

Transformation in TNAU

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Sir/Madam,

Change is permanent and it is essentially required for an institution which aims to reach greater heights. This little document is a story about my attempt for the past three years to bring cultural and attitudinal changes and outlook in the minds of scientists of TNAU and changes in structural and functional aspects of management in the University.

The efforts have undoubtedly brought in substantial transmogrification in the Institution's functioning and management style. The benefits due to the metamorphosis that has taken place are perceptible. However, the question remains, 'Are the changes adequate?'. I can call the venture, whatever it is, is only partially successful and we have to go a long way. The individuals in the University have not changed much, may be due to want of inducements to think, encouragement and guidance and further, largely, the individual keeping their personal agenda over the Institution's agenda. Particularly, there is an urgent need for putting in place a 'Personnel Policy' (such as transfer policy) which must be complied with scrupulously for the benefit of all and the Institutions.

Overall, there are clear portents of positive changes. However, we are still at the lower rungs of transformation ladder. To make TNAU world class in this globalized context, progressive thinking and action are important.

In this brief account of what had happened in TNAU during my stint as Vice-Chancellor for past three years, I have told about the modest attempt I have made to transform the Institution and the outcome. With all humility, I would say, the outcome is only modest. This understandingly, puts greater pressure on future leadership and responsibility of the scientists to sustain these attempts into the future.

For this to be achieved, mature leadership at all levels of administration and progressive outlook of scientists are 'essential' and also leadership and scientists have to move forward together in a participatory decision making mode. The journey into the competitive environment may be long and arduous. But gritty TNAU must not show any sign of weariness or resignation. TNAU scientists must get hardened by battles of life and must be determined to face the fight ahead.

Finally, this documentation is needed for posterity to know the trajectory of growth of this great Institution. Also I hope that this mini - document may provide benchmark for the self-analysis and evaluation of TNAU in future.

Let us continue the crusade for a better and improved Agriculture.

C. RAMASAMY



Geared to go Global Transformation in TNAU

Dynamics of Agricultural Economy

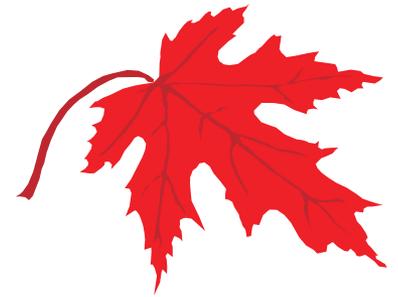
Present and future of agriculture as an industry is becoming more complex. Growing scarcity of water, declining soil fertility levels, climatic changes and its impact on agriculture, management of explosion of technology and knowledge in agriculture, globalised market for agricultural commodities and related market and price risks, rising demand for quality products from the consumers and growing strength of backward and forward linkages to agricultural production are the current challenges to all who are concerned with agriculture. It is time that Agricultural Education and Research Institutions address these new challenges and offer solutions to stakeholders.

In the past almost three years, Tamil Nadu Agricultural University (TNAU) responded to the emerging issues and designed plans and programmes and went into action.

Reinvention of Institutions

Will traditional management systems comprising rules, regulations, hierarchy, decision making process etc., in the Education and Research Institutions meet the new demands of the society? The answer is emphatic 'no' as each decision and action is to be carried out with high level of efficiency. An institution has to effect structural and functional changes to make it relevant to new economic and societal demands. The institution has to be highly competitive to grow further. It becomes essential to undertake reforms in all sub-systems of the institution such as governance, decision making framework, HRD, infrastructure, concept and methodology of education, research management, financial management, outreach, policy interfacing and marketing the institution's products and services.

Tamil Nadu Agricultural University (TNAU) did venture to have a deeper examination of its structure, functioning and



management systems and brought-in a series of reforms to make it a most efficient organisation.

