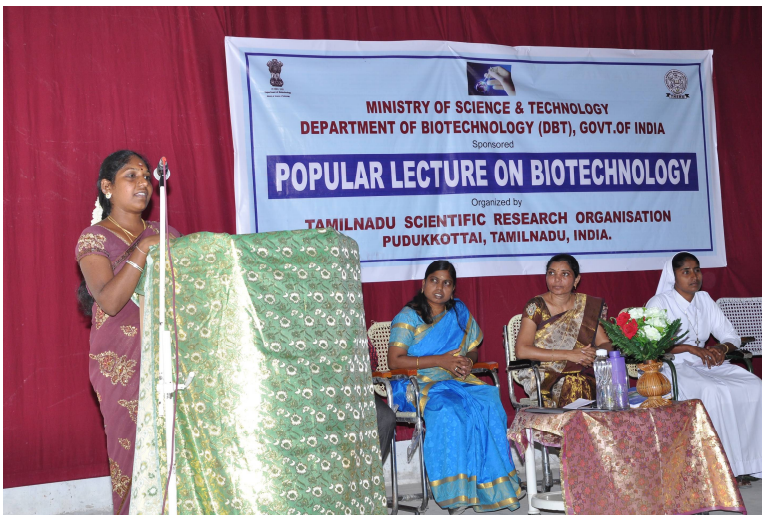
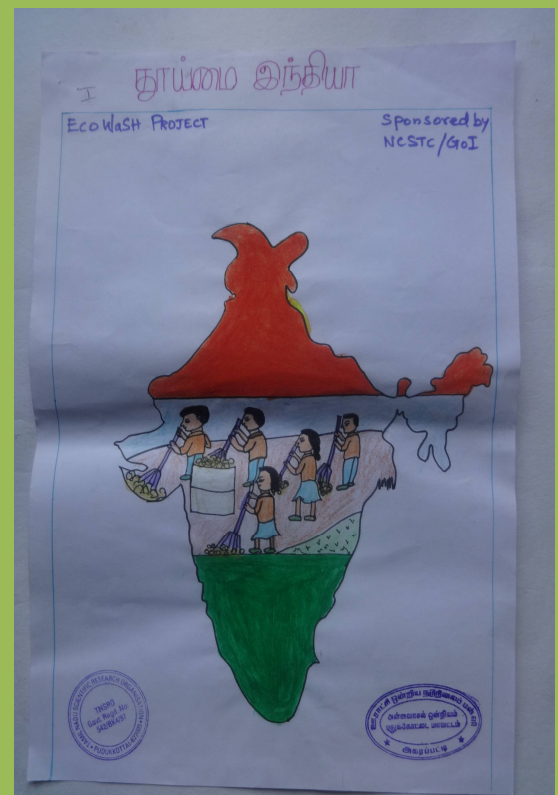


# 2015-2016



## ANNUAL REPORT



**TAMILNADU  
SCIENTIFIC  
RESEARCH  
ORGANISATION**  
PUDUKKOTTAI ,TAMILNADU ,INDIA.

[www.tnsroindia.org.in](http://www.tnsroindia.org.in)



## ANNUAL REPORT 2016



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Post,Pudukkottai 622003,TamilNadu,India.  
04322-261088,9952886637,E.mail:tnsroindia@gmail.com

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TamilNadu Scientific Research Organisation,2016

# **19<sup>th</sup> Annual Report**

## Forward

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We have great pleasure in presenting you 2015-2016 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. The institution is working for the application of science and technology in rural villages in 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 2015-2016. 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. Our institution has received Govt of Tamilnadu Best Institution Award (**Ariger Anna Award-State First Prize**) for 2011 environmental conservation and educational activities.

