

Feminist Ecological Economics
A Care-centered Approach to Sustainability¹

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INTRODUCTION

Ecological and feminist economists have worked to incorporate areas of economic activity traditionally ignored and undervalued by the discipline: nature and care, and household production respectively. While there have been some efforts to develop frameworks that bring together the two fields to share approaches and insights, engagement has been relatively limited (Nelson & Power, 2018). These frameworks tend to focus on the idea that properly valuing care and nature are essential to generating sustainable development through sustainable production and consumption practices (c.f. Dengler & Strunk, 2018; Floro, 2012; Jochimsen & Knobloch, 1997; O'Hara, 1997; Perkins, 2007). That is, these models offer a more complete understanding of ecological and social sustainability than either field is able to when the linkages between environmental and social systems are ignored.

These urgent calls for a reframing of sustainability come at a time when the crises of ecological devastation and social reproduction have become more urgent and acute. Climate change is an especially pressing global issue, with the planet in danger of warming beyond the recommended limits of 1.5 degrees to 2 degrees Celsius in the next several decades, unless immediate actions are undertaken to reduce greenhouse gas emissions (IPCC, 2018). In fact, the consequences of anthropogenic climate change are already being felt globally through stronger and more frequent storms, heat waves, flooding, and drought. A growing number of researchers argue that the planet has entered its sixth mass extinction event, with population collapses leading to “biological annihilation” (Ceballos, Ehrlich & Dirzo, 2017).

While some jurisdictions such as the European Union and California have approved aggressive targets for reducing greenhouse gas emissions, the United States as a whole, the single largest emitter in the world, both currently and historically, refuses to set meaningful limits. Even where targets are aggressive, the carbon permit trading systems meant to drive

reductions have succumbed to the temptation of offering too many allowances, keeping prices low and hence, reductions minimal. Efforts to implement carbon pricing schemes or tax policies that would lead to lower emissions have failed in Washington and Oregon in the United States, France, and Australia.

At the same time, an emerging crisis of care and social reproduction continues to accompany economic growth throughout the world, ultimately threatening to impede or reverse sustainable development gains. Demographic changes are leading to increases in the numbers of children or the elderly who need care, which women disproportionately provide. Additionally, female labour force participation has dramatically increased since the 1960s. As women worldwide respond to employment opportunities brought about by expansion of trade, capital flows and economic restructuring, they have reallocated more of their time towards labour market work. Women, as a result, have increasingly taken on the triple responsibility of being income earners, household managers, and care givers, a situation that inevitably creates stresses and tensions as they try to balance these multiple roles. Moreover, urbanization and the nuclearization of households, especially in urban areas of low- and middle-income countries, have undermined the traditional caregiving support provided by kinship networks; families are, therefore, further stressed to meet their care needs.

Policy discussions on care issues, however, remain largely absent in the US as well as in many low- and middle-income countries. This neglect reflects the low policy and political priority accorded to the rising care needs including child care and elder care, and the prevailing belief that care issues have little impact on sustainable development. Instead, much of care provisioning rests overwhelmingly with family members. The customary social norms of filial

piety and familial obligations are often emphasized, promoting the idea that families can (and should) find their own solutions to deal with care responsibilities.

This *laissez-faire* approach to care provisioning continually ignores the persistence of unequal division of labour and distribution of care work within households and the fact that women often employ coping mechanisms such as lengthening their workdays or performing simultaneous work activities, which cause stress and ill health. Growing income polarization and the stagnation of real incomes for many households translate into different solutions for meeting care needs, which are conditioned by economic status. The persistence of poverty and economic inequalities have widened the gap between the households that can afford access to market care services and those that cannot. Such disparities will almost certainly be exacerbated with the worsening of the ecological crisis, though adequately understanding the contributions of care and nature to well-being and their relationship can help build mutually reinforcing practices too.

Capitalism is an economic system that has historically relied on the overexploitation and undervaluation of nature and on unpaid labour used in reproducing, caring, and maintaining the labour force. However, it may well be reaching a tipping point where this is no longer possible, at the very least without enormous, long-lasting social and economic costs. By better incorporating concepts of unpaid household labour and nature into a broader framework, economists can highlight important linkages and better acknowledge the role of feminist economics, political economy, and ecological economics in crafting policies that can be both sustainable and gender-equitable.

