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A.E. KALSEKAR DEGREE COLLEGE

KAUSA, MUMBRA
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Activity Report

Webinar on Water Mangement

Committee/Department/Forum: Botany Department and NSS Unit

Date: 24th March 2021

Time: 11:30am to 12:30pm (online: zoom)

Name of the Resource Person: Dr. Ajit Gokhale (Natural Solutions)

No. of beneficiaries: 57 online

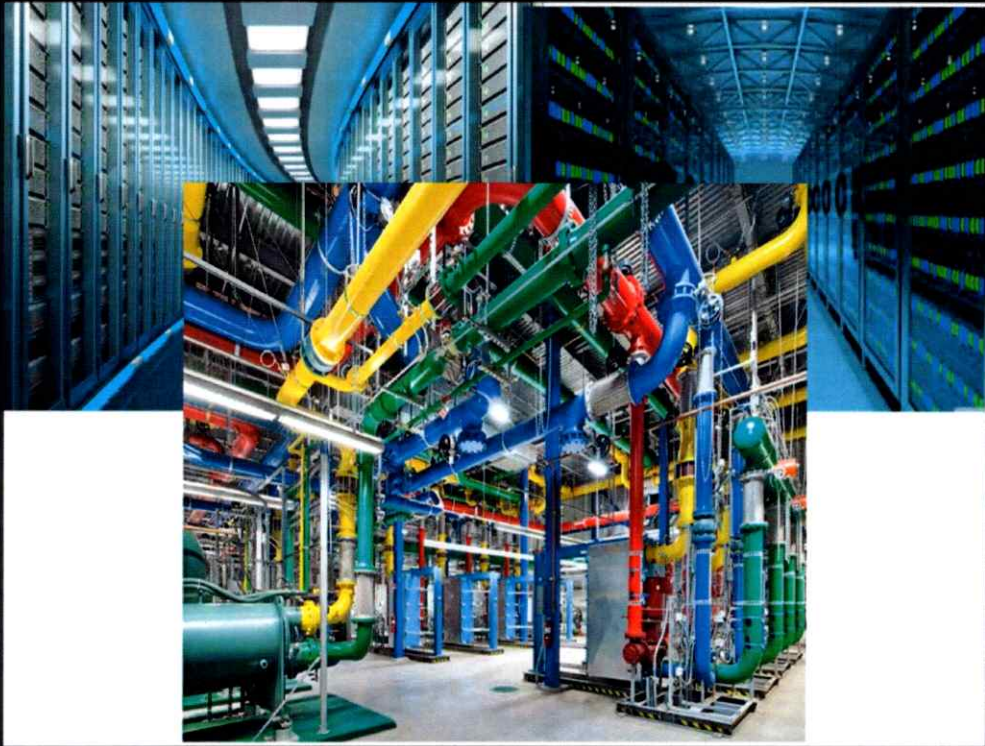
Short Activity/Event Report:

The Department of Botany and NSS Unit in collaboration with Natural Solutions had organised webinar on Water Management on account of Water Conservation Day to aware students about effective sustainable water management practices. Dr. Ajit Gokhale shared experiences of his latest lake purification projects. Session included videos and photographs by the presenter which made the session very interesting for the students.



Water Management

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b/77 aleena par...
Misbah Shaikh
Khan Nuzhat pa...
NSS MISBA ❤️👤...
Dirajit Gokhale
(12) NSS A FY...
Abhay hule

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Abhay hule
Misbah Shaikh
Dirajit Gokhale
(12) NSS A FY...
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(19)SMS A Fina...
06 Ayesha Siddi...

Unmute Start Video Security Participants Chat Share Screen Pause/Stop Recording Leave

From (B)_91_Sohail Qureshi to Everyone
submit



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NOTICE

All students are hereby informed that Department of **Botany and N.S.S Unit** in collaboration with Natural Solutions is organizing webinar on "**Challenges in Water Management**" on **24th March 2021** at **11.30 a.m.** on zoom (online platform). The link for the event will be shared on the same day of the event.

