

The Crises of Environment and Social Reproduction: Understanding their Linkages

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This paper explores the interconnections between the crisis of care, the deepening ecological crisis and growth and accumulation processes. They are critical challenges that mainstream economics fail to comprehensively address, thus resulting in growing tensions between the incessant pursuit of economic growth and material consumption on one hand and the ability of societies to care for their people and for the ecosystems upon which they live. The paper argues that the crucial interdependence between the market economy and the care/reproductive economy and between the entire human (economic) system and the ecosystems must be recognized in economic thinking and policymaking. Building on the work of several feminist economists and ecological economists, it demonstrates that an obsessive preoccupation with material economic growth in the economic paradigm not only undermines the care requirements of human maintenance, social reproduction and the sustainability of the ecosystem, but also actively contributes to crisis creation and intensification. The paper also examines the impacts of rising inequality on the care economy and carrying capacity of the ecosystem. Finally, it provides some building blocks for developing a new economic paradigm that lead to gender-sensitive and environmentally-aware economic policies.

Keywords : crisis of care, ecological crisis, gender, inequality, economic growth.

“Reproduction is always mediated via others: it lives only by subjugating the “other” without destroying it at the same time… using it without (*immediately*¹) exhausting it.” (Brie 2009, p. 17)

Introduction: Pursuit of Economic Growth and the Evolving Crises of Care

The world today faces serious challenges that go beyond the financial crises that have gripped both developed and developing countries in the last few decades. These concerns have to do with the

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evolving crises of care and environmental degradation. They are critical dimensions of life that mainstream economics has failed to address and in so doing, has promoted economic policies and development strategies which for the most part, have ignored the long-range effects on human maintenance, social reproduction and the sustainability of the ecosystem. As a result, there are growing tensions between the incessant pursuit of (market) economic growth to meet ever-expanding material consumption on the one hand, and the ability of societies to care for their people and for the ecosystems upon which they live, on the other. Such tensions are being manifested in the crises of care at varied scales and levels: some are of a magnitude that is potentially immense; others involve selective disturbances and severe disruptions that undermine the sustenance and quality of life of particular groups of people or species.

The evolving crisis of care for people has to do with the growing imbalances within and across societies with respect to access to care and subsistence necessities as well as the articulated hierarchy in the economics paradigm that biases the use of resources towards meeting the requirements of market production over those of social reproduction. Social reproduction involves the maintenance of and provisioning for human life as well as to the enhancement of capabilities of people as workers, citizens, and stewards of this planet. It involves the undertaking of reproductive or “care” activities that affect the well-being of both current and future generations such as food preparation, domestic work, subsistence production, childcare, care for the sick and elderly, collection of fuel and water, etc., which are mainly performed using unpaid labor in the household. They are largely not counted in the Systems of National Accounts (SNA) and conventional social and economic indicators; hence they remain “invisible” in most macroeconomic models, ignored in standard cost-benefit analyses, and outside the purview of policymakers.² The crisis of care is experienced in small and large scales and at localized as well as broader levels in the forms of (a) feeble support to meet adequately the needs of the sick, young, elderly or disabled, (b) chronic stress and long work hours of primary caregivers, as well as (c) stunted lives and everyday struggles to fight hunger, disease, etc.

Similarly, the world is witnessing climate destabilization and increasing fragility of the ecosystem that are closely tied with the rapid consumption (i.e. burning) of fossil fuels and other human activities which have led to active carbon buildup in the atmosphere (Lohmann, 2006; Parry et al., 2007). The world is already witnessing the likely consequences of climate change in terms of reduced agricultural productivity, more frequent heat waves, stronger storms and more weather-related damage, more intense flooding and droughts, water crises, increased biodiversity loss, and adverse health impacts due to recent warming and precipitation trends.

This paper explores the interconnection between the crisis of care and the deepening ecological crisis. It argues that there is a crucial interdependence between the market economy and the reproductive economy and between the entire human (economic) system and the ecosystems that must be urgently addressed. Building on the extensive work of feminist economists and ecological economists, it demonstrates that an obsessive preoccupation with material economic growth in the economic paradigm inadequately addresses the care requirements of human maintenance and social reproduction

and that of the ecosystem, and instead, actively contributes to crisis creation and intensification. The paper also evaluates whether the mainstream economic solution of having “more and better markets” can adequately address these crises. Finally, it provides an alternative framework based on feminist economics and ecological economics approaches, for developing a new economic paradigm to comprehensively address the dual crises of care.

Interdependence of Economic Growth, Social Reproduction and Ecosystems

Over the past few decades, feminist and ecological economists along with the science community and grassroots advocacy groups have brought attention to the vital importance of understanding the social content of economic actions and policies, and the crucial interconnection between human economic activities and the state of our ecosystem (Cagatay and Elson, 2000; Howarth and Norgaard, 1993; Nelson, 2011; Hahnel, 2011; Soderbaum, 2008; Costanza et al., 2001; Gitay, Suárez, Watson and Dokken, 2002; Parry et al., 2007; Sheeran, 2011; Bergmann, 2011). An overarching fixation on (market) economic growth and the concomitant fetish consumer culture, alongside rising inequality and demographic changes, have put stresses on the delivery of quality care and on the carrying capacity and resilience of our ecosystem. Yet the ecosystem and unpaid care labor provide services that are indispensable to the operation and functioning of the market economy. Economic policies, for the most part, have ignored the ecological dimensions of the material productive activities they promote and the care requirements for the reproduction of labor, assuming that any issue or consequence would either take care of itself or could be dealt with through market adjustments, for example through the development of more efficient technologies or of specialized care service markets. The type of economic growth generally pursued worldwide has not only increased the stresses put upon the earth's resource base but also on care labor capacity, which are wrongly perceived to be of infinite supply. The preoccupation of the dominant economic paradigm on material output growth has also led to the persistent failure of development processes to reduce inequalities and to deal with the rapid erosion of the diversity and resilience of the life-support ecosystems.

The general proposition that economic growth benefits everyone including the poor and women is premised on the idea that development of markets and increased market participation lead to more opportunities, higher incomes, thus empowering them both economically and socially, especially as consumers who meet their needs and satisfy wants. Economic growth also is assumed to lead to higher quality of life, albeit fewer, children since higher earnings increase access to education and health services, better nutrition and so forth. Additionally, economists argue that economic growth is good, or is going to be beneficial for the environment. This is based on the notion that when a country has attained a sufficiently high standard of living, people will give greater attention to environmental issues, leading to environmental regulation and new institutions that help protect the environment. Such a view has been justified by the claim that there exists a positive relationship between per capita income and some measures of environmental quality.

