

CURRICULUM VITAE

Name : Eriyagama
First Name : Nishadi
Year of Birth : 1970
Nationality : Sri Lankan
Marital Status : Married with 4 kids

SUMMARY

Nishadi Eriyagama has 13 years of experience as an engineer, consultant and researcher in the water resources and environment fields. She holds a M.Eng. in Environmental Water Resources Engineering from the University of Moratuwa, Sri Lanka. Her research/work experience spreads across hydrological modeling, environmental flow estimation, water resources/hydrological software development, drought indexing and mapping, provision of hydrological information for data poor regions, low-flow analyses, assessment of climate change impacts, estimation of water footprints, and environmental impact assessment (EIA). Nishadi is currently a Water Resources Engineer at International Water management Institute (IWMI) – a research centre headquartered in Sri Lanka and supported by over 60 governments and international organizations known as the Consultative Group on International Agricultural Research (CGIAR). She leads climate change related research on Sri Lanka and is also actively involved in other IWMI research programs on environmental flows, drought assessment, water footprint assessment and estimation of hydrological information in data poor regions.

Prior to joining IWMI, Nishadi worked as a Civil Engineer at Sri Lanka Land Reclamation and Development Corporation (SLLR&DC) for over seven years. At SLLR&DC, she carried out extensive work on hydrology and drainage, including computer modeling of drainage basins under road, building and golf course construction projects, both in the capacity of design engineer and consultant. She was also involved in EIA studies of several innovative projects in Sri Lanka, and served on a number of national steering committees (of large scale reclamation/drainage projects and hydrology related studies). Nishadi joined IWMI in November 2004. At IWMI, she developed tools for estimating water productivity and for classification of areas into crop suitability classes on a global scale – as part of the international initiative known as the Comprehensive Assessment of Water Management in Agriculture. She played a leading role in the development of the Global Environmental Flow Calculator (GEFC), a tool facilitating coarse scale assessment of environmental flow requirements for all river basins of the world. Her pioneering work on climate change vulnerability mapping in Sri Lanka influenced both Sri Lanka's Second National Communication to the UNFCCC, and the National Climate Change Adaptation Strategy for 2011-2016. She was also part of the team which undertook the landmark IWMI project on assessment of water footprints of milk production in the Moga district, Punjab, India. Nishadi has authored over 15 research publications, reviewed manuscripts for the Journal of Environmental Management, and presented papers at a number of international/regional conferences. She is a Chartered Engineer, a corporate member of the Institution of Engineers (IESL), Sri Lanka, and a member of the International Association of Hydrological Sciences (IAHS). She won the award for the best technical paper in the competition conducted by IESL and sponsored by the St. Anthony's Industries Group (PVT) Ltd in 2007.

EDUCATION

2008	Masters Degree in Environmental Water Resources Engineering, University of Moratuwa, Sri Lanka
2004	Corporate Member of Institution of Engineers (IESL), Sri Lanka; Chartered Engineer
2001	Postgraduate Diploma in Environmental Water Resources Engineering University of Moratuwa, Sri Lanka