TNAU : Vision for 21st Century

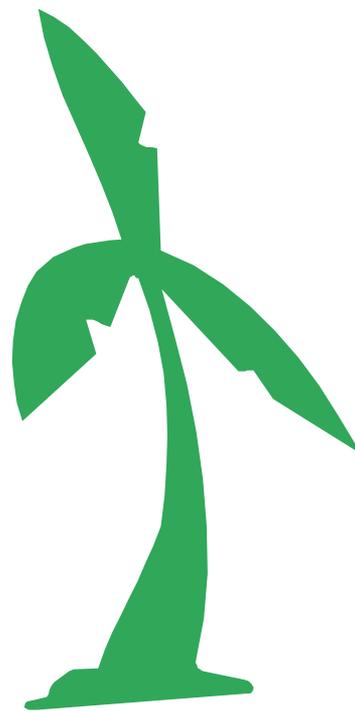
TNAU has been one of the leading institutions which contributed significantly for "**Green Revolution**" in the country. Tamil Nadu's agricultural development was largely due to technologies emanated from TNAU with major focus on food security and little commercialization so far. The 21st Century's demand is perceptibly different because of globalisation of agriculture. **TNAU hence totally took into 'professionalism' as the guide post for all the activities.** Vision was to take University on a high performance trajectory. Achieving global standards in education and research was the hallmark of the whole new approach. Many new initiatives were launched. The University has remanded its research to generate knowledge and technology to meet the needs of commercialized agriculture with the focus on 'improving the farm incomes'. Research has been redirected to meet the preferences and quality standards of high end markets. Attention is also paid to promote sustainable agriculture to meet food and environmental demands. The University has diversified its activities in terms of policy outreach, consultancy, training in hi-tech and precision agriculture, advising on agri-business and institution and industry-linkages. **The management system has been wholly revamped to function more efficiently.**

In Action:

1. Exercise in decentralisation

The concentration of decision making powers relating to financial allocation, manpower training, research, proposals for external funding, academic decisions, outreach activities, farm operations etc., resulted in sub-optimal performance. File movement through hierarchical route often resulted in frustration among scientists.

Decision making was decentralized from offices of Registrar and Director of Research to Deans of Colleges, Directors of various Directorates and Centres of the University. Purchase proposals were decided by the concerned Colleges, Directorates and Centers.





Deans were empowered to take decisions relating all academic matters at College level. Directors in-charge of Regional Research Stations acted independently with the set timeframe.

2. Ailed Finance, Reconstruction and Growth

Cut in Plan and Non-Plan to the tune of Rs.850 lakhs in the Revised Estimates for 2002-03, non-settlement of pensionary benefits to 203 pensioners, huge back-log of PF demand, for all most with a time lag of 6-8 months (about Rs.540 lakhs) and diversion of funds from externally aided projects to the tune of Rs.315 lakhs derailed the University finance.

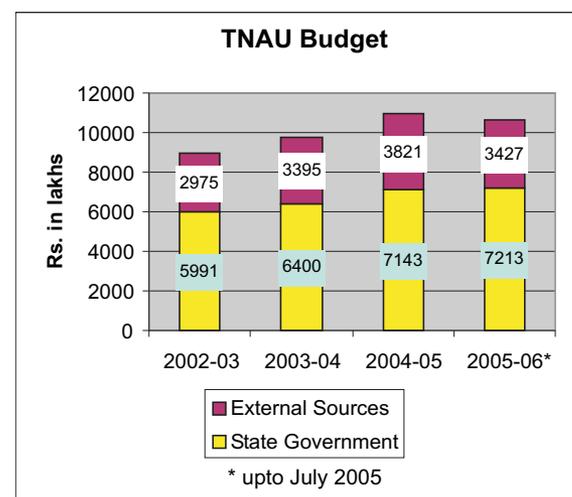
A closer interaction with State Government on placing demand for finance, filling up of sizeable number of vacant positions of Assistants Professors and Assistant Agricultural Officers in externally funded projects, prioritization of expenditure proposals, request for release of personal deposits of UPF from State Treasury Department, coupled with concerted efforts sensitizing scientists to mobilize research funds from external sources, constant monitoring of receipts and expenditure stabilized the University finance.

Frequent interaction with all persons in charge of budget, the Heads of Departments and Research Stations, University Officers and Administrative staff and guiding them in budget management helped to reconstruct the University finance and later for growth of the university.