I am extremely happy that this 2015-2016 period is a truly one of the big mile stone of our institution. Many of the programmes closely benefited to the community. I express my hearty thanks to all donors, Govt. departments, Panchayat raj institutions, 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

## About us

**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.



## 2. Organization Profile

1	Name of the Organization	<b>TAMILNADU SCIENTIFIC RESEARCH ORGANISATION</b>
2	Acronym	<b>TNSRO</b>
3	Registered Address	No.11, NAGAPPA ROAD, <b>ARIMALAM</b> – 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	<b>Legal status</b> (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	<b>Income Tax Registration</b> (a)Tax Exemption Registration (b)80GG Registration No. (c)12AA Registration No. (d) Place of Registration  (e) <b>PAN Card No.</b>	1961  6162E(33)/2002-03, 29.10.2002. 6162E(33)/2002-03, 29.10.2002. Commissioner of Income Tax-I Tiruchirapalli.  <b>AAA TT 9322J</b> dated: 04.11.1997
9	<b>Affiliation</b>	
(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	<b>Banking Details</b> Name of the Bank A/c. No. Type of A/c Branch Code IFSC /RTGS Code	<b>Indian Bank (IB)</b> <b>850149667</b> <b>S/B</b> <b>01815, Arimalam</b> <b>ID IB 000 133</b>
10 A	<b>Banking Details</b>  Name of the Bank  A/c. No. Type of A/c Branch Code IFSC /RTGS Code MICR Number	<b>ALLAHABAD BANK</b>  <b>50200527185</b>  <b>S/B</b> <b>01815, Pudukkottai</b> <b>ALLA0212291</b> <b>622010002</b>
11	<b>Membership</b>	Member in Tamilnadu Federation of voluntary Agencies, Chennai Regd.No.718/2007 Member in Network for Rural Development , Pudukkottai Dist.
12	NGO Partnership system	Registered with Planning Commission ,Govt of India. <b>Unique ID.TN/2010/0031352</b>
13	Chief Functionary/ Director	<b>Dr.S. VIJIKUMAR</b> Director, Tamilnadu Scientific Research Organisation No. 39,Mura Bhavan,Koodal Nagar Rajagopalapuram Post,Pudukkottai-622003 TamilNadu,India



### **3.Vision and Mission of the Organization**

#### ***Vision***

***To improve the resources of our nation and rural prosperity through the application of science & technology and also we dedicate the sustainable development of agriculture, ecology, health, education, employment and food security by the way of transferring valuable informations and action research with the community response and participation.***

#### ***Mission***

***To provide expertise and assistance to rural community in building their capacity to reduce poverty, tackle environmental problem and promote sustainable agriculture, rural prosperity assure and responsibility for their health and pursuer education through science and technological application.***

### **4.Objectives**

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- *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.

### 5. 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.

### 6.TNSRO Hierarchy



## 6.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 – Medicinal Plants 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

## 7 .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	PT
7	Ms.S.Keerthika	BBA	Project associate II	PT
8	Mr.Govind		Field worker	PT



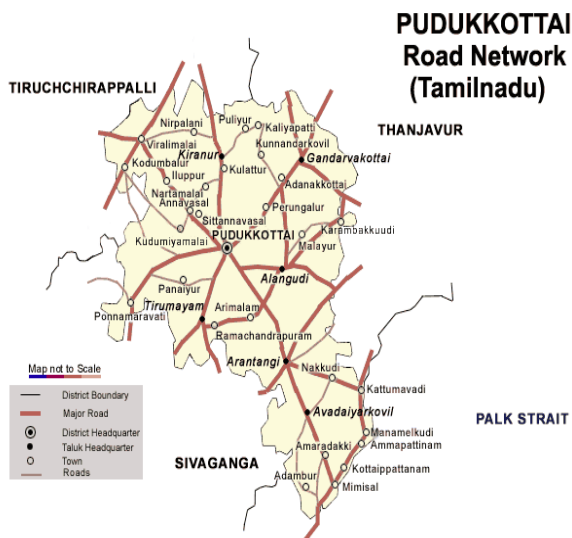
MoU Signed with AWE care Lab-Erode



MoU Signed with Holy cross College-Trichy

## 8. 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 form 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. 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.

## **9.PROGRAMMES /ACTIVITIES 2015-2016**

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### **9.1.Indian Journal of Natural Sciences-Research Publication**



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. IJONS published by our Institution was running successfully. Famous Scientific Information, Research Solution have been published. Above 70 Scientists and Professors have joined as a member. Last year 1000 and above scientific papers we have been published. It is very proud for us. Next year we are discussing to increase the research papers as above the last year. IJONS have been selected as the icon in the Internet.