1996 B.Sc. (Honours) in Civil Engineering
University of Peradeniya, Sri Lanka

LANGUAGE SKILLS

	<u>Written</u>	<u>Spoken</u>
English	fluent	fluent
Sinhala	fluent	fluent

PROFESSIONAL EMPLOYMENT RECORD

2010-to date	Water Resources Engineer (Senior Research Officer). Planning and execution of components of research projects mainly under the theme Water Availability and Access; development of software in hydrology and related fields; hydrological and water resources modelling; use of GIS and analysis, conducting literature reviews, and use of global datasets in research; developing and sustaining relationships with partners; presenting research results at conferences and publishing in international scientific literature; maintenance and content management of project related websites. International Water Management Institute (IWMI) - CGIAR Research Centre with headquarters in Colombo, Sri Lanka.
2004-to 2009	Water Resources Engineer (Research Officer). Carrying out components of research projects; providing specialist technical services including the use of programming languages and GIS software; preparing reports and research publications; liaison with partner organizations and presenting research results at conferences; maintenance and content management of project related websites. International Water Management Institute (IWMI) - CGIAR Research Centre with headquarters in Colombo, Sri Lanka.
2003-2004	Senior Civil Engineer (Research & Designs). Hydrological/Hydraulic modelling; supervising reclamation and canal rehabilitation work of drainage improvement and flood control projects, and providing consultancy services for EIA projects. Sri Lanka Land Reclamation and Development Corporation (SLLR&DC), Colombo, Sri Lanka
2000-2003	Civil Engineer Grade I (Research & Designs). Hydrological/Hydraulic modelling; providing consultancy services on hydrology/hydraulics for large scale expressway projects and golf course projects; Designing drain networks and bridges and providing specialist technical support for foreign funded drainage and flood control projects. Sri Lanka Land Reclamation and Development Corporation (SLLR&DC), Colombo, Sri Lanka
1997-2000	Civil Engineer Grade II (Research & Designs). Hydrological/Hydraulic modelling, Design of drains/culverts for reclamation and road construction projects. Sri Lanka Land Reclamation and Development Corporation (SLLR&DC), Colombo, Sri Lanka
1996-1997	Instructor. Conducting Hydraulic, Geotechnical and Structural Design classes, laboratory experiments and surveying field classes for undergraduate students. Department of Civil Engineering, University of Peradeniya, Sri Lanka

SELECTED ASSIGNMENTS AND PROJECTS

- 2010 IWMI: Development of simplified method for estimating daily stream flow time series in cold regions by using Flow Duration Curves
- 2010 IWMI: Estimation of Surface Runoff by State/Province and river basin in Malaysia and Thailand under the FAO Bio-energy project
- 2010 IWMI: Co-author chapter on "Using Ecosystem Services in Agricultural Water Management" in IWMI-UNEP publication "**Sustainable Water Use for Food Production and Ecosystems**"
- 2010 IWMI: Mapping the Global Water Footprint of Coffee for assessing water stress hotspots and areas for water productivity improvement.
- 2009 IWMI: Estimation of Water Footprints of crop production in Moga district, Punjab, India under the Nestle funded project on Water Footprint of Milk in Moga. (http://www.iwmi.cgiar.org/Publications/IWMI_Research_Reports/PDF/PUB138/RR138.pdf)
- 2009 IWMI: Review of Climate Change related research/activities in Sri Lanka with respect to water resources and agriculture sectors and preliminary vulnerability mapping. This study reviewed the status of climate change (CC) research/activities in Sri Lanka in terms of observed and projected climatic changes, their impacts on water resources and agriculture, CC mitigation and adaptation, and research needs. The study also developed a pilot level CC Vulnerability Index, which was subsequently mapped at district level. (http://www.iwmi.cgiar.org/Publications/IWMI_Research_Reports/PDF/PUB135/RR135.aspx)
- 2009 IWMI: Generation of research ideas and concept notes for development of the Sri Lanka Program at IWMI.
- 2008 IWMI: Mapping drought patterns and impacts on a global scale. The study examined the global pattern and impacts of droughts through mapping several drought-related characteristics - either at a country level or at regular grid scales. (http://www.iwmi.cgiar.org/Publications/IWMI_Research_Reports/PDF/PUB133/RR133.aspx)
- 2007 IWMI: Development of a software tool for low flow forecasting using Flow Duration Curves. The tool was initially tested in Iran.
- 2007 IWMI: Mapping of agricultural indices in provinces of Iran.
- 2006-to date IWMI: Calculation of various metrics on Environmental Flow Requirements globally, based on Smakhtin et al. 2004, including for **Asia Pacific Water Outlook** report.
- 2006-to date IWMI: Maintenance and content management of the IWMI Drought Information Centre web portal (<http://www.iwmi.cgiar.org/drw/>).
- 2006-to date IWMI: Contact person for provision of the software Global Environmental Flow Calculator (GEFC) to interested parties from around the globe. (http://www.iwmi.cgiar.org/Tools_And_Resources/Models_and_Software/GEFC/index.aspx)
- 2006-2007 IWMI: Developing a user friendly software for global desktop assessment of environmental flows called the **Global Environmental Flow Calculator (GEFC)**. The software facilitates selection and estimation of coarse scale environmental flow requirements of any river basin of the world via its user friendly graphic interface and the built-in global flow database. (http://www.iwmi.cgiar.org/Tools_And_Resources/Models_and_Software/GEFC/index.aspx)
- 2006 IWMI: Classification of areas into crop suitability classes on a global scale, for the international initiative: **Comprehensive Assessment of Water Management in Agriculture** (<http://www.iwmi.cgiar.org/assessment/>).
- 2005 IWMI: Development of spreadsheet tools for processing input data and output results of the integrated hydrologic and economic model **Watersim**. (http://www.iwmi.cgiar.org/Tools_And_Resources/Models_and_Software/WATSIM/index.aspx).

