Learning through sharing: beyond the traditional North-South learning models for a circular built environment

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Abstract. There is a general assumption that knowledge sharing takes place in a North-South direction; with North Americans and Europeans providing pearls of wisdom to the global South. At a recent Sustainable Built Environment knowledge sharing workshop this assumption was challenged. The workshop brought together building and circular economy experts from governments, public and private sector, financing organisations and researchers. The aim of this workshop was to share experiences between experts from The Netherlands, actively engaged in promoting and applying circularity principles in the country and the region, and Sustainable Building and Construction (SBC) partners engaged in promoting sustainable building and construction practices, including circularity, internationally. Participants were from Asia, Africa, Latin America, Australia and the EU. The workshop was set up in an interactive, action research format. The key messages arising from the workshop supported that South-North learning was equally valuable as North-South learning, supporting knowledge sharing rather than knowledge transfer. There was a recognition of the imminent danger of global system collapse if current practices were not changed immediately. Urgency was recognised as being a key driver to move to a new paradigm shift both in the North and the global South. There was also a recognition that since the task is complex and there are multifaceted considerations, it is not helpful to wait to align all stakeholders to develop common solutions. Grass roots engagement and development need to be supported and nurtured in alignment with various stakeholders. Governments can support circular processes through a top-down policy platform. Traditional and cultural practices in the global South may provide not only ideas for engagement but also new ways of thinking in a quest for diversity of solutions to be applied to reach our sustainability goals.

1. Introduction
The buildings and construction sector has an impact on resource use during the process of construction and post construction, through the operation of buildings. Buildings account for 36% of final energy consumption and more than 80% of this consumption was from fossil fuels in 2015. More than half of new buildings expected to be constructed over the next twenty years are expected to be in the developing regions of the world [1]. This reiterates the need to consider the value of good design and
non-mechanical operations to reduce energy use. It also brings attention to countries in Asia, Africa and Latin America due to the rapid rise in the city building activities in these regions.

The countries comprising the new growth regions are mainly in the global South and are still reliant on aid and funding for infrastructure and other essentials such as hospitals and housing. Decades ago, many western donors from the North have supported in providing aid to the global South. This has changed over the last decade and the rise of the BRIC countries: Brazil, Russia, India and China have shifted the landscape somewhat in terms of economic drivers. In fact, economic growth in countries such as China and India have become a driver for global performance. The GDP of the Asian region, including the middle east is nearly 40% of the global GDP (cited in [2]) in the last decade.

This paper presents the results of a knowledge workshop held mid 2019 as a pre-cursor to the annual One Planet Network’s Sustainable Buildings and Construction (SBC) programme meeting. These meetings held since the launch of the SBC programme (in 2015) involve various network actors including the leads and co leads of the SBC programme, multi-stakeholder advisory committee members and other experts and partners. This pattern of knowledge engagement has been successful in previous annual meetings, where the participants of the SBC programme get a good understanding of local challenges and opportunities in the buildings and construction sector which assists in deliberations about key directions for the programme and identify specific areas of focus. Previous meetings have been held in both developing and developed countries. This knowledge sharing workshop was particularly focused on circularity in the buildings and construction sector as discussions along various fronts in the One Planet Network leading up to the workshop led to this theme.

It is also essential to clarify what North and South refers to in the context of this paper. North in this paper refers to the wealthier countries in North America and Europe. Countries such as China, which are geographically in the Northern hemisphere are still considered to be part of the South in the context of learning and knowledge exchange. The paper commences with an understanding of the UN Sustainable Development Goals and the role of the SBC programme within this context. The paper then delves into understanding the literature in the context of learning; from North-South and South-South perspectives, demonstrating the gap between South-North learning. This is followed by the outcomes arising from the workshop, followed by discussions and conclusions.

