

# CHAPTER 12

## UNIVERSITIES IN THE EARLY DECADES OF THE THIRD MILLENNIUM: SAVING THE WORLD FROM ITSELF?

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### ABSTRACT

*Environmental degradation, economic and political threats along with ideological extremism necessitate a global redirection toward sustainability and well-being. Since the survival of all species (humans, animals, and plants) is wholly dependent on a healthy planet, urgent action at the highest levels to address large-scale interconnected problems is needed to counter the thinking that perpetuates the “folly of a limitless world.”*

*Paralleling critical societal roles played by universities – ancient, medieval, and modern – throughout the millennia, this chapter calls for all universities and higher education institutions (HEIs) generally – estimated at over 28,000 – to take a lead together in tackling the pressing complex and intractable challenges that face us. There are about 250 million students in tertiary education worldwide rising to about 600 million by 2040. Time is not on our side. While much of the groundwork has been done by the United Nations (UN) and civil society, concerns remain over the variable support given to the UN-2030 Sustainable Development Goals (SDGs), especially in light of the negative impact of global biodiversity loss on achieving the UN-2030 SDGs.*

*Ten propositions for global sustainability, ranging from adopting the SDGs at national and local levels to ensuring peaceful uses of technology and UN*

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*reforms in line with global socioeconomic shifts, are provided for consideration by decisionmakers. Proposition #7 calls for the unifying One Health & Well-Being (OHWB) concept to become the cornerstone of our educational systems as well as societal institutions and to underpin the UN-2030 SDGs.*

*Recognizing the need to change our worldview (belief systems) from human-centrism to eco-centrism, and re-building of trust in our institutions, the chapter argues for the re-conceptualization of the university/higher education purpose and scope focusing on the development of an interconnected ecological knowledge system with a concern for the whole Earth – and beyond.*

*The 2019 novel coronavirus has made clear that the challenges facing our world cannot be solved by individual nations alone and that there is an urgency to committing to shared global values that reflect the OHWB concept and approach. By drawing on our collective experience and expertise informed by the UN-2030 SDGs, we will be in a much stronger position to shape and strengthen multilateral strategies to achieve the UN-2030 Transformative Vision – “ending poverty, hunger, inequality and protecting the Earth’s natural resources,” and thereby helping “to save the world from itself.”*

**Keywords:** university history; planetary threats; One Health & Well-Being; UN-2030 Sustainable Development Goals; Propositions; propositions for global sustainability; international One Health for One Planet Education; IHOPE; the ecological university; ecology; belief systems; pandemics; mindshifts;

It is remarkable how the university as a social institution – “though much diluted and with less authority on the student life” (Trow, 2000, p. 13) has remained, by and large, unchanged in terms of its forms, structures, and governance. Perhaps only the military, the papacy, and a few parliaments have enjoyed such longevity.

While the institution’s existence spans over two millennia, its future survival in its present guise and functions are less certain. The shift from being “worlds in themselves” for most of the first two millennia, prizing “knowledge for the sake of knowledge” (Barnett, 2016, para. 1), but increasingly having to assume a utilitarian role that connects knowledge to economic priorities, continues to evidence problems, for example, by the chronic tensions between education and research (Lueddeke, 2008, pp. 1–18).

Compounding its structural/role introspections are societal pressures to address – along with other world and national stakeholders – the many unparalleled existential threats that face us all – comprising, among others, the urgency to tackle the impacts of environmental degradation, technology/artificial intelligence (AI), modernity, conflicts, migration, changing world economic order, and ideological extremism especially in religious and political realms – collectively calling for a global redirection toward planet and people well-being and sustainability (Lueddeke, 2019a, 2019b).

Against this background, this chapter explores the extent to which the university and higher education generally could play a more central global leadership role in ensuring the sustainability of the planet and all living species.

Responding to this query the chapter considers seven themes:

- the university in the first two millennia: historical perspectives and takeaways;
- existential challenges facing the planet and society in the twenty-first century;
- social progress and the university;
- toward a new worldview;
- propositions for global sustainability;
- re-imagining the university in the twenty-first century; and
- initiatives toward global sustainability and well-being.

## HISTORICAL AND CONTEMPORARY PERSPECTIVES

*From the 4th Century BCE to the 18th Century CE*

The origins of the universities can be traced to ancient Greece and early centers of learning such as Plato's Academy (c. 387–529 BCE) and Aristotle's Lyceum (c. 335–386 BCE) and to the scholarship contributions of isolated monasteries during the sixth and seventh centuries (Herman, 2013). These centers of learning ceased to exist by the sixth century considered out of philosophical step with the times, largely due to emerging Christian mysticism and were replaced by monastic schools which trained monks and priests.

For James Axtell (2016), Kenan Professor of Humanities Emeritus at the College of William & Mary in England, the university's permanence over eight centuries owes more to its unwavering commitment to "teaching, scholarship and service" (para. 9) and being "adaptable and responsive (sometimes tardily) to changing circumstances and social needs" than to "technologies" (para. 12), as more attention has been placed on "Who taught, what they taught and to whom evolved faster than the time-tested ways they taught" (para. 12).

Classical learning was revived during the reign of Charlemagne, ruler of the Carolingian Empire (France, German, and Italy) from the late eighth century to the ninth century (Kreis, 2009; Palmer, 2016) but provides another historical moment of failed intellectual inquiry and innovation, as after Charlemagne's death in 814 ce, progress of philosophical thought in Europe generally ceased for about two centuries – more than likely because "At the level of the state, Charlemagne's legend, came to reflect and augment not unity but division in Europe" (Nelson, 2014, p. 143).

In contrast, the Islamic world was at its cultural peak, transporting ideas to Europe including Latin translations of the Greek classics and of Arabic texts, as well as "humanism, philosophy, scholasticism, the scientific method, rationalism and material culture, such as commerce and seafaring" (Diwani, 2005, para. 5). Recognizing the knowledge advances in the East during the eleventh and twelfth centuries, Christian scholars visited Muslim lands to study their progress in the sciences, medicine, philosophy, mathematics, and other areas (Diwani, 2005).

Along with the Islamic connection, two other factors that gave rise to the universities in Europe – beginning with the University of Bologna in the eleventh century – were significant population growth and expanding commerce. While the oldest university in Asia and Africa predated European institutions (i.e., the University al-Qarawiyyin in 859 CE, founded by Fatima El-Fihriyya, in Fez, Morocco; [Mortimer, 2018](#)), the establishment of universities in Europe was a turning-point and largely a response to the socioeconomic and intellectual deterioration in the early Middle Ages (so-called “Dark Ages”) after the fall of Rome in 476 CE ([Cantoni & Yuchtman, 2012](#)).

From the tenth to the thirteenth centuries – the birth of Europe – population more than doubled: from about 40 million to at least 80 million and to as much as 100 million, by 1300. ([Pitts, 2013](#), p. 5)

University expansion continued at a rapid pace – Oxford University started in 1096 (charter, 1248); Cambridge in 1209 (charter, 1231); Paris (charter, 1200); and the University of Salamanca, Spain (charter, 1218) ([Perkin, 2007](#)), accelerating in the following four centuries and throughout the world. However, a steep decline occurred from early fourteenth century, when “Europe’s population not only ceased to grow, but may have begun its long two-century downswing” ([Pitts, 2013](#), p. 4) due to the Great Famine (1315–1322), diseases (e.g., Black Death or Bubonic Plague from 1348), typhus, dysentery, pneumonia, leprosy, warfare, and water pollution. Population increases resumed from the fifteenth century reaching about 120 million by the eighteenth century. In addition, it was also an era of significant commercial expansion across all economic areas leading to major increases in urbanization and rising incomes ([Pitts, 2013](#), p. 3).

Paris, as one example, increased its population tenfold with London not far behind. It is not surprising, therefore, that these developments spawned the expansion of universities across the continent and, that in response to societal needs or demands, many early universities focused on training students to become clerics, lawyers, civil servants, and physicians. Throughout the Renaissance humanism period (fourteenth to sixteenth centuries), more attention was also gradually paid to the importance of knowledge for the sake of knowledge opening an era of commercial expansion alongside increasing urbanization and income gains across all sectors ([Rüegg, 1992, 1996](#)).

Scholarly productivity in the Middle Ages consisted mainly of returning to the ancient Greek philosophers – especially Plato and Aristotle. It was not until the eighteenth century (the Age of Enlightenment) that new knowledge was recognized and led to the beginning of publishing and scholarship ([Axtell, 2016](#)).

#### *Developments in the 19th and 20th Centuries*

During the nineteenth century two very different university models evolved, the German and the post-Revolutionary French *Grandes écoles* ([Rüegg, 2004](#)). Both impacted on emerging universities in other countries, including Britain, informed by the sciences (Age of Enlightenment), the rise of the bourgeoisie (middle class), and decline of medieval scholasticism. Germany’s model was largely focused on the development of a national culture and lessening the power of nobility ([Rüegg,](#)

2004), while the French approach emphasized robust discipline and central curriculum control as well as scholarly reputation (Rüegg, 2004).

In Germany, only in post for 16 months (1809/1810) as head of Prussia's education ministry, Wilhelm von Humboldt (1767–1835), was recognized as a philosopher, a scholar, a philologist, and a statesman (Wertz, 1996, para. 19). He contributed to education at all teaching levels, based on his belief that everyone has a right to the best education available in order to become “a fully functioning citizen” within a system where “every part should be interlocked with every other part” (Wertz, 1996, para. 43), an “*Allgemeine Bildung* – or well-rounded education concept” (Wertz, 1996, para. 47) – mirroring his own lifelong learning.

Among his many accomplishments, Humboldt revolutionized teacher training at secondary (“scholastic”) level, demanding robust entry criteria, proposed a complete overhaul of a country's education system, established “the humanistic gymnasium as the basic institution leading to the university” (Wertz, 1996, para. 112), and founded the University of Berlin, “his crowning achievement” (Wertz, 1996, para. 118).

