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Inga Skowranek

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An Analysis of Opportunities and Challenges of PC for the EPR Implementation in Lusaka, Zambia

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With Forewords by Prof. Olaf Weber and Sebastian Frisch

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The Centre for Sustainability Management (CSM) at Leuphana University Lüneburg is an internationally operating centre conducting research, teaching and continuous education in the fields of entrepreneurial sustainability management, corporate social responsibility (CSR) and social entrepreneurship. The Centre analyses causes, structures and processes of environmental, social and sustainability related problems applying concepts and methods of business management, entrepreneurial and environmental sciences.

In research, Leuphana plays a pioneering role within the field of sustainability science. In 2010, Leuphana established the first and only Faculty of Sustainability in Germany and Europe.

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Brief Summary (German)

Nach Jahrzehnten des Wirtschaftswachstums und des damit verbundenen Konsums werden die Grenzen dieser Wirtschaftstätigkeit deutlich. Zum einen, weil die natürlichen Ressourcen begrenzt sind, zum anderen, weil die Abfälle der bisherigen Konsumgüter die Umwelt und die Gesundheit der Menschen belasten. Die lineare Ökonomie ist an einem Wendepunkt angekommen und die Circular Economy (CE) kann Teil einer notwendigen Transformation darstellen. Der nachhaltige Umgang mit Materialien über ihren gesamten Lebenszyklus hinweg spielt unter anderem bei Plastik eine besonders wichtige Rolle. Insbesondere in Entwicklungsländern lassen sich die aktuellen Plastikmengen kaum noch bewältigen und enden oft auf illegalen Müllkippen. Dies führt u. a. zur Verschmutzung des Bodens, Verstopfung von Kanälen und letztlich zur Schädigung von Mensch und Natur. In Entwicklungsländern obliegt die Aufgabe des Abfallmanagements, dessen Finanzierung und somit der Umgang mit Plastikabfällen oft den Gemeinden. In Industrienationen existiert bereits die erweiterte Produzenten-Verantwortung (Extended Producer Responsibility = EPR), die die Produzenten gesetzlich verpflichtet, für die Entsorgung ihrer Produkte und deren Verpackungen auch finanziell aufzukommen. In Entwicklungsländern existiert EPR meist nur rudimentär. Vielmehr finden sich hier kleinere Projekte, für die Produzenten freiwillig zahlen, da sie selbst über ihren Unkostenbeitrag entscheiden können. Dies findet u. a. in der Form von Plastic Credits (PC) statt. Dabei handelt es sich um Offsetting Zertifikate für Plastikabfall, die durch Produzenten freiwillig erworben werden können und Plastiksammelprojekte in ausgewählten Ländern finanzieren. Diese Arbeit befasst sich mit der Frage ob,

und wenn ja wie, PC als Brückenkonzept auf dem Weg zu einem EPR-System in Lusaka, Sambia einsetzbar sind. Die Relevanz dieser Fragestellung liegt in dem dringenden Lösungsbedarf zum Umgang mit dem kaum nach zu bewältigenden Plastikabfall in Sambia. Während PC kurzfristig einsetzbar sind, handelt es sich bei EPR-Systemen um langwierige Prozesse, die keine schnellen Auswirkungen erwarten lassen, jedoch langfristig Erfolg versprechen. Da beide Mechanismen ähnlichen Prinzipien folgen, besteht die Möglichkeit, dass PC genutzt werden können, um kurzfristige Optimierungen im Umgang mit Plastikabfall und der Einbeziehung von Produzenten zu schaffen und Grundlagen für EPR-Einführungen zu legen. Es wurden Mechanismen von EPR-Systemen und PC-Projekten anhand von Literaturrecherche analysiert. Zudem wurde das Abfallmanagement in Lusaka während einer Feldstudie untersucht. Basierend auf diesen Analysen und Beobachtungen konnte festgestellt werden, das PC als Brückenkonzept für das EPR-System in Lusaka anwendbar sind. Notwendige Aspekte für einen erfolgreichen Einsatz in Lusaka wurden erarbeitet und konkrete Umsetzungsmaßnahmen beschrieben.

