

Global Advances in Quality of Life and Well-Being: Past, Present, and Future

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Abstract This paper documents global progress in human well-being since the end of World War II and, more specifically, since 1950. The paper focuses on the transformative changes in quality of life that have occurred over this period in four of the most critical sectors of well-being: the health, education, economic, and welfare sectors. We also consider the significant impact that changes in the natural environment have and continue to make on humanity. In all five sectors we also identify what we regard as the underlying “drivers” that have made these transformative changes in the human condition possible and suggest how the strength of these changes can be expected to contribute to the further enhancement of quality of life and well-being over at least the near term. In pursuing these objectives, we argued in favor of adopting a more positive view with respect to the advances in quality of life and well-being that have taken place since 1950.

Keywords Quality of life · Well-being · History · Progress · Positivism · Health well-being · Educational well-being · Economic well-being · Social welfare · Environmental well-being

1 Introduction

People everywhere seek to improve the material and subjective conditions of their lives and that of their families, extended kinship systems and, as possible, those of unrelated people living in the same community and elsewhere (e.g., Angel and Angel 2017; Baldwin 1992). Using a variety of human and social capital approaches, individuals and families

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invest heavily in providing for the needs of their age-dependent children and aged family members and, using primarily fiscal capital, invest in the quality of life and well-being of their fellow citizens¹ (e.g., Greenberg et al. 2016; Piketty 2013). These investments in the well-being of self and others are substantial and include cash payments, in-kind contributions such as food and disaster assistance and, today, comprehensive social insurance programs that provide for at least the minimal income security needs of the most vulnerable populations—especially children and youth, the aged, and disabled persons (Day and Schiele 2013). These support systems also form the foundation on which societies of the past and present were and are built, societies in which people are regarded as both the means and ends of development (e.g., Estes and Sirgy 2017; People-Centered Development 2017). Every expectation exists for believing that social and human capital investments of this type in personal and interpersonal well-being will continue to be made by societies of the future as they, too, strive to promote advances in the quality of life and well-being of all their citizens.

The communal life of societies also is shaped by many *impersonal* forces that take place in the larger social, political, economic, technological, and physical environments. These forces are very powerful, and rarely can they be controlled by individuals or small social units. Indeed, in most cases, these mezzo- and macro-level forces tend to be invisible on a day-to-day basis but, nonetheless, profoundly shape the structure of societies (e.g., Gourevitch 2008; Strang 1991). This is especially the case in technology-driven societies that depend on the use of computers and other electronic systems that depend on the emergence of ever faster computer chips and microprocessors, highly specialized telecommunications and observation satellites, and the dazzling array of hand-held or worn electronic devices that are used to enhance interpersonal communications and nearly all aspects of commercial life (e.g., Headrick 2009; Selian and McKnight 2017).

Similarly, the political affairs of most nations are invested in a relatively small number of people selected to represent the larger population. The major charge to this group is to make policy decisions and to frame laws that affect not only the internal affairs of the state but also those associated with the state's complex relationships with other nations (e.g., Dye and MacManus 2014; World Bank 2017). Macro-level political powers, for example, are entrusted by the citizens they represent to carefully protect their nation's sovereignty but, at the same time, to use that sovereignty to enter social, political, economic, and even military alliances with other sovereign states. Some examples of the largest and most influential of these multinational alliances between sovereign states include the African Union, the Association of Southeast Asian Nations, the Commonwealth of Independent States, the North American Free Trade Agreement, the North Atlantic Treaty Organization, the World Trade Organization, and even the United Nations with its large network of specialized agencies that promote well-being, including the United Nations Development Programme, the United Nations Educational, Scientific and Cultural Organization, the United Nations

¹ For the purposes of this paper, "quality of life" refers to both the objective and subjective conditions of life. Quality of life, for example, rises as one's basic needs and wants are satisfied which, in turn, contribute to a high sense of satisfaction with one's life, e.g., secure income levels, favorable health, reasonable levels of education, opportunities for personal advancement, and so on (Diener and Rahtz 2000). Though often used interchangeably with one another, "well-being" is sometimes used as an abbreviation of "subjective well-being," which is a concept that fundamentally reflects a subjective experience that can co-exist in the absence of high levels of consumer goods and services and access to other objective conditions of life, e.g., people living in low-income communities and societies (Sirgy 2012).

Entity for Gender Equality and the Empowerment of Women, and the World Health Organization, among others.

1.1 Transformative Change

Transformational, or transformative, change refers to fluctuations that have already occurred or are occurring in societies that are *profound, fundamental, and irreversible*. Transformative change is a *metamorphosis, a radical change* from one form to another (Gass 2010). These changes also are holistic and impact all sectors of human activity. Transformative changes also are interdisciplinary, cross-sectoral, and require the efforts of large numbers of people with a great variety of skills working over a sustained period to achieve, e.g., the ability to travel to the moon required sustained contributions from all the physical, engineering, mathematical, and computer disciplines, as well as the contributions made by the social sciences, the humanities, and the arts. In effect, the arts and humanities provided the vision for space travel, the social sciences provided the skills needed by astronauts to work together over long periods in confined spaces, and the physical sciences brought into being the technologies needed to launch astronauts into space and return them to a point of reentry.

Much of what has been published in the quality-of-life literature on global development focuses on poverty, poverty alleviation, and the serious disparities that exist in the distribution of wealth within virtually all societies (Piketty 2015). Furthermore, much of what is reported in the news media about global development focuses on the continuing challenges faced by humanity in advancing the human condition, e.g., diversity-related social conflict, war and other cross-border conflicts, the flight of economic refugees from one region of the world to another, the plight of stateless peoples, and the complex needs of people seeking to lift themselves out of poverty. The purpose, of course, is to identify problems and act on these challenges to produce a more positive outcome. However, what seems to be missing in this equation is the positive view of human development. We argue in favor of adopting a more positive view with respect to the many critical societal changes that have taken place over this period as opposed to the negative perspective associated with the steady stream of often negative stories that historically have dominated the mass media and, sometimes, the professional literature (e.g., Caro 2016; Weinberger et al. 1981; Leach 2013; Watkins and Brook 2016).

To achieve this objective may require some readers to at least temporarily undergo a process of “cognitive reframing²” to fully appreciate the remarkable positive movements forward that that been made in improving quality of life worldwide since the nineteenth century. The goals of this paper are multifold: (a) to identify global progress in human well-being, especially in the health, education, economics, welfare, and environmental sectors; (b) to identify the underlying “drivers” that have made these changes possible; and (c) to suggest how the strengths of these changes can be expected to contribute to the further enhancement of quality of life and well-being over at least the near term.

² “Cognitive reframing” refers to a psychological technique that consists of identifying and then disputing irrational or maladaptive thoughts. Reframing is a way of viewing and experiencing events, ideas, concepts, and emotions to find more positive alternatives. In the context of cognitive therapy, cognitive reframing is referred to as cognitive restructuring. Cognitive reframing, on the other hand, refers to the process as it occurs either voluntarily or automatically in all settings (Frisch 2005).

1.2 Looking Back While Looking Forward

We raise and address the following questions: (1) what is the time frame of this study and why did we select that time frame? (2) Is the use of secondary data appropriate for this type of study? (3) How did we handle the subjective indicators of quality of life? (4) The so-what question: Why is our study important given that much of the data we report are widely available in major international publications. These are reasonable questions and ones that can be reasonably addressed.

1.2.1 What is the Time Frame of this Study and Why Did We Select that Time Frame?

The authors selected the period following the end of the Second World War and the decades that preceded it as a frame of reference for understanding current trends and implications for furthering well-being in the future. To move forward, we must first understand where we have been and how we arrived there. This study serves as a “rear view” mirror of sorts since it acknowledges the accomplishments of the past and, building on that legacy, contributes to a framing of both the research and policy agendas for achieving progressively higher and newer achievements in advancing human well-being. Our field of research is not ahistorical but, instead, reflects the social, political, economic, and technological status of nations and the world at various points in history. In a profound sense, we all “stand on the shoulders” of others who have preceded us in advancing the human well-being agenda. Thus, it is important that we acknowledge the continuity of conceptual innovations and material achievements that have taken place over time. Indeed, we strongly believe that all studies, as they do in their literature reviews, give recognition to the reality that their contributions are being added to the stream of ideas that others before them have helped to create.