This chapter builds on existing work in feminist ecological economics to develop an *Integrated Framework of Ecosystems and Social and Economic Systems*. It takes into account the strengths as well as limitations of current models on sustainability and incorporates further

considerations of political economy and the links between the social systems and ecosystems. In the next section, we assess three models of environmental sustainability, namely: neoclassical, ecological, and feminist ecological economics. We examine these models along three dimensions: a) how (and if) they address concerns of sustainability and care, b) how they conceive of individual and societal well-being, and c) how they incorporate ideas of political economy and institutions. We then present a conceptual framework that demonstrates the interconnections between environmental, social, and economic systems and the extent to which they are interdependent and impact the sustainability of production and consumption. The chapter ends with concluding thoughts that link the framework developed here with a broader policy agenda for sustainable development.

MAINSTREAM ECONOMICS AND SUSTAINABILITY

Mainstream or neoclassical economics traditionally considers sustainability only in the context of the market economy (or monetized economic system).¹ Resources from the natural environment are considered ‘natural capital’, and the problem of overexploitation is not expected to persist because of the price mechanism whereby scarcity leads to increases in price, which then drives innovation and makes substitutes more attractive. Pollution and waste are externalities that, if valued and taxed appropriately, can be contained. An “optimal” level of pollution is then achieved when the marginal cost of an additional unit equals the marginal benefit of the production associated with that unit. The infinite growth of the market economy (here defined as an increase in GDP) is not only possible but also desirable. Therefore, efforts to limit economic growth by reducing the use of natural resources including fossil fuel for market production would deprive individuals, households, and society at large of utility-enhancing material goods and services.

Viewed through this lens, the parameters in which the issue of sustainability—or the question of what the present generation owes to future generations to ensure that they have the capacity to live at least as well as the present—is addressed, allows the question of exactly what sorts of things should be preserved, to be avoided (Brundtland, 1987). There is a strong belief in the market mechanism and the spirit of competition among profit-maximizing firms in bringing about innovation and technological change that would enable future generations to have the capacity to live at least as well as the present one, regardless of the state of the natural environment.

Similarly, mainstream economics is more likely to view the development of market-based substitutes as the key solution to addressing the growing demand for care and for promoting women's participation in the labour market. This takes two forms: a) the promotion of employers' provision of care services to their employees, and b) the development of the care and household service industries that include day care centres, nursing homes, laundry services, online grocery delivery systems, home-based paid care givers, nannies, and maids for hire. The 2017 International Finance Corporation report entitled *Tackling Childcare: The Business Case for Employer-Supported Childcare*, for example, promotes the business sector provision of child care services by arguing that it improves employee performance by reducing absenteeism, enhancing worker productivity, and increasing employee commitment and motivation. The positive impression and improved company reputation resulting from providing quality child care can help companies recruit and retain good employees, meaning that an investment in child care programs can be an income generator for companies (International Finance Corporation, 2017).

The rise of neoliberalism and privatization has been a key driving force behind the trend towards market-based solutions for addressing care needs. Neoclassical economists argue that competitive markets maximize incentives to innovate, reduce costs, and respond to consumer preferences. The reliance on market providers for care also assumes that well-functioning, competitive markets exist. Such assertions are, however, contested by studies in Canada and the UK, which show that market-based solutions for meeting care services have resulted in higher costs and reduced access to services, at the same time pushing issues of quality to the back burner (Kim & Antonopoulos, 2011; Lapsley, 1997; Needham, 2013; Randall & Williams, 2006).

For the most part, the role of unpaid care in developing capabilities and enhancing well-being is generally absent in the depiction of the aggregate economy in neoclassical models. The rise of New Household Economics (NHE) has brought attention to home production and the allocation of time of household members between market work and unpaid household (domestic and care) work. But there is a disconnect between this micro-level analysis of household decision making and production processes involving unpaid labour, and the role of unpaid care in the functioning of the macroeconomy. Care issues tend to arise mainly in the context of labour supply constraints (of women) and occasionally, as a critical element in human capital formation, for example, the role of early childhood education. With regard to elder care, its importance in a later lifecycle stage entails savings decisions (i.e., foregoing some consumption in the current period in order to meet the cost of market care in the future). And when unpaid labour is acknowledged in the production of goods and services that increases utility such as in New Household Economics, its shadow price is usually determined either by the foregone earnings of its provider, that is, the opportunity cost or the replacement cost.

