



Environment

Water Community



## Solution Exchange for the Water Community Consolidated Reply

*Query: Organizations Working on Combating Salt Water Ingress - Referrals*

Compiled by [Nitya Jacob](#), Resource Person and [Sunetra Lala](#), Research Associate  
Issue Date: 29 April 2009

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From [Helen Rose Patterson](#), Auroville Water Harvest, Auroville, Tamil Nadu

Posted 13 March 2009

I am Helen Rose Patterson working with the 'Auroville Water Harvest', a non-profit organization working in the Villupuram District, Tamil Nadu, since 1996. Auroville Water Harvest works to combat sea water intrusion and promote integrated water management with people's participation.

Our aim is to develop efficient and sustainable remediation techniques based on a further understanding of the surface and groundwater systems. We undertake a wide array of activities, research, and development programmes pertaining to water management, with an emphasis on sustainable integrated development.

As part of my association with Auroville Water Harvest, I am researching salt water intrusion into coastal areas. Presently, I am gathering information regarding various organizations and their activities to control salt water intrusion in different parts of India. Subsequently, we will work with these organizations to develop a strategy on controlling sea water ingress in aquifers.

I request members to provide us with the following:

- Names and details of organizations working on combating sea water ingress in different parts of India
- Contact information of specific individuals and their expertise within the above organizations.

Your inputs will help us to compile a directory of such organizations to help further our work. We will share the directory with the community once it is developed.

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Responses were received, with thanks, from

1. [R. Adhinarayanan](#), DHAN Foundation, Tamil Nadu
2. [Harshad Gandhi](#), Excel Industries Ltd., Mumbai

3. [Dilip Surkar](#), Vikram Sarabhai Centre for Development Interaction (VIKSAT), Ahmedabad
4. [C. P. Kumar](#), National Institute of Hydrology, Roorkee
5. [Jyoti Parikh](#), Integrated Research and Action for Development, New Delhi
6. [Shailja Kishore](#), Aga Khan Rural Support Programme (India), Ahmedabad
7. [Satya Prakash Mehra](#), WWF-India, Rajasthan
8. [Lalit Mohan Sharma](#), Institute of Rural Research and Development, Gurgaon
9. [Vijay Kumar](#), Chartered Environmental and Water Resources Exploration and Development Associates, New Delhi
10. [A.Raja Mohamed](#), Coastal Energy Pvt. Ltd, Chennai
11. [Uday Gaikwad](#), Saline Area Vitalisation Enterprise Limited, Ahmedabad
12. [Ajit S. Gokhale](#), Natural Solutions, Mumbai
13. [Mihir Maitra](#), Individual Consultant, New Delhi
14. [V. Kurien Baby](#), District Collector's Office, Thrissur, Kerala
15. [Ankkur Goel](#), The Technology Information, Forecasting and Assessment Council (TIFAC), New Delhi
16. [N. Lakshmi Narayana](#), Dakshinya Institutes, Guntur
17. [Hrithesh Chakraborty](#), Water Technology Centre for Eastern Region (WTCER), Indian Council of Agricultural Research, Bhubaneswar
18. [Latha Bhaskar](#), Ashoka Trust for Research in Ecology and the Environment (ATREE), Trivandrum
19. [Annie George](#), NGO Coordination and Resource Centre, Nagapattinam
20. [Ajit Seshadri](#), The Vigyan Vijay Foundation, New Delhi
21. [Muhammad Mukhtar Alam](#), Centre For Ecological Audit, Social Inclusion and Governance, New Delhi
22. [Sikandar Meeranayak](#), Deshpande Foundation, Hubli

*Further contributions are welcome!*

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[Summary of Responses](#)

[Related Resources](#)

[Responses in Full](#)

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## Summary of Responses

Salt-water ingress affects a large percentage of India's 7,500 km long coastline. In some places, it is a natural phenomenon, but in many parts it has been caused by excessive withdrawal of fresh water from coastal aquifers. This has affected the drinking and irrigation water needs of coastal communities from Gujarat to Orissa.

Members suggested that there are several [organizations](#) working on tackling the problem of salt-water ingress on various fronts. While some have developed salt-water resistant varieties of food crops that can be grown in these areas, others have developed natural methods to prevent salt water from entering aquifers. Other organizations have more physical solutions to the problem, by backwashing aquifers using rain water, underground barriers against salt water intrusion and river basin management.

Members also suggested studying the extent and impact of salt-water ingress before actually implementing a plan to address the problem using a simulation model as used in Goa. Any project to stop salt water inflows have to take a basin-wide approach, because the problem also occurs when the environmental flows of a river system are interrupted, affecting the ability of

fresh water out flows to exclude salt water inflow. The [Recommended Documentation](#) section contains some such studies mentioned by members.

In addition to coastal areas, salinity affects groundwater in several parts of inland India. Several organizations working on the issue from Rajasthan, Haryana and New Delhi offered their expertise in tackling salt water ingress. Finally, members also noted some [experts](#) working in the field of combating salt-water ingress.

