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Gender and Sustainability: Learning from Women's Farming in Africa

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Abstract: Africa was the only continent not to achieve the 2015 Millennium Development Goal of 50% poverty reduction. This paper asks whether Africa will fare better in meeting Sustainable Development Goals (SDGs) addressing poverty and hunger by 2030. To answer this question, we examine a diverse body of literature and provide relevant longitudinal data collected over 13 years of field research. We find that ‘sustainable development’ is a failed concept immersed in the contemporary global economic system that favors growth over ecosystem stability and international institutions that undervalue women’s capacity for sustainability in their care-work as food providers. We examine barriers to women’s farming (climate change, gender bias, limited access to land, technology, finance) and provide examples of women’s innovative strategies for overcoming barriers in their care practices toward family and community well-being and ecosystem health. We find that Africa will likely repeat past failures without community-level interventions that empower women to achieve SDGs on poverty, hunger, gender equity, and ecosystem management. We uncover similar holistic thinking in women’s agricultural practices and scientific conception of ‘ecosystem services’.

Keywords: sustainability; Sustainable Development Goals; Africa/Ghana; women and gender; agriculture; food security; climate change; capital economics; care labor/logics/practices; ecosystem services

1. Introduction

Africa was the only continent not to achieve the Millennium Development Goal (MDG) of 50% poverty reduction by the goal of 2015 [1]. When the MDG global commitment expired, the Sustainable Development Goals [2] were launched by the United Nations General Assembly with the goals of ‘ending poverty and other deprivations’ by the year 2030, including eradication of extreme poverty and 50% reduction of all who live in poverty [3]. However, will the SDGs be any more successful than the MDGs in sub-Saharan Africa (hereafter ‘Africa’)? Poverty and hunger are closely linked in Africa [4] (pp. 442–443) so African poverty renders Africans vulnerable to food insecurity. This is a gender issue because Africans largely rely on women’s subsistence agriculture to fill national food baskets [5]. We hypothesize that Africa cannot successfully achieve both its economic and food security needs without gender-inclusive approaches that meet the needs of women subsistence farmers. We test this hypothesis by investigating the role of gender in achievement of the SDGs with attention that is focal but not limited to SDG1 on poverty, SDG2 on hunger, and SDG5 on women and gender [2].

Concerning poverty, according to the World Bank, 2020 is the first year in over 20 that global extreme poverty, i.e., living on less than \$1.90 USD per day, is expected to rise as climate impacts on income are exacerbated by COVID-19 [6]. In World Bank income classifications, of the 48 countries listed in sub-Saharan Africa, 26 are Low Income, i.e., have less than \$1005 USD per capita annual income, and 14 are Low Middle Income, i.e., have \$1006–\$3955 USD per capital annual income [7]. Over 54% of

Africa's countries are in the World Bank's lowest income category, into which only a handful of other countries fall. Africa carries a disproportionate poverty burden compared with other regions.

In 2017, the International Monetary Fund (IMF) anticipated that Africa was on the road to economic recovery because its growth in 2017 was likely to reach 2.6%—a promising improvement over 2016's 1.4% [8]. The African Development Bank (ADB) was more optimistic, assessing 2016 Gross Domestic Product growth at 2.2% and anticipating 2017 growth at 3% and 3.7% in 2018 [9]. Yet, according to the 2015 United Nations Millennium Development Goals Report, per capita income in Africa was expected barely to increase, and in fact to decline for approximately 40% of the population, i.e., 400 million people [1]. One explanation for growth without individual income increase is that much of this development depends upon oil resources. The ADB notes, concerning West Africa, that increased growth in the region is derived from four countries' oil revenues, while decline in oil contracts in Nigeria, that account for 72.4% of West Africa's GDP, is holding back the overall growth figure for the region [9]. There is thus reason to believe that the growth increase anticipated by the IMF and the ADB will not necessarily alleviate poverty for many Africans. Moreover, 2018 growth was expected by the ADB to be as high as 3.7%. Growth of 4.5% in the 1990s was, however, inadequate for Africa to reach the 2015 poverty MDG [1]. There is, accordingly, reason to believe that 3.7% growth will likely not be sufficient to achieve 50% poverty reduction in Africa by 2030.

Concerning food security, in 2015, over 98% of the hungry worldwide were in the global South, and over a quarter (27.7%) of them—220 million people—were in Africa [10] (p. 8–10). Nineteen of Africa's 48 sub-Saharan countries, i.e., just under 40%, had experienced food crisis in 8 of the 10 previous years [10] (p. 27). In 2018, the number of hungry Africans had reached 257 million [11]. Meanwhile, the Director-General of a 2018 Food and Agriculture Organization Regional Conference in Africa, José Graziano da Silva, announced that Africa would meet its goal of complete eradication of hunger by 2025 [12], seven years after the conference and five before the SDG deadline.

The UN World Food Programme (WFP) provides a yearly Hunger Map based on the proportion of a country's residents experiencing chronic hunger (CH) [13]. The 2020 Hunger Map shows six countries on the planet with more than 35% (the lowest category) of their population experiencing CH. Four are in Africa: Chad, Liberia, Rwanda, and Madagascar. Another eight fall into the next category of 25% to 34.9% CH, with five in Africa: Sierra Leone, the Republic of Congo, Tanzania, Mozambique, and Lesotho. Africa contains almost two-thirds (9 of 14) of the countries globally in which at least a quarter of the population is in CH, and two-thirds (four of six) of the countries in which more than a third of the population experiences CH. This assessment may not be accurate, however, because the WFP reports that data are not available for 12 sub-Saharan countries. Three of these countries—South Sudan, the Democratic Republic of Congo, and Zimbabwe—are identified elsewhere by the WFP as Global Hotspots that 'will stretch the UN food relief agency to the limit' [14]. CH falls, as does poverty, on Africa disproportionately, and CH in Africa may be worse than is documented in the WFP Hunger Map.

