

Introduction

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Traditionally, economic development and environmental protection were seen as opposites. The academic discussion and the relevant policy debates in the 1980s and 1990s focused on which should take priority over the other, with environmentalists and economists opposing each other over this question.

In the 1990s, the concept of Sustainable Development emerged as an attempt to achieve a balance between environmental protection and social and economic development. More recently, a number of concepts that aim at achieving a win-win situation between economic and environmental approaches and priorities have emerged. Over the last years, the international community has increasingly turned to the concept of a Green Economy with the aim of bringing the (seemingly) opposing values of economic development and environmental protection into a balance. In the absence of an internationally agreed definition, UNEP's 2011 report 'Towards a Green Economy' defines Green Economy as 'an economy that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities.'¹ In operational terms, a Green Economy is an economy that promotes investments in technologies that reduce carbon emissions and pollution, enhance energy and resource efficiency or prevent the loss of biodiversity. Interrelated concepts, such as 'Green Growth', 'Green Taxation', 'Green Industry', 'Green Jobs', 'Green Accounting', have developed within the frame of specific areas and have often broadened the concept of Green Economy for their specific purposes, all the while remaining based on it.

Today the belief is consolidating that long-term sustainable development is only possible if economic development is embedded in sound

¹ UNEP, 'Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication', Synthesis Report (UNEP 2011) 2, available at <www.unep.org/greeneconomy/Portals/88/documents/ger/GER_synthesis_en.pdf> (last accessed on 6 December 2015).

environmental and social policies. What is more, States and other (both public and private) stakeholders have begun to recognize the economic potential that innovations attending to environmental and social sustainability may have in the long term. The concept of Green Economy has thus stopped being a purely 'visionary' concept and has evolved into one that is starting to find its way into concrete policy frameworks, most recently the 2015 Sustainable Development Goals adopted by the UN General Assembly.² Nevertheless, some scepticism remains, as seen for example in the negotiations at the Rio+20 Summit in 2012: developing countries in particular were wary of supporting this concept, which they feared might simply be a new way of erecting trade barriers and slowing economic growth in the developing world.³

Much of the discussion and effort related to achieving a Green Economy have thus far focused on the areas of climate change and energy, with other areas of environmental protection, including waste management, receiving limited attention. Waste, subject to environmental legislation in the developed world since the 1970s, has until recently been seen as an unwelcome and costly by-product of modern societies, and thus as a problem. Accordingly, waste legislation at all levels has long focused on final disposal, and since the 1980s, on controlling export and import and preventing illegal traffic in waste, especially from developed to developing countries.⁴ The year 1989 saw the adoption of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, negotiated under the auspices of UNEP to protect developing countries from being used as cheap disposal grounds for hazardous wastes from industrialized countries. However, the implementation of the Convention, and waste management in general, have remained at the bottom of the political agenda at all levels. Funding is still largely insufficient to ensure environmentally sound management of wastes, especially in the developing world.

² See UN, 'Transforming our World: The 2030 Agenda for Sustainable Development', General Assembly Resolution 70/1 (25 September 2015) available at <www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E> (last accessed on 24 February 2016). See also e.g. UNCTAD, 'World Investment Report (WIR) 2014 – Investing in the SDGs: An Action Plan' (UNCTAD 2014) available at <http://unctad.org/en/PublicationsLibrary/wir2014_en.pdf> (last accessed on 24 February 2016).

³ See K. Kummer, R. Khanna and V. Sahajwalla, 'Resource and Energy Recovery from Wastes: Perspectives for a Green Economy' (2012) 42(6) *Environmental Policy and Law* 344.

⁴ For an overview see Katharina Kummer, *International Management of Hazardous Wastes, the Basel Convention and Related Legal Rules* (Oxford University Press 1995, reprinted 1999).

And yet, waste management remains one of the great challenges of our times. With a world population estimated to reach over nine billion people by 2050, resource consumption will continue to skyrocket, leading to the generation of dramatic dimensions of waste. The increase in available income in developing and emerging countries will further accelerate this waste generation.⁵ The massive increase in waste raises a host of problems that may ultimately touch upon humans' very basis of existence. If not properly handled, wastes may jeopardize human livelihood either directly (e.g. through contamination) or indirectly (e.g. through its impact on climate change). The more waste is generated in the world, the more urgent the problem thus becomes if adequate solutions are not found.

In line with continuing efforts to promote sustainable development in recent years, efforts have been made to prevent waste generation and increase recycling rates. New technologies have evolved that make this possible. New waste streams have emerged over the last decades, including in particular waste electrical and electronic equipment (WEEE), currently one of the fastest growing waste streams worldwide. With the progress of globalization, waste management is no longer a problem of individual nations but one that has attained a global dimension. At the same time, some waste materials, including certain components of WEEE, are also secondary resources for which a market exists.⁶ Resource recovery from waste is in some cases less energy intensive than primary production, and energy recovery can reduce primary energy consumption. Yet many challenges remain, both in legal and practical terms. One of these is the widespread illegal traffic in certain types of wastes, in particular WEEE, for improper recycling,⁷

⁵ UNEP, 'Towards a Green Economy (n 1), 17–18: '... [a]s living standards and incomes rise, the world is expected to generate over 13.1 billion tons of waste in 2050, about 20% higher than the amount in 2009', available at <www.unep.org/greeneconomy/Portals/88/documents/ger/GER_synthesis_en.pdf> (last accessed on 2 September 2015).