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## Related Resources

### *Recommended Documentation*

From [C. P. Kumar](#), National Institute of Hydrology, Roorkee

#### **Simulation of Seawater Intrusion in Ernakulam Coast**

Paper; by Dipanjali D. Bhosale and C. P. Kumar; National Institute of Hydrology, Roorkee; Roorkee;

Available at <http://www.angelfire.com/nh/cpkumar/publication/ernac.pdf> (PDF; Size: 60KB)

*It presents the simulation of salt water ingress in a section of the Ernakulam coast and examines the impact of increased pumping on the extent of seawater intrusion*

#### **Modelling of a Coastal Aquifer Using FEFLOW**

Report; by C.P. Kumar; National Institute of Hydrology, Roorkee; Roorkee; 2006;

Available at <http://www.nih.ernet.in/report/Goa.pdf> (PDF; Size: 2.55MB)

*The study focuses on salt water ingress in the coastal areas of Goa and how seawater intrusion may turn to be a major problem if corrective measures are not initiated*

### *Recommended Contacts and Experts*

**Ajit S. Gokhale, Natural Solutions, Mumbai** (from [Satya Prakash Mehra](#), WWF-India, Rajasthan)

301, Sudama Chhatra C.H.S., Pandurang Wadi, Near Saibaba Mandir, Dombivili (East), Mumbai 421201, Maharashtra; Tel: 91-251-2881173, 98704 23023; [ajit.naturalsolutions@gmail.com](mailto:ajit.naturalsolutions@gmail.com)

*An expert who has been working in the area of salt water ingress and is also a consultant working on Project Boondh - a rainwater harvesting initiative*

**Yargen Putz, Palmyra, Auroville, Tamil Nadu** (from [Mihir Maitra](#), Individual Consultant, New Delh)

Centre for Ecological Landuse, Water Management and Rural Development, Aurobrindavan, Auroville 605101, Villupuram District, Tamil Nadu; Tel: 91-413-2678145;

[palmyra@auroville.org.in](mailto:palmyra@auroville.org.in); <http://www.palmyraauroville.org/>

*Has renovated nearly 30 minor irrigation tanks with community participation in Villupuram district in an effort to combat salt water ingress in Tamil Nadu*

### *Recommended Organizations and Programmes*

**DHAN Foundation, Madurai** (from [R. Adhinarayanan](#), DHAN Foundation, Tamil Nadu)

18, Pillayar Koil Street, Arasaradi, Madurai 625 016, Tamil Nadu; Tel: 91-452-2610794; Fax: 91-452-2602247; [ghan@md3.vsnl.net.in](mailto:ghan@md3.vsnl.net.in); <http://www.dhan.org/vayalagam/index.php>;

Contact R. Adhinarayanan; Regional Coordinator; Tel: 91-9443832662;

[aadhinarayanan@gmail.com](mailto:aadhinarayanan@gmail.com)

*Works in the area of conserving surface water bodies and arresting salt water ingress in the Nagapattinam district through construction of check dams in the backwaters*

**Vivekanand Research and Training Institute (VRTI), Kutch, Gujarat** (from [Harshad Gandhi](#), Excel Industries Ltd., Mumbai)

Nagalpur Road, Mandvi, Kutch, Gujarat; Tel: 91-2834-223253; [vrti-mandvi@yahoo.com](mailto:vrti-mandvi@yahoo.com), [vgssatik@rediffmail.com](mailto:vgssatik@rediffmail.com); Contact J. S. Gosali; Trustee; Tel: 91-22-56464200; [gosalia@excelind.com](mailto:gosalia@excelind.com)

*An NGO based in the coastal town of Mandvi, it has been associated in several developmental projects to combat salt water ingress in the Kutch district of Gujarat*

**Vikram Sarabhai Centre for Development Interaction (VIKSAT), Ahmedabad** (from [Dilip Surkar](#))

Nehru Foundation for Development, Thaltej Tekra, Ahmedabad 380054, Gujarat; Tel: 91-79-26856220, 26852360; Fax: 91-79-26862360; [mail@viksat.org](mailto:mail@viksat.org); <http://www.viksat.org/land&water.htm>; Contact Dilip Surkar; Executive Director; Tel: 91-79-26856220; [dilip.surkar@viksat.org](mailto:dilip.surkar@viksat.org)

*Is engaged in promotion of participatory management of natural resources, including water resources and works on the issue of salt water ingress in coastal Gujarat*

**Integrated Research and Action for Development , New Delhi** (from [Jyoti Parikh](#))

50 Asian games Village, Khelgaon, New Delhi 110049; Tel: 91-11-26490126; Fax: 91-11-26495523; [jparikh@irade.org](mailto:jparikh@irade.org); <http://www.irade.org/activities.htm>; Contact Jyoti Parikh; Executive Director; Tel: 91-11-26495522; [jparikh@irade.org](mailto:jparikh@irade.org)

*Works on the issues of environment and climate change at the grassroots level and is interested in working in the area of salt water ingress in India*

