# Association of Global Groundwater Scientists (AGGS)

Alais International Groundwater Congress (IGWC) (Registered No.1/2013, Dated: 04.01.2013, Tamil Nadu Societies Registration Act 1975)

***Administrative Office:*** Located at Coimbatore, Tamil Nadu, India

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## Message from Dr. M. Thangarajan, Founder AGGS alias IGWC

It is indeed very happy to note that IGWC alias AGGS is bringing out its second Newsletter for the benefit of our members. IGWC was started during 2002 and it spreads its wing slowly in organizing international seminars in various parts of the country under the umbrella of IGWC. After organizing five international events viz., IGWC-2002, 2006, 2007, 2011 and IGWC-2012, most of the members and well-wishers of the forum suggested to get registered it and rename it as AGGS to attract members globally. It got changed as AGGS and got registered during the first week of January 2013 at Coimbatore, Tamil Nadu, India. There was a big expectation from most of the AGGS members that we should bring out Newsletter to share all members' personal information like promotion, awards etc. as well announcement of AGGS program and other forums conference etc. The matter was discussed during the last AGM meeting during IGWC-2019 at the Department of Hydrology, IIT, Roorkee and decided to start the E-Newsletter with immediate effect. An editorial Board was formed for this purpose, and they have started the work to bring out the first E-Newsletter during the INGWC-2020 at CWRDM, Calicut, Kerala, India. The second one started very late due to corona spread and it is now completed under the guidance of the chief editor of the AGGS's Newsletter editorial committee

> ***"The main mission of our forum is that let us all join together to find a more innovative way of selecting high yield wells in crystalline and basaltic terrain, assess the reliable recharge potentials through various methods, augment the groundwater system through artificial recharge method, remediate the contaminated groundwater system with simple technology, apply various modeling technique for the assessment and management of water resources and create awareness among people to use the limited dynamic resource optimally and reserve the static reserve for future generation."***

As the Founder, I feel very much proud that our Forum has brought out the second Newsletter and request you all to share your views of your personal information as well bring out important topics like innovative technology which could be used for the Assessment, Modeling and Management of Groundwater Resources. I would like to congratulate to all those who worked very hard to bring out this important Newsletter.

## Editorial Desk:



Prof. Brijesh Kumar Yadav
(Chief Editor)

It is our great pleasure to release the second issue of the AGGS Newsletter for the benefit of the AGGS members and other readers. We are grateful to the entire editorial committee for their hard works and timely inputs in finalizing this second E-Newsletter. The main focus of this issue is to compile the backgrounds of AGGS and its activities carried out in past two years of pandemic time. The Newsletter also highlights the relevant ongoing research projects, recent journal publications of AGGS members along with forthcoming events under the aegis of this groundwater society.



Dr. N.C. Mondal
(Deputy Chief Editor)

# Background of AGGS

CSIR-National Geophysical Research Institute (NGRI), Hyderabad organized an International Groundwater Conference (**IGC-2002**) during January 31st to 3rd February, 2002 at Dindigul, a rural Town in Tamil Nadu, India. The conference was one of the most success one and ever organized in a rural sector. Dr. M. Thangarajan (Scientist-G at CSIR-NGRI) had organized the conference from NGRI side and got superannuated within two months after the Conference. The success of the conference motivated him to organize many more conferences at various centers in India. In organizing many such conferences IGC/IGWC, he identified host institute, prepared the brochure for that conference, circulating and mobilizing the abstracts and manuscripts as well advising the organizing committee in the preparation of Abstract and pre- & post-conference proceeding volumes. All the conferences were very successful one except IGWC-2015 at SRM University, Chennai where he had disassociated with the organizers after the start of the conference work.

The second one IGC-2006 was organized by the School of Environmental Sciences at Jawaharlal Nehru University (JNU), New Delhi during the first week of February 2006. Prof. A.L. Ramanathan of JNU organized it under the able guidance of Dr. M. Thangarajan (Conference Coordinator). Most of the delegates who attended the IGC-2002 also attended IGC-2006. It was also a very successful conference at the Capital of India. The success of IGC-2006 triggered Dr. Thangarajan, Prof. D.C. Singhal (IITR, Roorkee) and some more senior members to go for the registration of the forum viz., **International Groundwater Congress (IGWC) at New Delhi** and the responsibility was given to Prof. Ashok Keshari of IITD, New Delhi.

The third one IGC-2007 was organized by the Water Technology Centre (WTC) at Tamil Nadu Agricultural University, Coimbatore, Tamil Nadu. Dr. K. Palanisami of WTC organized it under the guidance of Dr. M. Thangarajan. It was a very big conference both in terms of papers (460) and number of delegates (400).

It was decided to organize IGC-2009 in commemoration with the diamond Jubilee celebration of the Department of Geology at Pune University, Pune during the second week of September 2009. At the same time, IAH & IAHS Annual Convention was also planned at Hyderabad. Many foreign and Indian members who belong both in IAH and IGC forum requested to postpone IGC-2009 for a year as it may affect the IAH & IAHS convention at Hyderabad. It was sacrificed IGC Conference for the sake of IAH & IAHS. There was no IGC conference during 2009 but organized the IGWC-2011 at Madurai.

During 2010, Dr. C. Mayilswami had joined with Dr. M. Thangarajan to help him (MT) in carrying out further the IGC activities. The registration of the forum could not take place irrespective of many reminders to Dr. Ashok Keshari. After 2010, the IGC was renamed as IGWC (international Ground Water Conference) and the future events will be labeled as IGWC events.

The fourth one was named as IGWC-2011 which was organized at Madurai and Dr. P.S. Navaraj was the organizing Secretary and Dr. M. Thangarajan was the advisor cum Conference coordinator. It was well organized even though the size of the conference was not big comparing with the earlier conferences. Dr. M. Thangarajan could convince Prof. V.P. Singh of USA to participate the conference and after that he has become a regular IGWC participant.

During this conference, it was decided to form an interim/ad-hoc committee to run IGWC affairs and Prof. L. Elango of Anna University, Chennai was nominated as the ad-hoc President and Dr. C. Mayilswami as the acting Secretary cum Treasurer and with a few more members and the committee was looking after the events with the major advice received from Dr. M. Thangarajan as the advisor who had motivated the forum and was running it successfully till 2016.

Dr. Thangarajan motivated IGWC-2012 at Aurangabad with the help of Dr. P.S. Kulkarni of Maulana Azad College of Science & Technology, Aurangabad. It was a very successful event. During the conference, Dr. Ashok Keshari informed that he could not do the registration of IGWC due to stringent IIT rules. It was during AGM meeting of IGWC at Aurangabad, the ad-hoc committee took a decision to register the IGWC forum at Coimbatore with the help of Dr. C. Mayilswami. It was also decided to release Journal of Groundwater Research (JGWR) with few selected papers from the conference with the help of Prof. V.P. Singh as Editor in chief and Dr. M. K. Singh as Deputy Editor in chief.

While finalizing the procedure to take up the registration of the forum, some members suggested that it would be ideal to rename the forum as the Association of Global Groundwater Scientists (AGGS) so that we can attract foreign members also to the forum. Registration responsibility was taken over by Dr. M. Thangarajan, Dr.

P. S. Kulkarni and Dr. C. Mayilswami. After a very hectic task, the three-member committee finalized the draft bye laws of the forum viz., AGGS and circulated among members for their feedback. The committee had received few suggestions which had been incorporated and got registered during the first week of January 2013. The ad-hoc committee members continued as the interim committee in the registration document also. After the registration, it was started admitting members as life member by paying Rs. 5000/- as life term fee for normal age group and Rs. 2500/- for senior citizens. The membership drive started from 2013 onwards and initially Dr. M. Thangarajan played very important role in mobilizing members of IGWC by contacting well-wishers and supporters of IGWC, and followed by Dr. P.S. Kulkarni who could admit many GEOFORUM members in to AGGS. Prof. V. P. Singh also helped in mobilizing a few members from USA, Canada and Australia.

