

A bottom-up perspective on SDGs: The subsistence marketplaces approach

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ABSTRACT

Purpose

This paper outlines the unique bottom-up perspective that the subsistence marketplaces stream of research provides on the United Nations' Sustainable Development Goals (SDGs), as well as how the SDGs can influence future work in subsistence marketplaces.

Approach

We present an overview and commentary on the subsistence marketplaces stream of research, referring to people and communities who live on low incomes, and its implications for the SDGs.

Findings

In contrast to other approaches at the intersection of business and low income, the subsistence marketplaces stream of research employs a bottom-up perspective to understand life circumstances at a micro level. As a result, unique synergies connecting a diverse set of stakeholders have been developed across research, education, and social enterprise. The subsistence marketplaces perspective emphasises how the SDGs can be addressed while listening to the voices of subsistence consumers as sustainable solutions are developed for large challenges such as poverty, hunger, education, justice, and equality. In turn, the use of SDGs provides insight into future directions for stakeholders working in subsistence marketplaces.

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Limitations

A challenge in working from a bottom-up perspective is how to identify what is generalisable across contexts versus idiosyncratic to some contexts.

Implications

The bottom-up perspective of the subsistence marketplaces stream of research is useful in directly addressing SDGs that are focused on basic needs (e.g., poverty, hunger, water, education), i.e., domains of subsistence, and indirectly addressing higher-order goals.

Contribution

This paper highlights a stream of research that has focused on subsistence individuals, who have long been underserved by business and are often overlooked by academic scholarship. This stream of research uses a unique approach to connect a diverse set of stakeholders in such a way that orients understanding of the everyday life circumstances of subsistence individuals and communities. This approach offers insight into how the SDGs should be approached to have a greater, more meaningful, impact on subsistence communities.

Keywords Subsistence, Poverty, Sustainable Development Goals, Marketing education, Marketplace literacy

INTRODUCTION

The UN General Assembly implemented the 2030 Development Agenda to improve life worldwide in five categories: People, Planet, Prosperity, Peace, and Partnership, which included 17 Sustainable Development Goals (SDGs) with 169 associated targets (United Nations, 2015). These SDGs built upon the Millennium Development Goals (MDGs) previously adopted by the UN to achieve the eradication of extreme hunger and poverty, universal primary education, the improvement of health for women and children, gender equality, and environmental sustainability (United Nations, 2000). SDGs extend MDGs by offering specific, ambitious goals to improve life in multi-faceted ways, including environmental sustainability, quality of life, and increased peace and justice (see Table 1).

In this paper, we present the stream of work on subsistence marketplaces, defined by a bottom-up approach, and the resulting unique insights for SDGs relevant to researchers, educators, and practitioners. Over the past two decades, the subsistence marketplaces stream of research has studied life circumstances and constraints in low income communities (e.g., Viswanathan, 2013, 2016; Viswanathan & Rosa, 2007). This research stream has examined key characteristics of subsistence life circumstances, including the impact of low income, low literacy and education, and consequent coping, across domains of subsistence (e.g., food and nutrition, water, health, sanitation, education). Field work and outreach work has occurred in various settings globally, including developing nations such as India, Tanzania, Uganda, Argentina, Honduras, and Mexico, and the advanced economy of the US. This research developed in parallel with dissemination efforts (e.g., academic