The mainstream economics notion of sustainability additionally rests on the assumption that the things that have value have market prices or (can be priced). Increasing well-being is assumed to be synonymous with increasing consumption. In turn, the value of a good or activity and its contribution to well-being depends on what people are willing to pay (Bromley, 2007), or, more precisely, what they are able to pay. This logic, applied to cost-benefit analyses to determine the appropriate level of environmental protection or pollution control, will likely “reveal” higher values for amenities or pollution that are used by or impact the relatively wealthy (Hahnel, 2011).

Mainstream economists such as Gary Becker, Ruben Gronau, and other NHE economists adopt a similar approach in providing a ‘shadow price’ to home production involving unpaid labour. The latter can be valued in two ways. First, unpaid work can be valued on the basis of its replacement cost, that is, the price of a market substitute such as the wage of a paid care giver. The second approach involves the notion of opportunity cost. When the work is valued according to opportunity cost, those who forgo high-paying jobs are deemed to be more productive than those who have been full-time housewives.

The main task of economists in promoting sustainability of the ecosystem or social reproduction is therefore to provide market-based solutions. This approach applies neoclassical economics’ key concepts, for example, comparative advantage, cost-benefit analyses, rational agents, *homo economicus* (economic man), etc., and models. Undergirding much of the work in this field is the assumption that solutions need only be technically feasible, and not necessarily institutionally feasible (Stern, 1997). However, criticisms of this mode of thinking have proliferated through ecological and feminist economics in recent decades.

ECOLOGICAL ECONOMICS AND SUSTAINABILITY

The recognition that infinite economic growth is impossible given the laws of thermodynamics has led to the development of ecological economics as a distinct field in the economics discipline. Ecological economists such Herman Daly, Robert Costanza, and Joy Bartholomew (1991) argue that economic growth has been accompanied by the ever-rising demand for natural resources, both renewable and non-renewable, and increases in wastes, pollution and damage to the ecosystem. They regard the planet as a thermodynamically closed system, meaning that it exchanges only energy with its exterior, that is, it receives sunlight and emits heat into space. Resources like fossil fuels that are energy-dense, or low-entropy, are transformed through economic processes into high-entropy wastes that are deposited back into the environment (Common & Stagl, 2005). If waste sinks become full or overflow, they can interfere with the functioning of economic and natural systems, perhaps most starkly illustrated by anthropogenic climate change. Thus, humans must place limits on the scale of the economy and use low-entropy resources carefully, engaging in “entropic thrift” by creating “a culture that lives within the current solar flow and does not fill its sinks any faster than natural systems can handle the waste,” (Brown, 2015: 78). Most famously, this has taken the form of calls for limiting economic growth and throughput, or the movement of matter through the economic system (c.f. Brown & Garver, 2009; Daly, 1996; Jackson, 2009; Kallis, Demaria & D’Alisa, 2015).

More recently, ecological economists have articulated the limits on the scale at which the economy can expand more clearly. One widely used framework is the concept of planetary boundaries developed by Johan Rockström, Will Steffen and others, primarily at the Stockholm Resilience Centre (c.f. Rockström et al., 2009 [Missing in references]; Steffen et al., 2015).

Rockström et al. (2009) identify the so-called thresholds in nine areas that, if breached, substantially risk altering the functioning of the global ecological system. These areas are climate change, land-system change, biosphere integrity, freshwater use, biochemical flows, ocean acidification, stratospheric ozone depletion, atmospheric aerosol loading, and novel entities (i.e., chemical pollution). The areas of climate change and biosphere integrity (related to biodiversity) are seen as “core” boundaries that are especially linked to other areas and could cause widespread damage on their own if breached (Steffen et al., 2015). It is likely that as of 2015, humanity has breached the safe boundaries of climate change, ocean acidification, atmospheric aerosol loading (in some regions), biogeochemical nitrogen flows, and loss of biodiversity (Steffen et al., 2015). However, the “safe” level for each boundary is uncertain. This is an inherent part of managing the interactions with a complex system like the climate (Ackerman, 2009; Hahnel, 2011). A number of “tipping points” in the global climate system could be triggered and lead to further, runaway warming, but it is unclear exactly where the tipping point might occur. For example, between 1 and 3 degrees Celsius of warming, a collapse in the Greenland and West Antarctic ice sheets, and Arctic summer sea ice may exacerbate warming and lead to cascading effects on one another. At 3 to 5 degrees of warming, crucial ocean currents may be altered, which can lead to a collapse in the Amazon rainforest (which may, in turn, lead to further impacts on ocean currents) (Steffen et al., 2018). By these measures, humanity is on a disastrously unsustainable course.