During 2015, Dr. Sivakumar Bellie of Australia and Prof. V.P. Singh prepared a draft blue print which provided guide lines how to select awardees for various schemes as well total bye laws for the association except how to mobilize members for the forum.

The Ad-hoc executive committee started during 2011, also continued their service till February 2016 until a new elected committee took over during February 2016 with Prof. B. Venkateswara Rao as the President and Dr. C. Mayilswami as its Secretary-Cum-Treasurer and Dr. P. S. Kulkarni as its Vice President and Prof. V. P. Singh as Vice President for foreign affairs. It is very clear there is no new forum started and got registered and it is only renamed and the same set up of 2002 is working. **The logo of AGGS is very ideal as it is started 2002.** It got registered under AGGS during 2013 only as suggested by some members.

During 2014, it was planned to organize IGWC-2014 at Andhra University, Visakhapatnam and initial work was started and the first core committee meeting was also conducted to chalk out the program but unfortunately Telangana agitation to bifurcate Andhra Pradesh and Telangana took violent turn and after taking the stock of situation EC decided to shift the conference to SRM University (Private University) at Chennai and to organize it during December 2015. All efforts were put to organize IGWC-2015 in a big manner but due to various constraints and Chennai rains during December 2015, it was postponed to February 2016. Prof. C. Mayilswami coordinated the work from AGGS side and it turned to be a moderate one due to postponement.

During AGM at SRM University, Chennai, the new committee took over the charge. Prof. B. Venkateswara Rao took over the President and Prof. C. Mayilswami took over as Secretary-Cum-Treasurer of EC. There are other members also took charge as the EC and other senior members had agreed the suggestion of Dr. Thangarajan to elect a new EC through election process.

The IGWC used to be organized once in two years but EC decided to organize the national conference as various places during even year and IGWC during odd years. Dr. B. Venkateswara Rao agreed to organize First INGWC 2016 at JNTUH, Hyderabad and Dr. N. C. Ghosh to organize the IGWC 2017. The First Indian National Conference (INGWC-2016) was organized at JNTUH by Dr. B. Venkateswara Rao (President, AGGS) during the first week of October 2016 and it was a successful venture. During the AGM, second INGWC 2018 was allotted to Jalgaon and Dr. Uday Kulkarni from Moolji Jaitha College, Jalgaon, Maharashtra agreed to organize the same.

The seventh IGWC-2017 was organized by NIH, Roorkee at New Delhi which was one of the most successful both in terms of number of papers, delegates and one of the best local hospitality provided by the organizers. Dr. N C. Ghosh and Dr. Anupma Sharma of NIH, Roorkee had done creditable job for the success of the conference. Though AGGS's involvement was minimal, many AGGS members as well CGWB scientists attended the conference. It was very surprising to us that there were many CGWB delegates who attended the conference are Dr. Thangarajan's fans and he was like a star of attraction among the delegates. During the AGM meeting, the revised blue print was approved by the EC.

Even during 2017, it was planned to organize IGWC-2019 at JNU, New Delhi by Prof. A. L. Ramanathan and which was not materialized due to Dr. A. L. Ramanathan became Dean, School of Environmental Sciences and busy with administrative works. As suggested by him, the IGWC 2019 was shifted to IIT Gandhinagar supposed to organize by Dr. Manish Kumar and finally cancelled due to administrative reasons. Then, Prof. Brijesh Kumar Yadav, Department of Hydrology, IIT Roorkee in guidance of Dr. Dinesh Singhal voluntarily came forward to organize IGWC 2019 at Department of Hydrology, IIT Roorkee. It was a very successful conference organized in the history of AGGS.

## SCOPES OF AGGS

- Identifying groundwater problems in India & implement appropriate measures to control or mitigate them.
- Groundwater professionals in India and neighboring SARC countries believe that sharing knowledge and experience on groundwater matters on a worldwide scale is an effective strategy to identify and promote optimal approaches to the assessment, development and management of groundwater resources.
- This is what the Association of Global Groundwater Scientists (AGGS) intends to do by organizing Seminars/Symposia at various centers in India & Neighboring Countries viz. Bangladesh, Sri Lanka, Pakistan, Nepal & Bhutan, and publishing Proceeding Volumes and new findings among Congress Members.
- The idea on the formulation of this Congress was crystallized by Groundwater Scientists and engineers who attended the last eight International Groundwater Conferences (IGWC). These were organized at Dindigul, Tamil Nadu (2002), JNU, New Delhi (2006), WTC, TNAU, Coimbatore (2007), Madurai (2011), Maulana Azad College of Sci & Tech, Aurangabad (2012), SRM University (Private University), Chennai (2016), New Delhi (2017) and IIT Roorkee (2019).
- As well as attended the last four Indian National Groundwater Conferences (INGWC) organized at JNTU, Hyderabad (2016), Jaitha College, Jalgaon, Maharashtra (2018), CWRDM, Kozhikode (2020) and recent one organized at JNTU, Hyderabad (2021). Apart of these, two brainstorming sessions were organized at Chennai, Tamil Nadu (2016) & Dindigul, Tamil Nadu (2017), and one Webinar at IIT (ISM), Dhanbad (2021).

## AGGS VISION/OBJECTIVES

- **The AGGS** will contribute in the field of effective management of groundwater resources.
- In this forum, groundwater experts and devise methods will be assembled for the effective management and ensuring sustainable development and livelihood in the overstressed areas of the country and elsewhere.
- The AGGS is also committed to work on the promotion of research for minimizing groundwater pollution and to advocate the effective use of groundwater for better health and sustainable livelihood through undertaking appropriate measures.

### What the Forum can do

- **The AGGS** will contribute to information, training and research and will lead to an increased capacity of developing countries in the area of hydrogeology/ hydraulics and water resources management.
- The **AGGS** will mainly focus in organizing annual events at various centers in India and neighboring countries by bringing **AGGS** members and other International experts to discuss the latest development in the assessment and management of groundwater resources.
- It also plans to have some research activities in collaboration with National Institutes and International agencies.

### Major Tasks & Activities:

- The **AGGS** is envisaged as a functional network and collaboration of different organizations including Govt. Dept., IIT's, National Inst. /Lab., Univ., Water related Industries and NGOs for better sharing and collaboration on emerging issues in ground water management.
- The AGGS will plan to bring experts in various fields to a common platform for exchange of new ideas, views and knowledge in a global platform that stimulates initiatives for the advancement of sustainable development and management of groundwater resources.

### General Focus of AGGS Activities

- Organizing regular annual events for groundwater scientists from all over the globe to assemble and discussing the various new research developments elsewhere and how to solve groundwater quantity and quality problems pertaining to SAARC countries.
- Organization of mass awareness meeting among school children and rural woman folk regarding the quality and scarcity of drinking water and how to create sustainable supply.
- Impairing the scientific knowledge among school children, women and farmers about the identification of potential boreholes in hard rock and drought prone region.
- Identification and development of innovative ideas for conservation of rainwater (rain water harvesting) and rain-fed forests.
- Sustainable development of a watershed in a hard rock region.
- Discussing problems and questions posed by farmers, the politicians, and technical cooperation agencies, general public and potential industrial clients.

### Long-Term Goals:

- Providing training to young groundwater scientists/ engineers on Mathematical modeling to assess groundwater potential and pollution migration and thereby evolving optimal management schemes.
- Collaborating with public sector water related institutions, municipalities, non-governmental organizations (NGO) and the private sector for the implementation of water management schemes.
- Promoting projects that directly involve and benefit local communities.