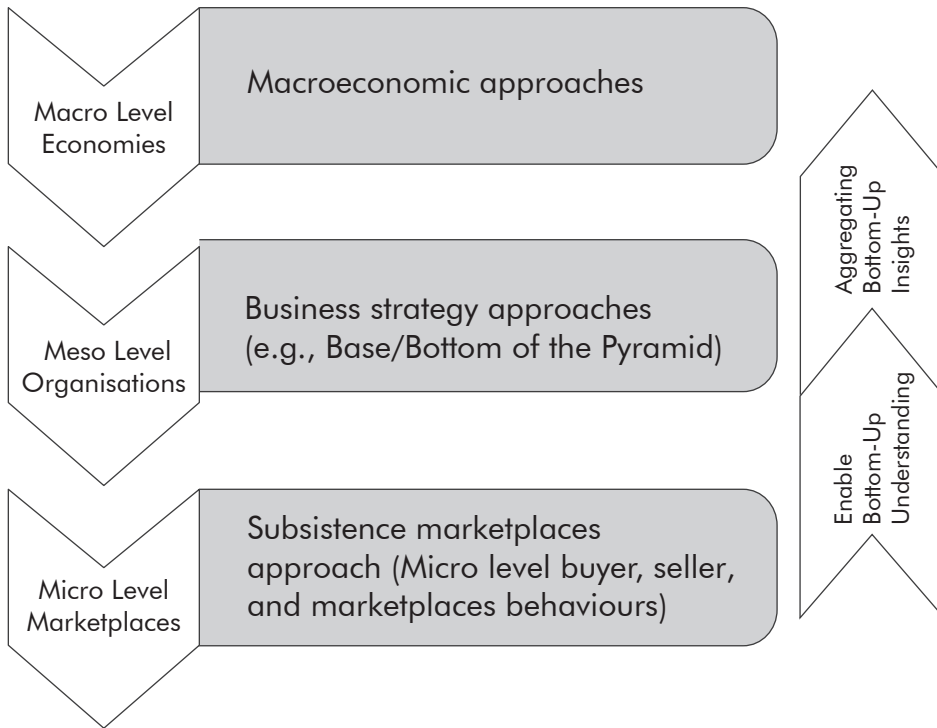
conferences, educational/social programmes) designed to directly impact people living in subsistence.

The subsistence marketplaces research stream studies subsistence marketplaces from a bottom-up perspective (Venugopal & Viswanathan, 2015; Viswanathan & Rosa, 2007), gaining insight on policy and programme design based on everyday life, with an emphasis on the marketplace arena (Viswanathan, Sridharan, Gau, & Ritchie, 2009). This bottom-up perspective (Figure 1) contrasts with meso level perspectives on poverty alleviation with organisations as a focal actor, such as the

TABLE 1 The 17 Sustainable Development Goals, with accompanying statements

Goal	Statement
Goal 1: No poverty	End poverty in all its forms everywhere
Goal 2: Zero hunger	End hunger, achieve food security and improved nutrition and promote sustainable agriculture
Goal 3: Good health and well-being	Ensure healthy lives and promote well-being for all at all ages
Goal 4: Quality education	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
Goal 5: Gender equality	Achieve gender equality and empower all women and girls
Goal 6: Clean water and sanitation	Ensure availability and sustainable management of water and sanitation for all
Goal 7: Affordable and clean energy	Ensure access to affordable, reliable, sustainable and modern energy for all
Goal 8: Decent work and economic growth	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
Goal 9: Industry, innovation and infrastructure	Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation
Goal 10: Reduced inequalities	Reduce inequality within and among countries
Goal 11: Sustainable cities and communities	Make cities and human settlements inclusive, safe, resilient and sustainable
Goal 12: Responsible consumption and production	Ensure sustainable consumption and production patterns
Goal 13: Climate action	Take urgent action to combat climate change and its impacts
Goal 14: Life below water	Conserve and sustainably use the oceans, seas and marine resources for sustainable development
Goal 15: Life on land	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
Goal 16: Peace, justice and strong institutions	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
Goal 17: Partnerships for the goals	Strengthen the means of implementation and revitalise the global partnership for sustainable development

Source: United Nations, 2018

FIGURE 1 Micro-, meso-, and macro-level approaches to low income contexts

Adapted from Viswanathan & Venugopal, 2015

Base of the Pyramid (Prahalad, 2004), or macro-level perspectives employed by larger, international organisations such as the World Bank, IMF, or the UN.

In this paper, we examine SDGs through a bottom-up, subsistence marketplaces perspective. This approach enables unique insights into how SDGs relate to poverty alleviation and development efforts in the emerging world, impacting how policy should be considered. We first present a brief review of SDGs, followed by an overview of the subsistence marketplaces stream of research, highlighting the underlying approach, key research findings, and impact on subsistence individuals and communities. We then discuss how this perspective offers unique insight into various aspects of SDGs, and vice versa. Finally, we present a discussion on proposed future directions for stakeholders working in subsistence contexts.

SUSTAINABLE DEVELOPMENT GOALS

The creation of the SDGs has spurred research across disciplines, resulting in calls for new directions, in fields ranging from the natural environment in the form of agriculture and soil science (Keesstra et al., 2016), and ecology (Wood & DeClerck, 2015), to human well-being, such as public health (Buse & Hawkes, 2015; Liu et al., 2016) and water treatment (Malik, Hsu, Johnson, & de Sherbinin, 2015), to

technological fields such as telecommunications (Wu, Guo, Huang, Liu, & Xiang, 2018). Additionally, there have been numerous examples calling for the development of useful metrics for tracking the progress of SDGs (Hák, Janoušková, & Moldan, 2016; Lu, Nakicenovic, Visbeck, & Stevance, 2015).