Perhaps one of his most important contributions was seeing the purpose of a university – for both the teacher and the student – as “a common quest for (scientific) knowledge or *Wissenschaft*” – abolishing “in a master stroke the problematic nature of the research-teaching link” (Elton, 2001, p. 1; Lueddeke, 2008). In a letter to the King of Prussia, he set out his argument for holistic academic learning:

There are undeniably certain kinds of knowledge that must be of a general nature and, more importantly, a certain cultivation of the mind and character that nobody can afford to be without. (Günther, 1988, para. 6)

Humboldt's philosophy spread across many countries, integrating “vocational training as a mandatory part of secondary education rather than dedicating all classes towards the pursuit of academia” (Doka, 2017, para. 1). During the nineteenth and twentieth centuries and as an outcome of industrialization, universities focused mainly on the sciences (Goldin & Katz, 1999), while widening participation – restricted largely to males and the upper classes during the nineteenth century – “changed after 1914 as the concept of the civic university was seen as an engine for developing a secular, economic potential that used the masses by giving them access to education” (DailyHistory.org, n.d., para. 13; see also Goddard & Kempton, 2016).

The university journey from being “worlds in themselves” to “moving into the world” and creating “useful knowledge” for economic growth (knowledge transfer) and shifting from traditional research to societal issues (Barnett, 2016, para. 1) has taken over 900 years. Given the accelerating pace of change in the world, it remains to be seen how the next few decades will transform the institution and whether it can remain intact.

#### *University Takeaways – Early Years to the 20th Century*

This brief retrospective, while highlighting several turning points, also makes clear that change across the university spectrum was very slow in terms of who

was taught, what was taught, and how it was taught. In fact, for many years there was hardly any progress of any kind given wars, famine, and disease. Most notable change came through the expansion of universities in the Middle Ages first in Europe – University of Bologna, founded in 1088, acknowledging the need to organize society and the early “professions” – law, theology, medicine. Other developments included – recognizing the two greatest figures of Western philosophy timeless wisdom of Plato c. 428-c. 348 BCE, Aristotle, (384-322 BCE) and others, shifting from theological influence to secularism – coupled with extraordinary breakthroughs in the life and physical sciences particularly over the past three centuries – but with much less progress in social spheres.

Humboldt’s assertion in the nineteenth century that “every person has a basic right to the best education possible to become a fully functioning citizen” (Wertz, 1996, para. 63) was a turning-point in democratic thought and emphasis with on “Bildung” or “the cultivation of the individual’s full personality as the aim of teaching” (Wertz, 1996, para. 44) continuing to be as important today (perhaps more so). While significant structural changes are being made globally in terms of widening student participation and expanding the types of courses on offer – many now using mediated learning (e.g., teleconferencing, distance learning) – for many the student undergraduate learning experience remains passive and continues to follow a rigid course-based approach rather than an integrated thematic and interdisciplinary learning experience, mirroring the way the world works and how it might engage students more meaningfully given global uncertainties and the increasing need for creative solutions or “thinking outside the box” (Lueddeke, 2008).

## EXISTENTIAL CHALLENGES FACING THE PLANET AND SOCIETY IN THE 21ST CENTURY

### *The Climate Conundrum*

An irrationality that has been with society for at least half a century perpetuates the “folly of a limitless world” (Lueddeke, 2019a, p. 217). While concerns are growing in strength and number and several nations are taking positive steps in enacting legislation to curb carbon emissions, the impact of climate change on our species and all others is being taken much more seriously than even a few years ago. One of the reasons is that we are seeing the consequences of not doing so – melting glaciers, pollution, extreme weather conditions, and food scarcity. It remains the most fundamental issue facing the planet’s sustainability and future.

Sir David Attenborough, British broadcaster and natural historian, perhaps said it best:

The fact is that no species has ever had such wholesale control over everything on earth, living or dead, as we now have. That lies upon us, whether we like it or not, an awesome responsibility. In our hands now lies not only our own future, but that of all other living creatures with whom we share the earth. (Hall, 2017, para. 4)

The 2019 *World Economic Risk* report places failure of climate change mitigation and adaptation, extreme weather events, and natural disasters at the top of its global agenda in terms of likelihood. Impact on society will fall mostly on

weapons of mass destruction and failure of climate change mitigation as well as extreme weather events (World Economic Forum [WEF], 2019, p. 5).

In only two generations we have managed to damage Earth to the point that, according to the *Global Assessment Report on Biodiversity and Ecosystem Services* (the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services [IPBES], 2019; see also United Nations, 2019a), there is now the distinct possibility of a mass extinction event – rapid decrease in the biodiversity on Earth – only the sixth in 66 million years when the dinosaurs were wiped out. The big difference is that the current extinction would be the first precipitated by human activities.

The IPBES report “examines the state of nature, its ecosystems, and its contributions to people” and aims “to empower policy makers with the knowledge and evidence to make better informed decisions when developing policies and taking actions for the benefit of both people and nature” (World Wildlife Federation [WWF], 2019, para. 2). The report involved 145 scientists from 50 nations and is

based on the systematic review of about 15,000 scientific and government sources, and draws (for the first time ever at this scale) on indigenous and local knowledge, particularly addressing issues relevant to Indigenous Peoples and Local Communities. (United Nations [UN], 2019a, para. 7).

Selected statistics begin to tell the story (UN, 2019a, para. 17):

- 75% of the world’s land surface have been altered and 85% of wetlands have been destroyed;
- about one million species face extinction;
- loss of bees and other pollinators presents a global threat to food production and could result in \$577 billion annual decline in crop damage;
- almost 600 species used for livestock production have become extinct;
- half the live coral cover on reefs has been lost since 1870 and will be wiped out if global warming reaches 2 °C above the pre-industrial level;
- marine plastic pollution has risen 10-fold since 1980 affecting at least 267 species, including 86% of marine turtles, 44% of seabirds, and 43% of marine mammals; and
- over 80% of the global wastewater is being discharged back into the environment without treatment, while 300–400 million tons of heavy metals, solvents, toxic sludge, and other wastes from industrial facilities are dumped into the world’s waters every year.

Robert Watson, chair of the IPBES, in a media statement, emphasized that the health of ecosystems, which all species depend on, is deteriorating more rapidly than ever:

We are eroding the very foundations of our economies, livelihoods, food security, health and quality of life worldwide. The report also tells us that it is not too late to make a difference, but only if we start now at every level from local to global. Through transformative change nature can still be conserved, restored and used sustainably. (Reuters, 2018, para. 8)

As Sir David Attenborough affirmed in *Blue Planet II*, time really is running out to enact the worldwide transformation that is necessary (Attenborough, 2017, as cited in Conner, Douglas, Honeyborne, & Attenborough, 2017) to save us from

*ourselves*, the sub-title of this chapter. The challenges are formidable to avert what could possibly be an apocalyptic future characterized by “The End of Food,” para. 22; “Climate Plagues,” para. 26; “Unbreathable Air,” para. 30; “Perpetual War,” para. 35; “Poisoned Oceans,” para. 41; and “Permanent Economic Collapse,” para. 38 (Wallace-Wells, 2017).

Several years ago, Marco Lambertini, Executive Director at WWF, made clear why there has to be a major societal transformation. Providing statistical evidence, he observed that

in less than two human generations, population sizes of vertebrate species have dropped by half. These are the living forms that constitute the fabric of the ecosystems which sustain life on earth and the barometer of what we are doing to our planet, our only home. (WWF, 2014, para. 2)

Warning that “We ignore their decline at our peril” (WWF, 2014, para. 2), the WWF Director-General affirmed that

We need a few things to change. First, we need unity around a common cause. Public, private and civil society sectors need to pull together in a bold and coordinated effort. Second, we need leadership for change. Sitting on the bench waiting for someone else to make the first move doesn’t work. Heads of state need to start thinking globally; businesses and consumers need to stop behaving as if we live in a limitless world. (WWF, 2014)

In the intervening years since the WWF report was published, too few leaders – G7 (France, United States, United Kingdom, Germany, Japan, Italy, and Canada (Russia suspended)) and E7 (emerging – China, India, Brazil, Mexico, Russia, Indonesia, and Turkey) have listened. Given the available evidence today (e.g., the UN biodiversity report published in May 2019!), there is now, unquestionably, a pressing need to re-orient society toward a sustainable future. The challenge is to shift our perspective from two-dimensional to three-dimensional, “orbital” thinking, as NASA International Space Station astronaut Col Ron Garan contends – “bringing to the forefront the long-term and global effects of every decision” (Garan, 2015, p. 1).

Given what we know, it may be important to remind global lawmakers and decision-makers that if we fail to save the planet none of the other human activities will matter. Percy Bysshe Shelley’s poem *Ozymandias* (1818) comes to mind:

My name is Ozymandias, king of kings:  
Look on my works, ye Mighty, and despair!  
Nothing beside remains: round the decay  
Of that colossal wreck, boundless and bare,  
The lone and level sands stretch far away.  
(Hebron, 2014)

### *Technology: Friend or Foe?*

The survival of our species – and all others – depends on conditions that maintain a *natural balance* in our ecosystem. According to scientists and, as mentioned earlier, we are already in the midst of the Earth’s sixth mass extinction phase (Carrington, 2017) similar to other eras of “biological annihilation” before – the last one was 66 million years ago. The main difference between the previous and now is that the current phase can be totally attributed to us, *Homo sapiens* (Ceballos, Ehrlich, & Dirzo, 2017).



Another existential threat for which we must take full responsibility relates to the pervasive developments of technology and in particular artificial intelligence (AI). In *Sapiens: A History of the Past*, author Yuval Harari (2014) conjectures that after four billion years of natural selection *Homo sapiens* are now able to transcend “their biologically determined limits” and become “ruled by intelligent design” (p. 447). In his subsequent book, *Homo Deus: A Brief History of Tomorrow* (Harari, 2016), he contends that during the course of this century, technology (non-conscious algorithms) might seek to control humanism (feelings), assisted largely by genetic engineering and nanotechnology. He also postulates that *Homo Deus* might begin to worship a new ideology – Dataism, a new techno-religion.

The battle between humanism and dataism already appears to be on the horizon given societal, military, and Big Tech developments. Indeed, as Harari observes, we may be going through a phase where we are seduced by satisfying basic human aspirations more efficiently only to discover that algorithms – age of quantum computers – can do most things better than we can and in the long run make our species irrelevant, what Berkley’s Professor Stuart Russel calls “the gorilla problem,” where “Their species has essentially no future beyond that which we deign to allow” versus “a golden age of humanity” (Fortson, 2019, p. 21).