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To,

Dr. Ajit Gokhale

Natural Solutions

301, sudamachhatra CHS,

Near Sai Baba Mandir,

Andurangwadi, Dombivli (E)

Thane, Maharashtra- 421201

Sub: Invitation for webinar on Challenges in Water Management (24th March, 2021)

Respected Sir,

We are pleased to inform you that N.S.S Unit and Botany Dept. of our College is organizing webinar on 'Challenges in Water Management' on 24th March 2021. The webinar will be beneficial to all the participants to understand the several aspects related to the topic.

You are cordially invited as Resource Person for the Session. Your acceptance as resource person for the webinar will enrich the knowledge of the Participants. We look forward to your co-operation for the same.

Thanking You,

Yours Faithfully,



To,
Dr. Ajit Gokhale
Natural Solutions
301, sudamachhatra CHS,
Near Sai Baba Mandir,
Pandurangwadi, Dombivli (E)
Thane, Maharashtra- 421201

Subject: Thanks Letter.

Respected Sir,

We express our sincere thanks to you for accepting our invitation as Resource Person for webinar on 'Challenges in Water Management' on 24th March 2021 on Zoom online platform.

Your insights during the technical session were extremely beneficial to all the participants. Thank you for gracing the occasion & giving your valuable inputs on the topic. We look forward for your co-operation in the future too.

Thanking You,

Yours Faithfully,



Natural Solutions



Dr Ajit S Gokhale,

Founder And Leader Of Natural Solutions

M.Sc., Ph.D., and a Special Course on Water and Wastewater Treatment conducted by Cranfield University, School of Water Sciences, UK
Dip in Env Mgmt & ISO 14000, NET, SET

JAL NAYAK (Expert Trainer of Trainers on Water) Recognized by Water Literacy Centre of Government of Maharashtra

Established Natural Solutions in the Service of Mother Nature

**2003 - <http://www.naturalsolutions.org.in>
<http://www.indiamart.com/natural-solutions/>**

Over 3 decades of experience in Application of Research in Ecology particularly in wetlands and water bodies including rivers; Natural Resource Conservation, Water Resource Development, Water and Wastewater Treatment & Solid waste Management is my Mission, Passion and profession.

Educational

M.Sc. Ph.D., Dip. Env. Management Systems & ISO 14000

- * **Distinction** in Dip. Env. Mgmt & ISO 14000 – 1999
- * **Ph.D.** as above given in the Research Experience – 1995
- * **1st position** in R.J. College Univ. Of Mumbai in **M.Sc.** (Botany –plant physiology) - 1990
- * **1st position** In K. V. Pendharkar College Univ. Of Mumbai in **B.Sc.** (Botany – Environmental Sciences Physics & Chemistry) - 1988

Other Qualifying Examinations

- * **NET** – National Eligibility Test for Lectureship in life Sciences with **Life Sciences** as the qualifying subject – 1994
- * **SET** – State Eligibility Test for Lectureship in Botany with **Botany** as the qualifying subject – 1995

Training Received

- * **Water & Wastewater Treatment**
Conducted by **Cranfield University – UK – 1999**
- * **ISO 9000** Quality System & internal auditor course –1998
- * **ISO 14000** EMS System & internal auditor course –1999
- * **Various behavioral aspects of Management** including Leadership, Creativity, Time Management, Conflict Management etc. – 1996 to 2001



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Since 2003 Last 18 years – spreading environmental literacy and giving Natural Solutions for Urban and Rural Problems of water scarcity, Solid Waste Management and wastewater treatment

- Consultant to two water treatment majors Ion Exchange (I) Ltd and a Retainer with another water giant Eureka Forbes
- Water Trainer for staff of Bharat Petroleum Corporation Limited
- Examiner for the Environmental Architecture for Rachna Sansad Academy of Architecture
- Panchayati Raj Empowerment training for elected representatives of Mokhada Taluka in Thane District
- Trainer for Water & Organic Farming Projects for following NGOs
 - < RSNH – Bharatpur;
 - < DCAP – New Delhi
 - < AROEHAN – College of Social Work - Nirmla Niketan
 - < JAL Academy Don Bosco Institute of Technology – Mumbai
- Also undertaking Environmental Projects from Concept to Commissioning
- Recently completed a biomass Project Establishment for use in fuel and organic growing media