To be sure, a significant component of economic growth has been beneficial in terms of leading to longer life expectancies, decline in infant and child mortality rates, development of green technologies that reduce consumption of fossil fuels and associated carbon emissions, etc. On the other hand, there are aspects of market production activities contributing to economic growth, which are “superfluous,” feed into the “conspicuous material consumption,” and have accelerated the consumption of fossil fuels and the absorption of labor and natural resources. This has raised a basic question regarding the relationship between human well-being and (material) growth (Ackerman et al., 1997; Hahnel, 2011; Soderbaum, 2008).³ Put in another way, can we improve the quality of life and attain prosperity without incessant pursuit of economic growth (Bergmann, 2011)?

At the same time, cultural and social norms have evolved alongside capitalist development and the expansion of markets, strongly defining the way that individuals behave, and households, markets, governments and businesses operate. Social and cultural norms often present solutions to problems of uncertainty, such as future demand for commodities and provision of care services in the future. For example, economic prosperity, social standing, and well-being, which serve as “*raisons d’être*” for maximizing profits, working harder and earning more, are defined by higher material consumption—the more commodities one consumes, the better-off the person, household, community, or country. A socialized belief of the existence of potential vertical mobility often accompanies the incessant demand for social status goods. And “the greater is the income and wealth inequality, the greater is the amount that must be consumed by everyone beneath the wealthiest to maintain or improve their relative status” (Wisman, 2011, p. 10). These social beliefs are nothing new; they were in fact pointed out by Thorstein Veblen in the late nineteenth century. They are further reinforced by modern economic theories that promote the fallacious belief that, even when one is above the poverty line and has sufficient means to pay for emergencies, higher levels of income still contribute to increasing well-being (Lane, 1997; Hahnel, 2011). Not surprisingly, as people become more affluent, in the United States and China for example, the more rapid is the increase in resource use and associated emissions (Schandl and West, 2010).

Gender norms, which are embedded in households, markets and community functions, have shaped the roles of women and men and their relation to one another. By perpetuating certain beliefs regarding women and men’s traits and ascribed roles, gender becomes a stratifier of economic and social life in the way that class, race, religion and ethnicity have become (Cagatay, Elson and Grown, 1995). Gender norms help address the coordination problem in social reproduction by providing the basis for a fundamental division of labor in societies—the division between productive and reproductive activities. To be sure, these socially ascribed roles are continually challenged by social and economic changes as well as by political and legal reforms. The evolving character of gender roles amidst these changes is not linear; the interplay of forces that influence gender norms can pull the process towards competing paths. In some cases, there is advancement towards gender equality while in others, there has been a backlash and a movement towards more traditional roles.

Still, an enduring pattern tends to persist. As women increasingly engage in productive activities

and become income earners, they (or at least the majority of them) continue to perform their socially ascribed gender role of being primarily responsible for reproductive activities; that is, as household managers and care providers. Although there is evidence in time-use studies of several countries that men have increasingly taken on more household chores, the bulk of unpaid care work performed at home and in the community still falls on women. This situation inevitably creates stresses and growing tensions, as workers, particularly women, try to balance old and new roles. They experience these strains in caring for their households, in their search for jobs and participation in the labor market, in accessing credit, technology and assets even as they continue to perform their socially ascribed roles. The inability to successfully combine paid and household labor has left many women disenfranchised and disempowered (Floro and Meurs, 2009). Instead of replacing time in household care work with time in paid work, and shifting compensating amounts of reproductive work to men, women tend to lengthen their total work time at the expense of leisure and sleep. In some cases, they perform two or more work activities simultaneously in order to cope with the time pressure. The work burden is heightened even more during periods of economic downturn and crises, cutbacks in government expenditures, and fiscal austerity measures.

Market Economy and Social Reproduction

There are important linkages between the market economy and the care economy that require scrutiny and attention if we want to understand and address the evolving crisis of care of people. We start by defining the sphere of economic inquiry around the concept of the provisioning of human life that feminist economists have used (Cagatay, Elson and Grown, 1995; Nelson, 1993). It emphasizes those goods and services that people need in order to survive and to develop their capabilities, for example food, health care, childcare, care for the sick and elderly, education, water, sanitation, housing and means of transport. There are two productive systems that provide them; namely, the market economy and the non-market (or reproductive) economy that take place in households and communities. The link between them is multi-faceted. First, the labor time spent in growing food for subsistence, gathering fuel and water, childcare, sick and elder care and performing domestic chores is co-determined with paid, market work time. Thus, reproductive or care work time directly affect individuals' labor market options as well as their time spent in the labor market.

Second, unpaid (care) labor time also affects the rate at which labor in paid work is rewarded since the so-called monetized opportunity costs are small in the case of unpaid, household work. Third, care or reproductive activities such as domestic chores, fuel and water gathering, subsistence production and care work in the household are crucial to the production of the labor force, generation of knowledge and overall social reproduction. As Nancy Folbre (2008: 24–25) puts it: “Children grow up to become workers, entrepreneurs, innovators as well as taxpayers, and the older generation is not the only group that benefits from their existence... The benefits are realized by all consumers of commodities, whether they have raised children or not.” Put in another way, those household mem-

bers that perform the unpaid work of daily domestic chores and caring activities assume important costs of producing the labor force and social fabric.

Fourth, there are complementarities and substitutions between market-purchased goods and services purchased and the non-marketed goods and services produced with unpaid labor. Market-produced goods and services (vegetables, flour, soap, tools, etc.) are inputs in the household production of meals, clean clothes, etc. Households that can afford them also make use of purchased goods and services (e.g. restaurant meals, house cleaning, laundry service and daycare centers) as substitutes for household production, thereby reducing the unpaid labor time demanded of the household members.

Finally, the boundaries of the market production and non-market production systems are influenced by economic policies and budgetary decisions which determine public provisioning of services ranging from childcare to healthcare to education, etc. Government policies that stimulate economic growth via market liberalization and privatization induce shifts in the use of labor and other resources from the non-market economy to the market economy. This pattern of economic growth, however, does not necessarily reduce the demand for household production of goods and services. For instance, the adoption of neoliberal policies since the 1980s has led to the erosion and cutting back of education, health, social protection and other social expenditures, thereby increasing the demand for and burden of the reproductive work performed by women. Tax cuts for the rich have helped keep the luxury goods industry contributing to economic growth.⁴ Attempts to balance the demands of market work and the unpaid work in household maintenance and social reproduction have led to long working hours and chronic stress, especially for many women.