2. Sustainable Development Goals and the One Planet Network
The Sustainable Development Goals comprising of 17 goals and 169 targets, titled Transforming our world: the 2030 Agenda for Sustainable Development [3] came into effect on January 1, 2016. The Agenda focuses on people, planet and prosperity through fostering peaceful partnerships. It builds on the Millennium Development Goals (MDGs) [4] formulated at the start of the millennium and is founded on a collaborative partnership to heal the planet and secure its health for current and future generations. While the goals and targets are still representative of the three pillars of the triple bottom line (TBL): economic, environmental and social; the approach taken in the implementation of the SDGs is also a recognition that these TBL pillars are of equal importance; that they are indivisible, and holistic in meeting the targets under each of the SDGs.

The 10 Year Framework of Programmes (10YFP), now called the One Planet Network (from 2018) was set up in 2012 at the World Summit on Sustainable Development or Rio+20, two decades after the first World Summit in 1992. The 10-Year Framework of Programmes on Sustainable Consumption and Production was set up, now included as part of the 2030 Sustainable Development Agenda, under Goal 12, Target 12.1 [5].

There are six programmes comprising the One Planet Network. The programmes are focused on achieving sustainable outcomes and focus on public procurement, buildings and construction, tourism, food systems, lifestyles and education, and consumer information. Together, the six programmes represent a multi-stakeholder partnership for sustainable development for SDG 12. The One Planet Network is the key implementation mechanism on consumption and production (SCP) and leads the shift to sustainable consumption and production through providing unified direction, tools and solutions.
The aim of the Sustainable Buildings and Construction Programme (SBC) is to promote resource efficiency, mitigation and adaptation solutions in the shift to SCP patterns in the buildings and construction sector. The programme was officially launched in April 2015. It has been in operation since then, moving now into the second half of implementation of the ten-year timeframe of the programme (2012-2022, with 2017 as the midpoint). The programme aims at improving knowledge of sustainable buildings and construction practices and mainstreaming these solutions wherever possible, particularly in the developing countries. Therefore, sharing good practices, supporting various innovative approaches (both high technology and appropriate technology), engaging and securing cooperative networks through various actors across all levels of government, industry and civil societies, academic and research organisations are all important deliberations of the programme [6].

3. Aim of the workshop and learning outcomes

In June 2019, the One Planet Network’s Sustainable Building and Construction programme held a knowledge workshop prior to its yearly face to face meeting. This knowledge sharing workshop was held at the QO Hotel in Amsterdam. Since the background discussions already focused on circularity, with a special session at the World Circular Economy Forum (WCEF) held in early June in Helsinki, the theme for the workshop was already set out. The workshop brought together building and circular economy experts from governments, public and private sector, financing organisations and researchers. The aim of this workshop was to share experiences between experts from the Netherlands actively engaged in promoting and applying circularity principles in the Netherlands, and SBC partners engaged in promoting sustainable building and construction practices - including circularity – internationally.

Workshop participants were from developed and developing countries. Thirty participants, including leads and co-leads of the SBC programme were from various countries and regions. About half the participants were from developing countries: Morocco, Ecuador, South Africa, India, China and from developed countries: USA, Finland, France, The Netherlands, UK, Belgium, Korea and Australia. Since the workshop was showcasing best practice, it was anticipated that there would be more of a transfer than exchange of information between the various SBC participants.

Given the aim of the workshop, action research [7] was used to achieve the objectives of the workshop. Action research nurtures and supports evaluation and critical reflection, in turn supporting pro-active actions. Presentations were kept short (15 minutes maximum) and panel discussions with appropriate facilitators ensured that the participants were engaged and had time for discussions. Facilitators were prepped well before the workshop so that insightful questions may be addressed, and the panel members were also provided with the questions prior so they may have time to think through and reflect on their responses. An assumption was made that even though other regions such as Asia and Africa state of play on circularity were presented at the workshop, these regions lag behind in circularity thinking, and their approaches and attendant outcomes of meeting circularity goals would not be as advanced as that of Europe.