From [Shailja Kishore](#), Aga Khan Rural Support Programme (India), Ahmedabad

**Coastal Salinity Prevention Cell (CSPC), Ahmedabad**

House No. 23, First floor, Yogashram society, Opposite Kenyuj Apartment, Shyamal Road, Ambawadi, Ahmedabad 380015, Gujarat; Tel: 91-79-32519799; Fax: 91-79-26604969; [sujit@cspc.org](mailto:sujit@cspc.org); [http://cspc.org.in/kutch\\_kvj\\_vrti.html](http://cspc.org.in/kutch_kvj_vrti.html)

*Supported a project to develop a mode for salinity management, and salt water ingress in a watershed comprising 20 villages in Mundra and Mandvi talukas in Kutch district*

**Aga Khan Rural Support Programme (India), Ahmedabad**

9th -10th Floor, Corporate House, Opposite Dinesh Hall, Off Ashram Road, Ahmedabad 380009, Gujarat; Tel: 91-79-66312451/61; Fax: 91-79-66312471; [kishore@akrspi.org](mailto:kishore@akrspi.org); [http://www.akdn.org/india\\_rural.asp](http://www.akdn.org/india_rural.asp); Contact Shailja Kishore; Programme Specialist (Research and Monitoring); Tel: 91-79-27541678; [kishore@akrspi.org](mailto:kishore@akrspi.org)

*Runs a Salinity Ingress Prevention Programme, focused on 105 villages in the Junagadh and Porbandar districts of Gujarat, which has helped to prevent salt water ingress*

**Institute of Rural Research and Development, Gurgaon, Haryana** (from [Lalit Mohan Sharma](#))

Plot No.34, Sector 44, Institutional Area, Gurgaon 122002, Haryana; Tel: 91-124-4744100; Fax: 91-124-4744123; [smsf@smsfoundation.org](mailto:smsf@smsfoundation.org); <http://www.smsfoundation.org/centers.htm>; Contact Lalit Mohan Sharma; Programme Leader - Water Management; Tel: 91-124-4744106; [lalit.sharma@smsfoundation.org](mailto:lalit.sharma@smsfoundation.org)

*Works on rainwater harvesting projects in Mewat district of Haryana to combat salt water ingress, where almost 450 villages have access only to saline water*

**Chartered Environmental and Water Resources Exploration and Development Associates, New Delhi** (from [Vijay Kumar](#))

MIG Flat No. 28, Pocket 2, Block E-2, Sector 15, Rohini, New Delhi 110085; Tel: 91-9810311907; [vj2001kumar@hotmail.com](mailto:vj2001kumar@hotmail.com)

*Promotes water harvesting and watershed development projects in Tamil Nadu, Maharashtra, Bihar, Orissa, Rajasthan and Gujarat to prevent salt water ingress*

**Coastal Energy Pvt. Ltd, Chennai** (from [A. Raja Mohamed](#))

5th Floor, Buhari Towers, No.4, Moores Road, Egmore, Chennai 600 006, Tamil Nadu; Tel: 91-44-43974397; Fax: 91-44-28268316; [rajam@coastalfuel.com](mailto:rajam@coastalfuel.com);

<http://www.coalandoil.com/html/index.php>; Contact A. Raja Mohamad; Geophysicist; Tel: 91-9790934534; [rajam@coastalfuel.com](mailto:rajam@coastalfuel.com)

*An India-centric integrated energy supply company, with interests in the area of combating salt water ingress in coastal areas*

**Saline Area Vitalisation Enterprise Limited, Ahmedabad** (from [Uday Gaikwad](#))

"Ishavashyam", Opposite Lajpatnagar Society, Eeshita Tower Road, Navrangpura, Ahmedabad, Gujarat; Tel: 91-79-26404263; [saveltd@vsnl.net](mailto:saveltd@vsnl.net); Website; Contact Uday Gaikwad; Manager (Projects); Tel: 91-79-27913569; [gaikwadu@yahoo.com](mailto:gaikwadu@yahoo.com)

*Works with small and marginal farmers and fishing communities with a focus on providing livelihood solutions to fight the impacts of salt water ingress in coastal Gujarat*

**District Collector's Office, Thrissur, Kerala** (from [V. Kurien Baby](#))

48/27, Civil Lines, Ayyanthole, Civil Lines, Ayyanthole, Thrissur 680003, Kerala; Tel: 91-9447579935; [kurianb@yahoo.com](mailto:kurianb@yahoo.com); Contact V. Kurien Baby; District Collector; Tel: 91-9447579935; [kurianb@yahoo.com](mailto:kurianb@yahoo.com)

*Working to prevent salt water ingress in the coastal areas of Kerala by adopting backwashing techniques, remediation, groundwater and open well recharge programmes*

From [Ankur Goel](#), The Technology Information, Forecasting and Assessment Council (TIFAC), New Delhi