Governments are also involved in the process of social reproduction, albeit in varied degrees and forms. State subsidies and support of clean water supply, sanitation, schools and healthcare, daycare services, pensions, food stamps, unemployment compensation, social protection, etc affect the manner in which care needs are met across various constituencies. The push towards global market integration, market liberalization and privatization of basic services over the last few decades has led to the gradual decline in taxation and a shift of public resources in support of increasing firm or business competitiveness, leading to divestment in services and programs in support of the care economy and social reproduction. Recent trends towards privatization of many elements of social reproduction have both promoted the growth of markets providing such services. Paradoxically, this has been accompanied by the increase in demand for unpaid care work, particularly among those who can ill afford more market purchases. This has created sharp distinctions between wealthy and poor households in terms of how the care requirements of human maintenance and social reproduction are met.

It must be noted that economic growth has been uneven with several countries undergoing economic stagnation or low growth over a long period now, and others experiencing economic fluctuations that include bouts of downturn and recovery as predicted by business cycles. The gains from economic growth are unevenly distributed across sectors, among households, and between men and women, as with the costs of economic downturns and crises. The economic divide between developed and developing countries continues to persist with a small group of countries remaining at the top of

the world income distribution; only a few countries that started out poor have joined that high-income group (UN 2011). This divide also exists within countries across income and social groups. Global economic prosperity in other words has increased, without giving everyone access to the benefits.

These widening income and wealth disparities have created diverse types of “care arrangements” and have shifted the distribution of caregivers across social classes and even national boundaries. As Razavi and Staab (2011, p. 17) point out, “demographic variables alone do not determine care needs and burdens. Rather they are filtered through social, cultural and economic factors which shape what is considered to be sufficient or considered ‘good care.’” The adequacy and quality of care received by people within the same country can be very different, which helps to perpetuate and even exacerbate the imbalances in the process of social reproduction.

For instance, hiring domestic workers or paid caregivers, typically women, is a common solution for middle and upper income families in developing and developed countries (Razavi, 2007, Beneria 2010). The need to balance household and market work is therefore mediated by the seemingly abundant supply of women willing to work even for low wages. Throughout Latin America, for example, domestic workers account for approximately 17 percent of employed women. They are about 9 percent of all employed women in South Africa, about 9.5 per cent in the Philippines, and are found in 1 out of every 2 Kenyan homes (ILO, 2007). Domestic workers have therefore served as substitute caregivers and helped compensate for the lack of collective support from family members. These domestic workers are predominantly women, often from poor communities, rural areas, ethnic and racial minorities, or immigrants.

For the working poor and low-income households, however, hiring domestic help is simply unaffordable, and these households are often compelled to engage their children in both paid and unpaid domestic work to enable the family to meet its survival needs. In many countries, it is typically girls who are removed from school to care for younger children and accomplish domestic tasks, thus contributing to household survival at the expense of long-term education and employment opportunities (Floro and Meurs, 2009). These trends enable the persistence of gender inequalities in future generations.

Those poor families with no (other) child carer at hand cope by leaving the sick, elderly or children home alone or by taking at least their children to work with them. For example, in Indonesia, 40 percent of working women care for their children while working (Kamerman, 2000; Addati and Casirer, 2008). In Nairobi, 54 percent of poor mothers were found to bring their babies to work, whereas 85 percent of better-off mothers had house-girls (Lakati et al., 2002).

Oftentimes, it is the primary caregiver in the household who migrates to the cities or to another country to work as domestic helpers, nannies, nursing home aides, etc., whose own dependents are left behind with other relatives. This leads to a reconfiguration of the division of labor among household members, requiring other female members to take on the responsibility for care. The migration of care workers of various types represents a form of reallocation of care labor from rural to urban areas, from the global South to the North countries, and from lower-income to higher-income house-

holds. The long-term social and welfare implications have yet to be fully understood, and many of these consequences cannot be neatly measured nor adequately evaluated in monetary terms.

Income inequality has therefore generated a solution for the increased need for care to those who have the private means to hire the domestic workers, nursing aides or use day care centers and nursing homes. For many women in poor and low-income households, however, their migration from the rural to urban areas, or from their own to the medium and high-income countries, has brought about the formation of transnational families who have to solve their own care needs (Beneria, 2010).

Widening inequality is also creating gaps in various aspects of human development across the world, which, although narrowing, remains substantial. The demographic transition from high to low death and birth rate regimes constitutes one of the most remarkable aspects of development. Large gains in life expectancy by more than 17 years since 1970 have occurred in many parts of the developing world. For some countries including Chile and Malaysia, mortality rates have dropped to about 60 percent what they were 30 years ago (UNDP, 2010, p. 31). Even in Sub-Saharan Africa, life expectancy is more than eight years longer than in 1970. The positive implications in terms of advancement of human welfare are obvious and immediately clear.

A key driver to this increase in life expectancy is the substantial decline in infant mortality by 59 per 1,000 live births in developing countries, almost four times the decline of 16 per 1,000 in developed countries (WHO, 2008). However there are huge health gaps across the world population, with eight times more infant deaths per 1,000 live births in developing countries than in developed countries (UNICEF, 2008). The general decline in mortality rates has been accompanied by fertility declines in many parts of the world. Overall, the total fertility rate of the developing world dropped from 6.0 births per woman in the late 1960s to 2.9 births in 2000–2005 (United Nations, 2007).⁵ The decline in fertility rates has been most rapid in Asia, North Africa, and Latin America regions. Sub-Saharan Africa also experienced significant declines despite its lagging development (Bongaarts, 2008).

There are two important caveats to the above demographic trends that impact (a) the level of care and forms of care arrangements utilized for social reproduction, and (b) the level of natural resources usage especially fossil fuels. First, the averages presented in the preceding paragraphs hide wide variations in the levels and trends of infant mortality rates and fertility rates between as well as within countries. Second, fertility rates in a growing number of both developed and developing countries are moving toward levels below replacement.

There have been dramatic reversals in 19 countries (home to about 6 percent of the world's people) that experienced declines in life expectancy in the past two decades (UN HDR, 2010). In nine countries, life expectancy fell below 1970 levels: six in Africa (the Democratic Republic of the Congo, Lesotho, South Africa, Swaziland, Zambia and Zimbabwe) and three in the former Soviet Union (Belarus, the Russian Federation and Ukraine).⁶ In the most affected countries, life expectancy is now below 51 years; in Lesotho it stands at 46—similar to that in England before the Industrial Revolution (UNDP, 2010, p. 32). In the case of the transition economies, the decline was due to the increase in mortality rates after welfare programs had been reduced or eliminated and social services were privatized.

