
Forging New Urban Policies for the 21st Century

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ABSTRACT

As humanity has entered what has been called both the Anthropocene Age and the Urban Age, we need to be globally conscious of how we may be able to successfully create a sustainable urbanity. While our various national political systems have taken a number of actions to combat global warming and other features of sustainability, these actions have clearly been inadequate to the task, so the present article focuses on what urban areas and their governments, which contain within their borders both the vast majority of our planets population and economic products, can do to bring about environmental sustainability. To achieve this, planners will need to both create models of environmental sustainability, and also create economic, governance, quality of life and urban planning models supportive of both urban and environmental sustainability. This article undertakes to identify the interdependent strategies through which our urban areas can forge themselves into fully sustainable cities. The development of a new shared economy to replace the current primacy of global laissez-faire capitalism, the need to establish democratic urban governance worldwide, to put enhancement of quality of life ahead of GNP growth, and the establishment of urban planning and design guidelines will provide a path towards global sustainability of our common human heritage into our collective, global future.

Keywords: Anthropocene; capitalism; climate change; conservation; environmental justice, ecology; political ecology; sustainable development; transition; urban development; urban economy; urban planning.

1. INTRODUCTION

The Anthropocene Age, characterized by geologically observable changes to the planet caused by what many ecologists characterize as our capricious manipulation of the environment. The result has been drastic reduction in the populations of many species, the mass extinction of thousands of species, resulting dangerous declines in genetic diversity; increasing ratios of greenhouse gases in the atmosphere resulting in the warming of our world and the initiation of a potentially devastating rise in sea levels. Meanwhile, economists decry income inequality caused by our present mode of global corporate capitalism while predicting the elimination of millions of jobs through the automation of factory production. Others theorize the potential for economic disruption in the form of a post-capitalist economy. Urban planners decry current levels of poverty and the lack of quality, affordable housing, while demographers predict that the current populations in poor nations could double by 2100 and that migration could skyrocket from rural areas to mega metropolises unable to provide for newcomers. Regrettably, most of heavily populated cities are near coasts, in areas most threatened by rising sea levels. Clearly, some of the policies of the past 200 years exacerbated problems to the point that they will lead to outright catastrophes [1, 2, 3, 4, 5, 6, 7, 8, 9, 10].

At the same time, many politicians seem more concerned with polarizing and/or populist ideologies or raising money than with solving problems, and too many policy-makers are locked into old stratagems—many of which are post-colonial, racist, and sexist. Attempting to break out of this deadlock, some researchers and theorists are proposing digital system analytics for our cities; others look to foment a socialist revolt of the growing, but until now disparate, groups of urban poor and

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disenfranchised people. Neither of these paths, however, will solve underlying problems and provide for the quality of life we would like everyone to have [11, 12, 13, 14, 15, 16, 17, 18].

It is time to reconsider our situation. Jared Diamond writes, in *Collapse: How Societies Choose to Fail or Succeed*, that the success or failure of historical societies was defined not by environmental and cultural challenges but rather by the societies' responses to these challenges. The tragic contrast between the collapse of Haiti and the success of the Dominican Republic on their shared island of Hispaniola offers a dramatic example of his thesis. Overpopulation, tremendous economic and power inequalities, democratic failures, and environmental mismanagement led to Haiti's downward path. Yet with very similar initial conditions, the Dominican Republic has been able to prosper. The first issue that must be addressed is preventing collapses in the short run; the second is to promote environmental and economic sustainability in the long run [19, 12, 20, 21, 22, 5].

Diamond goes on to show that the leading causes of societal collapse from environmental impacts have been the long-term loss of arable land, lower crop yields due to rapid climate change, and a too-quick rise in population. These issues are fairly well known, even if they are not accepted by some political elites who are less scientifically attuned. However, citizens living in urban areas tend to be more aware of environmental problems and are more open to implementing solutions than are political elites. Therefore, achieving sustainable urban policies (as opposed to national policies) is more likely attainable, at least in the near term. A set of urban policy strategies, as proposed here, can provide the basis for individual urban areas to create region-wide, integrated models that can be applied to national and global contexts [23, 21, 5].

In our pursuit to improve living conditions worldwide, should we risk environmental collapse, or should we accept a sustainable world that is forever separated into haves and have-nots? The answer hinges on how much we value consumer goods, considered an essential element in the Western notion of "standard of living." The other attributes important to quality of life—such as freedom, health, family, friends, education, and a satisfying work and cultural life—are conceivably attainable without risking environmental collapse [12, 24, 25, 26, 27, 28, 29].

A grand strategy is necessary to achieve the goal of a sustainable urban world with a high quality of life for all citizens. Combining and integrating critical theory, critical urban theory, and engaged theory provides the overall principles for a "Critically Engaged Urban Theory." It can be outlined as follows: Increasing the availability of the components of "quality of life" improves the human condition, maximizing personal freedom and assisting individual engagement in the pursuit of happiness. We must free the objective of attaining high income and wealth from our pursuit of a high global quality of life, recognize that creative destruction will likely be necessary to achieve positive change in urban spaces, and expand the concept of sustainability to include our ethical relationship to both the global population and the earth's ecology [1, 24, 30, 31, 32, 14, 33, 34, 35, 8].

