
Global Development in the Anthropocene

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The best science available warns that human impacts on global ecological and climate systems pose an existential threat to organized human life. In light of what climate scientist James Hansen describes as our “apocalyptic” future, current models of “transformational development” and “integral mission” ring increasingly hollow. Genesis 2:15 instructs us to watch over creation and take care of it, yet the most popular evangelical development texts largely omit any discussion of environmental breakdown and climate change. In response, this essay highlights the harmful effects of our slow-onset climate emergency on the very people Christian development practitioners care most about: the world’s poorest and most vulnerable peoples. It argues in favor of a seven-fold course of action, on both individual and organizational levels, that could put Christians on the frontlines of efforts to secure an “abundant life” for all without destabilizing the critical natural processes upon which it depends.

Perhaps the most remarkable fact about the last 50 years is what MIT economists Abhijit Banerjee and Esther Duflo (2019) describe as “the pace of change, good and bad.” While world poverty has been halved, then halved again, the global development community is also witnessing what is perhaps the greatest threat to planetary *shalom*: rising concentrations of carbon dioxide (CO₂) in the atmosphere.

For nearly 250 years, humans have burned a hundred million years of sunlight stored in the form of coal, petroleum, and natural gas. The contemporary “fossil economy” (Pirani, 2018) has enabled the rise of a modern civilization, with startling achievements in wealth production, medicine, communications, human rights, education, and much else. At the same time, economic expansion and fossil energy consumption have continuously pushed atmospheric concentrations of CO₂ upward—from 270 parts per million (ppm) in 1750 to over 415 ppm in 2019. Incredibly, more than half of the carbon exhaled into the atmosphere by the burning of fossil fuels has occurred since 1990, as industrial production and consumption has exploded worldwide (Wallace-Wells, 2019a).

Human activities within a fossil-fuel powered global economy have now dramatically modified the physical environment on a planetary scale. The earth has been pushed into a new era, the Anthropocene. Natural systems that have long sustained themselves now suffer under the strain of industrialized humanity. Forests are being decimated to make way for vast wheat, soy, corn, and palm plantations. Up to 1 million of the estimated 8 million plant and animal species on earth are at risk of extinction. Ozone smog blankets industrial

cities in low- and middle-income countries, making air unbreathable for billions of people. More people, across more of the planet, are experiencing more extreme heat and drought than ever before. Permafrost—the frozen soil that makes up most of the Arctic—is melting at an alarming rate. Glaciers are sliding into the sea five times faster than in the 1990s, with current losses doubling every decade. Trapped in the ice are 1.5 billion metric tons of carbon, almost twice as much as is currently suspended in the earth’s atmosphere. As the ice thaws and oceans absorb this CO₂ like a sponge, the delicate chemical balance of marine ecosystems will be radically altered. At current rates of thawing, sea levels are predicted to rise by four feet by the end of the century. Given that most of the world’s megacities are located in the coastal zone—as are its ports, power plants, naval installations, river deltas, and fisheries—the urban poor are especially susceptible to sea-level rise, storm surge, and flooding (Lu & Flavelle, 2019).

This is a drama of a scale that we only used to encounter in mythology or eschatology. But now the science is indisputable. Standard models collated by the Inter-Governmental Panel on Climate Change (IPCC, 2018), the gold standard of climate science, warn that unless we achieve *massive* and *immediate* emissions reductions, each year, for the next 12 years, humanity will pass the point of no return. Average global temperature will rise to 3 or 4 degrees Celsius before the end of the century, producing catastrophic impacts for most living things. Raymond Pierrehumbert (2019), a lead author of IPCC’s report, warns: “With regard to the climate crisis, yes, it’s time to panic. We’re in deep trouble.”

The evidence is compelling that even a 2-degree warmer world will supercharge every other problem that development practitioners care about: unbreathable air, water shortages, deforestation, infectious disease, habitat and biodiversity loss, falling food yields, resource wars, loss of life from “natural” disasters, deepening poverty, and safety-seeking mass migration. Without a stable climate, decades of progress in poverty reduction could stall or even be erased. Christian Aid (2006) recognized this fact 15 years ago when it boldly reported that

The potential ravages of climate change are so severe that they could nullify efforts to secure meaningful and sustainable development in poor countries. At worst, they could send the real progress that has already been achieved spinning into reverse. No other single issue presents such a clear and present danger to the future welfare of the world’s poor.

Thirteen years later, their language is even more unequivocal: “Climate change is the single greatest threat to humankind in our lifetime... *Forget making*

poverty history; climate change is making poverty permanent” (Author’s italics) (Christian Aid, 2019).

The contemporary climate emergency presents Christian development practitioners and educators with a harrowing question: *Twenty-five or 50 or 100 years from now—during the lifetimes of our children’s children—will the technological, economic, and public health improvements we rightly celebrate be undone by the increasingly threatening predations of ecological breakdown and human-induced climate change?*

This essay attempts a response. Following a brief synopsis of the inequities of climate change, it presents seven routes or pathways that Christian development practitioners from rich countries might take in order to address these inequities. The aim is to provide development practitioners and educators an opportunity to reassess their personal and organizational priorities and practices in the face of impending climate catastrophe.