Given such a situation, calls for limits to the growth in material consumption in human systems such as the market economy seem prescient. Traditionally, ecological economists have called for moving to a “steady state” economy, whereby any extraction of materials from the environmental system would be balanced by the development of new resources such as wind and

solar power for generating electricity. Any wastes placed into that system would be fully absorbed through natural processes (Daly, 1996), as, for example, the ocean is able to absorb a certain amount of carbon dioxide in a given time period with little impact on ocean chemistry. A sustainable socioeconomic system is one that allows the flow of whatever is needed for sustaining and maintaining life and well-being by using its renewable capital stocks without depleting or degrading them. The use of resources also involves the restoration of desirable qualities to resources that have lost them. Some examples are the restoration of the fertility of degraded soil, the quantity of water in important aquifers, and the reversal of greenhouse gases through carbon absorption, reduction of carbon dioxide in the atmosphere, etc.

More recently, ecological economists have paid more explicit attention to what this means for the composition of growth, notably through the rise of the degrowth (or *décroissance*) movement. It involves not just tinkering with change at the margin, for example, more use of clean capital in production, etc., but rather a fundamental transformation of human systems. Such transformation involves change both in the way humans live and meet their needs and in the distribution of resources, wealth and power. The issue of inequality is tackled head-on. As Daly (2018) argues: “For the poor to grow up to a steady-state economy that is sufficient for a good life and sustainable for a long future, the rich must make ecological space by de-growing down to the same sufficient (not luxurious) steady-state level. This applies not only to rich and poor countries but also between rich and poor within these countries.”

As Kallis, Demaria & D’Alisa (2015) note,

“Degrowth does not call for doing less of the same. The objective is not to make an elephant leaner, but to turn an elephant into a snail. In a degrowth society, everything will be different: different activities, different forms and uses of energy, different relations, different gender roles, different allocations of time between paid and non-paid work, different relations with the human world” (4).

Such a vision would require transformational changes in nearly every aspect of economic life, ranging from production to distribution processes, as with everyday consumption habits and lifestyles. Degrowth advocates call for reduced working time, implementing policies to radically reduce income and wealth inequalities, creating public spaces and other initiatives to build social capital and community, stronger regulation of commercial media and other efforts to dismantle consumerist culture (Jackson, 2009), extending product lifetimes, shrinking the financial sector, reducing international trade, and taxing natural resource use instead of income (Daly, 2005).

That is to say, sustainability inherently must grapple not only with questions of scale, but of efficiency and justice as well (Garver & Goldberg, 2015). Brown & Garver (2009) approach sustainability from the perspective of “right relationship,” building on the Quaker concept that emphasizes the interconnectedness of all life. In their approach, the right relationship ethic is defined in the following way: “a thing is right when it tends to preserve the integrity, resilience, and beauty of the commonwealth of life. It is wrong when it tends otherwise” (Brown & Garver, 2009: 5). Rather than assuming that the earth’s environment is embedded in the economy and belongs to humans, it should be understood that the economy is embedded within the environment, and humans are one of millions of species dependent on its relationship with that environmental system. In order to determine how to move the economy to a “right relationship” with nature, five key questions should be discussed: “What is the economy for? How does it work? How big is too big? What is fair? How should it be governed?” (Brown & Garver, 2009: 5).