The first step is to steer society away from potential collapse, and the second will be to develop a sustainable relationship with our ecosystems while improving living conditions for all. The next four sections in this series will cover economic, ecological, political, and cultural issues, providing insights into challenges we must confront and strategies we can use to overcome them [25].

1.1 Stratagems for Urban Economies

Considering current distress regarding global warming, mass extinctions, and income inequality, we must address the underlying economic facets of these challenges to our urban networks. Following the foundations put forward in the introduction, this analysis will help form strategies for sustainable cities that provide enhanced qualities of life for all citizens [36, 31].

1.1.1 Economic sustainability

Large global firms cannot be relied on to create and maintain long-term, high-paying, and life-fulfilling jobs. Instead, they too frequently buy out and absorb smaller firms, then export and/or cut jobs in their pursuit of low labor costs, minimized taxes, increased short-term profits, and thus higher stock market

valuations. On the other hand, regional institutional organizations and industrial firms that are tied to local natural resources tend to utilize long-term economic planning, which helps to stabilize communities, while local entrepreneurial firms employing native competitive advantages create a large share of job and income growth for most urban areas. Individual urban economies must subsequently work closely with regional firms and nurture, promote, and incentivize local entrepreneurs [37, 38, 39, 27, 34, 40].

1.1.2 Present levels of income inequality and poverty are unsustainable

Present rates of growth on capital and high-income earnings together with low tax rates on high incomes and inheritances have resulted in immense wealth gains among the world's top 1 percent. The worldwide wealth of the richest 1 percent now equals that of the remaining 99 percent. In addition to this stark level of inequality, there is also tremendous poverty, and hundreds of millions of people live in slum conditions [41,27, 42].

Both inequality and poverty appear to be as great now as at any time in the past. Income inequality historically courses between peaks and troughs with wars, revolutions, and periods of high taxation creating the troughs. While we lack exact statistics, it appears that revolutions have historically occurred when income inequality reaches levels approximating those of today. To solve these issues, our urban areas should pursue the following policies: first, encourage entrepreneurs who create both jobs and new wealth; second, equalize educational opportunities between the poor and the wealthy; third, distribute low-income housing equally throughout the city to increase education and job opportunities for lower-income families; fourth, curtail public projects that benefit only the wealthy; fifth, encourage a society of authenticity, culture and work/life balance; and sixth, appropriately adjust tax policies that favor the wealthy [38, 43, 34, 44].

World hunger is a function of poverty, not food production. The world is currently producing enough food to feed today's population. However, the world's poor do not have sufficient financial resources to overcome the causes of their lack of food. The most important factors are the use of a substantial amount of these food resources for the production of meat, food waste in its production, transportation and storage, over-consumption or obesity, and international food and agricultural aid policies. While all of these factors can be addressed at the urban level through an appropriate combination of education, regulation, and taxation, cities can also work with organizations to better produce food in their urban environments—be they on rooftops, empty lots, or brownfields [30, 45, 22, 27, 42].

1.1.3 Sustainable Industries

Present levels of resource extraction are unsustainable. The earth's resources are being extracted, consumed, and disposed at immense scales. Phosphorus, oil and natural gas, copper, zinc, aluminum, and iron are all non-renewal resources with known available reserves that will likely be economically depleted during the 21st century. Even if new sources or economic alternatives are found, sustainability demands that we conserve. Use of all such materials should be husbanded, and they should be recycled to the extent possible [46, 11, 30, 31, 32,34,47, 48].

1.1.4 Trading economies

Trading has always been a major attribute to a society's sustainability, as resources, skills, and industries present in the local economy are traded for goods available from other societies. Each region's trading economy should be developed and supported so it is of long-term value to other regions, and of a nature and supply that is sustainable into the future [49, 50, 39].

1.1.5 Regionalism

Authentic regional distinctions and their associated cultural identities provide residents with an important element of self-concept and contribute to a sense of belonging to a distinct and identifiable community. They also assist tourism and trade and attract individuals and firms with needed skills, jobs, and capital by offering a variety of cultural amenities. Unfortunately, other mediums work to

dilute these distinctions and identities, including global media, retail franchising, and many examples of post-modern architecture. This dilution of regional identity works against the interests of a region's tourism, trade and residents' quality of life. An authentic regionalism should be encouraged and promoted [51, 52, 53, 54, 55, 56, 57].

1.1.6 Global finance and small business

Both the financial meltdown of 2007-08 and the Dodd-Frank response to it in the U.S. created a global financial system more attuned to large corporations than to smaller, entrepreneurial firms, which decreased both the formation and growth rates of small businesses. This in turn has had an impact on economic growth, especially in the U.S. Cities should not only encourage local and regional banks to make more small business loans available, but also encourage crowd-funding through incentives and other forms of financial support [58, 41, 49, 59, 60, 42].