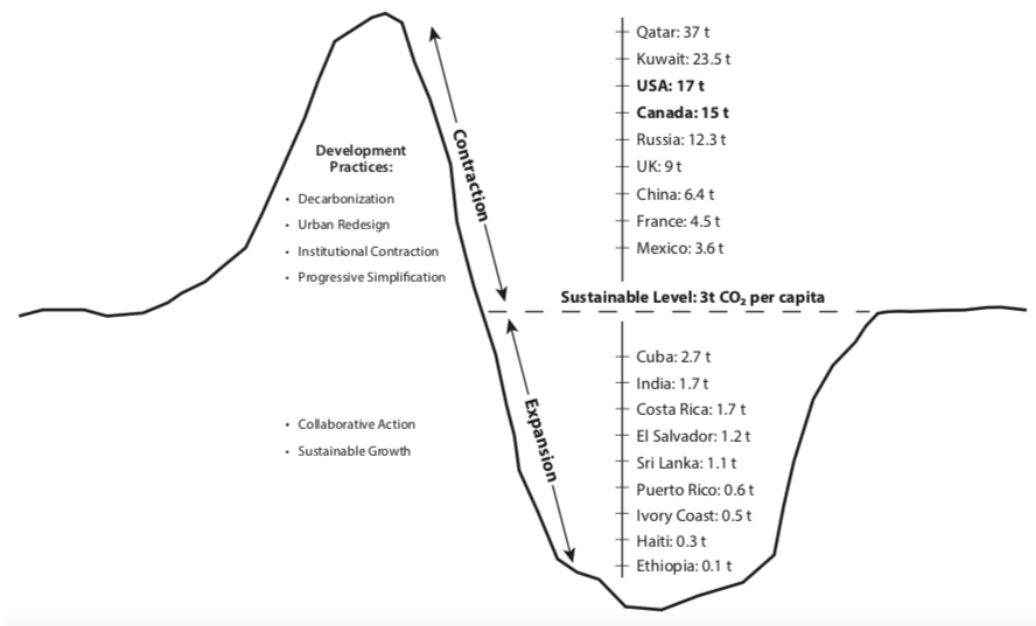


Figure 1: Fossil CO2 emissions by country (2017)¹

Mountains, Valleys and Pathways

In the gospel of Luke, Jesus quotes the prophet Isaiah:

*Every valley shall be filled
and every mountain and hill shall be made low.
The winding roads shall be made straight,*

*and the rough ways made smooth,
and all flesh shall see the salvation of God. (Luke 3:5-6)*

In the lowering of mountains and the raising of valleys, the ground is leveled. Those with too much and those with too little have enough: the basic needs of all are satisfied. Humanity walks forward together on equal footing into a fully healed creation. Embedded in Jesus’

¹ Author’s calculations based on European Environmental Agency, 2018; Richter, 2019; and Wikipedia, 2020.

imagery of mountains and valleys is the indispensable question of how the energy and material consumption in the well-off world interacts with the present needs of the world's poorest communities, and of future generations and other species.

The average American's annual carbon footprint (CO₂e) is about 17 tons. To put this in comparative perspective, this is more than twice the amount of someone in Europe and China, 3.5 times the global average, and nearly 2,000 times that of a villager in the African nation of Ethiopia (0.1 metric tons per year). In fact, the bottom two billion humans emit almost nothing (European Environmental Agency, 2018). The poorest half of humanity are responsible for only around 10 percent of total greenhouse gas emissions, but they happen to live in flood-prone tropical coastal zones and dry rural areas of poor countries that have few resources for meaningful adaptation. On the other hand, the richest 10 percent of humanity produce 50 percent of the earth's climate-harming emissions, but live in countries best prepared to withstand its worst effects. This is the basic injustice when it comes to climate: *the world's poorest and most vulnerable people must pay the high price for the energy consumption of those who are most secure.*

The consensus of the world's leading scientists is that the maximum worldwide average 'footprint' must be brought down to about between 2 and 3 tons per head in order to reduce carbon emissions even by 80 percent by 2050, and thus avert disaster (UNDESA, 2011; IPCC, 2018). What follows are seven paths, amid the world's mountains and valleys, that can help achieve that goal and heal a warming planet. Our discussion equates "development" with creational healing. Both terms bespeak a condition of *enduring positive change*—in individuals, in households, in local communities, and in ecosystems. Indicators include the meeting of basic needs (and more), sustainable relations with the natural world, justice for all groups (especially the most vulnerable), and the creation of psychologically and spiritually healthy persons in culturally diverse places. "Development" also says something about the capacity of economic and political *systems* to provide the circumstances for that well-being on a sustainable, long-term basis.

1. Ecological Conversion

With the advent of fossil-fuel powered society 250 years ago, humankind embarked on an all-encompassing life-mission: to conquer nature. Political economy became an endless contest of greed and power. Life values were replaced by technocratic and financial values. Fifty years ago, philosopher and city planner Lewis Mumford (1970) poignantly captured the reversal of basic values and conduct of life under capitalism. "There is only one efficient speed—faster;

only one attractive destination—further away; only one desirable size—bigger; only one rational quantitative goal—more. On these assumptions, the object of human life, and therefore the entire productive mechanism, is to remove limits, to hasten the pace of change, to smooth out seasonal rhythms... and destroy organic continuity" (173). Mumford's analysis signals the present ecological crisis as, fundamentally, a cultural and spiritual crisis. Modern industrial society has normalized a relation with the Earth that is essentially extractivist: It thrives on the domination, privatization, commodification, monetization, and commercialization of Earth's bounty. Humans are not only separate from nature, but her lords and masters.

In his 2015 encyclical titled *Laudato Si: On Care for Our Common Home*, Pope Francis summons the Church to "a profound interior conversion—an *ecological conversion*—whereby the effects of [our] encounter with Jesus Christ become evident in [our] relationship with the world around [us]" (No. 217). A central feature of this conversion is a personal rediscovery of our interdependence with the natural world, and our responsibility to it. In sharp contrast to the logic of extractivism, stewardship involves not just *taking* but also *taking care*. It refuses to regard the earth "as an insensate order, as a cold body of facts, as a mere 'given', as an object of utility, as raw material to be hammered into useful shape" (No. 115). Life values—'being,' humility, self-restraint, compassion, service to others, care for the natural world—are no longer crowded out by the *money/market values* of 'having,' achievement, material affluence, personal comfort, and constant fun (Fikkert and Kapic, 2019). The intrinsic logic of social and economic organization considers *quality of life* (Genuine Progress Indicators) over *standard of living* (Gross National Product) (Cha, 2013).