Closely related to these extraordinary and possibly unwelcome trends facing us are the dangers posed by techno-warfare and genetically engineered viruses. Perhaps the late physicist, Stephen Hawking, said it best: “We are all different. There is no such thing as a standard or run-of-the-mill human being, but we share the same human spirit” (Olympic Talks. NBC Sports, 2018 [video]).

Hawking’s introspection goes to the core of humanity’s instinct for “survival,” an attribute that is now being seriously tested (Jong, 2018). Our choice seems straightforward, but is proving difficult to execute given the short-termism of socioeconomic, geopolitical, and ecological decision-making, where truth has become a commodity. However, overwhelming evidence confirms that

unless crucial societal transformations occur, including the prevention of nuclear war, global warming and genetically engineered viruses – the shelf life of *Homo sapiens* could be extremely short. (Lueddeke, 2019a, 2019b, p. 221)

The bottom line is that there is a real danger that we are becoming increasingly dehumanized rather than as Klaus Schwab, executive chair of the WEF, aspired, that we refocus on becoming “better humans” (Mathuros, 2016, para. 10).

## **WAR: “HUMANITY’S GREATEST FAILURE”**

*“The Ideology of Scarcity”*

The first major step in reforming humanity may be for world leaders to accept that “war is humanity’s greatest failure” (Garan, 2015, p. 143). For the former International Space Station (ISS) astronaut and author the causes “of the many conflicts ranging around the world” can be traced to “the ideology of scarcity,” that is “actions tend to be based on a fear that the other side might attempt to take control of things such as water, land, oil, or some other resource .... If one side gains, the other loses” – reflecting “two-dimensional

conflicts” that see “their opponents as completely separate from themselves” with one diminishing “the humanity of the other” (p. 78). Taking an “orbital perspective,” [Garan \(2015\)](#) emphasizes, would make it abundantly clear that “both sides are fully human, and that by degrading the human dignity of one we degrade the human dignity of all” (p. 78). Our main problem, he says, lies primarily “in our inability to collaborate effectively on a global scale” ([Garan, 2015](#), p. 5).

As James [Rubin \(2015\)](#), assistant secretary of state for public affairs under President Clinton, reported, “we continue to see leadership by inertia with governments ignoring the real issues facing us and in some cases (e.g., climate change) actually continuing to undermine our future sustainability” (p. 17).

Leadership ineffectiveness may be traced to at least two other main causes: “a crisis of international institutions,” as [Rubin \(2015\)](#) contends, internationally we may simply “lack the tools to deal with the multiple crisis” (p. 17). It may also be a question of personality traits.

Michael [Myatt \(2012, October 18\)](#), writing in *Forbes*, observed that “vision” and “service above self” and engendering “trust, confidence, and loyalty of those they lead” are critical to effective leadership. In contrast, he asserts that “An overabundance of ego, pride, and arrogance” are not. Perhaps at this time of growing nationalism and populism global leadership might be wise to heed Myatt’s final point that “leaders not accountable *to* their people will eventually be held accountable *by* their people.”

## SOCIAL PROGRESS AND THE UNIVERSITY

While progress in the sciences in the past few centuries has been remarkable, social developments have been much less successful. In fact, we are now seeing a world where conflicts, brinkmanship, and post-truth continue unabated and where peoples of all ages are confronted by many physical and emotional/mental health problems, many of which stem from modernity (e.g., loss of traditional values) and incongruous lifestyles ([Lueddeke, 2016a](#), pp. 39–72).

Relying on universities/HEIs to lead the way in confronting global and national perils appears to be equally daunting as campuses are faced with similar pressures as the societies they are meant to serve – value for money, access, quality, global competition, academic freedom, and student well-being, to mention several ([Twenge, 2018](#)). While these represent significant hurdles, our capacity to help solve social problems through research has been greatly diminished, according to Simon [Marginson \(2016\)](#), professor of International Higher Education at the Institute of Education, University College London, and author of the *Dream is Over*.

His book focuses on the 1960 Master Plan for Higher Education in California developed by the visionary University of California President Clark Kerr and his contemporaries. Rather than solving socioeconomic problems, [Marginson \(2016\)](#) concludes that “higher education in the United States now contributes to the reproduction of social inequality” – ignoring and negating “the social conditions in which individual freedoms are nurtured and expressed” and that the dream “of

a higher education-led meritocracy grounded in equality of opportunity, serving enterprise and justice in equal measure, is over” (p. 194).

A similar concern has been voiced in UK universities where, Matthew Goodwin (2019), professor of politics at Kent University, observes that increasingly

it feels as though a narrow ideological orthodoxy is taking hold – an illiberal liberalism – stifling what can or cannot be said on campus, or can or cannot be hired, what can or cannot be researched. (p. 25)

The paradox of course is that “Universities are here to pursue truth, engage in reasoned argument, support freedom of inquiry and nurture the development of critical thinkers” (Goodwin, 2019, p. 25).

Marginson (2016) traces the main underlying problem in the United States – likely the root cause, as mentioned, in the United Kingdom and other countries – where populism and politics of fragmentation have become commonplace – to “political philosophy and political culture” and contends that:

Once government ceases to be a repository of the general will and the taxation that supports it ceases to be an instrument of the collective good. Once government is seen as the enemy, less trustworthy than market actors, though they are responsible only to themselves, then society has set aside its principal means of reflexively improving itself. (p. 194)

While higher education enrollments will be reaching about 600 million by 2040 (Calderon, 2018; see also Roser & Ortiz-Ospina 2019), it is clear, according to Alice Gast (2018), president of Imperial College London, that “some view higher education as part of the problem rather than part of the solution” (para. 2), especially those who feel frustrated and alienated due to the impact of an “increasingly global economy and rapid technological advances,” resulting in “a growing sense of frustration and alienation” (para. 2).

Part of the answer, she concludes lies in developing

new ways of collaborating and engaging personally and directly with community residents to share knowledge, to listen to their creative ideas and to work together on projects that have practical applications within the community. (Gast, 2018, para. 6)

## TOWARD A NEW WORLDVIEW

There are about 7.7 billion people on the planet, and it is estimated that there will be over 9.8 billion by 2050 and 11.2 billion in 2100. Climate change, urbanization, pandemics, conflicts (globally we spend US \$13.5 trillion on war in 2015 and only 3% on peace-c. \$6 billion!), and food security are the main issues we need to tackle now (Lueddeke, 2019a, 2019b).

As existential threats make clear, changing the way we think and behave should no longer be a question of why but how – although regrettably our main concerns continue to be political and economic rather than sustaining the planet. Authoritarian populism, nationalism, and isolationism are the antithesis of the paths toward which we ought to be striving to build trusting relationships and “form a basis for global collaboration” (Garan, 2015, p. 181). The root causes of these movements, for example, tensions “in values between social conservatives

and social liberals” (Rodrik, 2019, para. 1) need to be debated and remedies should be found that address societal conditions to ensure equality, peace, and global sustainability.

Doing so, we are challenged to make a fundamental mindshift – adopt a new worldview – to ensure our needs as human beings are compatible with the needs of our outer world – our ecosystem (Lueddeke, 2019a, 2019b). Universities/HEIs have a pivotal role to play here, but, as Marginson highlights, and Alice Gast (2018), president of Imperial College London, observes, higher education is part of the problem.

According to Dr Michael Crow (2016), president of Arizona State University, we need to “rethink the role of higher education and the ways that our institutions can be productive, disruptive forces for positive change and progress” (para. 1). In particular, he posits,

Education should move beyond singular academic disciplines as the point of focus and toward multidisciplinary programmes and schools capable of understanding and solving complicated real-world problems. Just understanding those problems is not good enough. (para. 3)

His notion of higher education differs markedly from current models that rely on “the static model based on exclusivity and tradition” (para. 14) and that focus too narrowly on academic disciplines rather than recognizing the wider global landscape and transforming the planet. He proffers:

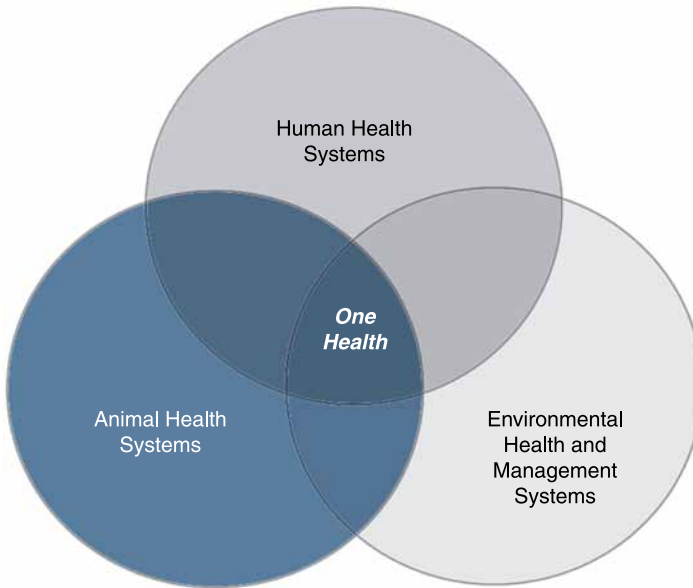
Why shouldn’t engineers work with social scientists, for example? Why not encourage arts students to intersect with economists or public policy professionals? Emerging fields are benefiting from the integration of the sciences – biology, chemistry, physics, technology and more. This is not only intellectually engaging, it also positions us to ask new and better questions to find critical answers. (para. 4)

### *The One Health Concept*

What appears to be a deficit across the globe in bringing people together – in mind and spirit – is the need for a common belief (public good) that transcends all existing ideological differences or divisions – all created by and for the human species (Harari, 2014). A similar plea, mentioned earlier, has come from the WWF Director-General Marcus Lambertini, who called for “unity around a common cause” (WWF, 2014), which essentially echoes the principles and values of the One Health movement.

As shown in Fig. 1, the One Health concept is at the intersection of human health, animal health, and environmental health. It builds on historical roots going as far back as ancient Greece and Hippocrates (c. 500 BCE), and well-known reformers in the nineteenth century, such as Dr Rudolph Virchow (1821–1902), German physician–pathologist, who asserted that there should be no dividing line between animal and human medicine and coined the term “zoonosis” (Lueddeke, 2016b).