1.1.7 The Collaborative Commons

Historically, public ownership of and access to important Collaborative Commons, including but not limited to utilities, roads, waterways, schools, parks, wilderness, entertainment, and cultural venues, has been considered a given. However, in today's context, the Collaborative Commons also includes the internet, higher education, and basic health care. Where available, many of these Commons are now under threat of corporate ownership and thus profit-maximizing fees, or of being crowded out for funding due to mega-projects that are unresponsive to most citizens' needs, such as Brazil's 2016 Olympic village, which displaced thousands in its creation. Instead, societies should husband and improve these common amenities and resources and at low economic cost for all citizens, especially those who wish to opt out of developing and maintaining high per-capita incomes [61, 41, 45, 62, 29].

In effect, use of the Collaborative Commons can provide citizens with meaningful alternative pathways to the sacrifices of long hours and unsatisfying jobs too often necessary to acquire high-income jobs and attain wealth and access to education. And as the internet can provide the means for those in the developing world to vastly increase their quality of life as well as income levels, aid to these countries' urban areas should be directed toward providing dependable, free and fast service [63, 30, 31].

1.1.8 Quality of life vs. economic enhancement

Historically, quality of life is associated with a sufficiency in food and necessary material goods together with engagement in a worthwhile activity, whether intellectual, religious, or familial. Enlightenment philosophies promoted a belief that scientific progress would increase societies' overall quality of life through industrial and economic gains. However, two world wars, nuclear weapons, industrial pollution, and global warming tell us that the link is less direct. There is a need to refocus on the ethics of our current economy and what it is that truly enhances quality of life among a society's participant. Planning and design should follow this focus [64, 65, 66, 50, 34, 47, 29, 67].

One aspect of this refocusing and rebalancing is that large numbers of individuals would likely prefer to adjust their work/life balance to less work and less income, especially if there are significant Collaborative Commons available for their lifestyle. The coming era of automation and artificial intelligence may well cause this shift to be necessary. It will require urban governments to find ways to provide sufficient amenities free or at low cost, such as internet access, transportation, parks, health care, art and entertainment venues, exercise and sports options, plus other opportunities for socialization and engagement [68, 69, 70, 63, 38, 71, 72, 28].

1.1.9 Home ownership and pricing

Government-sponsored housing finance was successful when the U.S. and the developed world were growing at a fast pace. However, the financial meltdown of 2008 destroyed many families' equity, and housing markets have been spotty in their recovery. Home ownership is appropriate for many families when population growth is strong, but the benefits may evaporate when population growth and housing demand stagnate. Policies and programs that encourage or favor urban home ownership

should be directly tied to the region's and/or nation's immigration and population growth policies [73, 74, 56].

1.1.10 Revitalization vs. gentrification

From the beginning of urban renewal, planners have worked to re-envision and rebuild slums. The result too often has been displacement of the urban poor, whether through gentrification or the bulldozers of "economic development." The revitalization of Harlem in the 1990s and early 2000s demonstrated that well-designed revitalization efforts, which included programs for small business and job creation, along with low-income housing targeted at local residents, can improve neighborhoods both physically and economically, while keeping the vast majority of residents in place [36, 74, 53, 59, 75, 76, 56, 77, 78].

1.1.11 Economic realignment

Significant societal realignments have occurred over the past 600 years as new economic regimes have replaced previous ones: from feudalism to colonialism to the present regime of global corporate capitalism. We now appear to be entering the latest realignment: an economy defined by robot assembly, artificial intelligence, zero marginal costs of production, and a sharing economy. We need to encourage the positive aspects of these changes and prepare our urban areas for realignment, which will include a significant increase in the turnover of wealth, thus reducing, at least temporarily, income inequality. This entrepreneurial spirit and the interconnectivity it will bring should be encouraged, but with checks and balances regarding privacy, freedom of access, and the potential for heightened income inequality [30, 79, 31, 22, 80, 40, 81, 67].

1.1.12 Creative destruction

Economic realignment is just one aspect of the force of creative destruction. This is an engine for societal progress and income redistribution as entrenched economic interests falter while new, smaller, more creative and nimble entrepreneurial firms flourish and create jobs. Over 50 percent of the Fortune 500 companies have been delisted since 2000, and the new digital economy accounts for most of the new companies listed. Unfortunately, politicians and bureaucracies tend to assist and promote entrenched economic interests instead of newer entrepreneurs. The cities that sustainably embrace such creative destruction will be the cities of the future [63, 38, 74, 79, 27, 81].

1.1.13 Time value of money vs. sustainability

The fundamental dogma of the time value of money is that today's funds are worth more than tomorrow's. This creates several problems. The first is that this value concept is clearly not consistent with long-term inter-generational sustainability. Second, most non-renewable resources will have a higher relative value to future generations than they have today for a profit-seeking corporation. Third, for-profit corporations seeking to maximize shareholder wealth are intrinsically set up to reject sustainable projects that only provide fair profits in the long run. As a society, we need to reconsider the appropriateness of corporate ownership of valuable non-renewable resources and find fair ways to convert these resources to public and/or non-profit ownership [82, 27, 42].

Integrating these economic strategies will enhance the sustainability and resiliency of our cities, lessen income inequality, and reduce poverty, and together with the following strategies for an urban ecology, political regimes, and cultural life, will lead to a higher quality of life for all urban citizens [69, 34].