3. Restructuring Education

'Quality of agricultural education' and 'competitiveness of graduates' constituted the foundation for restructuring education in the university. To achieve these, a series of measures were implemented.

- Curriculum restructured and the courses arranged in sequence of Basic Sciences (First Year), Applied Sciences (Second Year), Technology and Applications for problem solving (Third Year) and Institutional, Management and Entrepreneurial Courses including Village, Industry, NGO



and Government Departments Stay Programmes (Fourth Year)

- Syllabi was made flexible to incorporate new concepts and methodologies by the teachers. The syllabi is updated once in four years. One - tenth of the courses were offered in the Cafeteria mode - particularly commercial agricultural and tech courses left to the choice of the students.
- Evaluation system was modified with 10 per cent of the marks allocated for 'assignments' and 'class room interactions'. Assignments aimed to make students to be more innovative and creative and put more efforts for self-learning.
- 'Create best learning environment' was made as slogan to the teachers and education managers. One of the initiatives was to put learning materials (lessons - lecture schedule and notes, reading materials etc.) on-line and in CDs and make them accessible to students. As a consequence, the timings of computer centre, library, placement centres were extended according to the needs. For example, in the Tamil Nadu Agricultural University main campus, facilities are opened to students from 6 AM to 12.00 midnight. Students were motivated to buy text books and teachers encouraged to write good text books (insisting to have ISBN - numbers). Book exhibitions were organized with defined intervals to facilitate book purchasing and reading habits.
- Practicals were made more interesting instead being more routine. Following each practical class, students were given questions to answer and were made to understand the practical applications of these exercise to solve problems. Digestion and absorption of what was taught was given priority over record writing mechanically.
- Examinations were conducted as per academic calendar and evaluation of answer papers were completed within two weeks of final examination to declare the results in advance so as to enable the graduates to apply for higher education and for job market in time.



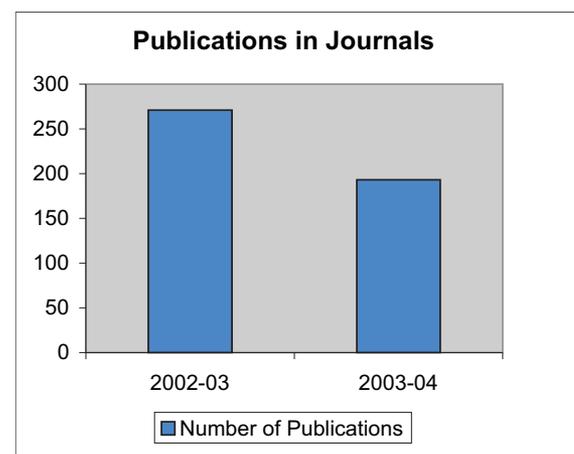


- Admission to UG and PG programmes were made in time. Enough publicity about the courses of the university was made and early start of the academic programmes attracted best students to Tamil Nadu Agricultural University.
- Deans of the colleges were empowered to make decentralized decisions on educational tour, day-to-day academic activities to facilitate the students learning process to be highly competitive.
- To make Tamil Nadu Agricultural University graduates globally competitive and to expose them to more professional opportunities, the University created alliance with many educational and research organizations and institutions to place the students, after the completion of course work, for pursuing their masters and doctoral research in the allied institutions, which include both International (CGIAR) and National institutions and both public and private sectors. TNAU is a partner in offering a course on 'International Agriculture' jointly with Cornell University and University of Agricultural Sciences, Dharwad for the past three years.

4. Research with social and stakeholder relevance

The syndrome of 'publish or perish' and 'have more research projects to save your skin' and 'research for research sake' have been predominantly influencing the agricultural scientists. First, genuineness of research and any research must have useful outcome in the form of a finding a new scientific phenomenon, a concept and methodology, a technology, a product, or any outcome which will be relevant to solve a problem challenging the individual or a society or an economy or a country, was emphasized to change the outlook of the scientists. **The concept of 'research with social relevance' was inculcated. As a second step, scientists were trained on identification and prioritization of research problems, and they were also guided on how to allocate available resources, finance, physical and human to go with prioritized agenda.**

Growing scarcity of finance for research was highlighted among the scientists and made them to realize the importance of



writing proposal for research funding. Repeated emphasis of this by Research Managers are showing a good sign of increasing number of externally funded research projects in the University.