- Initiating and sustaining the activities in the area of community-based research and the social, legal and economic aspects of groundwater resources management.
- Promoting Joint research projects among scientists/ engineers from India and its neighboring countries with leading research institution in the assessment and management of groundwater resources and pollution.
- Development of new methodology to characterize the fracture aquifer geometry and understanding the flow dynamics of fracture system.
- Development and management of coastal aquifer system.
- Promoting the research development of viable and feasible technology for the treatment of contaminated aquifer system.
- Publication of bi-annually quality Groundwater journal (Journal of Groundwater Research (JGWR)) in collaboration with likeminded International professional bodies viz. IAH, IAHS & ISGSD and GEOFORUM of Maharashtra.

# AGGS Past Events

Broadly the AGGS had been conducted eight international groundwater conferences, four Indian National Groundwater Conferences, one webinar and two brainstorming sessions since 2002. Details of recent activities are mentioned below and details of the activities conducted in past (till 2019) are available in our first News-letter.

**IGWC Events Period 2002-2019:**

| IGWC | Year | Place | Convener |
|---|---|---|---|
| I | 2002 | Dindigul, Tamil Nadu | Dr. M. Thangarajan |
| II | 2006 | JNU, New Delhi | Prof. A.L. Ramanathan |
| III | 2007 | WTC, TNAU, Coimbatore | Dr. K. Palanisami |
| IV | 2011 | Madurai | Dr. P.S. Navaraj |
| V | 2012 | Maulana Azad College of Sci & Tech, Aurangabad | Dr. P.S. Kulkarni |
| VI | 2016 | SRM University (Private University), Chennai | Dr. R. Annadurai |
| VII | 2017 | New Delhi | Dr. Anupma Sharma & Dr. N. C. Ghosh |
| VIII | 2019 | IIT Roorkee | Prof. Brijesh Kr. Yadav |

**INGWC Events Period 2016-2021:**

| INGWC | Year | Place | Convener |
|---|---|---|---|
| I | 2016 | JNTU, Hyderabad | Prof. B. Venkateswara Rao |
| II | 2018 | Jalgaon, Maharashtra | Dr. Uday Kulkarni |
| III | 2020 | CWRDM, Calicut | Dr. C. P. Priju |
| IV | 2021 | JNTU, Hyderabad | Prof. B. Venkateswara Rao |

**Brain Storming Sessions and Webinar**

| Brain storming/ Webinar | Year | Place | Convener |
|---|---|---|---|
| I | 2015 | Chennai, Tamil Nadu | Prof. L. Elango |
| II | 2017 | Dindigul, Tamil Nadu | Mr. Paul Basker |
| III | 2021 | IIT (ISM) Dhanbad | Prof. M. K. Singh |

## Third Indian National Groundwater Conference (INGWC-2020) at Calicut (Convener: Dr. Sushanth, C.M.)

The INGWC 2020 was held on 18-20 February 2020 in CWRDM along with a preconference workshop on 'groundwater modeling' on 17th February 2020. The third Indian National Groundwater Conference (INGWC 2020) was inaugurated by Shri. K. Krishnankutty, Hon'ble Minister for Water Resources, Government of Kerala in the auspicious day on 18th February 2020. The welcome address was delivered by Dr. A. B. Anitha, Executive Director, CWRDM followed by the Presidential address by Prof. (Dr.) K. P. Sudheer, Ex-Officio Principal Secretary, Science and Technology Department and Executive Vice President, KSCSTE. The felicitations were given by Shri. Sanjay Marwah, Member, CGWB, Faridabad, Dr. Sivaji Chakravati, Director, NIT Calicut, Dr. A. L. Ramanathan, Professor, JNU, New Delhi and President AGGS, Dr. M. Thangarajan, Former Director Grade Scientist, NGRI, Hyderabad and Founder President, AGGS. The vote of Thanks was delivered by Shri. C. M. Sushanth, Senior Principal Scientist & Head, Groundwater Division, CWRDM and Convener INGWC-2020.

There were 11 thematic sessions in the conference, and 11 plenary talks delivered by the experts on various themes. The experts delivered the plenary talks are Dr. M.



Thangarajan, NGRI Hyderabad, Prof. A. L. Ramanathan, School of Environmental Sciences, JNU, New Delhi. Prof (Dr.). K. P. Sudheer, EVP, KSCSTE, Thiruvanathapuram, Prof. Ed Mcbean, University of Guelph, Canada, Shri Sanjay Marwaha, Member, CGWB, Prof. M. Razak, University of Poitiers, France, Dr. Prabhakar Clement, Director, Centre for Water Quality Research, University of Alabama, USA, Dr. R. D. Deshpande, Scientist-G and Chairman, Geosciences Division, PRL, Ahmedabad, Prof. Choudhary Jahan, University of Rajshahi, Dhaka, Prof. K. V. Jayakumar, NIT Warangal and Prof. B. Venkateswara Rao, Director, Institute of Science and Technology, JNTU, Hyderabad. The conference was concluded on 20 February 2020 evening. The valedictory session was chaired by Dr. A. B. Anitha, Executive Director, CWRDM. Welcome Note was delivered by Dr. Arun P.R., Scientist, CWRDM. The concluding remarks were extended by Dr. M. Thangarajan, Former Director Grade Scientist, NGRI, Hyderabad, Prof. B. Venkateswara Rao, Director, Institute of Science and Technology, JNTU, Hyderabad and Prof. K.V. Jayakumar, NIT Warangal. The recommendations of the conference were read by Dr. C. P. Priju, Scientist, CWRDM and the vote of thanks was extended by Dr. U. Surendran, Senior Scientist, CWRDM.

The following are the recommendations of the conference:

(i) For Judicious use of groundwater resources, proper techniques should be employed in its assessment and suggestions for good management practices are needed. Water security can be achieved by adopting appropriate groundwater recharge practices based on potential recharge zones, geological and geomorphological conditions etc.

(ii) Advanced tools such as geophysical techniques (gradient resistivity profiling, sounding, and resistivity imaging), remote sensing & GIS, isotope techniques should be adopted for groundwater exploration, assessment and management and identification of potential sites for groundwater recharge on regular basis by various agencies and departments and this has to be communicated to all stakeholders for judicious use of groundwater resources.

(iii) Groundwater modeling tools (Flow and mass transport models, contaminant transport modeling) needs to be used in water resource assessment, managed aquifer recharge, transport and simulation of contaminants in the aquifer system for sustainable development of ground water.

(iv) Proper understanding of processes like groundwater-surface water interaction as well as natural and artificial recharges are very important components in groundwater resource replenishment, understanding the effectiveness, components and feasibility of recharge. In command areas where water logging is the problem, conjunctive use of both surface and groundwater may be practiced. This will not only solve the water shortage at the tail end areas but also reduce the salinity of the soils.

(v) Groundwater use efficiency is particularly important in irrigation, where major part of groundwater is currently utilized. The future challenges are proper groundwater management for agriculture sector to ensure food security. Drip irrigation and fertigation systems should be popularized in addition to other water conservation measures.

## Fourth INGWC-2021 at JNTU Hyderabad (Convener: Prof. B. Venkateswara Rao)

The Fourth Indian National Ground Water Conference (INGWC-2021) with a focal theme on 'Ground water Management in arid and semi-arid regions of hard rock terrains' is held online by Centre for Water Resources (CWR), Institute of Science and Technology, Jawaharlal Nehru Technological University Hyderabad (JNTUH) and Association of Global Ground Water Scientists (AGGS) during March 22-24, 2021 in collaboration with IITH and CSRI-NGRI Hyderabad. The conference was inaugurated by Sri G. C. Pati, Chairman, CGWB and the inaugural session keynote address was delivered by Prof. Abhijith Mukherjee, IIT Kharagpur. Prof. A. L. Ramanathan, President AGGS, Prof. G. Krishna Mohan, Director IST, Prof. M. V. S. S. Giridhar, Head CWR and Prof. B. Venkateswara Rao, Convener of the conference have addressed in the inaugural session. While reporting about the conference Prof. B. Venkateswara Rao, has informed that out of 135 papers received, 93 papers were being presented including 12 keynote addresses which are not only from India but also from other countries like Australia, Canada, Germany, Sweden and USA apart from few papers from African continent. Abstract volume was released during the inaugural function while proceedings volume was released after the conference 45 full length papers.

