

**TAMILNADU SCIENTIFIC RESEARCH ORGANISATION -ARIMALAM**

**ANNUAL REPORT 2010**



**WE MAKE BRAVE THE WORLD BY SCIENCE**

## ANNUAL REPORT 2010



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# **13 th Annual Report**

## **Forward**

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

**S.Vijikumar**  
**Director**

## **Director's Introduction**

**Tamilnadu Scientific Research Organisation (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, there by 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.

2009-2010 has been a significant year in the evolution of TNSRO. New research and training facilities were created at our organization. NABARD'S rural innovation fund project "Low cost Spirulina cultivation for poverty alleviation" dedicated to the Ayyanarpatti village, Arimalam Block, Pudukkottai Dist, it was inaugurated by AGM, NABARD and LDM Bank manager Pudukkottai. This is a unique project, which will concentrate the poverty alleviation in this village. The 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 complied by Mrs.V.Muthulakshmi, Project officer and Miss.S.P.Savithri Administrator, Miss.P.L.Vijayalakshmi Knowledge worker of the organization. The design and printing was done by our village knowledge centre. 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.

## 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 Dist TamilNadu
4	Administration office Address	No.46/141, Meenakshipuram Rd, Arimalam – 622 201 Pudukkottai Dist. Tamilnadu.
5	Phone Nos	04333-271989, 9952886637
6	E. mail	tnsro@yahoo.co.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	Income Tax Registration (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	<b>Indian Bank (IB)</b> <b>850149667</b> <b>S/B</b> <b>01815, Arimalam</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	Chief Functionary/ Director	<b>Dr.S. VIJIKUMAR</b> Director, Tamilnadu Scientific Research Organisation No.46/141, Meenakshipuram Rd, Arimalam – 622 201 Pudukkottai Dist. Tamilnadu.

*The tree is a peculiar organism of unlimited kindness and benevolence and makes no demand for its sustenance, and extends generously the products of its life activity. It affords protection to all beings, offering shade even to the axe men who destroy it.*

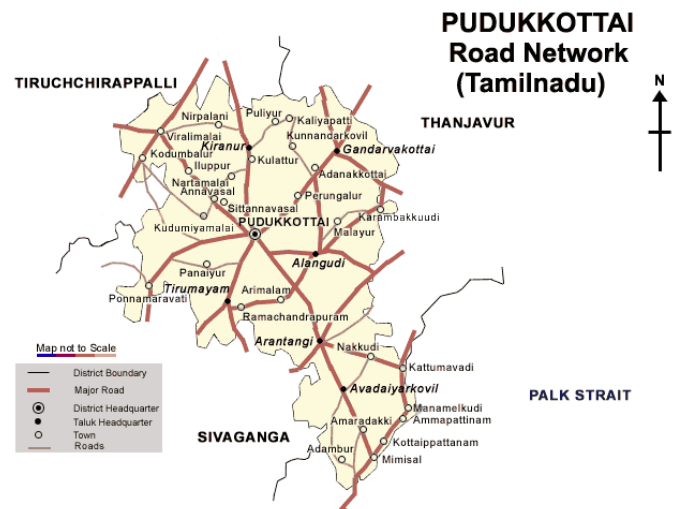
- Gautama Buddha (487 B.C.)



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

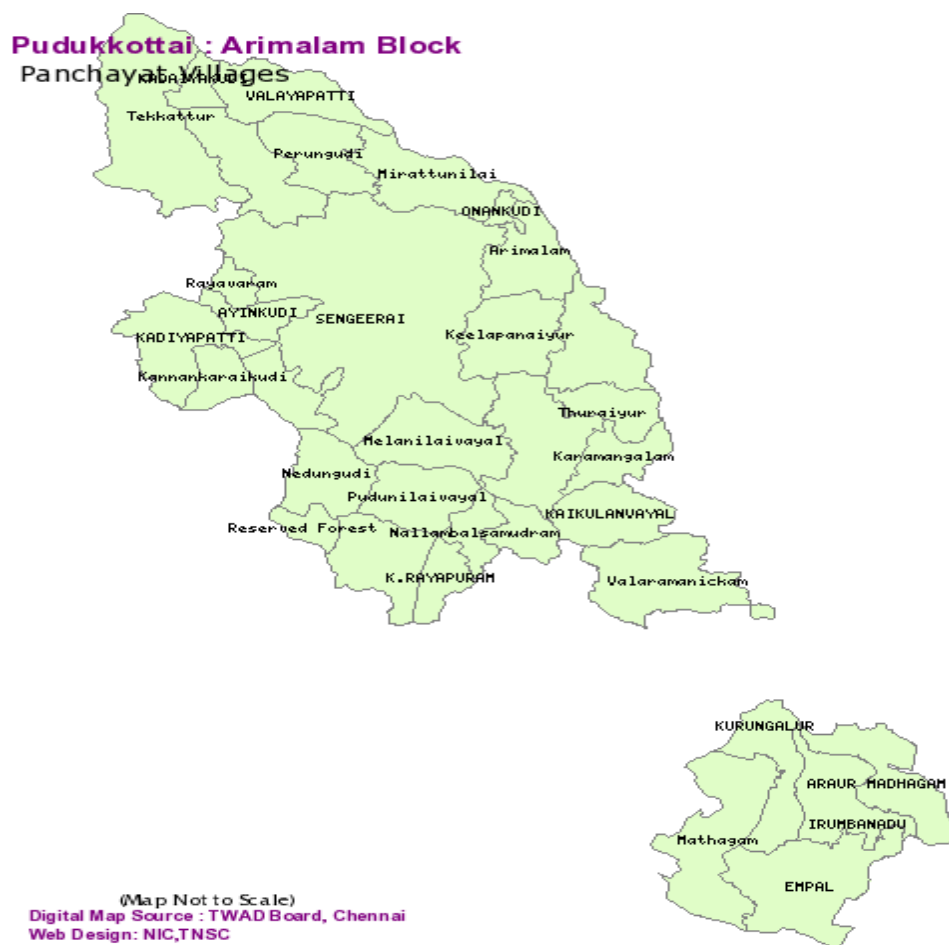
### Road Communications

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.

### Arimalam Block Map



## **II. 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 applications.***

## **III. Aims and Objectives**

1. 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.
2. 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.
3. To form and maintain farmers field schools, farmer's science clubs, students science club and youth clubs.
4. To formulate and implement any successful environmental programme it is necessary to make it socially relevant
5. To institute awards & fellowships for distinct fellow in the field of environmental conservation and science popularization.
6. To formulate and implement the community based health promotional programmes.
7. To conserve our biodiversity through the effective implementation plan.

8. To promote and conduct research and development programmes in the field of health, environment, agriculture, education etc
9. To publish research journals, books and local community news paper in the view of promotion of environmental science.
10. To encourage the rural community in Sustainable Agriculture through Natural farming.