**MS Swaminathan Research Foundation, Chennai**

3rd Cross Street, Institutional Area, Taramani, Chennai 600113, Tamil Nadu; Tel: 91-44-22542698; Fax: 91-44-22541319; [hmrcc@mssrf.res.in](mailto:hmrcc@mssrf.res.in); <http://www.mssrf.org/csr/index.htm>; Contact M.S. Swaminathan; Chairman; Tel: 91-44-22541229 ; [hmrcc@mssrf.res.in](mailto:hmrcc@mssrf.res.in)

*Has a Coastal System Research Programme which aims to strengthen the ecological infrastructure of coastal areas by preventing salt water ingress*

**The Technology Information, Forecasting and Assessment Council (TIFAC), New Delhi**

Department of Science and Technology, Technology Bhavan, New Mehrauli Road, New Delhi 110016; Tel: 91-11-26567373; Fax: 91-11-26864570; [dstinfo@nic.in](mailto:dstinfo@nic.in); <http://www.dst.gov.in/autonomous/tifac.htm>; Contact Ankur Goel; Scientist; Tel: 91-11-42525661; [ankurgoel@rediffmail.com](mailto:ankurgoel@rediffmail.com)

*A registered society under the Department of Science and Technology, it has conducted studies on salt water ingress in coastal areas*

**Water Technology Centre for Eastern Region, Indian Council of Agricultural Research, Bhubaneswar** (from [Hritesh Chakraborty](#))

Project Complex, Indian Council of Agricultural Research, Chandrasekharapur, Bhubaneswar 751023, Orissa; Tel: 91-674-2300016; Fax: 91-674-2301651; [wtcer@ernet.in](mailto:wtcer@ernet.in);

[www.wtcer.ernet.in](http://www.wtcer.ernet.in); Contact Hritesh Chakraborty; Scientist; Tel: 91-674-2300016;  
[hritesh\\_99@yahoo.com](mailto:hritesh_99@yahoo.com)

*Has developed technologies related to groundwater use in shallow coastal aquifers in Orissa, which has helped to combat salt water ingress*

**Participatory Learning and Action Network (PLANET Kerala), Thiruvananthapuram, Kerala** (from [Latha Bhaskar](#), Ashoka Trust for Research in Ecology and the Environment (ATREE), Trivandrum)

St. Mary's Building Complex (II Floor), Pattom P.O, Thiruvananthapuram 695004, Kerala; Tel: 91-471-3295944; Fax: 91-471-2557516; [info@planetkerala.org](mailto:info@planetkerala.org); <http://www.planetkerala.org/>;  
Contact Terry Thomas; Team Leader; Tel: 91-471-3095944; [2492013@gmail.com](mailto:2492013@gmail.com)

*Has facilitated participatory action research programmes involving appropriate approaches and technologies to recharge groundwater to combat salt water ingress*

**NGO Coordination and Resource Centre, Nagapattinam, Tamil Nadu** (from [Annie George](#))

31, Mahalashmi Nagar, South Palpannaicherry, Nagapattinam 611001, Tamil Nadu; Tel: 91-4365-252618; [info.ncrc@gmail.com](mailto:info.ncrc@gmail.com); <http://www.ncrc.in/index.php>; Contact Annie George; CEO; Tel: 91-4365-252579 ; [anniegeorge@gmail.com](mailto:anniegeorge@gmail.com)

*Has been working with 5 river systems in Nagapattinam to prevent salt water ingress in order to increase access to water supply for agriculture and drinking water purposes*

**The Vigyan Vijay Foundation, New Delhi** (from [Ajit Seshadri](#))

H2, 2-5, Mahavir Enclave, Palam - Dabri Road, New Delhi 110045; Tel: 91-11-25058853; [ajit.seshadri@vigyanvijay.org](mailto:ajit.seshadri@vigyanvijay.org); <http://vigyanvijay.org/jalagren.htm>; Contact Ajit Seshadri; Head-Environmental Wing; Tel: 91-9810460049; [ajit.seshadri@vigyanvijay.org](mailto:ajit.seshadri@vigyanvijay.org)

*Works on issues of water conservation and eco-literacy as a means to prevent salt water ingress in coastal areas and in other parts of India*

**Centre For Ecological Audit, Social Inclusion and Governance, New Delhi** (from [Muhammad Mukhtar Alam](#))

58-C, Top Floor, Ashok Vihar-III, New Delhi 110052; Tel: 91-11-40560734; [ceasig@gmail.com](mailto:ceasig@gmail.com);  
Contact Muhammad Mukhtar Alam; Executive Director; Tel: 91-9968345380; [ceasig@gmail.com](mailto:ceasig@gmail.com)

*Works on issues of resource conservation, including water resources in order to prevent salt water ingress in coastal aquifers*

**Deshpande Foundation, Hubli, Karnataka** (from [Sikandar Meeranayak](#))

BVB Engineering College, Vidyanagar, Hubli 580031, Karnataka; Tel: 91-836-2378430; [infoDCSE@dfmail.org](mailto:infoDCSE@dfmail.org); <http://www.deshpandefoundation.org/index.html>; Contact Sikandar Meeranayak; Tel: Telephone No.; [sikandar@dfmail.org](mailto:sikandar@dfmail.org)