The workshop was held in four sessions over a six hour period and deliberately designed to maximise engagement and discussion. The first session set out the workshop objectives. The objectives were to explore collaborations on circularity in the built environment between the countries present. This was followed by highlights from the Asian and African studies on circularity in the built environment. The Dutch approach was presented as three case studies followed by a panel discussion which delved deeper into the drivers and challenges of circularity in the built environment in the country. Given the geographical location and the advanced thinking on circularity in The Netherlands, good Dutch practices were shared including the design philosophy of the QO Hotel where the workshop was held, Cirkelstad (a platform that offers public and private entities to support zero waste in cities [8]) and policies on sustainable buildings and infrastructure. Post afternoon tea, more focused panel discussions followed, focusing on what can be learned by other regions (the global South) from the studies presented. Before drawing the day to a close and summarising the key messages from the day, the final session focused on views from different stakeholders representing government, research
institutions and NGOs and the barriers/challenges from these sectors in the move towards circular practices. The next section explores the literature on learning and building knowledge.

4. Learning and building knowledge

For a society to progress, learning forms the essential building block of knowledge sharing and growth. The purpose and reason for the learning, what needs to be learned, how is the learning to occur, where and when are all relevant questions to be considered. For a society to learn, silos need to be broken down and communication improved. Planned learning outcomes from the workshop were to share best practice outcomes and processes to ensure knowledge sharing. The following sections delve a little deeper into North-South, South-South and South-North learning.

4.1. North-South, South-South learning and South-North learning

The drive for North-South learning and South-South learning has been in implementation far longer than South-North learning. It is only recently that even the recognition of South-North learning has become a part of and accepted as legitimate means of learning.

The nature of the built environment sector also needs to be considered. Traditionally, the built environment sector has been plagued by significant problems associated with exchanging, sharing and integrating information between various actors in the sector. Costa and others [9] argue for and present a novel concept of knowledge sources where each source is semantically represented by a vector for the building and construction industry, particularly in a digital format. The advent of the digital age has been seen to be the driver of knowledge transfer and exchange.

Harrison [2] argues that although South-South knowledge exchange is more appropriate, these exchanges are not totally immune to the power inequalities of the North-South engagements. The notion of South-South learning cannot be seen to be inherently without problems either as the South has also been plagued with inequalities in power, contextual differences and complex geo-political situations. There is not enough evidence to show that South-South learning will prove to be more successful than North-South learning. Robeldo [10] along the same vein as Harrison [2] also states that South-South cooperation is used by middle income countries in the Southern Hemisphere to reaffirm themselves as global actors by examining the motivations of traditional and emerging donor practices. Most of the middle-income countries are donors and also receivers of aid. The contrast between the poor and the richer classes of society have governments in the region working hard to reduce inequalities.

Bry [11] states that few studies have focused on understanding the rationale of South-South cooperation and focuses on development of guiding principles and approaches for South-South Development Cooperation (SSDC). This is because there is lack of transparency and availability of information on measuring quality and process of South-South cooperation.

In the built environment sector, Czerniewicz and others [12] posit that knowledge from the North still dominates all metrics and they present their own study of knowledge production and dissemination in the climate change arena in an African setting. They interrogate global dynamics of knowledge production and dissemination and use local climate change research to highlight their argument for different ways of thinking and production of measurement metrics. They argue that in the tension between adaptation and mitigation, mitigation is still largely the focus in the North by nature of its development trends. Furthermore, Southern researchers are under-represented in organisations such as the IPCC [13]. They also claim that knowledge formation is “shaped by factors that include what is found, how it is found, on and what basis research content is selected, prioritised and ranked online” (p. 391).

UN Development Program [14] has raised the disparities between the Global North and the Global South and noted that while previous decades have indeed focused on North-South learning, emerging evidence suggests that due to differing national and local contexts, South-North learning is becoming a reality. Activists, policy makers and professionals are working in increasingly diverse milieu in planning, evaluation and learning from the South to the North. This recognition of changing context is slowly permeating across various sectors, including the built environment. Such examples of
recognition of South-North learning is not the norm and demonstrates a gap in the types of collaboration currently used.

4.2. Knowledge sharing and outcomes
In the context of how knowledge may be gleaned from learning processes, there are two main considerations. One is how the learnings may be translated into knowledge and the other is about the enabling mechanisms to support the learning outcomes. In this latter context, it is also important to consider non-western approaches and understandings of learning and knowledge transfers.