1.2.2 Is the Use of Secondary Data Appropriate for this Type of Study?

The point of the second question, having to do with the use of secondary rather than primary data, is that the ultimate unit of analysis in this report is the world. The use of secondary data is essential to the types of analyses that reflect global trends because it would be nearly impossible, and overly expensive, to attempt to collect primary data at the global level, especially given the fact that data of that type are not necessary to the type of analysis reported in this paper. Specifically, given that the patterns reported in this paper are based on worldwide trends and patterns, the data reported are necessarily of a secondary nature. Much of the data reported are objective, and the patterns of these indicators (e.g., advances in years of average life expectancy; enrollment levels in primary education; advancing the social, political, and economic status of women; advances in social welfare; declines in violence and crime) are reported over time. When possible, reference is made to changes in subjective satisfaction with changes in life achievements albeit these data are sporadic and, typically, are reported for only a few nations or world regions, e.g., Europe, North America, and selected countries in developing Africa, Asia, and Latin America.

The primary sources of these international comparative objective data include the International Monetary Fund; the United Nations Development Program; the World Bank; the World Fact Book of the Central Intelligence Agency; and a wide range of university-based and independent think tanks including Freedom House, the International Social Security Association, and the Stockholm International Peace and Research Institute, among others.

Data also were obtained from independent scholars working in the comparative social fields as well as graphics specialists who summarize international comparative data in a variety of formats.

1.2.3 How Did We Handle the Subjective Indicators of Quality of Life?

The authors are aware that many subjective studies of well-being have been undertaken in the past decades. The most important of these have been the *World Values Survey*, which started in 1981 and originates from Vienna (WVS 2018—<http://www.worldvaluessurvey.org/wvs.jsp>); the *Gallup Happiness Polls* (Gallup 2018—<http://www.medicaldaily.com/gallup-poll-shows-money-and-happiness-go-hand-hand-education-runner-292284>), the *Pew Research Center Happiness Polls* (2018—<http://www.pewresearch.org/subjects/happiness/>). Ruut Veenhoven and his colleagues at Erasmus University in the Netherlands have performed an enormous service in pulling together the major results of these and other subjective databases into a *World Happiness Database* (2018—<https://worlddatabaseofhappiness.eur.nl/>). These data, though useful in other types of studies, cannot readily be incorporated into this study, which focuses on the use of international comparative data to report on the changing *objective versus subjective conditions* of life since 1900 to the present. The available subjective data are spotty, recent in origin, and cannot easily be incorporated side by side with the objective data that are reported over a much longer period.

1.2.4 Why is Our Study Important, Given that Much of the Data We Report are Widely Available in Major International Publications?

We feel that the study is important precisely because most scholars are highly specialized within their own theoretical traditions and specialized areas of research and do not always appreciate the larger view. In addition, they may know about advances that are taking place in other sectors and fields of well-being research, but they may not necessarily achieve the depth of analysis that is needed to uncover the linkages that exist between different patterns and processes of well-being achievements (and failures). This paper is intended to provide a comprehensive framework and context within which the many and varied efforts intended to improve the well-being of humanity can be more fully understood. We sincerely hope that the paper contributes to a more enhanced understanding of well-being across sectors and nations than otherwise would be possible through more narrowly defined studies.

By focusing on the positive accomplishments of humanity over nearly a century, we sought to introduce a positive view in approaching the often-complex substantive and methodological challenges that confront us. We believe that we have achieved this goal, albeit still understanding that the connectedness that exists between knowledge and methods developed in various specialty fields of research is an on-going process.

2 Global Progress in Human Well-Being

Comprehensive reviews of the literature on quality of life show many of the dramatic advances that have taken place in selected sectors of well-being assessment. We identify some of these changes in this paper and focus on just five sectors of human progress in quality of life during the last half of the twentieth century to the present, namely *health, education, economics, social welfare, and the environment*. This paper is not intended to be

a compendium of all the shifts that have taken place in advancing quality of life since the beginning of the nineteenth century, but it is intended to be suggestive of many of the critical transformative changes that have been made in advancing the quality of life in various regions of the world. More particularly, we focus on a selected number of major advances in well-being in each of the five sectors. Where appropriate, we also qualify the nature of these advances by reporting some of the major challenges that continue to exist within these sectors and those of other sectors of human development that continue to confront us.

2.1 Global Advances in Health Quality of Life and Well-Being

In addressing advances in health well-being, we first discuss how health well-being outcomes are customarily measured worldwide, then follow up with a discussion of the drivers of health well-being (OECD 2013).

2.1.1 Health Well-Being Outcomes

To assess health well-being as an outcome state at the country level, we focused on four of the most sensitive indicators of health care worldwide: *advances in the average years of life expectancy* and *advances in reducing infant, child, and maternal death rates*. Data from the United Nations Development Programme show significant gains in life expectancy—from a world average of just 48 years in 1950 to a world average that exceeded 69.1 years for men and 73.8 years for women in 2015 (UNDP 2016). This increase represents a major achievement on the part of the world community in advancing health well-being. The country with the highest current life expectancy rates is Japan, with an average number of 86.8 years of life expectancy for both sexes; the country with the least favorable average years of life expectancy is Sierra Leone, where men currently live on average 49.3 years and women, 50.8 years. By 2050, years of average life expectancy in economically advanced countries will likely increase to about 100 and by the end of the century, to possibly 120 years on average. Average years of life expectancy are expected to continue to increase in developing countries at a pace even faster than that which occurs in economically advanced societies, given the already high average years of life expectancy that characterize the economically well-off countries. Nonetheless, the steady increases in years of average life expectancy occurring in developing countries is clearly related to social progress across a wide range of socioeconomic sectors associated with national and regional development strategies.

Average years of life expectancy increased for all world regions: It rose from a high of the late 50 s and early 60 s to the late 60 s and the low to middle 70 s in just 43 years. Life expectancy growth rates are especially impressive for East Asia and the Pacific and Latin America and the Caribbean. This pattern is expected to continue well into the future. The average years of life expectancy for sub-Saharan Africa is expected to approximate those reported for other regions. The impressive regional gains are the result of significant investments made by economically advanced countries and the countries themselves in improving the general health status of people living in the less-developed countries.

Data from population pyramids prepared by the United Nations Population Division (2017) for individual countries, regions, and the world dramatize the age and gender differences that exist between developed and developing countries—high concentrations of the populations of young people in developing countries and high concentrations of persons aged 60 years of age and older living in developed countries. This marked difference has

a profound impact on the nature of the health care that is needed in both sets of countries. Developed countries invest more of their health care dollars in providing for the long-term health needs of their aging populations whereas developing countries invest more of their health resources in children and youth. In both situations, the cost of health care in all countries is high and increasing at rates beyond inflation levels (International Monetary Fund 2017).

Reducing the number of infant and child deaths has been a major challenge confronting the global community. Infant and child deaths also are directly associated with maternal deaths, given the enormous demands that are made on the bodies of mothers, especially mothers living under difficult economic circumstances. Recent estimates indicate that there have been substantial gains in infant and child survival rates since 2002 (World Health Organization 2017). Still, though, the threats to child survival worldwide remain serious and will continue to be of central concern to health specialists until new technologies and outreach services have been fully implemented to serve pregnant women and their families living in remote, hard-to-reach rural communities. Max Roser, in *Our World in Data* (2017), summarized the global achievements in child survival as follows:

Since the beginning of the age of the Enlightenment and over the course of modernization, the mortality of children below 5 years of age has declined rapidly. Child mortality in rich countries today is much lower than 1%. This is a very recent development and was only reached after a hundredfold decline in child mortality in these countries. In early-modern times, child mortality was very high; in 18th century Sweden every third child died, and in 19th century Germany every second child died. With declining poverty and increasing knowledge and service in the health sector, child mortality around the world is declining very rapidly: Global child mortality fell from 18.2% in 1960 to 4.3% in 2015; while 4.3% is still too high, this is a substantial achievement. One reason why we do not see progress is that we are unaware of how bad the past was. In 1800 the health conditions of our ancestors were such that 43% of the world's newborns died before their 5th birthday. In 1960 child mortality was still 18.5%. Almost every 5th child born in that year died in childhood. Over the last decades we have seen a very rapid decline of child mortality globally. In 2015 child mortality was down to 4.3%—tenfold lower than 2 centuries ago (Roser, 2017, p. 1).