2005	IWMI: Development of spreadsheet tools for global mapping of Water Productivity of Crops and Livestock Products, for the international initiative: Comprehensive Assessment of Water management in Agriculture (http://www.iwmi.cgiar.org/assessment/).
2002-2004	SLLR&DC: Carrying out hydrological modeling, drainage designs and field supervision of: Golf Course Project, Battaramulla, Sri Lanka
2004	SLLR&DC: Writing chapters on Water Quality Aspects of the Environmental Impact Assessment (EIA) reports of: Colombo Organic Waste Treatment Plant, and Theme Park and Spa Resorts, Kotte, Sri Lanka
2003	SLLR&DC: Supervising reclamation and canal rehabilitation work of: Lunawa Environment Improvement Project, Sri Lanka.
2002-2003	SLLR&DC: Carrying out hydrological/hydraulic studies and providing consultancy services for: Outer Circular Highway Project, Sri Lanka (Funded by JBIC)
2001-2002	SLLR&DC: Providing specialist technical support in modeling and designs to consultants (Nippon Koei) of the project: Storm Water Drainage Master Plan for Colombo Metropolitan Region (Funded by JICA and JBIC)
2000-2001	SLLR&DC: Carrying out hydrological/hydraulic studies and providing consultancy services for: Colombo Katunayake Expressway Project, Sri Lanka (Funded by ADB)
1999-2002	SLLR&DC: Carrying out drainage/culvert/bridge designs for: Greater Colombo Flood Control and Environment Improvement Project (Funded by JBIC)
1998-2000	SLLR&DC: Carrying out hydrological modeling and drainage designs for: Residence and Secretariat complex for Head of Government at Madiwela, Sri Lanka
1997-1998	SLLR&DC: Carrying out hydrological modeling, drainage designs and field supervision of the project: Reclamation of low lying land for Courts Complex, Kandy, Sri Lanka

OTHER CAREER HIGHLIGHTS

2009-2010	Member of the Thematic Working Group on Socioeconomic Impacts for preparation of Sri Lanka's Second national Communication to the UNFCC
2009-2010	Active participation in preparation of Sri Lanka's national Climate Change Adaptation Strategy 2011-2016.
2010	External Reviewer of the Journal of Environmental management.
2004-2005	Member of the Environmental Monitoring Committee of Southern Highway, Sri Lanka
2002-2005	Member of the Environmental Monitoring Committee of Outer Circular Highway, Sri Lanka
2002-2005	Member of the Environmental Monitoring Committee of Golf Course Project, Battaramulla, Sri Lanka
2002-2003	Member of the Steering Committee of the Environmental Study of Kaduwela, carried out by University of Moratuwa, Sri Lanka
2000-2003	Member of the Environmental Monitoring Committee of Colombo Katunayake Expressway, Sri Lanka

MEMBERSHIP OF SCIENTIFIC AND PROFESSIONAL SOCIETIES

2010-to date	Member of the International Association of Hydrological Sciences (IAHS)
2004-to date	Corporate Member of Institution of Engineers (IESL), Sri Lanka
1999-2004	Associate Member of Institution of Engineers (IESL), Sri Lanka

AWARDS

2007	Best Technical Paper – Over 35 years of age at competition for Awards for Best Articles on “INFRASTRUCTURE FOR SUSTAINABLE DEVELOPMENT OF WATER AND OTHER NATURAL RESOURCES” – Session 2006/2007 conducted by Institution of Engineers, Sri Lanka (IESL), and sponsored by St. Anthony’s Industries Group (PVT) Ltd.
2000	Asian Development Bank (ADB) Scholarship to follow Postgraduate Studies in Environmental Water Resources Engineering at University of Moratuwa
2000	Presidential Scholarship Award for young people to follow postgraduate studies at a Sri Lankan University

