Sustainable urban housing policies in the era of post-covid climate change mitigation

Patrick Wakely

ABSTRACT
This paper briefly reviews recent and current approaches to the formulation and implementation of urban housing policies in towns and cities in the global South, with emphasis on local government-community participation and partnerships. It looks ahead to the implications of the lasting impacts of the Covid-19 pandemic and tenets of climate change that will constitute the ‘New Normal’.

Housing is a major component of all towns and cities, typically covering 60–80% of their developed land area and accounting for 50–70% of the value of the fixed capital formation of all urban areas.

Introduction
This paper was written during ‘lockdown’ isolation, occasioned by the global Covid-19 pandemic giving me the stimulus and opportunity to reflect on the fundamental and far-reaching impact of the pandemic on sustainable urban development and affordable, healthy and socially acceptable, housing for low-income households and communities (Urban & Nakada, 2021); not only in response to the immediate emergency but to future such crises and the daily pathogenic threats faced by urban low-income communities throughout the world. Environmentally, ‘social distancing’, a common term coined in the 2020s to minimise the airborne transmission of pathogens, became a social and physical planning principle. However, measures such as this are constrained by poverty that, hitherto, have limited the size of dwellings that households can afford and the low building densities at which neighbourhoods, ideally, should be planned (Gupte and Mitlin 2021). The Covid-19 pandemic coincided with increased international awareness of deteriorating climate change, due to global heating, largely caused by the build-up of CO₂ emissions, particularly in densely built-over urban areas.

On the up-side, the social restrictions, imposed by the Covid-19 pandemic, created or reinforced strong neighbourhood-based community organisations for mutual support during the crisis lockdown in towns and cities of the global North and South, alike, amongst all social classes and income groups, including the poorest. This ‘silver lining’ to an otherwise very ‘dark cloud’ is an asset to be nurtured and built upon, as discussed, throughout this paper.

Worldwide, urban housing policies and strategies for their implementation have been in a state of some confusion and indecision since the closing decades of the last century, well before the global economic crisis of 2008–9 and the onset of the Covid-19 pandemic.

In any developing city, the need for official support to the production, maintenance and management of appropriate housing and community facilities, that is fundamentally redistributive and/or committed to urban poverty alleviation and reduction, is so complex that no single strategic approach to housing production can possibly suffice equitably and effectively (Marcuse 1992). Thus, the next generation of urban housing policies, and strategies for their implementation, as well as heeding the lessons learnt from the Covid-19 pandemic and contributing to the mitigation of global climate change, must embrace a range of different programme and project approaches, principal amongst which will be support to ‘non-conventional’ incremental social housing and to the production of good quality public housing that...
provides socially controlled rental accommodation that is affordable to those households in the lowest income groups who are unable/unwilling to invest in fixed capital assets such as urban property (Wakely 2018, pp. 89–119).

A holistic approach to supporting urban low-income housing that is sensitive and responsive to the particular social, economic and political circumstances of any urban area, neighbourhood or community, and is sustainable over the medium- to long-term, can only be administered effectively at a level of government no higher than that of the municipality. However, in very many countries housing policies and operational strategies for their implementation are administered by national-level authorities that rarely entertain the devolution of any real power or decision-making down to the level of local government and municipal administration, and virtually never to levels of local organisation below that (i.e. to community-based organisations and/or the NGOs that support them). Thus, in most countries, recognition of the principle of subsidiarity and the devolution of authority in the housing sector is an essential starting point. However, ‘municipalisation’ and the co-existence, not to mention the integration, of alternative policy approaches are likely to pose some fundamental political/ideological contradictions (Fiori and Ramirez 1992). It also invariably calls for radical changes in the management of urban development and the administration of urban infrastructure and service delivery that in many towns and cities require complex and often contentious processes to ensure inter-agency cooperation or collaboration.

Clearly, to be effective, municipal housing policies and programmes must address the issues of good, safe and secure housing and domestic infrastructure to the wider social processes of equitable urban development, notably the alleviation of the social impacts of poverty, poverty reduction, and enhancing the productivity of low income urban communities and enterprises in the urban economy at large, while simultaneously combining ‘non-conventional’ participatory incremental housing production, maintenance and management with, for example, ‘conventionally’ constructed (subsidised) public rental housing. While all households would prefer to occupy formal housing, the difference in costs between formal and various categories of informal, or unauthorised housing can make a difference of as much as three times the value of property, as found in Egypt (Séjourné 2012).