The difficulty of achieving this type of deep, personal, and ultimately structural conversion to a caring relation for "our common home" can hardly be overstated. Modern society has largely severed the soul from the body, and the natural from the supernatural. The result for most of us is a state of spiritual confusion and psychological distortion. We naturally aggrandize ourselves at the expense of other people and the nonhuman creation, violating the natural processes of both. To satisfy a craving for continual stimulation and satisfactions, we mindlessly buy non-essential consumer goods produced by transnational corporations and marketed through gigantic retailers and megamalls. Their primary goal is not to prevent an overshoot of greenhouse gases or the diminishment of biodiversity. It is to maximize short-term profits for shareholders. Achieving this goal almost invariably involves the exploitation of both workers (through low wages and few safety regulations) and the earth (through extraction

beyond ‘carrying capacity’). As global consumers, many of whom already feel empty and insignificant, we willingly cooperate with these stable, high prestige structures in order to project a fashionable and publicly rewarded self-image. Spiritual alienation and insecurity, in turn, fuels more exploitation, more production, more stimulation, and more consumption. Pleasure and profits assume primacy over people and planet, causing the earth to “groan in travail” (see Rom. 8:19-23).

Christian development practitioners and educators play an important role in engaging the Church, and the public, with a compelling, theologically-informed vision of humanity reconciled with both creator and creation. Ecological conversion suggests a ‘turning’ from an anthropocentric to a theocentric and ecocentric orientation to the world. It affirms the intimate link between ecosystems and ethnoscaples, and calls us to “hear both the cry of the earth and the cry of the poor” (No. 49). In that hearing, we become aware of our resource footprint (patterns of production and consumption) and how that footprint reflects a certain moral and spiritual character. Understanding why our “internal deserts” have become so vast prepares us to exercise moral leadership in protecting the world’s peoples from the effects of “external deserts” and other climate calamities.

2. Decarbonization of the Global Economy

Modern civilization has been indisputably responsible for a stunning array of political, economic, technological, medical and cultural advances. What is much more debatable is whether the basic design of industrial culture is survivable in the unfolding future. By 2050, according to UN estimates, the world’s population will grow from its current (2019) level of 7.6 billion to 9.8 billion, with approximately *two-thirds* of the world’s people living in urban areas. World cities currently account for roughly 75 percent of the world’s energy consumption and 80 percent of its greenhouse gases. They are, by definition, parasites on a vast hinterland where supplies of fuel, food, water, and materials originate. To produce the “wealth of nations,” they impoverish the ecosphere. Now add two billion *more* people in the next 30 years that the earth will need to feed, clothe, house, heat, cool, and transport. How will this explosive increase in energy demand be met?

Again, global CO₂ emissions need to fall from the current level of 37 billion metric tons (5 metric tons for every person on the planet) to a sustainable level of 2 to 3 tons by 2050. There is only one plausible way to achieve this goal, and that is to *decarbonize the entire global economy*. In other words, aggressive action needs to be taken, by all countries, to create a *100 percent clean-energy grid*. Such a global development project would entail:

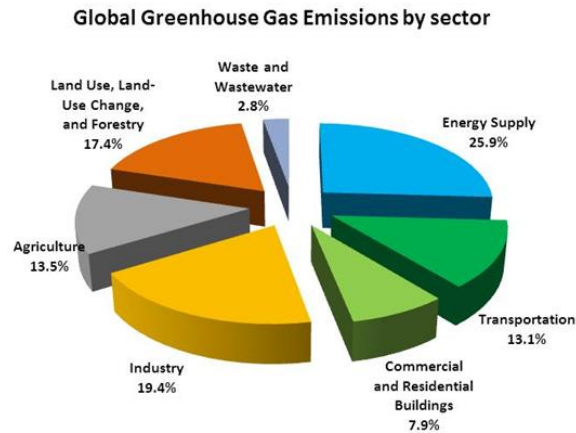
Massive growth in energy efficiency and clean renewable energy supplies (nuclear, solar and wind);

- Steady and dramatic cuts in the global production and consumption of fossil fuels (oil, coal, and natural gas);
- Rising mileage, manufacturing and emissions standards, and carbon market prices;
- Re-engineering every major sector of the economy—energy, housing, industry, military, commerce, transportation, public space, water, agriculture/food, and waste cycling—to connect to a smart-energy grid;
- Re-employing persons currently working in fossil fuel-related industries in low-emission, socially-contributive sectors; and
- Simultaneous reductions in wealth inequalities, social segregation, and human-earth disconnection.

No words can adequately convey the magnitude, technical complexity, and social and political obstacles involved in such a sweeping decarbonization project. It would be unprecedented and herculean, “akin to changing the engine, the driveshaft and all four wheels of a moving car without ever stopping it” (Dyer, 2008, 72). Consider what this might entail for just one province, Guangdong, in just one country, China. Reining in the province’s surging CO₂ emissions would require closing most of its industries—garment and textile, food and beverage, construction material, electrical appliances, machinery, petrochemical, forestry and papermaking, pharmaceuticals, and automobile. This would involve *unemploying* most of its 40 million workers... an unthinkable prospect. And that’s just Guangdong.

