Nashik	53025
Calicut University, Calicut	52024
Bharati Vidyapeeth, Pune	51929
Central Institute of Fisheries Education, Mumbai	51515
Mysore University, Mysore	51312
Sardar Vallabhbhai Regional College of Engg. & Tech., Surat	50860
Karnatak University, Dharwad	48794
N T R University of Health Science	47984
Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore	47652
Manonmanian Sundaranar University, Tirunelveli	42549
Visvesvaraya National Institute of Technology, Nagpur	41237
Shivaji University, Kolhapur	40893
Utkal University, Vani Vihar	40694
Nagarjuna University, Vijayawada	40047
Gulbarga University, Gulbarga	39729
National Institute of Technology, Rourkela	38682
Kakatiya University, Warangal	38413
Hyderabad University, Hyderabad	36656
Visveswaraiah Technology University, Belgaum	35475
Pondicherry University, Pondicherry	33699
Sri Krishnadevaraya University, Anantapur	33595
Sardar Patel University, Vallabh Vidyanagar	33357
Goa University, Panjim	30751
SASTRA Deemed University, Thanjavur	29788
Amravati University, Amravati	25809
Mahatma Gandhi University, Kottayam	24956
Mangalore University, Mangalore	24849
Avinashilingam Institute of Home science and higher education for women, Coimbatore	24641

University / Institution	R&D Expenditure
Bhavnagar University, Bhavnagar	23580
Gujarat Ayurved University, Jamnagar	23148
Berhampur University	23118
Sambalpur University, Jyotibihar	22278
SRM Institute of Science & Technology, Chennai	18627
Rajiv Gandhi University of Health Sciences	18431
Dr. Babasaheb Ambedkar Marathwada University, Aurangabad	17258
South Gujarat University, Surat	15854
Tamil University, Thanjavur	15854
Gujarat University, Ahmedabad	14587
Kalinga Institute of Industrial Technology, Bhubaneswar	14057
Swami Ramanand Teerth Marathwada University, Nanded	13695
Alagappa University, Karaikudi	12807
National Institute of Technology, Tiruchirappalli	12624
Saurashtra University, Rajkot	11460
Sri Padmavati Mahila Viswavidyalayam, Tirupati	9852
Deccan College Post Graduate and Research Institute	9574
Gandhigram Rural Institute, Dindugal	8640
Pandit Ravishankar Shukla University, Raipur	7802
Maharashtra University of Medical Sciences	6937
Karunya Institute of Technology, Coimbatore	6689
Fakir Mohan University, Balasore	5878
Guru Ghasidas University	5613
Bharath Institute of Science and Technology, Chennai	4182
North Gujarat University, Patan	3943
National Institute of Technology, Warangal	2891
Kannur University	2470
Biju Patnaik University of Technology, Rourkela	2159
Karnataka State Open University	1385
Mother Teresa Womens University, Kodaikanal	660
Dravidian University	524
Total	9154575

Appendix 12. Share of Expenditure

Item	Amount (' 000)	Percent in Total Expenditure	Percent in S&T Expenditure
Total Expenditure	45074627	100	
Expenditure of S&T Departments	29004617	64.35	100
R&D Expenditure of S&T Departments	9154575	20.31	31.56

Appendix 13. Year of establishment of Universities/Institutes

University / Institution	Age as at 2005 A.D.	R&D Personnel	R&D Expenditure ('000)
Acharya N.G. Ranga Agricultural University, Hyderabad	41	106	317817
Agricultural Sciences, Bangalore	41	165	237857
Agricultural Sciences, Dharwad	19	41	160980
Alagappa University, Karaikudi	20	33	12807
Amravati University, Amravati	22	55	25809
Andhra University, Visakhapatnam	79	176	110134
Anna University, Chennai	27	216	184656
Annamalai University, Chidambaram	76	202	61082
Avinashilingam Institute of Home science and higher education for women, Bangalore University, Bangalore	17	26	24641
Berhampur University	41	111	68944
Bharath Institute of Science and Technology, Chennai	38	52	23118
Bharathiar University, Coimbatore	3	4	4182
Bharathidasan University, Trichy	23	30	57349
Bharati Vidyapeeth, Pune	23	77	79002
Bhavnagar University, Bhavnagar	9	78	51929
Biju Patnaik University of Technology, Rourkela	27	17	23580
Calicut University, Calicut	4	1	2159
Central Institute of Fisheries Education, Mumbai	37	46	52024
Cochin University of Science and Technology, Cochin	16	31	51515
Deccan College Post Graduate and Research Institute	34	124	122208
Dr. Babasaheb Ambedkar Marathwada University, Aurangabad	15	10	9574
Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola	47	18	17258
Dravidian University	36	35	227641
Fakir Mohan University, Balasore	8	1	524
Gandhigram Rural Institute, Dindugal	6	5	5878
Goa University, Panjim	29	18	8640
Gujarat Agricultural University, Sardarkrushinagar	20	59	30751
	33	75	383251

University / Institution	Age as at 2005 A.D.	R&D Personnel	R&D Expenditure ('000)
Gujarat Ayurved University, Jamnagar	38	18	23148
Gujarat University, Ahmedabad	56	26	14587
Gulbarga University, Gulbarga	25	33	39729
Guru Ghasidas University	22	10	5613
Hyderabad University, Hyderabad	31	48	36656
Indian Institute of Science, Bangalore	47	1044	135883
Indian Institute of Technology, Bombay	47	161	249768
Indian Institute of Technology, Chennai	46	355	412737
Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore	7	76	47652
Jawaharlal Nehru Technological University, Hyderabad	33	12	108093
Kakatiya University, Warangal	29	68	38413
Kalinga Institute of Industrial Technology, Bhubaneswar	3	16	14057
Kannur University	10	7	2470
Karnatak University, Dharwad	56	14	48794
Karnataka State Open University	9	2	1385
Karunya Institute of Technology, Coimbatore	3	10	6689
Kerala Agricultural University, Trichur	33	55	329447
Kerala University, Trivandrum	68	42	144750
Kuvempu University, Shimogha	18	51	69590
Madras University, Chennai	48	378	163234
Madurai Kamaraj University, Madurai	39	57	64921
Maharashtra Animal and Fishery Sciences University, Nagpur	5	5	74674
Maharashtra University of Medical Sciences	7	2	6937
Mahatma Gandhi University, Kottayam	22	31	24956
Mahatma Phule Krishi Vidyapeeth	36	156	201053
Mangalore University, Mangalore	25	59	24849
Manipal Academy of Higher Education, Manipal	12	537	288719
Manonmanian Sundaranar University, Tirunelveli	15	54	42549
Marathwada Krishi Vidyapeeth, Parbhani	33	37	123843

University / Institution	Age as at 2005 A.D.	R&D Personnel	R&D Expenditure ('000)
Mother Teresa Womens University, Kodaikanal	21	3	660
MS University of Baroda, Vadodara	56	53	101601
Mumbai University, Mumbai	48	20	171212
Mysore University, Mysore	89	125	51312
N T R University of Health Science	19	45	47984
Nagarjuna University, Vijayawada	29	38	40047
Nagpur University, Nagpur	82	13	106150
National Institute of Mental Health and Neuro Sciences, Bangalore	11	37	256181
National Institute of Technology, Calicut	3	64	102745
National Institute of Technology, Rourkela	3	83	36682
National Institute of Technology, Tiruchirappalli	3	50	12624
National Institute of Technology, Warangal	16	48	2891
Nizams Institute of Medical Sciences	16	55	76117
North Gujarat University, Patan	56	11	3943
Orissa University of Agriculture and Technology, Bhubaneswar	43	93	121443
Osmania University, Hyderabad	87	137	133305
Pandit Ravishankar Shukla University, Raipur	41	14	7802
Pondicherry University, Pondicherry	20	32	33699
Pune University, Pune	56	82	75308
Rajiv Gandhi University of Health Sciences	9	9	18431
Sambalpur University, Jyotibihar	38	31	22278
Sardar Patel University, Vallabh Vidyanagar	50	49	33357
Sardar Vallabhbhai Regional College of Engg. & Tech., Surat	3	47	50860
SASTRA Deemed University, Thanjavur	4	71	29788
Saurashtra University, Rajkot	38	19	11460
Shivaji University, Kolhapur	43	46	40893
SNDT Womens University, Mumbai	54	17	54217
South Gujarat University, Surat	38	29	15854
Sree Chitratrinal Institute for Medical Sciences and Technology, Trivandapuram	32	95	135186

University / Institution	Age as at 2005 A.D.	R&D Personnel	R&D Expenditure ('000)
Sri Krishnadevaraya University, Anantapur	24	47	33595
Sri Padmavati Mahila Viswavidyalayam, Tirupati	22	24	9852
Sri Ramchandra Medical College and Research Institute, Chennai	11	120	182113
Sri Venkateswara University, Tirupati	51	117	80395
SRM Institute of Science & Technology, Chennai	3	12	18627
Swami Ramanand Teerth Marathwada University, Nanded	11	16	13695
Tamil Nadu Agricultural University, Coimbatore	34	344	339671
Tamil University, Thanjavur	24	14	15854
TamilNadu Veterinary and Animal Sciences University, Chennai	16	62	170851
Utkal University, Vani Vihar	62	53	40694
Visvesvaraya National Institute of Technology, Nagpur	3	76	41237
Visveswaraiah Technology University, Belgaum	7	15	35475
Yashwantrao Chavan Maharashtra Open University, Nashik	16	8	53025
Total		7500	9154575

Appendix 1A Strength of Existing and Responded S&T Faculty Members

In Number

University / Institution	Total Faculty	Responded Faculty	FTE(t)	FTE
Acharya N.G. Ranga Agricultural University, Hyderabad	470	104	235	52
Agricultural Sciences, Bangalore	358	101	183	52
Agricultural Sciences, Dharwad	533	52	266	26
Alagappa University, Karaikudi	39	28	10	7
Amravati University, Amravati	53	17	15	5
Andhra University, Visakhapatnam	272	272	125	124
Anna University, Chennai	507	408	208	167
Annamalai University, Chidambaram	878	612	263	182
Avinashilingam Institute of Home science and higher education for women,	131	70	30	16
Bangalore University, Bangalore	174	130	61	45
Berhampur University	56	48	17	15
Bharath Institute of Science and Technology, Chennai	25	14	7	4
Bharathiar University, Coimbatore	55	53	18	17
Bharathidasan University, Trichy	54	28	21	11
Bharati Vidyapeeth, Pune	157	157	61	62
Bhavnagar University, Bhavnagar	32	24	9	7
Biju Patnaik University of Technology, Rourkela	3	2	2	1
Calicut University, Calicut	94	59	32	20
Central Institute of Fisheries Education, Mumbai	55	21	34	13
Cochin University of Science and Technology, Cochin	130	82	53	34
Deccan College Post Graduate and Research Institute	13	12	3	3
Dr. Babasaheb Ambedkar Marathwada University, Aurangabad	83	35	24	10
Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola	438	31	127	9
Dravidian University	2	2	1	1
Fakir Mohan University, Balasore	22	16	7	5
Gandhigram Rural Institute, Dindugal	61	38	13	8
Goa University, Panjim	74	73	19	19
Gujarat Agricultural University, Sardarkrushinagar	376	85	184	42

University / Institution	Total Faculty	Responded Faculty	FTE(t)	FTE
Gujarat Ayurved University, Jamnagar	28	28	8	8
Gujarat University, Ahmedabad	55	44	16	13
Gulbarga University, Gulbarga	84	55	29	19
Guru Ghasidas University	43	37	8	7
Hyderabad University, Hyderabad	103	79	34	26
Indian Institute of Science, Bangalore	519	407	275	216
Indian Institute of Technology, Bombay	320	280	122	106
Indian Institute of Technology, Chennai	328	198	125	75
Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore	56	49	25	22
Jawaharlal Nehru Technological University, Hyderabad	87	22	31	8
Kakatiya University, Warangal	180	87	54	26
Kalinga Institute of Industrial Technology, Bhubaneswar	102	56	30	16
Kannur University	17	16	6	6
Karnatak University, Dharwad	111	15	37	5
Karnataka State Open University	6	6	2	2
Karunya Institute of Technology, Coimbatore	40	8	5	1
Kerala Agricultural University, Trichur	658	80	296	36
Kerala University, Trivandrum	81	72	29	26
Kuvempu University, Shimogha	127	49	50	19
Madras University, Chennai	152	139	55	50
Madurai Kamaraj University, Madurai	106	106	12	12
Maharashtra Animal and Fishery Sciences University, Nagpur	84	9	47	5
Maharashtra University of Medical Sciences	15	5	6	2
Mahatma Gandhi University, Kottayam	156	52	45	15
Mahatma Phule Krishi Vidyapeeth	551	261	298	142
Mangalore University, Mangalore	74	60	31	25
Manipal Academy of Higher Education, Manipal	870	591	296	200
Manonmanian Sundaranar University, Tirunelveli	40	41	14	14
Marathwada Krishi Vidyapeeth, Parbhani	147	81	51	28

University / Institution	Total Faculty	Responded Faculty	FTE(t)	FTE
Mother Teresa Womens University, Kodaikanal	13	7	4	2
MS University of Baroda, Vadodara	523	61	230	27
Mumbai University, Mumbai	149	63	48	20
Mysore University, Mysore	132	72	41	22
N T R University of Health Science	176	144	53	43
Nagarjuna University, Vijayawada	63	53	20	17
Nagpur University, Nagpur	101	43	30	13
National Institute of Mental Health and Neuro Sciences, Bangalore	125	16	55	7
National Institute of Technology, Calicut	325	109	120	40
National Institute of Technology, Rourkela	124	124	45	45
National Institute of Technology, Tiruchirappalli	135	121	50	45
National Institute of Technology, Warangal	132	118	51	46
Nizams Institute of Medical Sciences	140	139	53	53
North Gujarat University, Patan	14	14	4	4
Orissa University of Agriculture and Technology, Bhubaneswar	222	100	107	48
Osmania University, Hyderabad	263	263	76	76
Pandit Ravishankar Shukla University, Raipur	49	34	10	7
Pondicherry University, Pondicherry	48	47	15	15
Pune University, Pune	150	102	51	35
Rajiv Gandhi University of Health Sciences	127	10	38	3
Sambalpur University, Jyotibihar	70	59	12	10
Sardar Patel University, Vallabh Vidyanagar	95	91	38	36
Sardar Vallabhbhai Regional College of Engg. & Tech., Surat	99	99	39	39
SASTRA Deemed University, Thanjavur	290	236	87	71
Saurashtra University, Rajkot	52	38	15	11
Shivaji University, Kolhapur	81	81	24	24
SNDT Womens University, Mumbai	44	16	17	6
South Gujarat University, Surat	49	47	18	17
Sree Chitratriunral Institute for Medical Sciences and Technology, Trivandapuram	137	31	40	9

