

# JSA Newsletter

Jaffna Science Association, Jaffna, Sri Lanka

Volume 20, Issue 1

February 2013

Message from the General Secretary

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Jaffna Science Association is registered as a voluntary services, Non-Governmental Organization at the District Secretariat

**Registration Number :**

**JA/GA/P/CA/28**

**Date of Registration:**

20<sup>th</sup> November '08

Compiled and Edited by Mr. K.Sarveswaran, Chief Editor/JSA

Dear Members,

I am pleased to write this message to the News Letter of the Jaffna Science Association (JSA). Jaffna Science Association was founded by eminent personalities in science with the aim of disseminating scientific knowledge to the general public of this region. For the past many years it has been working tirelessly to achieve its goals. The Jaffna Science Association has been conducting popular talks, seminars, research paper discussions and school science programs to disseminate the latest scientific knowledge and its advancements to the general public. In addition to these activities the Applied Sciences Section of the JSA also publishes a scientific magazine entitled "Pirayoga Vignnaana Sudar" in bilingual to disseminate scientific knowledge. The Pure Sciences section of JSA publishes weekly scientific articles in the "Valampuri" daily newspaper. In addition, the JSA also publishes this newsletter, which carries short scientific communications and information about the JSA activities in the recent past.

The present executive committee of JSA has also actively involved in the knowledge dissemination activities and I can see that the enthusiastic members of each section are now carrying out various such activities. I am also happy to note that many new members join JSA and there are also requests from researchers in foreign countries to join JSA.

I am sure that the JSA will leap forward in achieving its endeavors and I congratulate all members of JSA for their tireless efforts.

Thank you.

Mr. K. Thabotharan  
General Secretary / JSA.



## Message from the Chair person - Section A

**The JSA**

The JSA was established in 1991 by the founder President late Prof.A.Thurairajah.

Would you like to contribute to your Community?

Need an appropriate platform for executing your ideas?

Become a LIFE MEMBER of JSA today!

The primary objectives of the JSA are dissemination of scientific knowledge among the intellectuals in Jaffna region, encouraging national as well as regional research studies and presenting them in the Jaffna society, and advancement of scientific knowledge among the secondary school students and at the undergraduate level.

Advancing our education system through quality inputs

On behalf of the Pure Science section (Section 'A'), I am pleased to communicate to the members on our sub theme. The sectional committee of Pure Science section identified "*Science Education for Community Empowerment*" as the sub theme, which was selected to contribute to the theme of the year "*Education for Community Empowerment*".

A successful education system focuses on learning and creating an enabling environment that promotes creativity, improves the quality of basic and tertiary education, and provides opportunities for lifelong learning.

Although Sri Lanka has managed to achieve high levels of literacy, it has been unable to provide high quality educational services. The low quality of education in terms of infrastructure, distribution of teaching resources and the teaching-learning process in the classroom is reflected in the low mastery levels of the first language, mathematics in primary grades and in low GCE pass rates.

We need to focus on developing lifelong learning systems and improving the quality of education. A lifelong learning system includes formal training (schools, training institutions, and universities) and non-formal learning (on-the-job training, and skills learned from family members and people in the community). The education provided should effectively offer the labour force with the skills necessary for the emerging knowledge economy: an economy that requires hard skills including information literacy, ICT competencies, and a new set of soft skills, including communication, problem-solving, creativity, and teamwork.

To orient our education system to the world of work, the government needs to increase educational funding, devote increased resources to modernize the school curriculum, develop the teacher training system, and upgrade the examination and evaluation system. Increasing quality inputs such as constructive and effective teaching, better mathematics and science education and IT access, whilst constantly consolidating existing high levels of literacy, will enable us to participate successfully in the knowledge economy.



In order to bring awareness on the need for improving quality of our education among the school children and general public, the Pure Science section organizes workshops and publishes articles in newspapers.