From September 1996 to June 2003 – Ion Exchange India Limited

– Involved in R & D and Technical Marketing of Ecofriendly Water and Wastewater Treatment Systems & Organic Farming for **India's Pioneer in Water Treatment Ion Exchange (I) L And Ion Exchange Enviro-Farms Limited.**

Excellence Demonstrated – by succeeding in positions of incremental responsibilities starting from Research in Biotechnology to various fields of technical marketing and Resigned as Manager Technical for Organic farming – To work full time in citizen's Environmental Literacy

Manager Technical – Organic Farming – Ion Exchange Envirofarms Limited

- * Developed a plan of action for making 1200 acres of orchards profitable by bringing them under 'Real Organic' regime. (Savings amounting several crores per year)
- * To Conceptualized and demonstrated – Bio-Diversity Gardening and Eco-tourism Projects

Deputy Manager in-Charge of Rural Development Cell

- * Achieved breakthroughs in Rural Indian Market for water and wastewater treatment technologies. **(Orders worth over a crore rupees)**
- * Set up pioneering Participatory-Rain Water Harvesting project in high rainfall areas of western ghats

Senior Executive – Rural Development Cell



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- * Commercialization of various water and wastewater treatment technologies to Rural Indian Market

Executive in-Charge – Technical Marketing of Reed Bed Systems

- * Commercialized the Reed Bed technology in various segments of wastewater treatment through out India (**First year business of over 10 lakh rupees**)

Biotechnology - Executive R & D Centre

- * Conceptualized and developed various natural wastewater treatment systems under Indian conditions.
- * Also worked as an internal auditor in ISO 9000 processes

From June 1990 to September 1996 in Academics– in 2 Colleges of University of Bombay

Excellence Demonstrated – by 6 years Full time Lectureship in Biological Sciences- Plant Physiology and Biotechnology - with several extra-curricular projects and a simultaneous achievement of Ph.D.

1995-1996 - R.A. DAV College, Bhandup.

- * Coordinator of Science faculty.
- * Worked as coordinator of Nature Club, Science Association, Exhibition & Examination Committee etc.

1990—1995 Birla College, Kalyan.

- * Other than normal undergraduate Lectureship also responsible for practical work for Post Graduate Classes.
- * Worked as active member of Nature Club, Science Association, Exhibition Committee etc. Also worked for Organization of various Conferences & Seminars

Surveys conducted through students

- * Awareness of Extinction of Biodiversity – 1993
- * Entertainment patterns among the youth of Kalyan -1994

Research - From June 1990 to September 1999 And Beyond ...

Excellence Demonstrated – by Original in-depth research for Doctoral work as well as application oriented Industrial Research

1990 – 1995 For Doctoral Degree from University of Mumbai

- * Discovered and established for the first time the carnivorous mode of nutrition of a plant *Martynia annua* L.



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- * Through field observations, Electron Microscopy, Enzymology and other Biochemical analysis methods studied the mechanism of insect trapping, their digestion and resorption for nutritional needs of the plant.
- Worked simultaneously with lectureship in Birla College.

1996 – 1999 Industrial Biotech - R & D for Ion Exchange India Limited

- * Conceptualized and developed various natural wastewater treatment systems under Indian conditions.
 - * Duck weed System
 - * Reed Bed System

Beyond Conventional Academic and Industrial Research Continued Travelling extensively studying the local environmental management practices and employing them for betterment of various water bodies in real life projects mitigating thirst of people, cattle and agricultural land. ...Worked and working on several Hundred reservoirs and over 20 rivers in Westernghat, Western Maharashtra and a small rivulet in Uttar Pradesh.