Osler (1849–1919), considered by many the “father of modern medicine,” was also a pioneer in medical education in the 1870s, advocating comparative pathology and adopting the One Health approach in teaching medical students at McGill College while also teaching veterinary students at the Montreal Veterinary College (Gyles, 2016, para.1).



*Fig. 1. General One Health Venn diagram visualization. Adapted from Operational framework for strengthening human, animal, and environmental public health systems at their interface, by World Bank group and Ecohealth Alliance, 2018. Retrieved from [documents.worldbank.org/curated/en/703711517234402168/pdf/123023-re-viseD-pUBliC-World-Bank-One-Health-Framework-2018.pdf/](https://documents.worldbank.org/curated/en/703711517234402168/pdf/123023-re-viseD-pUBliC-World-Bank-One-Health-Framework-2018.pdf/). (Copyright 2018 by the International Bank for Reconstruction and Development/the World Bank.)*

A few decades later Calvin Schwabe, as “chair of a new Department of Epidemiology and Preventive Medicine at the University of California, Davis School of Veterinary Medicine,” coined the term “One Medicine,” “and strongly advocated for collaboration between professionals in human and veterinary public health to address zoonotic disease concerns” (para. 2). Others who significantly advanced One Medicine in the twentieth century included James Steele, founding member of the Veterinary Public Health division at the Communicable Diseases Center in the United States in 1947 – applying “public health principles to prevention and eradication” (Gyles, 2016, para. 2). In the past few decades “the One Medicine term has evolved into One Health, placing emphasis on health promotion rather than treating diseases” (para. 2), followed by a further evolution recognizing that “the inter-relationships among humans, animals, and the environment are critical to health” (para. 2). One Health has been adopted across the globe by many organisations, including human and veterinary medicine, the social sciences, environment, governments and education, to name several groups.

One Health networks and consortia have also been building rapidly – the European Network for the Evaluation of One Health (NEOH, 2020), affiliated with EcoHealth International (EHI, 2020), and the global One Health Workforce – Next Generation project consortia (OHW-NG, 2020 [USAID, 2020]), led by

the University of California One Health Institute (OHI, 2020) that seeks to work through university networks to strengthen workforce capacities in Africa and Southeast Asia: i.e., the Africa One Health University Network (AFROHUN, 2020) and the South East Asia One Health University Network (SEAOHUN, 2020). The One Health Commission (OHC-est. 2009) and the One Health Initiative (OHI-est. 2006) have been recognized as global One Health (OH) trailblazers – promoting collaborations / networks, educational opportunities (e.g., 1 HOPE), cross-species disease prevention, and environmental resilience. OHC founding members include Drs. Roger Mahr, Joann Lindenmayer, Cheryl Stroud while OHI founding members are Drs. Bruce Kaplan, Laura Kahn, Thomas Monath.

The OHC and OHI have adopted the term One Health & Well-Being (OHWB) in some of their communications emphasizing the criticality of meeting socio-economic, geopolitical, and ecological conditions worldwide:

OHWB is defined as a collaborative, multisectoral, and trans-disciplinary approach-working at local, regional, national and global levels – to achieve optimal health and well-being outcomes recognizing the interconnections between people, animals, plants and their shared environment. (OHC, 2020, para. 1)

Applying the OHWB concept to the UN-2030 SDGs suggests that UN-affiliated agencies, committees, or groups should view the formulation and impact of policies and strategies through a wider, more inclusive One Health (OHWB) lens – at systems, goal, and discipline/professional levels, as shown in Fig. 1.

Inherent in the concept is the requisite to adopt ethical responsibilities that are rooted in the sanctity of life, highlighted eloquently, as one example, by former UNESCO Director-General Irena Bokova in her inaugural address in which she called for

[...] a new humanism that reconciles the global and the local, and teaches us anew how to build the world and that aspires to peace, democracy, justice and human rights ... rooted in ethics and in social and economic responsibility ... extending assistance to the most vulnerable ... to face our greatest common challenges, particularly respect for the environment. (UNESCO, 1997; UNESCO, 2009, para. 6)

The following year, the Director-General reinforced the importance of the One Health approach by underscoring that the global challenges we face “cannot be resolved by any single country” (UNESCO, 2009, para. 7). In keeping with the One Health approach, she reiterated that it is up to each of us “to bind the community of humanity together, to build a common space that excludes no one, regardless of continent, origin, age or gender” (para. 7).

These aspirations have regrettably not been realized in the intervening years for a number of reasons, but perhaps most importantly is society’s reluctance to “transition toward a world logic where the economy serves the society so that it evolves within the safe operating space of the planet” (Rockström & Sukhdev, 2016, para. 4).

It is noteworthy that representatives at the Group of Twenty (G20) Summit in Osaka, Japan, June 28/29, 2019, recognized the important contributions that One Health can make in tackling antimicrobial resistance (Government of Japan, 2019). Less understood by the 20 global leaders attending, however, is that the

concept is central to the sustainability of the planet and is fundamental to enacting sector policies and strategies across **all** other issues discussed at the summit and mentioned in the G20 Osaka Leaders' Declaration, such as the global economy, inequalities, and world sustainability.

The previously-cited [World Bank Group \(2018\)](#) comprehensive report, *Operational Framework for Strengthening Human, Animal, and Environmental Public Health Systems at their Interface*, acknowledged the wider application of One Health emphasizing that funding could be available not only for infectious diseases but also “other health hazards at the human–animal–environment interface, such as pollution, climate change, food insecurity, and more” ([Voegelé, Evans, & Kemper, 2018](#), para. 9).

### *The UN-2030 Sustainable Development Goals*

On September 25, 2015, 193 Member States of the UN General Assembly ratified the UN-2030 SDGs or Global Goals, as they are also called ([UN, 2015a](#)). The 17 SDGs, 169 targets and 232 indicators ([UN, 2019b](#)), superseded the 2000–2015 UN Millennium Development Goals ([UN, 2015b](#)) which, while raising the profile and funding of global health and making variable progress on the eight agreed goals, failed to fully address the broader concept of economic, social, and environmental development and, in particular, according to UN Secretary-General Ban Ki-moon, tackling root causes ([UN, 2015b](#)).

Broadening the nature and scope of the MDGs considerably, the SDGs, as shown in [Fig. 2](#), are “a universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity” ([UN, 2015a](#), para. 1). They are intended to be “integrated and indivisible, global in nature and universally applicable” while “respecting national policies and priorities” ([UN, 2015a](#), para. 55).

According to Johan Rockström, director of the Stockholm Resilience Center, “the SDGs are maybe the biggest decision in history ... a much more complex agenda, which requires humans to reconnect with their planet” ([Lebada, 2015](#), para. 6).



Fig. 2. Sustainable Development Goals. Adapted from UN (2015b).  
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Fig. 3 makes clear that all species are dependent on a healthy biosphere, where social, economic, and ecological development are integrated and not seen as separate parts. Given the global existential issues we face, “world logic” now dictates that the economy needs to serve society rather than being its master (Stockholm Resilience Centre, 2016).

To date, while there has been progress in terms of poverty and addressing health issues, the implementation of the SDGs remains slow, including on climate action and “reducing inequalities to achieve the SDGs” (UN, 2019b, p. 1) with monitoring reports continuing to show concerns about the slow pace of progress across most goals and targets – even reversal! (UN, 2019b).

Support from business is also uneven. It is estimated that the SDGs “might need between \$5US and \$7 US trillion of investment spend” (McClelland, 2019, p. 03) with the result that “most companies are either ignoring, spinning or cherry-picking” the SDGs rather than “using them to innovate or transform” (Visser, 2019, as cited in McClelland, 2019, para. 21).

Palladium 2020, a global impact firm, believes that the reasons for low uptake of sustainability programs relates to “poor integration with the company’s core business and the difficulty of engaging with key stakeholders in local communities” (p. 05). The SDGs may also go against the grain of American pragmatism “a penchant for examining issues separately: to solve problems on their merits” (Ferguson, 2019, p. 23). Repositioning from silo thinking to an understanding that everything is interconnected on the planet underscored in “Helping governments and stakeholders make the SDGs a reality” (UN, 2019a) – a view shared by

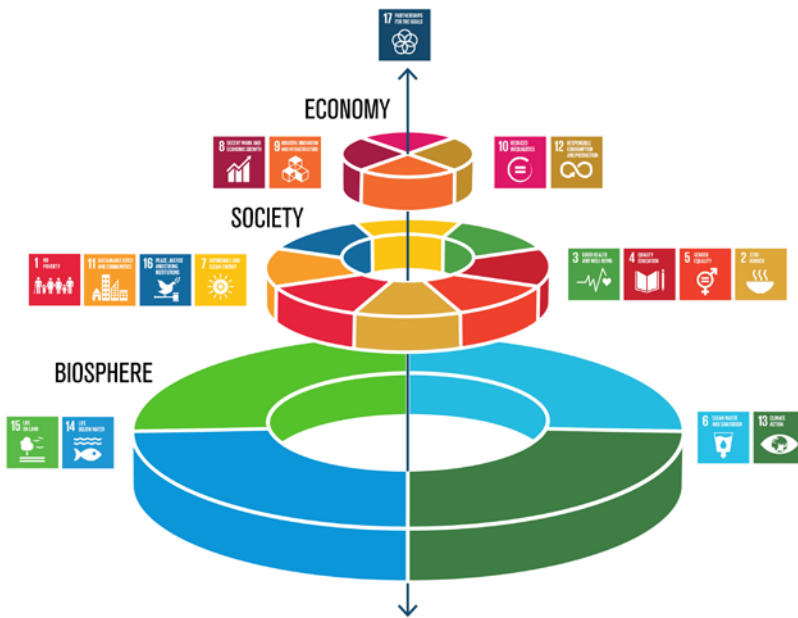


Fig. 3. Paradigm Shift-Economy Serving Society. Adapted from Stockholm Resilience Centre (2016).



both One Health and the SDGs – is a core assumption for all stakeholders and an imperative if we are to progress toward sustainability.