Equally significant gains have been achieved in reducing maternal mortality, the leading cause of death among women of child-bearing age. Women of reproductive age (15–45 years) are especially vulnerable to illnesses, disabilities, and death associated with pregnancy and childbirth. The threats to life are especially high in developing countries where large segments of the population reside in rural communities that have few or inadequate health resources (World Health Organization 2017). Elsewhere we provided evidence showing the significant gains that have been achieved in reducing rates of maternal mortality for each major world region over the 24-year period, 1989–2013 (Estes and Sirgy 2017). The most significant achievements in reducing maternal mortality rates occurred in the nations of sub-Saharan Africa, South Asia, and Southeast Asia. These gains parallel other broad-based developmental achievements made by the nations of these regions, including access to basic education, transportation and communication networks and more secure supplies of safe drinking water and effective systems of solid and liquid waste disposal (UNDP 2016). Furthermore, early intervention in the form of regular prenatal check-ups, the provision of prenatal food supplements, and access to skilled personnel prior to and during the delivery process are responsible for the significant gains, especially in those countries at great risk.

The world regions that experienced the lowest relative levels of net gains in reducing maternal mortality rates were Latin America and the Caribbean, East Asia and the Pacific, and the Arab states of the Middle East and West Asia. Continuing poverty for some of these countries, in combination with the absence of skilled health care personnel to assist with the birthing process, is the major impediment to reducing their high rates of maternal mortality. Also important in reducing infant and child mortality is access to emergency medicine in especially difficult situations. Fortunately, increasing levels of high-quality emergency care are becoming available to women and their children in both urban and rural communities (World Health Organization 2017).

2.1.2 Drivers of Health Well-Being

An important discussion of health well-being focuses on the identification of the drivers of health well-being. There are many drivers of health well-being worldwide. These include *environmental* factors (e.g., quality of the physical environment, employment conditions), *social* factors (e.g., culture, gender, ethnicity), actual *providers and recipients* of health services (e.g., quality of health care and growth in the size of the elderly population), *expenditures on health care* (e.g., percent of gross domestic product [GDP] spent on health care), and *technological innovation* in health care. To delve into a discussion of all the drivers is beyond the scope of this paper. Instead, we focus on just the latter two sets of factors, namely *expenditure on health care* and *technological innovation* in health care because of their prominence in health policy.

Among the major drivers of health policy are the *public and private investments* made by governments, non-governmental organizations (NGOs), business leaders, and consumers. The World Health Report 2000 (Mathers et al. 2001) examined the relationship between health care expenditure and life expectancy globally. This publication reported Japan as having the highest average healthy life expectancy of 74.5 years at birth in 1999. The bottom 10 countries were identified in sub-Saharan Africa with an average life expectancy of 35 years. The same study underscored the finding that, as average levels of health expenditure per capita increase, healthy life expectancy also increases. This evidence suggests that there is a positive relationship between health care expenditures and life expectancy; however, this relationship is not strictly linear.

Public health data show that all countries spent approximately 10.1% of their GDP on health care services in 2011 (World Bank 2017). This percentage has increased significantly from the 4.7% of GDP allocated to the sector in 1990 and from that of 5.6% of GDP in 1998. Thus, steady and somewhat higher levels of GDP were allocated to health services for each period studied and are likely to continue to increase as the world's population ages. The region with the highest levels of investment in health care services in 2011 was Latin America and the Caribbean (7.6%) followed by Eastern Europe and the Commonwealth of Independent States, sub-Saharan Africa, and North America, each of which invested an average of approximately 6.3% of their GDP in health care. The United States is an outlier among the region's countries in that it spends somewhat more than 17%, or approximately 1/6 of its national economy, on health care. The geopolitical regions with the lowest levels of investment of national and regional resources in health care are East Asia and the Pacific (4.8%) and the Arab States of the Middle East and North African (MENA) region (4.3%). These comparatively low levels of investment in health care limit development in other sectors as well, but especially in the economic and education sectors. The most recent data available concerning average annual GDP expenditures for health care among the countries

of Southeast Asia and the Pacific region (1.2% in 1998) suggest a slow rate of progress for these nations as well (World Bank 2017).

Technological innovation in health care continues to increase in type and impact on people's lives. Much evidence in public health suggests that technological innovation in health care is associated with positive health outcomes. For example, Chaudhry and his colleagues conducted a systematic review of the medical literature and provided evidence suggesting that the efficacy of health information technologies improves quality and efficiency in health care (Chaudhry et al. 2006). Technological innovations in health care do not occur in isolation but are closely linked to the large number and variety of consumer technological products that have emerged during the same period and that today can connect to the large technological systems that store electronic health records (Gartee 2016). In time, these systems will be used to record, organize, analyze, and plan even further advancements in the health sector by drawing on the rich patient databases containing electronic health records.

In sum, we believe that the two most salient drivers of health well-being that have major public policy implications worldwide are health care expenditures and technological innovations in health care. We conclude that promoting health well-being worldwide can be facilitated by investing more financial resources in the health sector and accelerating the rate of technological innovation.

2.2 Global Advances in Educational Quality of Life and Well-Being

Education is another critical sector of human activity that has received substantial attention from quality of life and well-being scholars. Education is an important sector in quality of life for at least two reasons: (a) basic education enables literate people to participate fully in most aspects of collective life; and (b) advanced education provides opportunities for people to contribute more fully to their own advancement and that of their societies (United Nations Economic, Social, and Cultural Organization 2016). Basic education for literacy and higher levels of education and vocational training do, of course, add appreciably to the competitive capacity of the individuals involved and, in turn, to their personal and household per capita income (International Monetary Fund 2017). Advanced education also enhances the health profiles of people (World Health Organization 2017) and their ability to contribute more fully to the social safety net from which they, their family members, and the larger community benefit (International Social Security Administration 2017).

In this section we focus on changes that have taken place in the educational sector since 1990. In doing so, we present educational achievements that have been realized over the most recent 27-year period and contrast these with the educational goals specified in the *Universal Declaration of Human Rights*, which dates to 1948, and the *Education for All* (most recent version dated 2016) commitments laid out by the United Nations. The *Declaration* and the *Education for All* compacts, for example, clearly state that everyone has the right to an education and that education, at least in the elementary stages, should be free and compulsory. Technical and professional education shall be made generally available, and higher education shall be equally accessible to all based on merit. Much of the world to date has embraced the notion that education is indeed a human right. Development economists treat education as a tool of economic growth that should not be considered an expense or a consumption element but an investment for future income and societal development.

2.2.1 Educational Well-Being Outcomes

Education can be distinguished in terms of educational well-being outcomes, antecedents, and consequences. Educational well-being outcomes reflect the desired state of education around the world: quantity and quality. The quantity dimension of educational well-being refers to the average years of total schooling (age 15 +); the quality indicator reflects the degree of learning. In this context, a quality education is viewed in terms of mastering levels of proficiency in mathematics, reading, and science. As such, a country or world region that registers high levels of learning proficiency in mathematics, reading, and science is considered to have high levels of educational well-being outcome compared to those registering low levels of learning proficiency. Today, statistics for quality indicators of educational well-being are collected routinely by both national and international agencies that administer educational achievement tests (mathematics, reading, and science tests). These agencies include the *Programme for International Student Assessment*, *Trends in International Mathematics and Science Study*, and the *Progress in International Reading Literacy Study*.

Data between 1970 and 2010 collected by the World Bank showed a positive world trend in levels of educational attainment (World Bank 2017). The gains are indeed remarkable, especially in sub-Saharan Africa, Latin America, East Asia, South Asia, Southeast Asia, Europe, the MENA region, Oceania, the successor states of the former Soviet Union, including the Russian Federation, and North America. Furthermore, the data for all these regions show a positive trend in educational attainment in both the developing and developed countries. Gender disparity in educational attainment is also narrowing—female students are catching up with their male counterparts in both developed and developing countries, which is positive news. South Asia and the MENA regions are lagging other world regions, but even so the gap in gender disparity is narrowing significantly.