**Dr. Meena Senthilnathanan,**  
Senior Lecturer (Chemistry)  
Chair Person - Section A, Jaffna Science Association

## Sections of JSA

Section A :  
For Pure Sciences

Section B :  
For Applied  
Sciences

Section C :  
For Medical  
Sciences

Section D :  
For Social Sciences

## Activities of JSA

Organize annual  
School Science  
programmes

Organize annual  
conference on a  
timely topic

## JSA Sectional Activities

Arrange popular  
talks to update  
people with present  
happenings

Organize workshops  
to empower people

Publish a magazine  
called '*Pirayoga  
Vingnana Sudar'*  
and News paper  
articles to  
disseminate  
knowledge

Sectional Activities : JSA - Section A (09/04/2012 - 31/12/2012)	
<b>Workshop (16<sup>th</sup> June 2012)</b> A one-day workshop on "Biodiversity Conservation" for school teachers, who teach Biology for GCE (A/L) classes, in the Northern Province was conducted on 16th June 2012 at the J/Hindu Ladies' College by the JSA-Section A in collaboration with the Provincial Department of Education, Northern Province.	
<b>Popular talk (11<sup>th</sup> January 2013)</b> Topic : "Diamond Bionic Eye" Resource person : Dr K Ganeshan, Fabrication Scientist, Melbourne Materials Institute, University of Melbourne, Australia	
<b>News paper articles (Published in Valampuri :</b>	

Title of the Article	Name and affiliation of the Author
ஓசோன் படலமும் அதனைப் பாதுகாத்தலின் முக்கியத்துவமும்	Mr. T. Prethipan Teacher, J/Manipay Hindu College
கட்டாபாரை மீன்களின் போசணைக்கூறுகள்	Mrs. S. Sathiyaruban Assistant Lecturer, Dept. of Fisheries, University of Jaffna
மீன்களின் உயிரியல் சார ஆய்வுகளும் வளமுதகாமைத்துவத்தில் அவற்றின் பங்கும்	Mrs. T. William Santhakumar MPhil Student, Dept. of Fisheries, University of Jaffna
மின்விளக்கும் அதன் விருத்தியும்	A. Kugan Lecturer, College of Education, Jaffna
வெப்பத்தோடு ஒளி வீசுகின்ற விளக்கு	A. Kugan, Lecturer, College of Education, Jaffna
யாழ் குடாநாட்டு கடற்பரப்பில் காணப்படும் சூடை மீன் இனங்களின் உற்பத்தி மற்றும் அவற்றின் முக்கியத்துவம்	Ms. Priyatharshini Tharmakulasingam Assistant Lecturer, Dept. of Fisheries, University of Jaffna
தென்மராட்சியின் வயற்பரப்பில் கோலோச்சும் வெண்முதுகு தாவரத்தத்தி - <i>Sogatella furcifera</i> (Horvath) - காரணம் எது? அல்லது யார்?	Dr (Mrs) R Gnaneswaran Senior Lecturer & Head, Dept. of Zoology, University of Jaffna
சுற்றுச்சூழல் பரிகரிப்பில் நனோ தொழில்நுட்பத்தின் பங்களிப்பு	Ms. S Gobika Assistant Lecturer, Dept. of Chemistry, University of Jaffna



## Message from the Chair person of Section B

**JSA : Section - A**

Pure Sciences

**2012/13  
Office bearers****Chair Person**Dr.(Ms.)  
M.Senthilnathanan**Secretary**

Dr. (Ms.) J.Prabagar

**Editor**

Mr. T.Prethipan

**Members :**Mrs. K.Niranjana  
Prof. P.Ravirajan  
Mr. T.Selvamurali  
Dr. P.Sevvel

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**JSA : Section - B**

Applied Sciences

**2012/13  
Office bearers****Chair Person**

Dr.(Ms.) J.Sinniah

**Secretary**

Mr. K.Parkeerathan

**Editor**

Mr. K.Sarveswaran

**Members :**Ms. M.Rajaram  
Dr.EYA Charles  
Ms. S.Ramachandran  
Mr. N.Thiruchelvan  
Ms. K.Chandrasegar

Sustainable Animal Production – aspects to be considered

*Sustainable animal production usually includes financial, environmental, ethical, social, product quality and animal welfare issues. Keys to sustainable livestock production include extensive preplanning, knowledge of one's goals, understanding of marketing options and the ability to review and adapt plans as needed.*

