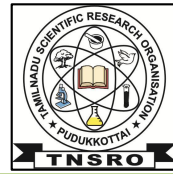


2014-2015



***Education is the manifestation
of the perfection already in man***

-Swami Vivekananda



ANNUAL REPORT

Science for Rural Prosperity



TAMILNADU SCIENTIFIC RESEARCH ORGANISATION

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

ANNUAL REPORT 2015



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TamilNadu Scientific Research Organisation,2015

18th 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.

In the mentioning period we could able to reach the unmet, unloved, uncared and unwanted communities through various programs with the support of government and from self-generated Local Communities contributions through fees. Since we keep the community in designing of an intervention through proposal preparation, implementation, monitoring and evaluation we could able to achieve the desires and demands of the disadvantaged more comprehensively. In the mentioning year we considered huge need of climate change effect on the disadvantaged communities in their poverty eradication programs and livelihood sustainability. Considering this we have organized ourselves in energy and environment conservation, climate change mitigation practices and combat against exploitations. In harnessing the rich inherited knowledge and experience of poor we have planned to accommodate the most vulnerable and deprived communities in capacity building, cadre building and socio-economic and political empowerment.

TNSRO in its journey through the development of disadvantaged sections continues with the support and coordination of humane people like you and local grant agencies. I am extremely indebted to present this annual report to the communities, supporters for the year 2014-2015. Because of communities participation our interventions have explored new corners. Our sincere and honest pledge to all of you and request the continuation of supports in the coming years as well. Together we would reach new heights and make productive changes in the lives of the deserved.

I am extremely happy that this 2014-2015 period is a truly one of the big mile stone of our institution. Because our institution has received from 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 and the environment.

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. We would continue to comply with the norms and regulations and legal aspects to demonstrate our transparency and accountability of the organization.



S.Vijikumar
Director

Director's Introduction



We have great pleasure in presenting you 2014-2015 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.

2014-2015 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.



Spirulina Cultivation Training Programme at PSG College,Coimbatore

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
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 (e) PAN Card No.	1961 6162E(33)/2002-03, 29.10.2002. 6162E(33)/2002-03, 29.10.2002. Commissioner of Income Tax-I Tiruchirapalli. 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 Prasara, Dept. of Science & Technology, NewDelhi. Affiliation No: V2919001/99 Dated: 30.01.1999.
10	Banking Details	
	Name of the Bank	Indian Bank (IB)
	A/c. No.	850149667
	Type of A/c	S/B
	Branch Code	01815, Arimalam
	IFSC /RTGS Code	ID IB 000 133
10.a	Banking Details	
	Name of the Bank	Allahabad Bank (IB)
	A/c. No.	50200527185
	Type of A/c	S/B
	Branch Code	0212 91,Pudukkottai
	IFSC /RTGS Code	ALLA0212291
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
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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.

III.Current Target Area: - Pudukkottai District and TamilNadu.

IV.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.

V. Board of Managing Committee 2014-2015 period

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.

VI.TNSRO Hierarchy



VII.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

VIII.Management Committee meeting held during the period of 2014-2015 Total No. of meetings-11

Resolution Number	Date	Subject
245/April/2014	16.4.2014	Approval of Establishment of new accounts for TNSRO in Allahabad bank at Pudukkottai.
246/June/2014	4.6.2014	AGP planning and to get social welfare sponsor.
247/July/2014	5.7.2014	Forming CRS (Community Radio Station). Discussion meets on Ecowash training programme. Submission of NEAC plan 2014-2015
248/Aug /2014	6.8.2014	Discussion meets on Ecowash plan.
249/Sep/2014	5.9.2014	Strengthening the Research Journal and joining BSS members. Discussion meets on Ecowash programme and stimulating it.
250/Oct/2014	6.10.2014	Discussion about 4 th Annual conference and Award ceremony. Strengthening the library of TNSRO.
251/Nov/2014	5.11.2014	Discussion about School of Holistic Health science programme in Tirupur. Ecowash awareness programme review.

		Discussion meets on doing MOU in Periyar university, Salem and discussion about Book Exhibition.
252/Dec/2014	5.12.2014	Discussion meets on one day training programme for farmers regarding Spirulina cultivation and marketing it.
253/Jan/2015	6.1.2015	Discussion meets on National level seminar for professors and research scholars. Discussion meets on Spirulina training programme.
254/ Feb /2014	5.2.2015	Discussion meets on Spirulina growth, cultivation and marketing it.
255/ Mar /2015	5.3.2015	Preparation of Annual A/c 2014-2015

Board Meetings: The board of Trustees meets regularly once in a month to chalk out policy guidelines and to take major decisions on Programme and usage of funds. Based on these discussions, the TNSRO Director leads the organization and the whole team implements the programme activities based on his guidance.