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 index. The journal was published

effective research articles in past years and also creates more awareness about good scientific publication practice. Our journal is also indexed many web pages.

## 9.2. 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.

In 2015-2016 totally 15 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 or alternative medical doctors who gives treatments in the villages. Now 15 candidates were joined. In Nagercoil for this training we had an agreement with KIAMS. Also we started a training centre at Tirupur. In Tirupur centre Mr.SPD Anbalagan was appointed as a coordinator of this training initially 13 candidates were admitted. We are giving training in the division of Acupuncture, Nature Cure techniques, Flower medicines and certificates have been given for trained members.

### 9.3.Environmental Awareness and Education Training programme



Sensitizing groups of the society about the environment issues, enhancing the involvement of local government authorities, social activists group, SHG's federation, community at large in practicing environmentally begin development process, encouraging people to build up the integrated and action oriented environmental conservation programmes. TNSRO organised the

programme at Keelapaniyoor village on 5<sup>th</sup> May 2015 ,82 general public actively participated.

### 9.4.Health Education Awareness Programme



Rural women constitute nearly 72 percent of total female population of our

country. They play an important role in family development. They are hail from households of

small and marginal farmers and landless labourers. Thus they have a major role in Indian agricultural scenario. But the return from agriculture is very meagre and this is not sufficient to meet women's role in activities relating to home management, child care, nutrition, health, feeding and breeding of animals and poultry needs to be acknowledged.



Indian farm women continue to live in a state of neglect and over exploitation. TNSRO is concentrated in rural women development and creates general health awareness at our target villages. So TNSRO has formed several number of health service groups for women and children for their Health upliftment. The concept of programme has emerged to recover and development women from distress, ill health and exploitation and to give recognition for their valuable contribution. Our organisation also playing major role in

empowering women in different, innovative aspects of education, rights, security, access power of decision making in family and community level.

This programme has been implemented in our remote villages of Keeranur, Annavasal taluk,. On 9<sup>th</sup> Sep 2015. During this programme training, workshop, awareness Rally, competition, distribution of hand bills and materials were conducted. Totally 64 women and 32 children were actively participated.

### 9.5. National Science Day Celebration



To encourage the student and Children in science we conducted a National Science Day program in selected schools in



pudukkottai taluk. In this programme Tamilnadu Scientific Research Organisation, director S.Vijikumar, Roland Foundation director A.Gomathi Shankar, science teacher Mr.S.Muthukumarasamy have given more information about science and research. They gave information in the titles scientific glory, scientific and research Institutions, new invention, scientist Histories. Totally 620 students actively participated in this programme.

### 9.6. Training Program on Organic Farming Agriculture



The inability of Indian agriculture to meet the demand for food in the country during the two and half decades immediately after independence had been a matter of concern at those times. The system



of our agriculture based on the traditional knowledge and practices handed down from generation to generation could not produce enough to feed the increasing population. The ignominy of our dependence for food on the western developed nations and the politics of food aid practiced by them added to our determination to be self-sufficient in food production by modernizing agriculture. However, the achievement was at the expense of ecology and environment and to the detriment of the well-being of the people. The agriculture system





adopted from the west has started showing increasing unsustainability and once again the need for an appropriate method suitable to our requirements is being felt. The practice of organic farming, said to be the best known alternative to the conventional method, also originated in the west, which suffered from the ill effects of chemical agriculture. However, organic farming is based on the similar principles underlying our traditional agriculture. Organic agriculture aims at the human welfare without any harm to the environment which is the foundation of human life itself.

A training program on the organic agriculture was conducted on Melur village of Thirumayam Block. The program was conducted on for Farmers .TNSRO Organisation director ,Dr.S.Vijikumar facilitated the program and the program includes like training on producing of Organic pesticides, Vermiculture compost making and trained the formers to make & implement a model organic agriculture method in their one part of land . 75 Farmers were benefited in the Program.