While free market forces will force corrective responses to many of our challenges, the tipping points for these corrections may come too late for many of society's least economically resourceful members, with potentially dire consequences for all of society.

1.2 Stratagems for Urban Ecology

History is littered with civilizations whose cities suffered ecological collapses, from the Fertile Crescent to the Indus Valley to the Mayans, Anasazi, and many, many others. As we enter the Anthropocene, we must learn from their mistakes and correct our own civilization's similar trajectory of inadequate responses to overpopulation, resource extraction, climatic changes, mass extinctions, and more [21, 8, 5].

1.2.1 Ecological balance

Cities that have existed for centuries, or even millennia, owe their survival to reaching a sustainable balance with their local ecologies. Those that did not meet the challenge ultimately collapsed. Most cities today are significantly out of balance with their environments, given the last 300 years of continuous growth and industrialization. Rebalancing our urban areas with their regional ecologies will require extensive analysis of ecosystems, sustainable energy production, sufficient water supplies, ecologically safe waste recycling, environmentally sustainable materials sourcing, and maintenance of appropriate population levels [83, 84, 32, 85, 56].

1.2.2 Regional wilderness preservation

Less than 20% of the earth's land mass has been untouched by human activities. The result has been a loss of species diversity through mass extinction. We need to act quickly to save the remaining wilderness, and urban areas can purchase or otherwise acquire the remaining wilderness areas in their regions to preserve what wilderness is still relatively wild. Examples include the acquisition of lands upstream of water supply reservoirs and forests owned by timber companies [73, 86].

1.2.3 Ecologically connected parks and forests

By creating a network of tree canopies along roadways, stream channels, utility easements, and other public and private lands we can bring forest wildlife into our cities which will enhance our lives and increase our awareness of the natural world, even when we're in the city [87, 56].

1.2.4 Global warming

For the past 1.8 million years the earth's glacial-interglacial, or Ice Age, cycles have stayed relatively consistent. Based on the historical lengths of these cycles, the earth would now be beginning to transition into a new Ice Age had we not intervened with man-made warming. Our greenhouse gas production since the beginning of the Industrial Revolution, however, is more than enough to prevent a new Ice Age. If we wish to resume production that creates unnaturally high levels of greenhouse gases at some point in the future, for now we must halt greenhouse gas emissions, affordably recycle an appropriate quantity of these gases out of the atmosphere, and conserve petrochemical resources [88, 32, 89].

1.2.5 Planning for rising oceans

Oceans and seas have maintained near-constant levels throughout recorded history, despite considerable variation over geologic time. Due to global warming they will now rise substantially (10-30 feet is probable, while 100+ feet is possible) during this century, flooding many coastal areas. Over 3 billion people now reside in areas less than 33 feet above current sea levels. With planning, some negative impacts can at least be minimized for urban populations. Densely built-up areas should plan for sea walls, berms, and the fortification of harbors with floodgates; other urban communities should direct growth to areas with higher elevations and use earthmovers to fill in low-lying areas they wish to save. Where possible, low-lying populated areas can be completely converted to estuaries and parkland, while settlements can be rebuilt elsewhere. If none of these are viable options, some areas will simply need to be abandoned [90, 32, 7].

1.2.6 Mass extinction

The past 200 years have seen a surge in global population, resulting in a tremendous expansion of agricultural fields and grazing ranges, the over-harvesting of game and fish, the extensive loss of natural habitat, widespread pollution, the degradation of ecosystems, and the worldwide spread of invasive species. In the last 20 years alone we have lost 10 percent of the planet's wilderness areas. This perfect storm has resulted in global mass extinction and diminished biodiversity. To reduce the rate of extinction, we need to preserve as much of the natural landscape as we can by halting deforestation, slowing population growth and transferring some of that growth from rural to urban areas, lowering demand for animal food sources, more efficiently utilizing agricultural lands, and minimizing the use of pesticides [2, 91].

1.2.7 Delays to renewable energy transformation

The extent of existing urban petroleum infrastructure in developed countries, together with high debt loads in dozens of poorer countries, is delaying a transition to a global renewable energy infrastructure. This process can be accelerated by first adopting conservation measures and funding smaller start-up projects to reduce governments' institutional energy costs, thereby freeing up financial resources for the transition. Next, large infrastructure projects with all-inclusive financing should undergo competitive bidding processes [92, 84, 89].

1.2.8 Sprawl vs. urban growth

Sprawl occurs primarily where national subsidies and local zoning codes encourage, or even enforce, this pattern of infrastructure development. Sprawl eats up valuable resources, fractures and destroys important ecosystems, and increases pollution and jobs/housing imbalances. Viable solutions to managing projected growth do exist, from revitalizing and expanding existing downtowns to creating new cities. Between these two extremes are many options. Suburban and urban pockets can be transformed into new urban centers by increasing access to mass transit, through such means as expanded highways, light rail transit, dedicated bus lanes, or (in the near future) dedicated lanes for autonomous vehicles. Urbanizing these outlying areas can enhance diversity and density within a broader urban region without increasing the overall footprint on the surrounding landscape [93, 94, 95, 96, 83, 97, 98, 99, 100, 101, 56, 102, 78].