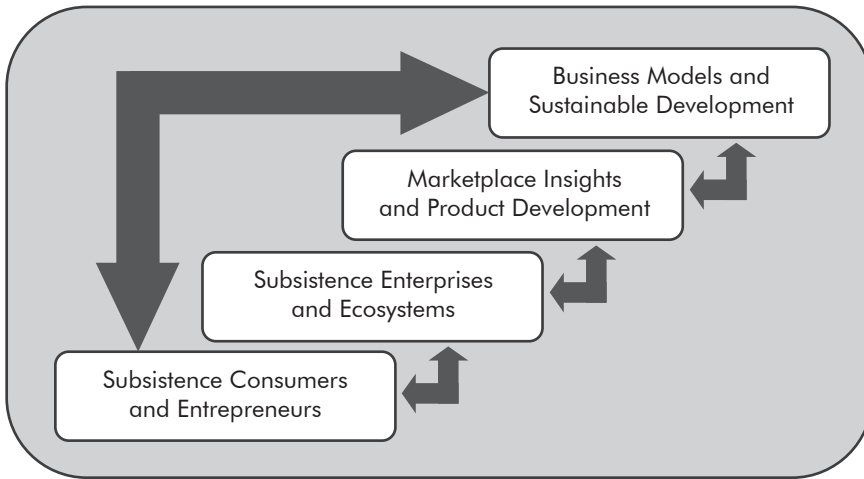
An overarching theme in the SDGs is the balance of human needs with sustainable development, accounting for environmental impacts that improve livelihoods and consumption for millions living in poverty (Griggs et al., 2013). For example, Chinese economic development since 2000 has greatly impacted the relative success of MDGs (Sachs, 2012). However, that development comes with environmental concerns (e.g., air and water quality) associated with increased power generation, transportation, and mechanisation. Thus, SDGs have been considered as a network of phenomena linked in success or failure, rather than independent goals (Le Blanc, 2015). Examining SDGs as a network of phenomena requires that social impact be considered from different perspectives. Questions surrounding sustainable growth have impacted governance and policy issues across many levels, including government, business (Bebbington & Unerman, 2018; Biermann, Kanie & Kim, 2017), and culture (Xiao et al., 2018). Insight through varied social lenses is required to ensure equitable development from SDG achievement (Briant Carant, 2017; Esquivel, 2016; Stuart & Woodroffe, 2016).

This highlights the need to avoid exclusively top-down approaches adopted in the past (Hajer et al., 2015), and to instead integrate stakeholders needs across all levels and disciplines (Rasul, 2016). For example, health and nutrition-based outcomes connect to SDGs regarding agriculture and food access. These goals directly relate to poverty alleviation and vocational training, particularly when subsistence individuals rely on agriculture for labour and income. This points to the immense challenge of accomplishing 17 SDGs, given the potential for unforeseen consequences and interactions associated with addressing such complex problems (Nilsson, Griggs, & Visbeck, 2016). Overall, this literature emphasises the importance of building connections with various stakeholders in different fields and contexts.

THE SUBSISTENCE MARKETPLACES INITIATIVE

The subsistence marketplaces initiative began with the objective of understanding consumption and exchange in low-income, low-resource contexts. This stream of research paralleled movements that highlighted poverty (e.g., Base of the Pyramid [BOP]) or consumer well-being (e.g., Transformative Consumer Research [TCR]) in business research (Mick, 2006; Prahalad, 2004; Prahalad & Hammond, 2002). While these research streams shared broad goals associated with improving the lives of vulnerable consumers, their approaches differed in fundamental ways. The BOP paradigm is characterised by work at the meso level, focusing on organisations. This work emphasises the potential of areas of poverty as new markets (Prahalad & Hart, 2002) or sources of innovation (Hart & Christensen, 2002), with a broad idea that increased availability of necessary products and services and connections with business would improve the life circumstances of BOP consumers. The TCR movement focuses on how academic scholarship interacts with consumers, emphasising that scholarship should be proactive in improving life, rather than be dispassionate and at arm's length from those being studied (e.g., Mick, 2006).