IX .Staff Particulars

S.No.	Name	Qualification	Designation	Part/ Full Time
1	Dr.S.Vijikumar	D.Sc.(AM)	Director	FT
2	Mrs.V.Muthulakshmi	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	Ms.B.Karthika	MCA	Administrative officer	PT
6	Ms.V.Bhuvaneshwari	B.Sc	Project Associate I	FT
7	Ms.S.Keerthika	BBA	Project associate II	PT
8	Mr.Govind		Field worker	PT

X.Strength of the TNSRO

The tasks of the TNSRO go beyond the conventional social works and we strongly believe in participatory rural development through scientific inputs and our community based approaches have proved to be successful for the past eighteen years. TNSRO has formed 50 science clubs in rural villages and schools.

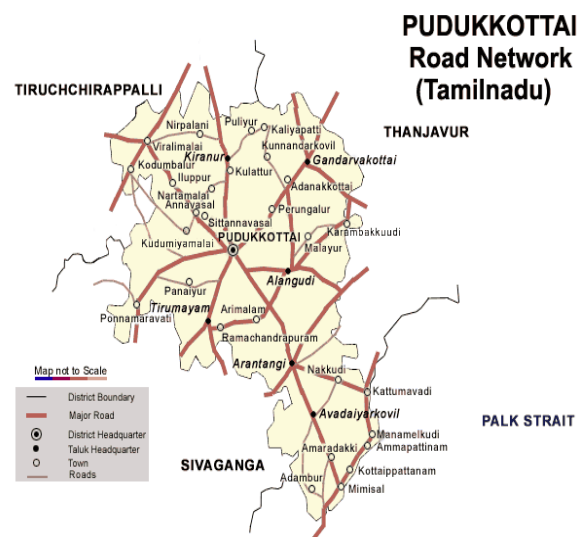
Youth Groups, Farmers Associations and NGO networks have been formed for collective behavior and social movement. With this formidable strength, TNSRO has been in the field since 1997 and has earned several awards, distinctions and recognitions. The Director, TNSRO has been awarded Fellowship by the distinguished MS Swaminathan Foundation under National Virtual Academy. He has also earned several awards for his dedicated work in the field, duly recognized by the Government and agencies abroad.

XI. 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 Thanjavur District. The district is bounded by Tiruchirappalli in the North and West, Sivagangai District in the South and Bay of Bengal and Thanjavur 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 besides 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 lakh 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 except 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 reigned 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 Tottenham 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. Sithannaval 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.

XII.PROGRAMMES /ACTIVITIES 2014-2015

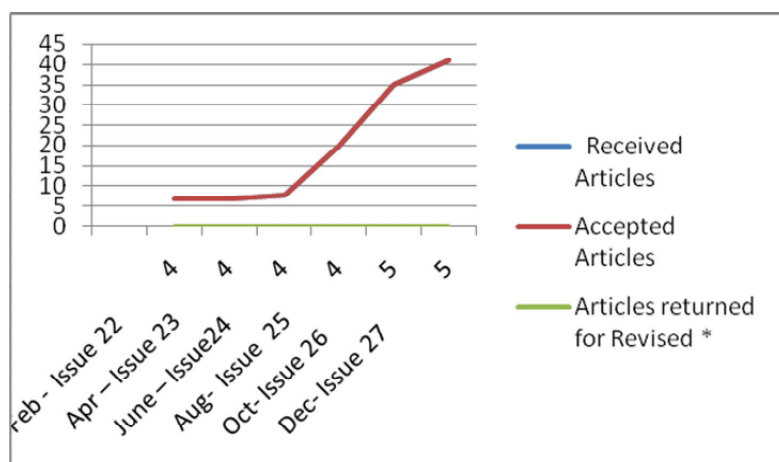
1. Indian Journal of Natural Sciences – IJONS /Research Publication

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.



