

FROM SHIPBREAKING  
TO SUSTAINABLE SHIP  
RECYCLING

Evolution of a Legal Regime

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TONY GEORGE PUTHUCHERRIL

# From Shipbreaking to Sustainable Ship Recycling

Evolution of a Legal Regime

*By*

Tony George Puthucherril



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## Series Editor's Preface

This is the fifth volume in the Martinus Nijhoff monograph series on *Legal Aspects of Sustainable Development* published under my general editorship. The aim of this series is to publish works at the cutting edge of legal scholarship that address both the practical and the theoretical aspects of this important concept.

I am pleased to include this major study by Tony George Puthucherril in the series. Shipbreaking poses a number of key sustainable development issues, yet it has not to date attracted much academic attention. Recycling the materials used to build huge oceangoing vessels must be a sound idea. However, when these vessels are exported from the developed world to be broken up in some of the world's poorest countries, including India, China and Bangladesh, the process poses basic north-south environmental justice issues. These issues are even more pronounced when this work is done in yards and on beaches in developing countries with minimal, if any, basic safety precautions for the workers or protection of the environment from the toxic and dangerous substances that may be released in the process.

This study was started at Dalhousie Law School well before the negotiation of the International Convention for the Safe and Environmentally Sound Recycling of Ships was finalized in Hong Kong in May 2009. Tony George Puthucherril was therefore ideally placed to produce what is probably the first authoritative assessment of the Convention. His study however is more than just this. He looks at the global significance of shipbreaking from a multidisciplinary point of view; he looks in detail at the attempts by the Indian authorities to regulate this growing industry including a consideration of the role of the Indian Supreme Court – a now familiar actor in the field of Indian environmental law after a number of seminal cases on environmental issues. Then he considers the patchwork of pre-existing international rules and guidelines, which derive from the work of the International Maritime Organization, the International Labour Organization as well as the Basel Convention Secretariat. Indeed it was these three bodies that collaborated in the development of the 2009 Convention. After a critical – in both senses of the word – assessment of the Convention itself, he poses a number of issues for future consideration and action. It is clear that the Convention is to be welcomed as a major step forward. However, as Professor Chircop points out, it could take some years more before it enters into force. In the meantime further actions can be taken to implement and to supplement the conventional regime.

In this light I trust that this timely work will provide a well informed and important stimulus for forward progress on this important agenda.

David Freestone  
Washington DC

## Foreword

This book is one of the first, if not the very first, substantial work on the international law of shipbreaking and ship recycling. The subject of shipbreaking is a complex problem with many difficult and interrelated issues. It has long been a virtually unregulated industry at the international level. It has stood out in sharp contrast to the otherwise substantial body of international regulation for maritime safety, environmental protection and security, mostly under the auspices of the International Maritime Organization (IMO), and work safety regulation of the International Labour Organization (ILO). Shipbreaking somehow fell between the cracks of international regulation.

And yet the need for regulation has been cogent for a long time. The industry has had a generally poor occupational health and safety and marine environmental protection record. Every year hundreds of workers in the yards of Asia, among others, suffer injuries and tragic deaths at work in shipbreaking yards. Workers are frequently not properly equipped and trained, including when they are expected to handle material such as asbestos, a toxic material used for insulation on board ships. In the yards of South Asia, ships are beached after their final voyage, and during the process of breaking they release a variety of toxic wastes directly into the coastal and marine environment. Shipbreaking also concerns the recycling of scrap metal, a highly valued commodity in the countries where the breaking occurs. The industry employs thousands of people in those countries and is a significant contributor to local and regional economies, mostly in regions which are under-developed. The bulk of the industry is located in Asia, mostly in a few places that include China, Bangladesh and India, and even though the ships to be broken were owned and operated mostly from outside of this region. This reality has produced social equity undertones, juxtaposing values and interests of rich and poor countries.

Recently, the international community has come to the realization that this problem cannot continue to be unregulated. In the space of a few years the International Convention for the Safe and Environmentally Sound Recycling of Ships was developed and in May 2009 it was formally adopted at a conference in Hong Kong. This initiative has its origins in collaboration between the IMO, ILO and the Secretariat for the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal. It will be several years before the Convention will receive the required number of ratifications to bring the instrument into force. The hope is that the main source and shipbreaking States will become parties. It is possible to criticise the Convention for what it has not been able to achieve, or address effectively. However, few would not

concede that it is an important achievement and addition to the international regulation of the industry.