Few of the outstanding conclusions from this mega event includes:

- Still large parts of the irrigation are met from the Ground water in south Asia and needs conservation of ground water with installation of micro-irrigation systems. This will bring ground water levels to the normal level after some years and rejuvenate our rivers by contributing base flow.
- If we use ground water from shallow aquifers the anthropogenic pollution such as arsenic and fluoride get reduced. Indiscriminate use of fertilizers and pesticides has led to the pollution of ground water with nitrates as well as pesticides.
- Urbanization is mostly spreading into inland areas and these urban centres are mostly in hard rock terrain as the case with India. Due to fracture porosity present in the hard rocks, ground water

contamination is very much imminent and needs to be planned accordingly by urban planners.

- Integrated approach of rain water, surface water, soil water and ground water should be kept in mind while managing the water resources.
- Managed aquifer recharge, River bank filtration, Bioremediation for the treatment of polluted ground water are some of the technologies highlighted in the conference.

The panel of INGWC-2021 held at JNTU, Hyderabad during March 22-24, 2021 has selected the three best technical papers of all technical sessions for the cash of First Award: Rs. 2,000/, Second Award: Rs. 1,500/-, and Third Award: Rs. 1,000/- with the citations.

1. **First Award: T-4:** "Reconnoitering of hotspot of heavy metals in groundwater using pollution indices and PCA analysis in parts of Yamuna river basin, Northern India" authored by Salman Ahmed[#], Shadab Khurshid, Naseem Akhtar and Mohd Wajahat Sultan [[#]Research Associate, CSIR-NGRI, Hyderabad].
2. **Second Award:TS-85:** "Analysis of long-term aquifer information to facilitate sustainable groundwater management in Hard rock regions" authored by Abhilash R [#], Mathew K Jose, B Venkatesh, Pandith Madhnure and Rakesh Chander [[#]Research Scientist, NIH, Belagavi]
3. **Third Award:TS-76:** "Dominating hydrological parameter for the different watersheds in hydrometeorological regions in Krishna basin" authored by Nayeen Ahmed A. Mulla[#], and N.C. Mondal [[#]Project Associate, CSIR-NGRI, Hyderabad].

## Webinar GCMA-2021 at IIT(ISM) Dhanbad (Coordinator: Prof. M. K. Singh)

One day webinar on "Groundwater Contamination and Modelling Approaches, GCMA-2021" was conducted successfully by Department of Mathematics & Computing, IIT (ISM) Dhanbad on Dec 23, 2021. More than 100 participants took active participation in the webinar during which following keynotes were delivered.

1. "Unified Biochemical Pollution and Hydrologic Modeling" by Prof. Vijay P. Singh, Texas A&M University, USA
2. "Groundwater Pollution Management Using Simulation-Optimization Models" by Prof. T. I. Eldho, IIT Bombay
3. "Remediation of Polluted Groundwater Sites using Engineered Bioremediation and PRB Techniques" by Prof. Brijesh Kumar Yadav, Head Hydrology, IIT Roorkee

# Upcoming Events

# The IGWC-2022, Nov 2-4, 2022

**"The 9th International Groundwater Conference (IGWC-2022)" will be organised at IIT Roorkee to Celebrate Glorious 50 years Completion of the Department of Hydrology, IIT Roorkee**

**Theme of the conference:** "Effective Management of (sub)-surface water resources in arid and semi-arid regions" on November 2-4, 2022

**The Nodal Person:** Prof. Brijesh Kumar Yadav, Head, Department of Hydrology, IIT Roorkee, Former Ramanujan Fellow, Mob +91-8979534484, tel +91-1332-284755, Email: brijesh.yadav@hy.iitr.ac.in, brijeshy@gmail.com, Web: https://www.iitr.ac.in/~HY/Dr__Brijesh_Kumar_Yadav

**About the host Institute:** IIT Roorkee is among the foremost of institutes of national importance in higher technological education and in engineering, basic and applied research. Since its establishment (in 1847), the Institute has played a vital role in providing the technical manpower and know-how to the country and in pursuit of research. The Institute ranks amongst the best technological institutions in the world and has contributed to all sectors of technological development. It has also been considered a trend-setter in the area of education and research in the field of science, technology, and engineering. IIT – Roorkee, formerly University of Roorkee and Thomson College of Civil Engineering, is a public engineering university located in Roorkee, Uttarakhand, India. Established in 1847 in British India by the lieutenant governor, Sir James Thomason, it was given university status in 1949 and was converted into an Indian Institute of Technology (IIT) in 2001, thus becoming the seventh IIT to be declared. IIT Roorkee has 21 academic departments covering Engineering, Applied Sciences, Humanities & Social Science and Management Programs with a strong emphasis on science and technology education and research. IIT Roorkee contributes significantly in the field of water resources required for sustaining our growing economy and is celebrating its glorious 175 years this year.

**About the host Department:** The Department of Hydrology was established in 1972 as a training and education centre for International and sponsored candidates. The Department has been offering admissions to the sponsored and GATE qualified engineering and science graduates in disciplines of Surface Water Hydrology, Groundwater Hydrology, and Watershed Management. The offered programmes of P.G. Diploma, M. Tech, and Ph.D. in Hydrology by the Department are sponsored by Government of India and international

agencies like UNESCO, WMO etc. The Department has nine dedicated full time faculty members having specializations in various facets of Hydrology including Groundwater as mentioned here: https://www.iitr.ac.in/departments/ HY/pages/index.html

**Focus and expected Outcome:** The aim of IGWC 2022 is to provide a common platform for researchers, academicians, water managers, industrialists and technocrats to discuss and present their vision for effective management of groundwater resources to face the growing challenges of the needs of the rising population and anticipated impacts of land use and climate change. This international conference will provide an opportunity to scientists, researchers, students, engineers, policymakers and industrial houses dealing with soil and water problems to exchange their ideas, identify grey areas, and explore new approaches and technologies to better manage our limited soil and water resources. The groundwater theme of the forthcoming world water day (https://www.worldwaterday.org/) scheduled on March 2022 noticeably highlights the urgent need of organising such types of events for better managing our depleted/degraded subsurface water resources.





# AGGS Committee

## Executive Committee-2019-22:

The election was conducted by Prof. D.C. Singhal as the Election officer. On the basis of the voting results, the newly elected executive office bearers is as under **(Declaration of Elected Office Bearers of AGGS for the Term 2019-22, Dated: Feb. 12, 2019):**

| | | |
|---|---|---|
| President | Prof. A.L. Ramanathan | Professor, Jawaharlal Nehru University New Delhi |
| Vice President | Dr. P. S. Kulkarni | Professor, Maulana Azad college of arts, science and commerce, Aurangabad, MS |
| Secretary | Prof. C. Mayilswami | Retired Professor (SWCE), WTC, TNAU, Coimbatore |
| Joint Secretary (India) | Dr. N.C. Mondal | Senior Scientist, CSIR-National Geophysical Research Institute, Hyderabad |
| Joint Secretary (Foreign) | Dr. Moumtaz Razack | Professor, University of Poitiers Rue Albert Turpain France |
| Treasure | Dr. A. Valliammai | Assistant Professor (SWCE), WTC,TNAU, Coimbatore |