The quality dimension of educational well-being is captured in terms of learning proficiency in reading, mathematics, and science (as reflected in Programme for International Student Assessment results). The data from the World Bank (World Bank 2017) showed that proficiency in mathematics in the developed countries was high but remained flat between 2000 and 2012. In contrast, improvement in proficiency in mathematics in the developing world is both positive and remarkable. The data also show little disparity between boys/men and girls/women in proficiency in mathematics in the developing countries. When proficiency in mathematics was examined by gender and by world region, proficiency in mathematics was found higher than the world average in East Asia, followed by Oceania, North America, and Europe. Regions below the world average were the former states of the Soviet Union, MENA, Southeast Asia, South Asia, sub-Saharan Africa, and Latin America, in that order. Proficiency in mathematics was also noted to be increasing among both male and female students in East Asia (with male students doing better than female students, but female students catching up in 2009 and 2012). In Oceania, proficiency in mathematics was observed to be declining for both male and female students (with the latter doing worse). In North America, progress in proficiency in mathematics was observed to be flat (for both male and female students, with the male students doing slightly better than the female students). A similar trend was apparent in Europe (progress was flat with male students doing slightly better than female students). In the world regions scoring below average (i.e., South Asia, Southeast Asia, Former Soviet Union, MENA, and Latin America), the data show marked fluctuations for both genders.

The same data (World Bank 2017) showed a similar pattern in terms of rate of improvement in language proficiency (i.e., reading). The rate of improvement in language proficiency among students in the developing countries was observed to be positive and significant compared to the rate of change in the developed countries—the rate of change in language proficiency among students in the developed countries seems flat. Unfortunately, the discrepancy in language proficiency among students in the developing versus developed countries was high—that is, students in the developed countries outperformed students in the developing countries by a significant margin. It was also observed that a reverse phenomenon for gender disparity exists within these countries. That is, female students slightly outperform male students on reading proficiency tests in the developing countries, but much more markedly in the developed countries. Examining language proficiency by gender disparity by world region, reading proficiency for the world at large was stable in 2000, 2003, 2006, and 2009, but rose markedly in 2012 for both male and female students. Reading proficiency was noted to be higher than the world average in East Asia, followed by Oceania, North America, and Europe—a profile highly like that for proficiency in mathematics. Regions below the world average are the former Soviet Union, MENA, Southeast Asia, South Asia, sub-Saharan Africa, and Latin America, but not necessarily in that order.

With respect to science proficiency, again, the difference between developed and developing countries was substantial but improved over data from the earlier decades of development (World Bank 2017). The trend reflected in these data resembled the trends for mathematics and reading proficiency. That is, the rate of improvement was observed to be much more pronounced among students in the developing than in the developed countries. This observation reinforces the notion that gains in human well-being are much more evident among the developing than developed countries. With respect to gender disparity, the data showed no disparity in either developing or developed countries, which is, of course, good news. Female students have made significant strides in science education.

2.2.2 Drivers of Educational Well-Being

Many factors may account for both the quantity and quality of educational well-being outcomes. An important driver of educational well-being is *educational policy*. A major educational policy that plays a significant role in educational well-being outcomes is *compulsory education* (number of years that children are legally obligated to attend school). Many countries mandate a school-leaving age of 12, but most countries enforce a school-leaving age of 16. Accumulating evidence suggests that compulsory education is correlated with educational attainment and learning proficiency (Oreopoulos 2006; Raffe et al. 1998). Consider the following pronouncement by Professor Philip Oreopoulos at the University of Toronto in Canada:

Education levels rose dramatically in Canada between 1920 and 1970. The national grade attainment average increased from 8.1 to 11.3. Provinces also implemented or tightened many compulsory school limits. I estimate changes in these limits had a significant impact on the rise in grade attainment, accounting for about 13% of the rise. Those affected experienced a 14% increase in their annual income. Compelling would-be-dropouts to take additional education also lowered the chances for unemployment, decreased the chances of working in a manual occupation, and raised the fraction reporting speaking both English and French (Oreopoulos 2003; p. 24).

Also, based on the evidence, *government investment in education* is considered a major factor impacting educational well-being (Psacharopoulos 1994). Cross-national data show

an association between countries that spend more on education and positive educational well-being outcomes. Overall, the average rate of return of another year of schooling is 10%. Overall, compared to men, women receive higher returns on their schooling investment, especially in relation to secondary education. The highest returns on investment are strongest for low-income and middle-income countries. Average returns from schooling are highest in Latin America and in sub-Saharan Africa. For example, Gupta and Verhoeven (2001) assessed the efficiency of government expenditure on education in 37 countries in Africa in 1984–1995. The results of the study suggested that educational outcomes improved with greater allocation of government expenditure in education, although this relationship was not strong because of other covariates.

Educational technologies are another driver of educational well-being. Information and communication technologies in education are changing the educational landscape by enhancing both learning proficiency and educational attainment (Organization for Economic Cooperation and Development 2006a, b; World Bank 2017). Although we have a digital divide, all forecasts point to the likelihood that the digital divide will shrink soon, further contributing to educational well-being, especially in the developing world.

With respect to *workforce* issues in the education sector, data from the World Bank (2017) provide evidence that teacher quality is positively related to student performance. In other words, students do better with formally qualified and experienced teachers. Finland was used as a case in point. Finland is a strong performer in education, which may be directly attributed to teacher quality. There are significant problems with the educational workforce in various parts of the world. The significant disparity between the educational well-being of students in the developing and the developed countries may be attributed (at least in part) to workforce problems. There are problems of recruiting and retaining young, qualified teachers, problems related to recruiting and retaining teachers with expertise in specialist subject areas such as mathematics and science, and problems of teacher absenteeism. In some countries in sub-Saharan Africa, the shortage of qualified teachers is both a national and regional crisis. South and West Asia are also facing the problem of teacher shortages in the drive to provide every child with at least a primary education. Other world regions such as North America are not exempt from the problems of teacher recruitment and retention. Teacher shortages have existed in developed countries, such as the United States, for many years. The problem is especially acute in impoverished urban areas where teachers must cope with a broad range of family and other social problems, including violence, as part of their “teaching” responsibilities.

In sum, educational policies must be contextualized. That is, successful policies and programs applied in one country cannot and should not be applied in another country without considering the “context.” We suggest that education is an important factor in globalization. For countries to compete in the global marketplace, education must be a priority in policy making, and specific strategies to enhance education in a global economy should be considered. Furthermore, education plays an important role in the making of global citizens. An ideal educational system that produces best educational well-being outcomes is one that:

- is regulated by compulsory education mandates,
- has adequate financial resources,
- has adequate educational technologies, and
- has quality teachers.

As such, educational policies worldwide should be based on this evidence.

2.3 Global Advances in Economic Quality of Life and Well-Being

As we have done in the preceding sections, we discuss worldwide economic well-being outcomes followed by the drivers of those outcomes.

2.3.1 Economic Well-Being Outcomes

Quality-of-life researchers customarily discuss economic well-being outcomes in terms of economic growth and median household income. *Economic growth* has reached historically high levels in virtually all regions and countries of the world. The current rate of global economic growth currently averages 3.4% per annum. The world average per capita income levels rose from \$4261 in 1990 to \$5486 in 2000 to \$9511 in 2010 and, in 2015, to \$10,093—an increase of 137% in just 25 years (International Monetary Fund 2017). These contemporary global economic growth rates are unparalleled in modern history and provide substantially more of the resources needed to employ a larger workforce, thereby reducing rates of extreme poverty at all levels of social organization (Piketty 2013). Continuing high rates of economic growth in developing countries serve to improve the quality of health, education, and economic well-being in poor nations as well and, in time, in economically advanced countries (UNDP 2016).

The world's most rapidly developing countries for 2015 are emerging markets located in East and Southeast Asia and in sub-Saharan Africa (World Economic Forum 2016). Among the 20 most rapidly developing countries economically, China tops the list followed by the Philippines, Kenya, India, and Indonesia. The combined population of these countries exceeds 3.1 billion people, or approximately 42% of the world's total population. The fact that such a large share of the world's population, including three of the world's population super giants (China, India, and Indonesia), is benefitting from more accelerated rates of economic growth is good news. We can fully expect that this trend will continue over at least the near term and that an increasingly larger group of developing nations will benefit from the social gains realized by these countries.