SELECTED MANAGEMENT AND OTHER COURSES

2005	Presentation Skill Development, IWMI, Sri Lanka
2003	Structural Design, University of Moratuwa, Sri Lanka
2003	Project Management, University of Moratuwa, Sri Lanka
2002	Introduction to the Flood Estimation Handbook, WTI Training Group, Basingstoke, UK
2000	ADB training program on Environmental Economic Analysis, Kandy, Sri Lanka
1991	Diploma in English and Career Skills, Waterfield Institute, Nuwara-Eliya, Sri Lanka
1990	Diploma in Computer Studies, Institute of Data Management, Kandy, Sri Lanka

REFREED PUBLICATIONS

1. Amarasinghe, U.; Smakhtin, V.; Sharma, B.; **Eriyagama, N.** 2010. *Bailout with white revolution or sink deeper: groundwater depletion and impacts in the Moga District, Punjab, India.* Colombo, Sri Lanka: International Water Management Institute. 32 p. (IWMI Research Report 138)
2. **Eriyagama, N.**; Smakhtin, V.; Chandrapala, L.; Fernando, K. 2010. *Impacts of Climate Change on Water Resources and Agriculture in Sri Lanka: A Review and Preliminary Vulnerability Mapping.* Colombo, Sri Lanka: International Water Management Institute. 51 p. (IWMI Research Report 135)
3. **Eriyagama, N.**; Smakhtin, V.; Gamage, N. 2009. *Mapping drought patterns and impacts: a global perspective.* Colombo, Sri Lanka: International Water Management Institute. 31p. (IWMI Research Report 133)
4. Smakhtin, V.; **Eriyagama, N.** 2008. Developing a Software Package for Global Desktop Assessment of Environmental Flows. *Environmental Modelling and Software*, 23 (2008) 1396–1406
5. Bharati, Luna; **Eriyagama, Nishadi**; Smakhtin, Vladimir. Environmental Flows: Moving from Concepts to Application. 2008. *Journal of the Japanese Society of Irrigation, Drainage and Rural Engineering*, Vol.76 / No. 5. (in Japanese)
6. **Eriyagama, N.**; Ratnayake, N. 2008. Decision Support Tool for Colombo Canal System Water Quality Monitoring. *Engineer – Journal of the Institution of Engineers, Sri Lanka*, Vol. XXXXI, No. 01, pp. 24-33

7. De Fraiture, C., Wichelns, D., Rockstrom, J., Kemp-Benedict, E., **Eriyagama, N.**, Gordon, L. J., Hanjra, M. A., Hoogeveen, J., Huber-Lee, A., Karlberg, L. 2007. Ch3: Looking ahead to 2050: scenarios of alternative investment approaches. *Water for Food, Water for Life: A Comprehensive Assessment of Water Management in Agriculture*, London: Earthscan, and Colombo: International Water Management Institute.