#### **IV.TNSRO Working Fields/Programmes**

- Bose Science Society – Science popularization
- Bio tech for Villages – Village promotion through Biotechnology
- ICT for Rural Prosperity-Village Knowledge Centre
- Environmental Education and Conservation-Village Biodiversity School, Tree plantation, NEAC etc
- Community College- Self Employment Generation.
- Plant Science Research Division – Research
- Protection of Indigenous Knowledge System-Documentation.
- Farmers Training School- Farmers Promotion
- Publication and Library Division- Publish journals & Books, Library development.
- School of Social Work- Training and Research in Social works and NGO management.
- Village Health Services-Free Medical Camps
- Disaster Risk Management- Training and Research

## V.DISTRICT PROFILE AT A GLANCE

Name of the district	:	<b>Pudukkottai</b>		
(1) Geographical area (sq.kms)	:	4663.29sq.kms		
(a) No.of blocks/talks	:	13/ 9		
(b) No.of villages (inhabited)	:	764		
(c) No.of villages electrified	:	764		
(d) No.of villages connected by all Whether roads	:	764		
(e) No.of villages having supply of potable water:	:	764		
(2) Rainfall (mm)	:	Normal	Actual	
		922.8	2005	2006
			<hr/>	
		1260.8	1286.	
(3) Agro-climatic Region & Zone	:	Southern Zone. Semi Arid West Monsoon and Moist Sub- Humid during nor East Monsoons		
(4) Population	:	(in '000)		
(a) Male	:	724		
(b) Female	:	735		
(c) Total	:	1459		
(d) Population density/ sq km.	:	313		

(5) Classification of Workers

(a) Cultivators	:	370179
(b) Small & Marginal Farmers	:	344186
(c) Agricultural Laborers	:	229846
(d) Artisans	:	3369
(e) Household Cottage Industries	:	13008
(f) Allied Agro-activities	:	69990
(g) Other workers	:	169458

(6) Land utilization (ha).

(a) Geographical area	:	466329
(b) Net sown area	:	158724
(c) Forest	:	24103
(d) Fallow land	:	100931
(e) Land not available for cultivation	:	129265
(f) Cropping intensity	:	113%
(g) Area brought under HYV seeds	:	102750

(7) Size of holdings	No.	(%)	Area	(%)
a. Less than 1 ha	:	344186	93	164180 61
b. Between 1 - 2 ha	:	18624	5	50265 19
c. Above 2 ha	:	7369	2	7369 20
Total	:	370179	100	269607 100

(8) Irrigation (in ha)

A. Net Irrigation area	:	111182
B. By canals	:	10730

C. By tanks : 71944

D. By wells : 28508

(9) Consumption of organic and chemical fertilizers and pesticides (per ha)

(a) Chemical Fertilizers : 240.8 kg/ha

(N.117.4+P.54.4+69.0=240.8)

(b) Organic Fertilizer : 240 kg/ha

(c) Pesticides : 18.41tr/ha

(10) Agricultural support facilities (Nos)

Seed outlets : 55

Fertilizer Centers : 493

Pesticide Outlets : 419

Rural Markets / Mandis : N.A

Rural Godowns : (Nos / Total Capacity) 2 / 23000 MT

Cold storages : (Nos / Total Capacity) 1/ 4000 MT

(11) Animal Husbandry (as per 2004 – 17th livestock census)

a. Plough Animals : 138871

b. Dairy Animals

(i) Cows : 333326

(ii) Buffaloes : 31958

c. Sheep/goat : 151078/177816

d. Poultry : 476110



(12) 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.

(13) 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.

(14) 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.

(15) 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 of any raw material.

## VI.BLOCK PROFILE AT A GLANCE

### Project Operational Area Details

S.No	Particulars	Details	Remarks
1	Name of the District	<b>Pudukkottai</b>	
2	Name of the Block	<b>Arimalam</b>	
3	Date of Establishment	02.10.1960	
4	Standard	III Group	
5	Total Area (Acre)	77806.85 acre	31488 Hectare
6	Total Population (2001)	M-34293 / F-36380	70673
7	Total SC Population	M-6101 / F-6224	12325
8	Total ST Population	M-11 / F-9	20
9	Total No. of union councilers	13	13-4-1-1
10	Total No. of Panchayats	32	
11	Total No. of Panch. councils	101	
12	Total No. of Panch. councilors	240	61-30-18
13	Special Grade Panchayat	Arimalam	
14	Total No. of Union Schools	54	Buildings
15	Total No. of Public Well	195	
16	Total No. of Hand Pump	381	
17	Total No. of Tube well	149	
18	Total No. of water tanks	123	
18	Union Dhar Road	61.05 K.M	32 Nos
19	Panchat Dhar Road	104.90 K.M	30 Nos
20	Panchat Metel Road	42.60 K.M	153 Nos
21	Panchat Saral Road	37.40 K.M	41 Nos
22	Panchat Sand Road	9.10 K.M	6 Nos
23	Noon Meal Centres	159	
24	Noon Meal Beneficiaries	M-12961 / F-12747	25708 Children
25	Union Primary schools	65	Private-38
26	Govt.Middle schools	18	Private-5
27	Govt. High schools	5	Private-1
28	Govt. Higher Sec. schools	4	Private-1
29	Technical Institution	-	Private-1
30	Colleges	-	Private-4

31	Govt.Hospital	1	Kadiyappati
32	Primary Health Centre	5	
33	Sub Health Centres	15	
34	Union Animal Husbandry	1	Kallur
35	Animal Husbandry Hospital	3	
36	Animal Husbandry Sub centres	4	
37	Police Station	4	
38	SHGs	548	KASA
39	SHGs	150	RDO
40	Banks	06	02 Private
41	Cooperative Banks	01	-
42	Average Literacy Rate	56 %	
43	Annual Rain Fall	1043.31mm(average)	
44	Weather Stations	2	Arimalam, Kaikualnvayal
45	Annual Highest Temp	108 deg	April-May 2009
46	Annual Lowest Temp	95 deg	July- Aug 2008
47	Major Crops	Paddy,Sugarcane	Vegitables, Grountnut
48	Major Irrigation Rivers	Vellar, Pampar	
49	Minor Irrigation Source	Kanmai,Oruni	Ponds and Wells
50	Small Scale Industries	Paper Board Ind.Mineral Water,	Soap Ind.and Rice mill
51	E.B offices	3	Arimalam,Karama ngalam, Embal
52	NGOs	3	TNSRO,RDO, KASA
53	Major Employment	90%	Agriculture
53	Soil Type	Red soil	
54	Current Govt Schems	NREGP,IAMWARM	
55	Union Administration Office	Arimalam	
56	Farmers Club	1 Onangudi	TNSRO-NABARD
57	Total No. of Revenue village	50	

**Current Target Area:** - Arimalam Block, Pudukkottai Dist 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.

### VII. Board of Managing Committee

S.No.	Name	Address	Qualification	Designation
1	Dr.S.Vijikumar	46/141, Meenakshipuram Road, Arimalam, Pudukkottai District.	D.Sc.(A.M.)	Director/ Managing Trustee.
2	V.Muthulakshmi	Annamalalyar Street, Arimalam.	D.M.L.T. NVA. Fellow	Financial Trustee.
3	T.Malarrajan	Saralvilai, Kumarapuram (po) K.K. Dist.	+ 2	Trustee.