A study of 24 developing countries found widening gaps in child mortality between the extremes of the wealth distribution in 11 countries, narrowing gaps in only 3 and persistent gaps in the rest (UNICEF, 2008). In the developed countries, recent increases in life expectancy have benefited people who are wealthier and more educated. Overall, according to the 2008 UNICEF report, the gaps in health between high and low-income groups remain large, especially in developing countries. Infant mortality, for example, is far more frequent among the poorest households across all regions. In the Arab States, East Asia and the Pacific, and Latin America and the Caribbean, infant mortality roughly doubles in the bottom fifth of the income distribution.

A number of high-income and middle-income countries have experienced fertility declines so large that their populations are far below replacement-level fertility. Total fertility rates estimates in 2010 are as low as 1.4 children per woman in Italy, Spain, Germany, and 1.3 for Japan and Russia.⁷ None of the industrialized countries is above the fertility rate of 2.1 children per woman that is needed to replace the population at a constant level. Only the United States, New Zealand, United Kingdom, Ireland, Iceland, and France have fertility rates above 1.9 children per woman. Hong Kong has the lowest fertility rate in the world at 1.0 child per woman. Birth rates in South Korea and Singapore are also at historic lows, with 1.21 and 1.28 children per mother respectively.

The net effect of declining fertility on social reproduction is not so clear-cut. On one hand, lower fertility reduces the care demands of young dependents, tends to improve the household access to health services and education and, more generally, expands opportunities to escape poverty. But it also poses serious, longer-term problems such as declining labor supply, and fewer taxpayers to fund pensions and social security programs, health services and so on, at a time when the elderly population need them due to longer life expectancies.

Interdependence of the Ecosystem and Human Systems

The scope of economic inquiry used in feminist economics is incomplete however. It fails to recognize the important linkages between human systems and the ecosystem of which they are part. Care for people encompasses intergenerational issues concerning relationships and commitments between the current generation and future generations, which inevitably involves the sustainability of our ecosystems. Care provided in households involves commitment that has moral and distributional dimensions. Parents and mothers in particular pay much of the unpaid labor costs of raising the next generation (Folbre, 2008). A longer term horizon involving a series of future generations requires a much more visceral perception of the multi-level interdependence of life however and the moral responsibility it requires is profound for as Nelson (2011) pointed out, future generations cannot give us anything in return for actions we may take out of our concern with their well-being (p. 18). It involves commitment and requires a reexamination of our relations to the totality of the ecosystem in which human systems are deeply embedded. At the same time, there is a need to examine in more depth the gendered dimensions of environmental sustainability proposals and collective actions such as pro-

vided by Agarwal (2007).

Societies and governments' response to the needs of social reproduction and of maintaining the sustainability of our ecosystem have been uneven and, to a large extent, slow, particularly in allocating resources, even as both the demand for care services and the imperative to address pressing environmental concerns including climate change have increased. The reluctance of policymakers to value non-market work and hence, the goods and services provided by the reproductive economy creates an illusion that the extraction and use of natural resources serve the primary purpose of providing inputs to market production. The absent recognition of these services in mainstream economic analyses and models tends to bias their results and recommendations in favor of commercialization of agricultural land over subsistence production and smallholder farming, dam construction over livelihoods and cultural heritage of indigenous communities, road widening ports, export processing zones, and highway construction over development of public transport, health centers and better sanitation. Similarly, the predominance of GDP growth as the key indicator for assessing the "health" of the economy creates barriers towards reallocation of resources from market (material) production use to that of reproduction since such transfers reduce market output, at least in the short run. The heightened demand and increasingly constrained access to natural resources for survival has created social tensions between groups, communities, and countries especially on access to water, arable land and even fossil fuels like oil. Conflicts over resources exist among and within units of every scale. At the smallest unit of analysis, even within households, men and women may have different, and occasionally conflicting, rather than complementary resource use. In this sense, gender, as with economic power and social strata, determines relative access to resources.

The processes of market production and social reproduction—that is the way societies organize themselves to provide for the sustenance and flourishing of life—substantially affect the carrying capacity of our ecosystem in varied ways. On one hand, declining fertility is perceived to be generally beneficial both to the sustainability of the ecosystem and its diversity as it reduces the growth of population size dependent on natural resources. It also reduces women's specialization in reproduction by reducing the care demands.

But the effect of declining fertility tends to be dominated by the more dramatic growth in per capita material consumption brought about by the growing affluence of the upper classes alongside massive investments in physical infrastructure and increased productive capacity of industry. The study by Schandl and West (2010) on resource use in the Asia-Pacific region demonstrates the important linkages between materials use, climate change and Asian economic growth. The study shows that rising per capita incomes contributed more strongly to growing material use than did population growth. There is still a considerable range of uncertainty about global warming, the potential impacts of toxic chemicals, etc., and one cannot predict the possible outcomes with any degree of accuracy. However, there is growing evidence provided by the science community that increasing accumulation of stocks of waste and pollutants is associated with human activity, and has both localized short-term costs (for example sulfur, particulates, and fecal coliforms) and long-term and more dispersed costs

(such as CO₂ emission). The resulting adverse climatic conditions provide feedback effects to the lives and livelihoods of millions of people throughout the world by creating dramatic changes in the form of long droughts, regular and extreme flooding, typhoons and hurricanes, and mounting soil erosion. These adverse climate conditions have already affected biodiversity, destroyed factories, livelihoods, infrastructure, shelters, etc. and have made it harder to grow the supply of food necessary to meet subsistence needs. There are signs that relations within households and communities are strained by the stress of the effects of coping with environmental degradation and climate change.

Climate change is likely to make the water situation even more critical. Drier areas will be more prone to drought and humid/wetter areas more prone to flooding (Lohmann, 2006; Houghton et al., 2001; Asian Development Bank, 2009; Field and Raupach, 2004). As access to food, water, and other resources becomes more strained, the number of refugees from fierce competition over scarce resources and natural disasters has risen and so too the potential for more conflicts and civil wars, exacerbating the crisis of social reproduction in many parts of the world today.

The worst effects of these adverse climate changes are being felt in the poorer areas and countries such as those in sub-Saharan Africa and Asia. They are likely to take on the brunt of natural disasters. Severe and prolonged drought has also affected parts of Australia, Latin America and the United States as with the Sahel and East Africa, while many parts of Western Africa and Asia are experiencing record floods, where tens of thousands have perished and production of food crops, particularly rice, a basic food staple and source of livelihood for many, has been severely impacted. Rising seas and typhoons have already displaced several million people in South Asia, with India, Pakistan, Bangladesh, Sri Lanka and Indonesia experiencing the worst effects (Asian Development Bank, 2009). As early as 2008, Asian global warming has been predicted to likely cause declines in rice yield potential by up to 50% on average by 2100.