**Land and housing procurement processes**

Whilst it can be argued that the market in land and property is a single continuum, the process by which land is procured and developed differs significantly between the formal and informal sectors. Upper- and middle-income households with recognised and regular incomes and collateral have access to long-term credit – housing loans and mortgages – that may take between 15 and 30 years to redeem. Those with low and/or irregular incomes and no access to formally recognised collateral can only afford to construct minimal basic dwellings in the first instance. But over time, they get extended and improved as resources become available and as the need for bigger or better structures become a priority. This process of incremental extension and modification can also take decades or be ‘never-ending’. Although there are situations where the two processes overlap, the first, which is relatively rigid and inflexible, characterises the incremental housing procurement process of the formal sector; the latter, which is much more flexible and responsive to changing circumstances and fortunes, is the way in which most low-income households in the informal sector acquire premises for living, working and renting. Broadly, the differences between them lie in the reversal of the sequence of the formal and informal procurement processes as illustrated below (McLeod and Mullard 2006).

An urban policy approach that treats a city’s housing markets as a single continuum, should also take into account and contribute to the rationalisation of the urban structure (form) of the city to ensure coherence between different areas of the city and the functions and amenities that they provide for the city as a whole as well as for those who live and/or work in them. Thus, initiating integrated and sustainable urban development, as expounded by the 2016 UN ‘New Urban Agenda’, for ‘Housing and Sustainable Urban Development (Habitat III)’ and the United Nations Sustainable Development Goals (SDGs) 2015–2030 and embracing the goals and targets for the mitigation of climate change in and by urban areas – principally the reduction and control of global heating through greenhouse gas emissions, as agreed by the ‘The Paris Agreement’ of the UN Framework Convention on Climate Change in Paris in December 2015.
As pointed out at the start of this article, in physical terms, housing is a major component of all towns and cities in Asia, Africa, the Middle East, Latin America and the Caribbean (UN-Habitat 2003). Thus, low-income group housing policies and strategies for their implementation cannot be divorced from policies and strategies for the development, planning and management of towns and cities as a whole, as they have been, and still are, in many countries. City development strategies (CDS) and comprehensive urban (physical) development plans, strongly promoted by international aid agencies in the closing decades of the 20th Century, offer democratic, participatory ways into the new agenda for inclusive housing and urban development (Freire and Stren 2001; Cities Alliance 2006). All CDS procedures are operationally founded on inclusive participatory principles (‘City Forums’) that engage representatives of formal local (municipal) government, private sector enterprise, NGOs, including community-based organisations, thereby ensuring a significant level of buy-in, participation and communication between different interest groups and segments of the urban society and economy, both formal and informal, governmental and non-governmental (Cities Alliance 2006).

**Urban housing sub-groups**

It is likely that any city housing development strategy will embrace a set of broad householder affordability categories. Hitherto, government housing policies and programmes for supporting participatory low-income group housing have given emphasis to freehold ownership of urban land and dwellings. However, in many cities a large proportion of this group, who are unable or unwilling to invest capital in urban real estate, rent their accommodation (Gilbert 2008). In response, government sponsored incentives for private sector developers and landlords, including ‘subsistence landlords’ (Kumar 2011) are often needed to provide acceptable, rental accommodation that is affordable to them.

Public sector constructed ‘conventional’ rental housing, located and designed in partnership with representatives of its eventual low-income group occupants and users, is also appropriate for this category of urban households (Wakely 2020).

**Cultural integration & cosmopolitan development**

In some cities, further categories or sub-categories of a broad classification by income-group and affordability, such as clearly identifiable cultural, ethnic or social groups that require special social considerations or facilities, such as land for particular religious and cultural buildings or celebrations, may have to be included in urban development and housing policies and operational strategies for their implementation. The identification of such sub-groups and responses to their particular local needs are political processes, peculiar to every neighbourhood and city, and cannot be generalised. However, cases of sensitive ‘cosmopolitan planning’ and development do provide examples, from which useful principles and practices to assist the identification of different social and cultural ‘housing support-need-groups and strategic planning approaches to them, can be drawn, giving emphasis to fostering ethnic, religious and cultural harmony and conviviality (Beall et al. 2002).7

Whilst it is important that such categorisation is included in city databases to facilitate citywide programme planning and budgeting, there is a danger of it becoming the driver of project-level planning by municipal housing authorities, which should be avoided, as it is likely to induce top-down, historically determined social divisions that can lead to involuntary ‘ghettoisation’ and ultimately to civil strife. Such a degree of segregation can effectively only be made voluntarily, at a community-level, provided that an appropriate and capable institutional capacity exists (Wakely 2018, p.p.63–73).

