2013-2014

ANNUAL REPORT

TAMILNADU SCIENTIFIC RESEARCH ORGANISATION
PUDUKKOTTAI
TNSRO

TAMILNADU SCIENTIFIC RESEARCH ORGANIATION

#39,MURA BHAVAN,KOODAL NAGAR,RAJAGOPALAPURAM POST
PUDUKKOTTAI-622003,TAMILNADU,INDIA.

ANNUAL REPORT 2014

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17th Annual Report

Forward

TamilNadu Scientific Research Organization (**TNSRO**) is a registered non-governmental voluntary organization under Indian trust act on 31.10.1997. The institution is working for the application of science and technology in rural Arimalam block, Pudukkottai dist. Our main aim is to conserve our nature and propagate the simple scientific techniques for rural prosperity among the rural and scientific community since 1997. Together with various organizations, we are organizing so many programmes related to the subjects among the rural target groups. We have successfully completed Govt. sponsored programmes and few programmes by our own contribution. Most of the awareness camps were held in remote villages at Arimalam block and overall dist. Besides we are working to promote Health & Sanitation, Environmental conservation, Biodiversity conservation, Science popularization, Knowledge revolution, Sustainable Agriculture, Rural Development, Disaster risk management,EDP training, e-village and Research. And also we are imparting national and international level observation days. Our former honorable president of India Dr.APJ.Abdul Kalam appreciated our institution for the efforts and services on 2003. Our organization has received Best Institution Award (2007-2008 and 2009-2010) for Biodiversity Conservation Activities from Peace Trust Dindigul / Regional resource agency, Ministry of Environment and Forests, Govt. of India.This 2013-2014 period is a truly one of the big mile stone of our institution. Because our institution has received Govt of Tamilnadu Best Institution Award (Ariger Anna Award-State First Prize) for 2011 environmental conservation and educational activities. Many of the programmes closely benefited to the community. I express my hearty thanks to all donors, Govt.departments,Panchayat raj institutions, Townpanchayat, Arimalam, NGO friends and our institutional members for their valuable involvement for our achievements.

S.Vijikumar
Director

We have great pleasure in presenting you 2013-2014 annual report of **TamilNadu Scientific Research Organisation** (TNSRO).TNSRO is a registered institution, which is duly registered by the govt. of Tamilnadu under Indian Trust Act. TNSRO was started on 1997 by a group of social and scientific volunteers for the welfare of down trodden people. An institution has carried outstanding multi disciplinary activities in the field of science and society development. TNSRO has got registration from Income Tax department for 12A and 80G exemption under act 1961. TNSRO is a catalog organization working for the development of lower strata through the scientific application. Our organization to promote the advancement, transfer and sharing of scientific knowledge, science education, raise public awareness of sustainable development issues by launching co-operative activities with major groups.

TNSRO created a greater impact through various types of programmes in different field with the aspects of science and society development. Research and development programmes for villages. i.e. Water resource management, health and hygiene, forest and environment management and social welfare of the rural people. And also TNSRO has been organizing seminar and training workshops related our target issues. Publish and co-publishes books, reports and documents collection for information services, creates and supports other research and social networks of co-operating institution. A multi disciplinary team of TNSRO workers along with the experienced technical and other supporting staff are now pursuing their research and development, social awareness programmes in view of the various development problems of the target area.

The people of Pudukkottai dist. are economically, socially and educationally very backward, it is officially announced by the Govt. of Tamilnadu most of our target groups are belongs to SC/ST/MBC and their families earn livelihood by working as agricultural and constructional labours. The organization is encouraged in the service of the society by popularizing and enhancing public and students understanding of modern science & technology through interactive, popular lecture, exhibit, science club and research activities, thereby creating a scientific temper and social strength.The other sphere of our activity involves planning organization and contact of innovative activities towards education, Social Welfare, Health and Medicine, Rural Development through the scientific approach. The organization is

thus involved in the planning organization and execution at rural development programmes.

The overall objective at the TNSRO is to provide expertise and assistance to rural maser in building their capacity to reduce poverty, tackle environmental problem, and assure responsibility for their health and pursuer education. The organization has developed infrastructures consisting at social workers, medical personals, and Para-medicals, to act with a holistic approach. Since India's seventy percent population lives in villages, the key to its long term growth and all round development lies in the development at its rural sector. Despite India's massive development achieved during the last decades, vast number of people still lives in object poverty, often without accepts to basic health care education, clean drinking water and sanitation, employment opportunities.

2013-2014 has been a significant year in the evolution of TNSRO. New research and training facilities were created at our organization. Our various work summarized in this report. The generous support of numerous government and non-governmental agencies, philanthropic organization has been invaluable support to worthwhile our all projects. Our sincere gratitude goes to all or them.This report was compiled by Mrs.V.Muthulakshmi Project officer and workers of the organization. The design and printing was done by Lissan Printers Pudukkottai. We owe a deep debt of gratitude to all of them. Above all, our indebtedness goes to the distinguished trustees and staff of TNSRO. Who have to generously made available their precious time and vast knowledge and experience to guide the work of the Institution.

Senna auriculata(L.)Roxb.

Azolla pinnata pit

I. Organization Profile

1	Name of the Organization	**TAMILNADU SCIENTIFIC RESEARCH ORGANISATION**
2	Acronym	**TNSRO**
3	Registered Address	No.11, NAGAPPA ROAD, **ARIMALAM** – 622 201. Pudukkottai ,TamilNadu
4	Administration office Address	No. 39,Mura Bhavan,Koodal Nagar Rajagopalapuram Post,Pudukkottai-622003 TamilNadu,India
5	Phone Nos.	04333-261088, 9952886637 ,9894217573
6	E. mail Website	tnsroindia@gmail.com www.tnsroindia.org.in
7	**Legal status** (a) Nature of the organization (b) Registered Act (c) Regd.No. (d) Place of Registration	Registered Voluntary organization TRUST Indian Trust Act 1982 No:542/BK4/97 dated: 31.10.1997. District Registrar Office Pudukkottai
8	**Income Tax Registration** (a)Tax Exemption Registration (b)80GG Registration No. (c)12AA Registration No. (d) Place of Registration	 1961 6162E(33)/2002-03, 29.10.2002. 6162E(33)/2002-03, 29.10.2002. Commissioner of Income Tax-I Tiruchirapalli.

	(e) **PAN Card No.**	**AAA TT 9322J** dated: 04.11.1997
9	**Affiliation**	
(a)	For vocational Education	Bharat Sevak Samaj, National Development Agency Promoted by Govt; of India. AffiliationNo: TN 598/2006 Dated: 28.8.2006
(b)	For Science Popularization	Vigyan Prasar, Dept. of Science & Technology, NewDelhi. Affiliation No: V2919001/99 Dated: 30.01.1999.
10	**Banking Details** Name of the Bank A/c. No. Type of A/c Branch Code IFSC /RTGS Code	 **Indian Bank (IB)** **850149667** **S/B** **01815, Arimalam** **ID IB 000 133**
11	**Membership**	Member in Tamilnadu Federation of voluntary Agencies, Chennai Regd.No.718/2007 Member in Network for Rural Development , Pudukkottai Dist.
12		NGO Partnership system,Planning Commission ,Govt of India. **Unique ID.TN/2010/0031352**
13	Chief Functionary/ Director	**Dr.S. VIJIKUMAR** Director, Tamilnadu Scientific Research Organisation No. 39,Mura Bhavan,Koodal Nagar Rajagopalapuram Post,Pudukkottai-622003 TamilNadu,India

II.Objectives

- To promote popularization of science & technology among the public and students by way of organizing awareness programmes, seminars, lectures, exhibitions, training Programmes and research activities.

- To identify areas for the applications of science & technology for the developmental needs, in particular, to the prevailing conditions of backwardness, rural, unemployment and poverty.

- To form and maintain farmers field schools, farmer's science clubs, students science club and youth clubs.

- To formulate and implement any successful environmental programme it is necessary to make it socially relevant

- To institute awards & fellowships for distinct fellow in the field of environmental conservation and science popularization.

- To formulate and implement the community based health promotional programmes.

- To conserve our biodiversity through the effective implementation plan.

- To promote and conduct research and development programmes in the field of health, environment, agriculture, education etc

- To publish research journals, books and local community news paper in the view of promotion of environmental science.

- To encourage the rural community in Sustainable Agriculture through Natural farming.

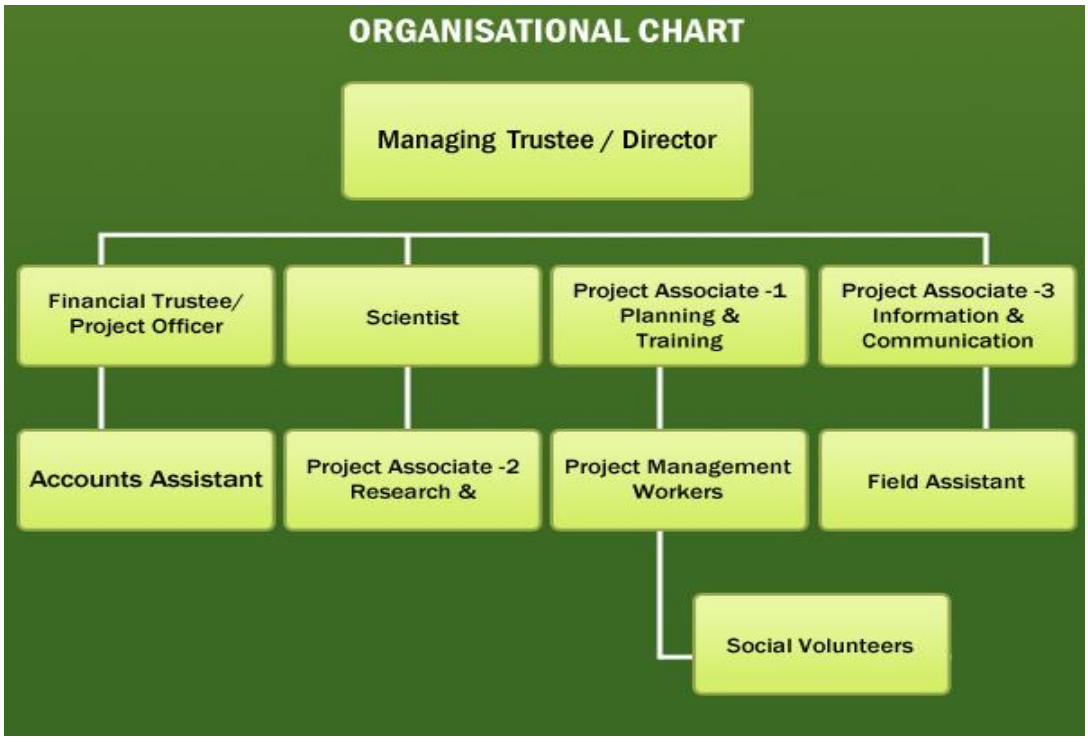
Current Target Area: - Pudukkottai District and TamilNadu.