Brief Summary (English)

After decades of economic growth and the associated consumption, the limits of this economic activity are becoming clear. On the one hand, because natural resources are limited, on the other hand, because the waste of previous consumer goods pollutes the environment and people's health. The linear economy has reached a turning point and the Circular Economy (CE) can be part of a necessary transformation. The sustainable use of materials throughout their entire life cycle plays a particularly important role in the case of plastics, among others. Especially in developing countries, the current plastic volumes can hardly be managed and often end up in illegal landfills. This leads to pollution of the soil, clogging of canals and ultimately damage to people and nature. In developing countries, the task of waste management, its financing and thus also the handling of plastic waste is often the responsibility of the municipalities. In industrialized countries, the Extended Producer Responsibility (EPR) already exists, which legally obligates the producers to be financially responsible for the disposal of their products and their packaging. In developing countries, EPR usually exists only in rudimentary form. Rather, smaller projects are found here, for which producers pay voluntarily, since they can decide themselves on their contribution to expenses. This also takes place in the form of Plastic Credits (PC). These are offsetting certificates for plastic waste, which can be acquired voluntarily by producers and finance plastic collection projects in selected countries. This paper addresses the question of whether, and if so, how PCs can be used as a bridging concept towards an EPR system in Lusaka, Zambia. The relevance of this question lies in the urgent need for a solution to deal with the

almost unmanageable plastic waste in Zambia. While PCs are applicable in the short term, EPR systems are lengthy processes that are not expected to have a quick impact but promise success in the long term. Since both mechanisms follow similar principles, there is a possibility that PCs can be used to create short term optimizations in plastic waste management and producer engagement and lay foundations for EPR rollouts. Mechanisms of EPR systems and PC projects were first analyzed based on literature review. Furthermore, waste management in Lusaka was investigated during a field study. Based on these analyses and observations, it was found that PCs are applicable as a bridge concept for the EPR system in Lusaka. Necessary aspects for a successful application in Lusaka were elaborated and concrete implementation actions were described.

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Abbreviations

ACCP	African Clean Cities Platform
AFR	Alternative fuels and raw material
Approx.	Approximately
App	Application
BFS	BlackForest Solutions GmbH
CBE	Community Based Enterprises
CE	Circular Economy
cf.	Confer
CPR	Collective Producer Responsibility
CO_2	Carbon Dioxide
8NDP	The Eight National Development Plan
EC	European Commission
EDP	EPR Design Principles
EF	External Factor
e. g.	exempli gratia
EPR	Extended Producer Responsibility
Etc.	Et cetera
et al.	Et alia
EUR	Euro (Currency of Europe)
FMCG	Fast Moving Consumer Goods
Fig.	Figure
GDP	Gross domestic product
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GES	Green Earth Solutions
GTAI	Germany Trade and Invest

HDPE	High-density Polyethylene
ISO	International Organization for Standardization
ISWA	International Solid Wastes and Public Cleansing Association
Kg	Kilogram
LCC	Lusaka City Council
i. e.	id est
IPR	Individual Producer Responsibility
IJHSSE	International Journal of Humanities Social Sciences and Education
JICA	Japan International Cooperation Agency Institute for International Cooperation
LDPE	Low-density Polyethylene
M	Million
MGEE	Ministry of Green Economy
MLP	Multilayer plastic packaging
MLGRD	Ministry of Local Government and Rural Development
MLNR	Ministry of Lands and Natural Resources
MMMP	Multi-material multilayer plastic packaging
MoF	Ministry of Finance and National Planning
MoH	The Ministry of Health
MSW	Municipal Solid Waste
MWDS	Ministry of Water Development, Sanitation & Environmental Protection
NABU	Naturschutzbund Deutschland
NGO	Non-Governmental Organization
n. d.	no date
n. pag	no page number
OECD	Organization for Economic Co-operation and Development
PET	Polyethylene terephthalate
PE HD	Polyethylene High-density
PE LD	Polyethylene Low-density
PVC	Polyvinyl chloride
PC	Plastic Credits
PS	Polystyrene