*One should identify the motivations and goals before beginning a livestock enterprise. Management decisions will vary according to the goal.*

*Resources available to help to meet the goals should be taken into account. An inventory of tools, land, soils, fences, water, forage, shelter, labor, etc. is crucial when considering a new livestock enterprise. An inventory of resources often reveals more available resources than one might have thought at first. Input from others could be sought to make the list complete.*

*It is best to identify challenges before initiating a new enterprise. Some challenges may preclude certain options on your acreage. Land purchased should be compatible with goals set.*

*Sustainable livestock production could involve any or all production phase of the species, viz. beef cattle, dairy cattle, sheep, goats, swine, poultry, rabbits and other. Some species such as sheep and goats provide producers with the opportunity to produce multiple products (milk, cheese, fiber, meat, breeding animals, etc.). Some producers choose to specialize in a certain aspect of the industry, such as rearing dairy heifer and replacements. Others are involved with all aspects of production, from breeding and birth through marketing products. In raising livestock the aspects like species or breed, source of animals, feeding, management, housing, health and marketing should be paid attention.*

*Perhaps the most common reason for failure of new farm enterprises is lack of adequate market research. Even if the producers have the resources they need, have selected a livestock product to produce and are ready to go, the enterprise will not be sustainable if there is no one to purchase the product.*



*To have a chance at profitability and sustainability, the producer must know where to sell the products, who are the clients, what do they want, how do people come to know about the product, is the product cost effective and what is the uniqueness of the product.*

*Think outside the box stall, too; consider innovative enterprises such as agro-tourism, composted manure, selling shares of the products, starting a community-supported agriculture operation etc. Consider specialty or niche markets, which often can bring higher retail prices and greater likelihood of profit.*

*When the products are sent to the grocery stores the products should be labelled like "natural," "organic," "grass fed," "free range," "hormone free," "non-GMO" and so on. Each label may appeal to a different segment of consumers.*

*For most producers, sustainable livestock production must also take financial sustainability into consideration. Sadly, many producers do not know enough about their costs of production to determine a break-even price for their product(s). Without knowledge of their break-even price, producers can easily sell products for less than production costs and lose money through their livestock enterprise. A less-than-fair price does not allow producers to pay themselves for their labor and management services and help retire debts. Other businesses build in a profit margin when they price their products, so why shouldn't you?*

*As mentioned, market research is a key part of creating a successful small business. Advice regarding marketing plan, business plan, enterprise budget and periodic financial analysis could be obtained from appropriate persons associated with small and medium scale entrepreneurship.*

*It is very challenging for an agricultural enterprise to be financially sustainable, but thorough planning helps reduce threats to profitability. Pre-planning issues include resource inventory, selection of product(s), market research, determination of break-even price, specific challenges and more. The need for planning cannot be overemphasized because the damage to your livestock and wallet due to lack of preparation can be devastating.*

**Dr. (Ms.) J. Sinniah**

Senior Lecturer (Animal Science)

Chair Person - Section B, Jaffna Science Association

## **JSA : Section - C** Medical Sciences

### **2012/13** **Office bearers**

#### **Chair Person**

Dr.R.Surenthirakumaran

#### **Secretary**

Dr.C.S.Jamunanantha

#### **Editor**

Dr. (Ms.) S.Sritharan

#### **Members :**

Dr. A.Murukananthan

Ms. T.Deviy

Dr. S.Kumaran

Dr. S.Sivaganesh

Dr. T.Nanthakumaran

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## **JSA : Section - D** Social Sciences

### **2012/13** **Office bearers**

#### **Chair Person**

Mr. A.Niththilavarnan

#### **Secretary**

Mr. V.Kumaradeepan

#### **Editor**

Ms. S.Saseela

#### **Members :**

Mr. Rasakumaran

Mr. S.Balaluthiran



Members joined  
since April 2012  
to  
December 2012

**Section A**  
**Life members**

Dr. Gowri Rajkumar  
Mr. Nagarajah Varathan  
Ms. Kajitha.Suthagar  
Ms. Gobika  
Sivasubramaniyam  
Ms. Jeyasakthy  
Sathiyadevan