Major Target Groups: - Rural Communities, Small Marginal Farmers, Land less Farmers and labourer , Students, Youth groups, SC/ST weaker sections, Rural Teachers, Women groups, Techno entrepreneurs, Innovation groups, BPL groups, Children groups and under privileged groups etc.

III.Board of Managing Committee

S.No.	Name	Address	Qualification	Designation
1	Dr.S.Vijikumar	No. 39,Mura Bhavan, Koodal Nagar Rajagopalapuram Post,Pudukkottai-622003, TamilNadu,India.	D.Sc.(A.M.) FNVA.,	Director/ Managing Trustee.
2	V.Muthulakshmi	No. 39,Mura Bhavan,Koodal Nagar Rajagopalapuram Post,Pudukkottai-622003 TamilNadu,India	D.M.L.T. NVA. Fellow	Financial Trustee.
3	T.Malar Rajan	Saralvilai,Muttakadu post,Kanyakumari Dist	+ 2	Trustee.

IV.TNSRO Hierarchy



V.TNSRO working fields

- Bose Science Society – Science popularization
- Bio tech for Villages – Village promotion through Biotechnology
- Climate change –IEC and Research Activities
- Conservation of Biodiversity.
- ICT for Rural Prosperity-Village Information Centre (VIC)
- Environmental Education and Conservation-Village Biodiversity School, Tree plantation, NEAC etc
- Vocational Education and Training - Self Employment Generation.
- Plant Science Research Division – Research
- Protection of Indigenous Culture and Knowledge System-Documentation and Research.
- Farmers Training School- Farmers Promotion and Development
- Publication and Library Division- Publish journals & Books, Library develop.
- Village Health Services-Free Medical Camps
- Disaster Risk Management- Training and Research

Management Committee meeting held during the period of 2013-2014 Total No. of meetings-12

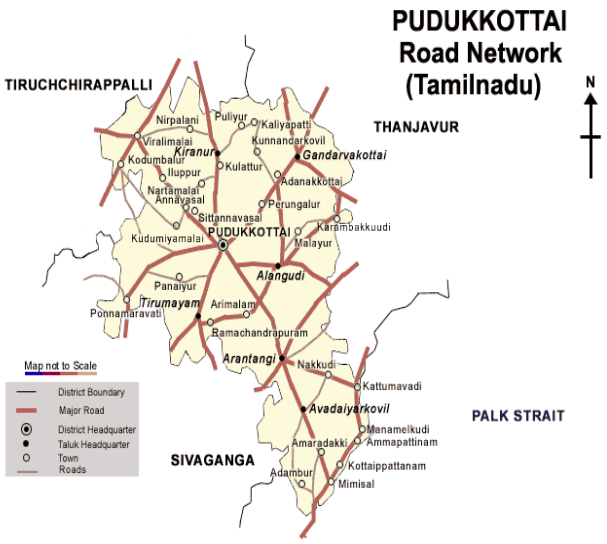
Resolution Number	Date	Subject
233/April/2013	5.4.2013	Approval of Year ending accounts 2012-2013 Approval of Establishment of TNSRO information centre at Pudukkottai.
234/May/2013	3.5.2013	Submission of Proposal to TNSCST,Chennai
235/June/2013	5.6.2013	Submission of Proposal to Peace Trust for NEAC
236/July /2013	5.7.2013	Strengthening the Research Journal and Submission of proposal to RRRLF,Kolkatta.
237/Aug/2013	5.8.2013	Approval of continuation of VBS project and Bose science society.
238/Sep/2013	3.9.2013	Discussion about NEAC environmental Programme-Ist round.
239/Oct/2013	5.10.2013	Discussion meets on future projects
240/Nov/2013	5.11.2013	Discussion meets on future projects
241/Dec/2013	5.12.2013	Discussion meets on NCSTC Ecowash Porject.
242/Jan/2014	5.01.2014	Discussion meets on NCSTC Ecowash Porject and review the activities of TNSRO IPMS
243/Feb/2014	5.02.2014	Discussion about NEAC environmental Programme-Final round.
244/Mar/2014	3.03.2014	Preparation of Annual A/c 2013-2014 and Discussion meets on ongoing projects.

VI.Staff Particulars

S.No.	Name	Qualification	Designation	Part/ Full Time
1	DR.S.Vijikumar	D.Sc.(AM)	Director	FT
2	Mrs.V. Muthu lakshmi	MLT, FNVA	Project Officer	FT
3	Mr.K.Ramanathan	M.Sc.,M.Phil	Research Associate	PT
4	Mr.S.Muthukkumarasamy	M.Sc.,M.Phil.,	Research Associate	PT
5	Mrs.G.Ramya	M.B.A	Project Associate 1 (Project Planning)	FT
6	Mr.A.Pavaraj	M.Sc.,M.Phil	Project Associate 2	FT
7	Mr.J.Christopher	CEE; ToT	Prog.cordi. Disaster & Biodiversity	FT
8	Mr.R.Ramakrishnan	B.Com	Accountant	PT

VII.Project Area Details

District Profile



Pudukkottai District was formed on 14 January 1974 by merging Pudukkottai revenue division of Trichy District and Arantangi and Avudayarkoil taluks of Thanjvur District. The district is bounded by Tiruchirapalli in the North and West, Sivagangai District in the South and Bay of Bengal and Thanjvur District in the East. The district lies between 9′ 50′ and 10′ 40′ of the northern latitude and 78′ 25′ and 79′ 25′ of the eastern longitude. It comprises 9 taluks, 13 development blocks and 764 revenue villages.

The district is generally a drought prone area an analysis of the rainfall data of the previous 10 years brings to light that expect for the three years of 1998, 2004 and 2005 the district witnessed deficient rainfall; and the deficiency ranged from 0.3 (1996) to 30% (2003).The total population of the district as per the 2001 census was

1459601 comprising 724300 males and 735301 females. There are 3 Major Rivers flowing through the district decides small rivers. However, they do not from the main source of irrigation as they are jungle streams and remain dry for most part of the year. As such, tanks are the major source of irrigation in the district, followed by canals and wells. The net irrigated area in the district is 70 percent of the net cropped area.The major food crop cultivated in the district is paddy covering around 1.02 lake hectares representing about 64 percent of the net sown area. Groundnut is the major oilseed crop grown in about 30500 hectares. The other crops include millets, pulses, sugarcane, banana, and cotton. The district is industrially backward. There is no industrially graded raw-material expect pockets of granite deposits. Irregular power supply and acute water shortage stand in the way of speedy industrialization. A sugar factory has been set up in the private sector which covers majority of the farmers growing sugar cane in the district.

Historical brief

Pudukkottai was formerly one of the princely states of India. It was under different dynasties during the first half of the 15th century and under Mughals till the 17th century. Thereafter Pudukkottai came under the suzerainty of the Thondaiman Kings who had reined the state till it was merged with the Government of India after independence. The Thondaiman Kings were noted for the able and clean administration. During their rule they have augmented creation of irrigation sources for agriculture, evolved a sound revenue administration, education systems etc., the palatial administrative buildings for public offices constructed during their period are still remaining as monuments and serving the same purpose till date. The noted British administrator Alexander Loftus Tottenhem was the administrative executive under the Thondaiman rulers. He evolved the famous "Tottenham System" of file maintenance and other office procedures, which are still being followed by government departments with a little change then and there.

Revenue Administration

There are two revenue Divisions namely Pudukkottai and Aranthangi. There are nine taluks and thirteen Panchayat unions with 763 revenue villages and 498 village panchayats. There are also two Municipalities and eight town panchayats in this District.

Soil Type

According to Geological reports rocks, granite, stone and limestone occurs in this District. White clay and other building stones are available in plenty.

Industries

Pudukkottai is one of the industrially backward district of Tamil Nadu. The total numbers of small-scale industries are 634.

Historical Architectural Monuments

There is one famous Shiva Temple at Avudaiyarkoil. It is internationally famous for its beautiful stone sculptures. Viralimalai in Madurai - Trichy High way is a pilgrim centre where a beautiful temple is situated over the hilltop for Lord Murugan.

Sithannavasal is a tourist attraction in this district, where one can see the rock beds and cave temples erected during the Samana period.

Road Communications

This District is sufficiently linked with other parts of the country with Railways and Highways.

General

The nature of the district is purely agrarian with the major crops Paddy, Banana, Sugarcane, Groundnut and cashew nut. There is an All India Pulses Research Station at the village "Vamban" and one State Agricultural farm at Kudumianmalai.

Predominant economic activities of the district

Agriculture is the predominant economic activity being pursued in the district. There are no major industries in the district. Dairy and goat/sheep rearing are the allied activities pursued in villages. Synthetic gem cutting is being done in Viralimalai block of the district. Stone and granite quarrying are the other economic activities worth mentioning.

Major food / commercial and plantation / horticulture crops

Paddy is the major crop cultivated in the district covering around 102750 hectares forming 64 percent of the net sown area followed by groundnut in an area of 30544 ha. The other major crops are sugarcane, millets, gingelly, cotton and pulses. Among the horticulture crops, cashew nut tops the list covering an area of about 15432 ha. Followed by coconut in an area around 4067 ha. Further, the district has around 6418 ha under fruit crops like mango, banana, acid line, etc. Vegetables are also cultivated in an area of 2586 ha. The area under sugarcane has been increasing since the commissioning of a sugar factory under private sector in the district.

Special/additional/other features of the district

Other economic activities include stone quarries, granite quarries, coir rope making, marine fishing, gem cutting, small business, mat weaving, pottery, pith work, etc.