University / Institution	Total Faculty	Responded Faculty	FTE(t)	FTE
Sri Krishnadevaraya University, Anantapur	92	92	30	30
Sri Padmavati Mahila Viswavidyalayam, Tirupati	52	52	16	16
Sri Ramchandra Medical College and Research Institute, Chennai	294	268	121	110
Sri Venkateswara University, Tirupati	233	98	103	43
SRM Institute of Science & Technology, Chennai	306	12	101	4
Swami Ramanand Teerth Marathwada University, Nanded	32	16	10	5
Tamil Nadu Agricultural University, Coimbatore	676	548	338	274
Tamil University, Thanjavur	12	12	4	4
TamilNadu Veterinary and Animal Sciences University, Chennai	202	88	107	47
Utkal University, Vani Vihar	84	80	25	24
Visvesvaraya National Institute of Technology, Nagpur	189	109	76	44
Visveswaraiah Technology University, Belgaum	18	13	6	4
Yashwantrao Chavan Maharashtra Open University, Nashik	60	5	24	2
Total	16463	9238	6417	3485

Appendix 15. FTE of R&D Manpower of University

CATEGORY	MALE	FEMALE	TOTAL
Professor and above	1631	187	1818
Reader / Equivalent	745	134	879
Lecturer / Equivalent	503	135	638
Tutor /Scientist/	111	36	147
Pool Officer	10	1	11
Research Associate	.634	210	844
SRF	869	296	1165
JRF	1421	574	1995
Total	5924	1573	7497

Note : R&D Personnel = Full time equivalent of faculty engaged in research
Based on responded questionnaires

Source : DST Questionnaire III - 1.4.4.Q1_3_2 & Q2_5

FTE : $\text{SUM}(\text{TIME SPENT FOR RESEARCH} + \text{EXTENSION TIME}) / 100$

Appendix 16. Details of R&D FTE - University-wise (In Number)

University / Institution	Professors		Readers		Lecturers		Others		FTE Faculty members		Total - 1
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	
Acharya N.G. Ranga Agricultural University, Hyderabad	38.5	6.5	4.5	0	0.5	0	2	0	45.5	6.5	52
Agricultural Sciences, Bangalore	48.4	3.06	0	0	0	0	0.51	0	48.9	3.06	52.02
Agricultural Sciences, Dharwad	23.7	0	0	0	0	0	2.6	0	26.3	0	26.37
Alagappa University, Karaikudi	0.28	0	2.22	0.28	1.11	0.28	2.22	0.56	5.83	1.12	6.95
Amravati University, Amravati	1.2	0	2.1	0.3	1.5	0	0	0	4.8	0.3	5.1
Andhra University, Visakhapatnam	86.2	15.8	18.0	4.2	0	0	0	0	104.	20	124.25
Anna University, Chennai	57.8	11.8	59.4	13.5	21.7	2.87	0	0	138.	28.29	167.28
Annamalai University, Chidambaram	35.2	4.3	29.1	5.65	86.4	20.6	0	0.3	150.	30.85	181.6
Avinashiingam Institute of Home science and higher education for women, Coimbatore	0.45	3.12	0.3	7.95	0	4.08	0	0	0.75	15.15	15.9
Bangalore University, Bangalore	11.5	1.4	10.8	5.95	9.45	4.55	1.05	0.35	32.9	12.25	45.15
Berhampur University	8.1	0.3	4.2	0	2.4	0	0	0	14.7	0.3	15
Bharath Institute of Science and Technology, Chennai	0	0	0	0	1.5	2.4	0	0	1.5	2.4	3.9
Bharathiar University, Coimbatore	5.28	0.99	2.97	1.32	3.93	2.97	0	0	12.1	5.28	17.46
Bharathidasan University, Trichy	7.2	0	2.88	0.36	0.36	0	0	0	10.4	0.36	10.8
Bharati Vidyapeeth, Pune	33.2	0	28.4	0.4	0	0	0	0	61.6	0.4	62.04
Bhavnagar University, Bhavnagar	3.55	0	1.9	0	1.5	0	0	0	6.95	0	6.95

University / Institution	Professors		Readers		Lecturers		Others		FTE Faculty members		Total - 1
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	
Biju Patnaik University of Technology, Rourkela	0.7	0	0	0	0	0	0	0	0.7	0	0.7
Calicut University, Calicut	10.2	0.7	3.3	0.65	3.95	0.65	0	0	17.5	2	19.5
Central Institute of Fisheries Education, Mumbai	0	0	0	0	0	0	11.1	1.8	11.1	1.8	12.9
Cochin University of Science and Technology, Cochin	15.8	1.23	15.1	2.05	0	0	0	0	31.0	3.28	34.32
Deccan College Post Graduate and Research Institute	0.25	0	1.05	0	1.75	0	0	0	3.05	0	3.05
Dr. Babasaheb Ambedkar Marathwada University, Aurangabad	6	0.6	0	0	2.7	0.3	0	0	8.7	0.9	9.6
Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola	9	0.3	0	0	0	0	0	0	9	0.3	9.3
Dravidian University	0	0	0.7	0	0	0	0	0	0.7	0	0.7
Fakir Mohan University, Balasore	1.2	0	0.9	0	1.8	0.9	0	0	3.9	0.9	4.8
Gandhigram Rural Institute, Dindugal	2.14	0.64	1.5	0.64	1.5	1.29	0	0	5.14	2.57	7.71
Goa University, Panjim	3	0	5.3	0	9.7	0.5	0.2	0	18.2	0.5	18.7
Gujarat Agricultural University, Sardarkrushinagar	27	1	14	0	0	0	0	0	41	1	42
Gujarat Ayurved University, Jamnagar	1.2	0.3	2.4	0	4.2	0.3	0	0	7.8	0.6	8.4
Gujarat University, Ahmedabad	4.8	0.6	2.7	0.6	3.6	0.9	0	0	11.1	2.1	13.2
Gulbarga University, Gulbarga	4.76	1.36	5.1	0.34	5.44	1.36	0.34	0	15.6	3.06	18.7
Guru Ghasidas University	1.2	0	0.8	0	4.4	1	0	0	6.4	1	7.4

University / Institution	Professors				Readers				Lecturers				Others				FTE Faculty members		Total - 1
	Male		Female		Male		Female		Male		Female		Male		Female		Male	Female	
Hyderabad University, Hyderabad	14.4	0	5.75	1.9	2.25	2.1	0	0	0	22.4	4						26.45		
Indian Institute of Science, Bangalore	67.1	7.7	87.4	13.2	34.6	5.5	0	0	0	189.	26.4						215.6		
Indian Institute of Technology, Bombay	49.2	1.89	43.1	1.14	10.2	0.38	0	0	0	102.	3.41						106.01		
Indian Institute of Technology, Chennai	53.8	3.49	11.6	1.89	1.13	0	2.57	0	69.2	5.38	74.6								
Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore	17.6	1.68	2.52	0	0	0	0	0	20.1	1.68	21.84								
Jawaharlal Nehru Technological University, Hyderabad	5.7	1.14	0	0	0	0	0.76	0.76	6.46	1.9	8.36								
Kakatiya University, Warangal	21.6	0.3	4.5	0	0	0	0	0	26.1	0.3	26.4								
Kalinga Institute of Industrial Technology, Bhubaneswar	0.9	0	1.8	0	12.9	0.9	0	0	15.6	0.9	16.5								
Kannur University	2.88	0	2.52	0.36	0.36	0	0	0	5.76	0.36	6.12								
Karnatak University, Dharwad	4.34	0	0	0	0.66	0	0	0	5	0	5								
Karnataka State Open University	1.2	0	0	0	0.6	0	0	0	1.8	0	1.8								
Karunya Institute of Technology, Coimbatore	0.34	0	0.17	0	0.51	0.34	0	0	1.02	0.34	1.36								
Kerala Agricultural University, Trichur	16.3	6.43	0	0	0	0	8.16	4.91	24.5	11.34	35.84								
Kerala University, Trivandrum	10.7	2.58	4.43	2.58	2.21	2.21	1.11	0.37	18.4	7.74	26.19								
Kuvenpu University, Shimogha	4.15	0.65	5.42	0.36	8.25	0	0	0	17.8	1.01	18.83								
Madras University, Chennai	32.3	7.68	3.01	0.72	4.18	1.52	0	0.38	39.5	10.3	49.85								

University / Institution	Professors				Readers				Lecturers				Others		FTE Faculty members		Total - 1
	Male		Female		Male		Female		Male		Female		Male	Female	Male	Female	
Madurai Kamaraj University, Madurai	7.8	0.2	2.2	0.4	1	0.2	0.6	0	0	11.6	0.8	12.4					
Maharashtra Animal and Fishery Sciences University, Nagpur	2.65	0	1.59	0	0.53	0	0	0	0	4.77	0	4.77					
Maharashtra University of Medical Sciences	1.5	0	0	0	0	0	0	0	0	1.5	0	1.5					
Mahatma Gandhi University, Kottayam	2.2	0	3.58	0.28	5.78	3.02	0	0	0	11.5	3.3	14.86					
Mahatma Phule Krishi Vidyapeeth	112.	2.16	21.0	0.54	5.94	0	0	0	0	139.	2.7	142.02					
Mangalore University, Mangalore	7.6	0	7.35	1.2	6.7	1.15	0.55	0	0	22.2	2.35	24.55					
Manipal Academy of Higher Education, Manipal	55.4	14.6	59.3	16.0	39.4	13.6	0.7	0.35	0	154.	44.66	199.58					
Manonmanian Sundaranar University, Tirunelveli	5.05	0	4.32	1.02	3.04	0.32	0	0	0	12.4	1.34	13.75					
Marathwada Krishi Vidyapeeth, Parbhani	26.9	0	1.2	0.3	0	0	0	0	0	28.1	0.3	28.4					
Mother Teresa Womens University, Kodaikanal	0	0	0.35	0.35	0	1.25	0	0	0	0.35	1.6	1.95					
MS University of Baroda, Vadodara	5.85	1.8	5.4	1.8	8.1	3.6	0	0	0	19.3	7.2	26.55					
Mumbai University, Mumbai	5.46	1.2	6.85	1.5	3.2	1.9	0	0	0	15.5	4.6	20.11					
Mysore University, Mysore	8.4	0.6	4.2	0.3	6	2.1	0	0	0	18.6	3	21.6					
N T R University of Health Science	11.1	0.6	16.8	2.7	0	0	10.2	1.2	0	38.1	4.5	42.6					
Nagarjuna University, Vijayawada	13.5	1.6	1.28	0	0	0	0	0.32	0	14.8	1.92	16.78					
Nagpur University, Nagpur	3.6	0	9	0	0	0	0	0	0	12.6	0	12.6					

University / Institution	Professors				Readers				Lecturers				Others				FTE Faculty members		Total - 1
	Male		Female		Male		Female		Male		Female		Male		Female		Male	Female	
National Institute of Mental Health and Neuro Sciences, Bangalore	5.4	1.35	0.45	0	0	0	0	0	0	0	0	0	0	0	0	5.85	1.35	7.2	
National Institute of Technology, Calicut	10.1	1.05	8.75	1.75	11.5	6.65	0	0	0	0	0	0	0	0	0	30.4	9.45	39.85	
National Institute of Technology, Rourkela	15.1	1.11	13.6	0	12.2	2.59	0	0	0	0	0	0	0	0	0	41.0	3.7	44.77	
National Institute of Technology, Tiruchirappalli	10.3	0	17.0	0.74	13.6	3.33	0	0	0	0	0	0	0	0	0	41	4.07	45.07	
National Institute of Technology, Warangal	13.6	0.39	15.2	0.78	13.6	1.95	0	0	0	0	0	0	0	0	0	42.5	3.12	45.63	
Nizams Institute of Medical Sciences	14.7	4.26	18.8	3.56	0.72	2.16	5.02	3.6	0	0	0	0	0	0	0	39.2	13.58	52.86	
North Gujrat University, Patan	0.6	0	1.5	0.3	0.9	0.9	0.3	0	0	0	0	0	0	0	0	3.3	1.2	4.5	
Orissa University of Agriculture and Technology, Bhubaneswar	46.4	0.5	1	0	0	0	0.51	0	0	0	0	0	0	0	0	47.9	0.5	48.47	
Osmania University, Hyderabad	57.2	5.78	10.4	2.89	0	0	0	0	0	0	0	0	0	0	0	67.6	8.67	76.34	
Pandit Ravishankar Shukla University, Raipur	3.4	0.2	2.2	0.6	0.4	0	0	0	0	0	0	0	0	0	0	6	0.8	6.8	
Pondicherry University, Pondicherry	4.08	0.34	5.1	0.68	3.06	0.68	1.02	0	0	0	0	0	0	0	0	13.2	1.7	14.96	
Pune University, Pune	13.9	1.74	10.3	0.72	4.32	2.88	1.44	0	0	0	0	0	0	0	0	30.1	5.34	35.44	
Rajiv Gandhi University of Health Sciences	2.1	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	2.1	0.6	2.7	
Sambalpur University, Jyotibihar	5.2	0.3	2.4	1	1	0.35	0	0	0	0	0	0	0	0	0	8.6	1.65	10.25	
Sardar Patel University, Vallabh Vidyanagar	13.2	3.6	10	2	4.8	2.8	0	0	0	0	0	0	0	0	0	28	8.4	36.4	
Sardar Vallabhbhai Regional College of Engg. & Tech., Surat	5.85	0.39	8.97	0.78	22.2	0.39	0	0	0	0	0	0	0	0	0	37.0	1.56	38.61	

University / Institution	Professors		Readers		Lecturers		Others		FTE Faculty members		Total - 1
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	
	SASTRA Deemed University, Thanjavur	5.7	0	1.52	0	43.3	20.5	0	0	50.5	
Saurashtra University, Rajkot	7.2	0	2.7	0	1.2	0	0.3	0	11.4	0	11.4
Shivaji University, Kolhapur	6	0.3	7.2	0.9	8.7	0.9	0	0	21.9	2.1	24
SNDT Womens University, Mumbai	2.03	2.2	1.03	0.4	0.35	0	0	0	3.41	2.6	6.01
South Gujarat University, Surat	5.9	0	6.15	0.4	2.7	1.75	0	0	14.7	2.15	16.9
Sree Chitranil Institute for Medical Sciences and Technology, Trivandapuram	5.9	0.7	1.9	0.6	0	0	0	0	7.8	1.3	9.1
Sri Krishnadevaraya University, Anantapur	24.3	3.42	1.37	0.34	0.68	0.34	0	0	26.3	4.1	30.49
Sri Padmavati Mahila Viswavidyalayam, Tirupati	1.6	9.28	0	4.48	0	0	0	0.64	1.6	14.4	16
Sri Ramchandra Medical College and Research Institute, Chennai	39.4	10.9	32.3	18.0	0.84	0	6.72	2.1	79.3	31.08	110.46
Sri Venkateswara University, Tirupati	31.3	7.15	3.1	0.4	0	0	1.4	0	35.8	7.55	43.35
SRM Institute of Science & Technology, Chennai	0	0	0	0	3.6	0	0	0	3.6	0	3.6
Swami Ramanand Teerth Marathwada University, Nanded	0.9	0	1.8	0	2.1	0	0	0	4.8	0	4.8
Tamil Nadu Agricultural University, Coimbatore	212	16.5	0	0	0	0	30.5	15	242	31.5	274
Tamil University, Thanjavur	2.1	1.05	0	0	0.35	0	0.7	0	3.15	1.05	4.2
TamilNadu Veterinary and Animal Sciences University, Chennai	24.9	1.56	0	0	0	0	16.9	3.18	41.8	4.74	46.58
Utkal University, Vani Vihar	7.8	1.2	9	0	5.4	0.3	0	0	22.2	1.5	23.7