There’s no question that nuclear, solar, wind, biomass, and hydro power will ultimately replace most fossil fuel energy production. Unfortunately, climate stabilization is not simply a matter of unplugging coal plants and plugging in solar panels or wind turbines. Greenhouse gas emissions are produced *across the entire economy*, not only or even mainly by electric generating stations, which accounts for only about 26 percent of global CO₂ emissions (see figure below). That means that *even if every coal, oil and gas-fired electric generating plant in the U.S. closed tomorrow, and were replaced with clean energy sources, we would still need to drastically suppress emissions across the rest of the economy in order to reach 2050 targets*.

A practical pathway to completely decarbonizing the earth’s economy is scarcely imaginable, much less feasible. Renewable power generation and large-scale storage batteries would need to be *global* in scale. That supply would then need to connect to highways, railways, and airports; to warehouses, shopping malls, office buildings, and houses; to mines, smelters, forges, and factories; to farms, ranches, forests, and fisheries;



Source: IPCC (2014)

and to facilities that process waste in the forms of packaging and discarded products. Currently, virtually all of that infrastructure, worldwide, depends on fossil fuels. In just one sector alone—transportation—petroleum products are used to power the world’s 1.5 *billion* cars, trucks, trains, ships, and planes that haul people and freight. Every sector of modern life has a carbon footprint, and that footprint needs to be eliminated—completely. Currently, though, it’s doing the opposite: CO₂ emissions in the U.S. alone rose 3.4 percent in 2018, the largest increase in eight years, and will hit a record high once again in 2019.

3. Urban Redesign

Rural areas have long dominated development discourse. And in the next few decades, we will likely see a dramatic expansion of humanitarian aid in coastal and rural areas of the global South. Christian agencies will be called upon to assist in the areas of disaster preparedness, famine relief, economic recovery, and resettlement/sponsorship. These are critical ameliorative processes that serve populations most affected by environmental, climatic, and economic shifts.

Nevertheless, the Great Transition to a steady-state global economy, if it is possible at all, will not be achieved in the world’s villages and hamlets. Just as we cannot hope to create a sustainable culture with any but sustainable souls, neither can a sustainable planet be achieved without sustainable cities. Cities are already the fundamental economic, political, and social organizing units of our time. And by 2050 they will house two-thirds of humanity. Even though cities occupy a mere two percent of the world’s landmass, they consume over two-thirds of the world’s energy and account for more than 70% of global CO₂ emissions. That makes cities ground zero for ensuring human well-being on a hotter and less stable planet. In the words of former UN Deputy Secretary General Jan Eliasson

(2015), “Cities are where the battle for sustainable development will be won—or lost if we fail.”

True, fertility rates are contracting in North America, Europe, Japan, and China. But across South Asia, the Middle East, and Africa, megalopolises are multiplying. The Global Cities Institute at the University of Toronto projects that, 30 years from now, Mumbai, Dhaka, Karachi, Delhi, Lagos, Kolkata, Kinshasa, Cairo, and Manila will all have populations between 24 and 42 million people. These places are *already* dominated by slums and beset with acute burdens on all of the systems mentioned above. The development challenge is to make cities more climate-resilient and inclusive while meeting the basic life needs of burgeoning populations. This challenge is, fundamentally, one of urban design, planning, and policy making.

The city is a complex system of systems, integrating land use, housing, materials, construction, infrastructure, manufacturing, trade, food, biodiversity, energy, water, transportation, and waste disposal. These are the “structures” that are heating the planet, and radically reducing their carbon footprint is the task of our times. That task is particularly germane to Christian development practice. Drawing upon the poetic imagination of Micah (4:1-5) and Isaiah (65:17-25), how might city systems be transformed to support the truly flourishing urban existence?

The short answer to that questions is this: policy and planning. Policy affects the lives of millions of people with the stroke of a pen. Planning concerns, quite literally, the remaking of the human presence on earth. City officials in the global South are quite familiar with the “smart” design being done in virtually every large European and North American city. What they often lack is the national and international support to conduct the policy research and create the adaptation plans that adequately respond to burgeoning populations, weak governance, profit-driven land speculation, and widening wealth disparities. The Association of African Planning Schools is charting an encouraging path forward. Rather than simply mimicking the planning approach of Northern nations, its curriculum is based on a logic of “downward accountability.” Through experiential learning and practical problem-solving within grassroots communities, students learn how to listen to local residents and create channels of communication between those communities and municipal officials.

This is also where locally-engaged congregations could play a critical role. To the extent they are energized by a shared vision of integral mission, they could help close the gap between what local authorities can do and what the urban poor actually need. Many churches are embedded in poor people’s communities. They are intimately familiar with local living conditions

and health risks. They know from first-hand experience what adaptation policies and interventions are needed during times of crisis. Moreover, many congregations are often well-networked across urban areas, enabling “people power” to be mobilized and leveraged in support of more inclusive planning processes.

All to say, local churches have the potential to be an effective “interface” between the state, which has the resources and technical expertise, and capable and energetic *congregant-citizens*, which are typically left out of policy-planning (Watson, 2009). What they need to learn is *how* and *with whom* to leverage their power on behalf of informalized and vulnerable majority populations. Public officials are, of course, the obvious and often most appropriate targets of direct leverage, whether through consultation, demonstration, policy advocacy, or popular education. At other times, indirect leverage may be the most strategic course. Foreign donors and development implementers can significantly support this community-driven process, whether through technical knowledge of best planning practices, disaster risk reduction, or climate change adaptation.

4. Adaptive Development

The development task becomes immediate and concrete as we consider the capacity of informal settlers in low- and middle-income nations to act in the face of climate shocks and stresses. Will low-income households be able to cope with an increase in the price systems withstand the next mega-storm? Will the most vulnerable residents—the young, the elderly, the chronically ill, the disabled—survive high winds, torrential rain, and protracted heat waves? Will they be able to bounce back in ways that reduce future risks?