FEMINIST ECOLOGICAL ECONOMICS

Until the late nineties, ecological economics had paid scant attention to the fundamental role of care provisioning in human well-being, maintenance of the labour force, and social reproduction. The work performed mainly by women in attending to the needs of the young, sick

or disabled and frail elderly, as well as other able-bodied family members, is largely invisible in discussions of sustainability. Whether it involves gathering water, cleaning the house, cooking meals, or providing care, ecological economics fails to explore the connection between environmental sustainability and the role of the reproductive or care sector in sustaining human systems. In an attempt to provide a more holistic approach to sustainability, feminist ecological economists have begun to address this gap in ecological economics by bringing key insights from feminist economics (Perkins, 2007). Specifically, this subfield draws upon the concept of economics as a study of social provisioning (Nelson, 1993; Power, 2004) and the idea that the economic system is not only embedded within the physical environment but also a human, social system (Dengler & Strunk, 2018; Jochimsen & Knoblock, 1997). Whereas ecological economics criticized the invisibility of the natural environment in mainstream economic theories, with the exception of natural resource economics, and their poor understanding of the ecological crisis, feminist economics has drawn attention to the invisibility and devaluation of women's unpaid work in neoclassical economics and the emerging crisis of social reproduction (Aslaksen, Bragstad & Ås, 2014; Bauhardt, 2014; Floro, 2012; Waring, 1987). For the most part however, the natural environment or ecosystem remains invisible in their discussion of gender, with the exception of the work by feminist economists such as Bina Agarwal, Julie Nelson, Marilyn Power, and Christine Bauhardt, to name a few.

As Bauhardt (2014), Dengler & Strunk (2018) and Floro (2012), note, the market economy heavily relies on both nature and unpaid care labour in order to function,² and yet its analysis by neoclassical economists either ignores or devalues them in the pursuit of increasing material production or economic growth. A major feature of contemporary economic growth in the last five decades has been the enormous increase in women's participation in the labour

market in most countries around the world. And yet gender biases continue to be embedded in economic and social institutions such as markets and social norms, and the gender division of labour in the household has changed much more slowly. Such conditions inevitably create stresses and growing tensions for women. They experience the day-to-day symptoms and manifestations of these strains in their households, in their search for jobs and participation in the labour market, etc., leading many to combine their dual roles as income earners and care givers paid at the expense of self-care (leisure time and sleep).

From a feminist ecological economics perspective, the concept of sustainability should recognize a “common humanity and substantive responsibility for care” that involves care of people and the environment (Nelson, 2013: 150). Its sustainable equitable development framework involves a set of decision-making processes which takes a more social rather than individualistic perspective, and efforts towards building collective action and cooperation becomes paramount (Agarwal, 2007; Baland, Bardhan & Bowles, 2007; Nelson, 2008).