While the subsistence marketplaces approach shares much with BOP and TCR approaches, there are meaningful differences. The subsistence marketplaces approach

FIGURE 2 The bottom-up approach

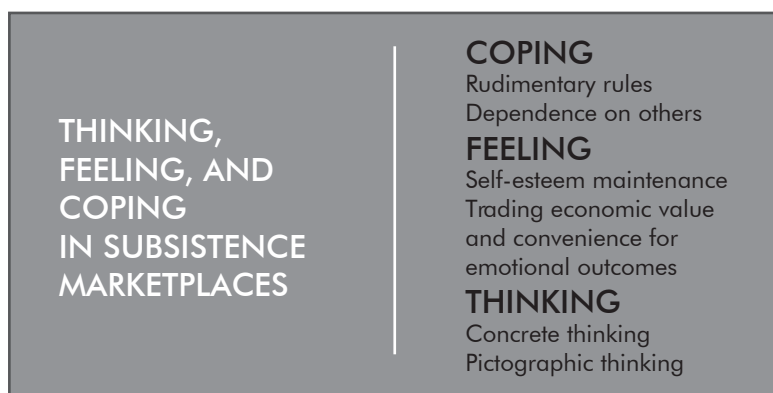
Adapted from Viswanathan & Venugopal, 2015

builds around bottom-up understanding of how consumers with limited economic, cognitive, and/or social resources, navigate everyday life in subsistence. An emphasis is placed on literacy, particularly marketplace literacy, which represents consumers' ability to effectively allocate scarce resources towards products and services necessary for day-to-day survival (e.g., Viswanathan, Rosa, & Harris, 2005). Additionally, buyers and sellers in subsistence marketplaces are often the same individuals, as entrepreneurship is a way for subsistence consumers to generate the necessary income to survive (e.g., Viswanathan, Rosa, & Ruth, 2010), which roots this approach in the importance of consumer-entrepreneur interactions with the marketplace. The subsistence marketplaces approach directly aligns with SDGs relating to poverty, hunger, water, health, education, and energy, that fundamentally impact subsistence life. This approach also aligns with SDGs' emphasis on networks of partnerships for solving complex problems, by emphasising collaborations across disciplines and among stakeholders (e.g., individuals and communities, NGOs, social enterprises, government organisations, corporations).

Unique to this approach is a focus on marketplaces, specifically termed to engender a mindset of understanding pre-existing marketplaces as a basis for designing solutions (Figure 2). With a marketplace emphasis, SDGs relating to sustainable consumption and production, inequality, and economic growth are captured as well. The bottom-up approach to research starts with individual life circumstances at the micro level, a counterbalance to the top-down sustainability goals, providing understanding of what people in subsistence strive to sustain.

Key findings from research

Subsistence consumers face choices in terms of making, or foregoing, rather than buying, with necessary products and services often out of reach (Viswanathan et al., 2009). The uncertainty and lack of margin of error at the heart of low-income contexts has been studied in various ways. Poverty has been unpacked beyond the

FIGURE 3 Thinking, feeling, and coping in subsistence marketplaces

Adapted from Viswanathan et al., 2005

material, to encompass cognitive, affective, and behavioural constraints. Subsistence contexts also reveal the potential for social/relational richness, where individual roles as consumers and entrepreneurs blur with broader life circumstances, the community, and the larger context.

A number of cognitive predilections have emerged from this research stream, offering insight into decision-making processes of subsistence consumers. Concrete and pictographic thinking, tradeoffs rooted in self-esteem maintenance during decision-making, and the use of coping strategies, provide the micro-level foundation (Viswanathan et al., 2005; see also Figure 3). For instance, low literacy leads to concrete thinking, due to difficulty with abstractions. This results in difficulty in envisioning across time, geography, social circles, etc., leading to a preponderant focus on the immediate (Viswanathan, Echambadi, Venugopal, & Sridharan, 2014).

This research stream also describes how the social milieu blurs within the subsistence marketplace (Viswanathan, Sridharan, Ritchie, Venugopal, & Jung, 2012). Buyer-seller interactions are characterised by fluid transactions, responsive exchanges, and constant customisation. This results in enduring relationships, as well as interactional empathy, and a pervasive interdependence and orality. Overall, there is a 1-1 interactional nature in day-to-day life that is conducive to marketplace learning and skill development.