Cities in wealthy nations take resilience for granted. Most local governments ensure that residents live and work in code-conforming buildings; that they have access to all-weather paved roads and storm drainage systems; that public transport, piped treated water, and waste disposal systems are provided; that emergency services and early warning systems are in place; and that risk-reducing land use and climate action planning are prioritized. In cities of the global South, measures that build up accumulated resilience are often non-existent. City government have little technical and investment capacity to promote low-carbon and climate-resilient urban development. As previously noted, large sections of the population occupy land unrecognized by the government, in overcrowded and substandard dwellings, within settlements lacking access to basic public services like policing/rule of law, storm drainage systems, paved roads, and waste collection. In short, households have little resilience to stress or shock. These institutional realities significantly constrain urgent efforts to reduce climate-related hazards, either

by radically reducing carbon emissions (“mitigation”) or by reducing people’s vulnerability to actual or expected climate-related impacts (“adaptation”). Extraordinary action is imperative on both fronts, and in strategic coordination with city designers, planners, and policy makers (IPCC, 2014; Global Commission on Adaptation, 2019).

Potential synergies exist between conventional development agendas and various mitigation and adaptation interventions. Better climate models and datasets, for example, can inform pro-poor urban planning and critical infrastructure development. Improved mass transit can cut carbon emissions and connect urban poor residents to better jobs. Still, to achieve their full potential, mitigation and adaptation actions must *integrate* with each other (as suggested by the perforated line in the above table) across sectors (industrial, residential, agricultural) and scales of government (local, regional, national), and also *mobilize* the most vulnerable and underserved communities in plans to strengthen their adaptive capacity.

Effective implementation also requires dedicated and knowledgeable leaders and strong governance structures, along with significant political commitment and investment capacity. Such enabling conditions may be difficult to imagine in many cities of the South. But any realistic prospect of broad-scale “adaptive development” (Agrawal & Lemos, 2015) or “transformative climate adaptation” (Chu, et al. 2019) will be thwarted without them.

Easily overlooked in the global debate about how to pursue deep adaptation is the fact that considerable heating, sea level rise, and instability are *already* “locked in” due to rapidly thawing permafrost (University of Exeter, 2017). This suggests that it may be too late to avert uncontrollable impacts on human habitats and global agricultural, political, and social systems within the lifetimes of people alive today (World Bank, 2012; Ehrlich, 2013). Keeping the planet to 1.5 degrees of warming, let alone two degrees, would require immediate, transformative action. And as of 2020, no plausible plan exists to substantially reduce, much less phase out, fossil fuels. That leaves us to do all we can to help slow and reduce harms through both emissions cuts and adaptation action. Change doesn’t happen by itself. It results from the dogged efforts of passionate, empowered individuals and groups at the grassroots. They see something that’s wrong and, despite seemingly insurmountable odds, organize and agitate in ways that influence the powers that be. Christian development NGOs have a potentially vital role to play in helping to catalyze community-driven adaptive development, especially among the three billion urban dwellers who will live in insecure settlements by 2050

Mitigation Actions	Adaptation Actions
<i>Electricity generation:</i> biomass, solar, wind, geothermal, nuclear, tidal, smart grids	<i>Information:</i> mainstream the best climate data to inform urban planning, community organizing, and investments
<i>Food:</i> plant-based diet; biochar; composting; managed grazing; pasture cropping; ocean farming; reduced food waste	<i>Infrastructure:</i> improve energy grids, housing, and transportation, water, sanitation, and waste management systems; retrofit existing buildings
<i>Population:</i> urbanization; educating girls; family planning information; access to contraceptives	<i>Institutions:</i> strong, informed, inclusive, and accountable government policy-making and practice
<i>Transport:</i> electric bikes; electric/autonomous cars, buses and trucks; mass transit; reduced air travel; high-speed rail; ride-sharing	<i>Integration & inclusion:</i> synchronize adaptation planning across scales of government; form strategic partnerships between city decision-makers and urban poor residents
<i>Materials & buildings:</i> alternative cement, bioplastic, green rooftops, water-saving, LED lighting, Net Zero buildings, smart thermostats and glass	<i>Disaster preparedness:</i> build seawalls and elevate docks/wharfs; increase water pumping capacity; create public service redundancies
<i>Urban infrastructure:</i> bike lanes; high-density dwellings; permeable surfaces; walkable cities, community gardens;	<i>Lifestyle:</i> adopt a plant-based diet; avoid air travel; live car-free; choose to have a small family
<i>Land use:</i> conserve forest; plant trees/bamboo; regenerate coastlines; protect wetlands; restore peatland; rewilding landscapes	<i>Finance:</i> investments from national governments, intergovernmental agencies, banks, development aid, philanthropy, and local savings groups

Table 1: Mitigation and Adaptation Action

(Barbière, 2017). The following list suggests some possibilities:

- Prioritize direct engagement with vulnerable urban poor populations in climate adaptation planning.
- Enable grassroots awareness of climate science and lessons from best practices in the global South.
- Promote more community-based, people-centered, and inclusive visions of urban development.
- Foster data sharing and knowledge co-production between city governments, academic institutions, civil society organizations, church leaders, and urban poor community groups.
- Provide training and direct technical assistance to municipal officials and community leaders.
- Strengthen the social contract between government and informal communities.
- Delineate guidelines and metrics for community-level vulnerability reduction and livelihood-protection.
- Assist churches in organizing congregants and other community groups to neighbors, and local associations to partner with municipal governments in adaptation actions.
- Promote grassroots (including church-based) social movements that advocate for climate action.
- Support long-term science-policy-practitioner coordination.
- Help establish funding pathways to channel external resources (e.g., private donations, multilateral aid,

philanthropy) to specific urban adaptation programs.