### IX. Details of Management Committee meeting held during the period of 2009-2010 meeting details as follows. Total No. of meetings-12

S.No.	Date	Meeting No.	Subject
1	5.4.2009	206/April/2009	Discussion about NABARD –RIF Spirulina project Approval of project for identification and conservation of farmers' traditional varieties.
2	5.6.2009	207 / June/2009	For project approval of conducting farmers training programme under NABARD grant assistance.
3	5.7.2009	208 / July/2009	Project approval of submission on framers rights act awareness programme among farmers in Pudukkottai dist to PPVFRA /Newdelhi. Submission on proposal to PEACE Trust/RRA/MOEF/NEAC programme 2009-2010

4	2.8.2009	209 / August/09	For Approval of establishment of Plant science research division for plants research and trainings ,For approval of establishment of research journal in the name of “ Indian Journal of Natural Sciences –IJONS or Research Journal of Natural Sciences, Improve the activity of Village Biodiversity School Project.
5	7.9.2009	210 /September/2009	For Approval of establishment of “Farmers Training School –FTS Separate wing for farmers trainings. Draft the strategies of Endangered plants Conservation.
6	5.10.2009	211 / October/09	For approval of submission on project to ICMR -Ethnomedicines
7	3.11.2009	212 /November/09	Discussion about NEAC environmental programme-1st round. Submission on project proposal to INSA approval.
8	5.12.2009	213 /December/09	Approval of Disaster Risk Management Programme.
9	1.1.2010	214 / January/2010	Discussion meet on PPVRA training programme – 1st round Discussion about NEAC environmental programme- final round. Approval of conduct National Youth Day celebration.
10	5.2.2010	215/ February/2010	For approval of farmers trainings, science club meetings, library and lab development.
11	3.3.2010	216/ March/2010	Approval for submission on projects to JSS and MOEF Govt of India.
12	31.3.2010	217/March/2010	Special meeting for discussion and approval of 2009-2010 year A/c Closing

## X. Staff Particulars

S.NO	Name	Qualification	Designation	Part/ Full Time
1.	DR.S.Vijikumar	D.Sc.(AM)	Director	FT
2.	Ms.SP.Savithri	B.Com;..	Administrator	FT
3.	Mrs.V. Muthu lakshmi	MLT, FNVA	Project Officer	FT
4.	Mr.J.Christopher	CEE; ToT	Prog.cordi. Disaster management & Biodiversity	PT
5	Ms.PL.Vijayalakshmi	MLT	Prog.cordi ICT/ Knowledge worker/VBS	FT
6	Ms.M.Rani	MLT	Lab assistant & Library assist.	FT
7	Mr.M.Veerappan	B.Com	Accountant	PT
8	Mr.A.Kalidoss	M.Sc; Ph.D..	Scientist, PSRD	PT
9	Mr.R.Kalaichelvan	M.Sc; PGDBI; DMLT	Research Associate - PSRD	FT
10	Mr.J.Johnvasanth	M.Sc;PGDBI; DMLT	Editorial Assistant – IJONS Journal	FT
11	Mr.VKM Muthuram Sanjeevi	M.Sc;PGDBI; DMLT	Principal, IPMS	FT
12	Mrs.D.Tamilarasi	12 <sup>th</sup>	Office Assistant	FT
13	Solid waste management workers	8 <sup>th</sup>	15 Nos	FT

## **XI.PROGRAMMES /ACTIVITIES**

### **1.Nature Cure and Yoga Promotional Programme for General public and Childrens**

Naturopathy as a system of medicine may not be as old as the traditional medicine. It is a very good therapy for long term chronic ailments at human beings. It is a drugless therapy, cheap and best for rural people. In this year our organization was organized Naturopathy and yoga awareness programme



for General public at Arimalam town panchayat in Arimalam block. In this programme was provided necessary training to the participants in Nature Food Preparation, Yoga Demonstration, Nature Cure Treatment Techniques, Film show and valuable lectures are given to the women groups. Totally 52 general public including children and students were benefited in this programme. The programme was sponsored by SIMPRA, Thanjavur.

### **2. Bose Science Society –Science popularization**

TNSRO was established a Science club in the name of **Bose Science Society** at Arimalam. The society was taken VIPNET Science programmes from Vigyan Prasar, Department of Science Technology, Govt. of India, New Delhi. Its unique authorization no. is V.29190001/99. TNSRO was conducted special science classes with following activities among the school children. Now 50 students and younger were enrolled in this club.

1. Special Lecture programmes related scientific inventions
2. Demonstration projects
3. Dissemination of Information regarding Environmental issues.
4. Competitions

### **Science Club Formation and Maintenance**

TNSRO has been creating scientific awareness among the school students through the Science Clubs. Our Dist. Elementary Education Officer was given the order of permission to establishment of Science Clubs in Union Primary Schools at Arimalam Block. TNSRO was established and maintained 30 Science Clubs in all over the block;

all are operated through our own contributions. Totally 2500 and above students were enrolled and benefited in this programme every year. Above said clubs application are submitted to Vigyan Prasar, Govt. of India for getting unique authorization number with affiliation certificate. Monitoring and activities report submitted to the VIPNET regularly. New active members are selected for these clubs. They are encouraged through various science awareness programme conducted by us.

### **3.Solid Waste Management Project**

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

### **4.NABARD'S Rural Innovation Fund –Demonstration Pilot Project Low cost Spirulina Cultivation for Poverty Alleviation An Environmentally Sound Green food revolution**

Spirulina Plankton is a blue-green vegetable micro-algae found in the highly alkaline lakes of Africa and Maxico. The natives of these places have been using Spirulina as part of their diet for centuries. Today, Spirulina cultivation is becoming a world-wide phenomenon owing to its extraordinary nutritional qualities. The various considerations that highlight the importance of Spirulina under present day context are:



- The only single, natural source providing the highest amount of protein ever known to man is spirulina which contains 71% protein. The protein content in spirulina is three times that of soybean five times that of meat and the protein quality is





among the best with a good degree of aminogram. The protein yield per unit area per year is the highest compared to other protein yielding crops.

- Like all other microbial cells, Spirulina contains all natural vitamins including the 'B' complex range, minerals and growth factors including gamma-linolenic acid (highest after milk and 'evening prime rose oil' ). It contains the highest amount of beta-carotene a precursor of Vitamin 'A'. It is the only vegetable source of vitamin 'B12' containing two and half times that of liver.
- The concentration of nucleic acids is among the lowest recorded for microbial cells considered as food or feed.
- The other micro organisms including those pathogenic to humans and other animals are eliminated in the production process of spirulina due to its requirement of a very high alkaline growth medium.
- Spirulina's preference for tropic and sub tropic climatic conditions offers a best land use in arid areas.



## Process

Spirulina Cultivation essentially consists of four major steps which are

- Development of inoculums
- Culturing the spirulina in the production ponds
- Separation and washing of the bio-mass from the growth- medium
- Drying or dehydration of bio-mass

## Application

**Food Supplement** -The World Health Organisation has found Spirulina to be an excellent food for human consumption and Spirulina has the approval of the Food & Drugs Authority of the United States for being sold as a natural food. In Japan and in the United States, business executives take spirulina tablets to combat stress. Athletes and joggers take spirulina for quick energy synthesis.

**Health and Medicine-** Non insulin dependent diabetes, Cholesterol control, Vitamin A, deficiency & malnutrition, Adjunct to cancer patients undergoing chemotherapy, Formulations with other natural products as a general health supplement., Liver corrective for liver disorder, Burns therapy, skin grafting, Control obesity, Lactating agent for mothers.

**Extraction-** Beta-carotene for medicinal & laboratory use, C-phycoyanin colouring agent in food, microbiological areas cosmetics, C-phycoyanin - colouring agent in food, cosmetics, etc. Chlorophyll - colouring agent, Essential aminoacids - for microbiological & chemical essays.