Another major indicator of economic well-being, *median household income*, averaged \$9733 worldwide in 2013, and median per capita income averaged \$2920 (World Bank 2017). These averages are substantially higher than the median household and per capita income levels reported in 1990. Median household and individual per capita incomes are higher today than those reported for 2013 and are likely to continue to rise appreciably between 2017 and 2030. The changes are expected to occur among the poorest nations of East, South, and Southeast Asia—the regions with the largest concentrations of extreme poverty. The poorest nations of sub-Saharan Africa are expected to benefit significantly from these trends as well.

2.3.2 Drivers of Economic Well-Being

Many governments have used a variety of approaches to alleviate poverty and enhance economic well-being. The most innovative of these approaches involves the use of a combination of *tax incentives* and *private skills training* for persons with highly uneven employment histories (Brookings Institution 2017). Public subsidies of private job training have been among the most commonly used policy approaches used and have

been among the most effective in promoting sustained levels of well-paying jobs for previously poor people (Taylor 2009).

Other types of *public–private initiatives* frequently exist between governments and business enterprises, such as in the armaments and munitions industries, in road building, in providing research funds in support of a wide range of research investigations, and as backers of the last resort in student loans and the financing of research laboratories in universities, pharmaceutical firms, and other types of businesses (International Monetary Fund 2017). Similar types of relationships exist between developed and developing countries including the provision of large amounts of critically needed financial assistance to stimulate economic development and economic well-being in developing and least developing countries.

Another approach to enhancing the incomes of impoverished families is the *migration* of adult members of the households to foreign countries as contract laborers (Organization for Economic Cooperation and Development 2006a, b). This approach has been used for several decades and has been proved highly effective in generating substantial sums of income in the form of foreign remittances to families. Indeed, countries of origin make the process of obtaining work visas easy for adults wanting to engage in contract labor abroad. Families receiving foreign remittances, in turn, benefit from the income they receive, which adds appreciably to their living situation and quality of life.

Other approaches to raising the median household and per capita income levels of families living in or near poverty involve cash grants to subsidize the ability of poor families to purchase basic goods and services (Estes 1999). Cash grants to the poor, however, have not been designed to lift the poor out of poverty but rather to provide only for their subsistence needs. To lift the poor out of poverty requires programs of social support, including improved health and education services designed to bring the poor into the mainstream of society.

Furthermore, *foreign aid* continues to be an efficient and effective mechanism for transferring large sums of development assistance from rich to poor countries, despite the criticisms of foreign aid articulated by some economists (e.g., Moyo 2009). For example, the Organization for Economic Cooperation and Development (2015) has set and, for the most part, almost has achieved the goal of having its member nations contribute a minimum of 0.7% of their gross national income to alleviate poverty. The most generous countries are in North America and Northern Europe, though not necessarily the countries with the largest economies. In terms of dollars, though, the United States, the United Kingdom, Germany, and Japan allocated the highest number of actual dollars to international development assistance in 2013 and 2016.

Foreign direct investment (FDI) is another method of alleviating poverty. The investments refer to inflow of funds from developed to developing countries with the goal of enhancing the economic capacity of developing countries with resulting profits accruing to both groups of nations. FDI is critical to propelling the growth of new emerging economies and those of poorer developing countries. FDI investments have proven to be highly effective in growing entire industries, creating large numbers of new jobs, and helping the economies of developing and socially least developing countries to transition from agricultural and extraction industries to urban-based manufacturing and services—the two stable segments of most modern economies (Organization for Economic Cooperation and Development 2017). Prominent examples of countries that have benefitted from high levels of FDI in the past include Germany, Japan, Singapore, South Korea, and Taiwan, among others. Major beneficiaries of FDI include China, India, Malaysia, the Philippines and, in recent years, the newly independent countries of Central Asia (e.g., Kazakhstan, Tajikistan). This

trend has in the past decade been bolstered by a growing movement of private wealth being channeled to poor countries through socially conscious and development-oriented fund and venture philanthropy vehicles, seeking to work in parallel with the traditional activities of large global foundations and government aid (Lipovsky 2016).

Among the not-so-recent innovative approaches for improving the economic well-being of poor families is the *Universal Basic Income* initiative, the essence of which is a utopian approach that involves the payment by governments of income to every individual regardless of wealth or other income sources. The expectation is that the scheme would solve a host of economic problems that are endemic to every society such as chronic joblessness, poverty, and other recurrent economic problems (Vella 2017).

In sum, the world at large is increasingly becoming less poor. In terms of economic well-being, the average global citizen is much better off today than at any time in the history of humanity. The levels of economic well-being of most people in the world have significantly increased since World War II. We know the drivers of economic well-being. Among the most effective methods proven to enhance economic well-being are the following:

- government programs of tax incentives for industrial growth and subsidized education
- public–private initiatives between governments and business enterprises
- migration of skilled workers from rural communities to urban areas and from the least-developed countries to the most developed
- cash grants to poor families to purchase basic goods and services
- foreign aid from rich to poor countries
- foreign direct investment.

It is time to abandon ideas and efforts from the far right and the far left of the political spectrum and focus on evidence-based solutions that have been proven to enhance economic well-being. To continue to enhance economic well-being of the global citizenry, government institutions, the private sector, and NGOs should work together to implement the proven methods of economic well-being.

2.4 Global Advances in Social Welfare Quality of Life and Well-Being

“Social welfare” in its most basic sense refers to organized public and private social services that are designed to benefit the largest number of people in society but especially the poor and other socially disadvantaged population groups. Though administered by the state in most societies, the concept of promoting the “social welfare” (“well-fare” in the old English or “well-being” today) of people includes the large, generous programs of privately supported social assistance to the poor and others through private social services organizations (e.g., Catholic Social Services, sectarian hospitals and schools), community federations (e.g., United Way, Allied Jewish Appeal), state alliances (e.g., Medicaid) and national and international humanitarian relief programs (e.g., Doctors Without Borders, Save the Children, World Vision).

In industrial and postindustrial societies, social welfare programs designed to reach the working classes are funded largely by individuals themselves, their employers and administratively by the state, given the large sums of money involved in financing these programs over the long-term (International Social Security Association 2017). In many of the “welfare states” of Europe, governments also frequently supplement the contributions made by individuals and employers and use general tax revenues in doing so (Wilensky 1958, 2002). In virtually all economically advanced countries the “welfare,” or, more

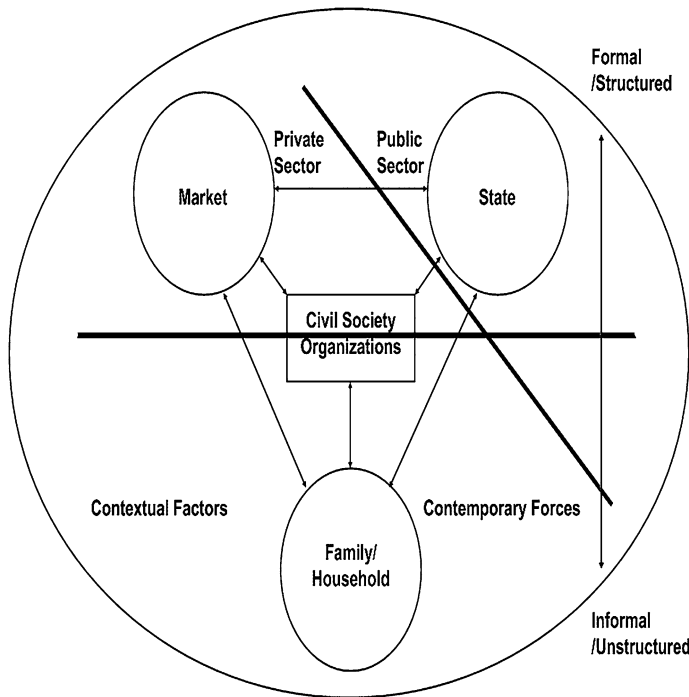


Fig. 1 The public–private mix in social welfare. *Source:* Based on Estes and Sirgy (2017), Fig. 20.17, p. 712

specifically, the “social security” is made available to seven, often overlapping, categories of beneficiaries: (1) the aged; (2) the permanently ill and disabled; (3) injured workers; (4) the temporarily sick and disabled; (5) pregnant women; (6) persons who are involuntarily unemployed; and, in some countries, (7) parents with large families via subsidized income support programs. An individual person could be eligible for partial income support under more than one category of social assistance but the type of program-specific aid that is eventually provided is the one that provides the beneficiary with the highest level of subsidized income support.

