

Assoc. Prof. Dr. Sebastien Bonnet

EDUCATIONAL BACKGROUND

Year 2003 Ph.D. (Environmental Science), University of Lincoln, England

Year 2000 B.Sc. (Hons) (Environmental Science), University of Lincolnshire and
Humberside, England

RESEARCH FIELDS OF INTEREST

- Impacts of open biomass burning on air pollution
- Ambient air quality assessment
- Externality assessment of biomass-to-energy systems
- Sustainability assessment of biomass-to-energy systems
- Carbon footprint of products

FIELD OF EXPERTISE

- Air pollution (open biomass burning and ambient air quality)
- Strategic Environmental Assessment
- Risk assessment

ACADEMIC BACKGROUND

March 2003 – December 2003:

Analyst, Analytical Chemistry - Allied Laboratory Ltd (England).

Chemical analyses of environmental and food samples using GC, ELISA, analyser and HPLC, technical data interpretation, reporting, and decision making as member of a technical team.

June 2004 – at present:

Research Associate - The Joint Graduate School of Energy and Environment (Thailand)

PUBLICATIONS

International Journals

- Tun, T.Z., Bonnet, S., and Gheewala, S.H., (2021) Emission reduction pathways for a sustainable cement industry in Myanmar. *Sustainable Production and Consumption*. 27: p. 449-461.Jul
- Tun, T.Z., Bonnet, S., and Gheewala, S. (2020) Life Cycle Assessment of Portland Cement Production in Myanmar. *The International Journal of Life Cycle Assessment*. 25(11): p. 2106 - 2121.November 2020
- Kamma, J., Manomaiphiboon, K., Aman, N., Thongkamdee, T., Chuangchote, S., and Bonnet, S. (2020) Urban heat island analysis for Bangkok: multi-scale temporal variation, associated factors, directional dependence, and cool island condition. *Scienceasia*. 46(2): p. 213-223.Apr

- Nilsalab, P., Gheewala, S.H., Mungkung, R., Perret, S.R., Silalertruksa, T., and Bonnet, S., (2017) Water demand and stress from oil palm-based biodiesel production in Thailand. *The International Journal of Life Cycle Assessment*. 22(11): p. 1666-1677.
- S Garivait, S Bonnet, U Chaiyo, S Taoprayoon, P Maleewong and M Hooper (Accepted) Estimation of atmospheric particulate matter emission from open biomass burning in the Mekong river basin sub-region. *International Journal of Applied Environmental Science*.
- Utomo, B., Prawoto, A. A., Bonnet, S., Bangviwat, A. & Gheewala, S. H. (2016) Environmental performance of cocoa production from monoculture and agroforestry systems in Indonesia. *Journal of Cleaner Production* 134, Part B: 583-591.
- Permpool, N., Bonnet, S. & Gheewala, S. H. (2016) Greenhouse gas emissions from land use change due to oil palm expansion in Thailand for biodiesel production. *Journal of Cleaner Production* 134, Part B: 532-538.
- Nilsalab, P., Gheewala, S. H., Mungkung, R., Perret, S. R., Silalertruksa, T. & Bonnet, S. (2016) Water demand and stress from oil palm-based biodiesel production in Thailand. *The International Journal of Life Cycle Assessment* 22(11): 1666-1677.
- Agabu Shane, Shabbir H. Gheewala, Bundit Fungtammasan, Thapat Silalertruksa, Sébastien Bonnet and Seveliano Phiri (2016) Bioenergy resource assessment for Zambia. *Renewable and Sustainable Energy Reviews*. 53: p. 93-104. January, 2016
- K Boonrod, S Towprayoon, S Bonnet and S Tripetchkul (2015) Enhancing organic waste separation at the source behavior: A case study of the application of motivation mechanisms in communities in Thailand. *Resources, Conservation and Recycling*. 95(0): p. 77-90. February 2015
- Wilaiwan Sornpoon, Sebastien Bonnet, Poonpipope Kasemsap, Praphan Prasertsak and Savitri Garivait (2014) Estimation of Emissions from Sugarcane Field Burning in Thailand Using Bottom-Up Country-Specific Activity Data. *Atmosphere*. 5(3): p. 669-685. September 2014
- S. Menikpura, Shabbir Gheewala, Sébastien Bonnet, and Chart Chiemchaisri. (2013) Evaluation of the Effect of Recycling on Sustainability of Municipal Solid Waste Management in Thailand. *Waste and Biomass Valorization*. 4(2): p. 237-257. June 2013
- Junpen, S. Garivait, and S. Bonnet. (2013) Estimating emissions from forest fires in Thailand using MODIS active fire product and country specific data. *Asia-Pacific Journal of Atmospheric Sciences*. 49(3): p. 389-400. May 2013
- T. Silalertruksa, S. Bonnet, and S. H. Gheewala. (2012) Life cycle costing and externalities of palm oil biodiesel in Thailand. *Journal of Cleaner Production*. 28: p. 225-232. June 2012
- Thayukorn Prabamroong, Kasemsan Manomaiphiboon, Wongpun Limpaseni, Jariya Sukhapan, and Sebastien Bonnet. (2012) Ozone and its potential control strategy for Chon Buri city, Thailand. *Journal of the Air & Waste Management Association*. 62(12): p. 1411-1422. december 2012
- Rattanawan Mungkung, Shabbir H. Gheewala, Claver Kanyarushoki, Almudena Hospido, Hayo van der Werf, Ngamtip Poovarodom, Sebastien Bonnet, Joel Aubin, M. Teresa Moreira, and Gumersindo Feijoo. (2012) Product carbon footprinting in Thailand: A step