**In Pisciculture-** Speciality feed for aquarium fish, Colour enhancement feed for Gold fish, Formulation with existing feeds for augmentation of vitamins, High protein feed for table variety fishes (fresh water), and Special feed for shrimp farming.

**In Entomology and Sericulture-** Feed to increase yield in mulberry consuming silk worm, Speciality feed for breeding and culturing various insects used for research.

**Cosmetics-** Spirulina in pimple lotions, Facial asks, Hair oil, Shampoo, Mineral bath, Skin cleaner, Tooth paste.

The demand for high quality of eco-friendly food and nutrients material is steadily increasing due to interest in natural products. The need of setting up this unit to meet the demands of the people has been felt by rural poor women, youths and farmers. In order to meet this demand there is ample scope for introduction of small production units which will serve to augment the incomes of rural society. The project beneficiaries are suffered from malnutrition including children. So this project will help the village people to get adequate nutrition from Spirulina and develop their health, socio and economic conditions. Definitely the project alleviates the poverty of the target village.

## Overall Project Description

Project Area	<b>IYYANAR PATTY VILLAGE</b> Kummangudi Panchayat Arimalam Block-Pudukkottai Dist-Tamilnadu.
Objectives of the project	Income augmentation and / or employment generation for rural poor women/youth and rural farmers. <ul style="list-style-type: none"> <li>• Providing training to all beneficiaries of the above said project.</li> <li>• The beneficiaries selecting from target village.</li> <li>• Providing basic facilities to the above for setting up new unit to the beneficiaries.</li> <li>• Providing necessary technical and managerial back up to these techniques.</li> <li>• Assisting in market formation.</li> <li>• Promotion of Health in the target village.</li> <li>• Promotion Socio economic status of the target village.</li> <li>• Providing innovative R &amp; D inputs.</li> <li>• Creating mass awareness generation about health and hygiene, rural employment opportunities</li> </ul>
Project Methodology	A nodal training centre was set up an organization at the project site. The training was provided at this centre with all requisite facilities. 100 rural poor women/youth/farmers are chosen from the target village. These trainees are then given basic study kits for training, after training the basic assistance will be provided by our institution for setting up of these type new units for trained women. The organization provides constant technical, managerial back up and thus on the job training to the beneficiaries marketing avenues is explored and tie ups generated. In a month they are able to earn about Rs. 3000 as gross income from one unit. (One Kg of dry spirulina powder is being sold at Rs.1000 in the market.) Even after deducting the expense for maintenance and employment for 2 persons they are able to realize a net

	profit of Rs.2000/per month. Also our organization will provide all basic education towards health & hygiene, environment conservation, capacity building and rural employment generation among the target villagers. The beneficiaries getting the profit regularly, TNSRO will induced and supported the beneficiaries to establish another one unit.
Completed activities	<ul style="list-style-type: none"> <li>✓Awareness Generation – 550 beneficiaries</li> <li>✓Batch wise training – 100 beneficiaries</li> <li>✓Orientation Training -75 beneficiaries</li> <li>✓ Field visit - 75 beneficiaries</li> <li>✓ Demo unit formation - 50 beneficiaries</li> </ul>
Ongoing activities	Market formation and Documentation
Innovation	Yes, our idea is truly innovative viz spirulina is truly single cell protein it is suitable supplementary food for children to elder people. Despite, growth of food technology is rapid, rural India peoples suffered by protein energy malnutrition (PEM) and some other consequences related with protein malnutrition. Peoples spending their most income for treating above said nutrition problems. By cultivating spirulina in low cost technology he can able to fulfill his health, economic and social requirements. In India few large scale industries are cultivating spirulina as commercial, so the cost of spirulina is relatively high hence rural people are not able use by means our project we will alleviate the poverty. The existing projects solely improve economic or social status of people but our project will improve their health, environment, social, economic and political status and is highly sustainable.
Project Benefits	<p><b>Health:</b></p> <ul style="list-style-type: none"> <li>- Fulfill protein requirements</li> <li>- Strengthen the immune system</li> <li>- Supports cardio vascular function and healthy cholesterol</li> <li>- Improves gastrointestinal and digestive health</li> <li>- Enhances natural cleansing and detoxification</li> </ul>

	<ul style="list-style-type: none"> <li>- Reduces cancer risks with antioxidant protection.</li> </ul> <p><b>Environment:</b></p> <ul style="list-style-type: none"> <li>- Pollution free</li> <li>- Land and soil conservation</li> <li>- Spirulina grows alkaline water hence in conserve fresh water. (In the proposed village people using alkaline water for non drinking purposes because it is plenty)</li> <li>- It produces high O<sub>2</sub> into atmosphere (16.8 tons O<sub>2</sub> per hectare per year).</li> <li>- It reduces the CO<sub>2</sub> content of atmosphere produced by industries.</li> </ul> <p><b>Economic:</b></p> <ul style="list-style-type: none"> <li>- It provides self employment</li> <li>- Comparatively, income is high</li> <li>- Creates rural employment opportunities</li> </ul> <p><b>Agricultural:</b></p> <ul style="list-style-type: none"> <li>- It is used as fertilizers</li> <li>- Feed for live stocks</li> <li>- Feed for aquatic animals</li> <li>- Ecologically sustainable</li> </ul> <p><b>Political:</b></p> <ul style="list-style-type: none"> <li>- Self food satisfaction</li> <li>- Alleviate poverty</li> <li>- Create economic development</li> </ul> <p>Solution for Chronic hunger persist</p>
Champion of this Innovation	<b>S.VIJKUMAR, Director of TNSRO</b>
Project period	<b>Dec-2008 to Nov 2009 Extn From Dec 2009 to March 2010</b>
Total Project cost	<b>Rs.2,60,000/- Funded by NABARD ,Chennai</b>
TNSRO Contribution	<b>Rs.44,575/-(2009-2010)</b>

## 5. Legal Awareness Campaign on Protection of Plant Varieties and Farmers Rights Act 2001

Plant Genetic Resources (PGRs) are the foundation for the development of a food and nutritionally secure society. In addition, plants have many uses, including feed, fibre, medicine and industrial applications. PGRs were treated as the 'heritage of mankind' and were shared freely among nations, till the concerns for conservation of biological diversity were raised by the Convention on Biological Diversity (CBD), which came into force in 1993. The conservation and sustainable utilization and access to biological diversity were considered as national sovereignty by CBD. Consequently, many issues regarding the rights of the conservers, users, breeders, farmers and intellectual property have emerged. During 2001, significant developments have taken place with respect to the realization of the rights of breeders, farmers and local communities. The Protection of Plant Varieties and Farmers' Rights Act (PPVFR) was passed by the Indian Government. TNSRO was conducted Dist.level legal awareness sensitization programme on Protection of Plant Varieties and Farmers' Rights Act from 1.3.2010 to 15.3.2010. Totally 1200 and above participants were actively participated in this programme. Some participants especially farmers are displayed rare varieties of plants for conservation. NGOs, Block Offices, PRIs are also participated in this training. This programme was sponsored by PPVFRA, Govt of India, New Delhi. TNSRO also encouraged and guidance the farmers' community to register their Variety in plant authority.