*Works on rainwater harvesting, bore well recharge and open well recharge schemes like check dam bunds in rural and urban area of Karnataka to prevent salt water ingress*

### ***Related Consolidated Replies***

**Desalination Techniques, from S. N. Srinivas, The Energy Resources Institute, Bangalore (Comparative Experiences). Water Community, Solution Exchange India,**

Issued 26 October 2005. Available at <http://www.solutionexchange-un.net.in/environment/cr/cr-se-wes-26100501.pdf> (PDF, Size: 44KB)

*Provides information and experiences on desalination techniques such as using solar stills to produce potable water from brackish water*

**Coastal Zone Management Regulation, from K. S. Murali and N. M. Ishwar, UN Resident Coordinator's Office, New Delhi and UNDP Chennai. Water and Disaster Management Communities, Solution Exchange India,**

Issued 8 August 2008. Available at <http://www.solutionexchange-un.net.in/drm/cr/cr-se-wes-drm-05060801.pdf> (PDF,Size:141KB)

*Members commented in detail on the Ministry of Environment and Forests' proposal to issue a new notification for managing India's coastal zones*

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## Responses in Full

### **R. Adhinarayanan, DHAN Foundation, Tamil Nadu**

I am very happy to note Helen Rose Patterson's interest in mitigating sea water intrusion in coastal areas. I am working with DHAN Foundation, and we are working in the same area particularly on conserving surface water bodies and arresting sea water intrusion. Presently I am working on sea water intrusion mitigation through construction of check dam in the backwaters and promoting new surface water bodies in Nagapattinam district. For further information please contact:

DHAN Foundation,  
18, Pillayar Koil Street,  
Arasaradi,  
Madurai 625 016

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### **Harshad Gandhi, Excel Industries Ltd., Mumbai**

Vivekanand Research and Training Institute (VRTI) has been associated in several developmental projects to combat salinity ingress in Gujarat. For more information please contact:

Mr. J. S. Gosali,  
Trustee,  
Vivekanand Research & Training Institute (VRTI),  
Email: [gosalia@excelind.com](mailto:gosalia@excelind.com)

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### **Dilip Surkar, Vikram Sarabhai Centre for Development Interaction (VIKSAT), Ahmedabad**

We are working on integrated water resource management with people's participation and promoting people's institutions for sustainable natural resources management, in Gujarat. More information about our activities is available on our website [www.viksat.org](http://www.viksat.org). We would happy to join in your efforts to develop a strategy on controlling sea water ingress in aquifers. Please contact us at the details provided below:

Dilip Surkar,  
Director,  
Vikram Sarabhai Centre for Development Interaction (VIKSAT),  
Nehru Foundation for Development,  
Thaltej Tekra,  
Ahmedabad 380 054  
Phone: 91-79-26856220, 26852360  
Email: [www.viksat.org](http://www.viksat.org)

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**C. P. Kumar, National Institute of Hydrology, Roorkee**

You may find interest in my study "Modelling of a Coastal Aquifer using FEFLOW". It deals with seawater intrusion problem in Goa coast. A brief introduction of the study is given below.

Coastal tracts of Goa (India) are rapidly being transformed into settlement areas. The poor water supply facilities have encouraged people to have their own source of water by digging or boring a well. During the last decade, there have been large-scale withdrawals of groundwater by builders, hotels and other tourist establishments. Though the seawater intrusion has not yet assumed serious magnitude, but in the coming years it may turn to be a major problem if corrective measures are not initiated at this stage. It is necessary to understand how fresh and salt water move under various realistic pumping and recharge scenarios. Objectives of the study include simulation of seawater intrusion in a part of the coastal area in Bardez taluk of North Goa, evaluation of the impact on seawater intrusion due to various groundwater pumping scenarios and sensitivity analysis to find the most sensitive parameters affecting the simulation.

For the study, a finite-element model (FEFLOW) was used for model simulations. The FEFLOW is an interactive finite element simulation system (Version 5.1) for three-dimensional (3D) or two-dimensional (2D), i.e. horizontal (aquifer-averaged), vertical or axi-symmetric, transient or steady-state, fluid density- coupled or linear, flow and mass, flow and heat or completely coupled thermohaline transport processes in subsurface water resources (groundwater systems).

Salient conclusions of the study are given below.

(1) Presently, seawater intrusion in Bardez taluk of North Goa is confined only up to 290 m from the coast under normal rainfall conditions and present draft pattern. It may slightly extend farther for low rainfall years.

(2) Seawater intrusion may further advance inland if withdrawals of groundwater by builders, hotels and other tourist establishments continue to increase in the coming years.

(3) Groundwater salinity needs to be continuously monitored near the coastal area, especially within 2 km from the coast.

(4) Corrective measures with proper planning and management of groundwater resources in the area need to be initiated so that it may not turn to be a major water quality problem in the coming times.