While reviewing and closing the research projects, outcome and impact of the project were looked for by the Research Managers, parallelly sensitizing the researchers on the relevance of the project to the stakeholders. This has brought in a change in the minds of researchers on genuineness and useful outcome from a research activity.

Demonstration of research findings in the form of technology in University campuses and research centres are being emphasised repeatedly.

Monitoring and evaluation of research through 'Annual TNAU Scientists Meetings' and 'Scientific Workers Conference' have been focused towards identifying projectwise 'new knowledge' and 'new technology' for transferring them to both public and private extension system. This focus has inculcated a sense of the responsibility in the minds of scientists. Now they are more 'knowledge focused' or 'technology focused' or 'product focused' in their research projects.

5. Effective Outreach

It is a common complaint that large part of new knowledge and agricultural technologies evolved remain in the shelf meaning not all reaching the fields. TNAU adopted three strategies for effective transfer of knowledge and technologies: (i) strengthen the existing linkages with public extension system through new mechanisms (ii) seek external funds to expand TNAU's technology delivery points (iii) use IT technologies to disseminate knowledge and technology. To realize the strategy, well defined joint sittings were organized to incorporate new knowledge and technologies, in public extension literature and train extension workers in latest developments and opened six new Krishi Vigyan Kendras by getting additional resources from Indian Council of Agricultural Research through competitive mode. Currently, in 14 districts of Tamil Nadu





state, the University has established own extension centres and efforts are on to connect one more district under this network. Scientists in TNAU extension centres have been activated with better planning and implementation of training, field demonstration, input distribution etc. adding infrastructure in the form of new buildings, soil testing laboratory, new equipments, vehicles, land improvement and water resource development. Now, the extension centres are brimming with activities. Efforts are on for public - private partnership to create infrastructure for transmission of technical information to the stakeholders using IT.

6. Influencing Policy Decisions

TNAU as an apex educational and research institution has the responsibility to guide the state policy makers in agricultural development. The University has, hence, included policy interfacing as one of the mandates. A series of presentations in the form of development policies and strategies were made to key policy makers in the State Government and members of State Planning Commission. Policy proposals covered seed production and distribution, irrigation development, soil improvement, agricultural marketing and exports and alternative crop systems, bio-fuel crops, etc. Policy proposals were taken upto the level of Chief Minister, Ministers of Finance and Agriculture, Secretaries - Finance and Agriculture, Heads of Departments of Agriculture, Horticulture, Agricultural Engineering, and Agricultural Marketing and Agri-business. Several developments schemes were drawn up consequent to the policy interfacing efforts.

7. Business as Usual to Commercial Outlook

Besides aiming towards food security and sustainable agriculture, large scale of commercialization of agriculture, in the form of agri-business, is critical in current phase of agricultural development. Cost effective production of agricultural commodities in order to meet the demand from food, fibre, animal feed industries and exports must be the priority. Agricultural education, research and outreach programmes need reorientation to meet those emerging requirements. Accordingly, a number of steps were taken to change



the outlook of agricultural scientists towards business and commercial orientation. The prime focus was to repeatedly emphasise on marketing our technology, products, graduates and knowledge with global coverage. Quality standards were repeatedly reminded to the scientists. One can now see a perceptible change in the outlook of TNAU scientists in the form of more of business orientation.