University / Institution	Professors		Readers		Lecturers		Others		FTE Faculty members		Total - 1
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	
Visvesvaraya National Institute of Technology, Nagpur	8.97	0	14.0	0	17.5	1.95	1.17	0	41.7	1.95	43.68
Visveswaraiah Technology University, Belgaum	3	0.3	0	0	0.3	0	0	0	3.3	0.3	3.6
Yashwantrao Chavan Maharashtra Open University, Nashik	0.3	0	0.3	0	0.3	0	0.3	0.3	1.2	0.3	1.5
Total	1631.42	186.63	745.06	134.19	502.91	135.49	110.98	36.12	2990.37	492.43	3482.8

Appendix 17. R&D FTE - University-wise (Research Staff)

University ¹ Institution	Pool Officer		Research		Senior Research		Junior Research		FTE Research		Total - 2	Total R&D FTE Personnel
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female		
Acharya N.G. Ranga Agricultural University, Hyderabad	0	0	4	1	8	2	30	9	42	12	54	106
Agricultural Sciences, Bangalore	0	0	8	2	16	4	70	13	94	19	113	165.02
Agricultural Sciences, Dharwad	0	0	1	1	3	1	6	3	10	5	15	41.37
Alagappa University, Karaikudi	0	0	2	0	6	1	12	5	20	6	26	32.95
Amravati University, Amravati	0	0	9	2	6	2	21	10	36	14	50	55.1
Andhra University, Visakhapatnam	0	0	3	1	16	2	20	10	39	13	52	176.25
Anna University, Chennai	0	0	4	1	10	3	25	6	39	10	49	216.28
Annamalai University, Chidambaram	0	0	3	1	4	1	8	3	15	5	20	201.6
Avinashilingam Institute of Home science and higher education for women, Coimbatore	0	0	1	1	2	2	2	2	5	5	10	25.9
Bangalore University, Bangalore	0	0	10	2	18	6	20	10	48	18	66	111.15
Berhampur University	0	0	7	4	6	2	12	6	25	12	37	52
Bharath Institute of Science and Technology, Chennai	0	0	0	0	0	0	0	0	0	0	0	3.9
Bharathiar University, Coimbatore	0	0	1	0	4	2	4	2	9	4	13	30.46
Bharathidasan University, Trichy	2	0	9	5	15	5	20	10	46	20	66	76.8
Bharati Vidyapeeth, Pune	0	0	0	0	4	2	6	4	10	6	16	78.04
Bhavnagar University, Bhavnagar	0	0	1	0	1	1	5	2	7	3	10	16.95
Biju Patnaik University of Technology, Rourkela	0	0	0	0	0	0	0	0	0	0	0	0.7
Calicut University, Calicut	0	0	5	1	6	2	9	3	20	6	26	45.5

(*) - Total - 1 of Appendix 21 and Total - 2 of this table

University/ Institution	Pool Officer		Research		Senior Research		Junior Research		FTE Research		Total R&D FTE Personnel	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female		
	Total - 2		Total - 2		Total - 2		Total - 2		Total - 2			
Central Institute of Fisheries Education, Mumbai	0	0	0	0	4	2	8	4	12	6	18	30.9
Cochin University of Science and Technology, Cochin	0	0	8	2	20	10	40	10	68	22	90	124.32
Deccan College Post Graduate and Research Institute	0	0	1	0	1	0	3	2	5	2	7	10.05
Dr. Babasaheb Ambedkar Marathwada University, Aurangabad	0	0	1	1	1	1	2	2	4	4	8	17.6
Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola	0	0	4	2	6	2	10	2	20	6	26	35.3
Dravidian University	0	0	0	0	0	0	0	0	0	0	0	0.7
Fakir Mohan University, Balasore	0	0	0	0	0	0	0	0	0	0	0	4.8
Gandhigram Rural Institute, Dindugal	1	0	4	1	1	1	1	1	7	3	10	17.71
Goa University, Panjim	0	0	8	4	15	3	8	2	31	9	40	58.7
Gujarat Agricultural University, Sardarkrushinagar	0	0	2	1	5	4	15	6	22	11	33	75
Gujarat Ayurved University, Jamnagar	0	0	1	1	2	1	3	2	6	4	10	18.4
Gujarat University, Ahmedabad	0	0	1	1	2	2	5	2	8	5	13	26.2
Gulbarga University, Gulbarga	0	0	1	1	2	2	6	2	9	5	14	32.7
Guru Ghasidas University	0	0	0	0	1	0	1	1	2	1	3	10.4
Hyderabad University, Hyderabad	0	0	1	1	3	2	10	5	14	8	22	48.45
Indian Institute of Science, Bangalore	0	0	100	10	250	43	300	125	650	178	828	1043.6
Indian Institute of Technology, Bombay	2	0	7	2	13	5	18	8	40	15	55	161.01
Indian Institute of Technology, Chennai	0	0	40	10	60	40	80	50	180	100	280	354.6
Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore	0	0	6	2	8	4	26	8	40	14	54	75.84

(*) - Total - 1 of Appendix 21 and Total - 2 of this table

University ¹ Institution	Pool Officer		Research		Senior Research		Junior Research		FTE Research		Total R&D FTE Personnel	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female		
	Total - 2		Total - 2		Total - 2		Total - 2		Total - 2			
Jawaharlal Nehru Technological University, Hyderabad	0	0	1	0	1	0	2	0	4	0	4	12.36
Kakatiya University, Warangal	0	0	2	1	8	4	20	7	30	12	42	68.4
Kalinga Institute of Industrial Technology, Bhubaneswar	0	0	0	0	0	0	0	0	0	0	0	16.5
Kannur University	0	0	0	0	0	0	1	0	1	0	1	7.12
Karnatak University, Dharwad	0	0	0	0	2	1	4	2	6	3	9	14
Karnataka State Open University	0	0	0	0	0	0	0	0	0	0	0	1.8
Karunya Institute of Technology, Coimbatore	0	0	0	0	2	1	4	2	6	3	9	10.36
Kerala Agricultural University, Trichur	0	0	1	1	3	2	8	4	12	7	19	54.84
Kerala University, Trivandrum	0	0	2	0	3	2	7	2	12	4	16	42.19
Kuempu University, Shimogha	0	0	8	2	5	2	12	3	25	7	32	50.83
Madras University, Chennai	0	0	60	50	75	25	68	50	203	125	328	377.85
Madurai Kamaraj University, Madurai	0	0	2	1	8	4	20	10	30	15	45	57.4
Maharashtra Animal and Fishery Sciences University, Nagpur	0	0	0	0	0	0	0	0	0	0	0	4.77
Maharashtra University of Medical Sciences	0	0	0	0	0	0	0	0	0	0	0	1.5
Mahatma Gandhi University, Kottayam	2	0	2	0	6	2	3	1	13	3	16	30.86
Mahatma Phule Krishi Vidyapeeth	0	0	1	1	1	1	8	2	10	4	14	156.02
Mangalore University, Mangalore	0	0	3	1	9	3	14	4	26	8	34	58.55
Manipal Academy of Higher Education, Manipal	0	0	190	50	20	10	53	14	263	74	337	536.58
Manonmanian Sundaranar University, Tirunelveli	0	0	5	2	10	3	15	5	30	10	40	53.75

(*) - Total - 1 of Appendix 21 and Total - 2 of this table

University ¹ Institution	Pool Officer		Research		Senior Research		Junior Research		FTE Research		Total - 2	Total R&D FTE Personnel	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female			
	0	0	1	1	2	2	1	2	2	2	4	9	37.4
Marathwada Krishi Vidyapeeth, Parbhani	0	0	1	1	2	2	1	2	2	2	4	9	37.4
Mother Teresa Womens University, Kodaikanal	0	0	0	0	0	0	0	1	0	1	0	1	2.95
MS University of Baroda, Vadodara	0	0	4	1	6	2	10	3	20	6	26	52.55	
Mumbai University, Mumbai	0	0	0	0	0	0	0	0	0	0	0	0	20.11
Mysore University, Mysore	0	0	8	2	15	5	60	13	83	20	103	124.6	
N T R University of Health Science	0	0	0	0	0	0	2	0	2	0	2	2	44.6
Nagarjuna University, Vijayawada	0	0	1	1	5	2	8	4	14	7	21	37.78	
Nagpur University, Nagpur	0	0	0	0	0	0	0	0	0	0	0	0	12.6
National Institute of Mental Health and Neuro Sciences, Bangalore	0	0	5	1	8	2	10	4	23	7	30	37.2	
National Institute of Technology, Calicut	0	0	4	2	3	1	10	4	17	7	24	63.85	
National Institute of Technology, Rourkela	0	0	2	2	9	3	15	7	26	12	38	82.77	
National Institute of Technology, Tiruchirappalli	0	0	1	0	1	0	2	1	4	1	5	50.07	
National Institute of Technology, Warangal	0	0	0	0	1	0	1	0	2	0	2	47.63	
Nizams Institute of Medical Sciences	0	0	0	0	0	0	1	1	1	1	2	54.86	
North Gujrat University, Patan	0	0	1	0	1	1	3	1	5	2	7	11.5	
Orissa University of Agriculture and Technology, Bhubaneswar	0	0	5	3	6	4	20	7	31	14	45	93.47	
Osmania University, Hyderabad	0	0	4	1	18	4	26	8	48	13	61	137.34	
Pandit Ravishankar Shukla University, Raipur	0	0	1	0	1	1	3	1	5	2	7	13.8	
Pondicherry University, Pondicherry	0	0	1	1	3	1	8	3	12	5	17	31.96	

(*) - Total - 1 of Appendix 21 and Total - 2 of this table

University/ Institution	Pool Officer		Research		Senior Research		Junior Research		FTE Research		Total R&D FTE Personnel	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female		
	Total - 2		Total - 2		Total - 2		Total - 2		Total - 2			
Pune University, Pune	0	0	7	3	5	2	25	5	37	10	47	82.44
Rajiv Gandhi University of Health Sciences	0	0	0	0	1	1	3	1	4	2	6	8.7
Sambalpur University, Jyotibihar	0	0	3	1	4	2	8	3	15	6	21	31.25
Sardar Patel Univesity, Vallabh Vidyanagar	0	0	0	0	4	1	6	2	10	3	13	49.4
Sardar Vallabhbhai Regional College of Engg. & Tech., Surat	0	0	0	0	2	0	4	2	6	2	8	46.61
SASTRA Deemed University, Thanjavur	0	0	0	0	0	0	0	0	0	0	0	71.06
Saurashtra University, Rajkot	0	0	2	0	1	1	3	1	6	2	8	19.4
Shivaji University, Kolhapur	0	0	2	2	6	2	8	2	16	6	22	46
SNDT Womens University, Mumbai	0	0	0	0	2	1	6	2	8	3	11	17.01
South Gujrat University, Surat	0	0	1	0	3	1	6	1	10	2	12	28.9
Sree Chitratrunal Institute for Medical Sciences and Technology, Trivandapuram	0	0	12	8	20	10	26	10	58	28	86	95.1
Sri Krishnadevaraya University, Anantapur	1	0	1	1	4	1	6	3	12	5	17	47.49
Sri Padmavati Mahila Viswavidyalayam, Tirupati	1	0	1	0	0	0	4	2	6	2	8	24
Sri Ramchandra Medical College and Research Institute, Chennai	0	0	1	0	2	1	4	2	7	3	10	120.46
Sri Venkateswara University, Tirupati	1	1	9	3	18	7	25	10	53	21	74	117.35
SRM Institute of Science & Technology, Chennai	0	0	1	0	2	1	3	1	6	2	8	11.6
Swami Ramanand Teerth Marathwada University, Nanded	0	0	1	0	4	2	2	2	7	4	11	15.8
Tamil Nadu Agricultural University, Coimbatore	0	0	10	2	20	8	20	10	50	20	70	344
Tamil University, Thanjavur	0	0	1	0	3	1	4	1	8	2	10	14.2

(*) - Total - 1 of Appendix 21 and Total - 2 of this table

University/ Institution	Pool Officer		Research		Senior Research		Junior Research		FTE Research		Total R&D FTE Personnel	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female		
	Total - 2											
TamilNadu Veterinary and Animal Sciences University, Chennai	0	0	2	0	3	1	7	2	12	3	15	61.58
Utkal University, Vani Vihar	0	0	3	2	7	2	10	5	20	9	29	52.7
Visvesvaraya National Institute of Technology, Nagpur	0	0	8	2	4	2	10	6	22	10	32	75.68
Visveswaraiah Technology University, Belgaum	0	0	1	1	2	1	2	4	5	6	11	14.6
Yashwantrao Chavan Maharashtra Open University, Nashik	0	0	0	0	1	1	2	2	3	3	6	7.5
Total	10	1	634	210	869	296	1421	574	2934	1081	4015	7497.8

(*) - Total - 1 of Appendix 21 and Total - 2 of this table

Appendix 18. R&D FTE Personnel by range and number

(in Number)

Range of R&D FTE Personnel	Number of Institutions
<=25	32
26-50	25
51 - 100	24
101 - 150	7
151 - 200	4
201 - 250	2
>=251	5
Total	99