Other factors affecting the district

The district is generally a drought prone area. The industrial progress in the district is sluggish due to low capital formation and absence if any raw material.

Conservation of RET plant scpecies

VIII.PROGRAMMES /ACTIVITIES -2013-2014

1.3rd National Conference on Natural Sciences and Award Presentation Ceremony

TNSRO has established Bose Science society at Pudukkottai for extension of its activities on scientific temper and encourage the research work among students' scholars and faculty since 1997. The society was officially affiliated with Vigyan Prasar,DST,Govt of India. The society was enrolled young scientist as a fellow member, till date more than 115 members enrolled in this society. In 2013 BSS, TNSRO and Bon secure College for women have jointly organized one day National Conference on Natural Sciences at college premises, Thanjavur. More than 25 research scholars were presented their valuable research works by oral and poster mode of presentation. More than 100 participants were attended the conference. Valuable invited talks are also given by the experts. This program was created a great opportunity for research scholars, and science students. Sharing their research work, idea of innovation thoughts and the way of the honorable award for fellowship. Many young scientists got the fellowship award. Every year BSS announce annual awards for best research scholars and scientist in the field of science including scientific Tamil. The following awards were distributed by guests to the winners.

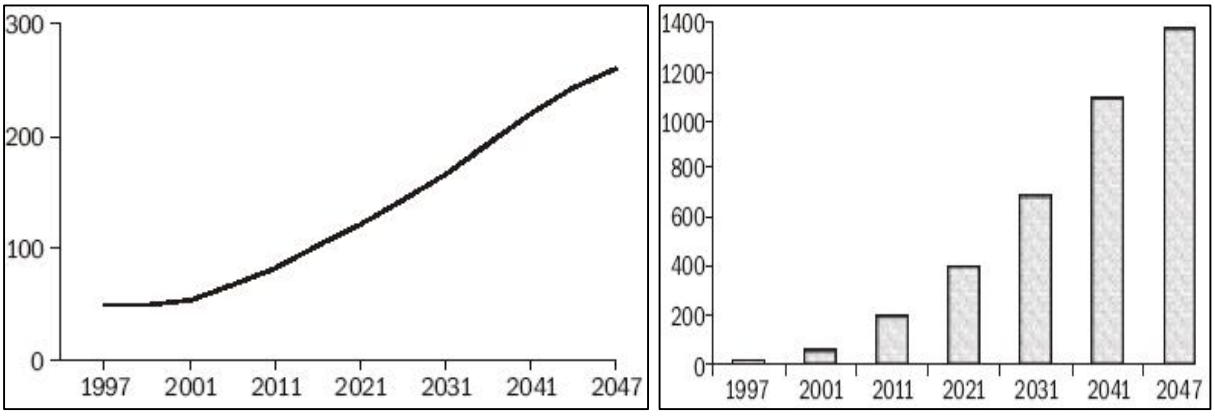
- **JC BOSE MEMORIAL AWARD for Plant Science**
- **INDIRA PRIYADHARSHINI AWARD for Environmental science Research**
- **SIR CV RAMAN MEMORIAL AWARD for Physics**
- **MEGHNAD SAHA YOUNG SCIENTIST AWARD for Physics**
- **PROFESSOR C.N.R. RAO AWARD for Chemistry**
- **RAMANUJAN MEMORIAL AWARD for Mathematics**
- **PROFESSOR MS SWAMINATHAN AWARD for Agriculture**
- **ALAN TURING AWARD for Computer Science**
- **HAR GOBIND KHORANA MEMORIAL AWARD for Biology**
- **SUNDERLAL BAHUGUNA AWARD for Environmental science (con)**
- **SUSHRUTA AWARD for Medical science**
- **THIRUMOOLAR AWARD for Scientific Tamil**
- **PROFESSOR RAMDEO MISRA AWARD for Forest Ecology**
- **Dr. S R RANGANATHAN AWARD for Library and Information science.**
- **Dr.VERGHESE KURIEN AWARD for Veterinary Science (Animal Nutrition).**

2.Solid Waste Management Project

The UN proclaimed International decade "Water for Life 2005-2015" directly reinforces and urges countries to meet Millennium Development Goal (MDG) under MDG 7, which calls for to ensure environmental sustainability. It is directly linked to drinking water and basic sanitation and specially calls for to: "Halve by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation".

The UN General Assembly declared 2008 as the International Year of Sanitation to put the spotlight on this issue, recognizing the impact of sanitation on public health, poverty reduction, economic and social development, and the environment. The goal is to raise awareness and to accelerate progress towards the Millennium Development Goal (MDG) target to reduce by half the proportion of people without access to basic sanitation by 2015. (http://www.un.org/waterforlifedecade/)

Urbanisation brings prosperity but at the same time creates environmental problems like pollution, accumulation of solid waste and poor sanitation. Use of tetrapacks, plastic plates, cups and bags, tin cans and similar throw-away items has increased in the last decade as has the amount of organic waste. In many Indian states, rural areas are fast catching up with urban areas in generating solid waste. Lack of proper waste collection, segregation and management systems and poor sanitary conditions in both urban and rural areas are aggravating health problems. In this context, solid waste management is an area of challenge and of innovation for urban planners and city corporations. Small and big pilots, with different degrees of sustainability and success, are operational in many parts of the country.



a) MSW Generation (Million tones/day) **b) Land Requirement (in sq.km)**

Waste generation trend and implications for Land requirement in India

A zero waste management (ZWM) project by TNSRO NGO and the Town panchayat Arimalam by Govt.of Tamil Nadu grants. Town panchayat Arimalam is an example of a successful solid waste management programme and its benefits.

ZWM is a system of managing solid wastes that strives for maximum waste recovery through recycling and reuse, aiming at zero waste generation.

- The system's strength lies in segregation of waste at the source leading to maximum recovery of resources, minimization of waste and reduction in area required for storing and composting.
- It minimizes pollution of ground water and air by doing away with disposal of wastes at dumpsites and landfills.

Zero waste management integrates the informal recycling sector (ragpickers and waste collectors) into the solid waste management system providing opportunities for income generation

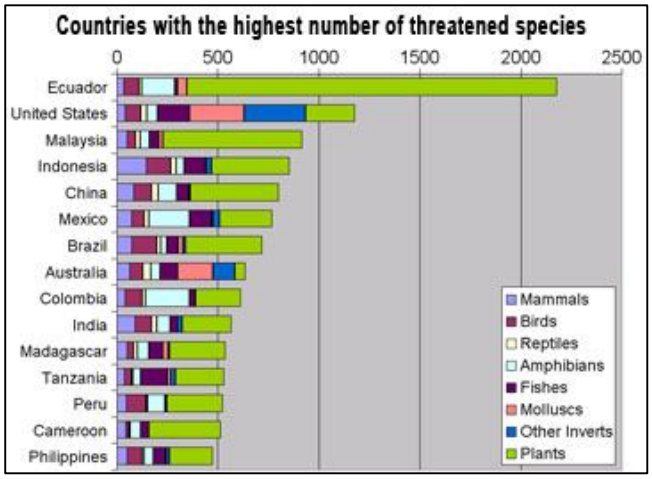
Arimalam Town panchayat was sanctioned our project on solid waste management through trained women groups. These trained groups collecting garbage from each and every household. 15 wards selected for this project, initially 9 workers selected, then our requisition additionally 6 workers were selected for this project with order of town panchayat. Now the workers are collecting the solid wastes from the houses through tracks and disposed the garbage out side of the village. The panchayat is prepared natural fertilizers from this garbage. This project is very useful to our village people. We are creating the village with clean and green. The project was successfully completed and reported to the sponsoring agency.The Arimalam solid waste management project is now managed by federation of SHGs supported by Arimalam Town panchayat.

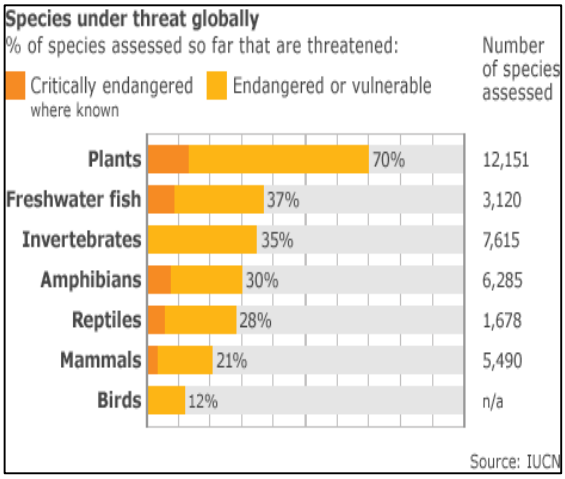
3. Environmental Conservation

National Environmental Awareness Campaign (NEAC) -2013-2014
Biodiversity Conservation

India is the seventh largest country in the world and Asia's second largest nation with an area of 3,287,263 square km. The climate of India is dominated by the Asiatic monsoon, most importantly by rains from the south-west between June and October, and drier winds from the north between December and February. From March to May the climate is dry

and hot. India has a rich variety of wetland habitats. The total area of wetlands (excluding rivers) in India is 58,286,000ha, or 18.4% of the country, 70% of which comprises areas under paddy cultivation. A total of 1,193 wetlands, covering an area of about 3,904,543 ha, were recorded in a preliminary inventory coordinated by the Department of Science and Technology, of which 572 were natural (Scott, 1989). India possesses a distinct identity, not only because of its geography, history and culture but also because of the great diversity of its natural ecosystems.The panorama of Indian forests ranges from evergreen tropical rain forests in the Andaman and Nicobar Islands, the Western Ghats, and the north-eastern states, to dry alpine scrub high in the Himalaya to the north. India contains a great wealth of biological diversity in its forests, its wetlands and in its marine areas. This richness is shown in absolute numbers of species and the proportion they represent of the world total. The protection of wildlife has a long tradition in Indian history. Wise use of natural resources was a prerequisite for many hunter-gatherer societies which date back to at least 6000 BC. Extensive clearance of forests accompanied the advance of agricultural and pastoral societies in subsequent millennia, but an awareness of the need for ecological prudence emerged and many so-called pagan nature conservation practices were retained. As more and more land became settled or cultivated, so these hunting reserves increasingly became refuges for wildlife. India contains 172 species of animal considered globally threatened by IUCN, or 2.9% of the world's total number of threatened species (Groombridge, 1993). These include 53 species of mammal, 69 birds, 23 reptiles and 3 amphibians. India contains globally important populations of some of Asia's rarest animals, such as the Bengal Fox, Asiatic Cheetah, Marbled Cat, Asiatic Lion, Indian Elephant, Asiatic Wild Ass, Indian Rhinoceros, Markhor, Gaur, Wild Asiatic Water Buffalo etc.