Research impact through marketplace literacy and subsistence marketplaces education

Using the research as a foundation, a marketplace literacy programme encompassing consumer, entrepreneurial, and sustainability literacy was developed for subsistence consumers (Viswanathan, Sridharan, et al., 2009). This programme uses a bottom-up approach to emphasise deep understanding of marketplaces as a basis for consumer knowledge. Rather than simply teach what to buy/sell, the programme focuses on overcoming the cognitive predilections previously mentioned. Moreover, the programme emphasises self-confidence to address the affective and behavioural issues discussed earlier (i.e., self-efficacy plus efficacy).

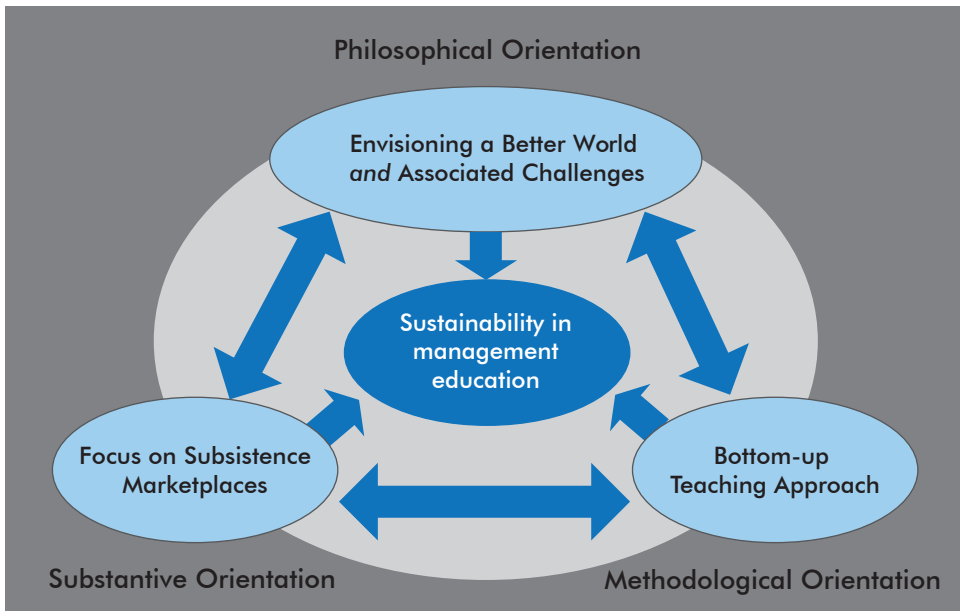
The programme has reached approximately 100,000 individuals in seven countries. The savings from being informed consumers has been immediate, and almost universal. Many families have also benefited from new or expanded livelihood opportunities. Overall, participants have developed self-confidence, social skills, awareness of rights, and the ability to adapt to changing circumstances. The effect of such enlightenment is transformative and potentially life-long.

The practice of marketplace literacy has enriched research and educational efforts within the subsistence marketplaces stream. A number of ongoing research projects within this stream are focused on evaluating marketplace literacy as it relates to other factors, as well as different formulations of it. As such, the research emphasises rigour and relevance and often leads to immediate applications.

Additionally, to further build connections with subsistence marketplaces, we have used research and social enterprise to provide the basis for curricular innovations. We have created a number of undergraduate and graduate educational experiences with sustainability in all its forms at the centre of the curricular innovations (Viswanathan, 2012; Viswanathan, Yassine, & Clarke, 2011). These educational innovations envision a better world, and examine the associated challenges to communicating a philosophical orientation, a substantive orientation on subsistence marketplaces, and a methodological orientation that is from the bottom up (Figure 4).

Additionally, we have created a set of forums through conferences and associated publications to bring together research, enterprise and education. These conferences are interdisciplinary, inter-sector, and integrative, with audiences of researchers, educators, practitioners, and students. The approach is immersive and interactive to

FIGURE 4 Educational innovations about subsistence marketplaces



Adapted from Viswanathan, 2012

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enable dialogue among different stakeholders. Moreover, a newly introduced series of immersion conferences¹ emphasises field interactions rather than presentations, following through on the promise of working from the bottom up.

Overcoming challenges

Over the course of the authors' research efforts, a number of ongoing challenges have emerged, related to connecting to subsistence communities, and then connecting these communities to other stakeholders. One challenge is the bridging of geographic distance to connect with subsistence communities, which requires physical access to hard-to-reach locations (very rural areas, urban slums, etc., many of which have limited infrastructure). By investing in developing teams on the ground, coupled with information technology, we are able to provide virtual means for both research and education, as well as the authors' outreach training to field teams on the ground.