Appendix 19. R&D Expenditure and R&D FTE personnel details for Total Faculties

University / Institution	R&D Expenditure	R&D FTE Personnel	Total S&T Dept. Expenditure	Total S&T Faculty and Research Staff	R&D Expenditure in Percent of Total S&T Exp.	R&D Personnel Per 100 Faculty of Research Staff	In Number
Acharya N.G. Ranga Agricultural University, Hyderabad	317817	106	960285	524	33.1	20.23	20.23
Agricultural Sciences, Bangalore	237857	165	566190	471	42.01	35.03	35.03
Agricultural Sciences, Dharwad	160980	41	429442	548	37.49	7.48	7.48
Alagappa University, Karaikudi	12807	33	48403	65	26.46	50.77	50.77
Amravati University, Amravati	25809	55	120254	103	21.46	53.4	53.4
Andhra University, Visakhapatnam	110134	176	460918	324	23.89	54.32	54.32
Anna University, Chennai	184656	216	498228	556	37.06	38.85	38.85
Annamalai University, Chidambaram	61082	202	298956	898	20.43	22.49	22.49
Avinashilingam Institute of Home science and higher education for women, Coimbatore	24641	26	116145	141	21.22	18.44	18.44
Bangalore University, Bangalore	68944	111	218487	240	31.56	46.25	46.25
Berhampur University	23118	52	75185	93	30.75	55.91	55.91
Bharath Institute of Science and Technology, Chennai	4182	4	30600	25	13.67	16	16
Bharathiar University, Coimbatore	57349	30	191504	68	29.95	44.12	44.12
Bharathidasan University, Trichy	79002	77	195612	120	40.39	64.17	64.17
Bharati Vidyapeeth, Pune	51929	78	213110	173	24.37	45.09	45.09
Bhavnagar University, Bhavnagar	23580	17	88237	42	26.72	40.48	40.48
Biju Patnaik University of Technology, Rourkela	2159	1	16600	3	13.01	33.33	33.33

University / Institution	R&D Expenditure	R&D FTE Personnel	Total S&T Dept. Expenditure	Total S&T Faculty and Research Staff	R&D Expenditure in Percent of Total S&T Exp.	R&D Personnel Per 100 Faculty of Research Staff
Calicut University, Calicut	52024	46	112618	120	46.2	38.33
Central Institute of Fisheries Education, Mumbai	51515	31	117153	73	43.97	42.47
Cochin University of Science and Technology, Cochin	122208	124	450866	220	27.11	56.36
Deccan College Post Graduate and Research Institute	9574	10	20962	20	45.67	50
Dr. Babasaheb Ambedkar Marathwada University, Aurangabad	17258	18	85006	91	20.3	19.78
Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola	227641	35	1055793	464	21.56	7.54
Dravidian University	524	1	5838	2	8.98	50
Fakir Mohan University, Balasore	5878	5	37831	22	15.54	22.73
Gandhigram Rural Institute, Dindugal	8640	18	36131	71	23.91	25.35
Goa University, Panjim	30751	59	104041	114	29.56	51.75
Gujarat Agricultural University, Sardarkrushinagar	383251	75	1282311	409	29.89	18.34
Gujarat Ayurved University, Jamnagar	23148	18	96212	38	24.06	47.37
Gujarat University, Ahmedabad	14587	26	118262	68	12.33	38.24
Gulbarga University, Gulbarga	39729	33	129194	98	30.75	33.67
Guru Ghasidas University	5613	10	68659	46	8.18	21.74
Hyderabad University, Hyderabad	36656	48	200649	125	18.27	38.4
Indian Institute of Science, Bangalore	1358838	1044	2854231	1347	47.61	77.51
Indian Institute of Technology, Bombay	249768	161	792713	375	31.51	42.93

University / Institution	R&D Expenditure	R&D FTE Personnel	Total S&T Dept. Expenditure	Total S&T Faculty and Research Staff	R&D Expenditure in Percent of Total S&T Exp.	R&D Personnel Per 100 Faculty of Research Staff
Indian Institute of Technology, Chennai	412737	355	1109535	608	37.2	58.39
Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore	47652	76	106259	110	44.85	69.09
Jawaharlal Nehru Technological University, Hyderabad	108093	12	369015	91	29.29	13.19
Kakatiya University, Warangal	38413	68	200635	222	19.15	30.63
Kalinga Institute of Industrial Technology, Bhubaneswar	14057	16	155101	102	9.06	15.69
Kannur University	2470	7	15846	18	15.59	38.89
Karnatak University, Dhanwad	48794	14	190896	120	25.56	11.67
Karnataka State Open University	1385	2	7599	6	18.23	33.33
Karunya Institute of Technology, Coimbatore	6689	10	73278	49	9.13	20.41
Kerala Agricultural University, Trichur	329447	55	776998	677	42.4	8.12
Kerala University, Trivandrum	144750	42	368992	97	39.23	43.3
Kuempu University, Shimogha	69590	51	192162	159	36.21	32.08
Madras University, Chennai	163234	378	310825	480	52.52	78.75
Madurai Kamaraj University, Madurai	64921	57	417683	151	15.54	37.75
Maharashtra Animal and Fishery Sciences University, Nagpur	74674	5	187465	84	39.83	5.95
Maharashtra University of Medical Sciences	6937	2	50932	15	13.62	13.33
Mahatma Gandhi University, Kottayam	24956	31	107359	172	23.25	18.02
Mahatma Phule Krishi Vidyapeeth	201053	156	610321	565	32.94	27.61

University / Institution	R&D Expenditure	R&D FTE Personnel	Total S&T Dept. Expenditure	Total S&T Faculty and Research Staff	R&D Expenditure in Percent of Total S&T Exp.	R&D Personnel Per 100 Faculty of Research Staff
Mangalore University, Mangalore	24849	59	128824	108	19.29	54.63
Manipal Academy of Higher Education, Manipal	288719	537	1403294	1207	20.57	44.49
Manonmanian Sundaranar University, Tirunelveli	42549	54	136960	80	31.07	67.5
Marathwada Krishi Vidyapeeth, Parbhani	123843	37	498741	156	24.83	23.72
Mother Teresa Womens University, Kodaikanal	660	3	6926	14	9.53	21.43
MS University of Baroda, Vadodara	101601	53	409650	549	24.8	9.65
Mumbai University, Mumbai	171212	20	399604	149	42.85	13.42
Mysore University, Mysore	51312	125	342101	235	15	53.19
N T R University of Health Science	47984	45	216487	178	22.16	25.28
Nagarjuna University, Vijayawada	40047	38	213340	84	18.77	45.24
Nagpur University, Nagpur	106150	13	236979	101	44.79	12.87
National Institute of Mental Health and Neuro Sciences, Bangalore	256181	37	578408	155	44.29	23.87
National Institute of Technology, Calicut	102745	64	176586	349	58.18	18.34
National Institute of Technology, Rourkela	38682	83	146932	162	26.33	51.23
National Institute of Technology, Tiruchirappalli	12624	50	81053	140	15.57	35.71
National Institute of Technology, Warangal	2891	48	39421	134	7.33	35.82
Nizams Institute of Medical Sciences	76117	55	269768	142	28.22	38.73
North Gujrat University, Patan	3943	11	18056	21	21.84	52.38

University / Institution	R&D Expenditure	R&D FTE Personnel	Total S&T Dept. Expenditure	Total S&T Faculty and Research Staff	R&D Expenditure in Percent of Total S&T Exp.	R&D Personnel Per 100 Faculty of Research Staff
Orissa University of Agriculture and Technology, Bhubaneswar	121443	93	344844	267	35.22	34.83
Osmania University, Hyderabad	133305	137	569845	324	23.39	42.28
Pandit Ravishankar Shukla University, Raipur	7802	14	59471	56	13.12	25
Pondicherry University, Pondicherry	33699	32	123437	65	27.3	49.23
Pune University, Pune	75308	82	315506	197	23.87	41.62
Rajiv Gandhi University of Health Sciences	18431	9	204600	133	9.01	6.77
Sambalpur University, Jyotibihar	22278	31	110142	91	20.23	34.07
Sardar Patel University, Vallabh Vidyanagar	33357	49	162504	108	20.53	45.37
Sardar Vallabhbhai Regional College of Engg. & Tech., Surat	50860	47	176022	107	28.89	43.93
SASTRA Deemed University, Thanjavur	29788	71	156534	290	19.03	24.48
Saurashtra University, Rajkot	11460	19	78884	60	14.53	31.67
Shivaji University, Kolhapur	40893	46	223028	103	18.34	44.66
SNDT Womens University, Mumbai	54217	17	215069	55	25.21	30.91
South Gujrat University, Surat	15854	29	86844	61	18.26	47.54
Sree Chitratrunal Institute for Medical Sciences and Technology, Trivandapuram	135186	95	450638	223	30	42.6
Sri Krishnadevaraya University, Anantapur	33595	47	99613	109	33.73	43.12
Sri Padmavati Mahila Viswavidyalayam, Tirupati	9852	24	44849	60	21.97	40
Sri Ramchandra Medical College and Research Institute, Chennai	182113	120	517097	304	35.22	39.47

University / Institution	R&D Expenditure	R&D FTE Personnel	Total S&T Dept. Expenditure	Total S&T Faculty and Research Staff	R&D Expenditure in Percent of Total S&T Exp.	R&D Personnel Per 100 Faculty of Research Staff
Sri Venkateswara University, Tirupati	80395	117	289034	307	27.82	38.11
SRM Institute of Science & Technology, Chennai	18627	12	62251	314	29.92	3.82
Swami Ramanand Teerth Marathwada University, Nanded	13695	16	53437	43	25.63	37.21
Tamil Nadu Agricultural University, Coimbatore	339671	344	976706	746	34.78	46.11
Tamil University, Thanjavur	15854	14	18312	22	86.58	63.64
TamilNadu Veterinary and Animal Sciences University, Chennai	170851	62	428712	217	39.85	28.57
Utkal University, Vani Vihar	40694	53	171769	113	23.69	46.9
Visvesvaraya National Institute of Technology, Nagpur	41237	76	121870	221	33.84	34.39
Visveswaraiah Technology University, Belgaum	35475	15	200064	29	17.73	51.72
Yashwantrao Chavan Maharashtra Open University, Nashik	53025	8	92878	66	57.09	12.12
Total	9154575	7500	29004617	20478	27.60	35.78

**Appendix 20.R&D Expenditure and R&D FTE Personnel details for
Responded faculties**

(In Number)

University / Institution	R&D Expenditure	R&D FTE Personnel	Total S&T Expenditure	Data available S&T Faculty and Research Staff	R&D Expenditure in Percent of Total S&T Expenditure	R&D FTE in Percent of total staff
Acharya N.G. Ranga Agricultural University, Hyderabad	317817	106	960285	158	33.1	67.09
Agricultural Sciences, Bangalore	237857	165	566190	214	42.01	77.1
Agricultural Sciences, Dharwad	160980	41	429442	67	37.49	61.19
Alagappa University, Karaikudi	12807	33	48403	54	26.46	61.11
Amravati University, Amravati	25809	55	120254	67	21.46	82.09
Andhra University, Visakhapatnam	110134	176	460918	324	23.89	54.32
Anna University, Chennai	184656	216	498228	457	37.06	47.26
Annamalai University, Chidambaram	61082	202	298956	632	20.43	31.96
Avinashilingam Institute of Home science and higher	24641	26	116145	80	21.22	32.5
Bangalore University, Bangalore	68944	111	218487	196	31.56	56.63
Berhampur University	23118	52	75185	85	30.75	61.18
Bharath Institute of Science and Technology, Chennai	4182	4	30600	14	13.67	28.57
Bharathiar University, Coimbatore	57349	30	191504	66	29.95	45.45
Bharathidasan University, Trichy	79002	77	195612	94	40.39	81.91
Bharati Vidyapeeth, Pune	51929	78	213110	173	24.37	45.09
Bhavnagar University, Bhavnagar	23580	17	88237	34	26.72	50
Biju Patnaik University of Technology, Rourkela	2159	1	16600	2	13.01	50

University / Institution	R&D Expenditure	R&D FTE Personnel	Total S&T Expenditure	Data available S&T Faculty and Research Staff	R&D Expenditure in Percent of Total S&T Expenditure	R&D FTE in Percent of total staff
Calicut University, Calicut	52024	46	112618	85	46.2	54.12
Central Institute of Fisheries Education, Mumbai	51515	31	117153	39	43.97	79.49
Cochin University of Science and Technology, Cochin	122208	124	450866	172	27.11	72.09
Deccan College Post Graduate and Research Institute	9574	10	20962	19	45.67	52.63
Dr. Babasaheb Ambedkar Marathwada University,	17258	18	85006	43	20.3	41.86
Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola	227641	35	1055793	57	21.56	61.4
Dravidian University	524	1	5838	2	8.98	50
Fakir Mohan University, Balasore	5878	5	37831	16	15.54	31.25
Gandhigram Rural Institute, Dindugal	8640	18	36131	48	23.91	37.5
Goa University, Panjim	30751	59	104041	113	29.56	52.21
Gujarat Agricultural University, Sardarkrushinagar	383251	75	1282311	118	29.89	63.56
Gujarat Ayurved University, Jamnagar	23148	18	96212	38	24.06	47.37
Gujarat University, Ahmedabad	14587	26	118262	57	12.33	45.61
Gulbarga University, Gulbarga	39729	33	129194	69	30.75	47.83
Guru Ghasidas University	5613	10	68659	40	8.18	25
Hyderabad University, Hyderabad	36656	48	200649	101	18.27	47.52
Indian Institute of Science, Bangalore	1358838	1044	2854231	1235	47.61	84.53
Indian Institute of Technology, Bombay	249768	161	792713	335	31.51	48.06
Indian Institute of Technology, Chennai	412737	355	1109535	478	37.2	74.27

University / Institution	R&D Expenditure	R&D FTE Personnel	Total S&T Expenditure	Data available Faculty and Research Staff	R&D Expenditure in Percent of Total S&T Expenditure	R&D FTE in Percent of total staff
Jawaharlal Nehru Centre for Advanced Scientific	47652	76	106259	103	44.85	73.79
Jawaharlal Nehru Technological University, Hyderabad	108093	12	369015	26	29.29	46.15
Kakatiya University, Warangal	38413	68	200635	129	19.15	52.71
Kalinga Institute of Industrial Technology,	14057	16	155101	56	9.06	28.57
Kannur University	2470	7	15846	17	15.59	41.18
Karnatak University, Dharwad	48794	14	190896	24	25.56	58.33
Karnataka State Open University	1385	2	7599	6	18.23	33.33
Karunya Institute of Technology, Coimbatore	6689	10	73278	17	9.13	58.82
Kerala Agricultural University, Trichur	329447	55	776998	99	42.4	55.56
Kerala University, Trivandrum	144750	42	368992	88	39.23	47.73
Kuvempu University, Shimogha	69590	51	192162	81	36.21	62.96
Madras University, Chennai	163234	378	310825	467	52.52	80.94
Madurai Kamaraj University, Madurai	64921	57	417683	151	15.54	37.75
Maharashtra Animal and Fishery Sciences University,	74674	5	187465	9	39.83	55.56
Maharashtra University of Medical Sciences	6937	2	50932	5	13.62	40
Mahatma Gandhi University, Kottayam	24956	31	107359	68	23.25	45.59
Mahatma Phule Krishi Vidyapeeth	201053	156	610321	275	32.94	56.73
Mangalore University, Mangalore	24849	59	128824	94	19.29	62.77
Manipal Academy of Higher Education, Manipal	288719	537	1403294	928	20.57	57.87