1.2.9 New urbanism and edge cities

These relatively new forms of urban development, typified by the Walt Disney Corporation's Celebration town in Florida and the unincorporated edge city Tyson's Corner in Virginia, are centers of increased density in the sea of suburbia. However, as privately owned and managed entities, they also tend toward exclusionary practices and lack income equality, job and housing balance, and urban vitality. They also lack public commons and adequate citizen involvement. Thus, there is a need to open these areas up to the public, increase diversity and density, and connect them to the rest of the city with mass transit [83, 74, 103, 99, 56, 102, 78].

1.2.10 Water supply and quality

In many urban areas, growth has outpaced available water supplies, climate change will exacerbate this problem as rainfall drops in the coming decades. In some areas, water will need to be re-priced to minimize waste, with a sustenance supply provided at low cost for all residents but high costs imposed for additional usage. Other areas will require substantial planning for and infrastructure investments in water recycling or desalination. Where contamination is a problem, "upriver" water supplies will need to be protected from agricultural fertilizers or animal waste [61, 97, 104].

1.2.11 Zero Waste

As urban trash landfills are filling up many cities are shipping their trash further and further away from their city centers. Instead we need economic ways to increase recycling and dispose of trash in ways

that bring us to zero waste. Stockholm and several other cities have trial programs, which should be studied where possible improved upon [1, 91, 105, 31].

1.2.12 Sustainable regional agricultural systems

Many urban areas have begun to utilize local farmers markets, urban agricultural plots, local seafood and rooftop farming to bring locally grown, and often organic, produce to urban residents. Governmental support of these activities will help to ensure that urban areas will always have sufficient food resources for their residents, and are not dependent on foreign markets [90, 85, 106, 44].

1.2.13 Regional agriculture and food supplies

Farmers have always selected desirable traits in plants used in agriculture. More recent genetic engineering has been accompanied by an ever-growing use of herbicides, while “superweeds” have developed resistance and ecologically deficient crop management methods have become more common. Many herbicides are harmful to humans, even in small amounts, and as use increases, so does their danger. Urban governments can support further research in enhanced farming systems and crop breeding programs that are not dependent on herbicides. Food labeling laws should be developed and enforced to inform consumers when known cancer agents—such as herbicides, pesticides, growth hormones, or other additives—are used during food production [107, 108, 85, 109].

1.2.14 Food dumping vs. emergency relief

When international agencies provide food on a regular basis to poor countries, instead of only when emergency relief is needed, they create a post-colonial dependency as local farmers unable to sell their goods become dependent on food aid themselves. International funds should instead be directed to developing local agriculture [110, 26, 85, 33, 34].

1.2.15 Wasteful agricultural methods

Agricultural systems need to be transformed to reduce waste and feed the world population more efficiently and effectively. For example, corn subsidized and grown for ethanol in the U.S. keeps corn prices artificially high, and prevents agricultural lands from being used for food production. Global food markets can also produce waste—palm trees grown in the less developed world for consumption primarily in the developed world withholds agricultural lands from production of local food supplies. In the developing world, city governments should work with national governments to disincentivize agricultural export at the expense of meeting domestic food needs [90, 85, 109, 91].

1.2.16 Design methodology

Ancient cities grew incrementally, and in the process respected and worked with natural landforms. However, as the combination of gridded city plans and 20th-century suburbia have extended urban sprawl, the natural topography has too often been treated as an obstacle to be overcome instead of an enhancement to planning and design. While autocratic design solutions overwhelm naturally occurring formations and contribute to a sense of sameness and disconnectedness, emerging urban design should take cues from native ecologies and natural terrains [45, 56].

1.2.17 The street and the sidewalk

Before 1900, cities were generally designed for walking. Buildings presented appropriate street fronts lined with stoops, balconies, retail shops, and human-scaled entrances. Pedestrians could safely walk in the street as horse-drawn carriages and trolleys moved at a slow pace. The automobile industry lobbied for 30 mph speeds on city streets, which forever changed the streets’ pedestrian character. Zoning has also insulated residential structures from downtown retail and employment, requiring setbacks and parking standards that further deadened streets, especially those in downtown areas in

the evenings, which then invited crime. We need to revitalize our streets and sidewalks by increasing the diversity and density of pedestrian-friendly uses [111, 87, 100, 56, 77].

1.2.18 The failure to create an ecological planning and architectural movement. We have not yet fully developed an architecture that minimizes environmental destruction, in spite of good intentions, many fine individual projects, and LEED and Passive Building certifications. Institutional clients, developers, design educators, architectural publications, and design competitions should require that designs resonate with the regional environment. Ideally, each building should be a self-sustaining, living member of the ecology in which it is set. City building departments can assist in this endeavor by requiring architects to certify that their buildings meet LEED and/or Passive Building standards [105, 89, 56].

The above strategies can pull developed economies away from trends that lead to a potential ecological abyss, as well as provide a path for both developed and developing countries toward a sustainable and equitable future [87, 8].

1.3 Stratagems for Urban Regimes

Jared Diamond's *Collapse* and Joseph Tainter's *The Collapse of Complex Societies* teach us that autocratic governments which protect the vested interests of the wealthy and powerful are the most likely to suffer collapse. They are not willing to spend the core group resources to fund necessary responses and adjustments to larger societal problems—and to do so before it is too late [21, 112].