2.4.1 Social Welfare Outcomes

Today, 178 countries have formal worker–employer participatory social security programs, the single most successful social program implemented to date (International Social Security Association 2017).

Figure 1 illustrates the rich relationships that exist between and among the four sets of actors that make and shape social policy, including social welfare policy: (a) the family; (b) the market; (c) the state; and (d) the private, voluntary, non-profit sector (commonly referred to as either “civil society organizations” or NGOs). These actors are shown in the figure’s circles and rectangular box. These are the institutions on which all aspects of social welfare depend and to which most of the system’s benefits are directed. The figure also displays a major horizontal line that divides the family/household sector from that of

the economy (or market) and the state—society’s two most impersonal systems over which individuals have relatively little or no control. The slanted line distinguishes the contributions made by the public sector from those made by the private sector. This line, or vector, makes clear that the major actors in social welfare are really in the private rather than in the public sector, albeit the public sector typically provides the largest share of financial resources that drive the welfare systems for the poor and near poor, e.g., federally supported job training programs in the market place, subsidized health care and housing for the poor, public schools, cash and in-kind grants to families and households and, often, financial grants to non-sectarian civil society organizations (NGOs) to carry out a broad range of functions in the public interest. The vertical line distinguishes between the formality of each type of system or actor. Those at the upper end of the line are the most formal, often bureaucratic, and require the highest levels of education to function within. Those entities at the bottom of the horizontal line are the least formal and devote much of their time and resources to providing “hands on” care for family members (Estes and Zhou 2014).

Based on the distinctions made among the family, the market, the state, and the NGOs (as shown in Fig. 1), one can analyze the strengths and weaknesses of social welfare systems in various parts of the world. Social welfare systems are strongest in Northern and Western Europe and weakest among the nations of Southeast Asia (International Social Security Association 2017). Social safety nets in East Asia depend heavily on personal savings, company pensions and other income support programs as well as on families for their implementation. The social safety nets of the Mediterranean countries of South Europe are heavily family-centric as are the social safety nets that exist among the nations of Latin America and the Caribbean. The successor states to the former Soviet Union in Central Asia depend heavily on state resources for their support but the systems are changing rapidly toward worker-employer programs in combination with limited savings. The United States system for establishing a social safety net is acutely bimodal—“welfare” in a pejorative sense for the poor and “social security” (including Medicare) for persons with substantial work histories. The American system also depends heavily on personal savings as well as on an active role on the part of adult children in caring for their aged or disabled family members. Americans also must absorb the major costs associated with health care (primarily through premiums paid for “sickness insurance”) and higher education. The Canadian social safety net more closely resembles that of the United Kingdom and depends heavily on personal contributions to provincial and other communal funds, personal savings, and active participation on the part of families in contributing toward the income security needs of their most vulnerable members. The Canadian system also is province-based in combination with nationally administered universal health care and access to public higher education.

Estimates of the costs associated with these various approaches to providing social safety nets for the poor and middle-income people vary widely and cannot easily be calculated for countries, regions, or the world. Failures in these systems, however, contribute to even higher costs to societies in the form of chronic poverty, crime, social deviance, and imprisonment with its heavy cost to individual prisoners, their families, and the larger societies. Overall, though, social welfare and social safety nets generally amount to a minimum of 20–40% of the national economy of nearly all countries (depending on whether one includes the health, education, job training, retirement, and other income-support programs of the military). This figure must be added to the cost of education and health in each country. In the main, and for countries with average levels of military investments (2–3%), social welfare (including health, education, cash transfer, in-kind, and subsidized

housing, child care and other programs) accounts for approximately 50–80% of the gross national product.

2.4.2 Drivers of Social Welfare

Knowing that social welfare systems are heavily dependent on the family, the market, the state, and the NGOs, one can logically conclude that quality of life of the vulnerable populations can be enhanced by strengthening the social welfare institutions related to the family, the market, the state, and the NGOs. Those vulnerable populations (the aged, the permanently ill and disabled, injured workers, the temporarily sick and disabled, pregnant women, persons who are involuntarily unemployed, parents with large families) can be better assisted through strong support from social welfare institutions. This means that an ideal social welfare system is one based on:

- strong state institutions that protect their most vulnerable citizens
- a private sector enculturated to protect their most vulnerable employees and customer groups
- a culture that permeates norms and expectations of support and obligation from family members to support the most vulnerable in their own families and
- NGOs that work hard to
 - support the social welfare programs provided by state government institutions
 - support private-sector organizations in their social welfare programs to assist employees and customer groups and
 - help propagate a culture of norms and expectations of family responsibility for vulnerable family members.

2.5 Ecosystems and Services Provided

The planet comprises many different ecosystems. Examples include mountain and polar, forest and woodland, inland water, drylands, cultivated land, urban land, coastal, island, and marine. Each of these ecosystems provides services to human populations in various forms (Mooney et al. 1996). For example, mountain and polar ecosystems provide food, fiber, fresh water, erosion control, climate regulation, recreation and ecotourism, aesthetic values, and spiritual values (see Table 1 for a breakdown of various ecosystems and the services provided by each).

The various ecosystems we have on Earth provide us with the basics (e.g., the food we eat, the fresh water we drink, and the biofuels we use). However, many other services provided by the various ecosystems are beyond the provisioning of basic resources. These involve supporting services (e.g., nutrient cycling, soil formation, and primary production) and system regulation (e.g., climate regulation, flood regulation, disease regulation, pest regulation, and water purification). Additionally, ecosystems provide other social, cultural, and economic benefits (e.g., recreation and tourism, cultural heritage, and aesthetic and spiritual values). Collectively, ecosystem services satisfy many human needs such as security (e.g., personal safety, secure resource access, and security from disasters), basic material for a good life (e.g., adequate livelihoods, sufficient nutritious food, shelter, and access to goods), health (e.g., strength, feeling well, and access to clean air and water), good social relations (e.g., social cohesion, mutual respect, and ability to help others), and

Table 1 Ecosystems and services provided. *Source:* Adapted from the Millennium Ecosystem Assessment (2008)

Ecosystems	Services provided
Mountain and polar	Food, fiber, fresh water, erosion control, climate regulation, recreation and ecotourism, aesthetic values, spiritual values
Forest and woodlands	Food, timber, fresh water, fuelwood, flood regulation, disease regulation, carbon sequestration, watershed protection, medicines and other non-timber forest products, recreation and hunting, aesthetic values, spiritual values
Inland water (rivers and wetlands)	Fresh water, food, pollution control, flood regulation, sediment retention and transport, disease regulation, nutrient cycling, recreation and ecotourism, aesthetic values
Drylands	Food, fiber, fuelwood, local climate regulation, cultural heritage, recreation and ecotourism, spiritual values
Cultivated	Food, fiber, fresh water, dyes, timber, pest regulation, biofuels, medicines, nutrient cycling, aesthetic values, cultural heritage
Urban (parks and gardens)	Air quality regulation, water regulation, local climate regulation, cultural heritage, recreation, education
Coastal	Food, fiber, timber, fuel, climate regulation, waste processing, nutrient cycling, storm and wave protection, recreation and ecotourism, aesthetic values
Island	Food, fresh water, recreation and ecotourism
Marine	Food, climate regulation, nutrient cycling, recreation

freedom of choice and action (i.e., the opportunity to achieve what an individual values doing and being).

2.5.1 Environmental Well-Being: Positive Effects

Positive effects of environmental well-being can be discussed in terms of food production, water use, and sanitation. The food supply has increased significantly to feed people and lift them out of poverty. It is estimated that the total food production increased by about two-and-a-half times between 1960 and 2000 while the world population has doubled (from 3 billion to 6 billion). Most agricultural land and agricultural techniques produced far more crops and meat to feed the masses than ever before. We have also seen a dramatic increase in the farming of fish and shellfish. This type of farming accounts for more than a third of the fish and shellfish production globally (Balmford and Bond 2005; Kates et al. 2001; Kates and Parris 2003; Millennium Ecosystem Assessment 2008). With respect to water use and sanitation, it is estimated that since 1960, the ratio of water use to accessible supply has grown by 20% per decade. Problems of malnutrition, infant mortality, and diseases have been significantly reduced through efforts to provide people with a sufficient supply of uncontaminated water (Balmford and Bond 2005; Goodstein and Polasky 2005; Kates et al. 2001; Kates and Parris 2003; Millennium Ecosystem Assessment 2008).