University / Institution	R&D Expenditure	R&D FTE Personnel	Total S&T Expenditure	Data available S&T Faculty and Research Staff	R&D Expenditure in Percent of Total S&T Expenditure	R&D FTE in Percent of total staff
Manonmanian Sundaranar University, Tirunelveli	42549	54	136960	81	31.07	66.67
Marathwada Krishi Vidyapeeth, Parbhani	123843	37	498741	90	24.83	41.11
Mother Teresa Womens University, Kodaikanal	660	3	6926	8	9.53	37.5
MS University of Baroda, Vadodara	101601	53	409650	87	24.8	60.92
Mumbai University, Mumbai	171212	20	399604	63	42.85	31.75
Mysore University, Mysore	51312	125	342101	175	15	71.43
N T R University of Health Science	47984	45	216487	146	22.16	30.82
Nagarjuna University, Vijayawada	40047	38	213340	74	18.77	51.35
Nagpur University, Nagpur	106150	13	236979	43	44.79	30.23
National Institute of Mental Health and Neuro Sciences,	256181	37	578408	46	44.29	80.43
National Institute of Technology, Calicut	102745	64	176586	133	58.18	48.12
National Institute of Technology, Rourkela	38682	83	146932	162	26.33	51.23
National Institute of Technology, Tiruchirappalli	12624	50	81053	126	15.57	39.68
National Institute of Technology, Warangal	2891	48	39421	120	7.33	40
Nizams Institute of Medical Sciences	76117	55	269768	141	28.22	39.01
North Gujarat University, Patan	3943	11	18056	21	21.84	52.38
Orissa University of Agriculture and Technology,	121443	93	344844	145	35.22	64.14
Osmania University, Hyderabad	133305	137	569845	324	23.39	42.28
Pandit Ravishankar Shukla University, Raipur	7802	14	59471	41	13.12	34.15

University / Institution	R&D Expenditure	R&D FTE Personnel	Total S&T Expenditure	Data available S&T Faculty and Research Staff	R&D Expenditure in Percent of Total S&T Expenditure	R&D FTE in Percent of total staff
Pondicherry University, Pondicherry	33699	32	123437	64	27.3	50
Pune University, Pune	75308	82	315506	149	23.87	55.03
Rajiv Gandhi University of Health Sciences	18431	9	204600	16	9.01	56.25
Sambalpur University, Jyotibihar	22278	31	110142	80	20.23	38.75
Sardar Patel University, Vallabh Vidyanagar	33357	49	162504	104	20.53	47.12
Sardar Vallabhbhai Regional College of Engg. & Tech.,	50860	47	176022	107	28.89	43.93
SASTRA Deemed University, Thanjavur	29788	71	156534	236	19.03	30.08
Saurashtra University, Rajkot	11460	19	78884	46	14.53	41.3
Shivaji University, Kolhapur	40893	46	223028	103	18.34	44.66
SNDT Womens University, Mumbai	54217	17	215069	27	25.21	62.96
South Gujrat University, Surat	15854	29	86844	59	18.26	49.15
Sree Chitratruinal Institute for Medical Sciences and	135186	95	450638	117	30	81.2
Sri Krishnadevaraya University, Anantapur	33595	47	99613	109	33.73	43.12
Sri Padmavati Mahila Viswavidyalayam, Tirupati	9852	24	44849	60	21.97	40
Sri Ramchandra Medical College and Research	182113	120	517097	278	35.22	43.17
Sri Venkateswara University, Tirupati	80395	117	289034	172	27.82	68.02
SRM Institute of Science & Technology, Chennai	18627	12	62251	20	29.92	60
Swami Ramanand Teerth Marathwada Univesity,	13695	16	53437	27	25.63	59.26
Tamil Nadu Agricultural University, Coimbatore	339671	344	976706	618	34.78	55.66

University / Institution	R&D Expenditure	R&D FTE Personnel	Total S&T Expenditure	Data available S&T Faculty and Research Staff	R&D Expenditure in Percent of Total S&T Expenditure	R&D FTE in Percent of total staff
Tamil University, Thanjavur	15854	14	18312	22	86.58	63.64
TamilNadu Veterinary and Animal Sciences University,	170851	62	428712	103	39.85	60.19
Utkal University, Vani Vihar	40694	53	171769	109	23.69	48.62
Visvesvaraya National Institute of Technology, Nagpur	41237	76	121870	141	33.84	53.9
Visveswaraiah Technology University, Belgaum	35475	15	200064	24	17.73	62.5
Yashwantrao Chavan Maharashtra Open University,	53025	8	92878	11	57.09	72.73
Total	9154575	7500	29004617	13253	27.60	52.43

Appendix 21. Total Faculty Members and Supportive Manpower engaged in R&D (In Number)

University / Institution	Total Faculty	Technical Staff	Administrative Staff
Acharya N.G. Ranga Agricultural University, Hyderabad	470	85	56
Agricultural Scineces, Dharwad	533	315	212
Alagappa University, Karaikudi	39	36	43
Amravati University, Amravati	53	290	208
Andhra University, Visakhapatnam	272	131	228
Anna University, Chennai	507	639	325
Annamalai University, Chidambaram	878	900	850
Avinashilingam Institute of Home science and higher education for women, Coimbatore	131	120	110
Bangalore University, Bangalore	174	172	106
Berhampur University	56	36	41
Bharathiar University, Coimbatore	55	70	50
Bharathidasan University, Trichy	54	40	170
Bharati Vidyapeeth, Pune	157	125	117
Bhavnagar University, Bhavnagar	32	18	22
Calicut University, Calicut	94	36	25
Central Institute of Fisheries Education, Mumbai	55	246	128
Cochin University of Science and Technology, Cochin	130	62	126
Deccan College Post Graduate and Research Institute	13	16	8
Dr. Babasaheb Ambedkar Marathwada University, Aurangabad	83	65	57
Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola	438	164	158
Dravidian University	2	1	4
Gandhigram Rural Institute, Dindugal	61	28	58
Goa University, Panjim	74	60	80
Gujarat Agricultural University, Sardarkrushinagar	376	84	67

University / Institution	Total Faculty	Technical Staff	Administrative Staff
Gujarat Ayurved University, Jamnagar	28	24	25
Gujarat University, Ahmedabad	55	24	28
Gulbarga University, Gulbarga	84	123	133
Guru Ghasidas University	43	22	38
Hyderabad University, Hyderabad	103	37	63
Indian Institute of Science, Bangalore	519	439	338
Indian Institute of Technology, Chennai	328	250	200
Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore	56	13	16
Jawaharlal Nehru Technological University, Hyderabad	87	38	52
Kakatiya University, Warangal	180	57	42
Kalinga Institute of Industrial Technology, Bhubaneswar	102	34	120
Kannur University	17	11	17
Karnatak University, Dharwad	111	132	70
Karnataka State Open University	6	14	16
Karunya Institute of Technology, Coimbatore	40	75	70
Kerala Agricultural University, Trichur	658	372	363
Kerala University, Trivandrum	81	52	81
Kuempu University, Shimogha	127	18	18
Madras University, Chennai	152	56	89
Madurai Kamaraj University, Madurai	106	65	71
Maharashtra University of Medical Sciences	15	14	12
Mahatma Gandhi University, Kottayam	156	24	20
Mahatma Phule Krishi Vidyapeeth	551	805	805
Mangalore University, Mangalore	74	15	13
Manipal Academy of Higher Education, Manipal	870	310	343

University / Institution	Total Faculty	Technical Staff	Administrative Staff
Manonmanian Sundaranar University, Tirunelveli	40	60	65
Mother Teresa Womens University, Kodaikanal	13	7	15
MS University of Baroda, Vadodara	523	128	178
Mumbai University, Mumbai	149	18	15
Mysore University, Mysore	132	91	96
N T R University of Health Science	176	130	67
Nagarjuna Univeristy, Vijayawada	63	56	66
National Institute of Mental Health and Neuro Sciences, Bangalore	125	61	26
National Institute of Technology, Calicut	325	24	17
National Institute of Technology, Tiruchirappalli	135	25	20
National Institute of Technology, Warangal	132	70	157
Nizams Institute of Medical Sciences	140	155	172
North Gujarat University, Patan	14	11	25
Orissa University of Agriculture and Technology, Bhubaneswar	222	115	106
Osmania University, Hyderabad	263	282	318
Pandit Ravishankar Shukla University, Raipur	49	35	96
Pondicherry University, Pondicherry	48	30	25
Pune University, Pune	150	142	48
Rajiv Gandhi University of Health Sciences	127	45	47
Sambalpur University, Jyotibihar	70	33	45
Sardar Patel University, Vallabh Vidyanagar	95	45	72
Sardar Vallabhbhai Regional College of Engg. & Tech., Surat	99	50	60
Saurashtra University, Rajkot	52	87	34
Shivaji University, Kolhapur	81	157	130
SNDT Womens University, Mumbai	44	22	37

University / Institution	Total Faculty	Technical Staff	Administrative Staff
South Gujrat University, Surat	49	27	62
Sree Chitratriunal Institute for Medical Sciences and Technology, Trivandapuram	137	24	35
Sri Krishnadevaraya University, Anantapur	92	77	131
Sri Padmavati Mahila Viswavidyalayam, Tirupati	52	1	4
Sri Ramchandra Medical College and Research Institute, Chennai	294	107	102
Sri Venkateswara University, Tirupati	233	140	120
SRM Institute of Science & Technology, Chennai	306	26	20
Swami Ramanand Teerth Marathwada University, Nanded	32	47	40
Tamil Nadu Agricultural University, Coimbatore	676	450	350
Tamil University, Thanjavur	12	8	7
TamilNadu Veterinary and Animal Sciences University, Chennai	202	220	218
Utkal University, Vani Vihar	84	105	114
Visvesvaraya National Institute of Technology, Nagpur	189	189	147
Visveswaraiah Technology University, Belgaum	18	14	12
Yashwantrao Chavan Maharashtra Open University, Nashik	60	41	104
Total	14989	10118	9695

Note : Data available only 89 universities out of 99 universities

Source : Respective Universities Annual Reports

Appendix 22. University - wise papers published by Teaching Faculty during three years (1999 - 2002)

University / Institute Name	National Papers				International Papers				
	1999 - 00	2000 - 01	2001 - 02	1999 - 00	2000 - 01	2001 - 02	1999 - 00	2000 - 01	2001 - 02
	Acharya N.G. Ranga Agricultural University, Hyderabad	90	100	107	84	102	112	84	102
Agricultural Sciences, Dharwad	165	237	327	56	79	109	56	79	109
Agriculture Sciences, Bangalore	na	210	310	na	69	66	na	69	66
Alagappa University, Karaikudi	52	84	60	35	54	32	35	54	32
Amravati University, Amravati	na	na	21	na	na	8	na	na	8
Anna University, Chennai	224	233	233	205	183	76	205	183	76
Annamalai University, Chidambaram (*)	na	na	100	na	na	148	na	na	148
Bangalore University	134	145	115	14	18	20	14	18	20
Bharathiar University, Coimbatore	101	125	na	48	35	na	48	35	na
Bharathidasan University, Trichy	na	na	146	na	na	25	na	na	25
Bhavnagar University, Bhavnagar	na	na	40	na	na	6	na	na	6
Calicut University, Calicut	37	37	63	8	17	7	8	17	7
Central Institute of Fisheries Education, Mumbai	18	174	177	na	na	5	na	na	5
Cochin University of Science and Technology, Cochin	118	135	na	100	122	na	100	122	na
Deccan College Post Graduate and Research Institute	52	58	61	3	6	7	3	6	7
Dr. Babasaheb Ambedkar Marathwada University, Aurangabad	34	30	69	na	na	2	na	na	2
Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola	62	52	59	20	10	12	20	10	12
Gandhigram Rural Institute, Dindugal	80	76	84	1	na	3	1	na	3
Goa University, Panjim	21	37	60	4	2	12	4	2	12
Gujarat Agricultural University, Sardarkrushinagar	30	32	35	18	21	37	18	21	37
Gujarat Ayurved University, Jamnagar	72	101	85	na	11	10	na	11	10
Gulbarga University, Gulbarga	54	115	120	47	30	41	47	30	41
Guru Ghasidas University	13	2	11	10	6	12	10	6	12
Hyderabad University, Hyderabad	261	267	288	na	na	na	na	na	na
Indian Institute of Science, Bangalore	690	1575	1732	821	na	na	821	na	na
Indian Institute of Technology, Bombay	330	212	409	347	494	629	347	494	629
Indian Institute of Technology, Chennai	258	252	262	605	570	556	605	570	556

Jawaharlal Nehru Centre for Advanced Scientific Research	180	171	167	60	53	56
Kakatiya University	23	40	16	20	34	10
Kannur University	7	4	5	5	3	4
Karnatak University, Dharwad	66	130	160	5	18	81
Karunya Institute of Technology	na	na	35	na	na	na
Kerala Agricultural University, Trichur	151	157	160	na	na	na
Kerala University, Trivandrum	68	87	48	41	27	15
Kuvempu University, Shimogha	46	19	24	23	2	4
Madras University, Chennai	101	103	108	122	129	123
Madurai Kamaraj University, Madurai	109	99	81	103	72	76
Mahatma Gandhi University, Kottayam	27	29	32	na	na	na
Mahatma Phule Krishi Vidyapeeth	138	152	171	na	na	na
Mangalore University, Mangalore	121	114	93	46	74	83
Manonmanian Sundaranar University, Tirunelveli	23	55	56	20	54	44
Maharashtra Animal and Fishery Sciences, Nagpur (*)	na	na	24	na	na	na
MS University of Baroda, Vadodara	135	70	65	155	83	73
Mumbai University, Mumbai	17	22	27	7	9	12
Nagpur University, Nagpur	na	na	62	na	na	14
National Institute of Technology, Rourkela	31	70	95	29	60	83
National Institute of Technology, Tiruchirappalli (*)	na	na	83	na	na	na
National Institute of Technology, Warangal	na	68	65	na	na	8
Nizams Institute of Medical Sciences	na	170	39	na	15	5
Osmania University, Hyderabad	na	166	187	na	118	98
Pondicherry University, Pondicherry	60	55	68	44	50	60
Pune University, Pune	na	4	26	na	32	17
Sambalpur University, Jyotibihar	46	32	52	44	28	na
Sardar Vallabhbhai Regional College of Engg. & Tech., Surat	40	19	22	22	19	22
SASTRA Deemed University	17	30	31	20	35	28
Saurashtra University, Rajkot	4	2	19	6	na	na
Shivaji University, Kolhapur	61	76	117	48	30	90
SNDT Womens University	8	3	7	2	2	4
South Gujarat University, Surat	25	8	15	15	8	12