Less is known however regarding the gender dimensions of the ecological crises, which have implications not only on the well-being of women and men in the current generation but also our collective ability to care and provide for future generations. While no one will deny the importance of sustainability of ecosystems, there is much disagreement and even denial about the need to substantially change our economic way of thinking, our decision making processes, actions and behavior.

The “health” of our ecosystem is a significant factor that shapes communities’ and regions’ vulnerability to shocks and risks as well as their capacity to respond. The poor are more vulnerable than other segments of the population; they are more likely to be exposed to sickness from polluted environments and they have fewer resources and instruments to cope.

Dominant Economic Paradigm: Looking at a Mirage?

Dominant economic thinking, that is, the neoclassical economic paradigm, has undoubtedly maintained the preoccupation of policy makers and governments with promoting GDP growth and socialized the materialist consumer culture. There is, now, an extensive literature in feminist economics as

well as ecological economics that provides a strong critique of the dominant economic models and theories that serve as foundations for policy formulation and that influence the interaction between (market) production and reproduction processes, and the speed of natural resource extraction and manner of use.⁸ Their work have challenged definitions, modified analytical tools and expanded our understanding by confronting and dealing with the different forms of exclusions of ecological and care dimensions from most economic discourses as well as the inextricable embeddedness of the market economy within a broader economy of human provisioning, and the latter in the ecosystems of our planet.

Although each body of knowledge focused on distinct vital concerns and involve a diversity of approaches, there are common flaws and weaknesses of neoclassical economics in the ecological economics' and feminist economics' critique that are worth mentioning in this paper. First, they perceive the use of selfish, rational individuals as the starting point to address the central coordination problem in every society as problematic (England, 1993; Nelson and Ferber, 2003; Nelson, 2011). The utilitarian concept of profit maximization and "homo economicus" is viewed to operate in a timeless and spaceless world, taking no note of the social setting (e.g. cultural and gender norms) or the specific characteristics of space and territories (long gestation of renewable resources, limits to non-renewable resources, importance of biodiversity). Further, economic theory rests upon additional assumptions that are not made explicit: the underlying belief (a) in the order of species (humans rule), (b) in the "objectiveness" of social hierarchy (unfettered markets operate on "one-dollar, one-vote" and hence the interests of the wealthy prevail; purchased resources and goods are valued much more than those provided without pay), and (c) in the supremacy of markets over other institutions that coordinate actions.

Secondly, the dominant economic thinking fosters the use of analytical tools and methods that idolize market mechanisms and have "culturally masculine" attributes such as autonomy, abstraction, and logic, which have become the defining characteristics of the economics discipline. Topics such as unpaid work, non-market production, and caregiving as well as characteristics of connection are considered "feminine" and largely marginalized (Ferber and Nelson, 2003). The mainstream economic paradigm makes use of the principles of Pareto optimality and Pareto efficiency in the construction of microeconomic and macroeconomic models. They socialize and direct government actions and socializes people's attention to these criteria, with little regard to the social and ecological contexts and consequences. Further, as Taleb (2010) notes, mainstream economics have successfully distracted people away from uncertainty, nonlinearities and size of the consequences, in the short as well as longer term. The assumptions used in seeking for Pareto efficient solutions or outcomes involve externalizing the ecological and social spillovers, pushing them into the "non-market" sphere and hence are asserted as being exogenous in optimization behavior. Pareto efficiency uses the criterion of not doing something for your own benefit if it makes another person worse off (Nelson, 2011). In so doing, it helps preserve the "status-quo" and renders the issues of economic and social inequalities including gender inequality irrelevant.

Conventional economic analysis typically requires some form of economic valuation in order to

conduct cost-benefit analysis. A valuation method is required for those resources or inputs provided without pay. For instance, measuring and quantifying the value of a natural resource or unpaid caring and domestic work are done through the use of shadow prices, opportunity costs and replacement methods, contingent valuation, etc. Ecological economists and feminist economists argue that such valuation methods are dependent on the context and the market is not an appropriate context in which to determine the value of ecological services and caring labor (Hahnel, 2011; Himmelweit, 1995). They question the premises behind the current methods of valuation since they conceptually link ecological services, natural resources, and unpaid caring work to market production of goods and services and paid labor time. Economists applying cost-benefit analysis methods, say, on environmental impact assessments or on allocation of time between paid (market) work and unpaid (domestic) work, often get preoccupied in determining shadow prices and discount rates and in predicting the expected lifetime (monetary) benefits or earnings. Such an approach essentially follows the priorities of the market to begin with. (Goldschmidt-Clermont and Pagnossin Aligasakis, 1995; Nelson, 2011; Anderson, 1993; Howarth and Norgaard, 2003; Ozkaynak, Devine and Rigby, 2003).⁹ Moreover, as Hahnel (2011) correctly points out, the cost-benefit analysis, perceived by mainstream economists as the rational and objective method of making choices including choices on time use or social choices about the environment, is inappropriate “when compensation is unlikely to rectify inequities, when people have rights, and when power differentials bias estimates of costs and benefits... when benefits are hard to quantify, and when the consequences of improbable outcomes are very large...” (p. 11).

Several feminist economists have also raised serious theoretical and methodological concerns regarding the conceptualization and valuation method of unpaid caring and domestic work. Himmelweit (1995), for instance, points to the distinctive aspect of the caring activities that include relational aspects which makes it qualitatively different from market work. Moreover, there is an implicit bias in the valuation process as pointed out by Beneria (2003): “When lower-income women participate in the paid labor market, either their workload increases or the standards in home-produced goods and childcare need to be lowered” (p. 159). Such concerns highlight the basic question of how to measure human well-being, health of the ecosystem and the contributions made by ecosystems, habitats, and unpaid caring labor that are outside the market economy.

Third, markets in general are considered in the dominant economic paradigm to be dynamic and able to create solutions to address the crises including the crisis of care and environmental crisis. Shortages in care services, food crises, and environmental problems for example can be dealt with by the market (price) allocative mechanism, which is considered a powerful device for discovering new solutions to problems that arise in the course of economic growth. The creation of a market for tradable CO₂ emissions to deal with climate change is one example. Another example is the promotion of market institutions that allocate childcare and elderly care services on the basis of one’s ability and willingness to pay.