**Gender Needs and Assets**

It is essential that the different gender needs of men and women are recognised and responded to at all levels and in all fields of strategic planning and resource allocation. In nearly all developing urban societies built on historical patriarchal traditions, emphasis in the access to housing has been given to men on the assumption that they are the heads of
households. Almost universally, however, women are in fact the main users and managers of domestic property, in which they feed and maintain households, including the nurturing of children, and often undertake income-earning activities that augment overall household financial resources. In addition, women frequently provide the leadership and play pivotal roles in neighbourhood and community organisations, as they did in local mutual support activities during the Covid-19 pandemic lockdown 2020–21 (DeGroot & Lemanski 2021). The lack of recognition of women’s roles and the inadequate allocation of moral, social and physical resources to maintain them seriously imbalances the access to housing assets that constitute the predominant, if not the only, source of social and financial security available to urban low-income families (Moser 2016). Furthermore, in many cities women are further discriminated against by legislation and administrative procedures that militate against, or totally negate, their security of tenure to housing and urban property8 (Rakodi 2016). Such discriminatory measures have had a particularly severe impact on women-headed households, the global incidence of which grew significantly in the closing decades of the Twentieth Century (Chant 2013). Attempts to redress the gender-based inequities in access to secure urban housing have included one-off project- and programme-level approaches such as the issue of title deeds for public housing only in the name of women household members. However, such one-off strategies do little to create sustainable structural transformation out of gender-biased inequalities in access to urban housing and asset accumulation (Moser 2017).

**Climate Change & Geophysical Hazards**

The early decades of the 21st Century have seen the dramatic and tragic impacts of global climate change, particularly on low-income group settlements. Strategies to minimise the severity of the world’s climates, notably global heating through the emission of ‘greenhouse’ gases,9 have been addressed politically by international bodies and agreements, with varying (limited) degrees of success.10 However, it seems extremely unlikely that any international political or technical innovations that must be embraced globally will reduce the vulnerability of urban settlements to the impacts of global climate change before the end of the 21st Century (Brown 2021), but they can be mitigated by informed planning for enhanced resilience to hazards, thereby reducing risks of disaster11 from extreme climatic conditions such as flooding and drought, storms and high winds, and geophysical hazards such as earthquakes, tsunamis and landslides (UN-Habitat 2011).

The impact of climate change hazards, such as seasonal rains that have occasional unpredictable extremes, should be mitigated by judicious planning and infrastructure engineering that take into account seasonal occurrences and the possibility of unexpected peaks, without radically increasing the capital cost or maintenance expenditure in use. Long-term environmental changes, such as sea level rise, or extended periods of drought and/or extreme air temperature increases (heatwaves) can be addressed by informed good planning and design practice. In many cities, long-term climate change can have significant effects at a regional level that impact directly upon urban low-income housing. For instance, sustained periods of drought or extensive flooding can disrupt agricultural production in rural areas, occasioning increased migration to towns and cities by ex-farmers seeking shelter and employment in urban low-income group (informal) settlements.

Local government administrations in towns and cities in regions prone to geophysical hazards, such as earthquakes, landslides and tsunamis are aware of the potential for disaster and in most cases include mitigation measures in their planning and building procedures and legislation (World Bank 2015). However, urban low-income group housing areas and informal settlements frequently are not protected by such official safety measures, rendering them the most prone to disasters. In these situations, therefore, there is a need to ensure that appropriate precautions are taken in the location and planning of areas designated for low-income group incremental housing development, and that appropriate advice and technical support is given to the design and construction of dwellings and community buildings; also to the provision of such measures as safe escape routes and buildings of permanent construction that can act as storm shelters in the case of flooding by surges, tsunamis and cyclones in coastal towns and cities. It is important that such measures are designed and implemented by local authorities in close collaboration with the communities that are in potential danger, also that reliable communication and early-warning procedures are in place and well understood.
The lessons learnt from geophysical hazards and those originating from extreme climatic occurrences such as riparian flooding caused by storms, hurricanes and cyclones or glacial melt water from unusually high temperatures in mountainous regions that may be a considerable distance from the urban area of impact. Such occurrences are not uncommon in parts of the Andes in South America. As well as causing hazards from surface run-off flooding heavy and persistent rainfall can cause ground water saturation that can precipitate landslides in steeply inclined topography, which, in many cities are the sites of informal settlements where the lowest-income group households live and work.