towards sustainable consumption and production? *Environmental Development*. 3(0): p. 100–108. July 2012

- S. Menikpura, Shabbir Gheewala, and Sébastien Bonnet. (2012) Framework for life cycle sustainability assessment of municipal solid waste management systems with an application to a case study in Thailand *Waste Management & Research*. 30(7): p. 708-719. July 2012
- S. Menikpura, Shabbir Gheewala, and Sébastien Bonnet. (2012) Sustainability assessment of municipal solid waste management in Sri Lanka: problems and prospects. *Journal of Material Cycles and Waste Management*. 14(3): p. 181-192. September 2012
- Bonnet, S. & Gheewala, S. (2012) Potential of *Jatropha* as an Energy Crop. In: *Jatropha, Challenges for a New Energy Crop*, eds. N. Carels, M. Sujatha & B. Bahadur, pp. 571-582. Springer New York.
- Junpen, S. Garivait, S. Bonnet, and A. Pongpullponsak. (2011) Estimation of Forest Fire Emission in Thailand by Using Remote Sensing Information. *World Academy of Science, Engineering and Technology I : Mathematical and Computational Sciences*. 58: p. 735-743. Oct., 2011
- Sébastien Bonnet and Savitri Garivait. (2011) Seasonal Variability of Biomass Open Burning Activities in the Greater Mekong Sub-Region. *Global Environmental Research*. 15(1): p. 31-37. Jan - Jun 2011
- Kritana Prueksakorn, Shabbir H. Gheewala, Pomthong Malakul, and Sebastien Bonnet. (2010) Energy analysis of *Jatropha* plantation systems for biodiesel production in Thailand. *Energy for Sustainable Development*. 14(1): p. 1-5 March 2010
- Butchaiah Gadde, Sébastien Bonnet, Christoph Menke, and Savitri Garivait. (2009) Air pollutant emissions from rice straw open field burning in India, Thailand and the Philippines. *Environmental Pollution*. 157(5): p. 1554-1558 May 2009
- T.L.T Nguyen, S.H Gheewala, and S. Bonnet. (2008) Life cycle cost analysis of fuel ethanol produced from cassava in Thailand. *International Journal of Life Cycle Assessment* 13(7): p. 564-573. November, 2008
- Loi Dinh Chinh, Shabbir H. Gheewala, and Sebastien Bonnet. (2007) Integrated environmental assessment and pollution prevention in Vietnam: the case of anthracite production. *Journal of Cleaner Production*. 15(18): p. 1768-1777. December 2007