- Assist churches in organizing congregants, neighbors, other religious groups, local associations and municipal governments to act locally and regionally.
- Provide pastoral services to refugees and internally-displaced persons affected by climate change impacts, helping them to bounce back, both physically and psycho-spiritually, from tragedy, trauma, and loss.

5. Institutional Contraction

We can be encouraged by the number of cities, North and South, that are taking environmental constraints seriously, typically under the banners of “sustainability,” “resilience,” or “climate action.” Still, the painful reality is that global energy and resource use continues to steadily rise, not decline. As it stands, the world is on a path to nearly 3°C of warming by the end of the century, and even that assumes substantial emissions reductions in the future. Along with an increase of over two billion people over the next 30 years, global income is expected to *triple*. But instead of being the solution, economic growth has unwittingly become a big part of the problem. That’s because a rising middle-class in Southern cities wants what their high-consuming neighbors in the global North have: iPhones and big screen TVs, refrigerators and SUVs, big box stores and air conditioners, processed foods

and international travel experiences. Teenage slum-dwellers in Lagos and Mumbai have no interest in staying “sustainable.” They look out at the city skyscrapers, or overhead at flying jets, and compare the material quality of their own lives to that of the rich. They won’t be convinced that *having more* doesn’t equal *being happier*. Meanwhile, the safety window for radically reducing global emissions is rapidly closing. In the short period of time left to us, it’s hard to imagine how the current system, based on price, profits, and market competition, could instigate a transition in energy use at the necessary or possible level.

Equally dispiriting is the fact that, thus far, no government or major political party has been willing to shut down new fossil fuel production, switch entirely to renewable energy across the economy, or radically curtail non-essential air travel, manufacturing, or construction. Policy makers, industrialists, financiers, insurance companies, and bankers continue to be heavily invested in the fossil fuel economy. Populist authoritarian regimes are on the rise. Oil and gas infrastructure is being built at a furious pace. Petrochemical corporations continue to use undisclosed, untraceable “dark money” to buy their way to political power and prevent action against climate change, all the while enjoying tens of billions of dollars in federal subsidies (Environmental and Energy Study Institute, 2019). They also show little evidence of being willing to advance the initial capital and bear the project risk of a clean-energy transition. The necessary political will and policy support to build a global clean-energy economy is just not there.

Given the scientific prognosis and the current political climate, we need to ask *whether it’s possible to make poverty history without also making affluence history*. In other words, can the interconnected problems threatening humanity and habitat be solved without an immediate, dramatic, and coordinated *contraction* in the rates of production, consumption, and resource use in rich nations? In the judgment of IPCC scientists, the answer is “no.” “Green growth” and incremental efficiency improvements are too little, too late to reverse trends in global emissions. The only feasible way to meet carbon reduction targets is to actively scale down or “degrow” the material throughput of the global economy. In essence, the global consuming class needs to stop converting so much of the planet into “product.”

The UN’s Sustainable Development Goal #12 asks countries to ensure, by 2030, “sustainable consumption and production patterns.” But what does that goal

actually require countries to do other than to say amen? Americans alone make per capita ecological demands that are about eight times the standard for global sustainability. One might insist, as a standard of fairness, that the U.S. and other rich countries be required to bring down per capita CO₂ emissions to a sustainable (2–3 metric tons) level. The global class of high-consuming people (mountains) would “be brought low” (produce, buy, and use much less stuff), while the bottom two billion—the “under-consumers” of basic infrastructure, schools, health care, durable housing, jobs, and so on—are “lifted up.” As the emerging economies grew, they would agree to switch from a carbon-emitting industrial base to carbon-neutral technologies. Rich countries would agree to support poorer countries through non-fossil technology transfers and direct financial subsidies, even as they execute a similar transition. Christian relief and development organizations are uniquely prepared to make a solid ethical case for such a “just transition.” And yet it’s politically unimaginable that any reforms would be accepted that move significantly against the interests of capital, along with the livelihoods and consumer preferences of billions of people.

According to *The Carbon Majors Database* (Griffin, 2017), 71% of total global GHG emissions can be traced to just 100 investor-owned *corporations*, mostly fossil fuel giants. What this means is that no “sustainable production” is possible unless gross polluters like Peabody Coal (coal), Saudi Aramco (oil), and Russia’s Gazprom (natural gas) are willing to accept immediate and major retrenchment or closure. But these are only the obvious first targets. Many other industrial sectors are fossil fuel-dependent and would need to undergo radical “degrowth”: oil refining and distribution, construction, agribusiness, auto and airplane manufacturing, travel and tourism, shipping, and synthetics production, to name just a few. Then there are the thousands of hugely profitable firms that produce and sell frivolous and mostly unhealthful goods to middle- and high-income people. Corporations like Pepsico (bottled water), Coca-Cola (sugary drinks), Starbucks (coffee), McDonald’s (fast food), Tyson Foods (factory-farmed chicken, beef, and pork processor), H&M (fast fashion), and Walmart (low-cost disposables) employ vast numbers of people, but generally at the expense of human and ecological health. And we still haven’t reported on the largest institutional consumer of oil products in the world: the U.S. Armed Forces.² Substantially shrink or shutter these diverse institutions and tens of millions of people would suddenly be unemployed—or worse. But fail to

² The Union of Concerned Scientists (n.d.) estimate that, “every year, American armed forces consume more than 100 million barrels of oil to power ships, vehicles, aircraft, and ground operations—enough for over 4 million trips around the Earth, assuming 25 mpg.” At present, the Pentagon burns more oil than 140 smaller countries. See also Neta Crawford (2019).

do so and we will certainly face rising temperatures, extreme weather, and environmental collapse. “Absent a significant adjustment to how billions of humans conduct their lives,” writes Wallace-Wells (2017), “parts of the Earth will likely become close to uninhabitable, and other parts horrifically inhospitable, as soon as the end of this century.” The stakes for human development couldn’t be higher. Standing in our place in history, what would Jesus seek to do—or undo?