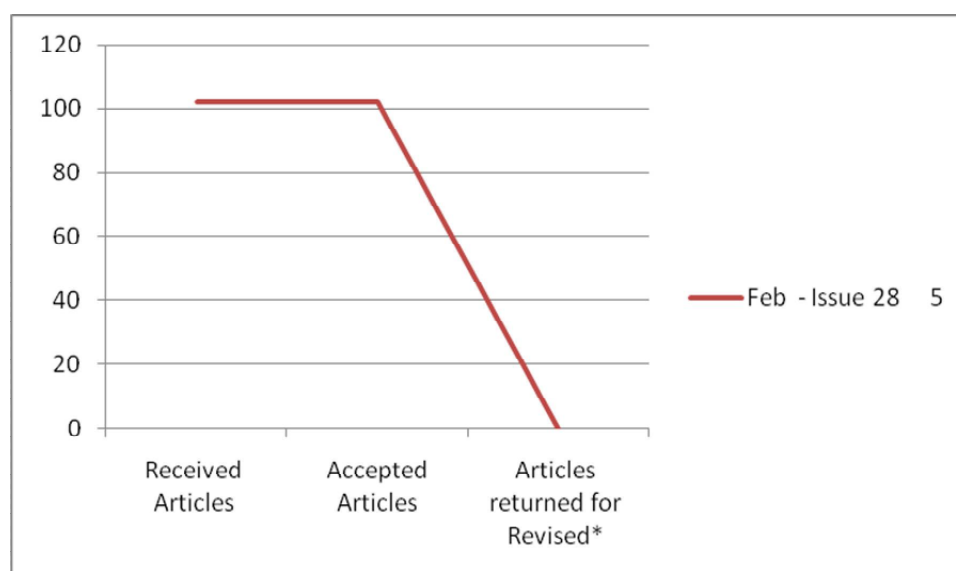
Previous Manuscripts Performance Year 2014

Month	Volume	Received Articles	Accepted Articles	Articles returned for Revised *
Feb - Issue 22	4	7	7	0
Apr – Issue 23	4	7	7	0
June – Issue24	4	8	8	0
Aug- Issue 25	4	20	20	0
Oct- Issue 26	5	35	35	0
Dec- Issue 27	5	41	41	0
Total		118	118	0



Year 2015

Month	Volume	Received Articles	Accepted Articles	Articles returned for Revised*
Feb - Issue 28	5	102	102	0
Total		102	102	0



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

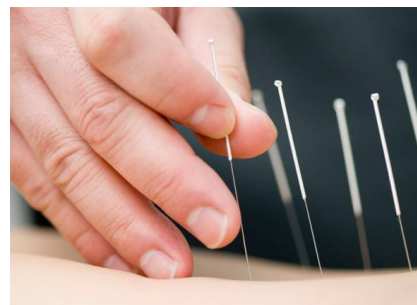
- Internal Quality, Published Bi-Monthly
- Fast acceptance and Quick Publication
- Low price
- High Rank Editorial Board
- Online manuscript submission
- Publish original research work and Reviews
- **NAAS rating 2.51 / 2014**
- Cited by Thomson Reuters and other famous data bases

2. 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 bodies 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 up gradation 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 2014-2015 totally 20 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. In this plan one year PGDHSS course have been conducted for traditional doctors who gives treatments in the village. Now 20 members have been joined. In Nagercoil for this training we had an agreement with KIAMS. Also we started a training centre in Tirupur. We are giving training in the division of Acupuncture natural medical, Flower medical and certificates have been given for trained members.

3. Farmers training programme - Adaptation of climate change for Sustainable Food Security

To solve the problems during the climate change, we are giving inculcate trainings among the farmers like changes a cultivate plan, Forming on the sustainable agriculture field in Arimalam, Ghandharvakkottai, Pudukkottai and Thiruvarankulam block villages. Farmers have been trained by the experts. In each and every union above 50 Farmers have been participated. In this programme we are collected more information regarding climate change traditional knowledge from the farmers. Prepared survey forms and it was distributed and collected the information from identified or well known small and marginal farmers. The main thrust of the programme is to create the awareness about the impact of climate change and its mitigation in the rain fed areas should be on activities relating to rainwater harvesting, soil conservation, land shaping, pasture development, vegetative bounding and water resources conservation on the basis of the entire compact micro-watershed which would include both cultivated and uncultivated lands.



4. Special lecture on scientific discoveries for students programme



To encourage our students and Children in scientific discoveries, we conducted a Special lecture program in some selected schools in Pudukkottai. In this programme our organisation director S.Vijikumar, Roland Foundation director Gomathi Shankar, science teacher Muthukumarasamy are given various

lectures. They are given more information in the field of scientific discoveries, Indian scientific and research institutions, new inventions and biography of Indian scientists.