## Proceedings of 7th Annual General Body Meeting-AGGS on 23.03.2021 (Virtual)

The 7th Annual General Body Meeting of the Association of Global Groundwater Scientists (AGGS) was held on 23.03.2021 virtually at Centre for Water Resources, JNTU, Hyderabad. The President Prof. A. L. Ramanathan briefed about the activities of AGGS after assuming charge at IIT, Roorkee from 2019 to 2021 as follows:

- Third Indian National Groundwater Conference (INGWC 2020) was organized by CWRDM, Kozhikode, Kerala with the support of CGWB in a pandemic situation physically and successfully. Some foreign nationals' viz. Prof. Clement Prabhakar, USA and Edward McBean, Canada were participated in the conference.
- The AGM was conducted by Dr. N. C. Mondal, Joint Secretary and Dr. A. Valliammai, Treasurer, AGGS in the absence of Secretary, AGGS.
- A new committee was formed for the publication of Newsletter.
  - Prof. Brijesh Kumar Yadav, Chief Editor, IITR, Roorkee
  - Dr. N. C. Mondal, Deputy Chief Editor, CSIR-NGRI, Hyderabad
  - Dr. S. N. Rai, Member Secretary, Fellow (AGGS)
  - Dr. Gopal Krishan, Member, Scientist D, NIH Roorkee, Uttarakhand
  - Dr. C. P. Priju, Member, Scientist, CWRDM, Kozhikode
  - Dr. Y. Siva Prasad, Member, Research Scientist, NIH, Kakinada
- Accordingly, the first AGGS Newsletter was released during the III INGWC 2020 and AGGS appreciated the whole team spirit for their achievement.

## Proceedings of 8th Annual General Body Meeting-AGGS on 11.11.2021 (Virtual)

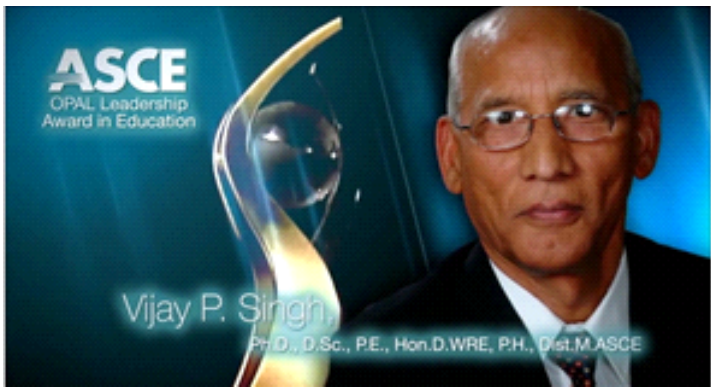
The 8th Annual General Body Meeting of the Association of Global Groundwater Scientists (AGGS) was held on 11.11.2021 virtually.

- Geoforum, Maharashtra is to be involved in all the AGGS activities.
- Prof. M. K. Singh should take effective action for the publication of JGWR. The difficulties if any may be brought to the notice of the Secretary, AGGS. Dr.U.Surendran, Senior Scientist, CWRDM, Kozhikode has sent some selected papers of INGWC 2020 for publication in JGWR.
- Membership Drive - It has been decided that all the members should take the responsibility to make enrollment of members. Regional members are requested to spare some time and try to concentrate on AGGS membership including student members.
- Registration fee of 10% discount is already in vogue for AGGS members which have to be extended to the student members also so as to encourage them.
- Registration fee is to be decided by the conference convener and local organizing committee only.

- Felicitation of senior most distinguished Scientists / Researchers / Awardees in Groundwater may be done during IGWC/INGWC following the guidelines prescribed in the blue print.
- The bi-decenery celebration of AGGS (2022) as a special event will be organized by Prof. Brijesh Kumar Yadav at the Department of Hydrology, IIT, Roorkee, Uttarakhand.
- AGGS is very much thankful to Prof. D.C. Singhal, President IAH-INC for his wholehearted support rendered to all AGGS activities
- Events such as brainstorming session, invited/guest lectures, panel discussion etc. can be organized by the local chapter or the committees or by the individual AGGS member so that AGGS name can be popularized.
- During the meeting, Prof. D.C. Singhal, President IAH-INC had suggested to create a WhatsApp Group of AGGS to get more visibility and more interactive of the day-day-activities. The WhatsApp of AGGS has been created on November 27, 2021.

**Awards and achievements of AGGS members:**

1. **Prof. Vijay P. Singh**, Texas A&M University, USA, has received the Opal Leadership Award for Education, given by American Society of Civil Engineers (ASCE), 2021. This is the highest award of ASCE in education. He has also been credited the best Technical Note Award, published in Journal of Hydrologic Engineering, given by American Society of Civil Engineers, 2021, and become the Honorary Member Award, given by International Water Resources Association (IWRA), 2021. This is the highest award of IWRA. The Lifetime Achievement Award-2019, given to him by Indian Water Resources Society, Roorkee, India, 2021. Dr. K.G. Tejwani Memorial Lecture Award has given him by Indian Association of Soil and Water Conservationists, Dehradun, Uttarakhand, 2021. He has also been honoured with a Lifetime Achievement Award by IWRS, Roorkee, Uttarakhand, India. Hearty congratulations to Prof. V. P. Singh.
2. **Prof. Madan Kumar Jha,** IIT Kharagpur, West Bengal, India has received Eminent Water Resources Scientist Award by the Indian Water Resources Society (IWRS), IIT Roorkee; Smt. Savitri Chadha Memorial INC-IAH Award for Excellence in Groundwater Science by the Indian National Chapter of International Association of Hydrogeologists, New Delhi; editor of prestigious Water Resources Research journal published by the American Geophysical Union (April 2021-December 2024); fellow of the National Academy of Agricultural Sciences (NAAS), New Delhi (January 2020); and featured as top 2% of the scientists across the globe in the field of "Environmental Engineering", based on the research publication output in 2019, in a study carried out by the Stanford University Analyst Group (November 2020).
3. **Prof. Brijesh Kumar Yadav**, IIT Roorkee is the recipient of prestigious Ramanujan Fellow award from GOI has been promoted to Professor of IIT Roorkee in March 2021 and appointed as the Head of Hydrology Department, IIT Roorkee. He has ranked in top 10 PG 'Outstanding Teachers' of IIT Roorkee consequently for last four years.
4. **Prof. C. Mayilswami** is currently Professor (SWCE), Karunya Institute of Technology & Sciences, Coimbatore, Tamil Nadu has been conferred with "Lifetime Achievement Award 2021" for his outstanding contribution to watershed, surface water & groundwater management, irrigation and higher education on October 17, 2021 at Chennai.
5. **Dr. N. C. Mondal**, CSIR-NGRI, Hyderabad, India has been promoted to Principal Scientist of CSIR-NGRI, Hyderabad, and also Associate Professor of Academy of Scientific & Innovative Research (AcSIR), Ghaziabad, Uttar Pradesh. He has received the Outstanding Scientist Award-2020 in the 4$^{th}$ International Scientist Awards on Engineering, Science & Medicine at Abu Sarovar Portico, Kilpauk, Chennai organized by VDGOOD Professional Association, India; and Elected for the Executive Member (EC) of Association of Hydrologists of India (AHI) in Year: January 2020 –December 2023.
6. **Dr. Gopal Krishnan** has revived Professional Excellence Award 2021 in individual category by Aqua Foundation, New Delhi.
7. **Dr Shrikant Daji Limaye** AGU (American Geophysical Union) has awarded him a 'free' Membership.
8. **Prof. Shakeel Ahmed** currently Senior Consultant, School of Sciences, Maulana Azad National Urdu University (MANUU), Hyderabad, has been elected as a Fellow of The World Academy of Science (TWAS) for the advancement of Science in developing countries effective January 1, 2022.
9. **Prof. S. Vasudevan**, Senior Principal Scientist, CSIR-CERI, Karaikudi, Tamil Nadu, India received Professor U.C. Pant Memorial award.
10. **Mr. Subhajyoti Das** has received the prestigious SGAT Life Time Achievement Award 2021 from the Society of Geoscientists and Allied Technologists, Bhubaneswar.