Training Imparted

Through various Colleges, Universities, TISS, RCF, IITs, ASHARE and private Training Companies like E A Water etc to over 5000 Professionals

- * Water literacy including pond and river ecology
- * Wastewater Issues and treatment fo wastewater using Nature Based Systems
 - * Reed Bed System
 - * Duck Weed Systems
 - * High Rate Evapotranspiration Systems
- * Rain Water Harvesting
- * Organic Farming
- * Biodiversity and Conservation
- * Global Warming ; Challenges and Mitigation in terms of Natural Resources Conservation

Major Awards and Recognition

- * Paryavaran Sarankshan Samman of Tarun Bharat Sangh 2020
- * Rashtrya SwayamSiddha Award of JSW Foundation 2020
- * Vocational Excellence Award – Rotary Club – for Rain Water Harvesting – 2003
- * **'Young Scientist'** at Indian Society of Plant Physiologists conference at BHU – 1991



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Publications and Contributions to Some important Conferences

Besides various Cover stories in Leading Water Magazines in English and Marathi

- * **Participatory approach ensures project sustainability** Water and Waste Water International **April 2003**
- * **Clean and Green Goa** Organized by CII Goa – Invited lecture on - Rain Water Harvesting **Feb 2003**
- * **International Conference on Ground Water** Organized by Central Water Commission & National Geophysical Research Institute at Dindigul
 - * Learnings from Rainwater Harvesting Projects in Western Ghat Region
 - * Advanced Technologies for Prevention of Pollution of Ground Water and Treatment of Polluted Ground Water **Feb 2002**
- * **International conference on strategies for fluorosis mitigation** Organized by Rajeev Gandhi Drinking Water Mission. MP state Public Health Engineering at Bhopal
Fluoride Removal from Drinking Water Using Ion Exchange Resin Technology **January 2001**
- * **International conference on constructed wetlands** Organized by Central Pollution Control Board, German Technological Mission & Anna university at Chennai
Applications of INDION reed Bed Systems for Domestic Sewage and Industrial Effluent **December 2000**
- * **Symposium on Conservation of Biological Resources** Organized by The Institute of Sciences, Mumbai 400 032 At Mumbai
Message of Water Crisis in a Sacred Grove **December 1996 –**
- * **January 1991 – International Conference on Plant Physiology** Organized by Indian Society for Plant Physiology & BHU at BHU Varanasi
'Observation of Insectivorous Nature of *Martynia annua* L – some Physiological studies' – **This paper got recognition in the form of Young Scientist Award**

For 6 years, prior to that taught Environmental Sciences, Plant Physiology and Biochemistry in Birla College Kalyan, Bombay University



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ROTARY RECOGNITIONS

Rotary International has made a video –documentary on our water availability improvement work in hilly western ghats. (RVM Vol 3 Issue 1...2007)

District 3140: Two Rotary Clubs from RC Bombay Metropolitan and RC Bombay Seaface have awarded Vocational Excellence Awards for Improving Rural Water Availability in year 2002.

WORK WITH AMERICAN CONSULATE

Invited Speaker in a Digital Video Conference with American Water Expert Mr J David Foster and Prof Dr Eldho from IIT Mumbai on May 12, 2009, on Sustainable Water Management Organized by Program Advisor, The American Centre, Mumbai

CONSULTANT TO

- * PDOC- Sudan Petro Dar Oil Company Sudan – Khartoum through HMR Environmental Engineering Consultants – Muskat Oman
- * Bharat Petroleum Corporation Limited
- * Hindustan Petroleum Corporation Limited
- * Eureka Forbes Institute of Environment for Rain Water Harvesting
- * Ion Exchange India Limited for Natural Wastewater Treatment
- * Reliance Infrastructure for their Jamnagar project
- * P. N. Writer Corporation for Comprehensive Water Management for their Spa at Shilim
- * Dr. Babasaheb Ambedkar Technology University for Waste Water Treatment
- * I M Quadri Architects
- * SJK Architects