### *Reconciling the OHWB Concept and the UN-2030 SDGs*

As mentioned, progress in implementing the SDGs continues to vary. A working hypothesis for this slow uptake is that, while their development involved participants from all walks of life, sectors, and most nations, the SDGs are perceived as being driven top-down rather than being owned nationally and locally. Many governments have not yet integrated the SDGs into their national priorities nor set aside funding to operationalize strategies relating to the Earth’s ecological systems and closing “the nexus between energy, health food, education and water” (Likhotal, 2015, para.17). The stance that the SDGs mainly concern in developing nations also persists although most, arguably, all are equally relevant for the richer nations given socioeconomic, geopolitical, and environmental hurdles now faced (Lueddeke, 2016a, 2019a, 2019b).

Noted previously, a more fundamental concern relates to connecting the SDGs to local communities and raising awareness of how their realization is vital to ensuring the sustainability and well-being of their families and all life on the planet. Daniel Wahl (2017), a consultant in transformative systems design, asserts that there are two main levers that should be widely deployed: “effective collaboration between the public and private sector and civil society at local, regional and global scale” (para. 5) and mobilizing “the active participation of people and communities around the world,” para. 1). Achieving sustainability depends on “communities and local institutions around the world” which, in the final analysis, “is where the cause of sustainable development will either triumph or fail” (UNESCO, 1997).

It is in this broader context that the OHWB concept/approach – *recognizing the fundamental interconnectedness of humans, animals, plants and their shared environment* – offers a convincing rationale for the UN-2030 Global Goals (Sustainable Development Goals, SDGs), helping to pave the way for greater public engagement through formal and non-formal education.

## **THE INTERNATIONAL ‘ONE HEALTH FOR ONE PLANET EDUCATION’ INITIATIVE**

*(IHOPE)*

To this end, the **One Health Commission (OHC, 2020)** and the **One Health Initiative (OHI, 2020)** are developing the international *One Health for One Planet Education Initiative (IHOPE)* Pursuing a broad, inclusive vision, its aim, summarized in **Fig. 4**, is to “build global capacity for promoting and valuing the OHWB concept and approach as the foundation for achieving the UN-2030 Sustainable Development Goals” (One Health Education Task Force, 2020).

Complementing the priorities of the Earth Charter International movement, IHOPE is premised on the assumption that “Education is not only a human right; it enables the realization of other human rights – reducing poverty, boosting job opportunities and fostering economic prosperity,” and is pivotal in ensuring that

**INTERNATIONAL  
ONE HEALTH for ONE PLANET EDUCATION  
INITIATIVE  
(1 HOPE)**

**VISION** A world where people of all ages embrace a *One Health & Well-Being (OHWB) approach* recognising the interdependencies among humans, animals, plants and their shared environment.

**AIM** Build global capacity for promoting and valuing the OHWB concept and approach as the foundation for achieving the *UN-2030 Sustainable Development Goals (SDGs)*.

**CONTRIBUTORS** Individuals/organisations from education and community groups invited from all global regions – Africa, Americas, Asia, Europe, Middle East, Oceania.

**MOTIVATION** Striving to create a “more just, sustainable and peaceful world” (*UN-2030 Global Goals*); adopting the OHWB concept and educating the next generation of global citizens about the fragile and interconnected nature of the health and well-being of all living organisms at this time of unparalleled planetary change.

**WORKING GROUPS** Drawn from and targeting *Primary/Secondary/Tertiary education sectors and Community/Civil Society, Government (intergovernmental/non-governmental) / Corporate organisations*.

**COMMON 1 HOPE QUEST** To foster learning about the OHWB approach and the SDGs at all levels of formal and non-formal education (*lifelong learning!*) and to raise awareness of the long-term value of OHWB and SDG strategies in all sectors of our global community.

**FOCUS** Act as a “connecting facility” explore possibilities (local, country, regional, global) and *develop draft project proposals* (e.g., curricula, resources, conferences, policies) *by mid 2020* – seeking funding from national/regional/global organisations to accomplish *1HOPE* stated aims.

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07.02.2020

Fig. 4. Overview: International *One Health for One Planet* Education Initiative (G. Lueddeke, 2019).

students “care about the well-being of their friends and families, their communities and the planet” (Naidoo & Antoninis, 2018).

Guided by a multi-regional planning team and the OHC/OHI, working groups (WGs), representing education, civil society, government, and corporate sectors, are being established across all global regions. The main aim of the WGs is to identify initiatives at local, national or regional levels that could help raise awareness of the OHWB concept and the SDGs across the regions. Ideas could then be turned into proposals (e.g., curriculum, resources, policies, networking) for pilot projects and potential submission to funding bodies.

As we prepare for a world in constant transition and unknown societal expectations, it is likely that particular attention will need to be given to the role of schools and further/higher education – academic, vocational, social – across the globe. The [Organization for Economic Co-operation and Development \(OECD, 2018\)](#) position paper, *The Future We Want*, highlights today’s challenges in preparing students “for jobs that have not yet been created, for technologies that have not yet been invented, to solve problems that have not yet been anticipated” and posits that:

To navigate through such uncertainty, students will need to develop curiosity, imagination, resilience and self-regulation; they will need to respect and appreciate the ideas, perspectives and values of others; and they will need to cope with failure and rejection, and to move forward in the face of adversity. Their motivation will be more than getting a good job and a high income; they will also need to care about the well-being of their friends and families, their communities and the planet. (OECD, 2018, Foreword)

## RE-IMAGINING THE UNIVERSITY IN THE EARLY DECADES OF THE 21ST CENTURY

Faced increasingly with a “volatile, uncertain, complex and ambiguous world” (OECD, 2018, p. 3), it may be unsurprising that civil society and university/higher education institutions (HEIs) have shown the greatest interest so far in the IHOPE initiative.

The relevance of the university’s future purpose and role in society continues to be at the forefront of Emeritus Professor Ronald Barnett’s research at the University College London Institute of Education. While some universities are becoming more multidisciplinary and are focusing on social issues, Barnett (2016) observes that twenty-first century university values – based largely on instrumental reasoning and with less concern for the whole world – continue to limit its scope to improve the world (slide 20). The main problem with the university today, he maintains is that its “knowledge ecosystem is impaired ... too bounded, too imbued with the interests of the powerful – and with limited levels of critical reason” (Barnett, 2016, slide 20). Necessitating “a totally new kind of knowledge management,” he asserts that “University leaders have to become active epistemologists! – ethically oriented, & imbued with a concern for the whole Earth” (slide 20).

Taking “as a starting point for this work the interconnectedness of the psyche, society and the biosphere as set out by Guattari (2000) in *The Three Ecologies*” (as cited in Stratford, 2015, para. 4), in *The Ecological University: A Feasible Utopia* (2017), Barnett contends that the university’s main challenge is matching values appropriate to the twenty-first century to mass higher education and ensuring its relevance to the society and the world.

Barnett (2017) uses the term “ecosystems to point to a system that has a certain kind of internal coherence but also fragility – and possibly to some kind of impairment” (slide 10). He envisages the development of an interconnected ecological knowledge system (“interconnectedness of all things”) that recognizes seven different regions of knowledge or zones beyond the academic world – including economic (currently the most dominant zone), knowledge, learning, culture, persons, society more broadly, and the natural world. He asserts that it is “a human responsibility not only in ‘sustaining’ any such ecology,” but, above all, focusing on “improvement, of strengthening, of revivifying any ecosystem” (Barnett, 2017, slide 10) – supporting “the wellbeing or flourishing of various natural and social domains” (Stratford, 2015, para. 4). In other words, Barnett’s central argument is that by paying attention to all ecological zones universities will not only realize “their full potential as institutions that have an active concern for the whole Earth; even the universe” but also remain “constantly adaptable to new circumstances as the world moves forward” (Trembath, 2018, para. 4).

### *Synthesizing the OHWB Concept, the UN-2030 Sustainable Development Goals and the Ecological University ec uni*

Barnett’s rationales for the formation of the *ec uni* echo many of the arguments put forth for the adoption of the OHWB concept and approach. Indeed, evidence suggests that OHWB provides the unifying values and principles (Lueddeke, 2016a, 2016b, 2019a, 2019b) to underpin the UN-2030 SDGs.

Considered collectively and in the spirit of Barnett’s “imaginary” (Trembath, 2018, para. 5), the OHWB concept and the SDGs (goals, targets, and indicators) reinforce the urgency of the *ec uni* – helping to shift from a university concerned primarily with “human and social values” to striving toward embracing the sustainability and well-being of the planet and all its species (Lueddeke, 2019a, 2019b).

While the ecological knowledge zones identified by Barnett – others to be added? – require embedding across the *ec uni*, there cannot be any doubt that the Earth’s natural environment – its biosphere – upon which all life depends must be regarded as the most central of all ecological knowledge systems informing all human activities and decision-making. Its pivotal place in the *ec uni* mission and functions will demand considerable attention.

To this end, Fig. 5 illustrates that the OHWB concept – that recognizes the interdependencies among humans, animals, plants, and their shared environment – is integral to achieving the 17 UN-2030 SDGs (goals, targets, and indicators). In turn, they provide a solid foundation upon which to build the *ec uni* ecological knowledge system.