*The OPAL Awards Gala@ASCE 2021 Convention*




*Lifetime Achievement Award (Dr. C. Mayilswami)*



*Outstanding Scientist Award-2020 (Dr. N. C. Mondal)*

# SALIENT PUBLICATIONS FROM AGSS MEMBERS

**Book:**

- **Peter Dillon**, Enrique Fernández Escalante, Sharon B. Megdal and Gudrun Massmann (2021). Managed Aquifer Recharge for Water Resilience. April 2021. MDPI Publisher, DOI: 10.3390/books978-3-03943-043-7, ISBN: 978-3-03943-042-0.
- Chandniha, SK, Lohani, AK, **Krishan, G** and Prabhakar, A. 2021. "Advances in Hydrology and Climate Change-Historical trends and new approaches in water resources management" Apple Academic Press, **Pub Date:** July 2022, **ISBN:** 9781774910306.
- **Venkateswara Rao B.,** 2021. Edited Procs. of the Fourth Indian National Groundwater Conference (INGWC-2021) on Groundwater Management in Arid and Semi-Arid Regions of Hard Rock Terrains, B.S. Publications, 501p.
- Special Publication 7: River Rejuvenation: Kumudvathy model. Editors: **Subhajyoti Das** & Y.Lingaraju. Geological Society of India, 2020, 82p. ISBN: 978-93-80998-38-1.
- Special Publication 8: Water Resources of Odisha: status, issues & strategies. Editors: **Subhajyoti Das** & B.K.Mohanty. Geological Society of India, 2021, 68p, ISBN:978-93-80998-39-8.
- Special Publication 9: Water Resources of NE & E India: Status, Issues & Strategies. Editors: **Subhajyoti Das** & S. P. Sinharay. Geological Society of India, 2021, 208p. ISBN:978-93-80998-40-4.
- Special Publication 10: Water Resources of Kerala: Status, Issues & Strategies (Year 2020). **Subhajyoti Das** & E. Shaji. Geological Society of India, 2021. ISBN:978-93-80998, 158p.

**Research Article:**

- Garg, A, Yadav*, B K, Das*, D B, and Wood, P (2022) "Improving the assessment of polluted sites using an integrated bio-physico-chemical monitoring framework, Chemosphere, 290, 133344
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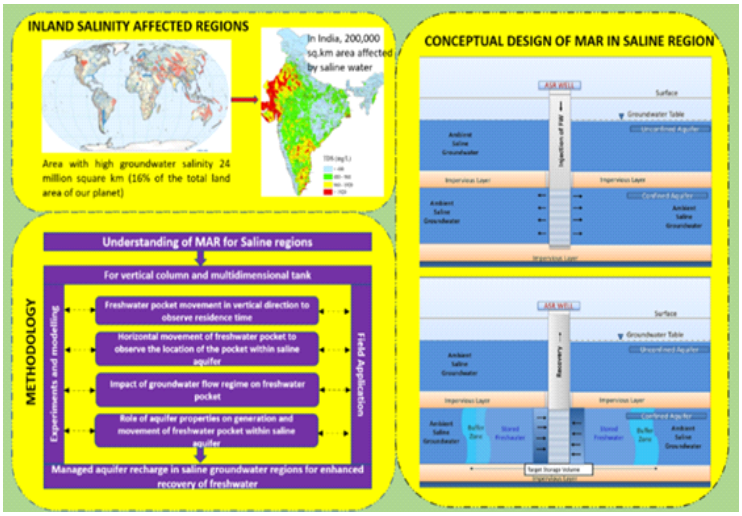
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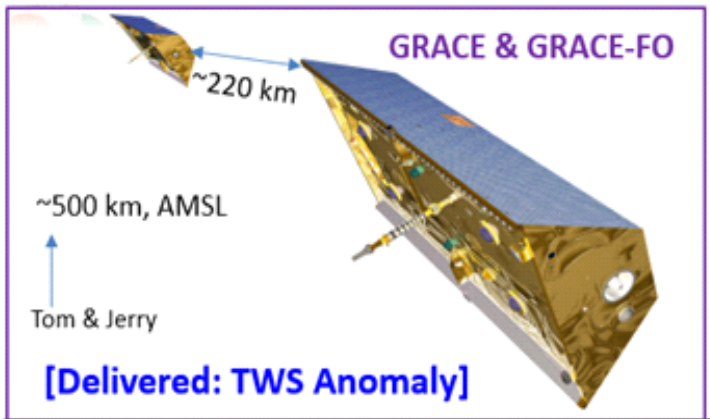
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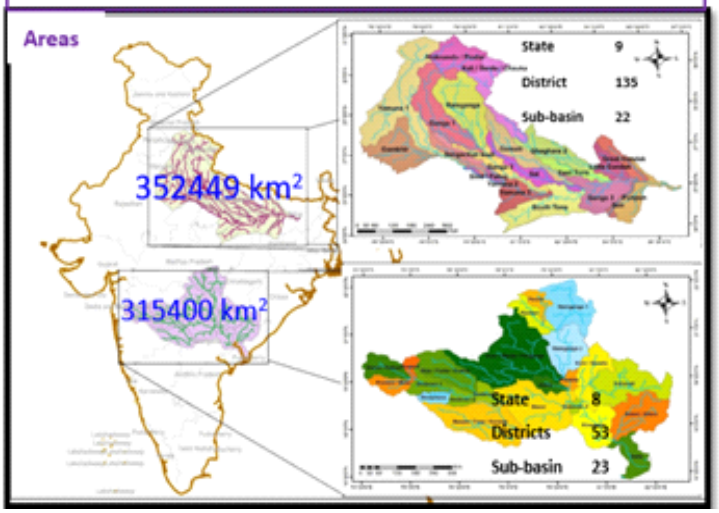
## Salient Ongoing Research Projects by AGGS members:

a. The project titled "An efficient aquifer storage method for enhanced recovery of recharged freshwater in saline regions" is being carried out by Prof. Brijesh Kr. Yadav approved by the DST for three years. This research project focuses on developing a new managed aquifer recharge (MAR) scheme for enhanced freshwater recovery in saline regions based upon a systematic series of experimental, numerical, and pilot scale studies. The developed model for movement and quantification of stored freshwater within saline aquifers can be used for further density dependent flow simulations. A feasibility analysis will also be done based upon findings of pilot study before community mobilization. The developed modified MAR framework will improve freshwater recovery from recharged saline aquifers.

a. The project titled "Assessment of Regional Hydrological System using Space Borne Gravity Observations with Special Reference to Groundwater" is being carried out by Dr. N.C. Mondal, sponsored by DST-NGP (erstwhile NRDMS), New Delhi keeping the main objectives of 1) assessing major fluxes (i.e., rainfall recharge, withdrawal, etc.) & estimating groundwater reserve at basin/watershed scale, and b) simulation of groundwater flow at regional scale, and estimating groundwater balance & its variability or up-scaling to the working scale of GRACE to compare with that of GRACE.



## Student member awards and achievements:

1. **Mr. Shubham Tiwari,** PhD student (in the guidance of Prof. Brijesh Kumar Yadav) IIT Roorkee, has received Newton Bhabha fellowship to visit Cranfield University, UK; received travel grant for attending AGU conference and Interpore conference in 2021; received ISH G. M. Nawathe Puraskar by The Indian Society for Hydraulics in 2020.
2. **Ms. Anuradha Garg,** PhD student (in the guidance of Prof. Brijesh Kumar Yadav) IIT Roorkee, has received travel grant for attending AGU conference and Interpore conference in 2021; received scholarship to participate in Indo-German Centre for Sustainability (IGCS) winter school 2022.