The most threatening challenge to Africa's farmers is climate change because, unchecked, it is moving the planet toward a mass extinction event if the Global Mean Surface Temperature (GMST) increases by 4 °C [15] (p. 19). Climate change is widely recognized as impacting agriculture in Africa by causing droughts, floods, and sporadic, unpredictable rainfall. The IPCC's 5th Assessment Report (AR5) identifies food insecurity as a key climate risk for developing countries [15] (p. 13). Africa's agricultural productivity is expected, with 'high confidence', to be near 'medium risk' by 2030, and well into that risk by 2080, even with adaptations, if the GMST rises above pre-industrial levels by 2 °C, and at 'very high risk' by 2080 if the GMST rises by 4 °C [15]. Vulnerability differs according to multidimensional inequalities, including gender, and the greatest vulnerability is to those who are marginalized socially, economically, culturally, politically, and institutionally [15] (p. 6). Women farmers in Africa are marginalized in all these ways and must struggle with weak land tenure, limited access to finance, resources, technology, and extension services, and persistent social inequalities that hamper their agricultural capacity and productivity [16]. The IPCC makes several recommendations

to build climate resilience in agriculture [15] (p. 2), including technological adaptations, adaptations in agroforestry, and improvement of small holder access to bank accounts.

Concerning gender, agriculture is the primary livelihood for 1.4 billion women globally who live in rural areas [16], and in the global South, women are 43% of the agricultural workforce and 66% of livestock keepers [17]. In Africa, agriculture employs on average about 60% of women, though in rural areas in its Least Developed Countries, women have a significant role in family food security because they grow up to 89% of what is consumed [18]. Rural women are responsible for growing, storing, processing, and preparing food, handling livestock, gathering food, fodder, and fuelwood, managing the domestic water supply, and providing most of the labor for post-harvest activities [19]. The phenomenon of women's increasing role in growing food, attributed to family income diversification that draws men away from farming, is known as the 'feminization of agriculture' in which women increasingly work as small-scale, subsistence farmers, in the global South [20]. The 'feminization of agriculture' is exacerbated by the 'feminization of poverty' that was first recognized at the United Nations Fourth World Conference on Women at Beijing in 1995 [21]. In Africa 26% of households are female-headed, and they contain 20% of the population [22]. Disproportionately disadvantaged households are often headed by women who are widows, divorced or separated, or single [23]. Glazebrook [24] documents a woman supporting as many as 17 people in her household.

The 5th SDG aims at gender equity and empowerment of women and girls. Given women's role in agriculture and food security, SDG5 is connected to SDG2 (hunger). SDG5 is thus also connected to SDG1 (poverty) because of the connection between poverty and hunger noted above. On the basis of these connections at the intersection of poverty, hunger, and gender in Africa, we test whether SDGs 1 and 2 can be achieved without gender equality and women's empowerment that enable gender-inclusive approaches aimed to meet the needs of women subsistence farmers.

2. Materials and Methods

Literature review and empirical methods in field research are the primary methods used. The literature review includes material from academic research using peer-reviewed articles in a diverse array of development, agriculture, science, gender-based, and other journals. Research is also drawn from United Nations documents, including the General Assembly Decision and progress report on the SDGs. Data is collected from UN Organizations, including the Food and Agriculture Organization (FAO, Rome, Italy), the International Fund for Agricultural Development (IFAD, Rome, Italy), the International Monetary Fund (IMF, Washington, DC, USA), and the World Bank Group (WBG, Washington, DC, USA). The UN's Development Programme (UNDP, New York, NY, USA) and World Food Programme (WFP, Rome, Italy) are also consulted. Data are taken from other UN entities, including the SDGs established by the UN General Assembly in 2015 and their MDG precursor, UN Women, UN News, the Intergovernmental Panel on Climate Change (IPCC, Geneva, Switzerland), the Economic Commission for Africa (ECA, Addis Ababa, Ethiopia, and the Brundtland Report, formerly known as the World Commission on Environment and Development. Data are also extracted from the Republic of Ghana concerning its poverty reduction plans created in consultation with the IMF and curated on their website. These data provide a factual basis for analysis and conclusions by generating understanding of the SDGs and, in Africa, poverty, hunger, and women's role in food security and situation as agriculturalists.

Non-governmental organizations (NGOs), e.g., the African Development Bank Group [25], the Social Watch [26], the World Tourism Organization, and the International Institute for Sustainable Development [27] provide data for factual analysis but also diverse perspectives and policy analysis beyond the UN and governments. Other NGOs, e.g., GenderCC, the Chipko movement, the Deccan Development Society, and the Green Belt movement provide examples of women's solutions to improve poverty, hunger, and their empowerment.

In field research, between 2007 and 2018, we targeted key informants in eight positions in government offices as policy-makers and implementers at the national level in Accra, Ghana's

capital, and in regional offices in Bolgatanga in the Upper Eastern Region (UER) for semi-structured interview (SSI). With women farmers in UER, we conducted focus group discussion (FDG) with overall approximately 330 participants, and SSI with approximately 120. Glazebrook also conducted participatory rural appraisals, including participant observation, informal mapping, transect walking, and daily/weekly/seasonal work-schedule tracking during planting, tending, and harvest. Current data analysis uses SPSS. This article draws from several published research outcomes using data collected since 2007 and new data collected in 2018 fieldwork. These data together provide original, longitudinal analysis of policy approaches and women's farming in north-east Ghana as a case study of their challenges and needs in order to assess SDG awareness and address of challenges at the intersection of poverty, hunger, and gender in Africa.

3. Agriculture and Women Farmers in Ghana

Ghana provides an informative example of the situation of women subsistence farmers working in similar conditions in Africa. Its political stability enables longitudinal research that allows tracking of emerging, developing, and evolving conditions distinct from anomalous events. The Sudan-Savanna extends from Africa's west coast well into East Africa, so the strongest commonalities with Ghana are in the East and West regions.

Ghana's population relies on its farmers. They are 52% of Ghana's work force and provide over 90% of what Ghanaians eat [28]. Just under a quarter of Ghana's total land (58,000 km²) is cultivated, though well over half (57%) is classified as agricultural. Only 110 km² (11,000 hectares), i.e., less than 2%, are under irrigation [28] and Ghanaian farmers rely almost entirely on rains. This means they grow once a year in the rainy season, roughly April to October in the north and March to November in the south, though they typically plant some fields more than once. For example, women subsistence farmers often grow early millet (*Pennisetum glaucum*, also known as *P. typhoides*) that is Ghana's fourth most important cereal [29], and then plant the field again. Bambara beans (*Vigna subterranean* [30], also known as garbonzo beans or chickpeas, are also planted as a nitrogen fix to prepare the soil for another crop [24].

Agriculture plays an important role in Ghana's poverty alleviation. In 2017, agriculture contributed 20% of its GDP [31]. In 2018, increase in the proportion of agricultural contribution to export earnings (40%) and GDP (54%) [32] helped Ghana attain low-middle income status in World Bank classification [33]. Ghana appears just the kind of success story the FAO 2018 Regional Conference promised. Yet proportionately, the increase in agricultural contribution to GDP is not necessarily indicative of growth in agriculture so much as decline in other sectors.