Conditions of severe drought occasioned by acute and sustained rise in air temperature (heatwave), compounded by the failure of seasonal rainfall, can have a disastrous impact on water supplies at a regional level, affecting urban and rural communities alike. There are no particular risks from periods of drought that distinguish urban low-income group neighbourhoods and communities as more vulnerable than the rest of the city except their poverty and customary lack of access to the decision-making power structures that control the distribution of resources, such as potable water. Hence, the importance of recasting urban decision-making and managerial structures for low-income groups.

Building research has established norms and standards for earthquake-proof construction that is available internationally and is incorporated in building codes and regulations in earthquake-prone regions universally (World Bank 2015). It is very important that good safety practices and techniques for neighbourhood planning and the construction of dwellings are conveyed as part of the technical support to incremental housing development processes in locations that are prone to earthquakes and other recurrent geophysical hazards. In many parts of the world, experience has shown that traditional, indigenous construction practices often result in buildings that are resistant to such hazards, even when transferred to the construction of urban housing (Audefroy 2011). However, traditional (rural) construction in many cities is classified as ‘impermanent’ and disallowed in municipal building bylaws that need repeal and revision, including introducing new technical and administrative capacities, which often are resisted politically due to lethargy, the lack of awareness of the need for them, and/or the inability to commit resources for them.

The latter half of the twentieth Century and the first decades of the twenty first demonstrated the impressive capacity of governments and international aid efforts to provide financial and technical emergency support to the first stages of recovery from geophysical disasters. Important though the initial emergency assistance is, once it is exhausted and the aid workers leave the scene of disaster, the affected families and enterprises are often left to recover and remake their lives on their own, unaided. There has been a move to draw attention to the importance of supporting the processes of initiating and sustaining the medium- to long-term development of the livelihoods, economies and environments of people and communities who have suffered the trauma of disaster (Lloyd-Jones 2006). By taking this a step even further than the slogan ‘Build back better’, the social and physical trauma of a disaster can be perceived as a catalyst for change and development. It gets people and communities ‘out of the rut’ of every-day habits and obligations, enabling them to look ahead with greater ambition and courage than they could previously muster.

In summary, low-income households and communities are more prone to the impacts of climate change and geophysical hazards than higher urban income groups due to poverty that tends to force them to inhabit the most vulnerable locations, and because their economic and locational circumstances have been overlooked or not given sufficient consideration in the administration of risk-mitigating development control measures. Where disaster has struck, there is significant evidence that, when appropriate support has been provided to enable low-income group households and communities to manage their own recovery and reconstruction of their neighbourhoods and dwellings: a platform has often been created, from which further, long-term development can take off and the wider implications of global climate change become more widely understood, to the benefit of disaster survivors and the wider urban community at large (Archer and Boonyabancha 2011).
Energy conservation and environmental sustainability

The production and maintenance of urban housing and domestic infrastructure of all classes has been a major consumer of energy that almost universally has been generated by the consumption of non-renewable, finite, natural sources.

The UN World Commission on Environment and Development (WCED) commonly known as the ‘Brundtland Commission convened in 1983 published its report on Sustainable Development, ‘Our Common Future’ in 1987. This, together with the outcome of the United Nations Conference on Environment and Development (UNCED), the ‘Earth Summit’ held in Rio de Janeiro, Brazil in 1992, the ‘Rio Declaration on Environment and Development’, ‘Agenda 21’ brought the attention of governments to their dependence on natural resources for the usable supply of energy, notably oil, coal, combustible natural gas and forest products, and the rate at which they were being depleted, threatening the global environment, and the very existence of humanity and all other forms of life on earth and calling for fundamental changes in the prevailing economic and development paradigms (Atkinson 2009).