A related challenge is the development of social connections that facilitate access to subsistence communities. Our own work in developing economies often requires overcoming problems associated with a lack of institutional mechanisms and infrastructure. Ironically, these challenges, in developed economies, relate to gaining access to low-income communities, given the lack of social networks that can be prevalent. The authors' approach to overcoming this challenge is through long-term partnerships with other organisations (NGOs, for-profit firms, and government organisations) that operate in subsistence contexts, in both developed and developing economies, to enable greater access to individuals in subsistence marketplaces.

Additionally, there are a number of methodological challenges associated with work in subsistence marketplaces. Broadly, there is difficulty in remaining true to our bottom-up approach, and not relying on previous bottom-up insights that have become top-down "knowledge" as the only baseline. There is also, of course, the difficulty in conducting research and outreach efforts in real-life settings, as opposed to lab settings. In particular, subsistence marketplaces are characterised by a myriad of uncertainties in day-to-day subsistence life, whether from natural events or human-made, such as political instability.

A final challenge in the subsistence marketplaces approach is in transferring knowledge across contexts. Concepts and tactics that work in one context, within a given culture, are not guaranteed to work for a different setting. In acknowledging the differences across subsistence contexts, the use of a bottom-up perspective allows for unique insights into everyday life within a given context. These insights are then aggregated across contexts while considering the impact of some important contingencies, to develop specific recommendations.

SUBSISTENCE MARKETPLACES AND SDGS

The review of the underlying philosophy and outcomes of the subsistence marketplaces research stream show a number of synergies with SDGs highlighted in this section.

1 This this new series of conferences is envisioned to take place in different continents over time, thus providing an opportunity for researchers, educators, practitioners, and students to engage directly with urban and rural subsistence marketplaces, through conversations and observations. The first Subsistence Marketplaces Immersion Conference was held in early 2018 in Chennai and New Delhi, India. The 2019 conference is scheduled for May, 2019 in Arusha, Tanzania.

Communicating SDGs through classroom settings

From our perspective, an important outcome is the development of an educational platform to raise awareness of SDGs in educational applications in the developed world. In a variety of university-level educational efforts, the bottom-up understanding gained from the subsistence marketplace research stream is used to create virtual immersion for students (e.g., analysing interviews, conducting virtual interviews, analysing day-in-the-life videos and virtual reality content). This sets the stage for actual immersion efforts (field work in subsistence marketplaces) to understand the fundamentally different characteristics of everyday life in subsistence marketplaces. Such immersion creates informed empathy, leading to more focused efforts by students in understanding the impact of SDGs in design, innovation, and enterprise processes in subsistence contexts.

Connecting academia to other stakeholders

Connecting academic researchers to stakeholders, including government organisations, commercial organisations, and non-profits, is crucial in translating SDGs into practice. Each of these stakeholders plays a role by being part of the network involved in learning experiences, and more specifically through research or educational projects.

As a case in point, university education that incorporates subsistence marketplace elements generally involves projects that connect subsistence communities to corporate, social enterprise, and university-based sponsors. This serves as a nexus point that facilitates communications to and from the various stakeholders to better pursue SDGs. Similarly, forums at subsistence marketplace conferences emphasise interdisciplinary and inter-sector interactions, connecting researchers and educators from various disciplines, practitioners from different sectors, and students, with members of subsistence communities. In total, these activities connect the micro level of life circumstances in subsistence communities to a variety of individuals and organisations. These efforts allow stakeholders from developed settings to interact with people in subsistence, across boundaries of culture, geography, and socio-economic status, as well as with NGOs in these places. Each of these stakeholders is also tuned into several SDGs in their own industries and arenas.

Our integrative, immersive and synergetic approach, bridging research, education, and practice, is based on a symbiotic academic-social enterprise. This is a unique model that is distinct from other approaches such as action research. Indeed, we argue that these are the types of efforts to gain insights in radically different contexts that can, in turn, create education for communities and for students and practitioners. Furthermore, the bottom-up approach is particularly germane, as top-down approaches that espouse sustainable solutions are only as good as their adoption and subsequent impact on the ground, in communities that are deprived on multiple fronts. We also note that the research stream is framed in terms of how we can move from subsistence marketplaces to sustainable marketplaces. In this regard, the sustainable solutions created here can, in turn, lead to solutions in all marketplaces.