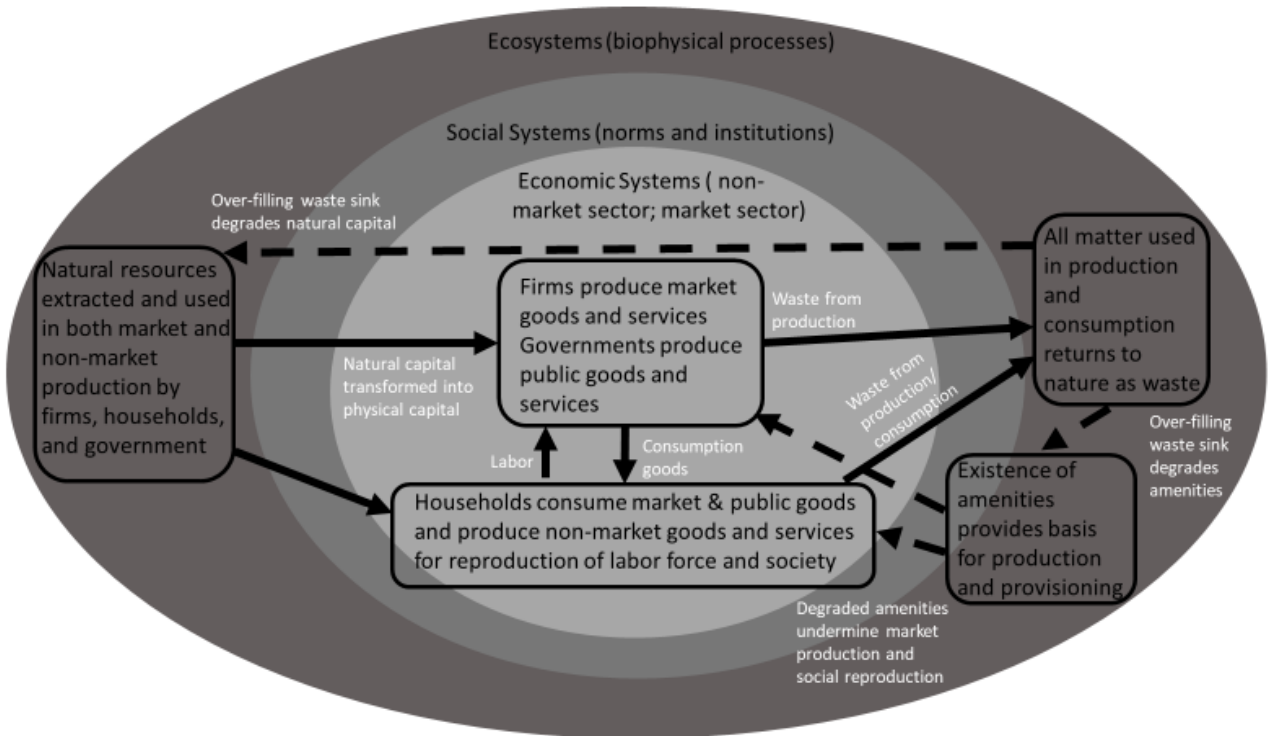
Feminist ecological economists call for policies that reallocate resources to support adequate care provisioning and promote equal sharing of responsibilities by women and men such as public investment in care services, parental leaves, pay equity law, etc. They also advocate policies that integrate the costs of raising the next generation and the costs of maintaining the resilience and carrying capacity of the environment in development planning and economic policy formulation (Beneria, Berik & Floro, 2016).

TOWARDS A FEMINIST-ECOLOGICAL SUSTAINABILITY FRAMEWORK

Building on the work of feminist ecological economists, we introduce in this section a sustainability framework that identifies the connections between accelerating fossil fuel and natural resource extraction, environmental degradation, drive towards more conspicuous,

material consumption, and gender and economic inequalities. It also recognizes the limits to the organization of economic processes around markets that are driven by competition, profit-maximization and the incessant pursuit of material prosperity. Figure 1 depicts these relationships more explicitly and highlights key aspects of the social provisioning process.³ Note that this framework follows the practice within feminist economics and ecological economics of embedding the (market) economic system within social systems and ecosystems. Social systems refer to the series of interrelationships among individuals, groups of individuals, and institutions constituting a coherent whole while the ecosystems refer to the energy and matter flows of the natural world, governed by physical laws.

Figure 1: An Integrated Framework of Ecosystems and Social and Economic Systems



Source: Own depiction

Social systems are shaped, to some degree, by the demands of the physical environment, but they are largely governed by primarily man-made norms and institutions that coordinate

activity, reduce uncertainty and influence behaviour and interaction among individuals and groups of individuals. Economic systems are embedded within these social systems, meaning that the same norms and institutions governing human activity also permeate the realm of economic processes and affect economic outcomes. In other words, markets, as with other human institutions, are socially constructed. Which occupations are considered appropriate for men and women, who should perform domestic chores and caregiving, who should make decisions in the households, whose labour has more value, etc., are influenced by social expectations and rules that systematically privilege and empower men.

Within each system are key actors and activities, and the solid black lines denote the flows of matter and labour between them. Households, firms, and the government produce goods and services in the economic (market and non-market sectors) systems and maintain themselves through productive, reproductive, and investment activities. The economic system is part of the broader social system that includes norms, laws, and institutions that govern human interaction and influence human behaviour. Ecosystems are more complex in that they provide physical or natural resources to the community of interacting organisms. These organisms, humans included, propagate and reproduce themselves and are linked together through nutrient cycles and energy flows. Biodiversity affects ecosystem functioning as do the processes of disturbance and succession. Ecosystems provide a wide range of goods and services upon which social systems, including the economy, depend. The extraction of natural resources and the use of plant and animal species for production of goods and services are undertaken by economic actors, mainly by businesses and governments, but also by households for meeting their subsistence needs. Ecosystems also provide services that can lead to general “improvements in the condition or location of things of value” (Brown, Thomas, Bergstrom & Loomis, 2007). These include things

like the maintenance of hydrological cycles, cleaning air and water, the maintenance of oxygen in the atmosphere, crop pollination and even things like beauty, inspiration and opportunities for research. After production and consumption, all matter and energy used in economic activities is returned to nature as waste material and heat, filling the waste sinks of ecosystems on land, in bodies of water, and in the atmosphere. Finally, the natural environment represents the physical space where life and production/consumption actually take place, relying on conditions such as a given set of temperatures, adequate air quality, and clean water.