Northern areas in Ghana have been experiencing on-going crop decline since at least 2007 [24] and hunger in these rural areas has rapidly increased due to climate impacts of drought, flood, and unpredictable rain patterns [24]. By 2012, three Regions were experiencing severe food insecurity in over 10% of households and moderate in 44% [34]. Adaptations include crop selection, e.g., moving to rice rather than millet because rice fares better in sporadic rainfall, though this strategy sacrifices nutrition in order to have something that will grow reliably [35]. Rice is a temporary solution because every 1 °C rise in GMST correlates with 10% decline in rice [36]. These issues affect both male and female farmers, but in many countries like Ghana, family food security is largely provided by women.

Women are 39% of Ghana's farmers [28] but fill between 55% and 87% of the national food basket depending on the reporting source [26,37]. This broad range in the data is a consequence of cascading factors. The first is that traditional economic indicators are market-based and accordingly do not track subsistence economies. This contributes to women's economic invisibility [38] that is further exacerbated by economic limitations, poor organization in governance, gender bias, and persistent social and economic inequalities such as lack of land tenure and poor access to finance, technologies, and extension services [16]. Moreover, government knowledge of and intent to address women farmers' challenges can be stymied by international finance mechanisms [39].

For example, the initial submission of Ghana's first Poverty Reduction Strategy (GPRS) [37] was completed in consultation with a consortium of women's groups, including access for women in rural, northern areas. The document identified gender equity as one of its strategies to achieve its goals of sustainable, equitable growth, accelerated poverty reduction, and protection of the vulnerable and excluded. The IMF response briefly acknowledged women's poverty and vulnerability, focused on market factors, and returned to gender in terms of the education gap [39]. Dependency on IMF assessments for World Bank support, as is common for low-income countries, made Ghana unable to maintain its proposal to target women farmers with support programs such as credit, improved technology services, and skills upgrading. The IMF approach of educating girls in preparation for their participation in the Ghanaian economy left women farmers without the support the Government of Ghana intended. The consequences are a substantial number of educated, unemployed young women who want paid work rather than to farm, and a generation of economically invisible, aging women obliged to continue their labor with still almost no access to finance and technology during the beginning of agricultural collapse in some areas of Ghana.

4. SDG Impediments and Confluence

The 2019 UN report on progress toward the SDGs notes that it has been slow and that the most vulnerable continue to suffer the most [40]. The report attributes this slowness to inadequately ambitious global response. Another issue goes to the institutional core of the UN itself in bringing the SDGs to community contexts: The UN and its signatory governments conceive and articulate the SDGs using assumptions about the 'universal' applicability of the aims and approaches of the SDGs, despite the many contexts and knowledge-systems for which they are intended to drive change. The idea of universality has a long history and in the 17th century and subsequent Enlightenment emerged as foundational to the epistemology of European science through, for example, Galileo's claim that the universe is a book written in the language of mathematics [41], Descartes' totalizing of the ego cogito [42], and Newton's third Rule of Reasoning that any quality belonging to bodies tested in his experiments should 'be esteemed the universal qualities of all bodies whatsoever' [43]. Assumption of the concept of universality is an issue for the SDGs because local needs do not meld well into up-scaled solutions that cannot nuance local contexts. Sustainability requires active involvement of local communities [44]. Concerning food security in particular, the connection between food production and consumption must match local contexts if the supply-chain problem of the 'Missing Middle' is to be resolved to achieve SDG2 [45].

Multiple challenges have been identified in Africa. Hall et al. [46] identify poverty-related stressors as a general impediment to Africa achieving SDGs. Other challenges are more complex. Impacts across SDGs is especially challenging when SDGs work against each other. For example, market-oriented intensification and increased production cause market gains that advance SDG1, but market gains also correlate with increased food-related illness that hampers SDG3 on public health [47]. Similarly, urban migration can support SDG1 but work against SDG2. A common poverty reduction strategy in Africa is to move into cities where there are more employment opportunities. This strategy drives urbanization. In Ghana, for example, the proportion of the population in cities went from 43.8% in 2000 to 50.9% in 2010 [48]. Urban migration also, however, affects SDG2. As populations shift, so do funding priorities and urban migration often leaves rural areas neglected in development [48]. This funding priority shift can draw resources from agricultural development in rural areas. Agriculture is also an urban fringe activity and urban growth adversely affects the livelihoods of fringe communities [44].

A significant challenge in Africa to achieving SDGs 1 and 2 simultaneously with SDG13 on climate change is the tension between oil wealth that promises a pathway for overcoming poverty and the climate impacts on agriculture caused by the burning of fossil fuels. Ghana, for example, discovered oil offshore in 2007, first produced it in 2011, and has since developed this resource that has immense potential to benefit Ghanaians [49]. Oil is also recognized as a 'resource curse' because of its role as a

‘windfall’ resource that pushes out other industry [50], but more significantly in Africa, because of corruption [51,52], conflict [53,54], and environmental devastation [55].

Agriculture also generates greenhouse gases (GHGs) when it relies upon livestock production that is the largest CO₂ emitter in the agricultural sector [56]. Livestock are commonly kept throughout Africa and, along with CO₂, also emit substantial volumes (approximately 6% of ingested energy) of methane (CH₄) that is a far more powerful GHG than CO₂ and anticipated to contribute 2% to global warming throughout the 21st century [57]. Growth in livestock can increase productivity and supply to address poverty and hunger but also works against SDG13 (on climate) by generating GHGs.

Climate Smart Agriculture (CSA) is anticipated as a promising approach to food security with potential to implement SDG2 and SDG13 on climate simultaneously, but not without significant challenge. Newell et al.’s [58] study of political, economic, and governance challenges in four East African countries, using CSA to address both these SDGs, found that governments must navigate a diversity of approaches that entail ‘choices and conflicts, synergies and trade-offs.’ Partey et al. [59] found that CSA ‘seems to be a suitable strategy’ in West Africa for adapting to climate variability and managing crop production risks. In particular, agroforestry, soil and water conservation technologies, and climate information services were identified as ‘highly valued promising options’ for managing variability and risk, and multi-level (community, national, and regional), multi-stakeholder innovation and dialogue platforms were recommended to overcome lack of clear conceptual understanding of CSA in both farming households and policy-making contexts. CSA implementation remains stymied, however, by limitations in both policy and financial supports [59].