## 6. Environmental conservation and Education Village Biodiversity School



Living things are interdependent, intricately linked in birth, death and renewal. Human beings are just one small part of the vibrant component of the biological systems on the earth but human beings are the vital and key biological system and put tremendous amount of pressure on species and the environment and ecosystem. As a result, many plants and animals are at risks as well as natural processes such as pollination by insects and the

regeneration of soils by microorganisms and also the survival of microorganisms. The population dynamics of such soil micro flora and of the biological equilibrium is altered significantly by various pollutants including the application of fertilizers and pesticides which are widely used in the modern agricultural operations and also Industrial toxic effluents discharged into the river and natural water bodies and land. These kind of pollutants create havoc not only to the human population by creating health hazards but also destroy the very survival of many plants, animals, beneficial insects including the beneficial microorganisms which occur in soil to enrich the soil fertility on a continuous basis and also damage the sustainability of soil which gradually become unfit for crop cultivation. Our village biodiversity school is an innovative community based model project established by our organization .VBS projected by our NGO works on local biodiversity conservation. This project is highly economic and non formal structure so everyone can educate by this school irrespective to their qualification. It was started in Arimalam village with 50 school going children, youth and farmers. This school was emphasized the importance of food web, agro biodiversity, different eco system, besides economic value of biodiversity, afforestation also taught. Herbarium preparation, Medicinal plants cultivation, distribution and plantation of endangered plant species like *Maduca longifolia*, *Terminalia arjuna* etc. This project is run by our own contribution. VBS awareness classes are conducted every week end by our institutional expert since 2008.

## 7. Disaster Risk Management Awareness Training

In India we tend to see four major kinds of natural disaster, because of the geographic Position. Climate and geological settings that are most vulnerable to natural disasters. Floods, earthquakes, cyclones and droughts come year after year. Our organisation has decided to conduct one day Disaster Risk Management Awareness Training to rural youth and students. This training is conducted at three identified spots. Primary schools at Ayingudi, K.Rayavaram, Ponnampatty panchayats Arimalam block. Mr. Duraimanickam a Ex. Fire service man and our institutional trained personals were conducted the programme in very successful manner .This programme was include First aid and rescue training ,Formation of Disaster management committees in different level etc.



This programme was useful to our rural villagers nowadays they fully aware about the natural calamities. One thousand and people got sufficient training in the management if the disasters. Students also were trained in this programme.

## 8.Village Knowledge Centre

TNSRO has been running a village knowledge centre (VKC) at Arimalam on 5-9-2007 with the co-operation of M.S. Swaminathan foundation Chennai. The Project aims to deliver demand drives information, and emphasizes interactivity services. Generally Provided Schemes, training, employment opportunities, weather forecast, health and market values, agriculture market produces and important phone number and address. VKCs act as multipurpose centre. VKC – KW discuss with local strategic partners. Series based on local community needs. Create question bank based on Interaction meetings.



The project enhances interlocking and sharing of information / knowledge. At present 10-15 villages benefited in this project.

### Concept

Dissemination of valuable information on availability of basic needs to the community.

Educate and train the community about application of ICT in daily life etc.

To serve the village people to get their needs, along with community, it will help

### Holistic philosophy of Prof. M.S.Swaminathan .... (1992 Jan).

VKC emphasizes an integrated pro poor, Pro women, and Pro nature orientation to technology dissemination .Community ownership of technological tools.





Encourage collective action for spread of technology

Ensure that the poorest person in the village gain from the technology and the technology does not further enlarge the rich-poor divide. Knowledge villages "based open the principle of participation knowledge management with local communities.

VKCs with its technologies are collectively owned by the community.

Men, women, educated, farmers, SHG members, students, youths, landless laborers, adult and children

Project Concept

- Social mobilization and Need / Demand Assessment
- Community participation
- Connectivity
- Content
- Hob and spokes model.
- Management, monitoring and Evaluation.
- Services
- Partnership
- Capacity building
- Sustainability



Activities: 2009-2010

- Short term Computer courses for poor people
- Computer Aided Learning programme
- Awareness training programme
- Information dissemination
- Conducted strategic partners meeting
- Management committee meeting

Printed information like Tamil monthly news letter Namma Ooru Seidhi launched from VRC, Annavasal has been used to disseminate information. TNSRO appointed 2 knowledge workers for conducting this project. Monthly 50 Community news paper were distributed by us in and around the Arimalam Panchayat.7 Computer trained persons have got employment opportunities. 45 children enjoyed

and learned computer education in our CALP programme. Farmers and other persons received most valuable information from our VKC and TNSRO.

The areas Information provided based on absolutely free...

- ❖ Agriculture
- ❖ Animal Husbandry
- ❖ Fisheries
- ❖ Citizen services
- ❖ Public health
- ❖ Education
- ❖ Women
- ❖ Tools

The value information services may be delivered by

- ❖ Community News paper
- ❖ Internet
- ❖ Public Addressing System
- ❖ Phone
- ❖ Face to face
- ❖ Notice boards
- ❖ Community radio
- ❖ Village meetings
- ❖ Cable TV

We are ready to serve the people in following subjects

- Trainings
- Productions
- LSP (Local Service Providers )
- Software developments
- Web makers
- DTP operators
- Data Entry operators etc

### **VKC management committee meeting**

Our VKC management committee meeting held on 16.4.2008 at our institution premises. In this meeting, we are discussed about the future prospects and development activities of the centre. Totally 26 committee members were participated in this meeting and discussion.

### **Video conference programme on “Post Harvesting Technology”**

Also our organization was conducted one video conferencing programme on among the rural farmers in the topic of “Post Harvesting Technology”. The programme was lead by Mr.S.Senthilkumar, Agriconsultant, VRC, Annavasal. The participants asked many questions related the topic finally the consultant answering the possible techniques.15 farmers were participated in this programme. This interaction session was arranged by TNSRO associated with MSSRF, VRC, Annavasal.



### **9. Promotion of Sustainable Agriculture – Meet with Expert Programme**

Our institution was arranged one interesting meet with expert programme at Keelanilaikottai village, Arimalam adjoining with SHALOAM Trust held on 24.7.2009, Young farmers and SHG members are meet and interact our agri consultants. They are discussing in organic farming, IPM, ICM and Water management etc. The consultants are visited the farm and they are identifying field level problems. After noon session our institution faculty Mr.J.Christopher delivered the lecture on Biodiversity act 2002 and Farmers Rights Act 2001 to the Participants. Totally 35 participants were participated in this meet.



### **10. Employment Scenario in India**

India is a predominantly agricultural country. Wage employment is a small fraction of total employment. As per estimates of the National Sample Survey Organisation, there were about 90 lakhs people totally unemployed in 1999-2000, out of which about 55

lakhs were educated with secondary and higher education levels. Compared to the size of the population, these numbers appear small. What is serious is the large number of employed persons working with low levels of productivity and income. Out of an estimated 397 million employed, about 122 million are poor, i.e. living below the poverty line. The main reasons for such a situation include inadequate growth of the economy, power productivity & labour force being inadequately skilled and growth rate of labour force being higher than the growth rate of employment etc.