The dotted black arrows represent feedbacks that limit the functioning of these systems. As the planetary boundary framework suggests, most ecological problems are caused by either the filling of waste sinks and/or reducing their capacity (thus making filling easier). This, in turn, can cause problems in three ways. First, resources may be degraded and less available for harvesting, as in the case of fertilizer runoff creating “dead zones” discussed above. Additionally, it can make the resource more vulnerable to overexploitation such as when pollution pressures are combined with increased fishing. In the case of climate change, increased frequency of extreme weather conditions such as drought and flooding can reduce agricultural output and make access to certain resources more difficult (such as minerals mined in remote regions). It can also dry sources of water that households rely on, forcing household members, for example, women, to travel further in order to collect water, and increase their unpaid work burden.

Finally, it can affect the physical environment in which production takes place through the degradation of environmental amenities such as clean air and water or a livable temperature. Such an erosion of amenities can impact production in the monetized economy and the very conditions of care provisioning. More frequent natural disasters and heat waves increase the

proportion of the population requiring the care of others and reduce opportunities for paid work (Floro & Poyatzis, 2019). Not only does production become less efficient, but additional resources are required on activities needed to adapt to new environmental conditions such as building flood works, switching of crops, strengthening infrastructure to provide storm protection, and so forth. Climate change can also increase the incidence of illnesses and diseases, for example, malaria, dengue, etc., due to the degradation of the environment (Carlton & Hsiang, 2016).

Following ecological economics, we consider the importance of the health of waste sinks and environmental amenities in the survival and maintenance of the human (social) systems, particularly the economy, and the limited substitutability between natural capital and human capital-technological change. A sustainable economy is one in which low entropy resources such as fossil fuels are extracted at a relatively low rate and carefully used (entropic thrift). The rate at which this is done should be shaped by the impact of the resulting waste byproducts. Additionally, following feminist economics and feminist ecological economics, the sustainability of social processes should be considered (O'Hara, 1997). Social reproduction has a complex relationship with nature, where institutions and policies that promote greater equality and ensure the fulfilment of care needs in society can help sustain ecosystems. The examples provided in Agarwal (2007) and Leisher et al. (2018) demonstrate how women's participation in resource management groups can result in improved resource governance, and conservation of local forests and fisheries. Compared to men-only or women-only resource management groups, mixed-gender groups in India, Nepal, Bangladesh, Canada, and Africa are likely to have greater community compliance with resource use rules, more transparency and accountability, better conflict resolution, increased patrolling and enforcement, and greater equity of access to

resources (Agarwal, 2007; Leisher et al., 2018). These outcomes have tended to lead to more effective resource conservation. However, feedback between the ecological crisis and social reproduction must be kept in mind too (Nelson, Meadows, Cannon, Morton & Martin, 2002).

WHITHER FORWARD? SOME REFLECTIONS

Understanding that sustainable processes must be maintained in social and economic systems in a way that minimizes material use, ideas around well-being must be much more carefully considered. That is, resource use should be both efficient in providing additional well-being and, ideally, egalitarian. There is plainly common ground between the degrowth movement and feminist economists discussing the importance of social provisioning here. An economy focused on improving social well-being instead of (theoretically) generating individual utility through greater material consumption is urgently needed to effectively address sustainability and the defining problems that the world faces today. In other words, economics will need to be practiced very differently once it is recognized that the world we live in is profoundly unsafe, interdependent, and uncertain (Nelson, 2013). Nelson and Power (2018) and Nelson (2018) warn of the danger in such knee-jerk tendencies of rejecting altogether any role for for-profit firms in the creation of sustainable societies, or those of market-based processes (e.g., carbon taxes, carbon markets, or payments for environmental services) to address environmental problems. Rather than adopting simplistic and naïve forms of either-or type of dualisms, an effective form of engagement and development of innovative, transformative change is more likely to emerge by understanding, say, the capitalist economic system as part of societies that is “deeply entwined and co-constituted with public regulation, cultural beliefs, real human emotional motivations, and social and ethical practice” (Nelson, 2015: 116). Better discussions would come out of asking questions such as “what do we want economic growth