NGOs for Drinking Water Availability and Integrated Rural Development

- * Impact India Foundation, Mumbai
- * Bridge Trust, , Mumbai
- * Save the Children, , Mumbai
- * Rajputana Society of Natural History, Udaipur and Bharatpur
- * Empathy Foundation , Mumbai
- * MOB , Mumbai
- * Centre for social Action, Mumbai
- * Aroehan, Mokhada
- * SHARE – Thane Raigad and Ratnagiri

Several of these Projects won awards for Rural Water Harvesting



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Also Engaged in

- * Advisory Board of Jal Academy of Don Bosco Institute of Technology
- * Examination of M Sc (By Research) Students, University of Mumbai
- * Guest Lectures & Jury for M Arch Environmental Architecture Course at Rachana Sansad
- * Guest Lecturer at Tata Institute of Social Science

SAMPLE PROJECTS LIST

WASTE WATER RECYCLING

Specialized wastewater treatment systems installed by us so far ... we conceptualize and install/ improve them for various Associates as well as Independently ...

❖ For HMR Environmental Engineering Consultants, Muskat, Oman

- * PDOC- Sudan Petro Dar Oil Company – Khartoum 3 units
Total 60 MLD Petrochemical Industrial wastewater 2011

❖ Independent Installations by Natural Solutions MBBR, FAB and Vortex Installations

- * Fatima Mata Sadan 10 KLD 2013
- * Sulzer Pumps India Ltd. 60 KLD 2014
- * For Helpers of Mary 20 KLD Bathand washing machine wastewater 2014

REED BED SYSTEMS

- * Symbiosis Society Lavale Campus New Hostel 70 KLD 2013-14
- * Golden Shelters Pvt. Ltd (Oneness University) 150 300KLD 2013-14
- * JSWEL Ratnagiri 8 KLD 2013-14
- * JSW Energy Limited, Bellary 80 KLD, 2012-14
- * Village Dhikoli, Dist Baghpat, Uttar Pradesh 30 KLD 2013-14
- * Village Kharera Dist Bharatpur , Rajasthan 30 KLD 2011-12
- * Village Deopura, Dist Bharatpur , Rajasthan 50 KLD 2012-13
- * Jindal Steel Works, Bellary, 2 units total capacity **1.5 MLD** 2010-11
- * JSW Energy Limited, 3 units total capacity **300 KLD** 2010-11
- * Essel-World Mumbai 1 unit in place 30KLD 2010;



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One more in process **350 KLD**

- * Ma Niketan Thane, 2 units 80 KLD 2010
- * St Catherines Home Project Karunankur 7KLD 2010
- * Gyanghar Building Khar, 3 KLD bath water – 2009
- * Symbiosis knowledge Village Pune - 4 units total capacity **500 KLD** 2007-2009
- * Kanti Apartments Bandra Mumbai - Bath wastewater 55 KLD – 2006
- * Dr Babasaheb Ambedkar Technology University - 4 units total capacity **240 KLD** - 2003-2004
- * For Techno Electric Co Ltd in Kabulpur and Dipalpur transmission stations in Hariyana 3 KLD each
- * For Tolani Maritime Institute, Talegaon, Decentralized mound type treatment system for bath wastewater total capacity about 60 KLD
- * For Dhole's Den an Ecofriendly Forest Lodge about 6 KLD

In Process : will start in 2 months

- * Reliance, Sasan mines 60KLD
- * Sikkim Govt. Slaughter House 125KLD

❖ For Ion Exchange (I) Ltd (besides several small in-house installations for Ion Exchange (I)Ltd).

- * John Deere Tractors Limited Pune - 40 KLD industrial waste 2000
- * Army Public School, Beas - Jalandhar 120 KLD - 2002
- * Dhirubhai Ambani Institute of IT - Gandhi Nagar **160 KLD** - 2003
- * Chemplast Sunmar Limited Karraikal - Pondy cherry 50 KLD- 2007
- * ONGC Dahej, 20KLD Industrial effluent 2010

❖ For Eureka Forbes Ltd

- * Europarivar Park 1 KLD - 2006



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- * Aquamall Factory Dehradun - 6 KLD - 2008
- * Victoria Memorial School for Blind Mumbai - 6 KLD bath water – 2009