⁶ A recent report on illegal WEEE trade estimated that '... the value of recycling of WEEE will be €2.15–3.67 bn by 2020', see J. Huisman, I. Botezatu, L. Herreras et al, 'Countering WEEE Illegal Trade (CWIT) Summary Report, Market Assessment, Legal Analysis, Crime Analysis and Recommendations Roadmap' (30 August 2015) (Lyon, France) 18, available at <www.cwitproject.eu/wp-content/uploads/2015/08/CWIT-Final-Summary1.pdf> (last accessed on 6 September 2015).

⁷ 'CWIT Summary Report' (n 6) 6: '... in Europe, only 35% (3.3 million tons) of all WEEE discarded in 2012 ended up in the officially reported amounts of collection and recycling systems. The other 65% (6.15 million tons) was either exported (1.5 million tons), recycled under non-compliant conditions in Europe

despite the enactment of legislation aimed at managing and controlling the relevant trade.⁸

For waste management, a Green Economy approach would mean making the so-called 'life-cycle approach' work within the broader goal of economic development, creating economic opportunities within the policy goals of reduction, reuse or recycling of wastes. The potential that lies in a resource-based approach towards waste management has started to transpire with the shift in focus by the international community to the overarching policy goal of sustainable development. The Basel Convention features provisions mandating waste minimization and environmentally sound waste management policies. In 1999, the Fifth Conference of the Parties, on the occasion of the tenth anniversary of the Convention, made efforts in these areas a priority for the following decade. The Tenth Conference of the Parties in 2011 acknowledged that wastes that cannot be prevented can be valuable resources, and supported the concept of waste prevention and waste management as a legitimate economic opportunity. In a similar vein, the Rio+20 Summit in June 2012 highlighted a Green Economy as a possible tool for promoting sustainable development, and called for reduction, reuse and recycling of waste, recognizing the need for public-private partnerships in these areas. The Sustainable Development Goals (SDGs), which replace the Millennium Development Goals (MDGs), touch in many of the 17 overarching goals either directly or indirectly on how wastes and their management can contribute to sustainable development.⁹

International transfer of waste also features in the discussion on trade and environment, including in the framework of the World Trade Organization. Waste and trade do have a peculiar relationship, and globalization has its own role to play. Waste is both a consequence of globalized trade as it may be one of its goods. Regarding waste from the trade angle does have the advantage of perceiving the monetary value of waste and its management, from collection to recycling.¹⁰ It also has the

(3.15 million tons), scavenged for valuable parts (750,000 tons) or simply thrown in waste bins (750,000 tons)'.

⁸ See e.g. European Union, Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment (WEEE) (2012) OJ L 197, 38–71.

⁹ See in particular SDGs 6.3, 7.1, 7.2, 7.a, 8, 11.6, 12.4 and 12.5, <<https://sustainabledevelopment.un.org/sdgs>> (last accessed on 24 February 2016).

¹⁰ UNEP estimated the value of the world market for waste, from collection to recycling, to be worth around USD 40 billion a year, see UNEP, 'Towards a Green Economy' (n 1) 18.

merit of shifting the focus from perceiving waste (only) as a problem to perceiving it (also) as a potential resource, in other words, an opportunity. It would appear, then, that waste management deserves more attention in the discussion of a Green Economy and related concepts than it is currently receiving.

The key question that inspired this volume is whether waste management has the potential to become a pilot area of a Green Economy, and if so, what would be required to achieve this. Might waste management, being a less controversial and less complex issue than climate change – often portrayed as the main driver of a Green Economy – have the technical, economic and social potential, as yet insufficiently explored, to move this concept forward? The potential implications appear attractive: can industry make a profit from the relevant operations if the applicable legal and policy frameworks facilitate the necessary operations while providing safeguards against abuse? Can this in turn serve as an incentive for industry to invest in these operations, and create green business opportunities and green jobs while protecting the environment, and human health and livelihood? Might this approach contribute to addressing the problem of illegal trade and improper recycling of hazardous wastes by making the legitimate alternatives more attractive?