### **Importance of Skill development and Training**

Skills and knowledge are the driving forces of economic growth and social development of any country. The economy becomes more productive, innovative and competitive through the existence of more skilled human potential. The level of employment, its composition and the growth in employment opportunities are the critical indicator of the process of development in any economy. Increasing pace of globalization and technological changes provide both challenges and growing opportunities for economic expansion and job creation. In taking advantage of these opportunities as well as in minimizing the social costs and dislocation, which the transition to a more open



economy entails, the level and quality of skills that a nation possess are becoming critical factors. Countries with higher and better levels of skills adjust more effectively to the challenges and opportunities of globalization. TNSRO was conducted Skill training programme under the grant assistance of NABARD.30 rural unemployed youths were selected our 45 days training programme in Electrical home appliances and house wiring training at Arimalam TNSRO training centre from 16.11.2009 to 6.1.2010.The trained participants are received their course certificate and registered with local employment office. Now the participants has been earning money from this skill.5 rural girls also trained in this programme.

## 11. Environmental Conservation

### National Environmental Awareness Campaign (NEAC)

#### Climate Change

The rising concentrations of greenhouse gases (GHGs) of anthropogenic origin in the atmosphere such as carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O) have increased, since the late 19<sup>th</sup> century. According to the Third Assessment Report (TAR) of the Intergovernmental Panel on Climate Change, because of the increase in concentration of greenhouse gases in the atmosphere (for e.g., CO<sub>2</sub> by 29 percent, CH<sub>4</sub> by 150 percent and N<sub>2</sub>O by 15 percent) in the last 100 years, the mean surface temperature has risen by 0.4-0.8°C globally. The precipitation has become spatially variable and the intensity and frequency of extreme events has increased. The sea level also has risen at an average annual rate of 1-2mm during this period. The continued increase in concentration of GHG in the atmosphere is likely to lead to climate change resulting in large changes in ecosystems, leading to possible catastrophic disruptions of livelihoods, economic activity, living conditions, and human health.



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 problems 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 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 Climate change. The programme activities like seminar, training, competition etc at school premises and villages. The rare herbal plant saplings were distributed to all participants. The programme was conduct at Arimalam, Ayanarpatty village and Pudukkottai .Totally 850 participants involved in this programme. In Pudukkottai the programme was conducted at Govt college of Education premises. Special lectures delivered by the eminent scholars through LCD. Prizes distributed to all winning students.

#### **NEAC Programme Grant Details**

<b>Year</b>	<b>NEAC National Concept</b>	<b>Sanctioned Amount.</b>
2009-2010	Climate Change	Rs.9,000
2008-2009	Climate Change	Rs. 8,000
2007-2008	Bio diversity conservation	Rs. 6,000
2006-2007	Solid waste Management	Rs. 4,000
2005-2006	Bio-Medical waste Management	Rs. 6,000
2004-2005	Solid waste Management	Rs. 6,000
2003-2004	Water Elixir of life	Rs. 6,000
2002-2003	Water Elixir of life	Rs. 4,500

#### **12. Special Science lecture Programme on Climate Change and Global Warming**

Science is the essential one for modern civilization. TNSRO has been creating the scientific awareness through the school students at our project area. TNSRO has organized one special science lecture programme for students in the title of Climate change and Global warming on 5 June 2009 observation of world environment day. This year we are selected more than 5 school students. More than 55 students were actively participated in this programme. Climate and Global Warming related Science

Lectures, Science film show with funny experiments, competition, and group discussions were also conducted. This programmed was fully sponsored by TNSRO.

### **13. Farmers Training School Azolla cultivation and Spirulina Production**

Our NGO gave training on Azolla cultivation, Organic Farming and Spirulina production to farmers under the assistance of NABARD. For this purpose five NABARD farmers clubs were selected. Mr. J. Christopher and Dr. S. Viji Kumar conducted this training and gave demonstration on above mentioned subjects. More than 500 farmers were participated and benefited.



Farmers' training school has been started for welfare of farmer's community. Besides training, value added informations regarding medicinal plant cultivation, climate, water storage, awareness on Government schemes etc.

### **14. Biodiversity conservation and Farmers Rights Act - Capacity Building Training Programme for SHG women leaders**

We are organized one day Biodiversity conservation Act 2002 and Farmers Rights Act 2001 Capacity Building Training Programme for SHG women leaders at RUPAN NGO Viralimalai union on 12.3.2010. In this programme 50 women SHG leaders and other community workers were participated. They are learned about the information of PBR formation and the conservation of biodiversity. Discussion, lectures, film show also presented and disseminated. 250 rare tree saplings also distributed to the participants.



### **15. Staff Development Programme**

The teaching faculties of our institution are given orientation training programmes. Every year before commencement of the trainings and research works to enhance their academic excellence and to work towards the vision of the institute. Last year 5 faculties were trained in this programme.

## **16. Agro biodiversity Conservation Programme Traditional Seeds Conservation Bank**

TNSRO has taken initiative steps for traditional seeds conservation programme at block level. Initially 4 varieties of traditional seeds identified from the Kothamangalam village. A farmer as well as Tamil teacher Mr.Veerandan cultivated and conserved these types of varieties last 80 years from his tradition. He has cultivating these varieties only through pure natural way of farming. TNSRO has documented these varieties for conservation and research purpose. Now we are formulating the idea and other programmes for conservation of Agro biodiversity through traditional seeds conservation bank project. Also we are arranging the seed registration in plant protection authority at New Delhi under the Farmers Rights Act 2001.



***Farmers Traditional Seed Varieties***

## **17.Plant Science Research Division (PSRD)**

PSRD is separate research division concentrates mainly on documentation of medicinal and endangered plant species and research work on medicinal plants. In 2009-2010 four M sc Biochemistry students were done their final year project in this division.

### **Aim of the division is**

- To collect and document the information about medicinal plants including endangered plant species and herbarium preparation.
- To identify, collect and conduct phytochemical research studies in medicinal plants.



S. No	NAME	TITLE OF THE PROJECT
1.	S. Natarajan	Isolation and Characterization of Bioactive Metabolites in <i>Cuscuta reflexa</i> Roxb.
2.	R. Kumaravadivel	Analysis of Phytochemicals by Spectral Methods on <i>Bauhinia tomentosa</i> L.
3.	V. JeyaRaman	Phytochemical Analysis of <i>Canna indica</i> L
4.	K. Sathiyamoorthy	Spectral Characterization of Metabolites of <i>Sansevieria roxburghiana</i> Schult

Now we are collecting herbarium and plan to collect more than 500 varieties of plant within the period of 2010-2011 for conservation and research purpose. We are planning to conduct conferences, workshops, seminars and short term training programmes related to plant science.

#### 18.State Conference on Research in Ethanomedicines (SCORE 2010)

The Ethno medicines occupy distinct position right from primitive period to the present-daytime. The utilization of biologically diverse plant resources for various ailments is the lifelong struggle of human race. Large proportions of rural and urban population (about 80%) throughout of the world are dependent upon Ethno medicine for symbolic and medicinal value. Plants have diverse combination of chemicals that can produce different results on different organisms. Approximately 119 pure chemical substances extracted from higher plants are used in medicine throughout the world which is used for the treatment of various diseases. Green plants synthesize and preserve a variety of biochemical products, many of which are extractable and used as chemical feed stocks or as raw material for various scientific investigations. State Conference on Research in Ethanomedicines (SCORE 2010) was organized by TamilNadu Scientific Research Organization and sponsored by Indian Council of Medical Research (ICMR) Govt. of India, New Delhi from



28.01.2010 to 30.01.2010. Eminent scientists, Professors, research scholars and students from various universities and colleges were participated and presented their research works on Ethanomedicines.