The governments most likely to respond to these challenges are democratic, transparent, and willing to share power between the various interest groups that comprise their administrations. Our urban governments are confronting many challenges, but the most prominent include the following [113, 21, 112, 27, 114, 115]:

1.3.1 Urban regime theory

Individual stakeholders (i.e., business groups, unions, non-profits, charities, foundations, etc.) in urban governments may be over-represented in influencing who is taxed, who receives government services, and to whom contracts are awarded. They may also impact general planning and zoning, infrastructure and implementation, the terms of urban economic growth, the integration of mega projects, and other aspects of urban project planning. Stakeholders who are not part of the power structure are unlikely to have their needs met through such an arrangement. These structures and relationships need to be refashioned in order to better provide for economic and environmental sustainability and an enhanced quality of life for all members of urban society. There are several steps that can be taken to address this issue, including redistricting that enhances citizen representation instead of concentrating power, encouraging and maximizing voter participation, and taking the money out of politics [105, 116, 117, 118, 112, 34, 115].

1.3.2 Tax policies vs. regulations

Infringing upon individual freedoms in order to achieve societal sustainability goals will only create short-term opposition to needed reforms. This can be overcome by the use of incentivizing tax policies targeted toward those environmental actions that are curable. Urban areas should encourage their national governments to pursue solutions that include progressive taxes on income and estates (taxing excessive CEO pay relative to workers), tax incentives to encourage upward mobility, and the elimination of taxes on necessities and incomes at or below some standard, such as minimum or livable wages [95, 74, 119, 75, 27, 120].

1.3.3 Entrepreneurial and innovation support

Local entrepreneurs are the backbone of urban job creation, and their innovating products and services often serves as one of the most important economic engines for regional economic growth. To the extent that urban regimes support local business, these are the businesses that should be

supported, rather than large corporations that too often seek to increase profits through job cuts [59, 75, 27].

1.3.4 Absence of graft

The presence of graft in urban regimes is deleterious in many respects: it is anti-competitive and locks areas of the economy on unsustainable paths, increases criminal activity, creates a sense among the citizenry that their government is out of control and unresponsive to their needs. It thus needs to be fought on every level [121].

1.3.5 Urban ethics

Though our post-colonial world was founded on simultaneously on both a history of discrimination and exploitation and a love of individual freedom and democracy, we need to create a space that allows for diversity, fairness, justice, and sustainability. We have one planet, and we are an integral part of its ecology. We must honor our need to pursue individual happiness—but only where it does not conflict with another's rights. Our laws must reflect these rights and obligations [121, 122, 123].

1.3.6 Alignment of political government with urban economy

Urban areas have seen tremendous growth over the past 300 years, in most cases well beyond their historic jurisdictions. As a result, larger jurisdictions (state, provincial, or national), which may reflect interest groups with priorities contrary to the sustainable health of our cities, make many of the decisions. Therefore, urban areas should either foster realignment of their jurisdictional boundaries or create new multi-jurisdictional planning agencies to both better align urban government budgetary needs with voting interests and to efficiently administer large infrastructure projects (e.g., water and mass transit systems) through single agency authorities [11, 96, 97, 118, 56].

1.3.7 Voter participation

Voter participation has decreased in a number of countries, possibly in association with global corporations increasing their involvement in national and regional elections and decreasing participatory democracy. There are exceptions, for example, in more than a dozen countries with electronic voting, where voter participation has increased in some cases to over 60 percent. Other regions have used mailings that publish individual's past voting history (but not the candidates voted on) to increase voting rates by 5-10 percent. And yet other countries, like Argentina and Brazil, have instituted compulsory voting, where staying home means paying a hefty fine. Notably, Argentina averages 80 percent voter turnout, and Brazil boasts averages from 78 to 95 percent [118, 124, 122, 115].

1.3.8 Class consciousness and spatial segregation

Racism, sexism, colonialism, and ethnic, religious, or political particularism are historical characteristics of many of today's societies. They are intertwined with the oppression of minority groups and individuals and have been institutionalized in various urban policies. These are seen in patronage, restrictive laws and regulations, and other protective measures directed toward those in power [125, 79, 126, 127].

In this regard, planning and zoning have greatly assisted in the process of spatial segregation of the races, ethnicities, religions, and of poverty and wealth in our urban areas. Exclusionary zoning began with the first zoning codes in New York City and continued as zoning spread throughout the U.S. and then globally. Low-income housing was spatially segregated from affluent housing, job centers, high-performing schools, and well-resourced hospitals—and this segregation continues even today [96, 118, 128, 129].

Dispersing new low-income housing and existing low-income residents throughout the city and placing better medical, education, and health care centers in low-income areas will help to minimize spatial

segregation over time. Strong revitalization programs, together with tailored education, economic assistance to oppressed communities, and heightened enforcement of anti-discrimination and anti-racial steering laws illustrate some of the ways that individual aspects of segregation can be overcome [130, 129, 56].