There is no scarcity in literature on international environmental law in general¹¹ and the international law perspective on selected environmental problems.¹² Much has also been written about the meaning and

¹¹ See among many others: Alexandre Kiss and Dinah Shelton, *International Environmental Law* (Transnational Publishers 1991); Patricia Birnie and Alan Boyle, *International Law and the Environment* (Oxford University Press 1994); David Hunter, James Salzman and Durwood Zaelke, *International Environmental Law* (Routledge 1998); Edith Brown Weiss, *International Environmental Law and Policy* (Aspen Publishers 2006); Malgosia Fitzmaurice, David Ong and Panos Merkouris (eds), *Research Handbook of International Environmental Law* (Edward Elgar 2010); Ulrich Beyerlin and Thilo Marauhn, *International Environmental Law* (Hart Publishing 2011); Paul Harris and Graeme Lang (eds), *Routledge Handbook of Environment and Society in Asia* (Routledge 2015).

¹² See among many others: S. Jayakumar, Tommy Koh, Robert Beckman and Hao Duy Phan (eds), *Transboundary Pollution, Evolving Issues of International Law and Policy* (Edward Elgar 2015); Prati Pal Singh and Vinod Sharma (eds), *Water and Health* (Springer 2014); Willem Wijnstekers, *The Evolution of CITES* (International Council for Game and Wildlife Conservation, 9th ed., 2011); Rosemary Rayfuse and Shirley Scott (eds), *International Law in the Era of Climate Change* (Edward Elgar 2012); Frank Maes et al (eds), *Biodiversity and Climate Change* (Edward Elgar 2015); C. Bail, R. Falkner, H. Marquard (eds), *The Cartagena Protocol on Biosafety: Reconciling Trade in Biotechnology with*

implementation of the concept of sustainable development,¹³ and the notion of Green Economy has in recent times received almost as much attention.¹⁴ By contrast, there are relatively few scholarly contributions on the specific topic of waste management,¹⁵ and even less that explore more in depth the role the concept of Green Economy could or should play in the environmentally sound handling of wastes. The objective of this book is to attempt such an analysis.

The book starts out with an exploration of the issues from a legal and policy angle: the first part sets the scene for exploring the international legal framework (in particular international environmental law, international trade law and human rights law) and its gaps. The law, however, does not exist in a void, but has been developed to deal with the facts of waste and materials management. The second part therefore delves into

Environment and Development? (The Royal Institute of International Affairs/Earthscan 2002).

¹³ See e.g. Giles Atkinson, Simon Dietz, Eric Neumayer and Matthew Agarwala (eds), *Handbook of Sustainable Development* (Edward Elgar, 2nd ed. 2014); Malgosia Fitzmaurice, Sandrine Maljean-Dubois and Stefania Negri (eds), *Environmental Protection and Sustainable Development from Rio to Rio+20* (Brill/Nijhoff 2014).

¹⁴ See e.g. Adrian Newton and Elena Cantarello (eds), *An Introduction to the Green Economy: Science, Systems and Sustainability* (Routledge/Earthscan 2014); Robert Richardson (ed.), *Building a Green Economy, Perspectives from Ecological Economics* (Michigan State University Press 2013); UNEP, *Green Economy and Trade: Trends, Challenges and Opportunities* (UNEP 2013); Anneleen Kenis and Matthias Lievens (eds), *The Limits of the Green Economy, From Reinventing Capitalism to Repoliticising the Present* (Routledge 2012); Elena Merino-Blanco, *Natural Resources and the Green Economy* (Martinus Nijhoff Publishers 2012); Dan Brockington, 'A Radically Conservative Vision?' (2012) 43 *Development and Change* 409; José A. Puppim de Oliveira (ed.), *Green Economy and Good Governance for Sustainable Development: Opportunities, Promises and Concerns* (United Nations University Press 2012); David Pearce, Anil Markandya and Edward B. Barbier, *Blueprint for a Green Economy* (Earthscan Publications 1990).

¹⁵ See e.g. Thomas Kinnaman and Kenji Takeuchi (eds), *Handbook on Waste Management* (Edward Elgar 2014); Michikazu Kojima and Etsuyo Michida (eds), *International Trade in Recyclable and Hazardous Waste in Asia* (Edward Elgar 2013); Syeda Azeem Unnisa and Bhupatthi S. Rav (eds), *Sustainable Solid Waste Management* (Apple Academic Press 2013); Mirina Grosz, *Sustainable Waste Management under WTO Law* (Brill/Nijhoff 2011); Trevor Letcher and Daniel Vallerio (eds), *Waste: A Handbook for Management* (Academic Press 2011); Katharina Kummer, *International Management of Hazardous Wastes, the Basel Convention and Related Legal Rules* (Oxford University Press 1995, reprinted 1999); Jonathan Kruger, *International Trade and the Basel Convention* (The Royal Institute of International Affairs/Earthscan Publications 1999).

different economic and technical issues of waste management that afford a glimpse of aspects that go beyond the law.

The book brings together contributions from an interdisciplinary group of authors who have made significant contributions to relevant academic and policy discussions and publications in their respective fields. It attempts to add to the academic analysis a consideration of concrete results on the ground, thus offering academic as well as practical perspectives on the questions.