Insights from SDGs for subsistence marketplaces

SDGs are the most practical representations of the global challenges that humanity faces. Of critical importance is the need to couple broad vision and moral imperative with clear pathways of how to achieve them. This commentary has focused on how

the unique, bottom-up approach employed by the subsistence marketplace stream of research can effectively promote SDGs. In turn, SDGs have important implications for the subsistence marketplaces stream of work.

The first area is with regard to the call for concrete, measurable goals within SDGs. This instills a mindset of achieving goals, as well as implementing concrete measures of impact. In this respect, value judgments, however called for and appropriate, need to be coupled with metrics to measure outcomes and impact. Broad judgments and visions need to be translated into day-to-day actions and measurable outcomes. The bottom-up nature of the subsistence marketplace research stream, built on partnerships across a number of different stakeholders in a variety of contexts, has a number of benefits, as previously mentioned. However, customised partnerships across multiple organisations and projects make it challenging to develop systematic measurements of progress.

A number of challenges also emerge due to the broad nature of the 17 SDGs and the need to be holistic, interdisciplinary and inter-sector. Some SDG topics are directly related to the subsistence marketplaces approach, and have been studied from the outset of this research stream. In our own research, we began with research on poverty, and as such, we examined domains of subsistence where poverty directly impacts everyday life, such as hunger/food, water/sanitation, energy, education, and labour/vocation. As modern topics, such as sustainability and technology, emerge, the impact on subsistence individuals becomes relevant to current and future pathways.

CONCLUSIONS AND FUTURE RESEARCH

The subsistence marketplaces stream of research emerged concurrently with other approaches, such as the BOP. Life in subsistence is characterised by uncertainty surrounding a number of challenges for individuals in different domains of subsistence, overlapping with a number of SDGs - food, water, health care, and education. As such, a number of characteristics of the subsistence marketplaces stream of research are closely related to issues surrounding SDGs. While insights from other perspectives within business research often build from the perspective of firms operating in poorer, developing markets, this stream of research is characterised by bottom-up approaches. The development of informed empathy, beginning at a micro level, is used to better understand the everyday lives of subsistence individuals. A point of emphasis in this work was learning from subsistence individuals to gain insights into issues such as business and marketing in emerging economies, as well as for broader issues such as poverty alleviation, social justice, and the development of public policy in these areas.

The subsistence marketplaces research stream is also interdisciplinary in nature, with the micro level spanning the individual, the household, the community, and so on, encompassing psychological sociological, anthropological and other social science perspectives. Solutions that work at the ground level require interdisciplinary thinking, requiring insights that bridge the technical with the social or the human. Interdisciplinary notions in an academic sense have to be stretched well beyond current formulations to address problems and find sustainable solutions.

A key aspect of the findings from the subsistence marketplace research stream is the complexity and inter-relatedness of everyday issues across multiple stakeholders. For example, issues such as climate change directly impact on consumption and

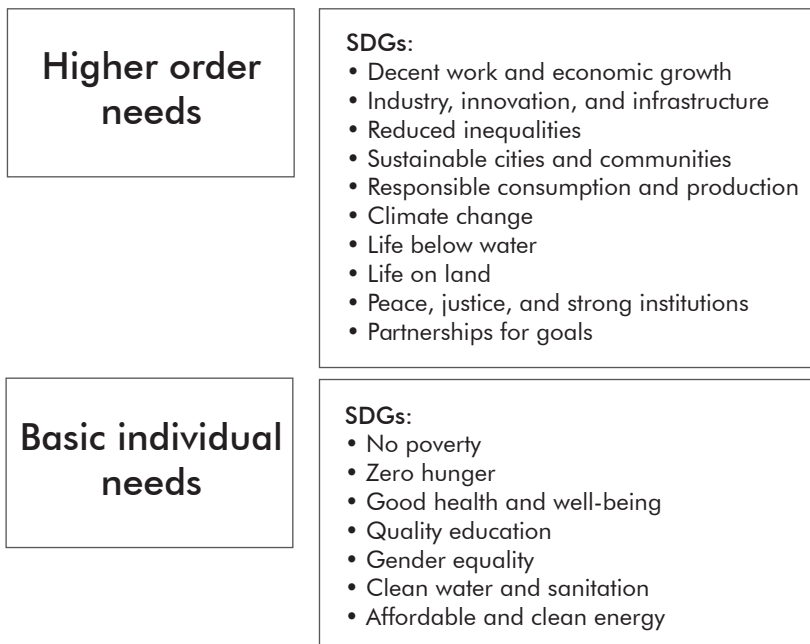
production for subsistence individuals, who often rely on agriculture and aquaculture for their incomes. Issues surrounding technology impact on information flow for subsistence individuals, which in turn impacts on income and gender inequality, and together, these factors impact on how subsistence voices are represented in the emergence of sustainable cities and communities. This highlights the importance of considering the intersection of poverty and the environment, rather than treating them in separate compartments.