Technological change, particularly the development of green technologies, is often seen as a moderating factor allowing for reductions in resource use and mitigation of climate change through im-

proved efficiency in resource use. For example, if oil reserves are continually depleted, this will lead to an increase in oil prices, which eventually leads to development of new consumer products such as hybrid and electric cars. Similarly, as life expectancy increases, the demand for elderly care in developed countries has led to surges in migration of domestic and healthcare workers from the developing countries and development of recruitment agencies. Economic fluctuations and social stresses simply trigger a set of actions such as development of new technologies as well as discovery and utilization of new resources in which dimensions of natural (fossil, land, forests) resources and care labor that were previously of little interest now become (potentially) valuable resources to be tapped and incorporated into the accumulation process.

Similarly, technological change is expected to modify gender roles due to development of labor-saving household appliances as well as to changes in economic incentives and relative prices that lead to increased women's participation in the labor market, higher earnings and, hence, improved well-being. The development of labor-intensive technologies during periods of export-oriented industrialization in developing countries for instance has led to the increase in demand for women's labor in export production. For example, the share of women workers substantially increased in the 1970's and eighties in countries such as South Korea, Taiwan, Singapore and Malaysia where the manufacturing sector has been heavily oriented towards exports. In fact, women provide the bulk of labor in the manufactured export sector.

A number of ecological economists and feminist economists view the belief that technological change, including development of "green technologies" will sufficiently address the emerging crises of care to be misplaced. They also see that so-called market solutions mitigate the problems (for some) only in the short-run and, on the whole, tend to postpone the crises, which eventually leads to discontinuities, major disruptions and even collapses, for example the disappearance of communities and extinction of species. Market forces by themselves do not address the distributional imbalances created by the interplay of social norms, demographic change, economic growth and capital accumulation processes. While they have propelled the growth of material prosperity, they fail to distribute the gains as well as the costs of that prosperity. Wealth distribution affects the ability of persons to meet their subsistence and care needs. It affects their capacity to manage resources sustainably as well. Both social and economic inequalities are likely to continue affecting the demands on the ecosystem and conflicts among individuals, groups, communities, etc (Wisman, 2011).

Paradoxically, hunger and food insecurity afflict many millions in various parts of the world, amid abundance and even food waste in other parts. It highlights the distributional consequences of income inequality, which undermine the ability of vulnerable groups for meeting subsistence needs. The availability of relatively cheap hired domestic and care workers enables middle and upper class families, including those in industrialized and Middle-East countries, to enlist a market solution to their elderly, sick and childcare problems. These care and domestic service workers, predominantly women from rural areas or from the global South, tend to leave their own dependents behind in networks of family (unpaid) caregivers, thus enabling them to work unencumbered for long hours and to reduce the cost

of their labor. Current trends in family structures and household division of labor including an increase in non-marriage and divorce, and the paid and unpaid (double) work burden of women, are exacerbating inequalities in well-being between women and men as well as outcomes among children (the future generation). Human systems and ecological systems may be able to tolerate such imbalances up to a certain point before behavior and decisions collectively create a shift from one steady state to another, one which is not what we want.

Seeking a Way Forward

The dual crises of care for people and care for the environment alert us to the real meaning of sustainability and the serious choices that governments and society as a whole need to grapple with. Addressing these crises will require a far-reaching, systemic change in society's values and consumer behavior, in the way businesses, farms, energy, transport, trade, etc. are organized, in the way markets operate and policies are formulated. They will also require a new way of thinking about economic systems, basically a fundamental change in the way economic concerns and problems are perceived and how they should be addressed. Drawing from the insights of feminist economists and ecological economists including Nelson (2011), Hahnel (2011), Agarwal (2007), Beneria (2003) and Bergmann (2011), I explore in the following section what's required in transforming the current way of economic thinking.

A good starting point is to recognize the crucial interdependence of the productive (market) system and the reproductive economy, and that of the human system and ecosystem. This interdependence operates at multiple levels and involves dynamic feedback loops. They are complex, multi-dimensional and non-linear, and we only have bounded knowledge about these causal chains, the nature of the effects and their magnitude. Their unpredictability and complexity should not be excuses, however, for integrating the true cost of maintaining the resilience of the ecosystem and of raising the next generation and valuing their future contributions in economic analyses, policy formulation and assessments. This would need a new economic paradigm that incorporates both feminist economists' and ecological economists' concerns and that provides a shared understanding of the natural resource and care labor constraints in meeting the needs of societies and the inseparability of the services provided by the ecosystem with the well-being of present and future generations.

Secondly, this new economic thinking must integrate the role of risk and presence of uncertainty in outcomes, no matter the type of intervention or form of change in behavior. For instance, the challenge to prevailing unequal gender relations can raise dissonance and conflict, or it can be accepted or unopposed. Economic processes, demographic change as well as economic and legal reforms that confront prevailing gender norms, that is, what it means to be a woman as well as what it means to be a man in the household, in the community at large and as market participants may lead to strong opposition and even a backlash, or they may be uncontested. Greater nuance is clearly required in addressing ecological crises as well, where the nature of our interdependence with future generations is rather different from the interdependence within the current generation involving care (exchange) re-

lations across gender, class, and national boundaries.

Ultimately, the solutions that address the crises of care and ecological sustainability demand from academics, policymakers and the rest of society “a recognition of common humanity and substantive responsibilities for care” that has more to do with commitment than with simply altruism or selflessness. (Nelson, 2011, p. 20). It requires a radical shift from the culture of individualism to one of cooperation. A new framework and way of thinking is thus required to reduce the ‘complacent irresponsibility’ to our global society and to future generations.

Such a framework also recognizes the limits to organization that is driven by competition and incessant pursuit of material prosperity. Baland et al. (2007) demonstrate that cooperation often requires collective action at the local, national and global level at a scale that many people have never before attempted. The story of the rational, self-interested individual shies away from the notion of cooperation and in fact may even find this to be detrimental. Indeed, coordination problems and associated costs abound, making such an effort challenging. But collective actions are required if we have to address these evolving crises of care. These involve coordinated efforts between governments, households, communities and businesses to adequately address the provisioning of care for children, the sick and disabled, elderly, as well as able-bodied adults, without making women necessarily specialize in reproductive activities.