The predominant concerns of urban energy conservation and environmental sustainability fall into two broad sets of issues: the ‘Green’ and ‘Brown’ Agendas:

The ‘Brown Agenda’ largely addresses issues that are traditionally, and correctly managed at the local (project) level, entailing no less nor more than good urban development planning and housing policy implementation and management practices. The urban ‘Green Agenda’ for energy conservation and environmental sustainability embraces the conservation of energy and natural resources through the management of processes of both the production and consumption of goods and services, including housing and domestic infrastructure. In many countries these require legislative and administrative action at the city, national or regional level as well as operational controls at the local level, for example on technical issues of housing construction and domestic energy consumption.

Perhaps the most publicised of such problems is that of the private automobile, now well understood to be a major contributor to urban environmental degradation through air pollution and carbon dioxide emission and the abundant consumption of fossil fuel – petroleum. However, in many low-density cities, private motor vehicles are the only practicable means of transport (Atkinson 2009). This and other energy-consuming urban services and infrastructure, such as street lighting, call for the need for greater attention to urban form and the need for compact cities, rather than low-density suburban extensions that proliferated towards the end of the 20th Century (Jenks and Burgess, 2000).

Any efficient, equitable and sustainable approach to the production, maintenance and management of urban housing, however, must simultaneously embrace both the ‘Green’ and ‘Brown’ agendas (Allen and You 2002).

Many examples of integrating the roles of macro- and micro-levels of authority and action in linking both Agendas and the production and maintenance of affordable housing exist, such as community-managed solid waste and recycling administered by the Santo André Municipal Environmental Sanitation Department in Greater São Paulo, Brazil and the long-term, comprehensive, integrated ‘Sustainable Chennai Project’ in India that demonstrate multiple ways in which local action can effectively address the challenges of environmentally sustainable housing and urban development, whilst conserving global energy sources (Allen and You 2002).

In conclusion: lessons learned for the way ahead into the ‘New Normal’

The principal lessons on policies and implementation strategies for the production and management of low-income group housing in towns and cities in the global South that have evolved over the last half-century (Wakely 2018) have been catalysed and refined by the Covid-19 pandemic 2020–21 and the emerging existential concerns occasioned by global heating and climate change.

Awareness of the pending impacts of global climate change to a large extent, build upon the outcome of the environmental sustainability movement, which was launched at the UNCED (‘The Earth Summit’) in Rio de Janeiro, Brazil, in 1992, ‘Agenda 21’ and ‘Local Agenda 21’ that introduced the distinction and interdependencies between the ‘Green’ and ‘Brown’ Agendas (Allen and You 2002; Dodds, 2011).

Most immediately, in the interests of public health, in particular through the airborne and tactile transfer of viral pathogens, such as Covid-19, the physical form of urban low-income group dwellings and neighbourhoods will have to be developed at lower densities than have hitherto been imposed, solely on the grounds of capital and recurrent costs in use.
Inevitably, this will incur higher capital costs of land and off-plot infrastructure works and house construction for which many households will not be able or willing to pay. Full infrastructure costs may therefore have to be subsidised by the relevant public sector agencies, through legislative changes and public land management practices. As it is unlikely that standards of space within dwellings will be able to be governed by building-control legislation (and policing), health considerations, such as viral infections within households, should constitute a significant component of participatory support-education in urban housing development processes (Wakely and Mataraachchi, 2021). So ubiquitous have been the hazards and risks incurred by the Covid-19 pandemic that they will live on in urban and rural ‘folklore’, even of generations that did not experience it, as have those of preceding plagues, epidemics and recurrent geophysical disasters, thus becoming accepted as common-sense practice in the planning and management of neighbourhoods and dwellings.

In addition to environmental health considerations, increased areas of public open space and neighbourhood facilities will be required to allow for community recreation and casual social interaction between otherwise housebound people, notably women, also local sports facilities to foster mental health and social conviviality, particularly of young adults and children and gathering-space to enable events related to community activities such as collective community governance. As a contribution to global heating reduction, where climatically and topographically possible, the planting and nurture of trees and other CO₂-absorbing vegetation needs to be encouraged and supported. In addition, in heatwave conditions, vegetation of all sorts help to create cool micro-climatic pockets comfortably below the high ambient air temperature (Lewis 2021).