1.3.9 Classism

While the elimination of socio-economic classes in society is unlikely to occur in our lifetimes, providing all of society's members the opportunity to move from one class to another is achievable. Unfortunately, classes that hold power create barriers so that their group(s) will maintain power to the exclusion of others. Administrators and policymakers in a democracy must resist the creation and maintenance of such barriers. For example, children from poor households attain higher education and income levels when raised in mixed income, wealthier neighborhoods, yet low-income housing is invariably situated in low-income neighborhoods and spending on education is substantially higher in high-income neighborhoods [73, 79, 126, 131, 127].

1.3.10 Slums, favelas, barrios, ghettos

Slums are forming with great speed in the less-developed and newly industrialized world due to a rapidly increasing urban population and a growing displacement of rural populations. These informal settlements have little or no public services, often creating extreme conditions for their inhabitants. While a number of urban investment and revitalization programs have begun, these growth-induced needs are outstripping the programs. Sanitation, health care, public commons, education, jobs, public safety, and all other accouterments of urban life are drastically needed [132, 126, 118, 60, 34, 133].

1.3.11 Homelessness

While the number of homeless in the U.S. has remained relatively stable in recent years at about 650,000, it has grown to approximately 100 million worldwide. Though there are wide ranges of problems leading to homelessness, in the U.S. the homeless population contains a high proportion of veterans, mentally unstable individuals, and those who suffer from drug and alcohol addiction and ex-offenders. In contrast, in the developing world, causes have more to do with the movement of people to avoid war and famine. Regardless, each city has a responsibility to provide housing, education and health care to the indigent and determine the more pronounced causes and potential solutions in their respective regions [134, 74, 128, 131, 133, 56].

1.3.12 Refugees

The rise in economic displacement, social unrest, and terrorism around the globe has inflamed a refugee crisis, which has arisen while many cities are still reeling from the 2008 financial crisis and in countries exhibiting a rise in populism. This has led to two reactions: an anti-immigrant backlash and a simultaneous rise in the Sanctuary City movement. The cities that have been most successful in dealing with this crisis have deployed their service agencies, churches, and NGOs to work closely with the refugees. These organizations assist refugees with housing, language training, and job placement [135, 34].

1.3.13 Sister city relationships

If we are to give peace a better chance in this world, we must all participate in growing the diversity of our relationships, and the understanding of other cultures. The likelihood of national leaders taking our nations to war are far less likely if our citizens have relationships with other cities and peoples around the world. Sister City relationships are an outstanding way to promote this [113].

1.3.14 IMF and World Bank loan conditions

Both institutions, co-creators of our current global capitalist economy, have placed austerity conditions on loans to under-developed countries that have greatly curtailed their ability to provide health,

education, and social services to their citizens, while at the same time granting projects to global firms located and paying taxes in developed world countries. Urban areas need to more forcefully resist these restrictions, “claw back” what they can from these lenders, and negotiate with their national governments to modify national taxing and spending agendas in order to re-establish more appropriate spending levels [126, 59, 118, 27, 133].

1.3.15 Freedom and security

Concerns about crime and terrorism have led to measures intended to increase public security, such as mass surveillance on the internet and camera surveillance of public urban spaces. These measures carry significant burdens regarding individual freedoms. The loss of privacy and potential for the sharing of this information reduces individual freedom and creates an environment that erodes public dialogue and creative expression and can eventually break down societal norms. Significant controls need to be put in place to ensure that individual freedoms and public speech are not compromised in our search for enhanced public safety [134, 136, 123, 137].

1.3.16 Human rights

The Geneva Convention enumerated 30 Human Rights as universal and fundamental both for individuals and governments, and need to be adhered to for the health, safety and happiness of all people. These include rights such as those of free speech, assembly, security, free elections, fair trials, private property, etc. [12, 24, 125, 138].

1.3.17 Freedom to pursue individual goals

All 30 human rights, in the end, boil down to this concept. For without each and every one of these rights, there is no full and complete right to pursue our own individual goals. And if we cannot pursue our own personal goals, what does it mean to be human? Thus, it is thus critical for each urban regime to protect each of these Human Rights [24, 125, 138].

1.3.18 Family planning and zero population growth

There are now almost 8 billion people in the world, and population growth continues at approximately a 1% annual rate. While of the worlds wealthier countries are at their peak populations, and perhaps even declining in population, the poorer nations continue to experience population growth. This is both unsustainable and potentially destabilizing, and so all urban areas need to control their growth [139, 140, 110, 141, 34].

1.3.19 Emergency preparedness (all hazards)

The Covid-19 pandemic has demonstrated how far we are globally from having adequate emergency preparedness. The types of emergencies that urban areas need to be better prepared against include not only pandemics, but also earthquakes, tornados, hurricanes, droughts, etc. [56, 142].

1.3.20 An enhanced collaborative commons

These are the shared resources in which each citizen has an equal interest, and include urban parks, wilderness, civic events, roads and sidewalks, and hopefully access to urban services such as utilities, education, health care, etc. It is an urban regimes responsibility to both manage these sustainably and enhance their availability and usability to its citizens [140, 143, 80, 62, 144, 145].