Against this backdrop, Tony George Puthucherril's book breaks new ground in the fields of international maritime law and international environmental law. The book emerged from seminal graduate work the author completed while at Dalhousie Law School. He undertakes a massive, brilliant and passionate exercise in setting out the problem, tracing its history and economic significance. He deconstructs the problem as it is manifested in some of the world's major shipbreaking States and highlights the many domestic challenges within each of those. He also ably explains a complex relationship between existing international regimes, notably for shipping, labour and transboundary movement of hazardous wastes, and explains how each of these addressed issues related to the problem, but without effectively addressing the problem, hence the need for a new international instrument. He provides numerous insights into economic, social, political and institutional processes, frequently interwoven. At the end of the day, any international effort in addressing the problem had to consider issues of equity in international relations and international law. The author provides the reader with a guided tour of the Convention, providing in-depth analysis and numerous insights along the way. This book promises to be "the work" on the subject for years to come. It will serve to enlighten those that wish to seek an in-depth understanding of how the international community embarked on an exercise in policy and legal development to respond to a major contemporary problem.

Professor Aldo Chircop  
Dalhousie Law School, Halifax  
NS, Canada

September 2009

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I would like to thank my professors and colleagues at the Marine & Environmental Law Institute, Dalhousie Law School, Halifax, Canada. In particular, I am indebted to Professor Aldo Chircop for his intellectual inspiration, invaluable guidance and encouragement; Professor David VanderZwaag for offering illuminating comments and suggestions, which has in a great measure enhanced the quality of this work; and Professor Moira L. McConnell for reading and responding to this work and for providing me with materials and advice at all crucial stages. My sincere thanks are also due to Professor Richard Devlin (Dalhousie Law School) who inspired in me critical legal thinking.

I express my immense sense of gratitude to my law teachers in India, particularly to Professor (Dr.) N.R. Madhava Menon, (Founding Vice-Chancellor of the National Law School of India University and the National University of Juridical Sciences; Founding Director of the National Judicial Academy, India; and Member, Commission on Centre-State Relations, India) my mentor, who has always encouraged me to think and work beyond traditional legal confines. I am also grateful to Professor V. Vijayabalan (former principal of the Government Law Colleges at Trivandrum and Ernakulam and former Dean of Law, Mahatma Gandhi and Calicut Universities) who has been a pillar of strength and has provided me with guidance and support at every stage of my career. At this juncture, I fondly remember the late Professor B. Dharmarajan (former principal of the Kerala Law Academy Law College, Trivandrum) who introduced me to the first lessons in law.

Honourable Madam Justice Roshan Dalvi of the Bombay High Court and Honourable Mr. Justice Madan B. Lokur of the Delhi High Court have always encouraged me in my academic endeavours and I am obliged to both of them. I am also grateful to Dr. K.P. Kylasanatha Pillay (Senior Advocate, Supreme Court of India) for his academic support.

I am also grateful to the series editor, Professor David Freestone, for his encouragement, as well as Mr. Peter Buschman, and Ms. Ingeborg van der Laan at Brill for their assistance in making this book a reality. I would also like to thank



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Last, but certainly not least, I convey my gratefulness to my 90 year old grandmother, Mrs. Lily George, for her prayers and blessings. I would also like to thank my 'Acha' and 'Amma', and 'Achachan' and 'Mummy' for their love and encouragement. Ms. Lekshmi Vijayabalan, my wife needs special mention for the love and care she showered on me while I was busy writing this book.