Despite these several challenges, Jagustovića et al. [60] found in a study conducted in a climate-smart village in northern Ghana with women farmers that CSA has the potential to contribute simultaneously to achievement of SDGs 1, 2, 5 (gender), 13 (climate), and 15 (terrestrial ecosystem health). Their method used systems thinking (ST) as a conceptual approach and complex adaptive system (CAS) attributes as a framework to examine what contribution ST and CAS attributes make to understanding and scaling up sustainable food production using CSA. ST sessions were conducted with the women that resulted in identification of income-generating and tree-planting activities that had system-wide affordances and beneficial effects on the women’s finances, food security, and empowerment, as well as generating climate mitigation and ecosystem remediation.

This is just one example, but it demonstrates how innovative, on-the-ground approaches in partnership with practitioners in local communities can enable transformative change. Concerning food security in Africa, women subsistence farmers, as noted above, make up the majority of practitioners. It also begs the question whether gender inclusion in agricultural, climate, and economic policy design, all of which intersect in women’s subsistence farming activities, is advantageous for achieving the SDGs.

5. Women and Gender in the SDGs

The July 2019 Report of the UN Secretary-General, António Guterres, on progress to the SDGs stated that in approximately 90 countries, women daily contribute three times more hours than men to unpaid care and domestic work, which limits their time for education, paid work, and leisure, and reinforces socioeconomic gender bias and disadvantages [40]. S-G Guterres also reported women’s under-representation at all levels of political leadership, with average representation in Parliaments of 24.2%, a mean of 26% in elected, deliberative bodies, and 27% representation in managerial positions (up only 1% since 2015) despite being 39% of the employed. A UN Women report on SDG progress in the same year indicated further, concerning wealth, hunger, and agriculture, that women, in comparison with men, are overall 4% (though 25% between the ages of 25–34) more likely to live in extreme poverty, have a 10% higher risk of food insecurity, and are 13.8% of landholders though 38.7% of employed women work in agriculture, forestry and fisheries [61].

In the articulation of SDGs by the UN General Assembly, the word ‘women’ figures primarily in the phrases ‘men, women, and children’ and ‘all men and women’ [2] Women are explicitly mentioned

in 8 of the 17 SDGs. In SDG1, 'men and women' are discussed twice with respect to reducing poverty and establishing equal rights to economic resources, basic services, ownership and control of land, property, inheritance, natural resources, technology, and financial services. SDG2 calls for the end of malnutrition, with specific attention to adolescent girls and pregnant or lactating women. SDG4 aims at women's education and literacy. SDG5 aims at gender equality and women's empowerment by ending discrimination, violence, and harmful practices; recognizing women's unpaid and domestic labor; ensuring women's access to sexual and reproductive health and rights; full participation in leadership, decision-making in political, economic, and public life; reform to give women access to economic resources and ownership of land and other property; enhanced use of technology, especially information and communication technologies; and policy and legislation to promote women's empowerment and gender equality. SDG6 on water provisions for women's hygiene. SDG8 calls for employment and decent work for all men and women, and calls for protection of labor rights, especially for women migrants. SDG11 on cities and human settlements addresses housing for all, and with particular attention to women and other vulnerable or marginalized groups, and transport and green spaces that are accessible, safe, and inclusive. SDG13 on climate calls for capacity building in least developed countries for effective planning and management, with focus on women among other groups.

6. Results

Gender is overlooked in poor economies despite women's economic contribution to food security through subsistence agriculture [38]. The SDGs pose specific challenges to women not just with respect to their attainment but by conserving gender bias through 'ghettoizing' and marginalization of women, and exacerbation of existing challenges. Economies in the global South could not survive without women's production meeting much of the population's food needs [35]. SDGs 1 and 2 connect reduction of both poverty and hunger with equal rights to factors important in agricultural production such as technology, financial services, and control of land. The remaining SDGs explicit about women, however, focus on women as vulnerable end-users passively needing assistance rather than autonomous agents of change. For example, water is discussed in terms of women's hygiene needs (SDG6 water) but not in terms of their agricultural need for irrigation. SDG13 addresses need to have climate planning and management focused on women's needs but does not call for their participation in that planning and management that would succeed more reliably if based on women farmers' articulation of need and vision of solution rather than assumptions made about their needs, options, and capacity. Women's access to technologies appears in SDGs 1, 2, and 5, but SDG5 on women's empowerment prioritizes information and communications technologies rather than agricultural. SDG9 on resilient infrastructure focuses strongly on technology but no mention of gender is made. SDG15 on terrestrial ecosystem management and protection says nothing about women despite their large number dependent on soil and responsible for the impacts of their agriculture on it. Women care for the soil by making fertilizer from animal waste, rotating crops, and using specific crops to manage nitrogen fixes [24]. SDG17 on implementation has sections on finance and technology, but makes no mention of gender, except for a call for gender disaggregation in data collection. Women subsistence farmers, who play such an important role in African food security, are marginalized in that they are discussed in the context of poverty and food but marginalized by lack of explicit inclusion in the SDGs central to their agricultural needs of land control, finance, and technology.

The SDGs do not outline a concrete, systematic approach that acknowledges both the feminization of poverty and the feminization of agriculture. Addressing women's marginalization would mean integrating gender throughout the SDGs more broadly on the issue of agriculture rather than 'ghettoization' of gender in a dedicated SDG. The separation of issues into 17 SDGs is impeding understanding of and action on nexus issues such as agriculture that in Africa requires intersectional thinking at the connection of poverty, food security, gender, water, and land care.

Women could benefit from IPCC recommendation of alternative income and diversified livelihoods, though generally women already do as much as they can by processing shea butter, weaving baskets,

and making spice mixes to sell [24]. The IPCC recommendation of improving smallholder access to bank accounts and credit is not useful for women if local decision-making remains gender biased, which is the primary reason women do not already have access to bank accounts or credit, and are caught in a circle in which they cannot get a government grant without a bank account but cannot open a bank account without funds to deposit such as the grant would provide [16]. Early warning systems are also recommended as an adaptation strategy [15], but women's limited opportunity to access finance and technologies typically precludes their use. Agroforestry in CSA increases productivity [62] and the IPCC also recommends it as a climate management strategy, but women are often excluded from agroforestry [24]. In short, IPCC recommendations reinforce existing systems that do not serve women well, rather than proposing substantive change. In the case of climate change, substantive change would mean meeting women farmers' needs through immediate, strong action to mitigate GHG emissions and invest in renewables that would also benefit ecosystems, people, and cohabitant species throughout the planet. The IPCC works toward in-system fixes that are not capable of meeting women farmers needs in Africa.