In short, democracies that share power among their various interest groups and promote transparency and ethical behavior offer their societies the best paths to resolve the complex economic and environmental challenges that are bound to arise [110, 80].

1.4 Stratagems for an Urban Cultural Life

An individual's quality of life has much more to do with personal freedom, quality of health, personal relationships, and job satisfaction than it does with income, attainment of wealth, or the acquisition of an abundance of consumer goods. A city must support these former facets if it is to thrive. In other words, a city that provides a good quality of life can attract and retain the highly educated, skilled workers and innovative entrepreneurs it needs to remain economically viable and to best respond to inevitable challenges [140, 110, 143, 72, 144, 138, 145].

1.4.1 Community life

People are particularly attuned to living in a community where they feel they are valued members. Historically, our cities have fostered both a collaborative commons and an architectural distinctiveness that have bestowed an emotional ground and psychological identity for their residents. Unfortunately, in contemporary society, urban planning and particularly international and post-modern architecture have often collapsed the rootedness and distinctiveness of many of our communities, lowering local engagement and participation. Critical regionalism promotes the design of regionally sensitive architecture and planning, encouraging a sense of community and place. Adding to the collaborative commons would further increase our connection and bonding to place, which cannot happen in a sea of sameness [140, 146, 143, 147, 144, 145].

1.4.2 Urban vitality

The physical separation of office from retail or industry from residential deadened our urban areas. This deadening can be reversed by thoughtfully allowing multiple uses in close proximity, enlivening urban streets with a dense mix of pedestrian-oriented retail, office, and residential uses, plus fostering multiple systems of transportation in close proximity. Schools, medical facilities, and provisions for non-profit offices should be part of the mix. Nodes and streets should include a safe environment for car lanes, bicycle lanes, and pedestrian walkways [111, 54, 56].

1.4.3 History and memory

The philosophies, religions, and institutions of the past continue to influence our understanding of ourselves and add to our potential for progress. By connecting us with our past, we can then look toward our future. Urban renewal and economic opportunities offered by newer, larger buildings and complexes often threaten that historic memory, and thus significant portions of that fabric need to be saved even as we renew, revitalize, and grow our cities [54, 56].

1.4.4 Education

In our technological world, a college education is often the determining factor in high- vs. low-wage jobs. A low-cost, high-quality education should therefore be available to all. When colleges cannot be physically located near those wanting to attend, web-based free education should be provided. In addition, while we must educate future generations for the jobs that will be available to them, we must also educate them to be good citizens: literate, compassionate to others, and understanding of their relationship to the world around them [34, 148].

1.4.5 Artists and live/work housing

Our urban areas are largely where we create our culture. This creativity—and the vitality, innovation, transformation, and growth associated with it—can only occur where the advances that come from this creativity are incentivized and embraced. Yet, the rapidly increasing housing values in our urban cores are pricing out artists and other creative types; if dispersed into far-flung areas, their loss negatively impacts the vitality of our urban cultural cores. To counteract this loss, we need to develop low-income housing specifically for artists and other creative types. Alternatively, we can provide tax incentives for artists, such as in Dublin, where artists aren't taxed on the first 40,000 euros they earn a year [122, 56].

1.4.6 Rebalancing work lives

As our economies are transformed by artificial intelligence and computerized automation, overall per capita work requirements will be lessened, and weekly work hours per employee will be able to be lessened. This will provide us with the ability to rebalance our work lives, so we will have more time for family, cultural, sporting and other activities [140, 71, 27, 72, 80].

1.4.7 Corporate vs. societal interests in culture and education

Global corporate capitalism's interests in culture and education too often correspond only to their financial interests, i.e., making profits from mass culture such as TV and movies and generating fees for providing educational services such as printing textbooks, creating coursework, offering degrees, and certifying teachers. Public interest in education is larger than the narrow business interest in education, but the long-term health of our corporate culture cannot long exceed the health of our citizenry. The two are inextricably linked [116, 100, 27, 80, 148].

1.4.8 Mass media

Corporate advertising is pervasive in mass media and public venues. While the media must be a sanctum for free speech, members of the public who do not wish to be part of corporate-sponsored advertising must be free to avoid it. Therefore, public advertising should be strictly limited to entertainment venues such as Times Square in New York City [24, 38, 118].

1.4.9 Health care

Medical and urban infrastructure improvements have vastly improved the health of citizens in many of our cities. However, large numbers of people still do not have access to these facilities. We must extend health care infrastructure around the globe and eliminate economic and geographic barriers to access, especially when addressing the issue of infant mortality. Basic medicines, procedures, vaccines, and preventative measures should be available to all. New discoveries in medicine, diet, and lifestyle continue to provide improvements to our health care options, and these new technologies can and must be distributed more evenly across the globe [97, 109, 149].

2. CONCLUSION

The Earth has seen numerous geologic ages through its history. Some sustained themselves over millions of years. Others were transient. If we are to make the Anthropocene one that lasts and represents what we aspire to, we will need to fashion an urban theory with sustainable strategies. What is fashioned here is an early draft of the strategies for such a theory, one that I hope will be added to many times over the course of our future.

COMPETING INTERESTS

Author has declared that no competing interests exist.

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