for?”, “growth of what, and where?” and “are there tradeoffs between growth and sustainability that are necessary and perhaps unavoidable in order to attain sustainability for the sake of future generations and if so, how are these costs distributed across societies?” (Nelson, 2015:116).

In moving away from traditional notions of progress, and building on those found in ecological and feminist economic thought, the new integrated framework helps emphasize the position of the economic system within the broader ecosystem. It also highlights the role of norms and institutions in shaping social processes. The framework recognizes socially connected groups over the atomistic individuals found in neoclassical models, and it adds the “care of humans” dimension that is found lacking in most ecological economic work. It highlights the importance of recognizing and addressing gender and other economic and social inequities throughout the economic processes.

Because it makes visible the interrelatedness of systems and hence the interconnectedness of problems associated with the increasing demand for care, social provisioning, and ecological crises that have been previously overlooked, the framework can be useful in explaining the failure of most sustainability policies, especially in the realm of climate change, to deliver results on the scale needed to address the problem. Models such as Nordhaus’s (2017) DICE model and current sustainability policies adopted by some governments, seem to operate from a relatively simplistic notion of an economic system that is loosely connected to the natural world and divorced from the non-market production sphere or sector that is based on unpaid labour.⁴ Because they are not part of a broader attempt at addressing social inequalities and the crisis of care and social reproduction, these policies have been inadequate, give the scale of the problem of climate change and the breadth of social provisioning. That is, they do not offer a reliable path towards sustainable development.⁵ Only through development of cooperation and broad political

mobilization recognizing the linkages outlined above can the requisite transformation and concomitant democratic support be built for such drastic measures.

Ultimately, the above framework indicates that an effective policy agenda for sustainable development should be built on a deep understanding of:

- the linkages between the economic and social systems and ecosystems, including the positive and negative feedbacks between all three, which ultimately impacts the sustainability of production and consumption; and
- the role that norms and institutions from the social system play in shaping the economic system. That is to say, the drastic changes needed to the economic system must be built on a foundation of political and social support by improving the sustainability of communities and social reproduction.

Additionally, it should:

- seek to improve the sustainability of ecosystems *and* social reproduction, which can be mutually reinforcing;
- recognize that, conversely, *unsustainability* of the ecosystem and social reproduction can be mutually damaging and irreversible; and
- consider policy options that promote sustainability, care, and well-being in a holistic sense and a democratic manner.

Building on the work of feminist ecological economists, this chapter suggests an integrated framework for understanding sustainability that shows how material and labour flows through an economy, eventually re-entering the ecosystem as waste. It also recognizes the interrelation between ecosystems and social and economic systems, including the feedback effects between the degradation of the ecosystem and care labour. Future work should examine

in greater detail policy proposals that seek to address questions of sustainable development, including environmental sustainability and gender inequalities in the light of the framework established here.

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¹ The concept of the monetized economic system discussed here is similar to that used by Jochimsen & Knobloch (1997) and further developed by Dengler & Strunk (2018).

² Jochimsen and Knobloch (1997) refer to these sectors as the “maintenance economy”.

³ Note that this reflects Power’s (2004) choice of the term as a starting point for economic analysis. The interest is not only in the outcome but also in the process itself and the role of social norms. Such an analysis illuminates “the ways a society organizes itself to produce and reproduce material life” (7).

⁴ For example, California’s system of climate targets and supporting policies, and the European Union Emission Trading System (EU-ETS).

⁵ For example, prices for a permit to emit a ton of carbon dioxide in the EU ETS have lately hovered between \$20 and \$30, and California’s price range is typically \$15 to \$20, while new evidence suggests that extremely high carbon prices (on the order of \$600/ton) would be needed to substantially reduce fossil fuel extraction (Heal and Schlenker, 2019).