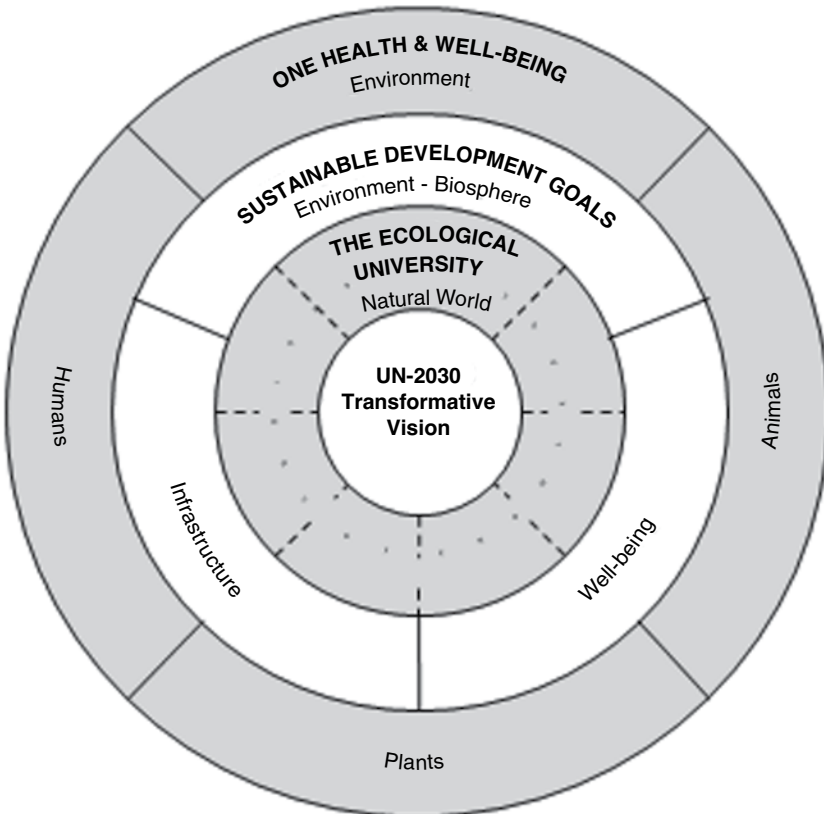


Fig. 5. Proposed Building Blocks for the UN-2030 Transformative Vision: the OHWB Concept, the UN SDGs and the Ecological University HEIs (G. Lueddeke, 2020.)

## REFLECTIONS ON TEACHING AND LEARNING IN THE ECOLOGICAL UNIVERSITY

### *Transdisciplinarity in Economics: A Case Example*

The *ec uni* affirms the fundamental importance of “epistemological interconnectedness – transdisciplinarity” (Barnett, 2017, slide 15). As one example, economics is an area where the need for breaking down silos is increasingly becoming apparent. In his essay, “Economics can no longer ignore the earth’s natural boundaries,” Erik Berglof (2019) at the London School of Economics argues that disciplines, such as economics, have evolved as separate domains and contends that there is now a need to unite these stands under a single community, that is, “*planetary economics* whose sole objective is to build a civilization that can exist within Earth’s boundaries” (para. 3).

Berglof’s (2019) recommendation could certainly help to bridge or integrate the seven zones Barnett’s *ec uni* model proposes. Indeed, the author goes further calling for “a new field of planetary social science to unite different perspectives, conceptual frameworks, and analytical tools – from political science, sociology, anthropology, and psychology” (para. 7).

Because the main aim of the *ec uni* is on ensuring planet sustainability and well-being, Robert Stratford in the Faculty of Education at New Zealand’s University of Waikato posits that “the ecologically intelligent student” would need to develop “deep understanding of the interconnected relationships between our conscious and unconscious thinking, our social and economic structures and humanity’s effect on the biosphere” (Stratford, 2015, para. 30).

Extending Berglof’s recommendations on transforming the economics curriculum structurally in transdisciplinary learning environments, Stratford (2015) also emphasizes the importance of developing in-depth understanding of and sensitivity to concepts and assumptions informed by critical reflection and reasoning, predicting that

unlike mainstream economics, the ecologically intelligent student would understand that we cannot indefinitely expand the economy or easily decouple our use of resources from the expanding production of goods and services. The ecologically intelligent student would also bring doubt to commonly held beliefs about progress, the power of technology and the extent to which we exist as autonomous atoms in a marketised universe. As a counter balance they would also critically value cultural traditions and look to end ways to support social practices that a sustainable history, structure and impact upon the planet. (para. 30)

### *Reflections on Operationalizing the Ecological University*

Aside from administrative and structural considerations, the *ec uni* would need to place much more prominence on inquiry-based learning across disciplines alongside team teaching, programmatic features – articulated eloquently by a [Task Force on Multidisciplinary Learning and Team Teaching \(MLTT, 2005\)](#); see also Lueddeke, (2003). at the University of Michigan several years ago:

We believe that the major problems of our time, from the environment to poverty, from human rights to terrorism, from religious movements to healthcare, cannot be studied effectively within any single discipline; all involve integrative thinking. In order to prepare for a life of productive endeavour in the 21st century, (students) must learn problem solving across disciplines and launch inquiries in uncharted territories of knowledge and practice.

They must examine the assumptions that inhere in a disciplinary perspective and integrate material outside the pattern of thought .... And they must learn how to find their way through disconnected bodies of information and perspectives and create their own path to an education that coheres. (MLTT, 2005, p.1).

Propositions that could be used to probe *ec uni* curriculum transformation and priorities have been summarized in Fig. 6 (Lueddeke, 2019, p. 221). Proposition #7 is pivotal for all others as it recommends that the unifying OHWB concept should become the cornerstone of our education systems and societal institutions. To raise awareness of the re-structuring required across the education arena (i.e., demonstrating much more concern for the planet's future in both formal and non-formal learning/research environments), higher education faculty and students could benefit greatly by liaising closely with parents, school systems, and teacher training institutions along with national governments, business, and local communities.

Resonating with the MLTT guidance on education process, the *ec uni* approach to learning would be based on the assumption that “learning is an active, integrated, and constructive process influenced by social and contextual factors” (Lueddeke, 1999; Tortorella & Cauchick-Miguel, 2017). To this end, open-ended problems that cut across various disciplines could serve as the initial stimulus for group discussion – online and/or offline).

Similar to problem-based learning (PBL) (Servant-Miklos, 2019), *ec uni* specific and transdisciplinary problems would also be ill-structured in the sense that have may multiple solutions that could be informed by both student and faculty involvement. As in PBL, an *ec uni* learning framework would be about “playing the whole game,” or “learning by wholes” (Perkins, 2009) rather than learning disconnected and isolated knowledge or skills or discrete topics. The world – the planet and all living species – is much more than the sum of its parts!

At wider community levels *ec-uni* engagement might include the following:

- connecting sectors (Crow, 2016) and systems (e.g., veterinary and human public health systems (Jonas, Sands, Yansen, Lall, & Jha, 2018), biosecurity, economics, human psychology, and global/national organizations);
- developing, implementing, and evaluating transdisciplinary ecological system courses and team teaching arrangements;
- conducting multidisciplinary, collaborative research at undergraduate and postgraduate levels on sustainability and well-being;
- contributing to national action plans (e.g., SDGs);
- raising awareness through the media and direct public contact of the actual impact of risks (e.g., climate and conflicts) on all species and sustainability;

### What if?

1. ALL 193 NATIONS OF THE WORLD collectively embraced the vision and aspirations set out in the UN declaration, 'Transforming our world: the 2030 Agenda for Sustainable Development,' in word *and* concrete enabling actions?

2. GLOBAL GUIDELINES were evolved, agreed and enacted to ensure technology is used *only* for peaceful purposes and in support of the health and well-being of all species and the planet?

3. DECISION-MAKERS treated migration as a historical, complex, global human reality that we need to manage collaboratively, compassionately and responsibly with an emphasis on mitigating root causes (socioeconomic, geopolitical, environmental) while enacting integrated, preventative life-sustaining measures?

4. GOVERNMENTS, BUSINESS AND CIVIL SOCIETY collaborated at all levels and adopted a new paradigm - a new world view - to ensure our needs as human beings are compatible with the needs of our outer world - our ecosystem?

5. HUMAN VALUES, AND MODERN LIFESTYLES- especially national vested interests and overconsumption (energy, water, raw materials...) were recognised globally as the leading causes of environmental degradation, eventual loss of resource bases threatening the sanctity and sustainability of all life?

6. NATURE was acknowledged as a major source of human thought processes and feeling, inspiration and creative learning as well as being a main factor in personal growth and development, thereby contributing to each individual's quality of life, realisation of dreams and aspirations?

7. THE UNIFYING ONE HEALTH AND WELL-BEING CONCEPT became the cornerstone of our education systems and societal institutions, thereby helping to create a "more just, sustainable and peaceful world" (UN, 2015a)

8. HUMANITY'S FUNDAMENTAL ROLE as frontline custodians of the planet, was recognised and adopted globally, thereby ensuring the true regenerative power of our societies, and fostering compassion, trust and goodwill?

9. THE UNITED NATIONS GENERAL ASSEMBLY (UNGA), guided by the human experience over millennia alongside global wisdom, and in a spirit of compassion, kindness, harmony and moral authority, agreed to prioritise and actively promote the values of equality, democracy, tolerance and respect to bridge divisions between people and bind nations together.

10. ALL MEMBERS OF THE UNITED NATIONS SECURITY COUNCIL (UNSC) were held globally accountable for their role in maintaining world peace and security - based on a genuine commitment to shared people and planet values while giving a permanent voice to regions with the fastest population growth and social and economic disparities (e.g., Africa, India, Middle East, SE Asia) i.e. close to 6 billion people not represented vs about 2 billion represented (a ratio of 3:1) currently on the UNSC.

Fig. 6. Ten Propositions for Global Sustainability. Adapted from Survival: One Health, One Planet, One Future (Lueddeke, 2019, p. 221).



- creating and sharing resources and multimediated courses with educators and civil society;
- evolving and enacting preventive measures (e.g., species decline, biosecurity, and healthcare); and
- exploring creative, often student-driven “out-of-the box” – alternatives to addressing complex and intractable issues.

Along with re-conceptualizing curricula that have “a care toward its interconnectedness with the world” (Barnett, 2017, slide 12), one of the more difficult hurdles may be convincing experienced faculty members “to operate more from a stance of *not knowing* rather than from *knowing*” (Senge, 2000, p. 284).

### THE UNIVERSITY: SAVING THE WORLD FROM ITSELF?

Many parts of the world continue to be in turmoil as the “path of escalation and provocation” (Luhn & Oliphant, 2018, para. 9) continues unabated. With so much at stake and so few answers to contain socioeconomic, geopolitical, and ecological tensions, we might be nearing a crossroads or an historical turning-point where a case for a bolder approach – involving civil society, government and corporations (Bowman-Kruhn, 2003, p. 89) has become a matter of urgency – given the state of the planet’s biosphere and impact on our civilization and all other species that make life on earth possible. While the United Nations and its agencies lead in most global areas that demand societal attention, the organisation’s efforts are often futile as ideological divisions and self-interests (Carstensen, 2018) undermine its generally well-intentioned policy directions and strategies.