In the era of climate change mitigation, there is likely to be a growing need for increased urban food (vegetables and fruit) production, particularly in low-income group settlements, to substitute for the import of foodstuffs by households with familial rural connections (in the traditional ‘home village’, prevalent in Sub-Saharan African countries) due to the reduced availability of motorised transport or its increased cost. Therefore, planning for low-income group housing must include space for this, which would benefit from neighbourhood centralised cultivation areas (similar to traditional urban ‘allotments’ in the UK), thereby also contributing to local environmental cooling, as well as providing a vehicle for enhancing community solidarity and the management of shared resources by individual plot-holders, such as irrigation water, some agricultural/gardening tools and security against theft.

Other geophysical hazards resulting from global heating and sustained climate change, such as flooding due to rising sea levels in coastal areas, landslides on steep slopes and other irregular or abnormal weather surges are locationally specific and local responses to them are becoming increasingly well understood (World Bank 2015). However, it is important that this knowledge is adequately communicated in all potentially endangered low-income group settlements that customarily are not de facto subject to local planning and building regulations.

On another plane, towns and cities and the areas and activities that they embrace, including formal and informal low-income group settlements, are net producers of greenhouse gases, through the production and use of engineering and building products (Allen and You 2002) and, most significantly, the preponderance of motor vehicles. Therefore, it is environmentally important to consider the location of urban low-income settlements in relation to places of appropriate employment and non-motorised (public) transport, particularly in regard to decentralised/dispersed work patterns in urban areas, occasioned by newly rationalised concerns for public health safety.

At a global level, there is strong evidence of the need for greater international collaboration in addressing the mitigation of climate change, as is vehemently argued by Gordon Brown, the former UK Prime Minister, who points to the ineffectiveness of recent inter-governmental conferences, reports and other such events (Brown 2021).

Since the late 1980s, there has been an international ‘globalisation’ of low-income group community organisations and partnerships with local government, preoccupied with affordable housing and environmental issues in some 200 cities in over 50 countries in Asia, Africa and Latin America.

An important function of all such global exchange movements in establishing and maintaining the sustainability of the ‘New Normal’ urban housing policies and implementation programmes must be the strategic development of operational capacity building, embracing all three components: 1) Human Resource Development (skill training); 2) Organisational Development (planning and management) and 3) Institutional Development (governance and legislation) (Wakely 2018, pp. 145–149)
Notes