## Life Members
## New AGGS Members

| Sl. No. | Name | Category | Address for communication | Email | Phone numbers |
|---|---|---|---|---|---|
| 1 | Dr. Aswin Kokkat | Life member LMAGGS-148 | Research Associate, Earth process modelling group, CSIR-National Geophysical Research Institute, Uppal road, Hyderabad-500 007 Mail address: Dr. Aswin Kokkat, Kokkat house, Snehaveedhi, Near S.N.H.S, Kanimangalam, Thrissur, Kerala-680 027 | kokkataswin@gmail.com | +91 40 27012844 (O) +91 94870 22219 (M) |
| 2 | Er.C.M.Sushanth | Life member LMAGGS-149 | Sr. Principal Scientist & Head, Groundwater division, Centre for water resources development & management, Kozhikode-673 571 Mail: 7 D, Bridge town Apts., Kannur road, Opp. Aditya Honda, Nadakkavu PO. Kozhikode, Kerala 673 011 | sushanthcm@hotmail.com | 09447162144 (R) 0495 2351854 (O) |
| 3 | Dr. Mrs. Bhavana Umrikar | Life member LMAGGS-150 | Associate Professor, Department of Geology, Savitribai Phule Pune University, Ganeshkhind road, PUNE – 411007 Maharashtra, INDIA | bnumrikar@gmail.com, geology@unipune.ac.in | + 91- 92255 27407 020-25601361 (O) 020-25659624 (O) |
| 4 | Prof. Abhijit Mukherjee, Ph.D. (USA), FRSC | Life member LMAGGS-151 | Associate Professor (Hydrogeology), Dept. of Geology and Geophysics, School of Env. Science and Engg. Indian Institute of Technology Kharagpur (IIT KGP), West Bengal, PIN: 721302, INDIA | amukh2@gmail.com | 03222-283396 (O) +91 9007228876 (M) |
| 5 | Dr. Anadi Gayen | Life member LMAGGS-152 | Senior Hydrogeologist (Scientist D), CGWB, Dept. of Water Resources, River development and ganga rejuvenation, Ministry of Jal Shakti, Govt. of India Mail to: 208 (23 old), Kayasthapara main road, Haltu P.O, Kolkata-700078, West Bengal, India | anadigayen1968@gmail.com, anadigayen@rediffmail.com | 62665 23304, 94S335 88814 |
| | | | **Student Members** | | |
| 1 | Mr. S. Sundaramoorthy | AM-AGGS-002 | Additional Director, Indogeo consultancy Private Limited, S.F.No.355/A2, D.No.5, Dev Towers, Trichy main road, Gandhigramam, Karur-639004, Tamil Nadu, India. | sundargeors@gmail.com | Mob: 9788414546 |
| 2 | P. RajendranA | M-AGGS-003 | Hydrogeologist, Indogeo consultancy Private Limited, S.F.No.355/A2, D.No.5, Dev Towers, Trichy main road, Gandhigramam, Karur-639004, Tamil Nadu, India. | rajendran.geologist1@gmail.com | 96777 92229 |
| 3 | R. Kanagaraj | AM-AGGS-004 | Geologist, Indogeo consultancy Private Limited, S.F.No.355/A2, D.No.5, Dev Towers, Trichy main road, Gandhigramam, Karur-639004, India. | geokanagaraj15@gmail.com | 96777 92229 90924 28884 |

# Sudden Demise of AGGS Members



It is with profound sadness we share the news that the Founder-Peace Trust, Dr. J. Paul Baskar has passed away suddenly on 20th August 2020.

Till the last breath of his life he relentlessly fought and worked for disadvantaged and marginalized sections of the society. We truly remember his contributions in Peace Trust for eradicating Child Labour, against the exploitation of children and adults. He will also be remembered for his contribution towards Women Empowerment, Skill development for Youth, bonded labors, adolescent Textile workers welfare, Overseas Migrant labour and Inter-Intra state migrant labour issues, held initiatives to contain Human Trafficking and gave immediate response to Disaster and Climate change, addressed the issues of Tannery, Ground Water depletion, Water shed management, and many Environment related issues.

In recent times with his support and guidance Peace Trust was able to distribute Raw ration for about 10,000 families of Migrants, Mill Workers and Unorganized workers during Covid-19 pandemic and also rendered the support in safe repatriation of migrant laborers to their home towns in collaboration with state and district administration. He was an excellent writer, environmentalist and activist through which Peace Trust held its position in the CSO sector specially to work towards the cause of underprivileged and been serving its purpose as voice of the voiceless and empowering the vulnerable communities since its foundation in 1984. We must recognize the positions he held on behalf of Peace Trust as Working Committee Member of NITI Aayog's Standing Committee - Government of India, served as the South India Coordinator of the South Asian Coalition on Child Servitude (Bachpan Bachao Andolan) as well as the member of the South Asia Task Force on Bonded Child Labour promoted by The Child Workers in Asia (CWA) and was also the National Coordinator of India for Global March Against Child Labour functioned as the Vice President of Community Radio Association, South India and made Peace Trust to get accredited with consultative status of UNECOSOC. His untiring and outstanding contributions at Peace Trust made him recipient of several prestigious awards such as World Children Prize-Sweden, Body Shop Human Rights Award-UK, Tamil Nadu State Government Best Writers award, Justice Krishna Iyer Centenary award, FIAN Gold medal for Econ Human Rights, Friends of UN award. His loss is indelible not only to the Peace Trust family but to the entire CSO community in India. We (AGGS Members) find it so fortunate to have worked with him for nearly two decades and will continue to follow up his dreams further and farther in lifting up the least, the lost and the last. Apart from him, the following three senior members of our AGGS have also left this world unfortunately.

1. Dr. S. Mohandass, Life member (LMAGGS-026), Professor (Crop Phy.), WTC, TNAU, Coimbatore, Tamil Nadu, India.
2. Dr. Gunnar Jacks, Life member (LMAGGS-040), Emeritus Professor, Sweden, Royal Inst. of Technology (KTH), SE-100 44 Stockholm, Sweden.
3. Dr. D.K. Chadha, Life member (LMAGGS-085) (Senior citizen), President, Global Hydrological Solutions, G-66 (G.F), Vikaspuri, New Delhi-110018, India.

## About the Journal of Groundwater Research (JGWR) http://aggs.in/index.html

Journal of Groundwater Research (JGWR) is an International peer reviewed journal published by AGGS alias International Groundwater Congress (IGWC), India. The Editorial Board includes prominent researchers, scientists, academicians, and professionals working in the field of Groundwater and allied areas from all around the world. The first issue of JGWR was released on 18th December, 2012, on the eve of the 10th Anniversary of IGWC at Aurangabad during the IGWC-2012 conference. AGGS is a leading non-governmental professional organization in India serving the scientific community for more than 10 years and it has been gradually growing and scaling new heights. Under its auspices, a series of conferences have been organized in various parts of the country. The peer-reviewed journal is another milestone that AGGS has achieved. JGWR, will provide a platform for publication of state-of-the-art research findings of groundwater scientists, hydrologists, geologists, hydro-geologists, geophysicists, engineers, environmental scientists, agricultural scientists, policy makers, economists, and so on from India and abroad. Prof. Vijay P. Singh, Texas A&M University, Texas, USA, is Editor-in-Chief and Prof. Mritunjay Kumar Singh, IIT(ISM), Dhanbad, is Deputy Editor-in-Chief of JGWR. We invite original research articles for consideration of publication in JGWR. The forthcoming volume of the journal is Vol.8.



**Editor-in-Chief:**
**Professor Vijay P. Singh**

**Deputy Editor-in-Chief:**
**Professor Mritunjay Kumar Singh**

# Membership Form

1. Name of the Applicant (in block letters) : ..... (Surname) (First name) (Middle name)
2. Designation or Position : .....
3. Name & Address of the Employer : .....
4. Address for AGGS Mail : .....