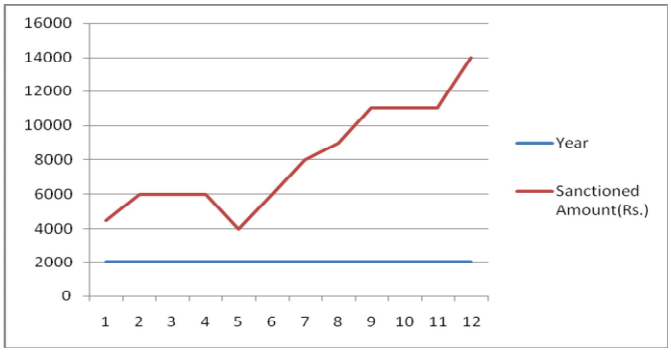




Global scenario of species

The National Environment Awareness Campaign (NEAC) launched by the Ministry of Environment & Forests, Government of India in 1986, aims to create awareness on environmental issues among a wide group of stakeholders. The Theme for 2013-

14 is 'Biodiversity', keeping in view that the current decade (2011-2020) has been declared as the United Nations Decade on Biodiversity and United Nations Decade for Deserts and the Fight against Desertification. With India hosting the Eleventh meeting of the Conference of the Parties (CoP-11) to the Convention on Biological Diversity (CBD), from 8- 19 October 2012 in Hyderabad, India, it is considered an opportune time to showcase the wide array of biodiversity in the country and the conservation measures adopted thereof. Our organization was organized 3 day NEAC programme with the global and national theme of Biodiversity Conservation. The programme activities are like seminar, training workshop competition, debate, cultural also conducted at Arputha college premises and 2 different villages. The rare herbal plant saplings were distributed to all participants. Totally 1000 and above participants involved in this programme. Special lectures delivered by the eminent scholars through LCD. Prizes distributed to all winners.



Previous NEAC Programme Grant Details

Year	NEAC National Concept	Sanctioned Amount(Rs.)
2013-2014	Biodiversity Conservation	14,000.00
2012-2013	Biodiversity Conservation	11,000.00
2011-2012	Forest for Sustainable livelihood	11,000.00
2010-2011	Forest Management	11,000.00
2009-2010	Climate Change	9,000.00
2008-2009	Climate Change	8,000.00
2007-2008	Bio diversity conservation	6,000.00
2006-2007	Solid waste Management	4,000.00
2005-2006	Bio-Medical waste Management	6,000.00
2004-2005	Solid waste Management	6,000.00
2003-2004	Water Elixir of life	6,000.00
2002-2003	Water Elixir of life	4,500.00

4.TNSRO Institute of Paramedical Sciences

TNSRO Institute of paramedical sciences is established by TNSRO on 2006 and it was affiliated and recognized by Bharat Sevak Samaj, Central programme office, Trivandrum.We have great pleasure in presenting you the report of **TNSRO Institute of Paramedical Sciences** for the various diploma programmes. TNSRO, is established for training, gainful employment, workplace education and career progression. The idea of a community institution is new to India and we see this as an opportunity to develop models of tertiary education more suited for specific geographical or other communities. In future, institutions could effectively provide alternate or additional educational routes for large numbers of people. Feedback from the members of the community on what they want to learn or what they want to teach will be useful. An institute has a duty to develop community resources of knowledge while also disseminating such knowledge to the members in the most effective and convenient way.

Now our Institute to offer Certificate and Diploma programmes in paramedical sciences. We are starting with some other vocational programs also.Vocational education programmes are an alternative system of education which aims to empower individuals through appropriate skill development leading to gainful employment in collaboration with the local industry and the community.It helps in developing skills for employment and self employability particularly to the marginalized and underprivileged sections of society. Our institutions offer the advantage of skill programmes to local needs and state-based requirements by using approaches that will be most acceptable to workers in the given community. It will offer a range of programmes at an affordable cost to students of all ages, following a flexible modular pattern of course delivery. The nature of the programmes and their pattern delivery will depend upon the requirements of the local community which the college serves. Successful completion of modules will lead to certificates, Diplomas.

Unemployment status of India and other countries. (Source: Central Intelligence Agency, US)

Unemployment Rate in India decreased to 3.80 percent in 2011 from 9.40 percent in 2010. Unemployment Rate in India is reported by the India Ministry of Labour. From 1983 until 2011, India Unemployment Rate averaged 7.6 Percent reaching an all time high of 9.4 Percent in December of 2010 and a record low of 3.8 Percent in December of 2011. In India, the unemployment rate measures the number of people actively looking for a job as a percentage of the labour force.

Unemployment status of India in 2012 source:MoLD

Objectives of TNSRO Institute of Skills

- Serve all segments of society through an open-access admissions policy that offers equal and fair treatment to all students.
- To serve as a community-based institution of vocational education
- Teaching focused on skill development and immediate job opportunity.
- Provision for vertical mobility
- Lifelong learning to have an educated workforce

Evaluation System

The System of Evaluation at TNSRO institute is different from that of conventional colleges. As suggested by BSS , TNSRO has multi-tire system of evaluation.

- **Self Evaluation** – Self assessment exercises within each unit of study. i.e. Group Discussions, Class Tests & Competitions, Interviews etc. [**15% Weightage**]

- **Concurrent Evaluation** – Continuous evaluation mainly through assignments, class tests, project work, workshops, field work, attendance, punctuality & regularity etc [**35% Weightage**]

- **Term-End Examination** –The central examination board will conduct the national level examination and certification. Term-End Examination once in a year in the month of March-April [**50% Weightage**]

Programme delivery

Our approach of Programme delivery is more learner-oriented and the learner is an active participant in participatory teaching-learning process. Most of the instructions are imparted through personal contact education and practical training methodology.

Features of the Courses

- Courses offered are fully vocational conducted in short period hence one can easily get trained in employable skill.
- A trained person certainly involved in skill based employment so employer will abstract the person those who got trained.
- The skilled men will they themselves turn entrepreneur; they will not only a job seeker also job giver too.
- Courses were designed according to the recent trend and need based on vocational curriculum.
- Ultimately one can become financially sound the so he will have superb livelihood.

Teaching Learning Methods

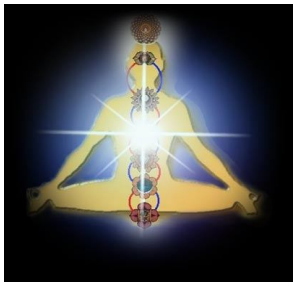
- Brain storming
- Demonstration
- Remedial work
- Class with electronic media support
- Problem solving
- Cooperative learning
- Case study method Self evaluation
- Use of necessary technology
- Simulation

Available Courses

- Diploma in First Aid and Practical Nursing (One year /Two year)
- Diploma in Medical Lab Technology(One year /Two year)
- Diploma in Ophthalmic Assistant (One year /Two year)

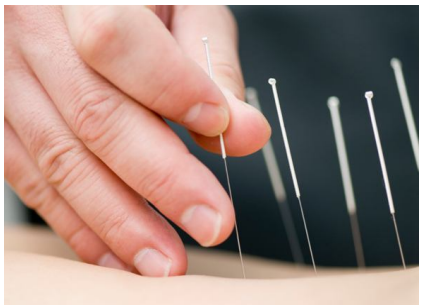
In this Year 20 girls admitted in medical laboratory technology course in January 2014 session. Our old students are now working in various institutions with satisfactory emoluments.

5. School of Holistic Health Sciences and Research



School of Holistic Health Sciences and Research (SHHSR) has established under the charter of our TamilNadu Scientific Research Organisation for educational objective of providing high quality instruction and therapeutic programs which utilize the mind and body's own rejuvenative powers through the natural modalities of Acupuncture, Bach Flower Remedies, Herbal Remedies and Nature cure techniques. The School will offer therapeutic educational programs to move individuals / practitioners to greater understanding and experience of perfect health, rejuvenation, transformation and higher states of awareness and upgradation of skill based training by distance mode and personal contact programme. From the most tangible studies on the physical plane to the most esoteric in exploration of consciousness, the school seeks to provide quality instructors and course material to aid the students/ practitioners in achieving the greatest proficiency and reaching the highest attainment of truth and knowledge in their chosen focus of study. This course is a unique opportunity for individuals of all ages to explore comprehensively the arena of Complementary and Alternative medicine. This course is aimed at providing a comprehensive understanding of a number of popular natural and holistic therapies and achieving sufficient qualifications to engage in professional practice.

The following courses are designed by the school for eligible health practitioner(s)



1. PG Diploma in Holistic Health Sciences
2. Diploma in Bach Flower Remedies
3. Higher Diploma in Acupuncture
4. Diploma in Nature cure Therapies
5. Diploma in Herbal Remedies

In 2013-2014 totally 12 candidates were registered in this courses. The courses will be taught in a workshop, hands-on situation. With supervision, students will practice the skills learned on fellow students to perfect the techniques. The courses offered are intended to reach all ages of interested students/ practitioners. The practitioners in any course will receive a certificate of completion and proficiency. The practitioners will be able, in many cases, to perform as a self-employed independent

experienced / skilled Holistic practitioner or as an employee in a health care setting such as a Holistic Healing Center, Nature cure Clinic, Physical Therapy Department, Wellness Center, Community Clinic, Hospital etc.**Assessment and Certification:** All these courses are certified and accredited by the Board of Examination of TNSRO. Our Diploma will enable you to improve your practicing skill, job prospects, your lifestyle and that of many others. Examinations take place in April and May.