### 9.7.Spirulina and Azolla EDP Programme

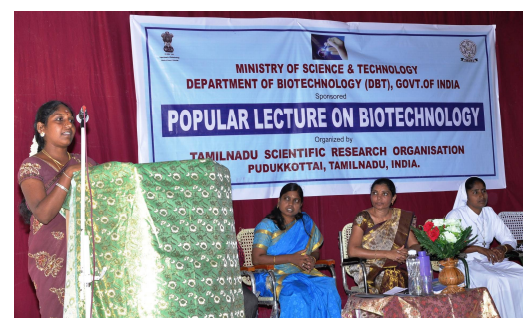


One day training programme have been conducted for spirulina and Azolla cultivation and how to market it. Tamilnadu Scientific Research Organisation director S. VijiKumar conducted this programme. In this programme above 25 youth members have been participated. The programme conducted in Pudukkottai has been started by Mr.A.Gomathy Shankar Managing Director Roland Foundation.He pointed out “ 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 youth.

### 9.8.DBT Sponsored Popular Lecture on Biotechnology Programme

Tamil Nadu Scientific Research Organisation, Pudukkottai has organized an **Popular lecture on Biotechnology** at Arputha College of Arts and Science, Vamban ,Pudukkottai on 21<sup>th</sup> March 2016 to 23<sup>rd</sup> March 2016 under the sponsorship of Department of Biotechnology, Govt. of India, New Delhi.





The programme was inaugurated by **Sister. Pakshi Matilda**, Principle, Arputha College of Arts and Science gave an introductory and inaugural speech on importance of biotechnology. **Dr.S.Vijikumar**, Director, Tamil Nadu Scientific Research Organisation delivered keynote address. Miss. Subha, Miss.Vijaya chamodeeshwari, Miss. Anjali Devi faculties of the Department of Biotechnology, Bharathi arts and Science College for women are felicitated the gathering. The first Lecture or Invited talks given by **Dr.S.Umamaheswari**, Assistant professor, Department of Environmental Biotechnology, Bharathidasan University in the title of “**Marine Biotechnology : Sustainable utilization and conservation of Marine Bio resources**” in his session she pointed out “Marine drugs is one important part of natural medicinal products. Abundant diversity of marine organisms is the treasure resources of novel natural products ...”

Second Lecture was handed by **Dr. C. Thamaraiselvi**, Assistant professor, Department of Biotechnology, **Mother Teresa Women's University, Kodaikanal** as the topic “**Biological Nitrogen Fixation Application for Poverty Alleviation**”, in his session she insisted that “The economic and environmental costs of the heavy use of chemical N fertilizers in agriculture are a global concern. Sustainability considerations mandate that alternatives to N fertilizers must be urgently sought. Biological nitrogen fixation (BNF), a microbiological process which converts atmospheric nitrogen into a plant-usable form, offers this alternative. Symbiotic systems such as that of legumes and Rhizobium can be a major source of N in most cropping systems and that of Azolla and Anabaena can be of particular value to flooded rice crop. Nitrogen-fixing systems offer an economically attractive and ecologically sound means of reducing external inputs and improving internal resources.”

Third Lecture (Tamil) by **Dr.G.Rubalakshmi**, senior scientist,TNSRO as the topic “**Intellectual Property Rights in Biotechnology for Bio security and Biosafety**”. She is pointed out “The application of biotechnology to food and agriculture can bring not only potential risks and benefits as any technology can, but also concerns about the human dimensions coupled with biotechnology. These include both positive and negative impacts on stake holders, social institutions, economy and communities. Biological materials and data have long been preserved in and disseminated by repositories of microbial culture collections, seed banks, etc and were a source of crop biosecurity. These

biological collections face great challenges but also great opportunities owing to the explosive increase in biological materials and data in the field of crop safety and biosecurity. IPR that play a key role in biosecurity and biosafety” Students are interacted well with the lecturers and got cleared their doubts. The lecturers are also insisted that thoughts of scientific research among the students in the field of biotechnology. Miss. Sheela, Assistant professor, Department of Microbiology, Arputha college invited the gathering. Mr.S.Govindan, Coordinator of TNSRO extended his vote of Thanks.