❖ For J C Enterprises & Jal Rasayan

- * T S Rahaman School of Maritime Studies JNPT – 55 KLD - 2007
- * T S Rahaman College of Maritime Studies JNPT – 25 KLD - 2009

RAIN WATER HARVESTING

Rural - Rain Water Harvesting --- making over 170 villages Drought free

- * Raigad District Maharashtra - 130 Villages from 4 Talukas
- Thane District Maharashtra - 20 villages in 4 Talukas
- Ratnagiri District – 2 villages from one Taluka
- Amaravati District Maharashtra - 10 villages in Melghat
- Bharatpur & Dausa Districts Rajasthan - 15 villages
- Baghpat District 1 Village

These villages experienced annual seasonal drought. The villagers were brought together, locally appropriate innovative, environment friendly solutions were suggested. **In all, over 200 Functional Flanged KT weirs,** and hundreds of Cordoned Springs **servicing peoples thirst.**

Lined Pond Based Rain Water Harvesting pond:

- A. Essel World, Gorai , Borivali, Mumbai
Pond 1: Top area 5acre and Bottom area 3.5acre Effective depth 11Mtr **capacity** 110,500 m³
Ongoing work Pond 2& 3 : Capacity 40, 000 m³
- B. **Uttan, Bhaindar** - A 12 Acre lake improved to retain additional 144,000,000 litres of water
- C. **Navjeevan Trust** - A Bridge Converted to bund to retain 5 months irrigation water post monsoon Storage capacity 75,00,000 litres



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OTHER WATER MANAGEMENT PROJECTS

- * **Nagaon** - Maharashtra Flood Control and water scarcity mitigation on a prime estate.
- * **Pilerene – Goa** A water stressed estate has implemented our suggestions for enhancing their water resources.
- * **Navsari and Valasad Districts of Gujarat – one village each** – These are experiencing water scarcity. Have sought for Rain water harvesting suggestions and are ready to implement the project.
- * **A large farm in Una District of Gujarat** – implemented our suggestions and is now growing Papaya, Groundnut and Amla.
- * **Cipla Indore** – implemented our suggestions for their new factory and are recharging several crore litres to the ground every year
- * **Reliance New Township Jamnagar** - – implemented our suggestions for their new factory and are recharging several crore litres to the ground every year

URBAN - RAIN WATER HARVESTING

Recommendations given to over 1200 Housing Societies in Mumbai on going Since 2003 as a panel consultant of Eureka Forbes Institute of Environment

SOLID WASTE MANAGEMENT

COMPOSTING

Site Specific composting of Bio-Waste for disposal of garbage and use in organic farming...for many a farms,

Set up these systems in Blue Star Wada Factory IGBC Gold Certified factory

'Native Space' an adventure tourism place near Lonavala 2012

WASTE TO ENERGY

Gram Laxmi Pvt Ltd – hand holding from concept to commissioning of a Bio-Energy and Organic farming substrate project.2011-2013 **Appropriate management of part of municipal solid waste used as energy source for industries like Pharma companies and beverage companies**

SOLAR LIGHTING AND WATER PUMPING from a bore well Installed in Shevgaon, District Ahmed Nagar in Maharashtra for an orphanage of 100 girls 2011

NATURAL AIR CONDITIONING

CII Award Winner energy conservation project Aquamall Dehradun Factory was helped with Natural Geo-Tunnel Air Conditioning 2010



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GREEN BUILDING

Guided Aquamall Factory, Dehradun for bagging 'Gold rating' by the Indian Green Building Council (IGBC), under LEED-India for New Construction v 1.0

COMPREHENSIVE WATER MANAGEMENT SOLUTIONS INCLUDING PLUMBING DETAILING

* To Several Architects in Mumbai

ORGANIC FARMING

* Low cost practical techniques of Organic Farming including maintenance of biodiversity, crop rotation, vermiculture, botanicals for pest management - demonstrated & used on several farms in Maharashtra. 2003 –on going

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