Tony George Puthucherril  
Halifax, Nova Scotia

September 2009

## **List of Abbreviations**

ACM	asbestos containing materials
AERB	Atomic Energy Regulatory Board
AFC	International Convention on the Control of Harmful Anti-Fouling Systems on Ships, 2001
AIDS	acquired immune deficiency syndrome
BIMCO	Baltic and International Maritime Council
BWC	International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004
CEC	Central Empowered Committee
COP	conference of parties
CPCB	Central Pollution Control Board
CRZN	Coastal Regulation Zone Notification
dB	decibel
DOC	document of compliance
DWT	deadweight tonnage
EA	environmental assessment
EFTA	European Free Trade Association
ENGO	environmental non-governmental organisation
EPA	Environmental Protection Agency (United States)
ESM	environmentally sound management
EU	European Union
FOC	flag of convenience
GMB	Gujarat Maritime Board
GT	gross tonnage
HPC	High Powered Committee
ICS	International Chamber of Shipping
IHM	inventory of hazardous materials
ILO	International Labour Organization
IMO	International Maritime Organization
IMOGRS	IMO Guidelines on Ship Recycling
INR	Indian rupee
IRRC	International Ready for Recycling Certificate
ISRA	International Ship Recycling Association
IWPSR	Industry Working Party on Ship Recycling
JWG	Joint Working Group
LDT	light displacement tonne
LOS Convention	United Nations Convention on the Law of the Sea, 1982

MARAD	Department of Transportation, Maritime Administration (United States)
MARPOL 73/78	International Convention for the Prevention of Pollution from Ships, 1973 and its Protocol of 1978
MEPC	Marine Environment Protection Committee (IMO)
NDRF	National Defence Reserve Fleet
NEPA	National Environmental Policy Act
NGO	non-governmental organisation
NIMBY	not in my back yard syndrome
NMHA	National Maritime Heritage Act
OECD	Organisation for Economic Co-operation and Development
OEWG	Open-ended Working Group
OPA	Oil Pollution Act
PAHs	polycyclic aromatic hydrocarbons
PCBs	polychlorinated biphenyls
PVC	polyvinyl chloride
RRF	Ready Reserve Force
SCMC	Supreme Court Monitoring Committee
SDIC	Ship Decommissioning Industries Company
SGAV	Specific Guidelines for Assessment of Vessels
SMB	State Maritime Board
SOLAS	International Convention for the Safety of Life at Sea, 1974
SPCB	State Pollution Control Board
SRFP	Ship Recycling Facility Plan
SRP	Ship Recycling Plan
TBT	tributyltin
TEC	Committee of Technical Experts
TGSD	Technical Guidelines for the Environmentally Sound Management of the Full and Partial Dismantling of Ships
TRO	Temporary Restraining Order
TSCA	Toxic Substances Control Act
UK	United Kingdom
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
US	United States
USD	United States dollar
VLCC	very large crude carrier
WRC	Nairobi International Convention on the Removal of Wrecks, 2007
WSR	Waste Shipment Regulation
WTO	World Trade Organization

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# Chapter 1

## Introduction

### I. Background

The dumping of hazardous wastes in the Third World has long been an intractable issue, despite the international legal regime<sup>1</sup> put in place to protect the victims of this trade. Popularly known as “garbage imperialism”,<sup>2</sup> one of its more sinister forms is the shipbreaking industry wherein ships that have outlived their economic utility are dismantled for scrap steel and other equipment which are recycled and reused. Even though ship recycling is performed in nearly 79 countries,<sup>3</sup> most of the heavy dismantling takes place on the tidal beaches of the South. It is here that there is a huge market for end-of-life ships from the North.

Among the leading shipbreaking nations, the countries on the Indian subcontinent, namely, Bangladesh, India and Pakistan, have been the undisputed leaders.<sup>4</sup> Whether Alang in India, Chittagong in Bangladesh, or Gadani in Pakistan, mention shipbreaking and the first picture that it conjures is that of geriatric ships resting peacefully on these once pristine beaches, awaiting their last rites. However, beneath this deceptive calmness lies a storm. Ever since the industry started functioning in these locations, the sandy beaches have turned

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<sup>1</sup> *Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal*, 22 March 1989, 1673 U.N.T.S. 126, 28 I.L.M. 657 (entered into force 5 May 1992) [*Basel Convention*].

<sup>2</sup> See Petra K. Kelly, “The Need for Eco-Justice” (1990) 14 Fletcher F. World Aff. 327 (HeinOnline) (accusing the West of indulging in garbage imperialism). See also Rozelia S. Park, “An Examination of International Environmental Racism through the Lens of Transboundary Movement of Hazardous Wastes”, Note, (1998) 5 Ind. J. Global Legal Stud. 659 at 660 (WLeC) (pointing out that the shipment of hazardous wastes from developed to developing countries is environmental racism). See Nisha Thakker, “India’s Toxic Landfills: A Dumping Ground for the World’s Electronic Waste” (2006) 6 S. D. L. & Pol’y 58 (HeinOnline).