Likewise, the IMF also and more impactfully provided an in-system fix when it turned Ghana's GPRS, that addressed hunger and supported women's subsistence economy through consultation with rural women's groups, into a program of educating women into the labor practices and expectations of market economies. In June of 2020, the UN Development Program reported that Africa still needs 'resilient agriculture and smarter food systems' as it faces multiplying crises of climate change and plagues of locusts exacerbated by COVID-19, that together could lead to as many as 300,000 people starving daily [63]. However, addressing Africa's hunger does not seem possible through typical strategies when, for decades, climate impacts have increasingly eaten away at women farmers' food security. Neither IPCC nor IMF in-system solutions can succeed when the system itself needs fixing.

There are clearly gaps in international policy and finance in the SDGs, the IPCC, and the IMF, concerning women's subsistence agriculture on which Africans depend for food security. These gaps in gender-awareness and gender-sensitivity are not new but reproduce in the SDGs what was in the MDGs. Meanwhile, climate change continues increasingly to damage crop production, for which women subsistence farmers have few and small resources to cope, such that women in Ghana, for example, are sacrificing their nutritional base by moving from traditional crops to rice in order to have a crop that will last until the next growing season. The SDGs, the IPCC, and the UNFCCC have been unable to instigate transition to renewables by 2030 or halt annual rise in emissions globally [64]. Multiple sources have argued, however, that solutions can only come locally where details and unique factors can be taken into account through, for example, community-based adaptation [65–67] and various participatory research theory approaches [68]. Addressing agriculture in Africa at the community level toward meeting SDGs 1 and 2 means working with women subsistence farmers on-the-ground as Jagustovića et al. [60] did in Ghana where their research on CSA made progress on SDGs 1, 2, 5 (gender), 13 (climate), and 15 (terrestrial ecosystem health).

The hypothesis that Africa cannot successfully achieve both its economic and food security SDGs without gender-inclusive approaches that meet the needs of women subsistence farmers is confirmed.

7. Discussion

The seeming incapacity of the SDGs to succeed beg the question of what 'sustainability' means in the SDGs and international policy contexts. The concept of 'sustainable development' first emerged from economics debates in the 1970s when intergenerational justice became an issue in case resource depletion denied future generations their right to an equitable resource base. This led to quantitative assessments of resource management, i.e., stocktaking of reserves to project into the future, and the idea of conservation to keep from depleting or exhausting those reserves [69,70]. In consequence, UN Secretary-General Javier Pèrez de Cuèllar invited Gro Harlem Brundtland, former President of Norway, to examine environmental impacts of global development. The resulting 1987 document, *Our Common Future: Report of the World Commission on Environment and Development* [71], popularly

known as the Brundtland Report, defines 'sustainable development' as 'the kind of development that meets the needs of the present without compromising the ability of future generations to meet their own needs' [71]. It has three pillars: economic, environmental, and social, also known as 'people, planet, and profits.' The Report also identifies two key concepts: *Need*, that prioritizes essential needs of the world's poor, and *natural limits*, that acknowledges the finitude of ecosystem capacity to satisfy unlimited human consumption. The economic pillar has been increasingly prioritized in subsequent development activities at the expense of ecosystems and large numbers of the planet's inhabitants, including human, animal, and other life.

The 1992 Rio Earth Summit that focused on contemporary hardships affecting the global poor adapted the concept of 'sustainable development' to distributive justice issues across peoples and cultural groups in the present. This became known as 'the welfare definition' of sustainable development because it interprets 'needs and nature's limits' in terms of improvement of human welfare. This definition is humanitarian in aim but implies, just as anthropocentrically as the original future orientation, that natural entities, i.e., the 'environmental' pillar, are reducible to human resources. Both approaches accordingly rely on nature's instrumental value and favor human needs over natural limits. As capital evolved into consumer culture, disposability and built-in obsolescence, for example, have created virtually unlimited demand for resource exploitation, contrary to the idea of conservation that recognizes natural limits.

Conservation does not treat all humans the same, however, and has served in policy attempts to protect ecosystems by removing the human factor. For example, as shown elsewhere [72], outside a Safari Park in South Africa, a tour guide issued assurance that inhabitants had been removed and were not a threat to the park. The policy approach did not trust indigenous residents or their traditional ecological knowledge systems to steward the area and its animal inhabitants responsibly. The fact, however, that there is something that the indigenous cultural groups might be feared to destroy is actually evidence that they participated in the local ecosystem sustainably for as long as they lived there. 'Conservation' in this context actually means appropriating the land and animals as resources for the African tourist industry in which wildlife watching constitutes 80% of sales of tourist travel annually and is estimated to collect \$90 million USD yearly in South Africa, for example, just from visitors to such protected areas [73] (p. 25).

This is not a significant amount for a country that had a GDP well over \$350 billion USD in 2019 [74] but it demonstrates the appropriation of ecosystems, species, and indigenous people into global economic systems, with the treatment of each depending upon its place in that system. That is, the ecosystem and species are valued and protected for the enjoyment of visitors often from the global North, while locals seem disposable as they are reduced to living in a small shanty town just outside the park's gates.

The World Tourist Organization aims at sustainability by briefing African governments and the broader international community on Africa's 'on-going poaching crisis driven by a dramatic increase in the illicit trade in wildlife products' [73] (p. 2). Yet a bigger picture reveals that tourism and poaching function in the same economic system that prioritizes individuals' profit over species and system health. The removal of indigenous residents, for whom the land was a subsistence resource, may have turned them toward unsustainable poaching because they have lost their home and livelihood and left obliged to fend for themselves. Their absence may also make poaching easier by eliminating a consistent resident presence. Conservation practices may actually undermine their goal by aiming to displace inherent, complex, always moving ecosystem balance.

Sustainability as ecosystem management to stay within natural limits is thus dwarfed by economic interests that are inherently anthropocentric in reducing nature to resource stockpiles and that assume human interventions can manage systems better than natural processes. Many cultures have collapsed because they destroyed their ecosystem base [75]. The rise of cultures in different ecosystems, as in the past, no longer seems likely if global ecosystem disruption by climate change is not soon addressed. A new approach is needed.