1. UN-Habitat, 2003
2. Recognition of the most efficient/effective (lowest) level of decision-making and authority.
3. Notably: SDG Goal 11 to: ‘Make cities and human settlements inclusive, safe, resilient and sustainable’
   Target 1 of which is: ‘By 2030, ensure access for all to adequate, safe and affordable housing and basic services, and upgrade slums’, [respecting and applying the post-Coronavirus tenets of ‘social-distancing’].
4. See: ‘Nature’ magazine, UK, October 2016
5. See also: UN-Habitat/UNDP/World Bank ‘Urban Management Programme’ (UMP) 1989–2006 ‘City Consultations’, which had identical objectives and similar procedures to CDSs.
6. In small sites, where possible linked to other low-income group housing with which its occupants can join local community assets, governance and infrastructure management responsibilities (not vast ‘conventional’ public housing estates, as were constructed in the past in many cities (Wakely 2018, p. 99).
7. On a different level, the extent of institutional discrimination against whole ethnic groups, such as the Uyghur people in Xinyang province of North West China and the Rohingya ethnic group in Rakhine state in North West Myanmar, emerged into public consciousness in the second and third decades of the 21st Century, together with the success of the ‘Black Lives Matter’ (BLM) campaign and movement, in developed countries of the global North.
8. Legislation related to definitions of ‘head of household’, ‘entitlement to inheritance of property’; registration and property tax procedures, etc.
9. Water vapour, carbon dioxide, methane, nitrous oxide, ozone, fluorocarbons, of which industrially emitted carbon dioxide -CO₂ has the greatest negative impact.
10. See: proceedings of the UN Intergovernmental Panel on Climate Change (IPCC) and the reports of the UN International Framework Convention on Climate Change (UNFCCC) and the various international conferences and Subsidiary Body meetings and Kyoto Protocol 1997 and the Paris Accord 2015.
11. The Centre for Research on the Epidemiology of Disasters (CRED) defines disaster as “a situation or event, which overwhelms local capacity (10 or more people killed; 100 people affected; loss and/or significant damage to property).
12. It is estimated that ‘by 2050 as many as 350–600 million people in Africa could be affected by drought’ (UN-Habitat 2011)
13. E.g. Customary prescriptive development control legislation needs to be recast by prescriptive (good-practice) standards.
14. First coined by UNICEF in reference to international relief and recovery efforts following the S & SE Asian tsunami, 2004/S.
15. The ‘Brundtland Report’ was made famous by defining ‘sustainable development’ as: ‘development that meets the needs of the present without compromising the ability of future generations to meet their own needs’.
16. ‘An action Agenda for the 21st Century’ for the UN, other multilateral organisations, and individual governments around the world to be executed at local, national, and global levels. Agenda 21 and its subsidiary report -Local Agenda 21- were popularised by the dictum: ‘Think globally and act locally’.
17. For instance, promotion of the use of building materials from renewable (or recycled) and indigenous sources and limiting those that consume extensive energy in their production or transport, such as steel and cement, the production of which also generates high levels of atmospheric pollution, as do polycarbonate materials that release excessive greenhouse gases into the earth’s atmosphere.
18. For example, support to the upgrading of dwellings and services in the Oshakati Human Settlements Improvement Programme in Namibia, was conditional on the planting of shade trees on each plot in low-income group housing areas as a social/climatic amenity and to stabilise the desertic soil, which, coincidentally, also increased the safe capture of CO₂, thereby contributing to the local amelioration of global heating on the fringes of the Kalahari Desert (Wakely 2018, p.74–83)
19. Through the evaporation of liquid, on the surface of leaves, generated by the botanical process of transpiration.
20. An excellent example of such communal vegetable- and fruit-growing plots was in the informal settlements of Sheikh Khoder and Herat Shahidin, in Aleppo, Syria, prior to the 2011–21 civil war.
21. In many cities long-term climate change can have significant effects at a regional level that impact directly upon urban low-income housing. For instance, sustained periods of drought or extensive flooding can disrupt agricultural production in rural areas, occasioning increased migration to towns and cities by ex-farmers seeking shelter and employment in urban low-income group (informal) settlements.
22. E.g. The UN World Commission on Environment and Development (WCED), 1983; The United Nations Conference on Environment and Development -UNCED ‘Earth Summit’, 1972, (The ‘Rio Declaration on Environment and D; The UN Framework Convention on Climate Change (‘The Paris Agreement’), 2015.
23. E.g. Habitat International Coalition (HIC),the Asian Coalition for Housing Rights (ACHR) and Shack/Slum Dwellers International (SDI).

Disclosure statement
No potential conflict of interest was reported by the author(s).
Notes on contributor

Patrick Wakely is Professor Emeritus of Urban Development in the University of London and former Director of the Development Planning Unit (DPU), University College London (UCL). An architect (AA Dipl, London), he has 40 years of experience of research, consultancy and teaching in participatory housing, sustainable urban development and planning, on which he has worked in more than twenty developing countries.

References

Allen A, You N 2002. “sustainable urbanisation: bridging the green and brown agendas”, Development Planning Unit (DPU), University College London (UCL), London (UK).

Archer D, Boonyabancha S 2011 Seeing a disaster as an opportunity: harnessing the energy of disaster survivors for change.Environment & Urbanization Sage.London (UK) Vol. 23.No.2

Atkinson A. 2009. Climate change policy, energy and cities. in: international journal of urban sustainable development. Vol. 1. Abingdon (UK & New York, USA): Taylor and Francis; p. Nos.1–2.

Audefroy JF. 2011. Haiti: post earthquake lessons learned from traditional construction. in: environment & urbanization. vol. 23. London (uk): sage.

beall j, crankshaw o, parnell S. 2002. “uniting a divided city: governance and social exclusion in Johannesburg”. London (UK): Earthscan.

Brown G. 2021. “seven ways to change the world”. New York (USA: London, UK): Simon and Schuster.

Buckley RM, Kallergis A, Wainer L. 2016. Addressing the Housing Challenge: avoiding the Ozymandias Syndrome. In: Environment & Urbanization. Vol. 28. London (UK): Sage.

Chant S. 2013. Cities through a ‘gender lens’: a golden ‘urban age’ for women in the Global South. In: Environment & Urbanization. Vol. 25. London (UK): Sage.