5. Special lecture on Scientific Discoveries - VIPNET Science programme

In VIPNET Science Programme a special Lecture activity was conducted in the title of new scientific invention. In this programme Johnmilton school Principal Manickam gave priority support. 65 Children have been participated in this programme. Special exhibition have been kept to encourage the students in science. Student science assembly had started.



6. Medicinal Plants Conservation Programme



The World Health Organization estimated that 80% of the population of developing countries relies on traditional medicines, mostly plant drugs, for their primary health care needs. Also, modern pharmacopoeia still contains at least 25% drugs derived from plants and many others which

are synthetic analogues built on prototype compounds isolated from plants. Demand for medicinal plants is increasing in both developing and developed countries, and surprisingly, the bulk of the material traded is still from wild harvested sources on forest lands and only a very small number of species are cultivated. The expanding trade in medicinal plants has serious implications on the survival of several plant species, with many under serious threat to become extinct. The Indian people know

a great deal about medicinal plants. Studies reveal that the largest proportion of the biodiversity in all our ecosystems is used by village communities for human and veterinary health care. Over 7,500 species of plants are estimated (AICEP, 1994) to be used by "the ecosystem people" who belong to some 4635 ethnic communities (Anthropological Survey of India, 1994). India probably has the oldest, richest and most diverse, cultural traditions in the use of medicinal plants.

TNSRO organized the awareness training programme on medicinal plants conservation at pudukkottai totally 75 farmers and students have attended in this training and they are understood the value of RET species initially 250 medicinal plants conserved in their household then we extending the programme in a wide range. 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 importance 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.



TNSRO organized a training programme on medicinal plants conservation at Kandarovakkottai block, Pudukkottai dist. associated with RDS NGO totally 65 farmers and women group members were participated they are observed the information on Medicinal Plants conservation activities. It covers matters like cultivation aspects, type of soil, bed preparation, fertilizers used, diseases and precautions, Addresses of the buyers of the produce, Role and Promotional schemes of National Medicinal plants board, Role and schemes of APEDA, India's Export potential, Global scenario and everything about Medicinal plants for a nominal price. We have made an endeavor in this effort to provide the Indian farmers all the

information under one umbrella and highlighting the potential of this uncovered potential area.

7. PGDHSS Programme

One year PGDHSS course have been conducted for traditional practitioners who gives treatments in the villages. Now 20 members have been joined in this course. In Nagercoil for this training we had an agreement with KIAMS. Also we started a training centre in Tirupur. We are giving technical training in the division of School of Holistic Health Sciences and Research, after completion of the training certificates have been given for trained members.

8. NCSTC - Ecowash Programme



National council for Science and technology communication (NCSTC) ,Department of Science and technology, Govt of India New Delhi has sanctioned(2014-2015)

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”.***

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 Ecowash 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).

In this programme, Pudukkottai educational officer Arul gave priority. School head master Vijayamanickam welcomed all. Hygienic officer in district hygiene office Palaniyappan gave speech about dengue fever which affects our hygiene and the



medical treatments for dengue fever. District youth assembly coordinator Sadhasivam gave a special speech regarding Environment protection, need of forest and use of aforestation.

Tamil Nadu Scientific Research Organisation Director S.Vijikumar gave a brief speech about hygiene. He said that, "Water is important for our life. Water is important for life cycle of every organism. But now only 1% of water is available for drinking. Industrial wastage, drainage in house affects the water. Water can be saved by creating a garden in the house so that waste water from the house will be useful for the plants in the garden. From this we can grow vegetables, fruits Etc.,



Students must keep their school and toilets clean so that we can keep control the spreading of the disease. In future there will be lack of water. To avoid non-availability of water we have to recycle water".

Competitions have been kept for the students regarding ecowash. Certificates and gifts have been given to the students those who won in the competition. Like, this programme was also conducted in Balan Nagar Panchayat union school and also in middle school. In this year Totally 505 schools participated in this programme.

9.Self Employment Generation Programme -Institute of Paramedical Medical Sciences

This is a one year training programme for the selective 20-beneficiaries belong to 12th passed and B.Sc ongoing female candidates' in Thanjavur. In this programme medical lab training and microbiology testing are offered. Forenoon and afternoon session classes are conducted having 3 hours per class. In the training the lectures and demonstrations and hands on training are also given. On completion of the training certificates are issued to the successful candidates. The placement cell organizes campus interviews for self-employment and employment opportunities. Majority of the successful beneficiaries are placed in self-employment and employment positions.This programme was cosponsored by Bonsecures college for women,Thanjavure.