6. Progressive Simplification

The foregoing has argued that without fundamental, systemic reductions in global material production and consumption (energy use), “overshoot” is inevitable. In the final analysis, installing solar panels and adopting a plant-based diet has little real impact on the concentration of carbon in the atmosphere. Nor on the material realities of the world’s most vulnerable peoples and places. That’s because the vast majority of energy and resource consumption, along with pollution and waste production, is generated by *institutions*—commercial, industrial, corporate, agribusiness, government, and military—not individuals. Institutional sin outstrips individual virtue, as well as the concerted action of the proverbial “small group of thoughtful, committed citizens.”

But this fact shouldn’t lead us to conclude that individual actions don’t matter. Yes, there are powerful systems that are difficult to disassemble. Factory farming, fast fashion, car culture, and consumer society shape how we eat, dress, get around and spend. But we are also free to choose from possible options which, when taken up by enough people, drive system reform. The personal *is* political. We *are* the animal cruelty. We *are* the landfill. We *are* the weather. The needed public policy changes and industrial contractions wait upon the future, and so are presently nonexistent. But there are innumerable small-scale “solutions” that Christian development personnel can adopt—and promote—now. At a minimum, those of us who can afford fossil fuel-dependent comforts and conveniences can learn to meet basic needs for mobility, food, cooling, heating, lighting, and consumables with dramatically fewer resources. We can pare down to one car. Better yet, instead of driving a car, we can commute by bike. We can stop flying or fly much less. We can swear off junk food and cheap, trendy clothing. We can cut way back on heating and cooling, and retrofit our homes to conserve energy. Above all, we can establish a strict line of “enough” in our spending. “If we want to stop the impoverishment of land and people,” writes Wendell Berry (2013), “we ourselves must be prepared to become poorer.” This doesn’t mean we go back to riding horses, hunting and gathering our food, and living in log cabins. But it does mean we learn to need

less, to waste less, and to make things last longer. The goal is progressive simplification—a relation between humanity and habitat that is inwardly rich, outwardly simple, and publicly contributive.

Capping personal consumption is also important in moral terms. As individuals, we are personally responsible to do everything we can to mitigate the damage caused by being a consenting member of a civilization that wreaks havoc on the planet. Utilitarian philosophers like Peter Singer (*The Life That You Can Save*), Peter Unger (*Living High and Letting Die*), and William MacAskill (*Doing Good Better*) argue persuasively that every individual of even a moderate degree of wealth is morally obligated to use their resources to alleviate the suffering of others. John Wesley (n.d.), in his famous sermon entitled, “The Use of Money” also enjoined his hearers to “gain all you can, save all you can, and give all you can.” Anticipated what “effective altruists” would propose 200 years later, Wesley proposed a faith-infused way to put more of the world’s wealth and expertise where it can do the most good.

Christian development practitioners need not be extremely wealthy in order to claim a spot among the world’s wealthy. According to the Global Rich List <http://www.globalrichlist.com/>, a \$40,000 annual income easily places community developers, humanitarian workers, and other modestly-salaried NGO staff among the global 1% of earners. We may consider ourselves “poor” relative to the majority of other Americans or Canadians who are extraordinarily affluent, but we are rich compared to those who, by an absolute standard, are unable to meet their basic needs.

Apart from encouraging simple living and generosity throughout their organizations, Christian NGOs can leverage their influence within local churches to support organizations and projects, including their own, that connect voluntary simplicity to high-impact global development priorities. There are over 65 million members of mainline and evangelical churches in the U.S. alone. Most of their giving goes to sustain church programs and select missionary enterprises, the majority of which lack performance standards and rarely undergo impact evaluations. This fact alone makes them hard to justify in terms of transformational development. Moreover, funds that are directed to humanitarian causes tend to be strongly biased towards Christian charities like World Vision and Catholic Relief Services. Are religious non-profits more cost-effective than organizations recommended by non-religious charity evaluators like GiveWell and GiveDirectly? They may or may not be. Still, the assumption persists within most evangelical churches that actors with an explicit Christian identity bring an indispensable moral and ethical dimension to

development practice that is unattainable within non-religious ventures.

This claim is central to Christian development practice, and it deserves careful empirical authentication. But our more immediate concern is how to build a bridge between those who are absolutely poor (lacking the resources to meet their basic needs) and those who are absolutely affluent (having the resources, not just to meet their family's basic needs, but also to take cruises, own timeshares, operate multiple vehicles, stay in fashion, and purchase the latest iThings). Although Christian NGOs might understandably view well-vetted secular development organizations as direct competitors for limited resources, a deep commitment to the 'greater good' might lead them to encourage congregations to support high-impact organizations and projects that address development priorities largely devalued within evangelical circles—issues like animal welfare, criminal justice reform, and climate change mitigation/adaptation. No-strings-attached cash transfers, in particular, simultaneously combat material poverty *and* climate vulnerability. The "luxury emissions" of the rich are reduced while essential "subsistence emissions" of poor people are raised. Money is moved from households that need it the least to households that need it the most. Mountains are lowered and valleys lifted up. Both rich and poor are able to lead healthier, more fulfilling lives.

7. Collaborative Action

There is a final path that the Christian development community can take to help move the dial on climate change. Individual and institutional contraction and effective philanthropy are strategically connected to the great "moral multiplier": political action. Here we consider how the "advocacy" arm of the Christian development community might campaign for infrastructural and policy changes that achieve both deep emissions reductions *and* deep adaptation. Wallace-Wells (2019b) sharpens the point:

Buying an electric car is a drop in the bucket compared with raising fuel-efficiency standards sharply. Conscientiously flying less is a lot easier if there's more high-speed rail around. And if I eat fewer hamburgers a year, so what? But if cattle farmers were *required* to feed their cattle seaweed, which might reduce methane emissions

by nearly 60 percent... that would make an enormous difference.