8. Unemployment - Making it a Distant Past:

Until 2002, sizeable un-employment was prevalent among TNAU graduates. This, even, resulted in reduction in number of applications seeking admission in TNAU. For 2003 admission, we competed for best students with medicine, veterinary, biology and biotechnology including some courses in engineering and, we succeeded in attracting best students with higher cut-off marks. While the curricular reforms and quality teaching were ensured, equal amount of efforts were placed for marketing the graduates. Directorate of Students Welfare was revived and Director and Professors in the Directorate addressed 1200 companies, directly or indirectly related to agriculture and allied activities, visited leading agro and agri-based companies communicating to them of quality of TNAU graduates. Evening classes were introduced on self-supporting basis to prepare the students for competitive examinations in agriculture R & D, higher education, civil services, banking, information technology, call centres, etc. Coachings were offered to write GRE, TOFEL, etc. for graduates aiming to pursue higher education abroad. Local hospitality was extended to employers who come for selection of graduates under campus placement, which has become a very frequent feature. Since March 2003, a total of 629 graduates were selected for various jobs through interviews conducted by 126 firms, both public and private. Post-graduate admission was restricted to meet only the market demand.

It was unprecedented that in some of the job placement interviews during April-May, 2005, graduates did demand higher salary for various positions, thus that graduates have become increasingly empowered. Currently there is very little unemployment among TNAU graduates. Directorate keeps pursuing to strengthen the





activities to enhance the quality of TNAU graduates and prepare them as a increasingly better product to market them. The teachers were often advised to churn out globally competitive marketable graduates. 'Market TNAU graduates or Perish' become the slogan in the teaching campuses of the University.

Special courses were offered on career planning, personality development, spoken English and entrepreneurship in order to make more graduates as agri-preneurs.

9. IPR - Awareness and Adoption

Intellectual Property Rights (IPR) has assumed more importance in the globalised context of world economy. Competitive research and owning the rights of research output has become order of the day. Agriculture must not stay behind as compared to all other sciences as, earlier, there was little effort only made to ensure IPR in agricultural field. WTO provisions require stricter adoption of IPR for agricultural inventions. Creating awareness and encouraging scientists applying patenting of TNAU inventions were pursued relentlessly. Consequently, many scientists are in the process of applying for patents. A separate committee has been constituted to promote this process. At Master's degree level, a new course on IPR has been introduced. Special training is organized on how to proceed with IPR. A new trade mark was created for the university.

10. HRD: As an Investment for the future

Constant improvement in the quality of human resources was considered as one of the key strategies for the development of the University. The scientists have been consistently encouraged to participate in national and international professional meetings and trainings to acquire cutting edge knowledge and technology and to get contact with the professional groups working in respective areas of research. Participant scientists were guided to mobilize resources from external agencies and from externally funded research projects for HRD, to minimize expenditure to Tamil Nadu Agricultural University main budget. There was enormous response from scientists, and the participation in conferences and trainings almost



TNAU Trade Mark

doubled. **This effort has led to developing linkages with a wide range of leading scientists and R&D institutions. The key outcome of this strategy has positively impacted in terms of nearly trebling of research grant proposals, submitted to various agencies and significant improvement in quality of teaching. This kind of broad-basing has laid a strong foundation for continuous influence on quality of research and education.**

11. Focused Investment on Infrastructure

Scarcity of financial resources has always crippled infrastructural development in the University. We designed the following framework:

- i. Specific grant proposals for building infrastructure were submitted to ICAR, DST, DBT, State Government (under Part II Plan Schemes), the Rockefeller Foundation, Medicinal Plants Board (GOI) and other agencies. Laboratory capacity was enhanced with one new Bio-Technology Lab, one Micro-Lab for Entire University, Lab-facility for Medicinal Plants totaling about Rs.4 crores in a period of recent 18 months. Grant of Rs,.4.50 crores were obtained from ICAR to building and / or equip class rooms laboratories, hostels, sports facilities, etc. Libraries were strengthened by getting a special project funding from ICAR. And 60 new internationally recognized on-line foreign journals were subscribed and connected to all Teaching Campuses and Research Stations of the University.
- ii. Student's contribution paid as Library Fee, Computer Fee, Hostel Fees, etc. were exclusively used for respective purposes without diversion for other demands. The result is a very impressive in terms of improved facilities. Particularly there was a significant jump in computer facilities.
- iii. Funds available in hundreds of research projects and funds generated under self supporting course programmes were pooled to create prioritized and long-felt needs. **One such example is the creation of 'Technology Park' with an investment of Rs.1.50 crores in the main campus. There is a proposal to build a bridge across in a busy road bisecting**