8. Examples of Women's Sustainable Solutions

The only real change evident now in Africa to address poverty and hunger has been initiated not from traditional 'blue-sky' policies designed by international systems of governance and finance, but from women's interventions at the community ground-level. For example, Wangari Maathai's widely known and astonishingly successful Green Belt Movement of tree-planting in Kenya has re-greened large swaths of the country and been transformative for women's empowerment, poverty alleviation, food security, ecosystem health, and climate adaptation [76]. Why did Maathai start and continue with this project? Her memoir describes the challenges and attempts to stop her made by her husband, her employer, and the police [77]. Eventually, she received a Nobel Prize for her efforts. Her work changed thousands of women's lives and gave women hope as well as remediating land and improving their agricultural productivity and life.

In Nigeria, one way that women entrepreneurs create employment and livelihood for other women, without creating the conflicts between SDGs noted above, is by establishing recycling businesses that generate revenue by collecting waste, sorting and adding value to recyclables, and selling them on for reuse. Waste management is a massive problem in many countries in the South where infrastructure is weak and people simply discard waste in a nearby river or popular site for dumping waste, whether managed or not. Mariam Lawani, at her recycling company in Lagos, for example, explicitly works toward SDG 1 (poverty) by providing livelihoods, SDG 4 (education) by expanding skill sets, SDG 6 (sanitation) by keeping waste out of water systems, SDG 8 (employment) by creating jobs, and SDG 12 (sustainable consumption) by keeping recyclables in production systems and reducing what ends up in a dump site [78]. Though Lawani does not note it, her business also addresses SDG 2 (hunger) by providing women with a livelihood, SDG 3 (health) by reducing disease-carrying pests attracted to street waste and preventing water-system clogging that causes pooling and thus increases populations of mosquitos that carry malaria or other vector-borne diseases, as well as SDG 5 (gender equity) by empowering women, and SDG 13 (climate change) by reducing CO₂ emissions from waste burning. Her business is contributing to 9 of the 17 SDGs simultaneously while providing an important public service.

Likewise, the women of the Deccan Development Society (DDS) in India changed their lives and fed communities by remediating land considered worthless and reviving traditional lentils and pulses that were being replaced by main-streamed crops such as basmati rice or genetically modified golden rice [79]. India's National Biodiversity Board Committee declared the region where the DDS worked an agro-biodiversity heritage site [80]. Their women's goal was to feed their family, and to reach that goal, they cared for their animals, healed their ecosystem, and treated women members of the group who were pregnant, ill, or aging as colleagues who needed support rather than sub-optimal workers [79]. Their values favor people over profit.

The Chipko women of India are similarly known for their work defending trees that ultimately prompted India's government to legislate need for local agreement before logging and other tree protections, including a 15-year ban on commercial felling in the Uttarakhand Himalayas [81]. The primary concern for the women of the DDS and the Chipko movement is functional care for their family through sustaining their ecosystem and their community. Their work is within economic systems but also displaces the values of capital that prioritize profit in favor of their own, quite different values.

Both the DDS and the Chipko movement show that women's work has, since before the SDGs were envisioned, been working towards sustainability using an integrated, holistic strategy toward human well-being and system health. With Mariam Lawani in Nigeria also, they demonstrate that with or without the SDGs, women's labor practices build synergy to overcome poverty and hunger rather than create the division and isolation of the SDGs that struggle not to damage one goal while addressing another, e.g., threatening food security while eliminating poverty.

Gender-based approaches to sustainability therefore must recognize women's capacity as drivers of change. Women's participation in government and policy is vital for actualization of their participation

not just 'at the table' but in setting the agenda by providing a combination of innovative thinking and long-standing, proven, traditional knowledge. Women can initiate and guide transformational approaches through participation in project design of poverty, hunger, and climate solutions rather than inclusion only in 'after-the-fact' implementation in which decision-making imposes upon them an uninformed and thus weak or sometimes downright dysfunctional plan that is unrealistic, unnecessarily labor intensive, and inefficient in its productivity.

For example, Jakarta and Makassar City in Indonesia participate in the Gender into Urban Climate Change Initiative supported by Gender CC, an NGO that provides finance and resources to local women's groups throughout the global South for integrating women into urban climate policy, mitigation, and adaptation. Makassar City decided to green its Cambayya Subdistrict and asked women's groups to implement the Lorong Garden Program (LGP) after the planning was complete. Had the women been included in planning, they would have chosen to plant pepper plants or something else that would give them a return for their labor and be a resource for other women in the community [82]. At a 2018 workshop on the LGP, the women reported struggling with the addition to their workload [83]. These factors were overlooked in planning. Programs that do not value women's practices, that often have sustained food supplies for generations, are inefficient and can have unnecessary, problematic impacts on the women they intend to benefit.

Change is, however, possible when governance and policy systems understand that women are agents of change and value them for their knowledge rather than treating them as post hoc support staff whose voices are overlooked and their labor taken for granted. For example, at a workshop a month later in the Buloa Subdistrict of Makassar City, participants reported that they planted pepper plants in their work in the LGP [83]. The women had been heard. A large part of the Initiative is educating decision-makers on women's needs, capacities and knowledge, and the value of their inclusion in project planning. This education includes creating understanding of a novel economics not based on capital or market factors but on optimizing labor conditions and outcomes practically.

That is, women bring transformational change by displacing the goals of capital with their labor practices of caring for family and community through collective, practical effort. Sustainable systems that favor care have the potential to disrupt the global inequity between South and North that is the driver of poverty and hunger. The women's care labor and logics in the examples provided have much in common with the ecosystem services vision of sustainability, i.e., their approach is holistic and considers what is cast aside as 'externalities' in capital approaches; they treat inter-relations as important for long-term system stability, i.e., see people as part of the ecological system rather than its masters, accommodate local conditions, and though they generate income and livelihood through their activities, the goal is not just economic growth. Rather, they create intersecting outcomes for self, family, and other women's well-being as well as for local ecosystem health aimed at long-term sustainability. The difference between traditional economic solutions and women's solutions is the difference between capital and care, i.e., between labor and exchange aimed at profit and labor and exchange aimed at functional, meaningful community.

Women's agricultural practices warrant attention and understanding [84]. Environmental degradation harms women's livelihood and increases women's poverty. Most of the world's farmers are women growing for subsistence. African women's farming has developed sustainably over generations, using, for example, nitrogen fixes, crop rotation, and fertilizer production from animal waste, in order to keep land productive because language, cultural, and financial factors limit women's capacity to relocate. Despite their marginalization, women are significant agents of ecosystem management. Because women's time is constricted by a larger labor-load than men's, and because women subsistence farmers are oriented toward food security over market gains, they can, working as collectives, succeed where men's groups have failed. Women farmers can contribute much to sustainability policy and practice. Attempts to achieve sustainability that are not gender-inclusive are conceptually deficient.