PP	Polypropylene
PRO	Producer Responsibility Organization
RDF	Refuse-derived fuel
SADC	Southern African Development Community
SDG	Sustainable Development goals
SG	Strategic goal
SLR	Systematic literature review
SWM	Solid waste management
SWOT	Strengths, Weaknesses, Opportunities, Threats
SWMIP	Lusaka Solid Waste Management Improvement Plan
Tab	Table
T	Ton
UBA	Umweltbundesamt
UN	United Nation(s)
USD	United States dollar (Currency of US)
US EPA	United States Environmental Protection Agency
UV	Ultraviolet
WCEF	World Circular Economy Forum
WMU	Waste Management Unit
WMD	Waste Management Districts
WWF	World Wide Fund for Nature
ZEMA	The Zambia Environmental Management Agency
ZMW	Zambian Kwacha (Currency of Zambia)

Foreword

Plastics are one of the major environmental problems the world suffers from. The practical and easy-to-use material has become a significant problem in landfills and water bodies, such as oceans, rivers, and lakes. There are floating 'plastic islands' in the sea, and in some rivers, there is more plastic than fish. However, the good news is that we are aware of the problem. The bad news is that we do not really know how to address the problem. To get rid of the waste, many industrial countries ship it abroad. But this does not solve the problem; instead, it moves it from one continent to another.

Some legislations have introduced regulations to price or ban one-way plastic products, such as shopping bags. In Tanzania, for instance, one-way plastic shopping bags are banned. Another way to address environmental problems, however, are market-based solutions. Probably, the most famous market-based approach is pricing carbon emissions. To test such solutions, they are often introduced voluntarily.

The current publication addresses such an approach. It analyzed whether voluntary Plastic Credits (PC) can be used to reduce plastic waste. The publication addresses the problem from a theoretical and practical perspective. Based on a literature analysis, the research conducts document analyses and interviews in Lusaka, Zambia. The approach is particularly useful because it focuses on a developing country instead of an industrialized country in the North. Developing and emerging countries will grow economically but often do not have the financial opportunities or regulatory systems to address problems caused by economic growth. Therefore,

the analysis contributes to our knowledge about how to address waste problems in developing countries.

Inga Skowranek suggests that a market-based solution, such as plastic credits, might be a way to address the waste problem, but that it needs to be designed carefully to have the desired effects. For instance, PC only works if there is a way to process the plastic waste. Often, it is argued that waste management or recycling facilities can be built with the PC income. However, usually, there is a lack of finance that leaves the problem unsolved.

The current publication delivers insights into PC use that are valuable for academics and practitioners. It shows both the opportunities and drawbacks of the approach. Hence, it is a must-read for everyone involved in managing plastic waste in developing countries.

Prof. Olaf Weber
CIBC Chair in Sustainable Finance,
Schulich School of Business

Preamble

At first the concept of so-called plastic credits seems promising. It stands for immediate financial support for collecting plastic waste that would pollute beaches and environment otherwise. Informal waste pickers receive money for their work from international brands to compensate their plastic waste footprint. Apps provide a digital coverage of the process. That process can be implemented without any burden of a time-consuming technical and legal process, which is required to establish a conventional circular economy that relies on the concept of a mandatory Extended Producer Responsibility (EPR). Especially countries located in the Global South still show a lack of awareness about waste management and EPR .

All good, let's go ahead with plastic credits?

Inga Skowranek's award winning master thesis shed more light on this question. In her thesis she analyzed that plastic credits can actually disturb and delay the process of circular economy and EPR implementation. Brands are using plastic credits as part of their corporate social responsibility budget, as a purely voluntary measure. The risk of greenwashing is high. Brands can pretend action with plastic credits whereas the structured, coordinated process of a mandatory EPR implementation is being neglected as substantial budget has to be pumped into the system. Plastic credits can cure the symptoms only on short sight but a mandatory EPR would cure the root cause of the global waste management crisis both sustainable and on long-term.

The impact of plastic credits based on quantities being collected is negligible on business models operating sustainable. The concept is rather used to promote brands, the (mostly European) start-ups behind the

apps and attract investors to finance these start-ups but not the system on the ground.

Inga further suggests clear conditions that would support the co-existence of a mandatory EPR scheme and plastic credits (then being used in a different form from how they are operated now).

This master thesis is answering key questions raised in the community since the first upcoming of plastic credits in approx. 2018. It gives a new perspective on the opportunity of implementing EPR in the Global South exemplary based on beautiful Zambia where Inga travelled to collect first-hand data and information on site.

Sebastian Frisch