Lewis [15] highlights the differences between transfer of knowledge and the exchange of knowledge. He argues that currently, South-South cooperation is noteworthy by many global agencies and intergovernmental organisations, and indeed, the learnings are more relevant from South-South context rather than from a North-South context. He raises pertinent questions about whether the global North can also learn from the poorer South and if so, what may be the learnings? Examples provided by Lewis include NGOs drawing from/learning from developing countries such as BRAC (an NGO, international development organisation in Bangladesh), which has extended its role across Africa and other countries in Asia not to mention other collaborative partnerships with governments the world over.

Using the example of soft accountability Kim and Lim [16] introduce the concept of soft accountability through South-South cooperation. They highlight the use of responsibility, answerability and enforceability as three defining concepts of accountability through four examples of South-South cooperation mechanisms. To sustain ongoing management, they argue that reducing ‘buck-passing’ is critical.

When considering the contexts for sharing learnings and knowledge, two examples from Australia are presented to highlight the point. In the context of the teaching profession involving remote indigenous communities in Australia, research by Hall and others [17] show working together in an intercultural setting and engaging in reflections of the process itself demonstrates the true impact of interchange in aboriginal settlements. This is not straightforward; there exist tensions with western approaches to undertaking research, where attention is paid to ‘objective’ research. In fact, research is often driven by the need to be considered to be objective. In Australian indigenous settings, it is the relationship itself and the ‘truth’ and trust of the relationship that drives the research, rather than the ‘objectification’ of the research. It is in doing things together, in joint ownership and ‘good feeling’ arising from the collaborative process that drives the research, and therefore capturing the knowledge. The coming together for common concerns is the very basis for relational and ethical knowledge sharing and building.

Likewise, Buchanan and others [18] show that meaningful discussions, ideas and practices arising from engagement with indigenous communities lead to real, honest and truthful knowledge exchange. This is also highlighted by Benveniste and King [19] where they discuss ethical research tensions with approaches used in undertaking a ‘western’ based research approach with the Australian indigenous families and communities. The application of such indigenous approaches for undertaking research causes tensions and interference with dominant western well-known and accepted methodologies. Thus, it begs the question that if genuine knowledge transfer is to take place, it needs to acknowledge non-western approaches of transfer and cross learnings as appropriate for the context.

5. Workshop outcomes
Focusing on Dutch best practices during the workshop was driven by the assumption that since Europe is far more advanced in circularity issues than the African or Asian context, the knowledge workshops’ goals would be easily achieved in a traditional North-South learning paradigm. However, the roughly half Dutch participants of the workshop clearly did not think so as the discussions demonstrated. The rich discussions that ensued during the workshop clearly demonstrated that the Dutch were open to learning and understanding some of the traditional and indigenous approaches to circularity practices including construction techniques, materials and processes from Latin America, Asia and Africa.
Practical considerations of South-North learning include learning from traditional cultures and their understanding of spiritual and physical relationships with the natural world. When considering early civilisation and even in traditional cultures today, there is a very strong relationship between nature and everyday life. Everything was local, including food and materials used in day to day life but over the last century, increased globalisation has contributed to our enormous footprint and put us in the wrong trajectory of unsustainable production and consumption practices. There was a clear agreement to learn from such cultures and traditions and support emerging growth areas of the world, moving away from unsustainable patterns. The following points encapsulate the high-level discussions that arose in the context of circularity in the built environment.

5.1. Value
Value needs to be redefined and how circularity enhances value needs to be communicated.
- There is need to move from current standard linear thinking to utilisation rates that supports long term thinking of a product/material or assembly in the built environment. Therefore, for physical systems, the shift needs to be made ensuring the value created is maintained or enhanced. The value itself needs to be defined so that it supports alternative thinking (sustainability and circular thinking) for enhancing value.
- The acknowledgement that there is a shift from sustainability only to value creation is critical for the move to a circular built environment (i.e. need to promote how applying circularity principles creates more value compared to current business as usual (BAU) approaches). Implementation needs to take place at a grass roots level, but also supported by top down policy targets and legislation at a national level. Regulation will assist in supporting minimum standards.