According to Oxfam International, global inequality that is ‘out of control’ has been caused by biased economic systems that exclude women while allowing billionaires who do little for society to amass huge fortunes so that today, for example, 22 men together hold more wealth than Africa’s 326 million women [85]. This inequity between the global South and North, but also between women and men, is created and enabled by capital systems that privilege a small group almost entirely in the global North over the majority of the planet’s inhabitants—both human and non-human—in order for the few to exploit masses of people, co-habitant species, and ecosystems, at the expense of the atmosphere and the very earth itself for their own accumulation of private wealth. Ecofeminists call this systemic structure a ‘logic of domination’ [86].

Capital is not just an economic system but a logic that is both a way of thinking and an organizational approach to the human experience [52]. ‘Economics’ is in fact etymologically the ‘laws of the household’ from the Greek *oikos* (home) and *nomos* (law). The logic of capital understands the purpose of human existence to be the accumulation of private wealth through Darwinian competition aimed at survival of the fittest. An alternative reading of Darwin suggests, consistent with an ecosystems services approach to sustainability, that survival of the fittest entails not fight-to-the-death competition but the sustainability of functional ecosystem fit. The transformative strength of women’s agriculture is that women’s work is structured by a different logic aimed not at wealth accumulation but at care practices toward family and community thriving.

‘Care’ in this context does not mean emotional attachment that is a denigration in policy contexts grounded in Cartesian ideologies that privilege reason over feeling and men over women, and thereby associate men with reason and women with emotion [87] (p. 82) using an epistemologically inflated notion of objectivity [87] (p. 79). Rather, ‘care’ means women subsistence farmers’ activities in meeting the needs of children, family, animals, crops, community, and ecosystems in their daily practices of reproducing the material conditions of everyday living on a spectrum from the immediate necessities of food, shelter, and clothing to life-enhancing and life-valuing experiences of happiness and thriving. The point is not to idealize women farmers whose work is hard and unrelenting in its challenges but to recognize that this work requires a different logic from the capital logic of wealth acquisition.

Capital logic designs and uses technologies that enable capital by providing the tools needed to develop planetary resources for human use. Because technologies are built from scientific understanding and create objects that, as objects, appear neutral, capital logic is grounded in the neutrality and indifference of objectivity. Care, however, requires partiality and valuing. Capital logic favors indifference, while logics of care require what has been identified as ‘emotional intelligence’ [86] that requires a different kind of feeling—a sensibility to a thing’s value beyond its instrumental appropriation. For example, while visiting an Ewe village in Ghana, Glazebrook attended a three-day festival that began with an animal sacrifice in order to feed the attendees. As the chief’s family circled the cow, a young man hit the cow on the face with a stick as he passed and told the poor bellowing beast to shut up. The second time he did so, a woman elder in front of him turned and chastised him severely. It is one thing ceremonially to sacrifice a life to feed people; it is another to disrespect the life that is being taken and unnecessarily brutalize the animal.

The logic of capital does not support sustainable development because growth is its driving principle inherent to its logic. Hence, poverty and wealth are assessed on the basis of GDP growth. The global North has been shaped by a history of gendered logics of domination that turn ‘sources of regeneration and renewal of life ... into inert and fragmented matter, mere “raw material” to be processed into a finished product’ [88] (p. 26). Nature is, however, a cyclical, regenerative process. The transformative capacity of logics of care displace unlimited growth and consumption with sustainable practices that meet daily needs in ways that support ecosystem balance. Sustainability without economic growth is a transformative concept in which Africa’s capacity to feed its people depends on women’s agriculture.

9. Ecosystem Services

In ecological sciences, the idea of ‘ecosystem services’ has emerged as another approach to understanding sustainability that is holistic in its prioritization of understanding how ecosystems work by considering all the activities and factors that function in an ecosystem. The UN-sponsored Millennium Ecosystem Assessment, in seeking to understand human impacts on ecosystems and people much like the Brundtland Report, identified four categories of ecosystem services: Provisioning, regulating, cultural, and supporting services [89]. Provisioning services are any benefit that can be drawn from nature, e.g., food, water, and medicinal plants. Regulating services have system impacts that make life possible, e.g., pollination, erosion and flood control, and carbon storage. Cultural services are the role ecosystems play in cultural identity and intellectual development, knowledge-building, and creativity. Supporting services, e.g., photosynthesis and nutrient cycling, are underlying natural processes without which the provision, regulating, and cultural services could not exist.

These services benefit people but the four categories also recognize that ecosystems are complex, constantly shifting their balance, and can be durable over time, even with humans in residence. Based on assumption that ecosystems are interactive, the ecosystem services approach values things typically discarded as ‘externalities’ in capital systems of resource exploitation. For example, a forest is not just so many board-feet of lumber but also squirrel habitat. Human survival and even thriving depend on the interconnectedness and interdependent functioning of other entities and systems that balance ecosystems for long-term stability. A focal distinction between this approach and the conservation approach is that conservation is thought instrumentally and places human being above other life, while an ecosystem services approach sees people as part of a system in which they participate but do not dominate. Ecosystems services also value diverse traditions and knowledge systems as valid because they are informed by, understand, and respect local surroundings.

Ecosystems services is accordingly not just an alternative ontology, epistemology, or method but a transformative thinking that disregards the capital goal of wealth accumulation through resource and labor exploitation in favor of understanding and participating in system stability toward thriving. The concept of ecosystem services displaces the corruption of the concept of sustainability in the phrase ‘sustainable development’ that underwrites systems of economic growth. Instead, the concept codes sustainability as ecosystem health and longevity. Etymologically, ‘sustainability’ (from the Latin *sustinere*, i.e., *sub* meaning ‘under’, and *tenere* meaning ‘to hold’ but also to know, grasp, keep or maintain) means the capacity to hold up and support. The SDGs would do better to displace the economic logic of ‘sustainable development’ in favor of sustainability goals. ‘Sustainability’ requires deep attention to and learning from indigenous practices, with respect in particular to agriculture, including water systems, located in the poverty–food security–climate change nexus. The praxis of women’s subsistence farming in Africa, indigenous traditions of ecological knowledge, and ecosystem services meet in the concept of ‘sustainability.’