International Conference

- Waqas, M., Bonnet, S., Wannasing, U.H., Hlaing, P.T., Lin, H.A., and Hashim, S. (2023) Assessment of Advanced Artificial Intelligence Techniques for Flood Forecasting. in 2023 International Multi-Disciplinary Conference in Emerging Research Trends, IMCERT 2023.
- Pengjan, S., Bonnet, S. and Garivait, S. (2018) PM_{2.5} concentration in Bangkok Metropolitan Region: Analysis of the Spatio-temporal Variability of the PM_{2.5}/PM₁₀ ratio. in 2018 Joint International Conference on ABaCAS and CMAS-Asia-Pacific. Beijing, China. May 2018

- Pengjan, S., Bonnet, S., and Garivait, S. (2018) Assessment of relationship between atmospheric PM10 concentrations and mortality in Bangkok metropolitan region (BMR). in 7th International Conference on Sustainable Energy and Environment (SEE2018). Bangkok, Thailand. 28-30 November.
- Oo, M.Y., Bonnet, S., and Garivait, S. (2018) Assessment of vegetation fires in Myanmar based on NOAA AVHRR and Terra and Aqua MODIS satellite data. in 7th International Conference on Sustainable Energy and Environment (SEE2018). Bangkok, Thailand. 28-30 November.
- Aung, N.E., Bonnet, S., and Garivait, S. (2018) Assessment of temporal variations of burned areas and carbon emissions from vegetation fires in Southeast Asia using GFED data in 7th International Conference on Sustainable Energy and Environment (SEE2018). Bangkok, Thailand. 28-30 November.
- Andini, A., Bonnet, S., Rousset, P., Patumsawad, S., and Pattiya, A. (2018) Assessment of climate pollutant emissions from crop residues open burning in Indonesia. in 7th International Conference on Sustainable Energy and Environment (SEE2018). Bangkok, Thailand. 28-30 November.
- Andini, A., Bonnet, S., Rousset, P., Patumsawad, S., and Pattiya, A. (2018) Torrefaction study of Indonesian crop residues subject to open burning. in 7th International Conference on Sustainable Energy and Environment (SEE2018). Bangkok, Thailand. 28-30 November.
- Andini, A., Rousset, P., Hasanudin, U. & Bonnet, S. (2016) Assessment of the proportion of crop residues subject to open burning available as energy feedstock in Indonesia. In: 6th International Conference on Sustainable Energy and Environment (SEE2016), Bangkok, Thailand.
- Kittinun Boonrod, Sirintornthep Towprayoon, Sebastien Bonnet and Sudarut Tripetchkul (2015) Public Perspective toward Waste-to-energy Applications in Thailand: An Opportunity on Biogas Production from Organic Waste. in The 4th International Conference on Informatics, Environment, Energy and Applications (IEEA 2015). Pattaya, Thailand. March 28-29, 2015
- Napapat Permpool, Sebastien Bonnet and Shabbir H Gheewala (2014) Implication of the AEDP 2021 Biodiesel target on Oil Palm Area Requirement in Thailand. in 4th International Conference on Green and Sustainable Innovation (ICGSI) 2014 and 3rd LCA AgriFood Asia 2014. Bangkok, Thailand. 22-24 May 2014
- Nilsalab, P., Gheewala, S. H., Mungkung, R., Perret, S. R., Silalertruksa, T. & Bonnet, S. (2014) Impact on Freshwater Use From Agrofuels Feedstock Cultivation in Thailand: Oil Palm Based Biodiesel Production. In: The 4th International Conference on Green and Sustainable Innovation 2014 (ICGSI 2014), Bangkok, Thailand.
- Kittinun Boonrod, Sirintornthep Towprayoon, Sebastien Bonnet and Sudarut Tripetchkul (2014) The Situation of Organic Waste Management Behavior: Household's Practice and Perspective. in The 3rd Annual PSU Phuket International Conference 2014 : Multidisciplinary Studies on Sustainable Development. Phuket, Thailand. November 13-14, 2014