2.5.2 Environmental Well-Being: Negative Effects

We also discuss the negative effects of environmental well-being in terms of water use, land conversion and degradation, nutrient use and levels, fisheries, climate change, and species extinction. For the last 50 years or so, water withdrawals from rivers and lakes for

irrigation and household and industrial use doubled. Approximately 50% of the fresh water people use is water runoff from land that contains pollutants. In some regions of the world such as MENA and sub-Saharan Africa, humans use water from underground sources that are not adequately recharged. Reservoir storage capacity (amount of water stored behind large dams) has grown significantly. The flow of water in rivers has been substantially reduced and with it, the sediments that bring food supplies to estuaries that support populations of shellfish, fish, and birds (Balmford and Bond 2005; Kates et al. 2001; Kates and Parris 2003; Millennium Ecosystem Assessment 2008). With respect to land conversion and degradation, approximately one quarter of the Earth's terrestrial surface has been transformed to cultivated land. Mangroves and coral reefs have been decimated at an increasing pace during the last 40 + years. It is widely accepted that areas highly populated with mangroves are better protected from the force of tidal waves. Loss of wetlands combined with increased pollution has reduced the ability of nature to purify water, which has significant implications for fisheries and ultimately for human health. Heavy rainfall and floods are now causing more destruction than ever before due to deforestation and the draining of marshes (Balmford and Bond 2005; Kates et al. 2001; Kates and Parris 2003; Millennium Ecosystem Assessment 2008). With respect to nutrient use and levels, human activities produce nitrogen and phosphorus at an accelerating rate. The flow of nitrogen to water systems has increased significantly, creating dead zones and killing a considerable quantity of aquatic life (Balmford and Bond 2005; Kates et al. 2001; Kates and Parris 2003; Millennium Ecosystem Assessment 2008). With respect to fisheries, more than one quarter of marine fish stocks are overharvested. There is now a decline of fish stock mostly due to overfishing. The population of large predators of the ocean (e.g., tuna, swordfish, and sharks) has been significantly reduced (Balmford and Bond 2005; Kates et al. 2001; Kates and Parris 2003; Millennium Ecosystem Assessment 2008). With respect to climate change, the argument is that, because of industrialization, we have used and are using more coal, oil, and natural gas than ever before in the history of humanity. The use of these non-renewable sources of energy has increased the amount of carbon dioxide in the air by a significant margin. The consequence of the increased concentration of carbon dioxide in the air is marked changes in global weather systems (Balmford and Bond 2005; Kates et al. 2001; Kates and Parris 2003; Millennium Ecosystem Assessment 2008). Finally, one should note that an outcome of these environmental trends is the reduction of species diversity. It is estimated that more than 10% of the species on Earth have become extinct since the Industrial Revolution. Scientists have estimated that more than 12% of birds, 25% of mammals, and at least 32% of amphibians are threatened with extinction over the next century. Human activities have increased the rate of global extinctions by 1000 times the "natural" rate (extinctions that occur naturally, not because of human activities). Damage to the environment has reduced the number of insects and birds used to cross pollinate flowering plants, with serious implications for many crops (Balmford and Bond 2005; Kates et al. 2001; Kates and Parris 2003; Millennium Ecosystem Assessment 2008).

The following courses of action (policies, programs, and other ideas for intervention) have been discussed widely in the literature (e.g., Millennium Ecosystem Assessment 2008; Mooney et al 1996; Sayer and Campbell 2004).

- *Influence individual behavior:* More effort is needed to increase the change in human attitudes and actions to relieve the pressures on ecosystems to deliver services. This can be done through public education on why and how to reduce consumption of threatened ecosystem services.

- *Establish certification systems:* Encourage businesses, governments, and NGOs to develop certification programs that would help inform the public about the extent to which goods and services available for consumption are sustainable.
- *Develop and use environment-friendly technology:* More effort is needed to further develop the technology and knowledge on how to reduce the adverse human impact on ecosystems. Such technology and knowledge would be directed at increasing food production with minimal harmful trade-offs, restoring degraded ecosystems, increasing energy efficiency, and reducing greenhouse gas emissions.
- *Develop tax policies:* Market mechanisms can be developed to encourage businesses and consumers to engage in sustainability practices. For example, governments can do this through taxation by incentivizing manufacturing operations to reduce carbon emissions. Tax policies can encourage landowners to manage their lands in ways that protect ecosystem services (e.g., water quality and carbon storage) in sustainable ways.
- *Use government subsidies:* Remove subsidies to agriculture, fisheries, and energy that cause harm to people and the environment.
- *Ensure coordination:* More effort is needed to coordinate action across all sectors of government, businesses, and international institutions in the form of policies related to investment, trade, subsidies, taxation, and regulation, among others.
- *Protect vulnerable ecosystems:* Identify additional ecosystems that are vulnerable and establish policies and programs to protect them, especially marine systems. This goal can be accomplished through local involvement and ownership (i.e., when local people benefit from sustainable practices). For example, sharing profits from ecotourism with the host communities should incentivize residents to promote ecotourism programs.

In sum, much of the evidence related to global assessment of environmental well-being points to the fact that humans have made significant changes in recent decades to the global environment to meet the growing demand for food, fresh water, fiber, and energy and that these changes have contributed to human well-being in many ways. However, the same changes have resulted in negative externalities—they have weakened nature's ability to deliver on purification of air and water, protection from disasters, and provision of medicines, among others.

3 Discussion

Advances in quality of life and well-being have increased steadily over the long expanse of human history (Estes and Sirgy 2017). These advances occurred largely in response to humanity's continuing search for more effective and efficient means for securing food, shelter, warmth, safety, and other basic needs. They also were driven by the search for new labor-saving technologies to perform otherwise labor-intensive work. These quests had as their central goal advancements in the level of living, in the material conditions of life, and in the quality of life and sense of well-being of those who could most directly benefit from the innovations. They also were intended to raise the quality of life and well-being of the society at large.

The ground-breaking advances in quality of life made since the end of World War II and, more particularly, since 1950 have been the primary focus of this paper, especially in the health, education, economic, social welfare, and environmental sectors. The advances made in these sectors have been dramatic and transformative and, now, are permanent features of life for most of the world's people. Countries with already

economically mature economies have benefited most from the advances in quality of life but so, too, have the developing nations of Africa, Asia, Latin America, and the Caribbean. This latter group of nations, which comprise as much as 80% of the world's population, have participated at an even more rapid rate in the benefits of the critical changes identified in the text. In turn, the changes have resulted in permanent transformative social, political, economic, technological, and, increasingly, environmental changes in these and all societies since at least 1950.

Today, social progress in advancing the quality of life of people everywhere is reflected in the significant increases that have been made in extending the average years of life expectancy, in decreasing the rates of infant, child, and maternal mortality (World Health Organization 2017), bringing literacy to most of the world's children and youth, increasing the average per capita and household income levels and, finally, increasing the social, political, and economic parity between men and women. These transformative changes were not easily achieved, and their realization required active and sustained partnerships between local and national governments, national and international businesses, national and international NGOs, and people themselves at all levels of social and political organizations. The gains made in improving the objective conditions of life and, in turn, the quality of life and perceived well-being of people everywhere required carefully thought through and implemented plans of action.