5.2. Education and capacity building
Education and capacity building are needed in the move to circularity.
- Education and capacity building are critical. Both vocational and higher educational structures need to consider circularity thinking as part of curricula. Flexible curricula with pathways from vocational to higher education need to be created.
- Co creation has an important role of play in this process. Not just learning within disciplines, but also interdisciplinary and transdisciplinary engagement (as appropriate) is critical. Therefore, the role of living labs in such a scenario can ensure in maintaining systemic shifts from linear to circular thinking.
- Since a number of disciplines are often engaged in the process of such systemic learnings, multidisciplinary engagement is required. This needs immediate attention at secondary and tertiary levels of education.
- The role of the informal sector (and therefore, informal education/skills) also needs to be recognised. In many countries, the informal sector is the backbone of the building and construction industry.

5.3. Current assets
Understanding currently available assets is necessary.
- The role of diversity both in terms of needs and in terms of availability of built environmental materials/assets needs to be recognised and nurtured. Secondary resource streams need to be considered. In addition to others, in the developing regions, the role of bio-mass as a viable option for energy generation needs to be tapped. Stigma associated with recycled products needs to be questioned, and convincing arguments with the assistance of social media needs to be generated to support innovation and testing.
- Small scale manufacturing needs to be supported to explore the possibilities of reusing waste and developing more nature-based solutions. Innovative labs and start-ups, large scale
prefabrication, all have their place in such systemic approaches to circularity in the built environment. In this context, low cost or appropriate technology solutions are also important.

5.4. Establishing base lines, monitoring and evaluation
Research and data capture to establish base lines, monitoring and evaluation are indispensable.

- Data needs to be captured, base lines developed, and monitoring and evaluation needs to be undertaken. Tracking and tracing are critical for transparency and supports one of the key principles for circularity.
- Research capacities need to be built upon. The traditional North-South learning models also need to be questioned. There is a learning paradigm that may be generated for all sorts of learning combinations and therefore, collective sharing platforms need to be encouraged and supported with South-South and South-North learning models also considered as appropriate.
- Traditionally in the built environment learning through case studies, and best practice examples have been the norm. This needs to be expanded to be captured and shared. Case studies need to be drafted, collated and published in open source platforms for sharing

5.5. Regulation and standardisation
There is a role for regulation and standardisation.

- While at the innovative level there are opportunities, these opportunities also need to be converted into legislative and regulatory frameworks as appropriate. For instance, building codes need to be supportive of such shifts in paradigms. Building regulations will support only the minimum standards to develop a level playing field, whereas innovation is always driving the reach into newer ways of practice.
- Systematic, networked engagement will also support to make case-base evidence for a level playing field through standards and regulatory environments.

Experimenting, innovating and learning across different contexts are important tenets to learning. Thinking in duopolistic terms is not inherently supportive of the world we currently live in, nor is it supportive of diverse approaches to find solutions.

6. Discussions and conclusions
The paper discusses and presents on learning and knowledge exchange between actors in the global North and global South with respect to circularity in the built environment. The assumption underpinning the development of the knowledge workshop was that there would be knowledge transfer from the learning of best practice examples of circularity in the built environment, particularly from The Netherlands. What eventuated was a better learning outcome for the participants; knowledge exchange through the process rather than knowledge transfer. Actors from both the South and the North were able to engage with each other meaningfully and come to a shared understanding on a collaborative platform for engagement. The collaborations highlighted the need to evaluate value, focus on education and capacity building, recognising current assets, establishing base lines and the importance of tracking supported by an enabling regulatory environment. The collaborations reinforced and supported some traditional practices that are quickly eroding in the new growth regions of the world.

The key driver resulting in these outcomes was a recognition of the imminent danger of global system collapse and an urgency to embrace a new paradigm shift. There was also a recognition that since the task is complex and there are multifaceted considerations, it is difficult to wait for the ‘perfect storm’. Therefore, it was suggested that while grass roots engagement and development need to be supported and nurtured (‘just do it’), government should ‘lead by example’, such as not just by integrating circularity in its construction projects but also involving/engaging other stakeholders in developing/designing appropriate solutions.

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