Sree Chitratriunal Institute for Medical Sciences and Technology, Trivandapuram	40	40	40	40	48	12	55
Sri Krishnadevaraya University, Anantapur	22	12	50	15	5	35	
Sri Padmavati Mahila Viswavidyalayam, Tirupati	na	6	57	na	5	52	
Sri Ramchandra Medical College and Research Institute, Chennai	na	30	77	na	30	65	
Sri Venkateswara Institute of Medical Sciences	na	na	264	na	na	na	
Sri Venkateswara University, Tirupati	158	68	104	na	24	na	
SRM Institute of Science & Technology (*)	na	na	62	na	na	na	
Swami Ramanand Teerth Marathwada Univesity, Nanded	na	na	18	na	na	4	
Tamil Nadu Agricultural University, Coimbatore	293	245	190	118	111	18	
Tamil University, Thanjavur	24	33	54	20	1	1	
TamilNadu Veterinary and Animal Sciences University, Chennai	141	164	176	na	na	na	
Utkal University, Vani Vihar (* *)	156	na	na	132	na	na	
Visvesvaraya National Institute of Technology, Nagpur	na	46	48	na	9	1	
Visveswaraiah Technology University, Beigam	na	52	190	na	na	53	
Yashwantrao Chavan Maharashtra Open University	na	na	9	na	na	3	
Total	5234	6940	8473	3596	2981	3244	

Source: University Annual Reports / Convocation Reports

Note : na - Not Available

Appendix 23. University-wise Ph.D. awarded/ongoing by faculty members during three years (1999 - 02)

University / Institute Name	Ph.D. Awarded		Ph.D. Progress	
	1999 - 00	2000 - 01	1999 - 00	2000 - 01
Acharya N.G. Ranga Agricultural University, Hyderabad	10	12	8	42
Agricultural Sciences, Dharwad	28	47	35	180
Agriculture Sciences, Bangalore	na	55	50	na
Alagappa University, Karaikudi	2	3	12	59
Amravati University, Amravati	na	na	6	na
Andhra University, Visakhapatnam	14	17	19	30
Anna University, Chennai	60	57	73	449
Annamalai University, Chidambaram (*)	na	na	144	na
Bangalore University	59	64	71	180
Bharathiar University, Coimbatore	27	30	na	22
Bharathidasan University, Trichy	na	na	13	na
Bharati Vidyapeeth	2	3	2	9
Bhavnagar University, Bhavnagar	na	na	6	na
Calicut University, Calicut	1	3	7	2
Central Institute of Fisheries Education, Mumbai	1	3	14	44
Cochin University of Science and Technology, Cochin	27	29	na	237
Deccan College Post Graduate and Research Institute	4	4	5	39
Dr. Babasaheb Ambedkar Marathwada University, Aurangabad	17	32	65	75
Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola	29	9	26	87
Gandhigram Rural Institute, Dindugal	8	12	14	34
Goa University, Panjim	8	13	13	4
Gujarat Agricultural University, Sardarkrushinagar	37	35	36	na

Gujarat Ayurved University, Jamnagar	7	15	9	37	15	20
Gulbarga University, Gulbarga	37	46	57	na	na	na
Guru Ghadas University	19	19	8	57	45	34
Hyderabad University, Hyderabad	30	33	17	67	73	85
Indian Institute of Science, Bangalore	131	516	676	122	137	310
Indian Institute of Technology, Bombay	91	87	73	263	274	292
Indian Institute of Technology, Chennai	103	51	45	320	429	543
Jawaharlal Nehru Centre for Advanced Scientific Research	2	3	4	44	48	56
Kakatiya University	46	41	29	na	na	na
Karnatak University, Dharwad	17	23	49	72	156	120
Karunya Institute of Technology	na	na	na	na	na	5
Kerala Agricultural University, Trichur	19	22	16	89	93	95
Kerala University, Trivandrum	57	29	83	304	321	202
Kuempu University, Shimogha	105	120	96	30	32	65
Madras University, Chennai	93	102	107	351	358	366
Madurai Kamaraj University, Madurai	71	40	35	150	80	70
Mahatma Gandhi University, Kottayam	6	7	8	64	65	67
Mahatma Phule Krishi Vidyapeeth	12	5	20	144	92	114
Mangalore University, Mangalore	18	33	43	na	na	na
Manonmanian Sundaranar University, Tirunelveli	16	5	9	11	10	40
MS University of Baroda, Vadodara	45	29	13	375	28	43
Mumbai University, Mumbai	319	417	758	na	na	na
Mysore University, Mysore	59	39	76	140	120	163
Nagarjuna University, Vijayawada	3	na	5	38	na	23
Nagpur University, Nagpur	na	na	21	na	na	117
National Institute of Mental Health and Neuro Sciences, Bangalore	7	10	11	na	na	na
National Institute of Technology, Rourkela	6	8	10	21	24	27
National Institute of Technology, Tiruchirappalli (*)	na	na	10	na	na	30
National Institute of Technology, Warangal	na	na	7	na	na	13
Orissa University of Agriculture and Technology, Bhubaneswar	na	na	17	na	na	na
Osmania University, Hyderabad	na	124	103	na	206	144

Appendix 24. University - wise M.Phil., awarded/ongoing by teaching faculty during three years (1999 - 2002)

University / Institute Name	M.Phil. Awarded			M.Phil. Progress		
	1999 - 00	2000 - 01	2001 - 02	1999 - 00	2000 - 01	2001 - 02
Alagappa University, Karaikudi	8	10	12	61	46	72
Andhra University, Visakhapatnam	8	12	18	23	28	32
Anna University, Chennai	19	21	21	3	6	6
Annamalai University, Chidambaram (*)	na	na	333	na	na	na
Bangalore University	15	19	24	20	22	32
Bharathiar University, Coimbatore	39	36	na	42	46	na
Bharathidasan University, Trichy	na	na	13	na	na	22
Bharati Vidyapeeth	na	na	na	1	1	2
Calicut University, Calicut	25	26	26	73	31	17
Deccan College Post Graduate and Research Institute	4	5	5	2	3	4
Goa University, Panjim	6	8	12	na	na	na
Gulbarga University, Gulbarga	14	18	16	na	na	na
Hyderabad University, Hyderabad	12	14	12	24	28	32
Indian Institute of Science, Bangalore	418	220	na	414	110	na
Indian Institute of Technology, Bombay	7	9	12	na	na	na
Indian Institute of Technology, Chennai	409	450	425	624	713	774
Kakatiya University	7	1	1	na	na	na
Karnatak University, Dharwad	12	15	31	16	14	47
Kerala University, Trivandrum	50	92	88	114	79	90
Kuvempu University, Shimogha	16	20	10	20	25	14
Madras University, Chennai	57	62	65	71	74	68
Madurai Kamaraj University, Madurai	32	39	40	37	39	36
Mahatma Gandhi University, Kottayam	12	13	13	10	12	13
Manonmanian Sundaranar University, Tirunelveli	na	9	3	na	10	12
MS University of Baroda, Vadodara	45	62	73	90	156	179
Mumbai University, Mumbai	33	46	71	na	na	na
Mysore University, Mysore	30	34	37	45	48	54
Nagarjuna University, Vijayawada	15	na	8	51	na	45
Nagpur University, Nagpur	na	na	63	na	na	78

National Institute of Mental Health and Neuro Sciences, Bangalore	26	25	27	20	27	27	29
Osmania University, Hyderabad	na	6	22	na	65	65	41
Pondicherry University, Pondicherry	22	28	23	na	na	na	na
Pune University, Pune	na	60	12	na	165	165	156
Sambalpur University, Jyotibihar	16	33	37	na	na	na	na
Shivaji University, Kolhapur	22	19	11	na	na	na	na
South Gujarat University, Surat	5	7	12	na	na	na	na
Sree Chitratrinal Institute for Medical Sciences and Technology, Trivandapuram	16	9	11	34	47	47	49
Sri Krishnadevaraya University, Anantapur	11	61	60	3	67	67	90
Sri Padmavati Mahila Viswavidyalayam, Tirupati	na	na	3	na	na	na	na
Sri Venkateswara University, Tirupati	26	29	38	30	34	34	42
Tamil University, Thanjavur	8	12	11	14	21	21	18
Utkal University, Vani Vihar	67	na	na	60	na	na	na
Total	1512	1530	1699	1902	1917	1917	2054

Source: University Annual Reports / Convocation Reports

Note : na - Not Available

Appendix 25. University wise Post Graduate Awarded during three years (1999-2002)

University / Institute Name	1999-00	2000-01	2001-02
Acharya N.G. Ranga Agricultural University, Hyderabad	193	215	220
Agricultural Sciences, Dharwad	224	239	201
Agriculture Sciences, Bangalore	na	321	349
Alagappa University, Karaikudi	333	207	334
Amravati University, Amravati	na	na	310
Andhra University, Visakhapatnam	243	257	278
Anna University, Chennai	344	579	738
Bangalore University	265	272	303
Bharathiar University, Coimbatore	114	120	na
Bharathidasan University, Trichy	na	na	75
Bharati Vidyapeeth	192	195	215
Calicut University, Calicut	240	273	387
Central Institute of Fisheries Education, Mumbai	44	42	38
Cochin University of Science and Technology, Cochin	365	365	na
Deccan College Post Graduate and Research Institute	2	3	4
Dr. Babasaheb Ambedkar Marathwada University, Aurangabad	511	540	556
Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola	246	317	303
Gandhigram Rural Institute, Dindugal	30	34	46
Goa University, Panjim	260	290	312
Gujarat Agricultural University, Sardarkrushinagar	118	126	164
Gujarat Ayurved University, Jamnagar	30	104	110
Gulbarga University, Gulbarga	na	283	340
Guru Ghasidas University	240	376	401
Hyderabad University, Hyderabad	230	236	288
Indian Institute of Science, Bangalore	680	760	815
Indian Institute of Technology, Bombay	491	539	595
Indian Institute of Technology, Chennai	191	210	230
Kakatiya University	195	234	254
Karnatak University, Dharwad	304	320	390
Karunya Institute of Technology	na	na	135
Kerala Agricultural University, Trichur	97	103	121
Kerala University, Trivandrum	380	329	487

Kuvempu University, Shimogha	80	96	108
Madras University, Chennai	190	195	200
Madurai Kamaraj University, Madurai	265	285	498
Mahatma Gandhi University, Kottayam	64	68	72
Mahatma Phule Krishi Vidyapeeth	164	198	298
Mangalore University, Mangalore	192	245	298
Manonmanian Sundaranar University, Tirunelveli	30	63	60
MS University of Baroda, Vadodara	115	114	117
Mumbai University, Mumbai	432	740	930
Mysore University, Mysore	614	575	646
Nagpur University, Nagpur	na	na	127
National Institute of Mental Health and Neuro Sciences, Bangalore	18	32	34
National Institute of Technology, Rourkela	220	260	279
National Institute of Technology, Tiruchirappalli (*)	na	na	309
Orissa University of Agriculture and Technology, Bhubaneswar	na	na	217
Pondicherry University, Pondicherry	145	160	181
Pune University, Pune	na	680	717
Sambalpur University, Jyotibihar	226	262	284
Sardar Vallabhbhai Regional College of Engg. & Tech., Surat	24	29	34
SASTRA Deemed University	59	58	160
Saurashtra University, Rajkot	222	483	514
Shivaji University, Kolhapur	383	399	415
SNDT Womens University	184	241	260
South Gujarat University, Surat	225	240	260
Sree Chitratriunal Institute for Medical Sciences and Technology, Trivandapuram	17	19	21
Sri Krishnadevaraya University, Anantapur	366	398	557
Sri Padmavati Mahila Viswavidyalayam, Tirupati	na	276	287
Sri Venkateswara University, Tirupati	290	312	333
Swami Ramanand Teerth Marathwada University, Nanded	na	na	48
Tamil Nadu Agricultural University, Coimbatore	267	214	241
TamilNadu Veterinary and Animal Sciences University, Chennai	126	131	142
Utkal University, Vani Vihar	583	na	na

Visvesvaraya National Institute of Technology, Nagpur	290	302	464
Visveswaraiah Technology University, Belgaum	na	na	45
Yashwantrao Chavan Maharashtra Open University	na	na	78
Bhavnagar University, Bhavnagar	na	na	557
Osmania University, Hyderabad	na	570	740
Nizams Institute of Medical Sciences	26	107	89
Total	12379	15641	19619

Source : University Annual Reports / Convocation Reports

Note : na - Not Available

Appendix 26. University - wise Research for a organized/participated by Teaching Faculty during three years (1999 - 2002)

University / Institute Name	University organized			Faculty participated		
	1999 - 00	2000 - 01	2001 - 02	1999 - 00	2000 - 01	2001 - 02
Agricultural Sciences, Dharwad	23	23	4	42	114	74
Agriculture Sciences, Bangalore	na	28	13	na	73	88
Alagappa University, Karaikudi	na	na	7	9	32	54
Anna University, Chennai	45	51	49	112	120	31
Annamalai University, Chidambaram (*)	na	na	40	na	na	510
Bangalore University	19	17	23	175	122	135
Bharathiar University, Coimbatore	31	33	36	94	108	na
Bharathidasan University, Trichy	na	na	20	na	na	115
Bharati Vidyapeeth	14	25	20	31	43	45
Bhavnagar University, Bhavnagar	na	na	na	na	na	18
Calicut University, Calicut	2	16	7	14	61	25
Central Institute of Fisheries Education, Mumbai	5	4	52	15	131	49
Cochin University of Science and Technology, Cochin	65	87	na	na	na	na
Deccan College Post Graduate and Research Institute	na	na	na	21	24	27
Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola	272	113	95	193	211	62
Gandhigram Rural Institute, Dindugal	9	9	13	90	56	102
Goa University, Panjim	12	17	10	18	47	77
Gujarat Agricultural University, Sardarkrushinagar	11	na	13	39	18	73
Gujarat Ayurved University, Jamnagar	4	3	8	54	40	45
Gulbarga University, Gulbarga	10	13	18	82	67	72
Guru Ghasidas University	2	6	7	8	7	25
Hyderabad University, Hyderabad	220	235	244	na	na	na
Indian Institute of Science, Bangalore	54	74	99	60	71	81
Indian Institute of Technology, Bombay	20	47	15	324	119	467
Indian Institute of Technology, Chennai	59	64	57	122	123	104
Jawaharlal Nehru Centre for Advanced Scientific Research	35	32	35	na	na	na
Kakatiya University	11	18	7	8	9	12