### **19. Medicinal Plants Conservation Programme**



Our institution has been taken initiative to conserving 20 endangered species of medicinal plants at our institution premises and also we are advising and directing the nursery owners to produce these plants in large quantities for sale and conservation. We are creating more awareness about the importance of medicinal plants conservation among the villagers, students and women groups. Now our organization has established Plant Science Research Division for Medicinal Plants research and conservation.

### **20. Vocational Education Programme TNSRO Institute of Paramedical Sciences**



Our organization has been conducting Institute of Paramedical Sciences for vocational education programme under the affiliation and recognition of Bharath Sevak Samaj, National Development Agency since 2006. The institute offering one year/two year first aid practical nursing and medical lab technician courses with experienced instructors. 40 candidates were getting job opportunity from private sectors.

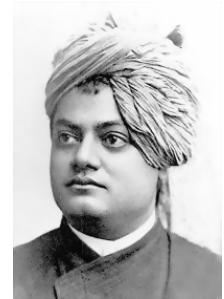
Also this institution has been providing leadership training, disaster management, first aid practice etc. We are giving educational opportunities to the rural poor girls and women.

## 21. National Youth Day Celebration 12 Jan 2010

### Swami Vivekananda Birth anniversary-

### III rd Special lecture on Educational Philosophy of Swami Vivekananda

The right to education for everyone, guaranteed by the Constitution of India, was Vivekananda dream, but it is still a far cry from its goal. His idea of continual, or lifelong, education, however, has been adopted in many countries already. Moreover, because of the adoption of continuous education in these countries, our idea of what constitutes success and failure has already, raising new hope for the weak, under-privileged section of these societies – the very people who for various reasons cannot complete their education when they are young. Vivekananda's cry for the uplift of the downtrodden



masses, particularly of the long-neglected women, has evoked a favorable response from different quarters, but societies tailor education to meet their own needs, thereby often robbing the weak of their freedom to determine their own destiny. Unless radical changes are made in all societies the poor will never be able to raise them.

The lack of basic necessities among the underprivileged all over the world is no less striking than the lack of morality among the educated privileged ones. To squarely meet this great challenge, Vivekananda prescribed 'man-making and character-building education'. For this reason, if not for anything else, Vivekananda's thoughts on education ought to be seriously re-examined today. Our organization was organized one day seminar on educational philosophy of swami Vivekananda on 12 Jan 2010 observation on National youth day celebration at Arimalam, Pudukkottai dist. The programme is designed for students. Special lectures, photo gallery of swamiji's, competitions, swamiji's Chicago speech audio presentations, prize distributions were conducted. 100 and above students and children are actively participated in this programme.

## 22.Awards, Fellowships and Appreciation



Our institution's financial trustee and project officer Mrs. V Muthulakshmi was selected as a fellowship of Jamsetji Tata National Virtual Academy for Rural Prosperity (FNVA). She has received her certificate in the occasion of MISSION 2007 at IGNOU New Delhi on 1Aug 2007 for his invaluable service to the cause of spreading a Knowledge Revolution in Rural India. Our institution Director S.Vijikumar also has received the same fellowship in the year of 2009 at chennai for his valuable service in knowledge revolution. The Fellowship was distributed by **Emeritus Prof.Bruce albert, Editor in Chief, The Science magazine USA & Prof. MS.Swaminathan chairman,MSSRF.**



Also our institution was appreciated by our formal president of India Dr.APJ.Abdul Kalam and Prof.Dr.AM Moorthy principal Koviloor Andavar College of Physical Education-Koviloor. Last year our organization was received **Best NGO award 2008** from Peace trust Dindugul (RRA/NEAC-Ministry of Environment and forests, Govt of India NewDelhi) for Environmental conservation activities. Several appreciation letters received from local authorities for free distribution of rare and endangered medicinal plants and tree saplings.

## 23.Publication

### Indian Journal Of Natural Sciences IJONS

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 decided to publish **Indian Journal of Natural Sciences - IJONS** from **August 2010**. Also the board of management approved the agenda for journal establishment and it will be applied for 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.The journal is invite investigations related to science in all branches for publication.

### Highlights

- 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

### XII. Available facilities

Library with 3000 books in all subjects especially science field with rare collections

Laboratory with basic facilities

Training hall with aids, Computers, Vehicle, and other basic equipments available

Resource persons are available in various fields.



### XIII. Magazine Articles

Our NABARD RIF project Spirulina cultivation programme was successfully completed. This project was documented by VALLARUM VVIVASAYA THAMIZHAGAM monthly magazine also the article was published on 5.6.2010 Issue.



#### XIV. Research Advisors

S.no	Name	Designation and address
1	<b>Prof .Dr. V. Ramaiyan</b>	Research Advisor, Sri Venkateswara College, Peravoorani, TN. Formerly Director , CAS Marine biology Annamalai university
2	<b>Prof.Dr. N. Jayabalan</b>	Professor and Head Department of Plant science Bharathidasan University Tiruchirappalli- 620024
4	<b>Prof.Dr.R.Udhayakumar</b>	Dean Faculty of Agriculture and AH Gandhigram Rural University Gandhigram – 624302 Dindugal
5	<b>Dr. M. Nageswaran</b>	Program Coordinator/ Principal scientist JRD Eco-technology centre-Field Office. M.S. Swaminathan Research Foundation Ilupoor, Pudukkottai Dist. TN
6	<b>Dr.M.Shanmugavelu</b>	Associate Professor Department of Zoology Vivekananda College (Autonomous) Tiruvedakam (West), Madurai.
7	<b>Dr.C.Savariraj Sagayam</b>	Assistant Professor CARISM- SASTRA University Thanjavur, TN.
8	<b>Dr.A. Lakshimi Prabha</b>	Assistant Professor Department of Plant science Bharathidasan University Tiruchirappalli- 620024
9	<b>Dr. Parimala Devi</b>	Head of the Department Department of Phytomedicine and Phytopharmacy SASTRA University, Thanjavur, TN.
10	<b>Prof.Dr.G.Santhanakumar</b>	Retd. Professor Zoology Scientist, HEAL Foundation Nagercoil, Kanyakumari Dist.

11	<b>Mrs.SN.Sheela</b>	Assistant Prof.Dept.of Biochemistry & Biotechnology, Bonsecours college for women Thanjavur.
12	<b>Mr.R.Ramasubramniyaraja</b>	Lecturer,Seven Hills College of Pharmacy Tirupathy. Andhrapradesh.
13	<b>Mr.V.Plato</b>	Assistant Prof.Dept.of Education PRIST University, Thanjavur -

#### **XV. Completed Scientific Projects**

- Project title: "**Low Cost *Spirulina* Cultivation for Poverty Alleviation**" funded by NABARD, Chennai, 2008-10.
- Project title: "**Disaster Risk Management Project in Arimalam Block, Pudukkottai Dist**" funded by Govt.of Tamilnadu & UNDP,2008-2009.
- Project title: "**Legal Awareness Campaign on Protection of Plant Varieties and Farmers Rights**" funded by PPVFRA, Govt. of India, New Delhi, 2009-2010.