(5) The model is very sensitive to hydraulic conductivity and dispersivity values. Field and laboratory investigations need to be undertaken for measurement of these parameters for use in further modeling studies.

(6) The study will guide in making management decisions to monitor and control seawater intrusion and planning of groundwater development in the area.

The complete report of the above study can be downloaded at <http://www.nih.ernet.in/report/Goa.pdf> (PDF; Size: 2.55MB).

You may also see another study on "Simulation of Seawater Intrusion in Ernakulam Coast" at <http://www.angelfire.com/nh/cpkumar/publication/ernac.pdf> (PDF; Size: 60KB).

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**Jyoti Parikh, Integrated Research and Action for Development, New Delhi**



We request you to please contact us at the name and address provided below.

Jyoti Parikh,  
Executive Director,  
Integrated Research and action for Development (IRADe),  
50 Asian games Village, Khelgaon,  
New Delhi 110049  
Tel – 91-11-26495522, 2649 0126  
Email: [jparikh@irade.org](mailto:jparikh@irade.org), [www.irade.org](http://www.irade.org)

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**Shailja Kishore, Aga Khan Rural Support Programme (India), Ahmedabad**

You can get good information from two of the currently ongoing programmes of Aga Khan Rural Support Programme (AKRSP) (India) (the address is provided below):

1. Salinity Ingress Prevention Programme, which focuses on 105 costal villages of Junagadh and Porbandar districts of Gujarat. The focus areas are WRD, Drinking water, Micro irrigation devices, Agri farm / support, alternate livelihood development and over all addressing the Issue through groups at sub village, village and supra village level.
2. River Basin Management, Which works in the upper region of this area and along with the revival of the river also indirectly, supports the above programme.

As the topic is so broad, a separate organization was formed to address the problem of coastal Gujarat. It's known as:

Coastal Salinity Prevention Cell (CSPC),  
House no – 23,  
First floor,  
Yogashram Society,  
Opposite Kenyuj Apartment,  
Shyamal Road,  
Ambawadi,  
Ahmedabad,  
Gujarat  
Email: [sujit@cspc.org](mailto:sujit@cspc.org)

Shailja Kishore,  
Programme Specialist (Research & Monitoring),  
Aga Khan Rural Support Programme (India),  
9th -10th Floor, Corporate House,  
Opp. Dinesh Hall, Off Ashram Road,  
Ahmedabad 380 009  
Tel – 91-79-66312451/61, 27541678, Extension -128  
Fax- 91-79-66312471  
Email: [kishore@akrsp.org](mailto:kishore@akrsp.org)

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**Satya Prakash Mehra, WWF-India, Rajasthan**

Here is a contact working on salt water intrusion:

Ajit S. Gokhale,  
Natural Solutions,  
301, Sudama Chhatra C.H.S.,

Pandurang Wadi,  
Near Saibaba Mandir,  
Dombivili (East),  
Mumbai 421201  
Telephone: +91-251-2881173  
Mobile: 91-98704 23023  
Email: [ajit.naturalsolutions@gmail.com](mailto:ajit.naturalsolutions@gmail.com)

He is also specialist and consultant for "Project Boond" running in different regions of India, which is a rainwater harvesting initiative.

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**Lalit Mohan Sharma, Institute of Rural Research and Development, Gurgaon**

We are working in the Mewat district of Haryana. Here out of total 503 villages only 61 villages have access to groundwater, the rest only get saline water. These groundwater pockets are under tremendous pressure and are depleting fast. As a result saline groundwater pockets are expanding and encroaching over the fresh ones. Thereby, groundwater pockets are shrinking. Through some innovative rain water harvesting projects we have been able to create small groundwater pockets.

Our problem here is similar to coastal areas. So we would like to join your efforts. Please contact us at the details provided below.

Lalit Mohan Sharma,  
Programme Leader - Water Management,  
Institute of Rural Research and Development,  
A Sehgal Foundation Initiative,  
Gurgaon  
Telephone: 91-124-4744106  
Website: [www.smsfoundation.org](http://www.smsfoundation.org)

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**Vijay Kumar, Chartered Environmental and Water Resources Exploration and Development Associates, New Delhi**

Almost 3/4 of the Indian sub continent is surrounded by sea and I appreciate your concern. We can associate with you to combat sea water intrusion and promote integrated water management with people's participation. As we all know that sea water intrusion in most of the cases is man made that disturbs the interface of the "out-flowing fresh water into sea (sweet water)" and "saline sea water". There is a need for effective monitoring and surveillance system to be designed for each water-well field for the target areas so that its interface is kept away from in safe limits while extracting for consumption, etc.

Our professional group of geosciences & engineering – the technical professional group and a panel of experts are in the field of exploration and development of groundwater resources since early 1970s in main land of India. Individually each one of us has vast experience working both in coastal and other many set of combination of terrain of India. They by virtue of work-experience learnt integrated water management with people's participation and promoted harvest harvesting and promoted watershed development projects in Tamil Nadu, Maharashtra, Bihar, Orissa, Rajasthan, Gujarat, Madhya Pradesh [undivided], both working for NGOs, state, central and National & International agencies.