- Wilaiwan Sornpoon, Bonnet Sebastien, Poonpipope Kasemsap and Savitri Garivait (2013) Contribution of Root Respiration to Soil Respiration in Thailand. in International Conference on Environmental Science and Technology (ICEST 2013). Singapore. September 12-13, 2013
- Wilaiwan Sornpoon, Bonnet Sebastien and Savitri Garivait (2013) Measurement of Greenhouse Gas Emission from Sugarcane Soil in Thailand. in International Conference on Climate Change and Global Warming (ICCCGW 2013). Bangkok, Thailand. December 24-25, 2013
- Wilaiwan Sornpoon, Bonnet Sebastien and Savitri Garivait (2013) Effects of Open Burning on Soil Carbon Stock in Sugarcane Plantation in Thailand. in International Conference on Environmental and Natural Resource Engineering (ICENRE 2013). Pattaya, Thailand. November 25-26, 2013
- Boonrod, K., Towprayoon, S., Bonnet, S. & Tripetchkul, S. (2013) Performance of Bio-Waste Separation at Source in Thailand: A Comparison of Motivation Mechanism for Behaviour Change. In: The 1st IWWG-ARB Symposium, Hokkaido, Japan.
- Thayukorn Prabamroong, Kasemsan Manomaiphiboon, Wongpun Limpaseni, Jariya Sukhapan, and Sebastien Bonnet. (2012) Speciated Anthropogenic and Biogenic VOC Emissions in Chon Buri Province, Thailand. in 4th International Conference on Sustainable Energy & Environment (SEE 2011): A Paradigm Shift to Low Carbon Society. 27-29 February 2012. Bangkok, Thailand.
- R Mungkung, S.H Gheewala, S Bonnet, P Phechpakdee, A Tomnantong, P Tapananont, N Chaiyawannakarn, P Pakornkarn, K Nawakullakan, S Siangjaeo, P Ocharosh, and N. Somtua. (2012) "FOOD print" as a tool to stimulate GHG reduction in the Thai agri-food sector. in Proceedings of the International Conference on Green and Sustainable Innovation 2012 (ICGSI 2012). 24-26 May 2012. Chiang Mai, Thailand.
- S.N.M Menikpura, S Bonnet, S.H Gheewala, L Abarca, and B. Chaturvedi. (2012) Integrated Sustainability Assessment of Solid Waste Management in Asia: Case Study of Nonthaburi in Thailand. in Proceedings of the 4th International Conference on Sustainable Energy and Environment (SEE 2011): A Paradigm Shift to Low Carbon Society, . 27-29 February 2012. Bangkok, Thailand.
- Agapol Junpen, Savitri Garivait, Sebastien Bonnet, and Adisak Pongpullponsak. (2012) Surface Fire Spread Prediction in Mixed Deciduous Forest fuel in Thailand. in 4th International Conference on Sustainable Energy & Environment (SEE 2011): A Paradigm Shift to Low Carbon Society. 27-29 February 2012. Bangkok, Thailand.
- T Prabamroong, K Manomaiphiboon, W Limpaseni, J Sukhapan, and S. Bonnet. (2011) A Study of Surface O₃ Formation due to NO_x and VOC Emissions Using a Photochemical Box Model for Chon Buri Province, Thailand. in 1st EnvironmentAsia International Conference. 22-25 March, 2011. Rama Garden Hotel, Bangkok, Thailand.
- Samanthi Nirmala M. Menikpura, Sebastien Bonnet, and S.H Gheewala. (2011) Implications of Recycling Activities on Sustainability of Solid Waste Management in Thailand in International Conference on Solid Waste 2011-Moving Towards Sustainable Resource Management 3-7 May 2011. Hong Kong.