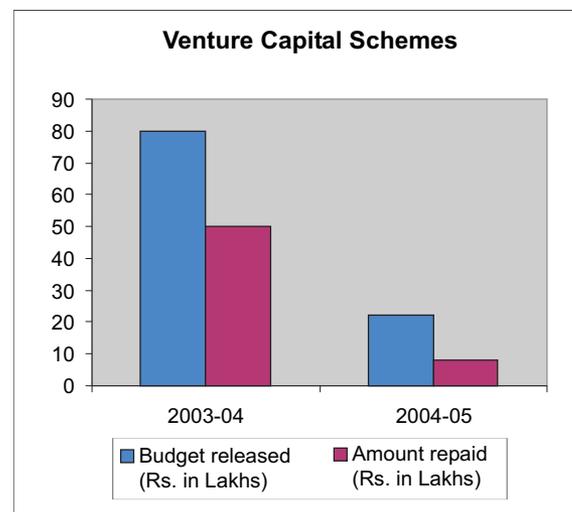


TNAU main campus. Infrastructural strengthening of Placement Centres in various campuses were accomplished under prioritized investment.

- iv. A Venture Capital Scheme (VCS), was designed and implemented as an unique approach not practiced in other State Agricultural Universities. Under the scheme, individual departments and research stations proposed schemes for funding to produce additional quantities of farm inputs such as seeds, bio-fertilizers, bio-pesticides, bio-control agents, vermi compost, to expand horticultural nursery and to offer paid trainings. A corpus fund, created as education and research development fund sourced under institutional charges of externally funded research, training and operational research projects was the main source of finance to support VCS. The funds were given as interest free loan repayable in three years. The beneficiaries under the scheme were advised to plough back surpluses to build infrastructure in the respective units of the University. The Regional Research Stations got empowered under VCS and improved their infrastructure such as lab facilities, irrigation structures, farm fences, roads and vehicles.
- v. Mobilising funds from students fees and self-supporting courses, an expanded and most-modernised computer centre has been created and thrown open to students. In each department, adequate computer facility is in place for the use of post graduate students.

12. Professorship - Visa for Research Resource Mobilization

Earlier, most researchers depended on financial support from University main budget for undertaking research projects. With increasing gap in budgetary provision for research from conventional sources of funding, professors in the university were motivated to write more and more proposals for research grants from national and international funding agencies. During the past three years 256 projects were obtained from various sources. This has facilitated scientists with comfortable amount of funds to meet



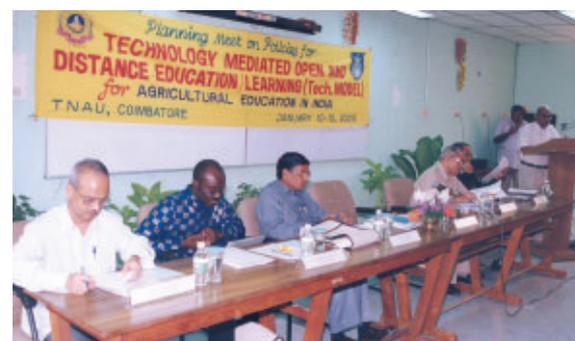
operational cost and improve research infrastructure, particularly laboratory equipments and computers. Eternal grants catalysed the researchers to attend national and international science meetings, resulting in larger interface of Tamil Nadu Agricultural University scientists with international scientific community resulting in more alliances in research. Additional advantage was that the researchers could hire research assistants to assist the scientists in fields and laboratories. At the University level, this process helped to solve problem of technical manpower shortage.

13. Reaching the Unreached

It is vital to give shape to a performing agriculture. The current system of agricultural education at the University level offers education, such as B.Sc., B.Tech., M.Sc. and Ph.D. courses only through a formal channel. These graduates move as Agricultural Extension Officers, Research Scientists, other high end jobs and entrepreneurs. A large section of people who are practising agriculture and other allied activities do not have a minimum of knowledge of scientific agriculture.