Kannur University	na	na	na	na	na	2	17	2
Karnatak University, Dharwad	14	30	16	75	96	56		
Karunya Institute of Technology	na	na	7	na	na	72		
Kerala Agricultural University, Trichur	76	24	25	341	343	345		
Kerala University, Trivandrum	23	54	89	57	116	76		
Kuvempu University, Shimogha	30	28	14	57	52	74		
Madras University, Chennai	31	35	36	207	215	225		
Madurai Kamaraj University, Madurai	56	40	24	192	119	65		
Maharashtra Animal and Fishery Sciences University	na	na	7	na	na	24		
Mahatma Gandhi University, Kottayam	34	34	4	19	24	21		
Mahatma Phule Krishi Vidyapeeth	28	44	42	8	19	19		
Mangalore University, Mangalore	3	7	26	41	149	84		
Manonmanian Sundaranar University, Tirunelveli	5	4	4	na	51	30		
MS University of Baroda, Vadodara	6	3	na	35	40	54		
Mumbai University, Mumbai	45	53	58	59	64	72		
Mysore University, Mysore	4	5	3	92	98	104		
Nagarjuna University, Vijayawada	5	na	24	30	na	59		
National Institute of Mental Health and Neuro Sciences, Bangalore	16	17	15	134	123	146		
National Institute of Technology, Rourkela	18	30	12	62	34	27		
National Institute of Technology, Tiruchirappalli (*)	na	na	17	na	na	122		
National Institute of Technology, Warangal	na	4	5	na	na	44		
Nizams Institute of Medical Sciences	53	10	na	139	281	na		
Orissa University of Agriculture and Technology, Bhubaneswar	na	na	6	na	na	117		
Osmania University, Hyderabad	na	16	24	na	124	156		
Pondicherry University, Pondicherry	6	9	8	54	51	121		
Pune University, Pune	na	10	13	na	21	25		
Sambalpur University, Jyotibihar	10	6	13	51	57	28		
Sardar Vallabhbhai Regional College of Engg. & Tech., Surat	6	5	5	78	79	91		
SASTRA Deemed University	23	15	11	na	na	6		
Saurashtra University, Rajkot	36	51	54	12	14	11		
Shivaji University, Kolhapur	47	65	7	38	59	157		

SNDT Womens University	10	49	29	34	85	35
South Gujarat University, Surat	5	5	8	15	27	27
Sree Chitratriunal Institute for Medical Sciences and Technology, Trivandapuram	23	15	53	7	35	70
Sri Krishnadevaraya University, Anantapur	10	6	12	8	14	55
Sri Padmavati Mahila Viswavidyalayam, Tirupati	na	1	1	na	2	40
Sri Ramchandra Medical College and Research Institute, Chennai	na	210	341	na	na	34
Sri Venkateswara Institute of Medical Sciences	na	na	3	na	na	145
SRM Institute of Science & Technology	na	na	36	na	na	11
Swami Ramanand Teerth Marathwada Univesity, Nanded	na	na	4	na	na	12
Tamil Nadu Agricultural University, Coimbatore	95	133	115	73	111	57
Tamil University, Thanjavur	4	2	11	14	26	16
TamilNadu Veterinary and Animal Sciences University, Chennai	7	11	14	103	114	119
Utkal University, Vani Vihar	19	na	na	30	na	na
Visvesvaraya National Institute of Technology, Nagpur	11	4	10	38	56	38
Total	1682	1950	2098	3616	4312	5383

Source: University Annual Reports / Convocation Reports

Note : na - Not Available

Appendix 27. University-wise doctorates verses non-doctorates of faculties during 2001 - 2002 .

University / Institute Name	Total Faculties	Doctorate	Non- Doctorate
Acharya NG Ranga Agricultural University	470	256	214
Agricultural Sciences , Bangalore	358	286	72
Agricultural Sciences, Dharwad	533	486	47
Alagappa University	39	29	10
Amrawathi University	53	45	8
Andhra University, Vishakapattinam (*)	272	258	14
Anna University, Chennai	507	376	131
Annamalai University, Chidambaram	878	767	111
Avinashilingam University of Home sciences	131	78	53
Bangalore University	174	174	na
Barat Institute of Science and Technology	25	4	21
Berhampur University	56	48	8
Bharathi Vidyapeeth	157	40	117
Bharathiar University	55	55	na
Bharathidasan University	54	51	3
Bhavnagar University, Bhavnagar (*)	32	28	4
Biju Patnaik University of Technology	3	3	na
Calicut University (*)	94	82	12
Central Institute of fisheries education	55	38	17
Cochin University of Science and Technology (*)	130	108	22
Deccan College Postgraduate Institute (*)	13	12	1
Dr. Babasaheb Ambedkar Marathwada University (*)	83	60	23
Dr.Panjabrao Deshmukh Krishi Vidyapeeth	438	296	142
Dravidian University	2	2	na
Fakir Mohan University	22	12	10
Gandhigram Rural Institute, Dindugal	61	42	19
Goa University, Panjim	74	65	9
Gujarat University	55	50	5
Gujarat Agricultural University (*)	376	360	16
Gujarat Ayurved university	28	28	na
Gulbarga University, Gulbarga	84	72	12
Guru Ghasidas University	43	32	11
Hyderabad University, Hyderabad	103	78	25
Indian Institute of science	519	415	104
Indian Institute of Technology, Bombay	320	306	14
Indian Institute of Technology, Chennai	328	306	22
Jawaharlal Nehru Centre for Advanced Scientific Research	56	48	8
Jawaharlal Nehru Technological University, Hyderabad	87	63	24

Kakatiya University (*)	180	145	35
Kalingal Institute of Industrial Technology	102	12	90
Kannur University (*)	17	14	3
Karnatak University, Dharwad	111	98	13
Karnataka state open university	6	4	2
Karunya Institute of Technology	40	12	28
Kerala Agricultural University	658	495	163
Kerala University	81	75	6
Kuvempu University, Shimogha	127	110	17
Madras University	152	152	na
Madurai Kamaraj University, Madurai	106	95	11
Maharashtra Animal and Veterinary Sciences University	84	62	22
Maharashtra University of Medical Sciences	15	11	4
Mahatma Gandhi University, Kottayam	156	113	43
Mahatma Pule Krishi Vidyapeeth	551	393	158
Mangalore University	74	60	14
Manipal Academy of Higher Education	870	472	398
Manonmaniam Sundaranar University	40	32	8
Marathwada Krishi Vidyapeeth	147	90	57
Mother Teresa Open University	13	11	2
MS University of Baroda, Vadodara	523	403	120
Mumbai University	149	124	25
Mysore University	132	102	30
Nagarjuna University	63	58	5
Nagpur University	101	87	14
National Institute of Mental Health and Neuro Sciences	125	35	90
NIT Calicut	325	210	115
NIT Rourkela	124	72	52
NIT Trichy	135	112	23
NIT Warangal	132	107	25
Nizams Institute of Medical Sciences	140	25	115
North Gujarat University	14	9	5
NTR University of Health Sciences	176	124	52
Orissa University of Agricultural Technology	222	145	77
Osmania University	263	161	102
Pandit Ravisankar Sukla University	49	42	7
Pondichery University	48	44	4
Pune University	150	128	22
Rajiv Gandhi University of Health Sciences	127	115	12
Sambalpur University	70	58	12
Sardar Patel University	95	80	15
Sardar Vallabhai Regional Engineering College	99	28	71
SASTRA Deemed University	290	28	262

Saurashtra University	52	44	8
Shivaji University, Kolhapur	81	64	17
SNDT Womens University	44	33	11
South Gujarat University	49	42	7
Sri Chitrahirunal	137	93	44
Sri Krishnadevaraya University	92	79	13
Sri Padmavathi Mahila Visvavidyalayam	52	40	12
Sri Ramachandra Medical College and Research Institute	294	14	280
Sri Venkateswara University	233	197	36
SRM Institute of Science and Technology	306	26	280
Swami Ramanand Teeth Marathwada	32	28	4
Tamil University, Thanjavur	12	12	na
Tamilnadu Agricultural University	676	598	78
Tamilnadu Veterinary and Animal Science University	202	186	16
Utkal University	84	74	10
Visveswariya National Institute of Technology	189	53	136
Visveswariya Technological University	18	12	6
Yashwantrao Chavan Maharashtra Open University	60	38	22
Total	16463	11845	4618

(*) - Partial data only available in the annual report

Source: University Annual Reports / Convocation Reports

Note : na - Not Available

Appendix 28. University - wise research project Completed/On-going by Teaching Faculty during three years (1999 - 2002)

University / Institute Name	Completed Projects			On-Going Projects		
	1999 - 00	2000 - 01	2001 - 02	1999 - 00	2000 - 01	2001 - 02
Agriculture Sciences, Bangalore	na	177	161	na	41	48
Agricultural Sciences, Dharwad	1	12	8	37	40	22
Alagappa University, Karaikudi	17	9	8	na	na	na
Amravati University, Amravati	na	na	8	na	na	na
Andhra University, Visakhapatnam	8	18	12	12	26	25
Anna University, Chennai	70	151	138	na	na	na
Annamalai University, Chidambaram (*)	na	na	45	na	na	na
Bangalore University	38	39	43	na	na	na
Bharathidasan University, Trichy	na	na	7	na	na	7
Bharati Vidyapeeth	5	5	15	na	17	na
Bhavnagar University, Bhavnagar	na	na	19	na	na	5
Calicut University, Calicut	161	55	39	na	na	na
Central Institute of Fisheries Education, Mumbai	15	13	26	8	3	16
Cochin University of Science and Technology, Cochin	45	51	na	na	na	na
Deccan College Post Graduate and Research Institute	4	4	5	19	19	20
Dr. Babasaheb Ambedkar Marathwada University, Aurangabad	9	11	13	na	na	na
Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola	na	na	na	79	21	25
Gandhigram Rural Institute, Dindugal	10	34	13	na	21	na
Goa University, Panjim	1	3	7	11	12	15
Gujarat Agricultural University, Sardarkrushinagar	26	15	12	na	na	na
Gujarat Ayurved University, Jamnagar	29	32	35	15	17	18
Gulbarga University, Gulbarga	3	6	8	1	na	na
Hyderabad University, Hyderabad	110	116	80	22	24	12
Indian Institute of Science, Bangalore	123	134	148	na	na	na
Indian Institute of Technology, Bombay	29	43	55	289	243	272

Indian Institute of Technology, Chennai	210	223	174	na	na	na	na
Jawaharlal Nehru Centre for Advanced Scientific Research	17	22	28	na	na	na	na
Kakatiya University	8	39	8	7	na	na	5
Kannur University	na	1	na	na	na	na	na
Karnatak University, Dharwad	27	23	23	na	na	na	na
Karunya Institute of Technology	na	na	5	na	na	na	na
Kerala Agricultural University, Trichur	154	179	184	na	na	na	na
Kerala University, Trivandrum	34	25	20	na	na	na	na
Kuempu University, Shimogha	15	15	15	7	2	na	2
Madras University, Chennai	14	15	15	151	160	na	164
Madurai Kamaraj University, Madurai	16	15	7	36	6	na	7
Maharashtra Animal and Fishery Sciences University	na	na	40	na	na	na	30
Mahatma Gandhi University, Kottayam	14	15	8	na	na	na	na
Mahatma Phule Krishi Vidyapeeth	122	117	122	na	na	na	na
Mangalore University, Mangalore	27	34	34	na	na	na	na
Manonmanian Sundaranar University, Tirunelveli	25	20	11	na	na	na	na
Mysore University, Mysore	50	55	80	na	na	na	na
Nagarjuna University, Vijayawada	5	na	8	na	na	na	na
Nagpur University, Nagpur	na	na	12	na	na	na	na
National Institute of Mental Health and Neuro Sciences, Bangalore	12	2	70	87	86	na	23
National Institute of Technology, Rourkela	17	12	32	na	na	na	na
National Institute of Technology, Tiruchirappalli	na	na	na	na	na	na	25
National Institute of Technology, Warangal (*)	na	5	7	na	na	na	na
Nizams Institute of Medical Sciences	72	90	na	103	86	na	na
Orissa University of Agriculture and Technology, Bhubaneswar	na	na	53	na	na	na	na
Osmania University, Hyderabad	na	26	66	na	36	na	51
Pune University, Pune	na	35	47	na	na	na	na
Sambalpur University, Jyotibihar	12	11	18	9	8	na	3
Sardar Vallabhbhai Regional College of Engg. & Tech., Surat	3	1	2	3	1	na	4
Saurashtra University, Rajkot	2	6	2	na	na	na	na

Shivaji University, Kolhapur	15	15	20	8	11	15
SNDT Womens University	9	6	6	5	1	3
South Gujarat University, Surat	3	4	4	na	2	4
Sree Chitratriunal Institute for Medical Sciences and Technology, Trivandapuram	27	27	61	na	na	na
Sri Krishnadevaraya University, Anantapur	3	8	10	1	12	30
Sri Padmavati Mahila Viswavidyalayam, Tirupati	na	1	4	na	na	na
Sri Ramchandra Medical College and Research Institute, Chennai	na	42	101	na	na	na
Sri Venkateswara Institute of Medical Sciences	na	na	38	na	na	na
Sri Venkateswara University, Tirupati	30	40	40	na	na	na
SRM Institute of Science & Technology (*)	na	na	4	na	na	na
Tamil Nadu Agricultural University, Coimbatore	82	90	120	60	203	270
Tamil University, Thanjavur	5	3	7	9	8	11
TamilNadu Veterinary and Animal Sciences University, Chennai	na	na	na	72	80	82
Utkal University, Vani Vihar	24	na	na	22	na	na
Visvesvaraya National Institute of Technology, Nagpur	na	4	15	na	na	na
Yashwantrao Chavan Maharashtra Open University	na	na	4	na	na	na
Total	1758	2154	2430	1073	1186	1214

Source: University Annual Reports / Convocation Reports

Note : na - Not Available

Appendix 29. University wise consultancy projects completed by teaching faculty during three years (1999 - 2002)

University / Institute Name	1999-00	2000-01	2001-02
Acharya N.G. Ranga Agricultural University, Hyderabad	7	9	12
Agricultural Sciences, Dharwad	6	7	5
Agriculture Sciences, Bangalore	na	27	28
Anna University, Chennai	18	125	58
Bharathiar University, Coimbatore	23	25	30
Bharati Vidyapeeth	4	4	6
Calicut University, Calicut	19	40	34
Central Institute of Fisheries Education, Mumbai	2	3	16
Cochin University of Science and Technology, Cochin	11	15	na
Deccan College Post Graduate and Research Institute	52	na	na
Goa University, Panjim	4	1	3
Hyderabad University, Hyderabad	20	24	28
Indian Institute of Science, Bangalore	122	119	141
Indian Institute of Technology, Bombay	74	94	30
Indian Institute of Technology, Chennai	382	209	194
Kakatiya University	23	na	na
Kerala University, Trivandrum	31	15	8
Madras University, Chennai	23	25	30
Mahatma Gandhi University, Kottayam	14	15	16
Mangalore University, Mangalore	1	na	na
MS University of Baroda, Vadodara	4	6	7
Nagpur University, Nagpur	na	na	3
National Institute of Technology, Rourkela	na	56	12
Osmania University, Hyderabad	na	14	21
Sambalpur University, Jyotibihar	1	na	na
Sardar Vallabhbhai Regional College of Engg. & Tech., Surat	26	91	83
Saurashtra University, Rajkot	3	3	2
Sree Chitratriunal Institute for Medical Sciences and Technology, Trivandapuram	na	20	na
SRM Institute of Science & Technology	na	na	2
Tamil Nadu Agricultural University, Coimbatore	16	37	55