NON REFREED PUBLICATIONS, CONFERENCE PAPERS AND TECHNICAL REPORTS

1. **Eriyagama, N.** 2010. Impacts of Climate Change on Water Resources and Agriculture in Sri Lanka: Vulnerability Hotspots and Options for Adaptation. In: *Water Matters*: Issue 5, April 2010. Colombo, Sri Lanka: International Water management Institute
2. **Eriyagama, N.**; Smakhtin V.; Chandrapala L.; Fernando, K. 2010. Responding to Climate Change Signals and Impacts: The Case of Sri Lanka. Paper presented at the Regional Workshop on Strategic Assessment for Climate Change Adaptation in Natural Resource Management, Colombo, Sri Lanka, June 2010.
3. **Eriyagama, N.**; Smakhtin, V.; Gamage, N. 2010. A global picture of drought occurrence, magnitude and preparedness. In proceedings of the Second International Conference on Drought Management: "Economics of Drought and Drought Preparedness in a Climate Change Context". Istanbul, Turkey, 4-6 March 2010. In Press.
4. **Eriyagama, N.**; Smakhtin, V. 2010. Observed and projected climatic changes, their impacts and adaptation options for Sri Lanka; A review. Proceedings of the National Conference on Water, Food Security and Climate Change in Sri Lanka, BMICH, Colombo, Sri Lanka, 9 - 11 June 2009. Vol. 2: Water Quality, Environment and Climate Change. Evans, A.; Jinapala, K. (Eds.). 19p.
5. **Eriyagama, Nishadi.** 2010. Climate change impacts on water resources and agriculture in Sri Lanka: A review and preliminary vulnerability mapping. Contribution to the UNDP e-discussion on Human Development and Climate Change.
6. **Eriyagama, N.**; Clayton, T. 2009. Environmental Journalists have Important Role to Play in Helping Sri Lanka's Water Sector Meet the Coming Challenges of Climate Change. In: Proceedings of the 18 th Asia Pacific Environmental Journalists' Forum (APFEJ) Congress of Environmental Journalists, October 19 – 21, 2009. Colombo, Sri Lanka. Available at: http://www.environmentaljournalists.org/EJs_Congress2009_101.htm
7. Amarasinghe, U.; Smakhtin, V.; Sharma, B.; **Eriyagama, N.** 2010. Water Footprints of Milk Production: Contributions to sustainable water use in the Moga district in Punjab. Project report of Nestle funded project on Water Footprints of Milk Production in Moga District, Punjab, India.
8. Amarasinghe, U.; **Eriyagama, N.**; Soda, W. 2010. Growing Biofuel Demand in Thailand and Malaysia: Water Use and Impacts. Project Report submitted to FAO-RAP in June 2010. A part of this project report was published in "Bioenergy and Food Security The analysis of BEFS for Thailand" and in "BEFS Thailand Key results and policy recommendations for future bioenergy development" (with credits for contribution)
9. Bharati, Luna; **Eriyagama, Nishadi.** 2008. Calculation of Environmental Flows within the Major Tributaries of the Volta Basin, West Africa. Consultancy Report prepared by International Water Management Institute, Colombo, Sri Lanka for the Glowa Volta Project, Center for Development Research (ZEF).

CONFERENCE/WORKSHOP PRESENTATIONS, INVITED PRESENTATIONS AND POSTERS

1. **Eriyagama, Nishadi**; Smakhtin, Vladimir; Gamage, Nilantha. 2010. A Global Picture of Drought Characteristics, Vulnerability and Preparedness. Invited Presentation made at the Regional Consultation on Integrated Drought Management organized by the Global Water Partnership (GWP). 24-26 July, Colombo, Sri Lanka.
2. **Eriyagama N.**; Amarasinghe, U. 2010. Mapping Global Water Footprints of Popular Beverages. Presentation made at the Project Workshop of Nestle Water Footprint of Milk Production in Moga District, Punjab. New Delhi, India, April 2010.
3. **Eriyagama, Nishadi**; Smakhtin, Vladimir; Gamage, Nilantha. 2010. Global Drought Characteristics, Patterns, Vulnerabilities and Impacts. Presentation made at the XEROCHORE Conference on Drought Science and Policy, 23-24 February, Brussels, Belgium
4. **Eriyagama, N.**; Smakhtin V.; Chandrapala L.; Fernando, K. 2010. Climate Change Impacts, Vulnerability Mapping and Adaptation in Sri Lanka. Poster presented at ARM 2010. Colombo: International Water Management Institute
5. **Eriyagama, Nishadi**; Smakhtin, Vladimir; Mir Matin, Lalith Chandrapala, Karin Fernando. 2009. Climate Change and Sri Lanka's Water Future. Invited presentation made at the Technical Workshop on Vulnerability and Adaptation in the Water Resources Sector, organised by the Water Resources Board for preparation of Sri Lanka's Second National Communication on Climate Change to the UNFCCC. Colombo, Sri Lanka, 25 September 2009
6. Luna Bharati; Vladimir Smakhtin; **Nishadi Eriyagama**; B.K. Anand. 2009. Environmental flows: moving from concepts to application, a case study from India. Paper presented at the International conference *Implementing Environmental Water Allocations*, February 26-29, 2009, Port Elizabeth, South Africa.
7. Smakhtin, V.; Finlayson, M.; Dissanayake, P.; **Eriyagama, N.**; Bharati, L.; Anputhas, M. Global and Basin Scale Assessments of Environmental Water Allocations for Delivery of Ecosystem Services. Poster presented at: *Global Environmental Change: Regional Challenges, an ESSP Open Science Conference*, 9-12 November, 2006