- Agapol Junpen, Savitri Garivait, Sebastien Bonnet, and Adisak Pongpullponsak. (2011) Estimating the PM10 Emissions from Forest Fire in Thailand by using Satellite Information. in 2nd International Conference on Environmental Science and Technology (ICEST 2011). 26-28 February 2011. Singapore.
- A Junpen, S Garivait, S Bonnet, and A Pongpullponsak. (2011) Estimation of Forest Fire Emission in Thailand by using Remote Sensing Information. in International Conference on Civil and Environmental Engineering (ICCEE 2011). 26-28 October 2011. Indonesia.
- Samanthi Nirmala M. Menikpura, Sebestien Bonnet, and S.H Gheewala. (2010) Logistics analysis of rice straw for power exploitations and potential green house gas mitigations- an example in Thailand. in Klimashutzkongress m-v energie-symposium. 4-6 November 2010. Stralsund Germany.
- Agapol Junpen, Savitri Garivait, Sebestien Bonnet, and Adisak Pongpullponsak. (2010) Spatial and Temporal Variation of Forest Fire Emission Estimation by using Remote Sensing Information. in GMSTEC 2010: International Conference for a Sustainable Greater Mekong Subregion. 26-27 August 2010. Bangkok, Thailand.
- S Bonnet, L.G Anderson, and S. Garivait. (2009) A study of ambient air quality in Bangkok and suburbs: Focus on ozone pollution. in The 15th International Joint Seminar on "Regional Deposition Processes in the Atmosphere. 12-14 November 2009 Taipei, National University of Taiwan, Taiwan.
- L.G Anderson, R Snow, J Rasmussen, S Garivait, and S. Bonnet. (2009) Effects of Alternative Fuels on Vehicle Emissions. in The 15th International Joint Seminar on Regional Deposition Processes in the Atmosphere. 12-14 November 2009. Taipei, National University of Taiwan, Taiwan.
- S Towprayoon, S Bonnet, S Garivait, and A. Chidthaisong. (2007) Greenhouse gas and Aerosol Emissions from rice field and forest in the Mekong River Basin Sub-region. in GMSARN International Conference 2007 on: Sustainable Development: Challenges & Opportunities for the Greater Mekong Sub-region. 12-17 December 2007. Pattaya, Thailand.
- S Garivait, S Bonnet, and O Kamnoet. (2007) Air Pollutant Emissions from Paddy Residues Open Burning and their Potential for Bioenergy in the Mekong River Basin Sub-Region. (Cambodia, Lao PDR, Thailand and Vietnam). in GMSARN International Conference 2007 on: Sustainable Development: Challenges & Opportunities for the Greater Mekong Sub-region. 12-17 December 2007. Pattaya, Thailand.
- S Bonnet, S Garivait, O Kamnoet, and S Towprayoon. (2007) Mapping of CO and TPM Emissions from Forest and Paddy Field Residues Burning in the Mekong River Basin Sub-Region Using Fire Hotspot Remote Sensing Data in Proceedings of the The 5th Eco-Energy and Materials Science and Engineering Symposium (5th EMSES). 21-24 November 2007. Pattaya, Thailand.
- Sa Garivait, Sa Bonnet, and Pb Petchtong. (2006) Air Pollutant Emissions from Biomass Open Burning in the Mekong River Basin Sub-Region (Cambodia, Laos, Thailand and Vietnam). in Sustainable Development for Peace: New Dimentions of Friendly Cooperation in the Upper Greater Mekong Sub-Region. September 25-28, 2006. Phnom Penh and Siem Riep, Cambodia.