TamilNadu Veterinary and Animal Sciences University, Chennai	8	5	7
Visvesvaraya National Institute of Technology, Nagpur	na	12	na
Total	894	1001	831

Source: University Annual Reports / Convocation Reports

Note : na - Not Available

Appendix 30. University wise Books and Monographs published by teaching faculty during three years (1999 - 2002)

University / Institute Name	1999-00	2000-01	2001-02
Agriculture Sciences, Bangalore	na	8	18
Agricultural Sciences, Dharwad	9	12	53
Alagappa University, Karaikudi	na	1	5
Amravati University, Amravati	na	na	4
Anna University, Chennai	17	14	13
Bangalore University	2	4	5
Bharathiar University, Coimbatore	3	8	na
Bharati Vidyapeeth	5	4	7
Calicut University, Calicut	3	8	9
Central Institute of Fisheries Education, Mumbai	36	19	32
Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola	16	12	25
Gandhigram Rural Institute, Dindugal	2	1	3
Gujarat Ayurved University, Jamnagar	22	24	29
Gulbarga University, Gulbarga	41	62	65
Hyderabad University, Hyderabad	48	50	69
Indian Institute of Technology, Bombay	19	29	43
Indian Institute of Technology, Chennai	26	18	13
Kakatiya University	na	na	3
Karnatak University, Dharwad	3	9	10
Kerala University, Trivandrum	3	3	31
Kuvempu University, Shimogha	31	9	13
Madras University, Chennai	12	14	17
Madurai Kamaraj University, Madurai	2	2	4
MS University of Baroda, Vadodara	20	10	37
Mangalore University, Mangalore	1	2	3
Mumbai University, Mumbai	24	31	36
Mysore University, Mysore	145	84	192
Nagarjuna University, Vijayawada	6	na	1
Nagpur University, Nagpur	na	na	3
National Institute of Mental Health and Neuro Sciences, Bangalore	40	9	13
Pune University, Pune (*)	486	210	269
Sambalpur University, Jyotibihar	19	na	1
Saurashtra University, Rajkot	na	21	3
Shivaji University, Kolhapur	2	na	na
SNDT Womens University	9	13	26
South Gujrat University, Surat	na	na	2

Sree Chitratriunal Institute for Medical Sciences and Technology, Trivandapuram	6	12	14
Sri Krishnadevaraya University, Anantapur	7	3	17
Sri Venkateswara Institute of Medical Sciences (*)	na	na	139
Swami Ramanand Teerth Marathwada Univesity, Nanded	na	na	3
Tamil Nadu Agricultural University, Coimbatore	4	5	9
TamilNadu Veterinary and Animal Sciences University, Chennai	58	71	76
Tamil University, Thanjavur	2	1	12
Utkal University, Vani Vihar	14	na	na
Yashwantrao Chavan Maharashtra Open University	na	na	3
Jawaharlal Nehru Centre for Advanced Scientific Research	10	7	8
Total	1153	790	1338

Source: University Annual Reports / Convocation Reports

Note : na - Not Available

Appendix 31. University - wise awards received by teaching faculty during three years (1999 - 2002)

University / Institute Name	National Awards			International Awards		
	1999 - 00	2000 - 01	2001 - 02	1999 - 00	2000 - 01	2001 - 02
Acharya N.G. Ranga Agricultural University, Hyderabad	10	10	8	na	10	13
Agricultural Sciences, Dharwad	4	11	5	na	na	na
Agriculture Sciences, Bangalore	na	12	3	na	na	na
Alagappa University, Karaikudi	2	na	1	na	na	na
Amravati University, Amravati	na	na	2	na	na	1
Anna University, Chennai	8	25	9	13	na	na
Annamalai University, Chidambaram (*)	na	na	69	na	na	na
Bangalore University	1	na	na	na	na	na
Bharathiar University, Coimbatore	3	6	na	na	2	na
Calicut University, Calicut (*)	2	27	8	na	na	na
Cochin University of Science and Technology, Cochin	6	8	na	na	na	na
Goa University, Panjim	16	1	2	6	1	na
Gujarat Ayurved University, Jamnagar	na	5	na	na	na	na
Gulbarga University, Gulbarga	na	1	2	na	1	1
Guru Ghasidas University	2	1	1	na	na	na
Hyderabad University, Hyderabad	5	7	7	na	na	na
Indian Institute of Science, Bangalore	44	50	30	na	57	40
Indian Institute of Technology, Bombay	10	8	16	8	2	6
Indian Institute of Technology, Chennai	41	30	28	na	na	na
Jawaharlal Nehru Centre for Advanced Scientific Research	26	24	29	2	5	10
Karnatak University, Dharwad	na	na	3	na	na	na
Kerala Agricultural University, Trichur	5	6	5	na	na	na
Kerala University, Trivandrum	3	4	16	1	1	2
Kuempu University, Shimogha	28	2	3	3	na	na
Mangalore University, Mangalore (*)	na	41	14	na	3	15
Manonmanian Sundaranar University, Tirunelveli	6	9	8	6	9	6
Maharashtra Animal and Fishery Sciences, Nagpur(*)	na	na	27	na	na	na
MS University of Baroda, Vadodara	40	62	23	34	na	30
Mumbai University, Mumbai	2	2	4	na	na	na

Nagpur University, Nagpur	na	na	2	na	na	na	1
National Institute of Mental Health and Neuro Sciences, Bangalore	9	8	14	na	na	na	na
National Institute of Technology, Rourkela	25	4	22	18	na	na	20
National Institute of Technology, Tiruchirappalli (*)	na	na	3	na	na	na	na
Pondicherry University, Pondicherry	3	1	5	1	na	na	na
Pune University, Pune	na	20	4	na	na	na	na
Sambalpur University, Jyotibihar	14	9	24	10	6	na	13
SASTRA Deemed University	30	35	12	na	na	na	8
Saurashtra University, Rajkot	na	1	2	na	4	na	3
Shivaji University, Kolhapur	1	2	2	1	1	na	2
SNDT Womens University	5	5	5	5	2	na	2
Sree Chitratruinal Institute for Medical Sciences and Technology, Trivandapuram	na	12	19	na	na	na	na
Sri Krishnadevaraya University, Anantapur	19	25	57	4	4	na	3
Sri Padmavati Mahila Viswavidyalayam, Tirupati	na	1	1	na	na	na	1
Sri Ramchandra Medical College and Research Institute, Chennai	na	25	46	na	26	na	43
Sri Venkateswara Institute of Medical Sciences (*)	na	na	41	na	na	na	na
Sri Venkateswara University, Tirupati	na	na	6	na	na	na	na
SRM Institute of Science & Technology (*)	9	8	5	na	na	na	na
Utkal University, Vani Vihar (* *)	1	na	na	na	na	na	na
Visvesvaraya National Institute of Technology, Nagpur	na	6	1	na	na	na	na
Total	380	514	594	112	134	na	220

(*) - Annual Reports available only on the latest years
(* *) - Annual Reports available on 1996-97 years

Source: University Annual Reports / Convocation Reports
Note : na - Not Available

Appendix 32. University wise technology developed by teaching faculty during three years (1999 - 2002)

University / Institute Name	1999-00	2000-01	2001-02
Acharya N.G. Ranga Agricultural University, Hyderabad	43	45	51
Agricultural Sciences, Dharwad	6	12	17
Agriculture Sciences, Bangalore	na	2	6
Anna University, Chennai	5	4	4
Calicut University, Calicut	12	15	17
Cochin University of Science and Technology, Cochin	106	70	na
Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola	4	7	7
Indian Institute of Technology, Bombay	6	5	4
Indian Institute of Technology, Chennai	132	62	66
Jawaharlal Nehru Centre for Advanced Scientific Research	2	3	3
Kerala Agricultural University, Trichur	19	21	23
Kerala University, Trivandrum	1	3	20
Madras University, Chennai	44	48	53
Mahatma Phule Krishi Vidyapeeth	5	10	9
Mysore University, Mysore	4	na	3
National Institute of Technology, Rourkela	na	5	na
Sree Chitratrunal Institute for Medical Sciences and Technology, Trivandapuram	na	15	14
Tamil Nadu Agricultural University, Coimbatore	25	7	16
Total	414	334	313

Source: University Annual Reports / Convocation Reports

Note : na - Not Available

Appendix 33. University wise Science related promotional activities by teaching faculty during three years (1999 - 2002)

University / Institute Name	1999-00	2000-01	2001-02
Agricultural Sciences, Dhanwad	42	22	85
Agriculture Sciences, Bangalore	na	111	170
Amravati University, Amravati	na	na	18
Anna University, Chennai	35	42	46
Bharathidasan University, Trichy	na	na	4
Cochin University of Science and Technology, Cochin	17	21	na
Deccan College Post Graduate and Research Institute	10	11	12
Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola	387	236	299
Gandhigram Rural Institute, Dindugal	1	na	3
Goa University, Panjim	4	6	7
Gulbarga University, Gulbarga	4	62	65
Indian Institute of Technology, Bombay	35	37	43
Jawaharlal Nehru Centre for Advanced Scientific Research	3	4	7
Karnatak University, Dhanwad	17	19	32
Karunya Institute of Technology	na	na	5
Kerala Agricultural University, Trichur	17	18	19
Kerala University, Trivandrum	11	12	39
Kuvempu University, Shimogha	8	31	22
Mahatma Phule Krishi Vidyapeeth	460	502	509
Mangalore University, Mangalore	na	5	6
Nagarjuna University, Vijayawada	84	na	107
Nagpur University, Nagpur	na	na	23
National Institute of Mental Health and Neuro Sciences, Bangalore	40	39	49
National Institute of Technology, Rourkela	3	na	na
Pondicherry University, Pondicherry	na	na	1
Saurashtra University, Rajkot	101	59	62
Shivaji University, Kolhapur	na	2	4
SNDT Womens University	10	11	14
Sree Chitratriunal Institute for Medical Sciences and Technology, Trivandapuram	23	19	26
Sri Krishnadevaraya University, Anantapur	10	13	15

Sri Padmavati Mahila Viswavidyalayam, Tirupati	na	na	4
Swami Ramanand Teerth Marathwada Univesity, Nanded	na	na	9
Tamil Nadu Agricultural University, Coimbatore	118	94	106
Tamil University, Thanjavur	6	3	4
Visvesvaraya National Institute of Technology, Nagpur	18	30	8
Yashwantrao Chavan Maharashtra Open University	na	na	6
Total	1464	1409	1829

Source: University Annual Reports / Convocation Reports

Note : na - Not Available

Appendix 34. University-wise patents sealed / filed by teaching faculty during three years (1999 - 2002)

University / Institute Name	1999-00	2000-01	2001-02
Indian Institute of Technology, Bombay	7	15	13
Indian Institute of Technology, Chennai	6	12	14
Kerala Agricultural University, Trichur	1	2	1
Kerala Univeristy, Trivandrum	5	9	3
Sree Chitratriunal Institute for Medical Sciences and Technology, Trivandapuram	15	4	5
Total	34	42	36

Source: University Annual Reports / Convocation Reports

Note : na - Not Available

Appendix 35. University wise membership of Professional Bodies by teaching faculty during three years (1999 - 2002)

University / Institute Name	1999-00	2000-01	2001-02
Agricultural Sciences, Dharwad	2	4	8
Agriculture Sciences, Bangalore	na	4	7
Bharathiar University, Coimbatore	28	33	34
Bharathidasan University, Trichy	na	na	2
Bharati Vidyapeeth	5	4	19
Deccan College Post Graduate and Research Institute	8	10	11
Hyderabad University, Hyderabad	17	25	23
Indian Institute of Technology, Bombay	140	90	120
Karnatak University, Dharwad	14	18	12
Madras University, Chennai	28	33	34
Mahatma Gandhi University, Kottayam	3	4	2
Nagpur University, Nagpur	na	na	18
National Institute of Mental Health and Neuro Sciences, Bang	8	16	17
Tamil University, Thanjavur	3	3	4
Total	256	244	311

Appendix 36. University wise fellowship conferred by teaching faculty during three years (1999 - 2002)

University / Institute Name	1999-00	2000-01	2001-02
Anna University, Chennai	25	7	11
Bangalore University	na	1	2
Calicut University, Calicut	6	na	7
Gandhigram Rural Institute, Dindugal	1	na	2
Hyderabad University, Hyderabad	3	4	2
Indian Institute of Technology, Bombay	5	3	6
Jawaharlal Nehru Centre for Advanced Scientific Research	12	18	22
Kamatak University, Dharwad	2	2	na
Kerala University, Trivandrum	57	16	13
Kuvenpu University, Shimogha	2	15	17
Mangalore University, Mangalore	na	na	9
National Institute of Technology, Tiruchirappalli	na	na	3
Pondicherry University, Pondicherry	10	15	8
SNDT Womens University	2	na	na
Total	125	81	102

Source: University Annual Reports / Convocation Reports

Note : na - Not Available

Appendix 37. University wise Visiting Faculty positions by teaching faculty during three years (1999 - 2002)

University / Institute Name	1999 - 00	2000 - 01	2001 - 02
Agricultural Sciences, Dharwad	16	14	17
Agriculture Sciences, Bangalore	na	111	109
Anna University, Chennai	39	43	68
Bangalore University	8	10	14
Bharathiar University, Coimbatore	26	29	34
Bharati Vidyapeeth	5	7	9
Central Institute of Fisheries Education, Mumbai	30	15	3
Cochin University of Science and Technology, Cochin	34	36	na
Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola	52	57	67
Goa University, Panjim	26	29	33
Gujarat Ayurved University, Jamnagar	17	12	19
Hyderabad University, Hyderabad	23	23	26
Indian Institute of Science, Bangalore	674	381	417
Jawaharlal Nehru Centre for Advanced Scientific Research	8	12	17
Kakatiya University	1	14	6
Karnatak University, Dharwad	69	108	29
Kuvempu University, Shimogha	41	46	93
Mangalore University, Mangalore	na	4	71
Manonmanian Sundaranar University, Tirunelveli	5	8	12
Mumbai University, Mumbai	48	51	53
Nagarjuna Univeristy, Vijayawada	19	na	38
National Institute of Mental Health and Neuro Sciences, Bangalore	50	33	40
National Institute of Technology, Tiruchirappalli	na	na	67
Pondicherry University, Pondicherry	21	9	47
SNDT Womens University	22	48	52
Sree Chitratriunal Institute for Medical Sciences and Technology, Trivandapuram	19	34	17
Sri Krishnadevaraya University, Anantapur	1	1	2
Sri Padmavati Mahila Viswavidyalayam, Tirupati	na	1	9
Swami Ramanand Teerth Marathwada University, Nanded	na	na	6
Total	1254	1136	1375

Source: University Annual Reports / Convocation Reports

Note : na - Not Available