Cities Alliance. 2006. “guide to city development strategies: improving Urban Performance”. Cities Alliance (Washington DC, USA).

Freire M, Stren R. eds. 2001. The challenge of urban government: policies and practices. Washington DC (USA): World Bank Institute Development Studies.

Fiori J, Ramirez R. 1992. Notes on the Self-Help Housing Critique. In: Mathéy K, editor. ‘Beyond Self-Help Housing’. London (U. K): Mansell; p. 23–31.

Gilbert A. 2008. Slums, tenants and home-ownership: on blind- ness to the obvious. in: international development planning review. vol. 30. Liverpool (uk).

Gupte J, Mitlin D. 2021. COVID-19: what is not being addressed. In: Environment & Urbanization. Vol. 33. London (UK): Sage.

Hardoy J, Satterthwaite. 1989. “squatter citizen”. London (UK): Earthscan.

Jenks M, Burgess R. 2000 (eds). “compact cities. sustainable urban forms for developing countries”. London (UK): Spon Press.

Kumar S. 2011. “The research–policy dialectic: a critical reflection on the virility of landlord–tenant research and the impotence of rental housing policy formulation in the urban Global South”. Vol. 15. London (UK). p. 662–673.

Lewis S 2021 “The world risks getting too hot for human life”, The Guardian Journal 2021 Jul 2, London (UK).

Lloyd-Jones T. 2006. “mind the gap! post-disaster reconstruction and the Transition from Humanitarian Relief”. London (UK): Max Lock Centre, University of Westminster/RICS.

Marcuse P. 1992. Why Conventional Self-Help Projects Won't Work. In: Mathéy K, editor. ‘Beyond Self-Help Housing’. London (UK): Mansell; p. 15–21.

McLeod R, Mullard K 2006. “Introduction: bridging the Finance Gap in Housing and Infrastructure” ITDG Publishing, Rugby (UK).

Moser CON. 2016. Towards a nexus linking gender assets and transformational pathways in just cities. In: Moser CON, editor. Gender, Asset Accumulation and Just Cities: pathways to Transformation. Abingdon; p. Routledge.

Moser CON. 2017. Gender transformation in a new global urban agenda: challenges for habitat iii and beyond. In: Environment & Urbanization. Vol. 29. London (UK): Sage.

Patel S, Mitlin D. 2004. The work of sparc, the national slum dwellers federation and mahila milan. In: Mitlin D, Satterthwaite, editors. ‘empowering squatter citizen: the roles of local governments and civil society in reducing urban poverty’. London (UK): Earthscan.

Rakodi C. 2016. Addressing gendered inequalities in access to land and housing. In: Moser CON, editor. Gender, Asset Accumulation and Just Cities: pathways to Transformation . Abingdon (UK & New York, USA): Routledge.

Séjourné M 2012 “Inhabitants’ daily practices to obtain legal status for their homes and security of tenure: Egypt”, chapter in Ababsa. Popular Housing and Urban Land Tenure in the Middle East, The American University in Cairo Press, USA.

UN-Habitat, 2003, “The Challenge of Slums: Global Report on Human Settlements 2003”, Earthscan, London (UK).

UN-Habitat. 2011. Climate change adaptation [and mitigation] responses in urban areas. In: (chapters 5, 6) in ‘cities and climate change: global report on human settlements. London (UK): Earthscan.

UN-Habitat, 2016 “Habitat III New Urban Agenda”,http://habitat3.org/wp-content/uploads/N1639668-English.pdf (accessed Jan 2017).

Wakely P. 2018. “housing in developing cities: experience and lessons”. New York (USA & Abingdon, UK): Routledge, Taylor and Francis.

Wakely P. 2020. Partnership: a strategic paradigm for the production & management of affordable housing & sustainable urban development. In: Environment & Urbanization. Vol. 12. London (UK): Sage.

Wakely P, Martaarachchi S. 2021. Sustainable community governance and management of urban housing and local environment. In: Town Planning Review. Vol. 92. Liverpool (UK): Liverpool University Press.

World Bank, 1993, “housing: enabling markets to work”, World Bank Policy Paper, Washington DC (USA)

World Bank. 2015. “building regulation for resilience: managing risks for safer cities”. Washington DC (USA):World Bank.