**Section B**  
**Life members**

Dr. Susantha  
Piratheepan  
Mr. Kanagaratnam  
Jegajeevagan  
Mr. S. Thileepan  
Ms. Gajani Nagendran  
Ms. Sivanthini  
Shanmugaratnam  
Ms. Sobana  
Muthukumaraswamy  
Ms. Subajini  
Balakrishnan  
Ms. Thavalanky  
Subramaniam  
Ms. Varmila Sinnarajah

**Section D**  
**Life members**

Mr. Rajendran  
Kajananthan  
Mr. Sivapalan  
Achchuthan  
Mr. Soosai Antony Jude  
Leon  
Ms. Sivagnanavathy  
Sivamoorthy

**Ordinary Member**

Ms. Lavanya  
Paramanathan

**Reported by**

Mr. K. Ananthakrishnan  
Treasurer, JSA

## Empowerment

Empowerment is associated with the daily essentials. It spends out from the daily life to the state power. That is, every part of human being concerns with empowerment from security to getting access, to research, to meet demands, to political decision-making process. Empowerment has to be perceived and realized as a whole in critical process that includes social, psychological, economic and political empowerment. Empowerment is one of the key concepts of this paper. The origin of the concept is found in the ideas of the Brazilian educationist Paulo Freire. The shift in development theory during the 1980s away from the assumptions of top-down change towards an alternative development model as its root, a concept of empowerment as a form of development change was brought about by local problem solving efforts and techniques.

Though the term empowerment has no fixed definition, yet it is frequently used to describe a process where in the powerless or disempowered gain greater share of control over resources and decision making and since women are generally the most disempowered members of the oppressed classes, empowerment has been described as nurturing, liberating, energizing the un-affluent and the unpowerful. Women's empowerment in Nasir Nagar Thana: A large scale sample survey, Prepared for Save the Children]. In a common sense, empowerment can be defined as a process of achieving more controlling power to face the question on existing power and to control over the source of power. Empowerment is at the same time a process and this result of the process. The process of challenging existing power relations and of gaining greater control over the sources of power may be termed as empowerment.

Empowerment is a multi-dimensional approach and of the same time it is an indivisible concept. As a process it refers to conscientization and sensitization about empowerment and at the same time it is the outcome of sensitization. The empowerment of a person or group of people is the process of giving them power and status in a particular situation. According to UNDP empowerment is a process which enables individuals or groups to change balances of power in social, economic and political relations in society.

It refers to many different activities including but not confined to awareness of the societal forces with people and to action, which change power relationships. One of the most important instruments for empowering women is to allow them dual access to and control over productive resources such as land, capital, technology, credit as well as marketing outlets, information, education, training etc. without any discrimination

Empowerment redistributes power from the powerful to the powerless. It is more than participation in decision making, it must also include the process that lead people to perceive themselves as able and entitled to make decisions.

**Dr. B.Nimalathan**

*Senior Lecturer (Accounting)*

*Asst. General Secretary, Jaffna Science Association*

### JSA Membership

LIFE Member – LKR 2000 (For local members)

Ordinary Member – LKR 1000 (For local members)  
(Annual membership fee)

**Eligibility:** Applicant should be a Graduate from a recognized University in Sri Lanka or Abroad in any field.



## Message from the President-Elect The School Science Program 2013

The most important event of the JSA is the school science program. The GCE A/L students from the schools in the Northern Province are invited to participate in school science competitions. The details of the contests are sent to the principals, Directors of Education and Zonal offices. On the final day of the annual sessions the winners are awarded medals, certificates and cash prizes.

More than fifty schools from the Northern Province showed interest in participating in the school science program this year.

- Among them from fourteen schools fifty six students applied for the documentary film competition.
- Ninety Seven students showed their interest in participating in the essay competition.
- One hundred and twenty seven students have applied for the quiz competition.
- For the speech contest forty five students from twenty four schools have applied.
- Thirteen schools comprising fifty two students have come forward to take part in the school science exhibition contest.
- Sixteen schools have sent their responses positively for school gardening competition.