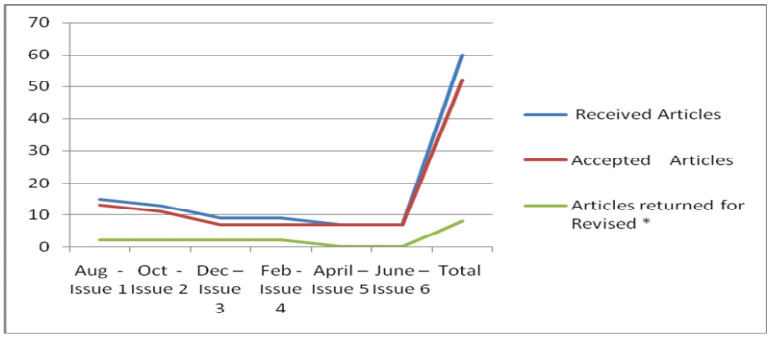
6.Indian Journal of Natural Sciences – IJONS /Research Publication

Tamil Nadu Scientific Research Organization is working for the promotion of society by transferring science technology since 1997. We are very keen in appreciating and recognizing the contribution of every one of you. We are publishing **Indian Journal of Natural Sciences - IJONS** from **August 2010**.Also the board of management approved the agenda for journal establishment with ISSN registration. The Journal is peer reviewed **International Journal** for publication of Original Research papers /Reviews/ Short communications/Book reviews/Reports on conferences/Seminar, Important events, News of interest etc.

Previous Manuscripts Performance

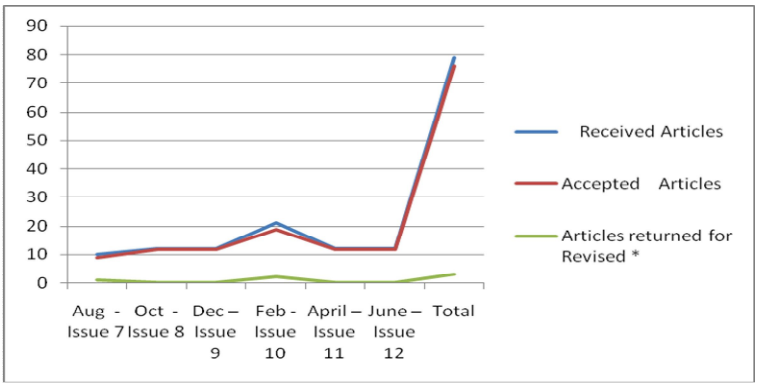
Year 2010 / Volume 1

Month	Received Articles	Accepted Articles	Articles returned for Revised *
Aug - Issue 1	15	13	2
Oct - Issue 2	13	11	2
Dec – Issue 3	9	7	2
Feb - Issue 4	9	7	2
April –Issue 5	7	7	0
June – Issue 6	7	7	0
Total	60	52	8



Year 2011 / Volume 2

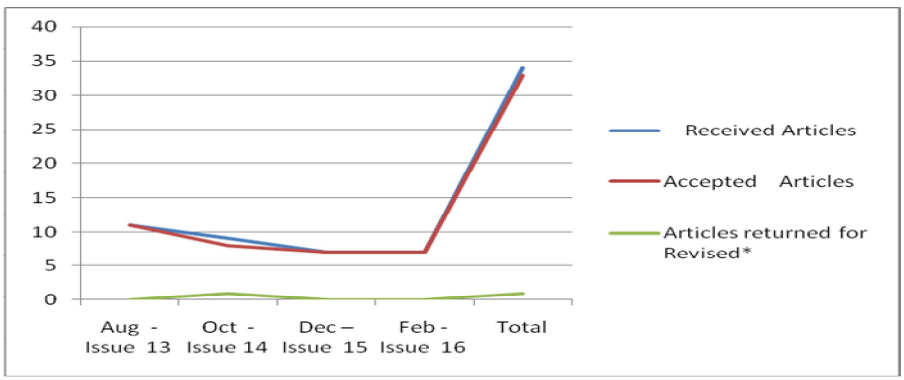
Month	Received Articles	Accepted Articles	Articles returned for Revised *
Aug - Issue 7	10	9	1
Oct - Issue 8	12	12	0
Dec – Issue 9	12	12	0
Feb - Issue 10	21	19	2
April – Issue 11	12	12	0
June – Issue 12	12	12	0
Total	79	76	3



Year 2012 / Volume 2

Month	Received Articles	Accepted Articles	Articles returned for Revised*
Aug - Issue 13	11	11	0
Oct - Issue 14	9	8	1
Dec – Issue 15	7	7	0
Feb - Issue 16	7	7	0
Total	34	33	1

* Articles Accepted for next issues.



Year 2013 / Volume 3

Month	Received Articles	Accepted Articles	Articles returned for Revised*
Apr - Issue 17	4	4	0
June - Issue 18	4	4	0
Aug – Issue 19	4	4	0
Oct - Issue 20	4	4	0
Dec - Issue 21	5	5	0
Feb - Issue 22	6	6	0
Total	27	27	0

* Articles Accepted for next issues.

In 2013 our organization has submitted the journal for NAAS (National Academy for Agricultural Sciences) Rating. The NAAS committee was evaluated our journal and finally declared that IJONS has received 2.51 NAAS rating in 2014.This is the great mile stone of our journey in the field of scientific research. Also our journal has included in Thomson Reuters Master Journal List with Rare Species citation list. The journal was published effective research articles in past years and also creates more awareness about good scientific publication practice.

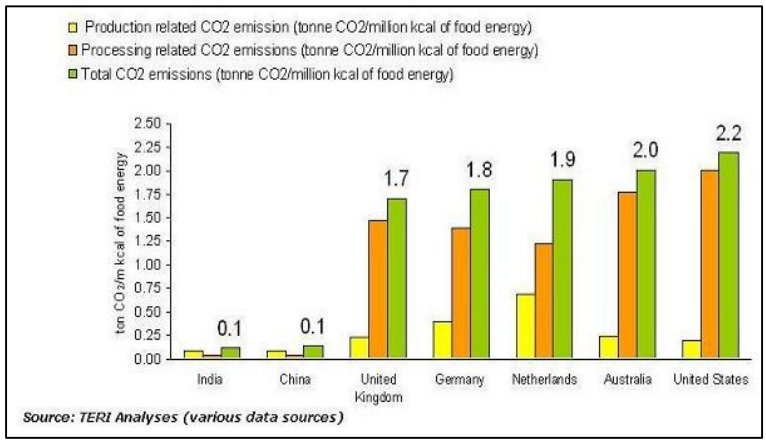
Highlights of the journal

- Internal Quality, Published Bi-Monthly
- Fast acceptance and Quick Publication
- Low price
- High Rank Editorial Board
- Online manuscript submission
- Publish original research work and Reviews
- **NAAS rating 2.51 / 2014**
- Cited by Thomson Reuters

First Issue of Our Indian Journal of Natural Sciences was released by Hon'ble District Collector Mis.Sumathi at Pudukkottai on 2010.

7.Farmers Training Programme on Adaptation of Climate change for Sustainable Food Security.

Climate change is no more an environmental concern. It has emerged as the biggest developmental challenge for the planet. Its economic impacts, particularly on the poor, make it a major governance issue as well.



Global carbon economy

India's performance is also commendable as far as recycling is concerned. Compared to other major economies India has successfully limited the growth in Energy use and consequent GHG emissions because of lower demand of virgin material such as steel, aluminum and copper. See the picture below for a comparison of recycling rations of major economies.

India is home to the largest number of hungry and deprived people in the world – to be precise 360 million undernourished and 300 million poor people. Sustaining supply of food itself is emerging as a critical issue. Growth in food grain production is slow, rather decreasing over the last few decades. During 1996-2008 it increased by just 1.2 percent per annum: from 199 to 230 million tons (mT), as against an annual rate of growth of 3.5 percent achieved during the 1980s.

The existing problems of poor farmers, if not addressed in time, will become more acute due to global warming induced climate change. The prediction so far suggests an upward trend in mean monthly temperature and average rainfall. However, the prediction indicates downward trend in the number of wet days in a year. The impact of climate change would be seen in terms of increased sub-regional variations and more extreme rain events.

TNSRO has organized 5 village level awareness, capacity building and survey programme on climate change mitigation for security.Gandarvakkottai, Thiruvarangulam, Pudukkottai, Arimalam and Thirumayam block villages are covered.In this programme we are collected more information regarding climate change knowledge from the farmers.Prepreapred survey form was distributed and collected the information from identified or well known marginal farmers.The main thrust of the programme is to create the awareness about the impact of climate change in the rain fed areas should be on activities relating to rainwater harvesting, soil conservation, land shaping, pasture development, vegetative bunding and water resources conservation on the basis of the entire compact micro-watershed which would include both cultivated and uncultivated lands.

In view of our survey report impending threats caused by climate change, regulating the unrestrained exploitation of groundwater and aggressive pursuit of water conservation should become a national priority. Drip irrigation and water sprinkler approach, mulching and bed plantation, construction of tanks and check-dams should be promoted for water harvesting and conservation. Its impact is visible in Thiruvarangulam and Arimalam block region of Pudukkottai wherein barren lands were converted into lush fields. Lastly, our report was finalized the need to build administrative capacities for designing climate proof investments, such as conservation of wetlands, wastewater reclamation, equitable access and regulatory

structures for basin level management.100 samples collected from the field sites.150 farmers involved in this programme.

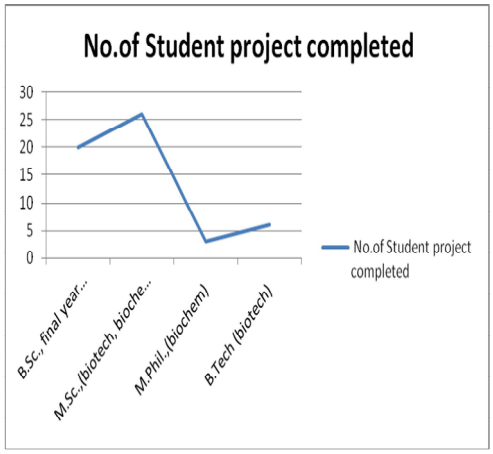
8. Faculty Development Programme

TNSRO and Bonsecours college for women ,Thanjavur was jointly organized one day faculty development programme at college premises Thanjavur.In this training TNSRO faculty Mr.S.Muhtukkumarasamy and Dr.S.Vijikumar has provided effective information towards "Govt of India Grant in Aid programmes and preparation of project proposals " . Nearly 80 faculties got sufficient training in this training.Also we are arranged hand on training for preparation of proposals and reporting methods.