In this programme nearly 750 and above students with faculty from Arputha Arts and science college,Vamban, Bharathi Arts and science college of women, kaikurichi, Pudukkottai H.H Rajah College, Pudukkottai, Holy cross college of Arts and science, Trichirappalli, Sri Venkateshwara college of Arts and science, Peravurani, Govt. Arts college for women, Pudukkottai were participated in this programme. 80% of girl students were actively participated in this event. The programme was organized by the Assistant professors Mrs.M.Shoba, Mrs.A.Radha and many others on behalf of Tamil Nadu Scientific Research Organisation.

### **9.9.Medicinal plants conservation programme**



Important Medicinal or herbal plants, planting and growing them in the kitchen garden, importance of kitchen garden promotion, herbal collection, processing and medicine preparation, disease identification and application the herbal medicine, sustaining of the medicine ect., have been discussed in the programme by the trainers Dr.S.Karunanithi and Dr.K.Ramesh. Totally 64 participants participated in this programme we also distributed medicinal plants for planting and conserving the plants in their premises.



### **9.10.Special lecture on scientific discoveries and Research**

To encourage the student and Children in science we conducted a program in selected schools in Pudukkottai. In this programme Tamilnadu Scientific Research Organisation, director S.Vijikumar, Roland Foundation director Mr.A.Gomathi Shankar, science teacher

Mr.S.Muthukumarasamy and trainer K.Ramanathan have given more information. They gave information in the titles scientific glory, scientific and research Institutions, new invention, scientist Histories. 154 School and college students have been participated in this programme. Special exhibition have been kept to encourage the students in science. Student science assembly had started.



### 9.11. Medicinal plants conservation by Home Garden Formation programme



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 providing training programme on home garden formation at Arimalam and Pudukkottai block 5 selected villages. TNSRO also documented as a herbarium /voucher specimen with photograph of more than 250 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.

### **9.12.Farmers Training Programme on Adaptation of Climate change**

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. 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.



TNSRO has organized 5 block 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. Preprepared 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 bonding 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

### 9.13.National Environmental Awareness Campaign (NEAC) -2015-2016

Awareness of environment was brought to world focus following the 1972 Stockholm conference on human environment and with the publication of the report of the WCED in 1987. In India serious environmental problem have not been evident until the middle of the present century. India is a large developing country with nearly two-thirds of the population depending directly on the climate sensitive sectors such as agriculture, fisheries and forests. The projected climate change under various scenarios is likely to have implications on food production, water supply, biodiversity and livelihoods. Thus, India has a significant stake in scientific advancement as well as an international understanding to promote mitigation and adaptation. This requires improved scientific understanding, capacity building, networking and broad consultation processes.

We are concentrating the conservation of our own environment and bio diversity since 1997. Already our organization was organized many environmental awareness programmes in the strong concept of clean and green village. Conserve our local resource and management of solid wastes. In this year our Ministry of Environment and Forests is announced the topic for NEAC is Forest Biodiversity conservation. TNSRO got sanction from Ministry of Environment and forests RRA – PEACE Trust Dindugul.



Our organization was organized the NEAC programme with the global and national theme of **Combating Desertification, Land Degradation and Drought**. Training workshop, special lecture, Competition, Distribution of resource materials, Exhibition, Folk performance etc..Organised at Sengol matha Nursery & Primary School,Pudukoottai on 04.02.2016 , Arputha College of Arts & Science,Kovilur-Mother Therasa School,Araadipatti on 09.02.2016 , Tree plantation, Establishment of green belt of traditional plants, Home garden formation , Documentation of local traditional knowledge/ practices related to farming, water conservation, weather forecasting etc , programme organised at Vathanakurichi Panchayat on 04.02.2016. Kuppakudi Village,Arasadipatty Village, Thirumalairayapuram Village on 09.02.2016. The rare I plant saplings were distributed to all participants. Totally 1200 and above participants involved in this programme. Special lectures delivered by the eminent scholars through LCD. Prizes distributed to all winning students. Dr.S.Vijikumar Director, TNSRO, Pudukkottai,

Mr.A.Arangan D.Agri.,DHM., Dist.Coordinator,National Green Corps,Aranthangi Educational Dist,Pudukkottai Mr.A.Gomathi Shankar Director,Roland Foundation,Pudukkottai are acted as a resource of this programme.