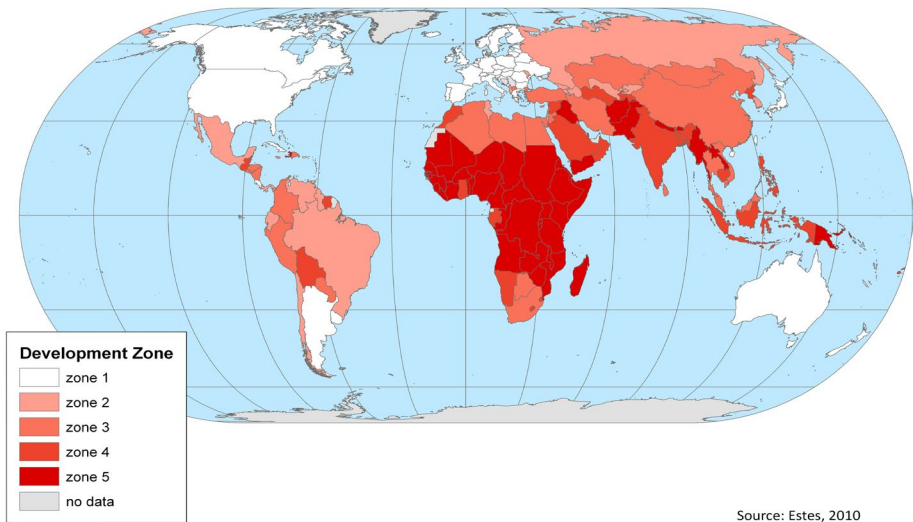
Though only alluded to in this paper, participatory forms of governance are the "new normal" worldwide. Men and women in an increasing number of countries have the right to exercise their universally guaranteed rights of freedom of expression, freedom of assembly, freedom to form political parties, freedom to vote, and freedom to practice their religious beliefs openly and without discrimination or fear of political retaliation. No other generation in human history has experienced such a high level of progress in these sectors of collective life. These gains, along with those reported for the health, education, economy, and social welfare sectors (but less in the environmental sector) are truly remarkable and have contributed meaningfully to progressively higher levels of quality of life, well-being, and even happiness for an increasingly larger share of the world's total population (Helliwell et al. 2017).

But worldwide advances in quality of life during the 20th and the opening decades of the still young twentieth century have not followed a straight path. Nor have the benefits of the transformative social gains realized by others been distributed evenly or across all sectors of collective social behavior. Within the political sector, for example, the New York-based think tank, Freedom House, in its annual survey of changing political conditions worldwide concluded,

There were setbacks in political rights, civil liberties, or both, in a few countries rated "Free," including Brazil, the Czech Republic, Denmark, France, Hungary, Poland, Serbia, South Africa, South Korea, Spain, Tunisia, and the United States. Of the 195 countries assessed (in 2017), 87 (45 percent) were rated "Free," 59 (30 percent) "Partly Free," and 49 (25 percent) "Not Free." The Middle East and North Africa region had the worst ratings in the world in 2016, followed closely by Eurasia (Freedom House 2017a, p. 1).

The state of freedom of the press throughout the world, also as reported by Freedom House, remains contentious and limited in many the world's countries dominated by economic and political elites (Freedom House 2017b). Freedom House reports that

Distribution of WISP Scores by Country & Development Zone, 2009



Source: Estes, 2010

Fig. 2 Advances in well-being as reflected by the Weighted Index of Social Progress by country and socio-economic development zone, 2009. *Source:* Estes (2010), Fig. 12

Global press freedom declined to its lowest point in 13 years in 2016 amid unprecedented threats to journalists and media outlets in major democracies and new moves by authoritarian states to control the media, including beyond their borders.

Freedom House went on to indicate that,

Only 13 percent of the world's population enjoys a free press—that is, a media environment where coverage of political news is robust, the safety of journalists is guaranteed, state intrusion in media affairs is minimal, and the press is not subject to onerous legal or economic pressures (Freedom House 2017b).

Unfortunately, commercial and political corruption also remains high throughout the world, especially in the poorest nations, whose squandered resources are desperately needed to provide for the basic needs of their still-growing populations. The Berlin-based think tank, Transparency International, in its most recent annual survey of press freedom throughout the world, reported,

Over two-thirds of the 176 countries and territories in this year's index fall below the midpoint of our scale of 0 (highly corrupt) to 100 (very clean). The global average score is a paltry 43, indicating endemic corruption in a country's public sector. Top-scoring countries...are far outnumbered by...countries where citizens face the tangible impact of corruption daily (Transparency International 2017, p. 1).

Figure 2 summarizes the comprehensive, often dramatic, patterns of uneven well-being that exist around the world. This figure reflects the important social gains reported for the health, education, economics, and social welfare sectors as well as the political and press freedom trends reported by Freedom House and Transparency International, respectively. Using the Estes' 41-item Weighted Index of Social Progress, Fig. 2 uses various shades of

color to identify those countries and world regions that have attained the highest and the lowest levels of well-being (Estes 2010). Countries with darker colors, for example, are at the lower end of the quality of life and well-being spectrum (Development Zones 4 and 5) and those with advanced levels of quality of life and well-being are in the lightest colors (Development Zones 1 and 2). As summarized in this figure, well-being attained its highest levels in 2009 in North America, Northern and Western Europe, and in selected countries and territories of East Asia (e.g., Hong Kong SAR, Japan, South Korea, Taiwan) and Oceania (Australia, New Zealand). Countries with the lowest levels of well-being, as summarized in Fig. 2, are in sub-Saharan Africa and parts of South and East Asia, especially in the heavily rural regions of these countries. Latin America and the Caribbean region, as has been the case for several decades, remain situated in the mid-level of well-being performing countries (Estes 2015a, b), albeit the region's subjective sense of "happiness" is among the highest in the world (Helliwell, Layard and Sachs 2017). Some Latin American countries are moving forward, however, and likely will move into development zones 2 and 1 over the next decade—Argentina, Chile, Panama, and Uruguay (World Bank 2017).

As is apparent from a visual inspection of Fig. 2, the gains made in improving the objective conditions of quality of life and well-being are not evenly distributed across the world. Though the impressive social gains reported in this paper have been transformative and, indeed, lay the foundation for future social progress, the gap between the most and least well-off nations continues to be wide, especially in countries with limited political freedom and restricted freedom of the press (including the Internet). The gap that exists between these two groups of nations, as reflected in Fig. 2, remains a large one but, with continued effort, can be narrowed. This gap in overall development, and in a perceived sense of well-being, undermines the social fabric of the nations and contributes to rising levels of militancy among groups of socially disenfranchised people, including acts of terrorism in some countries (Estes and Sirgy 2016).

People everywhere in the world can expect to participate more fully in the health, education, economic, and social welfare advances that have been achieved by most nations since 1950. These gains should be considered as transformative in the sense that we have used the term throughout the paper—profound, fundamental, and permanent.

4 Conclusion

Throughout the paper we have sought to present a more positive perspective of the remarkable progress that has been made in advancing the quality of life and sense of well-being since the end of World War II. The largest part of the paper was devoted to specific changes in quality of life that have taken place in five sectors of critical importance to the individual's perception of well-being—health, education, economy, social welfare and the environment. The advances in well-being that have taken place in the first four of these sectors are truly remarkable and contradict the sometimes-negative reports that appear in both the popular and scholarly literature concerning the state of the world's social situation (Patterson 1994; Weinberger et al. 1981; Wood 2014). Though these advances have not equally benefitted all people everywhere, today, people nearly everywhere are living much longer on average than in 1950; rates of infant, child, and maternal mortality have declined sharply; literacy among children and young people is approach a nearly universal level; and people nearly everywhere have higher average per capita and household income levels than previously thought possible. Similarly, university educations and vocational training

opportunities have increased exponentially, and, unlike in previous decades, women now enjoy the same social privileges and opportunities that have long been available only to men. Even the rate of extreme poverty has been halved in just two decades, with the result that hundreds of millions of previously poor people are now able to work and provide for their own and their families' financial needs. Provisional social safety nets have been established in 178 of the world's nations, including nearly 95% of the global population. Still, the century in which we are living is young, and the possibilities for further improvements in the conditions needed for a high quality of life are just ahead.

The subtitle of this paper is "past, present, and future" (advances in quality of life and well-being). If the past is truly the prologue for the future, then the world population and quality-of-life researchers have much to be happy about, knowing that recent accomplishments in social progress and quality of life have transformed societies to a level of well-being previously not thought possible, with the exception being the environment. Now that the human collective has accomplished so much in health, education, the economy, and social welfare sectors, it is time to pay more attention to the environment. We hope that the human collective can arrest the downward spiral of environmental well-being and change its trajectory to an upward spiral. If this is accomplished, historians of human well-being will be able to state unequivocally that the human condition has improved consistently throughout history in every sector of society.

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Compliance with Ethical Standards

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