A case in point relates to the SDGs. All 193 nations agreed the 17 Global Goals, and, while levels of poverty have been reduced across the globe, many outstanding issues remain – especially in such areas as inequality, education, climate action, human rights, economic growth, peaceful co-existence and putting “people and planet at the centre of policy-making” (UN, 2019a, p. 1).

The 8th Economic and Social Council (ECOSOC) Youth Forum was held April 8–9 in preparation for the Economic and Social Council’s High level Political Forum in July 2019, where voluntary national reports were considered to review a country’s efforts and achievements against the SDGs. The Youth Forum was attended by ministers, senior officials from UN Member States, and over 1,000 youth participants (UN, 2019a). The ECOSOC President Statement, summarizing the dialogue over the two days, highlighted *a pressing need to increase youth participation in decision-making bodies at all levels*. The President also called “upon young people to continue to raise their voice, advocate for the SDGs and hold their Governments accountable for the commitments made in the 2030 Agenda” (UN, 2019a, p. 3).

#### *Higher Education Expansion*

The voice of Youth is likely to get much stronger due to climate change, repressive political regimes, and rising unemployment in various global regions. There



are currently over 28,000 HEIs worldwide. In *Massification of Higher Education Revisited*, Angel Calderon (2018), principal planning advisor at the Royal Melbourne Institute of Technology (RMIT) in Australia, projects growth of nearly 200% in global higher education enrollments through 2040, rising from c. 216 million in 2016 to more than 594 million by 2040 – representing “an increase of 281% over the 30 years from 2000 to 2030” (p. 3; see also Roser & Ortiz-Ospina, 2019). Alarming, with a predicted total African population of over c.1.7 billion by 2030 from about 1.2 billion now (the largest relative global increase in the size of its population), the expected increase of tertiary students in SSA is from c. 8 million now (c. 9% of young people in vocational and university education) to c. 8.8 million (c.10%) by 2030 and only c. 21.7 million by 2040 –far lower than in other regions. (UN, DESA, 2019).

Calderon (2018) attributes this growth in many other regions largely to the doubling “of the world’s economy in size between 1990 and 2016” and a 10-fold increase “of exports in services from developing countries” (p. 6). Implications for national education systems, faculty shortages, quality control mechanisms, teaching methods, graduate employability, and an increasingly culturally diverse student population are without question as will likely become the voice of the younger generation (Generation Z) “demanding that leaders listen to their concerns and deliver on the promises envisioned in the 2030 agenda” (UN, 2019a, p. 1) including, as Sir Anthony Seldon, vice-chancellor of Buckingham University in England, advocates, opposing those “academics and students who want to restrict the spirit of liberal thinking and expression that universities should have at their heart” (Seldon, 2019, p. 23).

### *Generation Z*

Generation Z – labeled “the fixers” by some in their efforts to repair environmental and other damage caused by the current and previous generations (in other words, “advancing global public goods” (Global Policy Forum, 2013), were born in the mid/late 1990s and number about two billion worldwide becoming the most powerful consumer group; most are under the age of 30 and, according to journalist Helen Rumbelow (2016), represent “ a unique experiment in human history” (para. 5). Many feel “connected but very, very small” (para. 5) with many realizing that they “are the ones who will be picking up the pieces of what’s happening now, with the adults now chucking the problems down to the next generation” (para. 4).

Based on a major national Generation Z study in the United States (spark-sandhoney, 2019), the most important features characterizing this group include the following:

- Shifting from the “me to we” re-orientation.
- Decomposing “diversity” as a term in favor of simply being human.
- Recognizing that the one thing we have in common is our planet – “caring for the ground beneath our feet is an acute issue.”

- putting energy in re-using resources versus creating new ones (circular economy).
- seeking learning opportunities everywhere and wanting a hand in their own education.

Potentially the biggest health problem for Generation Z will be drawing the line between living in an “on” and “off” environment, possibly leading to many to seek digital detoxification (Lueddeke, 2019a, 2019b; sparksandhoney, 2019, slides: 39, 40, 42).

### *Combining Forces to Ensure Global Sustainability*

The United Nations employs around 40,000 people across its many departments and agencies. With over 250 million students in HEIs and rising to over 377 million by 2030 (Calderon, 2018) supported by around 13 million faculty members (Roser, 2014) forging a closer relationship between these vital institutions would be mutually beneficial at national and regional levels in terms of progressing OHWB and the SDGs. A practical first step might be encouraging ECOSOC Youth Forum members to engage with local universities / HEIs HEIs – as “seed carriers” – developing OHWB-SDG networks, organizing conferences and seminars with UN funding for their efforts while also developing approaches for “the kinds of joint decision-making and collaboration needed to solve the world’s problems” (Rogers et al., 2012, para. 50; see also Gast, 2018).

### *Changing Belief Systems*

The most fundamental and intractable challenge facing the UN and global partners in the implementation of the UN 2030 SDGs is to change belief systems of those who subscribe to the follies that the earth’s resources are limitless, that climate change is a hoax, that autocracy is preferable to democracy, that compassion is a sign of weakness, that profit should come before principle, that division is preferable to unity, and that war is a better option than diplomacy (Lueddeke, 2019a, 2019b).

Professor Douglass North (1920–2015), a Nobel Prize-winning American economist in his landmark work, *Understanding the Process of Economic Change* (North, 1993) focused on understanding the process by which economies change. Inspiring “a revolution in economic history” (Faundez, 2016), he concluded that change is mainly determined by

adaptive efficiency – a society’s effectiveness in creating institutions that are productive, stable, fair, and broadly accepted – and, importantly, flexible enough to be changed or replaced in response to political and economic feedback. (para. 2)

In his Nobel lecture, “Economic Performance through Time,” North (1994) reiterated that “societies that ‘get stuck’ embody belief systems (mental models) and institutions that fail to confront and solve new problems of societal complexity” (pp. 359–368). Some may agree that society in the first few decades of the twenty-first century is indeed “stuck” and that the perspectives (some extreme)

that divide us in thought and action have not been in step with a shared “belief system” to sustain the planet.

As the climate crisis makes clear, North’s “adaptive efficiency” construct or strategy in making fundamental changes to the economy is being tested to the limit as we are far removed from a global situation that for many seems “stable, fair, and broadly accepted” nor that is responsive to “political or economic” change (Azari, 2019; Prakash & Potoski, 2015). Applying North’s (1994) assumptions to today’s realities and in light of growing nationalism, populism, protest movements, democracy decline and the rise of the so-called far left and far right “strongmen,” we find ourselves in a quandary: “stuck” as our “belief systems and institutions” are failing in their capacity “to confront and solve new (unparalleled!) problems of societal complexity” (pp. 359–368).

Global existential risks have become considerably more consequential. Discussed earlier, IPBES biodiversity data make it clear that the health of our ecosystems on which all species depend is in serious decline (Reuters, 2018). Exacerbating global responses, as Tristan Harris, technology “industry whizz-kid,” laments, our lives are now ruled by algorithms and apps as addictive as slot machines (making it) “much less likely to find common ground with our fellow humans” (Hoyle, 2020, p. 13).

### *Re-orienting Society towards Sustainability and Well-Being*

Transforming a worldview that sees the world as a place made especially for humans and without limits to one that ensures that our needs as human beings are compatible with those of our ecosystem will not be easy (Lueddeke, 2019a, 2019b) as Big Business and Big Government try to appease their shareholders and the electorate. However, things are beginning to change thanks to people like Sir David Attenborough, English broadcaster and natural historian and seventeen year old Greta Thunberg, Swedish environmental activist, *Time* magazine “2019 Person of the Year” (Felsenthal, 2019), and recipient of the “2019 Right Livelihood Award for human rights” (Grosse, 2019).

Indications are that corporate priorities for “stakeholder capitalism” may be changing. Professor Laura Tyson, a former chair of the US President’s Council of Economic Advisers in the Obama administration and Lenny Mendonca, Chief Economic and Business Adviser and Director of the California Office of Business and Economic Development, report that

The recent push by big business in favor of a more socially and environmentally conscious – governance model is not just empty rhetoric. With the public losing trust in business and markets, it is now in everyone’s interest to reform the system so that it delivers prosperity for the many, rather than the few. (Tyson & Mendonca, 2020)

Education and peaceful awareness-raising remain our best options – encouraging opportunities for dialogue involving not only decision-makers at every level especially engaging civil society in leading by example. As the IHOPE initiative (Fig. 4) underscores, exceptional attention must be given to the education of our young people, especially in preparing “them for a future where imagination

and creativity are the most important attributes” (Rattle, 2018, p. 28) and where technology is fast encroaching on what it means to be human (Lueddeke, 2019a, 2019b).

With over 250 million students in about 28,000 HEIs, and rising to over 377 million by 2030 (Calderon, 2018, p. 3) supported by around 13 million faculty members (Roser, 2014), forging a closer relationship between the UN (c. 40,000 staff members) and the global university system could be timely and mutually beneficial. As one example, ECOSOC Youth Forum members (over 1,000 attended last year’s summit in New York (UN, 2019b) could be encouraged to engage with national universities/HEIs – as “seed carriers” – developing OHWB-SDG networks, organizing conferences and seminars – with UN funding for their efforts – while also developing approaches for “the kinds of joint decision-making and collaboration needed to solve the world’s problems” (Rogers et al., 2012 para. 50; see also Gast, 2018).

## CONCLUDING COMMENTS

### *Choosing Our Future*

Recommending alternative development strategies at civic society, government and business, the report, *To Choose Our Future* (Khosla, 2015), now appears to be equally relevant for rich, poor, and very poor nations. While the starting points differ, societal outcomes remain the same and are consistent with achieving the UN-2030 *Transformative Vision* – that is, “ending poverty, hunger, inequality and protecting the Earth’s natural resources” (UN, 2015).

The author, Dr Ashok Khosla (2015), a world leading expert on sustainable development, chair and founder of the Alternative Development Group, and former co-president of the Club of Rome, contends:

We need to refashion our institutional systems and transform our current attitudes to virtually all aspects of society and the economy (while ensuring) that the poorest and marginalised are put at the centre of economic and social attention and the restoration and regeneration natural systems become the boundary conditions that must not be transgressed, not just for future generations but also for those of today. (p. 9)

Unquestionably, ingrained ‘isms’ that divide societies – “religious, ideological, or scholarly,” such as *extremism*, *racism*, *populism*, are very resistant to change especially in this post-truth era (Kurunmäki & Marjanen, 2018). But, when our survival and that of all other species depends on our collective determination to sustain the planet – our only “home” – regardless of faith, culture, or background, we must now find a path through these ideological doctrines or practices.