#### **9.14.DBT Sponsored National Conference on National Conference on Achievements, Challenges and Opportunities in Environmental Biotechnology for Sustainable Livelihood Security**

The Tamil Nadu Scientific Research Organization is Non Governmental Organization located at Pudukkottai. It is working with the objective of the science for rural prosperity. Tamil Nadu Scientific Research Organization has organized two days DBT, Govt. of India Sponsored **National Conference on Achievements, Challenges and Opportunities in Environmental Biotechnology for Sustainable**



**Livelihood Security** on 27<sup>th</sup> and 28<sup>th</sup> February 2016. The Tamil Nadu Scientific Research Organization is to promote the research activities in the field of science. This institute motivates the young researchers and scholars to publish and present the papers. The institute has organized the National conference for the benefit of scientific community.

The First day of the National Conference begins with the Tamil Thaivazhthu. Mr.K.Ramanathan, Assistant Professor, Department of Biotechnology welcomed the gathering. Dr.S.Vijikumar, Director, Tamil Nadu Scientific Research Organization, Pudukkottai presided over the function. He insisted that the importance of two days DBT sponsored National conference and its



applications. Dr.C.Tamari selvi, Assistant Professor, Department of Biotechnology, Mother Teresa Women's University, Kodaikanal and Dr.M.Rajathi DModilal, Assistant Professor, Department of Zoology, Holy Cross College (Autonomous), Tiruchirappalli offered felicitations. Dr.K.Samiayyan, Dean, Agricultural College and Research Institute, TNAU, Eachangkottai, Thanjavur was the chief guest on the occasion. In his key note address, he has motivated the students with innovative thoughts. He also insisted that Green Revolution to elevate global food production because of the limited amount of land and water in many parts of the world. The only way to expand production is by developing a technology that increases output per unit of input. By 2030, the world's population is expected to grow to 8.1 billion at a rate of over 75 million people per year. FAO 2015 report stated that almost all of the population increases will occur in developing countries that can ill afford additional population pressures. Based on a population increase only projection with per capita consumption remaining constant, world cereal

production must rise from approximately 1.92 billion tons in 1990 to 2.88 billion in 2030 to match the demand.

He also suggested that the need to raise yield plateau because much of the exploitable yield gap between the farm and experimental station has been eliminated in many of the world's favorable areas, new technologies for these regions almost certainly will depend on increased investment in research on advanced breeding techniques, crop physiology, molecular biology and Environmental Biotechnology. In the recent development in environmental biotechnology especially in agricultural research leads to development of the crops for world food security.

He pointed out that there is a pressing need to document both the positive and the negative effects of biotechnology in rural communities. This will be of value in the ongoing debate about biotechnology and it will provide essential information to policymakers, research managers, elected representatives and community leaders. He explained that the importance of environmental biotechnology with the needs to go hand in hand with investment in broad based agricultural growth. There is considerable potential for biotechnology to contribute to improved yields and reduced risks for poor farmers as well as more plentiful, affordable, and nutritious food for poor consumers. The Opportunities of Environmental Biotechnology Research will reduce poverty, food insecurity, child malnutrition and natural resource degradation.

In this National Conference, the faculty members, research scholars and students participated and presented the papers from the Annamalai University, Alagappa University, Mother Theresa University, Tamil Nadu Agricultural University, SRM University, Kerala Veterinary Science University, Tamil University, Bishop Heber College, Holy Cross College and other Government Colleges. Nearly 150 participants attended the conference and they got comprehensive knowledge about the Environmental Biotechnology.

### **Conference Recommendations**

- 1) Conference shall be conducted twice in a year.
- 2) The organization and DBT shall also assist the researchers to get patents for their innovation and discovery.
- 3) Common syllabus for Environmental Biotechnology could be followed in all colleges and universities.
- 4) Application based research related training to farmers / rural population shall be given.
- 5) Conference theme shall also be focused on other subjects such as Life Sciences/ Chemical Science.