10. Eco conservation Programme and Biodiversity Documentation

TNSRO has documented the flora and fauna in various mountain ranges in the Pudukkottai region and District with the help of the local NGOs and farmers. During the year, a detailed work on this issue was prepared with the title "**Profile of Biodiversity in Pudukkottai dist.**" on completion of the



TNSRO plants science research division. The work is continued in view of the threats to our dist mountain ecosystem and biodiversity due to climate change and global warming in our region.

11. RRRLF Sponsored National Conference on Library Science



Tamilnadu Scientific Research Organisation, Koodal Nagar, Pudukkottai and Raja ram Mohan Roy Library Foundation, Government of India, jointly conducted a National conference on strengthening and utilization of public libraries

This programme is conducted at P.M.S.S. Seminar hall and programme was started by district library officer Maathaiyan. In this programme Tamil Nadu Scientific Research Organisation Director S. VijiKumar, Prof. Viswanathan, Head of History Department H.H. Raja's College, Roland Foundation Director Gomathi Shankar and District Librarian Muthu gave Benediction. Gnalaya Research Library Director Krishnamoorthi has given a Special address in the title "Libraries yesterday, today and tomorrow".

A Special discussion held with participants to rise up and to settle the public libraries. Students from Hindustan University, Gandhi Village University, Bishop Heber College and Periyar Maniyammai University Submitted their Research papers related to library.

At the end of the programme a special address was given by Nehru Yuvagendra district youth assembly coordinator Chairman Sadhasivam and he distributed the certificates for the participants gifts have been given for the best research papers. Chairs, Fans, Emergency Light, Wall Clock had given for 20 Libraries in Pudukkottai district. Book exhibition was kept in front of the seminar hall. Welcome address was given by project associate Kaliyamoorthy and vote of thanks was said by administrative officer Vijayalakshmi the programme arrangement was done by Tamil Nadu Scientific Research Organisation.

12.DBT –Popular Lecture Programme



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.

By using plant Biotechnology we can solve the major problem called food poverty which exist in future. To encourage this special conference was held. In this programme speech was given by prof.S.Karuthapadiyan, Department of Biotechnology Alagappa University, Karaikudi.

Science and technology, government of India have sponsored for this programme Tamilnadu Scientific Research Organisation and department of botany, H.H. Raja's college, Pudukkottai have joined and conducted a conference. Special address was given regarding the discovery of new medicines by using microbiology and relation between the organisms was identified by their genetics.

Microbes by connecting themselves increasing the influence of the disease. To restrain this by the way of anti biotic film, Anti infective medicines have been discovered. We can restrain the microbes completely if the new discoveries have



come successfully. Above 70 students have participated in this programme. A.Ganapathy, Department of Biotechnology Bharathidasan University Trichy, Thetchinamoorthy Department of Botany has given special address. Priority was given by college Principal M.Veerapan; Welcome address was given by Tamilnadu Scientific Research Organisation, Director S.Vijikumar. Vote of thanks was said by Prof. Muruggaiah.

13.EDP-Spirulina Training Programme

One day training has been conducted for spirulina growth and how to market by Tamilnadu scientific Research Organisation,



Koodal nagar,
Pudukkottai. Tamilnadu
Scientific Research
Organisation Director
S.Vijikumar conducted

this programme. In this programme above 25 members have been participated. The programme conducted in Pudukkottai has been started by Nehru Yuvagendra District youth assembly coordinate P.Sadhasivam.

In India past 30 years the awareness about spirulina cultivation has been increased among people. Spirulina is used as a medicine for diabetes, heart disease, cancer and also it is used as a food. By less cost we can cultivate

this in our home. For the farmers it gives more income. The programme has been conducted successfully for the farmers. In this programme around the state 40 members has been participated. The same programme also conducted at PG Research Department of Botany, PSG college of Arts and Science, Coimbatore. Totally 62 PG level students were participated and they are learned about the cultivation of spirulina.

14. Water conservation awareness programme

Water conservation awareness programme have been conducted by Tamilnadu Scientific Research Organisation Director S.Vijikumar. This programme was conducted in villages around Pudukkottai taluk. In this programme 40 members including farmers have been participated. A special speech was given by VijiKumar regarding awareness on water conservation.



He said that, "water is most important source for our life. Every organisms need water for their life cycle. But now only 1% of water is available for drinking. Industrial wastage, drainage in house leads to lack of water. This leads to non availability of water in future. To avoid this we must save water. There are many ways to save water. Recycle of water is one of the best ways to save water".