They include leading farmers, commercial commodity growers (cotton, sugarcane, banana, and coconut growers, livestock and poultry farmers) seed producers, dealers in agro-chemicals (both wholesale and retail), agro processors and traders, persons who have basic degree in agriculture and want to acquire special knowledge and skills in areas (eg. such as landscaping, floriculture, mushroom production, etc). These are the people who have higher intensity of interaction with large number of marginal, small and medium farmers and even farmers with larger farm holdings and plantation managers.

To equip this set of people with knowledge and skills in scientific agriculture, Open and Distance Learning (ODL) programmes have been launched at affordable costs. The courses are, at present, certificate and diploma courses. Minimum education required is pass in sixth standard. During 2004-05 three certificate courses were offered. The courses planned for 2005-06 are six certificate courses, two diploma courses and two post graduate programmes.





There is a demand from agricultural, horticulture, veterinary, forestry, home science, agricultural engineering, food science graduates, who are either already employed or entrepreneurs, to pursue higher education. To meet this demand, post graduate degrees are offered through ODL system. There is a reasonable number enrolment for ODL courses. The dual mode offers scope to explore pluralism in agricultural education.

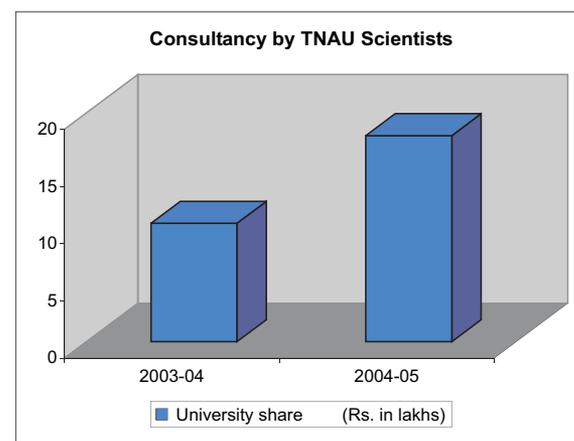
14. Incubating and Hatching Agri-preneurs

The agriculturally dependent enterprises are, to a large extent, practiced on subsistence and survival scale with lack of business orientation. On the other side of the fence, agricultural universities' substantive research output can be spared to users in the form of knowledge, skills technologies and physical products. **In order to showcase them, a technology park has been created in TNAU main campus at Coimbatore to practically show the transferable technologies and products (along with project reports) to create more entrepreneurs in the field of agriculture.** The park houses six big halls each with an area of 6500 sq. feet, a proposed mushroom mini-park, a proposed micro irrigation mini-park and a bioenergy mini-park.

Agricultural Technology Information Centre (ATIC) is located in the park to give single window services to all the stakeholders. ATIC also houses a retail point for TNAU seeds and inputs.

Consultancy

High end stakeholders look to the University for technical guidance and support. This emerging demand embraces hi-tech and commercial horticulture, forestry plantations, bio-fertilizer and bio-pesticide production, hybrid seed production and processing, mushroom production and processing, medicinal plants production and processing, bio-fuel production, agricultural implements and machinery manufacturing, field testing of agro-chemicals, residue analysis, food processing and marketing, agro-processing, skill training, organic certification, organic farming, product development and market promotion, agricultural project report preparation, etc.



University scientists offering consultancy have been encouraged. The consultancy service sharpens scientists minds; is a two way channel to sell TNAU technologies and receiving feed back on the strength and weaknesses of TNAU technologies, products, and services; and to fill in the financial kitty of University. In the past two years, 84 consultancy projects were undertaken by the scientists. There is a growing trend in this activity.

Build Leadership

Among Indian scientists, leadership quality is a missing link. Right kind of leadership is critical to achieve higher productivity at the individual level, but also needed to enhance organizational performance. A conducive climate was made to prevail in the University through measures such leadership training, decentralization of administrative and financial powers and setting appropriate norms and framework for administration. Improvement in leadership capabilities is more visible now.