### 9.15.Ongoing Research Programme

S.No	Project Title	Estimated cost (Rs.)
1	Screening on medicinal plants analysis of bio active principles research programme 2015-2017	1,25,000.00

### Medicinal Plants Research

In the world today, there are still a lot of people who do not have adequate access to basic needs such as food, water, education, health services and clean environment among others. Medicinal plants address not only the need for access to medicine as a component of health services but also to the need for increased income for farmers and as a significant contribution to the national economy. And, yet, a basic foundation to effectively bring about these contributions is to be able to collect, characterize, evaluate the genetic resources that a country has from animals, plants, insects and microorganisms which can serve this purpose. While there have been constraints in exchanges of materials and technology for pharmaceuticals derived from biological organisms, largely because of its very significant commercial value and questions on intellectual property rights, there is no doubt that a critical human need such as access to medicine which determines quality of life of human society will remain as a concern that will require a concerted effort among countries and peoples all over the world. 2015-2016 we conducted 5 selected medicinal plants for evaluating their medicinal properties.

### 9.16. Summer Research Project

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.

#### 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. In 2015-2016 we enrolled 25 PG scholars for Students Summer Research Project. These fellows are successfully completed their tasks.

## 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.

### 9.17.Special Lecture on Swami Vivekananda –National Youth Day Celebration



To honour Swami Vivekananda, National Youth Day is celebrated every year on January 12 since 1985. It was in 1984 that the Government of India declared it. The government felt that the philosophy of Vivekananda and his ideals are a great source of



inspiration for the Indian youth. So, it was declared that his birthday will be observed as National Youth Day. This day is of great importance in the academic calendar and schools and colleges all over the country conduct processions, speeches, recitations, youth conventions and various music, sports and essay-writing competitions. There are many youth organisations, study circles and service projects which derive inspiration from the writings and lectures of Vivekananda.

He stands as a role model for generations in various respects. Swami Vivekananda inspired many young people including great leaders like Netaji Subash Chandra Bose through his works. His works and knowledge is an ideal inspiration for the youth to achieve greater things in life.

The main objective of National Youth day is required for us to spread knowledge and the literature of Swami Vivekananda to the society, to build good characters and true citizens of the Nation. A responsible Youth must be taking the responsibility for the development of Individuals, villages and cities. Let us all put our efforts together to make a better society, inspired from the ideals of Swami Vivekananda is into --

- Inspiring youth to channelize their powers towards the development of the Nation
- Working for fulfillment of basic needs of people
- Creating awareness among the people in various aspects of Health, Education, Technology, and develop the quality of Spiritualism among the Youth

The TNSRO in Pudukkottai is all set to organise special lecture programme at its own premises on January 12 as part of Swami Vivekananda Jayanti celebrations in the national

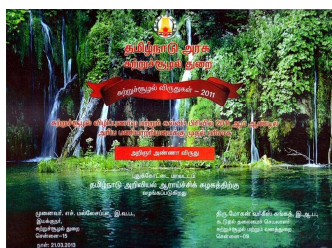
theme of **Indian Youth for Development, Skill and Harmony**. National Youth Festival is also organised annually and includes cultural activities that are both competitive and non-competitive in nature. In this programme totally 65 youth and women participants were actively participated. So, the National Youth Day is started celebrating every year to encourage and inspire the honorable youths of the India. Schools and colleges are delightfully adorned to enthusiastically celebrate the event. Swami Vivekananda was a great person who always believed in the youth power to lead and nourish the historical culture of the country and carry some advancement required by the country to be developed.

## 10. 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, Holy cross college, Trichy.
- Environmental Awareness – Peace Trust/RRA/MoEF/Dindigul
- NGO partner – Roland foundation, RDO, Pudukkottai.

## 11. Awards and Appreciation for Environmental Education and Awareness



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.

## 12.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

## 13.Available Facilities

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

## 14.Our Auditor

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

**Report presented by**  
**S.Vijikumar**  
**Director/Managing Trustee**  
**TamilNadu Scientific Research Organisation (TNSRO)**  
**Plot No.:39,Mura Bhavan,Koodal Nagar,**  
**Rajagopalapuram post,Pudukkottai Dist.-622003.**  
**TamilNadu,India. Off : 04322-261088**  
**Mobile:9952886637, E.mail:tnsroindia@gmial.com,www.tnsroindia.org.in**