.....

.....

.....

Telephone No. (Office) : .....

(Res) : .....

Email : .....

5. Date of Birth : ..... Nationality: .....
6. Qualification : .....

(a) Academic Qualifications : .....

(b) Technical Training : .....

7. Membership in other societies : .....
8. Professional Experience : .....

(a) Particulars of past experience, with dates : .....

(b) Nature of present work : .....

(c) Field of interest : .....

(Civil Engineering, Geophysical Sciences and Soil& Water Conservation Engineering etc.)

9. Code of Membership requested : .....
10. Your old membership No. if any : .....
11. Reference with address : .....

(AGGS members preferred) .....

I hereby apply for membership of the Association of Global Groundwater Scientists. I am sending herewith Rs. _____ as admission fee and Rs. _____ as subscription for the year/years/life membership. I testify that the above statements are correct and agree that if admissted. I shall be governed by the Rules and Regulation of the Association of Global Groundwater Scientists as long as I am a member. I further agree to promote the objects of the Society as far be within my power and that, if my membership is discontinued, I shall return any means of membership identification I may have received from the society and remit upon resignation any unpaid fees or dues owing to the Society. I undertake to present to the society original communication every year relating to the profession in Groundwater, I further undertake to abide by professional conduct rules or code of ethics that the society may frame time to time.

Date: Signature of the Applicant

[Note: Kindly see the following Annexure-I for details of the categories of membership and fee structure as well address for communication].

# Association of Global Groundwater Scientists (AGGS)

Alais International Groundwater Congress (IGWC) (Registered No.1/2013, Dated: 04.01.2013, Tamil Nadu Societies Registration Act 1975)

***Administrative Office:*** Located at Coimbatore, Tamil Nadu, India

Annexure-I

## CATEGORIES OF MEMBERSHIP:

| | | Subscription | | Admission Fee | |
|---|---|---|---|---|---|
| | | Inland (Rs.) | Foreign ($) | Inland (Rs.) | Foreign ($) |
| Corporate Member (one-time payment) | Any University/Institution/ Private Firm | 20,000 | 1500 | 100 | 30 |
| | Department or Affiliated college | 15,000 | 2000 | 100 | 30 |
| | NGO's | 10,000 | 1500 | 100 | 30 |
| Life Member | A qualified personnel working in Groundwater fields | 5000 | 200 | 50 | 20 |
| **Senior citizens** | From 60 -70 years | 2500 | 100 | 50 | 10 |
| **Super Senior citizens** | Above 70 years | 1000 | 75 | 50 | 10 |
| Member (annual) | A qualified personnel working in the field of groundwater | 1000 | 50 | 50 | 10 |
| Affiliate Member (person) (annual) | Any individual or body pursuing the profession of Groundwater will be eligible for Affiliate Membership | 1000 | 50 | 50 | 10 |
| **Student Member (5 years)** | Person undergoing a course of study/training or apprenticeship in Civil Engineering, Geophysical Sciences, Soil & Water Conservation Engineering and Environmental Engineering/Sciences are eligible for Student Membership | 1000 | 50 | 50 | 10 |

N.B:

1) Society's financial year is from 1st April to 31st March. Payment by crossed draft will be preferred and payable to the Association of Global Groundwater Scientists.
2) Graduate engineers can become life member by paying the fees.
3) Please mail the completed form along with remittance to.

**The fees should be paid through Cheque/DD drawn in any Nationalized Bank in favor of Secretary, AGGS, Payable at Coimbatore, Tamil Nadu, India and send it to Dr.C.Mayilswami,** Secretary, Association of Global Groundwater Scientists, India Site No.40&41, Super garden extension II, Vadavalli, Coimbatore-641 041, Tamil Nadu
E-mail: ceemayil@gmail.com
Mobile: 099524 46416

**For online transfer the bank details:**
**The Secretary, AGGS**
State Bank of India
Current A/C Number: 32797387800
IFS Code: SBINOOO5740
SWIFT Code: SBININBB451
MICR Code: 641002012

**Address:**
State Bank of India, No.747,
Sarvodaya Sangh Building,
Maruthamalai Main Road,
Coimbatore-641041, Tamil Nadu, India
Email:sbi.05740@sbi.co.in

# Membership Drive

*Following are the membership drive committees:*

***I. Within India***

1) *Tamil Nadu, Kerala and Karnataka- Dr. S. Sankaran (Convener), Dr. S. Vasudevan, Dr. Sajeena, S & Dr. C. P. Priju*
2) *Andhra Pradesh, Telangana and Hyderabad-Prof. B. Venkateswara Rao (Convener), Dr. N. C. Mondal & Dr. Phanindra*
3) *Maharashtra-Dr. P. S. Kulkarni (Convener), Dr. U. D. Kulkarni & Dr. Ashok V. Tejankar*
4) *Punjab, Haryana, Uttarkhand, Himachal Pradesh, Delhi & Western UP - Prof. A. L. Ramanathan (Convener), Dr. Brijesh Yadav, Dr. Anupama Sharma & Prof. S. N. Rai*
5) *Eastern UP-Prof. Naveen Kumar*
6) *Bihar & Jharkhand- Dr. M. K. Singh*
7) *West Bengal & Odissa - Dr. Madhan Kumar Jha*
8) *Rajasthan and Gujarat – Dr. H. M. Patel*
9) *Chhattisgarh – Prof. M. P. Tripathi*
10) *North East – Dr. Sumit Dabral*

***II. Outside India***

1) *Australia – Dr. Anand Tularam*
2) *Japan –Dr. Naoaki Shibasaki*
3) *Sweden – Dr. Gunnar Jacks*
4) *USA – Dr. V. P. Singh*
5) *Bangladesh – Dr. K. M. Ahmed*
6) *Nepal-Mr. Pawan Kumar Neupane*
7) *Italy – Dr. Walter Dragoni*

# Contact Persons



**Dr. M. Thangarajan**
Retired Scientist-G, NGRI,
Hyderabad
karvimrajan@gmail.com,
+91 9700217685



**Dr. A. L. Ramanathan**
Professor, Jawaharlal Nehru University,
New Delhi
alrjnu@gmail.com
011-26702434



**Dr. B. Venkateswara**
Director- Jawaharlal Nehru
Technological University
Hyderabad
cwr_jntu@yahoo.com



**Dr. C. Mayilswami**
Retired Professor (SWCE),
WTC, TNAU,
Coimbatore
ceemayil@gmail.com
0422-2401094



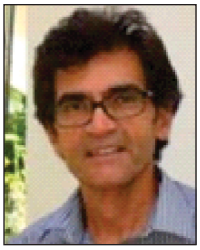
**Dr. L. Elango**
Professor,
Department of Geology,
Anna University, Chennai
elango34@hotmail.com
+91 94441 18629



**Dr. P. S. Kulkarni**
Former Professor &
Head Dept. of Geology,
Maulana Azad College, Aurangabad
psk120154@yahoo.co.in,
+91 73047 92046



**Dr. M. K. Singh,**
IIT(ISM)
Dhanbad
drmks29@rediffmail.com
+913262235488



**Dr. Moumtaz Razack**
University of Poitiers
France
moumtaz.razack@univ-poitiers.fr



**Dr. A. Valliammai**
Assistant Professor
(SWCE), TNAU, Coimbatore
vallimei@gmail.com
+91 98948 70483



**Dr. Brijesh Kumar Yadav**
Department of Hydrology
IIT Roorkee
brijkfhy@iitr.ac.in
+911332284755



**Dr. N.C. Mondal**
Senior Scientist,
CSIR-NGRI, Hyderabad
ncmngri@gmail.com
+91-040-27012608