Vijay Kumar,

Chartered Environmental and Water Resources Exploration and Development Associates,  
New Delhi  
Email: [vj2001kumar@hotmail.com](mailto:vj2001kumar@hotmail.com), [vijay110085@lycos.com](mailto:vijay110085@lycos.com)

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**A. Raja Mohamed, Coastal Energy Pvt. Ltd, Chennai**

I am interested in joining your efforts. Please contact me at the address provided below:

A. Raja Mohamad,  
Geophysicist,  
Coastal Energy Pvt. Ltd.,  
5th Floor, Buhari Towers,  
No.4, Moores Road, Egmore,  
Chennai 600 006  
Telephone: 91-44-43974397. Extension No.326  
Mobile: 91-9790934534.  
Fax: 91-44-28268316  
Email: [rajam@coastalfuel.com](mailto:rajam@coastalfuel.com)  
Website: [www.coalandoil.com](http://www.coalandoil.com)

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**Uday Gaikwad, Saline Area Vitalisation Enterprise Limited, Ahmedabad**

Saline Area Vitalisation Enterprise Limited, (SAVE), Ahmedabad was established in 1995 by people believing in social entrepreneurship to help poor and marginalised families and help them to access quality services of technology, market and management at affordable cost. Our focus is on providing livelihood solutions to fight impact of salinity ingress. SAVE works with small and marginal farmers, fishing communities, salt producers and charcoal producers in the coastal blocks of Bharuch and Bhavnagar districts in Gujarat.

Currently, SAVE is involved in providing alternative agriculture crops which has future markets and also has the potential of production in saline areas. Apart from this SAVE has done several large scale projects in regeneration of mangroves in over 2000 ha. in the southern Gujarat region. Our contact is provided below.

Uday Gaikwad,  
Saline Area Vitalisation Enterprise Limited,  
"Ishavashyam",  
Opp. Lajpatnagar Society,  
Eeshita Tower Road,  
Navrangpura,  
Ahmedabad  
Phone-91-79-26404263, 26403715  
Email: [saveltd@vsnl.net](mailto:saveltd@vsnl.net)

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**Ajit S. Gokhale, Natural Solutions, Mumbai**

We could prevent creek water intrusion in a coastal village of Maharashtra in Mhapral Bandar Wadi. Here we could convert well yielding salty water into a well yielding sweet water. For this we used an underground barrier against seas water and also worked on improving sweet water pressure around the well by causing sweet water recharge into the ground around and above the well.

Similarly we could prevent possible sea water intrusion in a beach property in Nagao village near Alibaug. We achieved this again by making an underground bund and a sweet water body.

Trust this help you in developing your own strategies against salt water ingress.

Ajit S. Gokhale,  
Natural Solutions,  
301, Sudama Chhatra C.H.S.,  
Pandurang Wadi,  
Near Saibaba Mandir,  
Dombivili (East),  
Mumbai 421201  
Contact No.: +91-251-2881173  
Mobile: +91-98704 23023  
Email: [ajit.naturalsolutions@gmail.com](mailto:ajit.naturalsolutions@gmail.com)

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#### **Mihir Maitra, Individual Consultant, New Delhi**

Combating sea water ingress involves monitoring and manipulating the movement of the saline-fresh water interface (including the transition zone) either by reducing/controlling fresh water extraction at the demand side and/or by inducing large scale groundwater recharge at the supply side.

An effective mechanism to reduce/control groundwater extraction from private wells is yet to be developed in our country. Unless Central Ground Water Authority is well capacitated and empowered to take strong actions and the well owners are involved in actual monitoring of the changing water quality in their own wells, community awareness and cooperation would be difficult to come by. Perhaps, a "Technology Mission" on conservation of fresh groundwater is needed in the country.

The supply side approach would be to promote large scale groundwater recharge along the coastal belt for which site specific techniques are to be identified by experts, including availability of the source water, designing an objective water quality (salinity) monitoring plan and locating/constructing monitoring wells. Data collected over a number of years are to be evaluated regularly by experts either by desk study or using an appropriate simulation modeling.

One simple and practical field approach would be to construct/renovate a number (garland) of small irrigation/ multi-purpose fresh water tanks along the coast line to enhance recharge and also meet local irrigation needs. The effectiveness of these tanks is to be ascertained through regular monitoring. You may contact Yargen Putz, Director, Palmyra, Auroville, who has experience of renovating nearly 30 minor irrigation tanks with community participation in Villupuram district.

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#### **V. Kurien Baby, District Collector's Office, Thrissur, Kerala**

We are working in prevention of saline intrusion in the coastal areas by adopting the backwash technique, remediation, simple ground water and open well recharge programme to inject fresh water, conservation of freshwater dikes, canals and coastal water balance and action research. We have also launched a programme in the district to recharge about 4.5 lakh open dug wells called Mazhapolima, which is progressing.