9.Plant Science Research Division

Plant Science Research Division was promoted by TNSRO since 2006.During the period of 2006 to 2013 we are completed M.Sc .,M.Phil., research projects based on plant science.The following table representing the actual number of the project in each course.

S.No.	Course	No.of Student project completed
1	B.Sc., final year (biochem)	20
2	M.Sc.,(biotech, biochem biotech and chemistry)	26
3	M.Phil.,(biochem)	3
4	B.Tech (biotech)	6



No.of student research project completed during 2006-2014

The division is promoted plant science based research works in different subject disciplines such as biochemistry, biotechnology, microbiology, biology, medicine etc.The main aim of the division is promote and guidance the rural students in basic and experimental research in the area of plant science particularly in medicinal plants. Our organization was submitted SIRO recognition application to DSIR,Govt of India for getting SIRO lab recognition.(F.No: 11/583/2012-TUV) This activity is lead to the division for further achievement. Minimum laboratory facilities are available at this centre for continuing the research.Also the division doing various activities such as Preparatory guidance of Thesis, Dissertation and research assistance to the scholars and students. Analysis of various parameters in biological samples and publish research work in our reputed journal.Also the division will encourage the lab analysis on water quality by APHA standard,Soil analysis,Heavy metal analysis,Food analysis, amino acids analysis ,Bioinformtics study etc.

10.State level Meeting on Scientific Assessment of Acupuncture Research in Clinical Applications.

Acupuncture has been practiced in China and other Asian countries for thousands of years. Acupuncture involves stimulating specific points on the body. This is most often done by inserting thin needles through the skin, to cause a change in the physical functions of the body.Research has shown that acupuncture reduces nausea and vomiting after surgery and chemotherapy. It can also relieve pain. Researchers don't fully understand how acupuncture works. It might aid the activity of your body's pain-killing chemicals. It also might affect how you release chemicals that regulate blood pressure and flow.TNSRO and Thavam Research Foundation,Pudukkottai jointly organized one day state level planning meeting on scientific assessment of acupuncture research in Clinical applications at ST.Joseph college campus, Thriuchirappalli on 6.10.2013 .Two important scientific evolution papers were presented. First one is Acupuncture application in Pain management by Dr.S.Vijikumar,Director of TNSRO second one is Hara Diagnosis by Dr.C.Nithiyanandam, Director of Thavam Research Foundation.After noon session acupuncture therapists are discussed some important policy related matters.1.Framing of universal syllubus2.Promotion of Scientific Research3.Forming of state level legislative body for registration and regulation of acupuncture

practicing. 100 and above acupuncture clinicians were participated in this meeting. Finally, vice principle of the college delivered his valedictory address.

11.Special lecture on Acupuncture and Alternative medicines

TNSRO and Thavam Research Foundation, Pudukkottai jointly organized month end special lecture programme on acupuncture and Alternative medicines at Thavam organization premises during the period of 2013-2014.Totaly 25 candidates trained and benefited in this programme.Dr.S.Vijikumar Director of TNSRO and his team faculties were delivered several training lecture towards Acupuncture and other alternative medicines.

12.NCSTC,Govt.of India Sponsored EcoWaSH Programme.

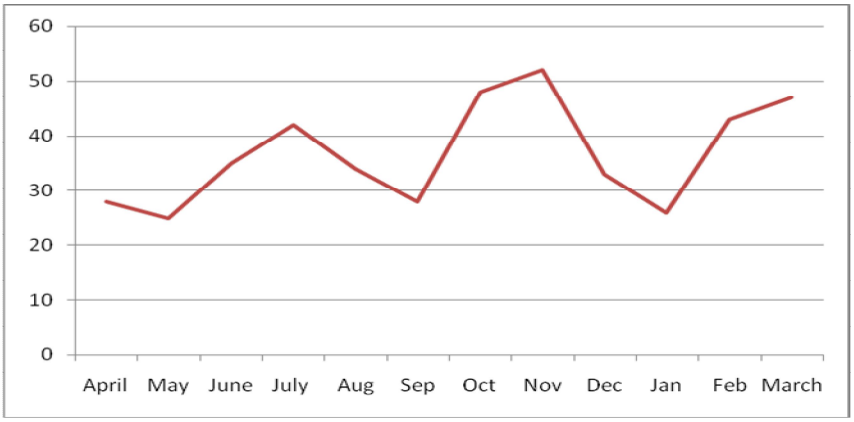
National council for Science and technology communication (NCSTC) ,Department of Science and technology,Govt of India New Delhi has sanctioned(2013-2014) our proposal on **"Community Based Participatory Training Programme on Scientific Awareness, Capacity Building and Promotion of Sustainable eco technology for water conservation, Sanitation and Hygiene among Students, Teachers and Public in Pudukkottai Dist. TamilNadu"** (Sanction order File No.: CO/P/FP/G79/2013 dt.23.12.2013) .The main objective of the project is the effective awareness generation and outreach activities among the school children and the community leading to behavioral change as envisaged in the Eco WaSH policy through hygiene education towards the issues pertaining to improved sanitation, including personal and environmental hygiene, waste segregation and recycling through the concept of the 3 Rs (Reduce, Reuse and Recycle).the project is commence from January 2014,The first part of the programme, base line survey activity is completed. Currently the programme is ongoing.

13. TNSRO Rural Information Center (TNSRO RIC)

Information is an important resource and is essential for the progress of an individual and that of a nation. Access to right kind of information or possession of correct and relevant information resolves various problems faced by individuals. Information plays a significant role in removing the hurdles of development. The importance of inf0ormation increases as publications increase at a rapid rate. Lack of access to the right information at the right time deprives the poor people their right to development. **TNSRO Rural Information Center** (RIC) was established under TNSRO on 2013 at Pudukkottai which is act as a resource unit and it is provides valuable information services for rural communities, local officials, organizations, businesses and rural citizens working to maintain the

vitality of pudukkottai district rural areas. Today our **TNSRO RIC** is working in the fields of education, health, natural resource management, appropriate technologies, livelihoods, agriculture, institution building, community mobilization and awareness etc. They are also providing a number of services to the community and complimenting various government programmes.The following table representing the number of users' utilized in the project during the year of 2013-2014.

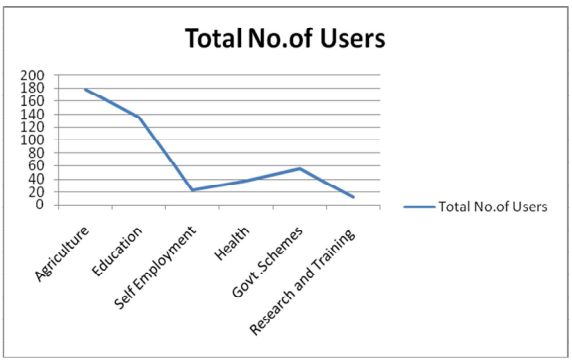
April 2013	May	June	July	Aug	Sep	Oct	Nov	Dec	Jan 2014	Feb	March
28	**25**	35	42	34	28	48	**52**	33	26	43	47
Total users											**441**



Month wise users data from April 2013 to March 2014

The following table representing the total number of users benefited in different categories

S.No.	Category	Total No.of Users
1	Agriculture	178
2	Education	136
3	Self Employment	23
4	Health	37
5	Govt .Schemes	55
6	Research and Training	12
	Total	**441**



The Millennium Development Goals (MDG) set very ambitious targets to address structural concerns that impede economic growth and human development. TNSRO RIC represents comprehensive policies, strategies, programmes at base levels to support growth and poverty reduction. Within these broad frameworks ICT is being deployed at RIC as tools for poverty reduction to:

- Improve access and quality of education in the rural areas.
- Contribute to women's empowerment through training and provision of small-scale business information.
- Provision of communication to rural areas.
- Improve governance and inclusiveness at the local level.

Targeted Beneficiaries

- General Community Members and leaders.
- School Children and Students
- Youth out of School
- Women and women groups
- Private Business
- Non-Governmental Organisations
- Local Government Authorities

The centre is fully sponsored by TNSRO with local contributions. Also the centre is formed project management committee for effective implementation of the programme.All valuable information should be delivered by SMS, E.mail and display board, printing materials etc.

14. Special lecture on Scientific Discoveries - VIPNET Science programme

TNSRO and AGN high school, Konganapuram, Salem jointly organized one day special lecture cum discussion programme at school premises.Dr.S.Vijikumar, Director of TNSRO and Mr.S.Muthukkumarasamy, Scientist, TNSRO are delivered his valuable presentation on scientific discoveries in centre of students. Totally 120 students and 25 teachers also participated. Students raised many questions related scientific innovation.After noon session was conducted by the resource persons for preparing some proposal regarding science club and awareness programme.

15. Documentation of Traditional Knowledge System

Traditional knowledge (TK), also known as indigenous knowledge (IK) or local knowledge (LK) generally refers to the matured long-standing traditions and practices of certain regional, indigenous, or local communities. It also encompasses the wisdom, knowledge, and teachings of these communities. In the recent years, the role of IK in a range of sectors is being talked about. It includes intercropping techniques, pest control, crop diversity, and seed varieties in agriculture; plant varieties, and fish breeding techniques in biology; traditional medicine in human healthcare; soil conservation, irrigation, and water conservation in natural resource management; and oral traditions and local languages in education. The realization of IK's contribution to these sectors has led to an increasing interest in it by academicians, and policymakers alike.

In this programme,TNSRO has documented 3 important traditional rice varieties *1.**Kruthakar 2.Karunguruvai 3.Chemmulichamba.***Farmer Mr.Veerandan is cultivated this varieties and conserved from his land last 100 years.The varieties are giving some medicinal effects and good nutritive value.Our team was personnaly visited more than 10 villages at Pudukkottai dist.and documented various knowledge system of agriculture,spiritual and medicine.Future studies will be continued our own contribution by the help of local institutions.

16. Documentation of Medicinal plants diversity

India has rich diversity of medicinal plants. The supply base of 90% herbal raw drugs used in the manufacture of Ayurveda, Siddha, Unani & Homoeopathy systems of medicine is largely from the wild. This wild source is speedily shrinking day-by-day. Therefore, there is a need for conservation and sustainable use of medicinal plants. Cultivation is clearly a sustainable alternative to the present collection of medicinal plants from the wild. This can be a potential provider of returns to the farmers.