A new economic thinking requires re-framing economic questions or inquiry in terms of provisioning for human life and environmental sustainability. It involves developing a framework for reallocation of resources and provisioning of socialized support for care, as well as the equal sharing of responsibilities between women and men. It also requires the integration of the costs for raising the next generation along with the costs of maintaining the resilience and carrying capacity of the environment in economic theories, models and methodologies. It demands economic reasoning and development of analytical tools that provide a deeper understanding of the gendered, distributional and ecological dimensions of economic options, choices and decisions including economic policies. Such a framework requires a better understanding of decision making processes where a more collective rather than individualistic perspective is taken (Baland et al., 2007; Costanza et al., 2001). This new way of economic thinking can provide a clear plan for transition to renewable energy, for development of a green economy (Hahnel 2011), for government actions in support of care provisioning, promotion of collective actions among communities and businesses based on a shared responsibility for social reproduction and care of the environment, and governmental and inter-governmental actions to prevent ecological damage. Such a new economic paradigm can humbly serve as an instrument for promoting agroecology and organic farming, collective consumption, jobs and prosperity without (or limited) growth, and the “new Industrial Revolution” that Broad and Cavanagh (2011), Hahnel (2011), Bergmann (2011) and Nicholas Stern (2011) respectively speak of, and for changing household and firm behavior, government priorities, and societies’ value systems, habits and norms, which the dual crises of care urgently demand.

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Notes

- 1 Italics are that of the author.
- 2 Only collection of fuel and water and subsistence production are included as part of the SNA production activities. These are poorly captured by labor force and household survey questionnaires however.
- 3 See further discussion of this point in Travers and Richardson (1993), Ackerman et al (1997), and Gough (1994).
- 4 As Wisman (2011) points out, the wealthy benefits the most from continuing environmental destruction and thus tends to gravitates towards political and economic doctrines that are supportive of their self-interest (p. 29). Not surprisingly, politics in the US and in other countries is increasingly dominated by people in the higher income strata.
- 5 The twentieth-century decrease in fertility in high-income countries has been explained by a number of factors as cited in Feyrer et al (2008). These are: a) increase in the demand for human capital, which increased the desire of parents to produce 'high quality or educated' children, b) increase in income which increased the opportunity cost of women's time, c) increase in women's labor force participation, d) decline in infant and child mortality rates and e) the availability of effective contraception for women.
- 6 A major factor in these declines in Africa is the HIV epidemic. Since the 1980s AIDS has slashed life expectancy in Southern Africa, where adult HIV prevalence rates still exceed 15 percent (UNDP 2010).
- 7 Based on <http://unstats.un.org/> and UN Population Division 2011
- 8 The list of such studies are too many to all mention here. See: Cagatay, Elson and Grown (1995, 2000), Beneria (2003), Ferber and Nelson (2003), Bergmann (2011), Folbre (2008), Agarwal (2007), Hahnel (2011), Broad and Cavanagh (2011), Lohmann (2006), Soderbaum (2005), Sheeran (2011), Costanza et al (2001), Wisman (2011), Brie (2009), to name a few.
- 9 The main methods for valuing environmental impact utilized in environmental economics include: (1) the current costs of abating or controlling emission, assuming that an equilibrium exists; (2) current costs of mitigation, assuming that they are an appropriate measure of environmental damage; and (3) social costs of environmental damage using either the travel cost method, hedonic or surrogate pricing, and contingent valuation. The value of unpaid labor time makes use of the monetary value of the good produced, the wage of a hired worker's, or the earnings that the person performing unpaid care work could receive in the market.

References

- Addati, Laura and Naomi Cassirer (2008). "Equal Sharing of Responsibilities between Women and Men including Caregiving in the Context of HIV-AIDS," ILO Paper Prepared for the Expert Group Meeting on ILO, Geneva.
- Ackerman, Frank, et al. (eds.) (1997). *Human Well-being and Economic Goals*, Island Press, Washington, D.C.
- Agarwal, Bina (2007). "Gender Inequality, Cooperation and Environmental Sustainability" in Jean-Marie Baland, Pranab Bardhan and Samuel Bowles (eds.), *Inequality, Cooperation and Environmental Sustainability*, Russell Sage Foundation and Princeton University Press, pp. 274-314.
- Anderson, Elizabeth (1993). *Value in Ethics and Economics*, Harvard University Press, Cambridge, Massachusetts.
- Arrow, Kenneth et al. (1995). "Economic Growth, Carrying Capacity, and the Environment," *Science*, Vol. 268, April, pp. 520-521.
- Asian Development Bank (2009). *The Economics of Climate Change in Southeast Asia: A Regional Review*, Asian Development Bank, Manila.
- Baland, Jean-Marie and Jean-Philippe Platteau (2007) "Collective Action on the Commons: The Role of Inequality" in Jean-Marie Baland, Pranab Bardhan and Samuel Bowles (eds), *Inequality, Cooperation and Environmental Sustainability*, Russell Sage Foundation and Princeton University Press, pp. 10-36.