The subsistence marketplace research stream brings the voices of subsistence individuals into the achievement of SDGs, when compared to macro-level perspectives. The focus on domains of subsistence intersects with several SDGs, including those related to poverty, health, nutrition, water, energy, climate change, etc. A subset of SDGs is directly related to the unmet basic physical needs that are associated with life in subsistence (Figure 5). How subsistence individuals make trade-offs regarding food, water, and health can be better understood with the bottom-up approach starting at the micro level, as can goals related to such factors as gender equity and access to education, with their cultural underpinnings. A second subset of the SDGs should be considered as community/macro-level needs (Figure 5). For goals regarding issues such as environmental sustainability, infrastructure and urban planning, the bottom-up approach offers a granular insight into how individuals in subsistence are impacted in these areas. The bottom-up approach enables a greater participatory voice for subsistence individuals, who are often the most affected, but have the least say in how change should be enacted.

The subsistence marketplace approach is particularly well suited to address SDGs when the starting point is at the micro level. But we again emphasise the *bottom-up*

FIGURE 5 Basic versus higher-order Sustainable Development Goals

Sustainable Development Goals



approach. Although the micro level covers thinking, feeling, behaviour, relationships, and culture, encompassing rich disciplinary perspectives, moving from the micro to the meso and the macro levels is critically important in the bottom-up approach. We illustrate this in a number of ways. The theme of moving from micro to meso and macro levels is emphasised in conference forums and research on subsistence marketplaces (e.g., Viswanathan et al., 2009; Viswanathan, 2016). This aggregates insights from the micro level to derive implications for meso and macro levels, e.g., for product design and development (Viswanathan et al., 2011), for enterprise models (Viswanathan, 2016), and for environmental sustainability (Gau, Ramirez, Barua, Gonzalez, 2014; Viswanathan, Jung, Venugopal, Minefee, & Jung, 2014). We also note the importance in the bottom-up approach of grounding educational experiences in reality, through virtual immersion via the use of information technologies, as well as actual immersion into the physical subsistence world. Here, extended field research serves to bring reality into the core of educational experiences. Working continuously with real-world sponsors and subsistence communities is another aspect that this approach emphasises. The symbiotic relationships between academic and social enterprises, field teams and subsistence communities, help ground the process, thus, increasing the level of connection to real-world sponsors and students. None of this ensures effectiveness, but does provide an environment where research and educational experiences have an increased probability of relevance for a variety of stakeholders.

The authors highlight a number of characteristics of future research that follow from the discussion. A rigorous, holistic, bottom-up approach is called for in considering SDGs as well as their interrelations in subsistence marketplaces. We also highlight the need for such research to bridge very different disciplines that may be relevant, including technical-social perspectives. Thus, the notion of interdisciplinary research needs to be pushed to its limits, given the challenging nature of SDGs. We also emphasise the conception of such research around practice. Here, stemming from the model of symbiotic academic-social enterprise, we emphasise practice-driven research at the intersection of relevance and rigour. As a case in point, the practice of marketplace literacy has led to a number of practice-based research projects. Ideally, assessing (and sometimes achieving) small scale impact as a self-contained outcome of the research leads to benefits, including the grounding of research questions in implementation processes and increased understanding of what relevance means for future applications.

In conclusion, we emphasise the daunting challenges in meeting SDGs. We offer a pathway grounded from the bottom up, reflecting our experience in seeking solutions for the urgent and large challenges reflected in SDGs. This pathway is offered with complete humility and realisation of the challenges that lie ahead, as well the need for coordinated action that combines the bottom-up with the top-down. Our fundamental motivation is that the bottom-up approach is often neglected, but an important piece of the puzzle in gaining understanding, and in designing and implementing solutions.

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