To assess the medicinal plant diversity and generate information on utilization of medicinal plants by the inhabitants of the area. Participatory Rural Appraisal (PRA) followed for information generation on medicinal plants. Also, local knowledgeable persons including *Vaidhyas* were interviewed and information generated on the indigenous uses and commercial values. Among the knowledgeable persons, one person was hired to collect medicinal plants from the natural habitat(s).The specimens of each species were collected and identified with the help of floras, and research papers.Nativity and endemism has been identified. Information on locality, altitudinal range, life form, habitat and other morphological characters was collected for each species. The data were compiled and analyzed for diversity and distribution pattern of the species.TNSRO has collected and documented as a herbarium /voucher specimen with photograph of more than 500 plant species, which are Astraceae, Solanaceae, Zingiberaceae, Poaceae, Labiateae, Asclepiadaceae, Rubiaceae, Meliaceae, Euphorbiaceae, etc.In this programme TNSRO has identified some species are covered under IUCN RET species data. We are informed the impotance about conservation of these plants.Local people are conserving these plants by nursery and other protection methods.TNSRO has encouraged social forestry for improving the diversity of local flora and fauna.The documentation purpose study is now going on which is very useful to the research scholars and farmers.

17.DBT /Govt. of India sponsored Popular Lecture on Biotechnology

TNSRO has identified the need to create scientific awareness, sensitization, socio-ethical acceptance and adoption to the potentials and application of biotechnology for the purpose of Promotion, Support and facilitation for the overall development of Biotechnology in the state. Hence, TNSRO has accorded a very high priority to dissemination of scientific information, awareness generation, knowledge up-gradation and exposure by means of various Awareness programmes like seminars, workshops, lecture series, participation in fairs and exhibitions Accordingly, TNSRO has conceptualized a program of 'Popular Lecture series', which intends to bring the knowledge of the best professionals, generate awareness about fascinating world of Biotechnology, its future promises, and initiate networking between stakeholders to the doorstep of the society in a comprehensive form. Having visualized programme of Popular Lecture Series as a mandate for -

dissemination of technical knowledge, creating awareness about the latest developments in the field of Biotechnology, various programs were conducted. It generated a tremendous interest and response in the Biotechnology Stake holders.

Department of Biotechnology,Govt of India has sanctioned our proposal on popular lecture on biotechnology (sanction no.: DBT/CTEP/04/201301424). In this project, three important biotechnology based lectures will be given by the eminent personalities among the students. This is to be organized at Pudukkottai very soon. The following table represents the programme details.Programme activities are ongoing.

Local colleges and other educational institutions,NGOs will be participated in this lecture programme.

S.No.	Lecture Title	Facilitator
1	Plant Biotechnology for Food security	**Dr.A.Ganapathy** UGC chair professor Department of Biotechnology Bharathidasan University, Trichy, TamilNadu
2	Microbial biotechnology for new drug discovery	**Prof.S.Karutha Pandian** Department of Biotechnology Alagappa University, Karaikudi, Tamil Nadu
3	Nanobiotechnology in medicine	**Mr.S.Muthukkumarasamy** Scientist, TNSRO

18.Village Biodiversity School Programme

Ecosystem services are processes provided by nature that support human life. These services include the decomposition of waste, pollination, water purification, moderation of floods, and renewal of soil fertility. Ecosystem processes are often overlooked, and are not generally valued as part of the economy until they cease to function. When economic value is assigned to these services, it is often startlingly

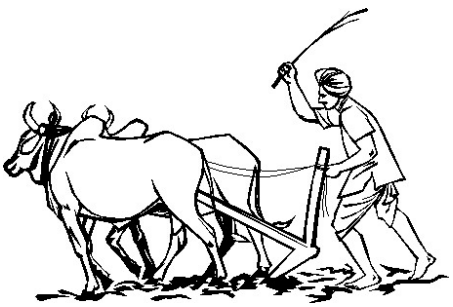
high. For example, insect pollinators help produce many commercially important fruits such as almonds, melons, blueberries, and apples. The global economic value of pollination services performed by insects has been valued at $217 billion per year.

Throughout most of human history, conservation has involved protecting nature for the spiritual gifts it provides, and protecting sacred places in the local landscape. Stories of indigenous people incorporate detailed knowledge of the animals and plants that make up their world.

Our village biodiversity school is an innovative community based model project established by our organization .VBS projected by our NGO works on local biodiversity conservation. This project is highly economic and non formal structure so everyone can educate by this school irrespective to their qualification. It was started in Arimalam village with 50 school going children, youth and farmers. This school was emphasized the importance of food web, agro biodiversity, agroforestry different eco system, besides economic value of biodiversity, afforestation also taught by awareness meeting. Herbarium preparation, Medicinal plants cultivation, distribution and plantation of endangered plant species etc. This project is run by our own contribution since 2008.

The project was developed and implemented a sustainable management and biodiversity conservation system for the Pudukkottai region of TamilNadu on the basis of rational plans and the participation of all key stakeholders, including: (i) priority biodiversity conservation initiatives and improved forest management; (ii) increased institutional capacity and awareness to manage the Agroforest (AF); (iii) measures to reduce poverty of the people living in the impact zone bordering the forest and agro forest through expanding economic opportunities, improved social infrastructure, improved organization for resource-users, and facilitating stakeholder participation in resource management; and (iv) adopting a supportive set of policies, especially related to the pricing for access to Agroforest resources.Now our school is planned to work with different stockholders for effective implementation of the activities.

19.Farmers' Field School Programme



Farmers' Field School Programme (FFS) is a group-based learning process that includes hands-on training methods in which farmers test management methods/production technologies for themselves and learn concepts directly. Training also includes communication skills, skills in identification and problem solving, in leadership,

in interaction and discussion methods. Training in the field school follows the season long cycle and the field is the primary learning venue. Farmers learn by carrying out themselves the various activities related to the particular farming practice they want to learn/evaluate. The field school offers farmers an opportunity to learn by doing, by being involved in experimentation, discussion and decision-making. This strengthens the role of farmers in the research-extension-farmer chain.The objective of FFS is to provide first hand information to the farmers in their fields to enable them to evaluate, fine tune and adopt the best crop production and crop protection technologies suitable to their location and resources for higher production and productivity.

Core Mission of FFS

"To promote an integrated natural resource management and farming systems approach under complex, diverse, and risk-prone conditions based on the principles of equity and sustainable in productivity through appropriate institutions and linkages that support ongoing changes in strategies, methods and materials related to adaptive research and extension".During the year 2013-2014 TNSRO FFS research team was visited many villages and collected more information regarding climate change adaptation activities of the farmers at pudukkottai. Also the organization was organized climate change mitigation training programme to the farmers at Ganapathypuram village,Pudukkottai Block.The eminent trainers were given the lecture and simple techniques for adopting the climate for their regular cultivation.57 farmers enrolled in this school and getting regular advice from the experts.In future, FFS programme activities are extending with local panchayats and other institutions with different activities.

20.International Year of Water Cooperation 2013

In December 2010, following the proposal initiated by Tajikistan and submitted by a group of countries, the United Nations General Assembly declared 2013 as the United Nations International Year of Water Cooperation. The fulfillment of basic human needs, our environment, socio-economic development and poverty reduction are all heavily dependent on water. Good management of water is especially challenging due to some of its unique characteristics: it is unevenly distributed in

time and space, the hydrological cycle is highly complex and perturbations have multiple effects. Rapid urbanization, pollution and climate change threaten the resource while demands for water are increasing in order to satisfy the needs of a growing world population, now at over seven billion people, for food production, energy, industrial and domestic uses. Water is a shared resource and its management needs to take into account a wide variety of conflicting interests. This provides opportunities for cooperation among users. TNSRO has organized a training programme to farmers and students on water conservation and management it was highlighted International Year of Water Cooperation activities .The aim was to create an understanding of the availability, demand and usage of water by designing a sound village water security plan. Farmer and environmental conservationist Mr.A.Arangan and leading farmers Mr.Arangagopalakrishnan were delivered his valuable lectures. Competitions,Film show also conducted. Totally 42 participants involved and benefited in this programme. The training programme exposed participants to knowledge of new and old ways of ensuring sustainable water supply and gain new perspectives about how the community can be involved in creating a village water security plan for themselves.They were shown experiences of successful NGO efforts in water supply. Field exposures were also included in every workshop for a deeper understanding of issues.

IX.Ongoing Research Programme 2013-2015

S.No.	Project Title	Estimated cost (Rs.)
1	Nanoencapsulation of Fertilizers by Biodegradable Polymers and Controlled Release of Micronutrients for Sustainable Agricultural Practices in Different Agroclimatical Zones in Tamil Nadu State.2013-2015.	**4,24,000.00**
2	Analysis of Phytochemical and Nutritional compounds from ***Aegle marmelos* L.** and ***Limonia acidissima* L.** for the cancer with *Insilco* studies.	**2,50,000.00**
3	Enhancement of Bio-hydrogen production from solid waste materials with algae by low cost methods.	**1,50,000.00**

X .Partner Organizations

The TNSRO partners with select organizations. These partnerships vary in nature, depending on the identified need —and can be technical, financial or strategic. The Foundation maintains a broad network of contacts in all key areas, is constantly scouting for innovative rural technologies, and for the organizations doing high quality work in the area of rural development.

- Technical Partnerships–AWE Care analytical and Research Laboratories, Erode.
- Community Awareness - Rural Development Society, Gandarvakkottai
- Strategic Partnerships - Rural Development Organisation,Pudukkottai
- Educational support partnership- Bonsecurs College for women,Thanjavur.
- Environmental Awareness – Peace Trust/RRA/MoEF/Dindigul
- ECO WASH programme – NCSTC/Govt.of India.
- Library conference - RRRLF/Govt.of India.