15.National science day celebration

National science day have been celebrated in Tamilnadu Scientific Research Organisation, Pudukkottai. In this programme 54 students have been participated. Tamilnadu Scientific Research Organisation Director S.Vijikumar gave a special lecture about Biography of Sir C.V.Raman and his discovery. Many competitions have been conducted for the students and prizes have been distributed those who won in the competitions.

XII.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.



A student receiving a certificate from our Eco Wash programme

XIV. 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, Tamil Nadu, 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 Tamil Nadu.	Biotechnology
Dr. P. Santhanam	Assistant Professor, Department of Marine Science, School of Marine Sciences, Bharathidasan University, Tiruchirappalli. Tamil Nadu. India	Marine Science
Dr. M. Lekshmanaswamy	Associate professor PG and Research Department of Zoology Kongunadu Arts and Science College, G.N. mills (PO), Coimbatore-641 029.	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

XV. 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.

XVI. Plants Science Research Division (PSRD)

TNSRO was established **Plants Science Research Division** in the year 2010 by special resolution with a basic intention of facilitating the initiation of young students in the field of Plant science including biodiversity, biotechnology, microbiology etc. , by imparting them quality education and further training them to take up either a research career or get recruited in the relevant industry or hone the skills to become successful entrepreneur.

Mission

The mission of this division is to provide impetus to the activity of knowledge acquisition and education of students in basic sciences and technological know-how associated with the field of plant science, and other relevant areas. The division is committed for the purpose of accepting the world's great challenges, with others, and tackling these challenges by generating, applying and preserving knowledge. This division is dedicated to combine stern academic study and the thrill of innovation. It desires to develop in each member of its family, not only the ability to work wisely, creatively and effectively for the betterment of humankind but also the passion for doing so. Today the PSRD is desirous of becoming TNSRO's premiere Institute. This division is envisaging on interdepartmental, multidisciplinary programs, laboratories and division's having strong research base and whose work extends beyond traditional departmental boundaries. It seeks to be a pulsating temple of science, from which intelligence, knowledge and wisdom disseminates.

Vision

Our division will be comprised of individuals committed to our mission and values. The division will nourish and nurture young, creative and innovative minds that will make significant contribution in the field of biological sciences and further the cause of alleviating the sufferings of mankind.

The Faculty

The faculty of this division is well trained and possesses relevant skills to conduct research and provide interdisciplinary training in fundamental areas at the forefront of plant science. We aim to cultivate a research environment that will also foster the advancement of the local and national research industry.

The Syllabus

The syllabus covers the latest developments in the plant science arena and has been designed, based on market needs, whereby employability, developing skills as entrepreneur and grooming students as scientists is the prime consideration. Our efforts are strengthened by collaboration with National level institutes and multinational companies, as well as with visiting scientist. We promote healthy interaction between academia and industry. Additionally, we will undertake contract research and be instrumental in commercialization of any product developed at the laboratory level.

Laboratories

The division has the following laboratories with state-of-art equipment:

- General laboratory for microbiology and biochemistry studies
- Critical laboratory for molecular biology and genetic engineering studies
- Tissue culture laboratory for in vitro studies
- Bioinformatics laboratory - software package for sequence comparison, restriction enzyme site identification, primer design, and partial protein characterization.

Research and Development

Designing and development of novel biological drugs:

The PSRD will be actively engaged in identifying prospective therapeutic cytokines,

modification of action of existing cytokines or developing antagonist to cytokines. Furthermore, use of cytokines as a diagnostic tool will be investigated.

- Screening, Identification and isolation of bio-active molecules from herbal and medicinal plants and marine flora and fauna, in particular, anticancer, antiviral and immuno-modulatory molecules.
- Development of Probiotics

Collaborations

We have Collaboration for Academic Programs and Research for Development Activities .

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
- 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

XVII. Future Plans and Activities

- Biodiversity conservation –flora and fauna diversity
- Sustainable Agriculture for Food security
- Endangered species conservation
- Publish books and magazines related biodiversity and environmental issues and medicinal plants.
- Popularize biotech application for rural prosperity
- Herbarium centre for research and conservation
- Phytochemical analysis for herbal drug research
- Climate change and water conservation

XVIII.Acknowledgements

The Executive Committee of the TNSRO expresses their gratitude to all the agencies that have supported various welfare programmes both financially and technically during the reporting period. We are very grateful to them for their generous support without which we could not have accomplished our goals.

Our Auditor

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Chartered Accountant,

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Report presented by

S.Vijikumar

Director/Managing Trustee

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