<sup>3</sup> Ron Hess *et al.*, *Disposal Options for Ships*, RAND Monograph Report (RAND Corporation, 2001) at 41, online: RAND Corporation <[http://www.rand.org/pubs/monograph\\_reports/MR1377/](http://www.rand.org/pubs/monograph_reports/MR1377/)>. Even though performed in several countries, shipbreaking in the majority of these countries is restricted mainly to the dismantling of government ships, fishing boats or pleasure craft. Most of the business is handled on the Indian subcontinent (almost 90 percent). France, Interdepartmental Committee on the Dismantling of Civilian and Military End-of-Life Ships, *Le rapport de la Mission Interministérielle portant sur le Démantèlement des Navires civils et militaires en fin de vie*, annex II at 2–3 (27 March 2007, Chair: Xavier de la Gorce), online: SGMer <[http://www.sgmer.gouv.fr/IMG/pdf/Annex\\_2\\_Dismantling\\_countries.pdf](http://www.sgmer.gouv.fr/IMG/pdf/Annex_2_Dismantling_countries.pdf)>.

<sup>4</sup> Amy Yee, “Wreckers in deep water” *Financial Times* [London] (18 April 2007) 4, online: FT .com <<http://www.ft.com/home/us>>.



gooey and black, and the waters of the Arabian Sea and the Bay of Bengal that wash their shores are covered with floating oil globules. The environment in these regions has been scarred and marine biodiversity has been systematically ruined. These yards resemble huge battlefields with metal pieces, asbestos sheets, thermocol, glass bits, equipment from the ship, oil, and other substances strewn all over.<sup>5</sup> Almost everything, from the steel to the fixtures and furniture, to pieces of sanitary ware, kitchen utensils and other items salvaged from the ship, end up in local markets.<sup>6</sup> At certain places, discarded wastes are burnt, sending huge columns of smoke into the atmosphere.<sup>7</sup>

The ship scrapping industry on the Indian subcontinent generates a whole range of economic activities, but it comes at an enormous cost. The job of breaking a ship is extremely hazardous and lethal. The shipbreakers who do these jobs, often without protective gear, are exposed to a series of life threatening substances like asbestos, polychlorinated biphenyls, residual oil, and situations such as explosions and falling steel.<sup>8</sup> Resembling ants that work diligently on carcasses, the undertakers in these yards use their raw power, sledgehammers and torch cutters to rip apart the huge bellies of ships.

From the point of view of safety and environmental protection, shipbreaking happens under totally unacceptable conditions. Consequently, many of the workers in these shipbreaking yards contract lethal diseases and the water, the soil and the coastal habitats are heavily polluted. This industry raises fundamental questions of human rights, environmental justice, and equity.<sup>9</sup>

Theoretically, the ship scrapping industry should be a sustainable enterprise as it removes redundant tonnage by providing a new lease of life to rusty steel and to the fixtures on board a vessel. However, shipbreaking operations contain elements that undermine its sustainability. Why is this situation persisting?

Shipbreaking is symbolic of what emerging and developing economies will continue to encounter in the context of the new economic opportunities afforded by globalisation. The central question is whether these seemingly beneficial

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<sup>5</sup> David Dodds, "Breaking up is Hard to Do: Environmental Effects of Shipwrecking and Possible Solutions under India's Environmental Regime", Comment, (2007) 20 Pac. McGeorge Global Bus. & D.L.J. 207.

<sup>6</sup> The steel re-appears as reinforcing rods which are used in the construction industry. The generators, light fittings and batteries are also reused. Even the hydrocarbons on board are reclaimed to be used as fuel in steel rolling mills and brick kilns. *Recycling of Ships: Report of the Correspondence Group*, Submitted by the Co-ordinator of the Correspondence Group, IMO/MEPC 46/7, 18 January 2001, ¶ 3.1.2 (KR-CON) [*Report of the Correspondence Group*].

<sup>7</sup> Dodds, *supra* note 5 at 217–20.

<sup>8</sup> Dwarik Nath Rath, "In the face of death" *PUCL Bulletin* (June 2003), online: What's new on the site <<http://www.pucl.org/by-month-2003.htm>>.

<sup>9</sup> John F. Sawyer, "Shipbreaking and the North-South Debate: Economic Development or Environmental and Labor Catastrophe?", Comment, (2001) 20 Penn St. Int'l L. Rev. 535 (WLeC).