XI. High Ranked Research Advisory Committee

Name	Address	Field specialization
Dr. T.S. Saravanan	Professor of Biotechnology cum Research Co-ordinator Dr.M.G.R Educational and Research Institute University Periyar E.V.R High Road,Maduravoyal,Chennai	**Cancer Biology**
Er.Abdul Samad. M. Kamdod	Assistant Professor Department of Civil Engineering Bharat Institute of Science & Technology for Women Mangalpally, Renga Reddy Dist. Andhra Pradesh, India	**Engineering Technology**
Dr. K.Gurunathan	Prof & Head, Department of Nano science & Technology, Alagappa University, Karaikudi,TamilNadu, India.	**Nano science and Technology**
Dr.A.Sathya	Assistant professor – III, School of Civil Engineering, SASTRA University, Thanjavur-613401.TN.	**GCMS analytical and Plant Science**
Mrs.A.Indumathi	Asst.Professor,Department of Biotechnology, Bon Secours College for Women,Vilar bypass road, Thanjavur Tamilnadu.	**Biotechnology**

Dr. P. Santhanam	Assistant Professor, Department of Marine Science, School of Marine Sciences,Bharathidasan University, Tiruchirappalli. Tamil Nadu. India	**Marine Science**
Dr. M. Lekeshmanaswamy	Associate professor PG and Research Department of Zoology Kongunadu Arts and Science College G.N. mills (PO), Coimbatore-641 029, TamilNadu, India.	**Zoology**
Professor.G.Ganesan	Professor, Department of Mathematics Adikavi Nannaya University,Rajahmundry-533105.Andhra Pradesh,	**Mathematics**
Dr.C.Kathirvelan	Assistant Professor, Department of Animal Nutrition,Veterinary College and Research Institute (TANUVAS) Namakkal -637002. T.N.	**Veterinary Science**
Dr.C.Balusami	Assistant Professor, Department of Livestock Production and Management College of Veterinary and Animal Sciences Pookode-673576.Kerala,	**Livestock Production and Management**
Dr. Rajashekhar O, Patil	Assistant Professor, Department of Environmental Management Sant Gadge Maharaj College of Commerce & Economics, Mumbai 400004.	**Environmental Management**
Dr.Vasudevan Ayyappan	Department of Biology, Delaware State University, Dover, Delaware - 19901	**Biological science**

XII. Hon'ble Chief Advisors

Honorable Chief Advisor 1	**Prof. Dr. V. Ramaiyan Marine Biologist Research Advisor Sri Venkateswara College of Arts & Science. Peravoorani, Thanjavur. Tamil Nadu,India.**
Honorable Chief Advisor 2	**Prof.Dr.A.Ganapathi UGC BSR Emeritus Professor Department of Biotechnology School of Life Sciences, Bharathidasan University, Tiruchirappalli. Tamil Nadu. India.**
Honorable Chief Advisor 3	**Dr. Sr.D.Victoriya FBS Principal, Bon Secours College for Women, Vilar bypass road, Thanjavur - 613 006. TamilNadu,**
Honorable Chief Advisor 4	**Dr.S.P.Subramaniyan ,Asst.Controller of Patents and Designs (Govt.of India),Patent Office,IPR Building,GST Road,Guindy,Chennai 600032**
Honorable Chief Advisor 5	**Dr.Mis.R.Mary josphin Associate professor Department of Botany Nirmala College for women,Coimbatore.**

XIII.Research and Development

In TNSRO, we mean and dream possibilities and experiment with each one of them. A failure or a series at failure cannot dissuade us. History is full of people who failed. But their failure often led them to great success. A researcher's success depends to a large extent on his confidence. We should believe in the significance of our efforts and the success that awaits us. Here are the procedural approaches, we provide in order to assist all research fellows,

Research Execution Stages

- Identification of a research problem
- Literature study
- Definition of the research topic
- Planning the most appropriate methodology
- Analyzing the data

- Selection of a sample
- Writing a research proposal
- Developing a working hypothesis
- Designing a research structure
- Core research work
- Periodical evaluation and course correction
- Discussion with experts for feed back
- Findings
- Testing/ field trials of the findings
- Generalization
- Preparation of thesis
- Presentation of thesis
- Acceptance of thesis
- Applying for patent, if relevant
- Publication

The long list furnished above may be shortened into four parts – problems, data collection, analysis and core research work.

Testing

We offer a various standards for testing and we are doing "Testing on Samples" for the following areas for life science research Scholars at M. Sc., M. Phil., and Ph. D., level.

- **Water Quality Analysis by using APHA Methods**
- **Soil Analysis**
- **Heavy Metals Analysis**
- **Food Analysis**
- **Quantification of Nutrients by spectrophotometer method**

Minerals - Calcium, Phosphorus, Magnesium, Sodium, Potassium, Chloride, Sulfur, iron, Manganese, Copper, Iodine, Zinc, Cobalt, Fluoride, and Selenium
Vitamins - A, D, E, K, C, B, B1 (thiamin), B2 (riboflavin), Niacin, B6 (pyridoxine), Folic acid, B12 (cobalamine), Biotin, and Pantothenic acid
Amino Acid Analysis
Pharmacological Study
Pharmacological activities by using Fish Models
Molecular Techniques

Training Program and Workshop

TNSRO offers training program to Students, Entrepreneurs and Farmers whoever wants to attain some of their career in a very short span of time. Hands on training will be given in production and process flow in manufacturing companies for best students. The Training programs have been designed as an immense knowledge transfer program rather than as a teaching tutorials or academics. Here are the glimpses of our specially designed custom made programs in various technologies.

- **Microbiology techniques.**
- **Food microbiology**
- **Mycotechnology**
- **Chromatographic techniques**
- **Mushroom technology**
- **Vermiculture technology**
- **Plant tissue culture**
- **Molecular biology**
- **Phytochemical techniques**
- **Water quality analysis**
- **Enzyme production, optimization and purification technique**
- **Bio remediation and bio degradation techniques**

XIV.Memorandum of Understanding 2013-2014

The Organization has signed Memorandum of Understanding (MoU) with the following Institutions;

1.Sharmila Institute of Medicinal Products Research Academy (SIMPRA) Thanjavur, TamilNadu, India.

Memorandum of Understanding is signed on 27th August 2010 at Pudukkottai between Director, TNSRO and Chairman, SIMPRA, Thanjavur, Managing director of Sharmila pharma for collaborative research and development in the area of medicinal plant biotechnology.

2.Bon Secours College for Women, Thanjavur, TamilNadu

MoU signed between TNSRO and Department of Biotechnology, Bon Secours College for Women, Thanjavur, TamilNadu, India for collaboration research and development in the areas of biotechnology on 10th October 2013 at Thanjavur.

XV.Awards and Appreciation

In 2013 our organization has received best institution award **(Ariger Anna Award)** from Department of Environment, Govt.of TamilNadu for best efforts and services in the field of Environmental awareness and education since 1997.Our hon'ble minister of environment and forests Mr.Pachaimal issued to our hon'ble director. **Mr.Mallaseppa IAS ,** Hon'ble director of environment and Principle secretary Mr. **Mohan Verghese Chunkath** IAS also appreciated our organizations best activities in the field of environment. Already our organization has received 2 times (2008 & 2010) from peace trust, regional resource agency,ministry of environment and forests,dindigul for NEAC programme.

XVI.Participation Programmes

- Vijikumar.S., Invited talk on "Mathematical Modeling in Biology, Organised by PG and Research Department of Mathematics, Bon Secours College for Women, Thanjavur, TamilNadu on 3-4 March 2014 sponsored by NBHM,DAE,Govt.of India.

- Vijikumar.S.,Role of NSS in the promotion in environmental education, Organized by Sri Venkateswara polytechnic college,Pudukkottai on 23.3.2014

- Vijikumar.S.,Community based Agro biodiversity Conservation ,NEAC Organized by Rural Development Society,Gantharvakkottai on 15.2.2014 sponsored by MoEF.

- Vijikumar.S., Invited talk on "Phytochemical Research in Herbal drug technology", National Conference titled on Phytochemical Research in Drug Discovery For Human Health Care on 24 & 25 January 2014 sponsored by ICMR, Govt.of India.

- Vijikumar.S., Lead Lecture on "A vision on scientific discoveries , AGN Matriculation school,Konganapuram,Salem on 11.11.2013.

- Muthukkumarasamy.S., Lead Lecture on "Inclusive education to make our students as scientists", AGN Matriculation school,Konganapuram,Salem on 11.11.2013.

- Vijikumar.S., participated ICSSR sponsored National Level Seminar on Small Water Bodies in India: Status and Impact on 11-12 September 2013,Organised by Department of Economics and Rural Development,Alagappa University,Karaikudi.

XVII.Research Paper/book Publications

- Anis Fatima.M , B.Ramya , **S.Vijikumar** and K.Ramanathan**,** Green synthesis of Silver Nanoparticles and Structural Elucidation of Root extract of *Hemidesmus indicus* R.Br. with docking study for Anti cancer activity ,*Indian Journal of Natural Sciences*,Issue 19,Vol III, Aug 2013.pp. 1375-1382.

- Vijayakumar A.S., B.Ramya, **S.Vijikumar** and K.Ramanathan,Structural characterization and Antifungal activity in Crude Latex Extracts with Drug Designing using *Calotropis procera* L., *Pergularia daemia* L., and *Sarcostemma intermedium* Decne. *Indian Journal of Natural Sciences*,Issue 21,Vol IV, Dec 2013.pp. 1421-1428.

- Palluyir Vallam, Training manual, Tamil, 2014, Published by TNSRO, Pudukkottai.

XVIII.Books under Press

- ***Text Book of Medicinal Plants Research*** – under press – English-2014
- ***Invitropropagation for Medicinal Plants Conservation*** - under press –English-2014
- ***Biodiversity Conservation*** - under press – English-2014
- ***Vazhvin Aatharam Neer*** – (Water Elixir of Life)- - under press – English-2014

XIX.Future Plans and Activities

- Biodiversity conservation –flora and fauna diversity
- Endangered species conservation
- Publish books and magazines related biodiversity and environmental issues and medicinal plants.
- Sustainable Agriculture for Food security

- Popularize biotech application for rural prosperity
- Herbarium centre for research and conservation
- Phytochemical analysis for herbal drug research
- Climate change and water conservation

XX.Available Facilities

- Laboratory
- Library with reference texts
- Training Hall
- Computer with Internet facility
- Herbarium
- Bioinformatics and other life science research facility etc.

Our Auditor

Mr.S. Jayaraman, B.Sc,F.C.A.,
Charted Accountant,
Regd No. 200/27903.
7A, Visalakshi Nilayam,
Marthandapuram,
Pudukkottai – 622 001

Our Banker

Indian Bank,
Arimalam Branch,
Pudukkottai Dist.TamilNadu.

Report presented by

S.Vijikumar
Director/Managing Trustee
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