In particular, agreeing with John Moyer (2012), science fiction author and California music producer, one of our biggest threats is to overcome a “future-by-inertia” – a future created by powerful entities that don’t think clearly about the global future at all (religious fundamentalists, profit-obsessed corporations, oligarchs, rabid nationalists, billionaire hedonists, etc. (para. 19).

*Sustainability or Societal Collapse: The Choice Is Ours*

Helping to create a fairer, more just, and peaceful world, William Joy (2000), an American computer engineer and co-founder of Sun Microsystems, demonstrated remarkable foresight several years ago in a provocative article, “Why the future doesn’t need us,” proposing

if we could agree as a species, what we wanted, where we are headed, and why, then we would make our future much less dangerous – then we might understand what we can and should relinquish.” (para. 113)

Joy’s wake-up call seems much more urgent now than it did at the beginning of this millennium as early in the second decade the world has been gripped by a pandemic – the novel coronavirus or Covid-19. According to Francois Balloux, professor of computational systems biology and the director of the University College London (UCL) Genetics Institute, Covid-19 is “the most serious global public health threat humanity faced since the 1918/19 influenza pandemic” (Science Media Centre, 2020).

For many of the 7.8 billion people inhabiting this planet, not unlike the Spanish flu in 1918, it feels as if overnight science fiction has become reality. Reaching all corners of the globe this global cataclysmic event is leaving no one unaffected – medically, socially, economically, and psychologically (Lueddeke, 2020). As with three other major pandemics in the past 100 years – Spanish Flu A (H1N1) 1918; Hong Kong Flu A (H3N2, 1968; HIV/Aids 1981 onwards (Westbrook, 2020), this potentially dystopic threat will pass, but its impact is transforming the world in ways no one could have imagined as we are learning that silos decision-making – political, socio economic, geopolitical, and environmental could lead the world to disastrous consequences. A single virus in China, Africa, the United States, or any spot on earth for that matter, could spread throughout the world in days with devastating impact on anyone – rich or poor and big or small organizations.

The question of whether Covid-19 was preventable has been raised. It is noteworthy that several reports in the past few years have underscored that the coronavirus or similar was predictable. All reached essentially the same conclusions: “a flu pandemic could kill millions, cost trillions, and derail the global economy” (independent Commission on a Global Health Risk Framework for the Future, 2016). In 2018, the Harvard Global Health Institute report, Global Monitoring of Disease Outbreak Preparedness: Preventing the next Pandemic, highlighted the urgency “to strengthen national public health systems (veterinary and human!) in order “to detect and promptly control an infectious disease outbreak” (Jonas et al., 2018). In addition, the Global Preparedness Monitoring Board (2019) alerted governments to scale up “research and development for new vaccines and medicines.” Its chair, Dr Gro Harlem Brundtland, formerly Prime Minister of Norway and Director-General of the World Health Organization, lamented that world leaders’ response to an impending crisis was “a cycle of panic and neglect.”

Most recently, the Center for Strategic and International Studies argued for “a heightened focus on the development of a universal flu vaccine and new antibiotics.” The report’s principal conclusion was

that leaders simply don't take health seriously enough as a U.S. national security issue. Congress holds few hearings on the topic, especially in the defense committees, and the White House last year eliminated a top National Security Council position focused on the issue. (CSIS, 2019)

Competing government priorities and lack of interest in “health” security as opposed to “military” may explain some of reasons for government complacency (Aaronovich, 2020). However, previous government policy decisions also matter. Of these, the US Welch-Rose Report in 1915 whose recommendations were adopted by many other countries, including China, separated the “mechanisms of disease and public health’s non-clinical concern with environmental and social influences on health and wellness” (Lueddeke, 2016b, p. 12; Patel & Rushefsky, 2015, p. 91). While countries were justifiably coming to grips with treating diseases – such as diphtheria, typhoid fever, scarlet fever, and cholera – in the early years of the twentieth century, caused largely by inadequate social conditions, less attention was paid to the prevention of these and lack of medical science. This decision impacted on funding priorities giving the human side of medicine distinct advantages over the veterinary and ecological professions throughout last century to present day. As a result funding of human curative treatment has been prioritized over preventive measures, the former receiving on average c. 95% of national health budgets. Another outcome has been the separation of human and veterinary health systems (Jonas et al., 2018), including education, although both share many common principles and practices as shown in Fig. 7, as it is well known that about 75% of all infectious diseases are zoonotic (animal) in origin. ebola (2014), Sars (2003), Mers (2012).

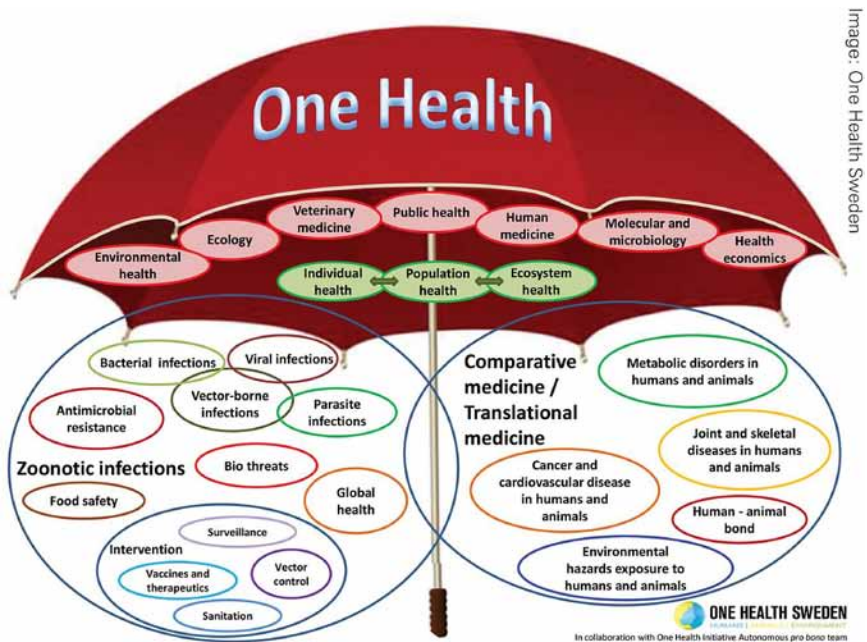


Fig. 7. A One Health Framework: zoonotic infections and comparative medicine/translational medicine Source: One Health Initiative. [www.onhealthinitiative.com/about.php](http://www.onhealthinitiative.com/about.php)



In terms of budget priorities, similar discrepancies exist in military spending where globally in 2018 US\$14 trillion were allocated to violence and war and about \$6 billion to peace – based on a c. \$86 trillion global GDP budget (2018) – leading former UN Secretary-General Ban-Ki moon to question, “Why is it easier to find money to destroy people than protect them?” (Interpress Service, 2015).

Part of the answer to his question may be found in how the world has responded to previous threats this century -e.g., inequities, conflicts, environment, corruption, mental health and controlling zoonotic diseases - the Sars virus (2003), H1N1 flue pandemic (2009), the Mers virus in 2012, ebola (2014), and the zika virus in 2016. While the warning signs were there, the response has been largely dealing with the immediate effects rather than “strengthen the capacity of all countries, particularly the developing countries, for early warning, risk reduction, and management of national and global health risks” (Jonas, 2015) while investing significantly in infrastructure (external sources!) developments - education (all levels-HEIs!), housing, employment, governance and financing of global health security!, to name several key areas. Covid-19 has also reminded us that our pandemic risk awareness is far too low and that there has to be much greater collaboration between and investment in human and public health systems globally - focusing on preventive measures that cross socio-economic, geopolitical and environmental lines. The urgency to adopt policies and strategies underpinned by the One Health & Well-Being concept/approach could not be more urgent.

In *Collapse: How Societies Choose to Fail or Survive*, Professor Jared Diamond (2005), environmental historian at UCLA, affirms that past societies (e.g., Easter Island, Maya civilization, the Dominican Republic and Haiti, Rwanda, China) hold many lessons for us. Referencing on-going conflicts, he emphasized that environmental stress and overpopulation can lead to political unrest, internal conflict, emigration, refugees, war between countries, and terrorism. For the author, the notion that nations can advance their “own self-interests at the expense of others” or that “the elite can remain unaffected by the problems of society around them” (p. 520) seems both outdated and morally indefensible. After an extensive journey through humanity’s past, he concluded that societies have two choices that could determine whether they “fail or survive”: “long-term planning and willingness to reconsider core values” (p. 521)

Synthesised in Fig. 5 Proposed Building Blocks for the UN-2030 Transformative Vision : the OHWB concept, the UN SDGs and the Ecological University HEIs, alongside the propositions (Fig. 6) are means of achieving global sustainability or “survival” in a world that Professor Jared characterizes as “a self-contained and isolated unit” (p. 521). As such, echoing William Joy’s (2000) aspiration, his question “Which of the values that formerly served society well can continue to be maintained under new changed circumstances?” (p. 524) is timely and critical not only for all global and national organizations and civil society generally but also for the University and higher education as a whole (Fig. 7).

As mentioned earlier, it is that there are about 28,000 HEIs across the globe. Considered in an historical context and to ensure their own survival, the university’s main challenge, as Ronald Barnett, social philosopher and Emeritus

Professor of Higher Education, University College London Institute, has underscored, is to match values appropriate for the twenty-first century and “ensure their relevancy in society to the world” (Barnett, 2017). It really is time for new thinking, understanding and compassion, thereby ensuring the sustainability of our civilization and the planet. Perhaps the real test in this regard will be the extent to which the university and other global institutions are able to connect “more genuinely with ourselves and each other” (Brown, 2020) – while embracing “a new sense of care and responsibility to the Earth community” (Earth Charter International, 2020).

Our planet is a lonely speck in the great enveloping cosmic dark. In our obscurity, in all its vastness, there is no hint that help will come from elsewhere to save us from ourselves. (Sagan & Druyan, 1997)

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