#### **XVI. Published Books & Proceedings**

- "**Proceedings of Phytomedicines**" published by "**TNSRO**- English Edition,2008, India.
- "**Training Manual on Protection of Plant Varieties &Farmers Rights Act 2001**" published by "**TNSRO**-Tamil Edition,2009, ISBN-978-81-909952-1-4, India.
- "**Scientific papers on Ethnomedicines**" published by "**TNSRO**- English Edition, 2010, ISBN-978-81-909952-0-7, India.

## **XVII. Thesis/Dissertation**

R. Renuga Devi, N. Gulshan Ara, R. Kanimozhi, D. Sangeetha 2009. "A study on the prevalence of Anemia among woman of low socio.economic status and its management". Dissertation submitted to the Holy cross college, in partial fulfillment of requirement for the Degree of Biochemistry. Trichirappali.

M.Flixfemina, 2009."A Phytochemical study of Spirulina". Dissertation submitted to the Holy cross college, in partial fulfillment of requirement for the Degree of Biochemistry. Trichirappali.

Natarajan 2010, "Isolation and Characterization of Bioactive Metabolites in *Cuscuta reflexa Roxb*" Dissertation submitted to the JJ College of Arts and Science,Pudukkottai, in partial fulfillment of requirement for the Degree of M.Sc.Biochemistry.

R. Kumaravadivel 2010,"Analysis of Phytochemicals by Spectral Methods on *Bauhinia tomentosa L.*" Dissertation submitted to the JJ College of Arts and Science,Pudukkottai, in partial fulfillment of requirement for the Degree of M.Sc.Biochemistry.

V. JeyaRaman 2010, "Phytochemical Analysis of *Canna indica L.*" Dissertation submitted to the JJ College of Arts and Science,Pudukkottai, in partial fulfillment of requirement for the Degree of M.Sc.Biochemistry.

K. Sathiyamoorthy 2010, "Spectral Characterization of Metabolites of *Sansevieria roxburghiana Schult*" Dissertation submitted to the JJ College of Arts and Science,Pudukkottai, in partial fulfillment of requirement for the Degree of M.Sc.Biochemistry.



## **XVIII. Published Research Papers /Participation**

Vijikumar.S (2010) poster presentation on “Elimination of Organic Trace Pollutants form Agro biodiversity through Natural Input Sustainable Agriculture” International Symposium on Trace Organic Pollutants in the Environment, United Nation University, Japan & Bharathidasan University, Trichirappali.

Vijikumar.S (2010) Presented a paper on “ Agro ecology and Sustainable Agriculture”, INSA Sponsored National Conference on Sustainable Agriculture, TNSRO, Pudukkottai.

Vijikumar.S (2010) Presented a paper on “*Cuscuta reflexa Roxb.*-A Miracle plant in Ethnomedicine “ICMR sponsored State conference on Ethnomedicines, TNSRO, Arimalam .

Vijikumar.S (2009) “Low cost Spirulina production for poverty alleviation”, 9<sup>th</sup> Tamil Science Congress, Alagappa University, Karaikudi, **(Best Paper Award)**

Vijikumar.S (2009) “In vitro Propagation of *Centella asiatica* L.” The Journal of Swami Botanical Club ( Vol 26, Special issue), National Conference on Modern Trends in Plant In vitro biology 5-6 Jan 2009 at Bharathidhasan University Trichirappali.

Vijikumar.S (2009) “Science and Social Aspects of Climate Change” District level Seminar on Climate Change 15 March 2009 at Govt College of Education - Pudukkottai Organised by ABS NGO Pudukkottai.

Vijikumar.S (2009) A paper on “Spirulina cultivation for poverty alleviation”, NABARD, State level consultation meet Chennai.

Muthukkumarasamy.S. (2008) “Artificial Virus –Encapsulated with an effective indole alkaloid from *Oldenlandia corymbosa* L.a boon to cancer treatment”-National Conference on frontiers in Chemistry Research 5 Dec 2008 at Holly cross College, Trichirappalli.

Vijikumar.S (2008) “Naturopathy and Yogic science techniques for Stress Management”. State level Seminar on Naturopathy and Yogic science for Stress Management 23-25 Feb 2008 at Arimalam.

Vijikumar.S (2008) "Village Biodiversity School". National Conference on Environment, Science and Technology 28-29 November 2008 at Bharathidasan University Trichirappali.

Vijikumar.S (2008) "Teaching method for Yogic practices". National Seminar on Yoga Therapy 15 November 2008 at Koviloor Andavar college Yoga research center, Karaikudi.

Vijikumar.S (2008) "Values, Utilisation and Conservation of Biodiversity". District level Seminar on Environmental Conservation 5 June 2008 at Pudukkottai Organised by Pudukkottai Dist. National Green crops.

Vijikumar.S (2006) MoEF, Govt. of India sponsored "Medicinal Plants Conservation and Utilisation". Regional Seminar on Medicinal Plants Conservation at TNSRO, Arimalam..

Vijikumar.S (2000) "Role of youth in the promotion of Human rights" UGC sponsored seminar on Human Rights Duties Education, P.G. Dept. of History, H.H Raja's College, Pudukkottai.

Indian Youth Science Congress, MSSRF, SRM University, RGNIYD, Chennai (2009)

National Seminar on Recent Trends in Secondary Metabolic Engineering, Dept. of Plant Science, Bharathidasan University, Trichirappalli, (2010).

National Symposium on Current Scenario in Microbial Technology, Dept. of Microbiology, Bharathidasan University, Trichirappalli, (2008).

National Seminar on Healthy Ageing through Yoga therapeutic means and Sports, Dept. of Physical Education and Health Sciences, Alagappa university, Karaikudi, (2008).

Training Workshop on CAPART scheme policies approaches and its Commitment to improve, OAZONE, Pudukkottai, (2008).

Workshop on Capacity building of panchayat and community leaders, farmers and other workers on recent legislation pertaining to Biodiversity Conservation Act 2002 & Farmers Rights Act 2001, **ToT Training Programme**, at MS Swaminathan Research Foundation, Chennai, (2008).

Disaster Risk Management Programme, ToT Training Programme, Chennai, UNDP-Gol and Govt of Tamilnadu, (2008).

Faculty Development Programme, Disaster Risk Management and GIS Training Sastra University, Thanjaure, (2009).

3 days course on uses of Herbal medicine, PAF, Pudukottai, (2007).

Workshop on Expert Naturopaths, ToT, NIN, Govt. of India, Pune, (2006).

### **XIX. Future Plans and Activities**

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

### **XX. Our Auditor**

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

**Banking Details**

1. Name of the Account Holder : **TAMILNADU SCIENTIFIC RESEARCH ORGANIZATION (TNSRO)**
2. Authorized Signatory : S.VIJKUMAR, Director
3. Name of the Bank : **INDIAN BANK (IB)**
4. Branch : ARIMALAM
5. Account Number : **8 5 0 1 4 9 6 6 7**
6. Account Type : Savings Bank
7. Bank Branch Code : **01 815**
8. RTGS/NEFT/IFC No. : **I D I B 000 A133**
9. MICR No. : Non-MICR Bank
10. Address of the Bank : NO.2, PUDUR AGRAHARAM ARIMALAM - 622201  
**City:** ARIMALAM  
**District:** PUDUKKOTTAI  
**State:** TAMIL NADU
11. Bank Contact Nos : 04333-271999,9442229959
12. Amount release in favour of : ***"TamilNadu Scientific Research Organization"***

**For INDIAN BANK**

  
**MANAGER**  
**ARIMALAM - 622 201**