10. Conclusions

‘Sustainable development’ is a false promise and the current global economic system that makes this promise is unsustainable because it is intrinsically oriented towards growth. We thus conclude that achieving the SDGs is unlikely if not impossible because the IMF, IPCC, and other UN and international policy programs function within that global economic system. SDGs 1 and 2 are especially difficult to make progress towards because poverty and hunger are inherently interlinked yet cannot be resolved together in a system that exploits resources and generates hunger by disrupting agriculture and poverty by disrupting livelihoods. Women subsistence farmers are the most vulnerable to these disruptions because agriculture is their livelihood. Sustainability, especially concerning food, is not possible without system change.

System change in agriculture includes movement away from large-scale, industrial agriculture. Africa hosts approximately 9% of the estimated 570 million farms worldwide. Of these 51.3 million farms, over 41 million are small holdings of less than two hectares (five acres) that are family-owned [90]

(p. 25) and produce 80% of Africa's food [91] (p. xi). Many are farmed by women who grow for subsistence to feed their family rather than to take their crop to the market. Their work is care work as they must care for their crops to get an optimal yield and care for the soil to keep it fertile. They care for their animals, their children, other family, and their community. These are labor functions that are overlooked and taken for granted in international economic systems and require a different way of thinking. This way of thinking is transformational and has the potential to displace toxic systems of industrial agriculture and toxic thinking that irresponsibly and unsustainably exhausts and destroys the ecosystems that enable life. This transformational logic is a gendered thinking inherent in care practices that can also be—and in indigenous groups that follow traditional practices respecting natural systems are already being—thought and practiced by men as well as women, just as women can embrace the logic and practices of unsustainable capital. Sustainable agriculture is not the yield of mass production through industrial systems but of many smallholders working as part of a community.

Women farmers in Africa working at the intersection of the feminizations of both poverty and agriculture are trapped in the food–poverty–climate nexus generated by practices of global capital. Their work is labor-intensive, under-resourced, needs annual repetition, and can end in catastrophic crop loss because of extreme weather events that leave the family in hunger crisis. The only long-term aspect of farming, given its cyclical processes because of constant consumption of its outputs, is land management aimed at making the job easier, increasing the output, and building climate resilience. Women farmers are obliged to act as guardians and caretakers of land over which they have no ownership. We conclude accordingly that, despite on-going risk to women of losing access to the land they farm, the work itself and women's need and commitment in their role as family caregivers are inherently aimed at sustainability, i.e., at ecosystem health to improve labor conditions and crop yields. While capital and governance work within outdated, destructive frameworks that render hope for a functional future ever more unrealistic, women farmers are already committed to the value of ecosystems services for their livelihood and food security.

We further conclude that a reliable indicator of transformational change in global economic and governance practices is women farmers' agricultural capacity. Movement away from capital-based economic and governance systems entails addressing climate change, reducing global South–North inequities, and improving the situation of women whose contributions to their family, community, country, and ecosystem health are substantial yet under-valued. It is reasonable to expect that removal of unnecessary, substantial impediments to women's agriculture would increase their food security capacity. Given such removal, this expectation could be tested. In place of such not yet available data sources, we have provided examples that show women, especially as growers, to be innovative agents of change whose strategies and hard work are guided by an inherent and functional conception of sustainability.

Finally, we examined the goals of women's agriculture as a care practice and found that the logic governing their goals and practices are significantly different from logic aimed at wealth accumulation. Their work is cyclical but also understands timelines beyond a single year. As the Chipko women say, 'this forest is our mother's home; we will protect it with all our might,' [92] in understanding they today's forest and field depend on yesterday's farmer, and today's grower has a responsibility to the future, in marked contrast with a logic of conservation based on stocktaking of current reserves in a world where species are disappearing daily and ecosystems are increasingly in crisis. Transformative change means new ways of thinking that reject continuous growth and wealth acquisition in favor of sustainable satisfaction of human needs and meaningful living that aim to leave healthy ecosystems for their children. We conclude that sustainability approaches that generate conflict amongst their goals are fundamentally flawed, while transformative sustainability strategies hold a promise of success through their holistic, inherent, and integrative vision of reconciliation, care, and respect for diverse needs and interests toward optimal solutions.

Agriculture has been our focus because hunger and food security crises in Africa are pressing humanitarian issues, but systemic transformation cannot be limited to one sector. Human ways of

thinking are collective practices of language, concept sharing, and built contexts that inhabitants learn to navigate. None of these things are fixed. Transformative thinking is intentional redirection of ways of thinking by means of concept shift. One way to accelerate concept shift is to look across cultures. For example, FraFra women farmers in northern Ghana overwhelmingly express a need to act on climate change [24]. Similarly, Ogoni women in Nigeria forced Shell oil off their land precisely because it was not sustainable with respect to their community health and food security [52]. Why would they want not want to get rid of the oil that is suffocating the planet in order to make a small group so wealthy that they deny climate change is real and undermine development of renewables in order to continue accumulation of private wealth? These women have very little if any access to that oil, so no dependency on it, and its climate impacts are destroying their food security. Competition as a principle of the logic of capital implies that people are fundamentally greedy and lazy, but women throughout the planet work hard for no money to care for their children, home, crops, animals, and community. Knowledge- systems that exhibit different perspectives are needed at all levels of governance to prompt the transformational change necessary for the sustainability of ecosystems and human practices that enable life.

The point has not been to use the women of the global South instrumentally to clean up ecosystem messes created by the global North that are harming their food security. Rejecting suggestion that these women have contributions to make to bring about transformative change on the basis that it exploits them is a biased assumption that they cannot speak for themselves about their willingness to participate and lead discussion. Nor is the point to idealize the brutal labor of subsistence farming. It is rather to push for system change that would improve those conditions and address global inequities in living conditions between South and North. For example, shifting capital from a system that gathers wealth for the sake of wealth to a system in which capital is not an end in itself, but a means would render distributive justice across the South–North divide more attainable. In addition, care practices have not been argued to be inherent to gender but to be a consequence of women’s care labor that is gendered by cultural habit but need not be. Indigenous knowledge systems provide multiple alternatives to Eurocentric gender politics and capital logic. Men and women can and do participate in care practices. Domination of capital systems is likewise gender-based on conceptions of masculinity that can be shifted. Transformative change can begin with women’s care logics but anyone can think this way. The task is specifically to bring this thinking into global economics and governance in order to make sustainability possible by 2030.

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