Major reconfiguration of the global political economy will likely come about only as the impacts of unmitigated climate change become horrific. In the meantime, the Church is invited to "speak up for those who cannot speak for themselves, for the rights of all who are destitute" (Prov. 31:8), and to thereby change the context in which our energy and economic systems operate.

Faith-based campaigning has begun to shape our political moment. To date, over 1,000 institutions have used their investment portfolios to divest from fossil fuel producers, with religious organizations representing the greatest share (29%).³ Secular advocacy groups have also organized masses of concerned citizens. Student campaigns associated with the Sunrise Movement and Zero Hour are demanding that politicians refuse to take money from the fossil fuel industry and prioritize the health of families and ecosystems. Rainforest Action Network and BankTrack advocate for banks to stop financing the expansion of the fossil fuel industry. The global Unfriend Coal campaign focuses on holding the insurance industry accountable for its role in climate change. As part of broader localism movements, Transition Town initiatives and nonprofit advocacy organizations like Local Futures seek to right-size the scale of human organization, with small cities and towns assuming greater control over energy, food, water, money, transportation, and waste cycling. More recently, the Extinction Rebellion (XR) movement has called for thousands of activists to block roads and shut down transport systems in major world cities—not just for one day, but long enough to impose to paralyze commerce and force governments and business elites to respond to the climate emergency. These are all global movements, but they have inspired highly localized projects by smaller groups of people—from banning single-use plastic to stopping a pipeline or coal port.

Rupert Read, one of the central figures in Extinction Rebellion, likes to say that what's needed is a "revolution in consciousness," something akin to Pope Francis' "ecological conversion." The collective revolution or conversion may visibly manifest in public actions, but it begins with people who begin to see new visions and dream new dreams. Something that was long tolerated becomes intolerable. The Jesus

³ These include charities like Christian Aid and Operation Noah, the Quakers, the United Church of Christ, the Methodist Church, the Church of England, the World Council of Churches, Union Theological Seminary, a number of Catholic religious orders, and many large Catholic institutions. Notably absent from the list of institutions disinvesting in fossil fuel energy stocks are evangelical colleges, evangelical megachurches, or large evangelical development agencies.

movement in the first two centuries embodied such an alternative imagination, the kingdom of God. Gatherings of Jesus-followers created new norms for organizing social life that became the seedbed for a new humanity grounded in faith-filled civil disobedience.

Today, a rapidly growing network of Christians are breaking out of both denialism and despair in order to take serious climate action. Groups like Global Catholic Climate Movement, GreenFaith, Christian Climate Action, Young Evangelicals for Climate Action (YECA), A Rocha, and Interfaith Witness for Climate Action cite their Christian faith as the moral force energizing their work. They regard non-compliance with ruling authorities, along with their false values, as a crucial form of kingdom faithfulness. Their conviction is that the kingdom comes as the Church, energized by the Spirit and in solidarity with other persons of faith and conscience, goes out into the world informed, vulnerable, praising, and protesting, “always bearing about in the body the dying of Jesus, that the life also of Jesus might be made manifest...” (2 Cor. 4:10 KJV). Standing in arm-in-arm solidarity with activists of other faiths or no faith, they exemplify a model of collaborative action expounded by British theologian and missiologist Lesslie Newbigin (1989) in his classic *The Gospel in a Pluralist Society*:

The Christian will be eager to cooperate with people of all faiths and ideologies in all projects which are in line with the Christian’s understanding of God’s purpose in history... Every day of our lives we have to make decisions that we cannot take without regard to the others who share the story. They may be Christians, Muslims, Hindus, secular humanists, Marxists, or some other persuasion. They will have different understandings of the meaning and end of the story, but along the way there will be many issues in which we can agree about what should be done. There are struggles for justice and freedom in which we can and should join hands with those of other faiths and ideologies to achieve specific goals, even though we know that the ultimate goal is Christ and his coming in glory and not what our collaborators imagine. (181)

Conclusion

For decades, the Christian relief and development community has been committed to continuous improvement in the human condition. “Development,” once viewed as synonymous with modernization, economic growth and increased consumption, must now aim to obtain the maximum of well-being with the minimum of consumption (Schumacher, 1977, 42). The alternative, according to the IPCC, is a level of earth systems breakdown that leads to slow and agonizing suffering and death for billions of people. The climate crisis will not be solved with more

philanthropy, more lobbying, more global summits, more awareness raising, better technologies, and the ‘greening’ of transnational corporations. That’s because the root problems are inherent in what we value and how we think about and interact with the other-than-human world. Whether by social or evolutionary conditioning, humans are simply incapable of sacrificing present benefits to forestall future costs. We might *know* the planet is facing an apocalyptic future, yet still refuse to *believe* it. We continue acting as if tomorrow will be just like yesterday.

This essay has outlined seven potential pathways for community engagement, beginning with a biblically-rooted, ecclesially-located and publicly engaged vision of a flourishing life. Taken together, they suggest ways to live out, individually and institutionally, the positive implications of that vision for the poor and the planet. Given the scale and complexity of the climate emergency, no one solution will suffice. There are some questions only governments will be able to answer—for example, about renewable energy infrastructure and massive CO₂ extraction—and Christian churches and development agencies ought to ratchet up their pressure on governments to act rightly. At the same time, and of equally importance, is keeping up pressure on our organizations, and ourselves. The Anthropocene was brought on by what humans are doing and, ultimately, because of who we are. Christian development practice will find its distinctive contribution to creational flourishing in its ability to transform both.

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