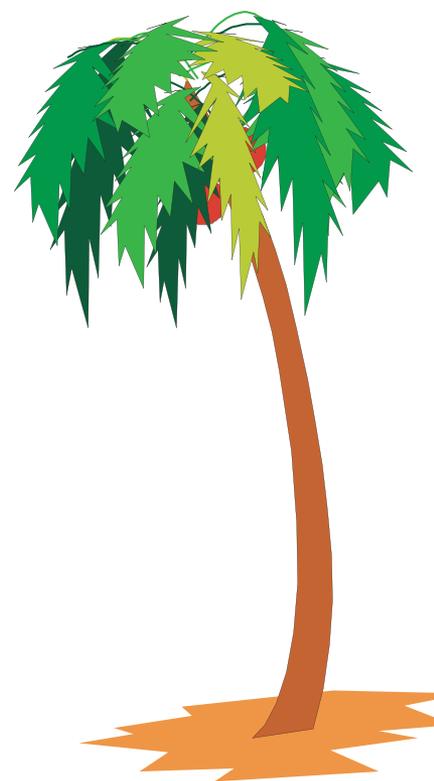
Taking Gender into Development

Some body said, "Science is science and to separate it into two sexes is to emphasise values in them that are not science". Strength of women scientists in the Indian Universities is poor. In the past few years, B.Tech. courses of TNAU attracted more girl students. On the new recruitment front, women scientists constituted 43 per cent in the total recruitment during 2004 and more than 50 per cent supporting staff are women. Thus **TNAU has a clear cut vision of promoting gender equity.**

Emerging Philosophy

How will Tamil Nadu Agricultural University tread into the future? What are its new philosophical orientation consequent to the changing socio-economic environment not only in the nation and across the globe?

- TNAU declares that 'it is an Institution without fences'. It constantly pursues making new alliances with more and more





institutions to strengthen each other in development activities.

- The University aims to become a world class institution. Now the institution attempts to define and make output which have world class features. Approaches and processes are redefined on constant basis and action initiated.
- TNAU has many milestones to cross; our scientists are changing themselves to be more patriotic and plan to make their presence more worthy.
- The objective of the new initiatives in the university is to present finest products, TNAU brand, ultimate in comfort and convenience and stakeholders are expected to witness a stunning array of products that can make a difference.

"With small legs, we can still make huge steps"



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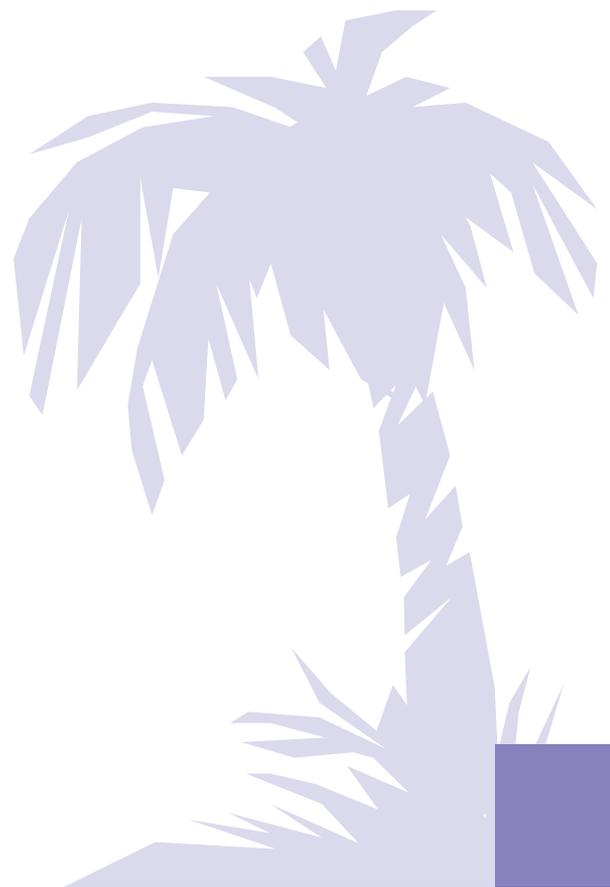
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Geared to go Global