- Bergmann, Barbara (2011). *Is Prosperity Possible Without Growth?* Unpublished paper, American University Department of Economics, Washington, D.C.
- Beneria, Lourdes (2003). *Gender, Development and Globalization: As If People Mattered*, Routledge, New York and London.
- Beneria, Lourdes (2010). "Keynote Address: Globalization, Women's Work, and Care Needs: The Urgency of Reconciliation Policies," *North Carolina Law Review*, Vol. 88.
- Bongaarts, John (2008). "Fertility Transition in Developing Countries, Progress or Stagnation," *Studies in Family Planning*, Vol. 39, No. 2, pp.105-110.
- Brie, Michael (2009). "Post-Neoliberalism: A Beginning Debate," *Development Dialogue*, No. 51, January 2009, pp. 15-33.
- Broad, Robin and John Cavanaugh (2011). "Can Danilo Atilano Feed the World?" *Earth Island Journal*, Winter Issue, pp. 56-60.
- Cagatay, N., D. Elson, and C. Grown (1995). "Introduction," *World Development*, Special Issue on Gender, Adjustment and Macroeconomics, 23 (11), pp.1,827-1,836.
- Carney, Judith, and Michael Watts, (1990). "Manufacturing Dissent: Work, Gender and the Politics of Meaning in a Peasant Society," *Africa*. 60 (2), pp. 207-241.
- Carrasco, Cristina and Marius Dominguez (2011). "Family Strategies for Meeting Care and Domestic Work Needs: Evidence from Spain," *Feminist Economics*, Vol.12, No. 4, pp. 150-188.
- Costanza, Robert et al. (2001). *Institutions, Ecosystems and Sustainability*, Lewis Publishers, Boca Raton.
- Elson, Diane and Nilufer Çağatay (2000). "The Social Content of Macroeconomic Policies," *World Development*, 28 (7), July, pp. 1,347-1,364.
- England, Paula (1993). "The Separate Self: Androcentric Bias in Neoclassical Assumptions" in Marianne Ferber and Julie Nelson (eds), *Beyond Economic Man: Feminist Theory and Economics*, University of Chicago Press, Chicago, pp. 37-53.
- Ferber, Marianne and Julie Nelson (eds) (2003). *Feminist Economics Today: Beyond Economic Man*, University of Chicago Press, Chicago.
- Feyrer, J., Sacerdote, B., and Stern, A. (2008). "Will the stork return to Europe and Japan? Understanding Fertility within Developed Nations," *The Journal of Economic Perspectives*, 22 (3): 3-22. doi:10.1257/jep.22.3.3.
- Field, C. B. and M. R. Raupach (eds) (2004). *The Global Carbon Cycle: Integrating Humans, Climate and the Natural World*, Island Press, Washington, D.C.
- Floro, Maria and Mieke Meurs (2009). *Global Trends in Women's Access to Decent Work*, Dialogue on Globalization Occasional Papers, Friedrich Ebert Stiftung and International Labour Organization, Geneva, No. 43, May.
- Folbre, Nancy (2008). *Valuing Children: Rethinking the Economics of the Family*, Harvard University Press, Cambridge.
- Gitay, H., A Suárez, R. Watson, D. Dokken (2002). *Climate Change and Biodiversity*, Intergovernmental Panel on Climate Change (IPCC), Geneva, Switzerland.
- Goldschmidt-Clermont, Luisella and Elisabeth Pagnossin-Aligasakis (1995). *Measures of Unrecorded Economic Activities in Fourteen Countries*, United Nations Development Programme Working Paper, New York.
- Gough, Ian (1994). "Economic Institutions and the Satisfaction of Human Needs," *Journal of Economic Issues*, Vol. 28, March, pp. 25-66.
- Hahnel, Robin (2011). *Green Economics: Confronting the Ecological Crisis*, M.E. Sharpe, New York.
- Hanemann, W. Michael (1997), "Valuing the Environment through Contingent Valuation" in Frank Ackerman et al. (eds), *Human Well-Being and Economic Goals*, Global Development and Environment Institute, Tufts University, Island Press, Washington, D.C., pp. 144-147.
- Himmelweit, Sue (1995). "The Discovery of Unpaid Work: The Social Consequences of the Expansion of Work," *Feminist Economics*, Vol. 1, No. 3, pp. 1-20.
- Houghton, J. T. et al. (2001). *Climate Change: the Scientific Basis*, Cambridge University Press, Cambridge.
- Howarth, Richard and Richard Norgaard (1997). "Intergenerational Transfers and the Social Discount Rate" in Frank Ackerman et al. (eds), *Human Well-Being and Economic Goals*, Global Development and Environment Institute, Tufts University, Island Press, Washington, D.C., pp. 154-157.
- Howarth, Richard B. (2003). "Discounting and Sustainability: Towards Reconciliation," *International Journal of Sustainable*

- Development*, 6 (1), pp. 87-97.
- International Labour Organization (ILO, 2007). *Equality at Work: Tackling the Challenges*, Global Report under the Follow-up to the ILO Declaration on Fundamental Principles and Rights at Work, ILO, Geneva.
- Kamerman, S.B. (2000). *Early Childhood Education and Care (ECEC): An Overview of Developments in OECD Countries*, Unpublished Paper, New York, Columbia University, Institute for Child and Family Policy. Available at <http://www.columbia.edu/cu/childpolicy/kamerman.pdf>.
- Lakati A. et al. (2002). "Breastfeeding and the Working Mother in Nairobi," in *Public Health Nutrition*, 5 (6), pp.715-718.
- Lane, Robert (1997). "The Joyless Market Economy," in Frank Ackerman et al. (eds), *Human Well-Being and Economic Goals*, Island Press, Washington, D.C., pp. 29-33.
- Lohmann, Larry (2006). "Carbon trading: A Critical Conversation on Climate Change, Privatisation and Power," *Development Dialogue*, No. 48, September.
- McNicoll, Geoffrey (2003). *Population and Development: An Introductory View*, Population Council, New York.
- Nelson, Julie (1993). "The Study of Choice or the Study of Provisioning," in M. Ferber and K Nelson (eds) *Beyond Economic Man: Feminist Theory and Economics*, University of Chicago Press, Chicago.
- Nelson, Julie (2011). "Ethics and the Economist: What Climate Change Demands of Us," *Global Development and Environment Institute*, Working Paper No 11-02, May, pp. 1-38.
- Ozkaynak, B. Devine and D. Rigby (2002). "Whither Ecological Economics?" *International Journal of Environment and Pollution*, Vol. 18, No. 4, pp. 317-335.
- Parry, M., O Canziani, J. Palutikof, P. van der Linden and C. Hanson (2007). *Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, Cambridge University Press, Cambridge, UK.
- Razavi, Shahra (2007). *The Political and Social Economy of Care in a Development Context: Conceptual Issues, Research Questions and Policy Option*, Gender and Development Paper, No. 3, United Nations Research Institute for Social Development, Geneva.
- Razavi, Shahra and Silke Staab (2011). *Worlds Apart? (Re) Thinking Care in a Development Context*, United Nations Research for Social Development, Geneva, forthcoming.
- Soderbaum, Peter (2008). *Understanding Sustainability Economics: Towards Pluralism in Economics*, Earthscan, London.
- Sheeran, Kristen (2011). "Building the Case for Climate Action: The Role of Economics," for *Economics for Equity and Environment Network* http://e3network.org/papers/Building_the_Case_for_Climate_Action.pdf
- Stern, Nicholas (2011). *How Should We Think About the Economics of Climate Change?* Lecture for the Leontief Prize Medford, Global Development and Environment Institute. http://www.ase.tufts.edu/gdae/about_us/leontief/SternLecture.pdf
- Taleb, Nassim, (2010). *The Black Swan: The Impact of the Highly Improbable*. Random House, Inc. New York.
- Travers, Peters and Sue Richardson (1993). *Living Decently: Material Well-Being in Australia*, Oxford University Press, Oxford.
- United Nations Children's Fund (UNICEF) (2008). *Progress for Children: A Report Card on Maternal Mortality*, Oxford University Press, New York.
- United Nations Development Programme (2010). *Human Development Report*, Oxford University Press, New York and Oxford.
- United Nations International Strategy for Disaster Reduction (2002). *Natural Disasters and Sustainable Development: Understanding the Links Between Development, Environment and Natural Disaster*, Background Paper No. 5, Geneva.
- United Nations Population Division (2011). *World Population Prospects*, Department of Economic and Social Affairs, New York.
- Wisman, Jon (2011). "Inequality, Social Respectability, Political Power and Environmental Devastation," *Journal of Economic Issues*, December, forthcoming.
- World Health Organization (2008). "Can Governments Influence Population Growth?" *OECD Observer*, No. 229, November, pp. 35-37.