- S Garivait, S Bonnet, and U Chaiyo. (2006) Emissions from Biomass Open Burning in the Mekong River Basin Sub-region: Emission Inventory Development. in The 2nd Joint International Conference on Sustainable Energy and Environment (SEE 2006). 21-23 November 2006. Bangkok, Thailand.
- S Bonnet, N Suwanprik, and S Garivait. (2006) Potential Impact of Biomass Burning on Urban Air Quality: Case-study of Chiang Mai. in The 2nd Joint International Conference on Sustainable Energy and Environment (SEE 2006). 21-23 November 2006. Bangkok, Thailand.
- S.H. Gheewala, S. Bonnet, and W. Wanichpongpan. (2005) Strategic planning for improved solid waste management in Hua Hin, Thailand. in International Conference on Integrated Solid Waste Management in Southeast Asia. July 5-7, 2005 Siem Reap, Cambodia.
- S. Garivait, S. Bonnet, V. Sorapipith, and S Sudo. (2005) Estimation of Air Pollution Emission from Open Biomass Burning in the Mekong River Basi. in The 17th International Clean Air & Environment Conference. May 4-6, 2005. Wrestpoint, Hobart, Tasmania, Australia.
- S. Garivait, S. Bonnet, U. Chaiyo, S. Paoprayoon, P. Maleewong, and M. Hooper. (2005) Estimation of atmospheric particulate matter emission from open biomass burning in the Mekong river basin sub-region. in The 11th international joint seminar on regional deposition processes in the atmosphere. Nov. 23-25, 2005. Jejudo, Korea.
- S. Garivait, S. Bonnet, V. Sorapipith, and U. Chaiyo. (2004) Estimation of Air Pollution Emission from Open Biomass Burning in Thailand. in The Third Regional Conference on Energy Technology towards a Clean Environment". Sustainable Energy and Environment (SEE)". December 1-3, 2004. Hilton Hua Hin Resort & Spa, Hua Hin, Thailand.

National Journal

- Bunkun, C., Bonnet, S., and Gheewala, S.H. (2021) Life Cycle Assessment of the Kamchay Hydropower Plant in Cambodia. *Journal of Sustainable Energy & Environment*. 12(1): p. 23-33. Jan.-Mar. 2021
- Nandar, S.L., Bonnet, S., Garivait, S., and Thao, P.T.B. (2020) Assessment of Health Benefits Using BenMAP-CE in Myanmar. *Journal of Sustainable Energy & Environment*. 11(4): p. 123-129. Oct. - Dec. 2020
- Pengjan, S., Fan, C., Bonnet, S., and Garivait, S. (2019) Analysis of PM_{2.5}/PM₁₀ ratio in the Bangkok Metropolitan Region, Thailand. *Journal of Sustainable Energy & Environment*. 10(3): p. 75-84. Jul.-Sep. 2019
- Oo, M.Y., Bonnet, S., and Garivait, S. (2019) A preliminary assessment of the distribution of vegetation fires in Myanmar and key drivers. *Journal of Sustainable Energy & Environment*. 10(3): p. 85-89. Jul.-Sep. 2019
- Aung, N.E., Bonnet, S., and Garivait, S. (2019) Spatio-temporal variations of burned areas and carbon emissions from vegetation fires in Myanmar and Southeast Asia derived from GFED data. *Journal of Sustainable Energy & Environment*. 10(4): p. 107-113. Oct.-Dec. 2019

- Andini, A., Rousset, P., Hasanuddin, U. and Bonnet, S. (2017) Fraction of Crop Residues Subject to Open Burring in Indonesia: Field Survey in Lampung Province. *Journal of Sustainable Energy & Environment*. 8(3): p. 51-53. July-September 2017
- Hindelang, M., Gheewala, S. H., Mungkung, R. & Bonnet, S. (2014) Environmental Sustainability Assessment of a Media Based Aquaponics. *Journal of Sustainable Energy & Environment* 5(4): 109-116.
- Boonman, T., Garivait, S., Bonnet, S. & Junpen, A. (2014) An Inventory of Air Pollutant Emissions from Biomass Open Burning in Thailand Using MODIS Burned Area Product (MCD45A1). *Journal of Sustainable Energy & Environment* 5(3): 85-94.
- Thamatheradamrong, N. & Bonnet, S. (2013) An Evaluation of Human Health Risk from Biomass Power Plant in Thailand. *Journal of Sustainable Energy & Environment* 4(4): 137-141.
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National Conference

- Silalertruksa, T., Bonnet S, and Gheewala, S.H. (2010). Life cycle cost and externalities analyses of cassava ethanol in Thailand. in *Proceedings of the 1st National Energy Congress : Energy Crisis and Solutions for Thailand*. 18-19 February 2010. BITEC, Thailand.