A unique experiment in pilot testing coastal watershed under Government of India programme is

progressing. Arghyam has agreed to support the documentation of the programme. Will be happy to share learnings and collaborate in whatever way possible. Please contact us at the address below:

District Collector's Office  
48/27, Civil Lines,  
Ayyanthole, Civil Lines,  
Ayyanthole,  
Thrissur 680 003,  
Kerala

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**Ankkur Goel, The Technology Information, Forecasting and Assessment Council (TIFAC), New Delhi**

I am sure lot of work in this area has been done by MS Swaminathan Research Foundation (MSSRF), Chennai. You may wish to contact them. Please contact me for more details at:

The Technology Information, Forecasting and Assessment Council (TIFAC),  
Department of Science and Technology,  
Vishwakarma Bhawan,  
Shaheed Jeet Singh Marg,  
New Delhi

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**N. Lakshmi Narayana, Dakshinya Institutes, Guntur**

The topic raised by is the quite interesting for the professionals concerned to the cause and consequences of the salt water intrusion due to various reasons. I worked on a study on behalf of Government of India. The study was made along the eastern coastal part covering Puducherry to south of Pichavaram and scanned with Geophysical, Geological and borehole studies. That was the first time mapping of the interface between the SW-FW and to understand the causes and consequences of these phenomena.

At present I am an individual consultant supporting NGOs and other departments connected with the above cited subject and other related issues. I was the Project Manager cum Technical-in-Charge of the above study. I look forward to working for the cause with you.

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**Hritesh Chakraborty, Water Technology Centre for Eastern Region (WTCER), Indian Council of Agricultural Research, Bhubaneswar**

Our organization has developed some technologies related to ground water use in coastal shallow aquifers in Orissa state. Actually different pumping schedule, pump design, and conjunctive use plan were developed so that the sea water can not contaminate the ground water in coastal blocks. If you are interested please visit [www.wtcer.ernet.in](http://www.wtcer.ernet.in) and write me at [hritesh\\_99@yahoo.com](mailto:hritesh_99@yahoo.com).

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**Latha Bhaskar, Ashoka Trust for Research in Ecology and the Environment (ATREE), Trivandrum**

PLANET Kerala has implemented a programme of recharging the wells in coastal areas with rainwater. They tried this in a coastal panchayat in Malappuram namely, "Kadalundi" with people's participation, and was found to be effective. Please contact them for details and visit their website [www.planetkerala.org](http://www.planetkerala.org).

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**[Annie George](#), NGO Coordination and Resource Centre, Nagapattinam**

Salt water ingress has been the bane of agriculture and drinking water sources in the place we work in Nagapattinam. Nagapattinam has 14 river water systems running though it before draining off into the Bay of Bengal and these systems have also been partly responsible for the ingress of sea water during high tides, salinating everything in its way. We have been working with 5 river systems in trying to retard salination and would be glad to hear from all members on their experiences. I also would like to know if there are any ways of stopping sub-surface ingress. Please contact us at:

NGO Coordination and Resource Centre,  
31, Mahalashmi Nagar,  
South Palpannaicherry,  
Nagapattinam  
Telephone: 91-9345400074

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**[Ajit Seshadri](#), The Vigyan Vijay Foundation, New Delhi**

We are based in Delhi, doing water-conservation and spreading eco-water literacy with association of youth. The point we wish to make is to spread the Mantra of optimising water usage by 4Rs - Reduce Reuse, Recycle, and Recharge. Youth awareness and participation, helps and the water as a resource is conserved and the value of available water is appreciated by one and all. Storage and more use of surface water will reduce community dependency on aquifers. Ensuring natural recharge through soakage in most landscapes can aid in sustaining quantity and quality in aquifers. Natural filling up and retaining of rain and storm-water in coastal water-bodies, reduction of coastal and marine-pollution due to man-made activities need to be curtailed. Please contact us for further details at the address below:

The Vigyan Vijay Foundation,  
H2, 2-5,  
Mahavir Enclave,  
Palam - Dabri Road,  
New Delhi 110045

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**[Muhammad Mukhtar Alam](#), Centre For Ecological Audit, Social Inclusion and Governance, New Delhi**

Please contact us at the address provided below:

Centre For Ecological Audit, Social Inclusion and Governance,  
58-C,  
Top Floor,  
Ashok Vihar-III,  
New Delhi 110052

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**[Sikandar Meeranayak](#), Deshpande Foundation, Hubli**

I am working on rainwater harvesting, bore well recharge and open well recharge schemes like check dam bunds in rural and urban area in Hubli, North Karnataka. Please contact me at the address below:

Deshpande Foundation,  
BVB Engineering College,  
Vidyanagar,  
Hubli 580031,  
Karnataka

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*Many thanks to all who contributed to this query!*

*If you have further information to share on this topic, please send it to Solution Exchange for the Water Community in India at [se-wes@solutionexchange-un.net.in](mailto:se-wes@solutionexchange-un.net.in) with the subject heading "Re: [se-watr] Query: Organizations Working on Combating Salt Water Ingress - Referrals. Additional Reply."*

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