The JSA comprises four sections namely A, B, C, and D. Each section is entrusted an activity with their consent for the school science program by the President elect who conducts monthly meetings and makes all the arrangements to conduct the school science program.

**Mrs. Shanmugayogini Ravindran**  
Senior Lecturer (ELTC)  
President Elect, Jaffna Science Association

## JSA Annual General Meeting

April 17-19, 2013

Theme of the year :

"Education for  
Community  
Empowerment"

Popular talks on :

Science Education for  
Community  
Empowerment

Technical Education for  
Community  
Empowerment

Health Education for  
Community  
Empowerment

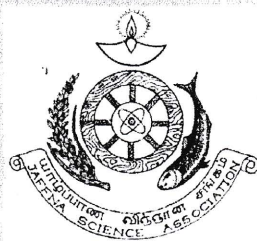
Socio-Economic  
education for  
Community  
Empowerment

Await more  
Information!

### Sectional Activities : JSA - Section B (09/04/2012 - 31/12/2012)

- Conducting school gardening contest and documentary film production in the northern province for School Science Programme.
- 'Priyoga Vignana sudar' - Volume 6 - Issue 1 is being prepared.
- Organised a popular talk titled "Nuclear Energy and Environment" on 15th May 2012 at 2.30pm-3.30pm at Management Hall (MH2). This talk was delivered by the Prof. G.S.Murthy (Retired President, Andhra Pradesh University, India).





## JSA Executive Committee

### 2012/13 members

#### President

Dr. G. Bavani

#### Past President

Prof. G. Mikunthan

#### President elect

Mrs. S. Ravindran

#### General Secretary

Mr. K. Thabotharan

#### Asst. Secretary

Dr. B. Nimalathasan

#### Treasurer

Mr. K. Ananthakrishnan

#### Asst. Treasurer

Dr. (Ms) A. Sivaruban

#### Chief Editor

Mr. K. Sarveswaran

#### Members

Dr. (Ms) M. Senthilnathanan

Dr. J. Sinniah

Dr. S. Surenthirakumaran

Mr. A. Nithlavarnan

## Message from the secretary of Section D

### Parents as Important stake holder in education

Parents' primary concern is always to support and monitor the educational progress of their children throughout their school life. The first decision is to make a choice of the school they wish their child to go to and career guidance is their responsibility. The first education is the child is given in its family mainly during child hood until school going age. Child education is a responsibility of every parent and a right of every child. As a member of the parents' committee a parents must participate in the progress and the development of the school. School development is the result of cooperation and school, parents, and community involvement.

School and the parents are responsible for the regular supervision of their children's learning progress. First, Regular contact is also allows to pedagogic appraisal as homework, checking of learners' progress at school and communication note books. As second, make a follow up discipline as regularity, punctuality, conduct and assiduity to work. Then as third, analysis major problem facing the school and propose possible solution as school development, building renovation, repairs, welfare and social works.

The school and community aim at promoting awareness sensitization and ownership of the school by this same community. The corporation increases confidence local community and the school. Effective school management is depends of the efforts of the number agencies that are interlinked. The provisional ministry of education, district department of education, local community and the school staff all play a part in the daily operation of the school.

The section head teacher is the pivotal link in this network and ultimately plays the most crucial role in ensuring school effectiveness. This role is however complex and demand. It involves management of human resource, financial resource and material resource in a dynamic situation affected by many internal and external forces. The task is made more difficult by the facts that these resources in our country constantly in short supply. Parents take part a important role in ensuring all development activities of their children as well as the country development.

V. Kumaradeepan,

Secretary/Section D, Jaffna Science Association

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e-Mail : [jsajaffna2010@gmail.com](mailto:jsajaffna2010@gmail.com)

Facebook group : [www.facebook.com/groups/thejsa](http://www.facebook.com/groups/thejsa)  
Facebook fan-page : [www.facebook.com/thejsa](http://www.facebook.com/thejsa)

Please send your comments, suggestions, and articles to include in the next issue to  
K. Sarveswaran, The Chief Editor/JSA, Department of Computer Science, University of Jaffna