SUSTAINABLE AFRICAN CITIES

Debating Current Challenges and Exploring Future Pathways

3 – 6 July 2018

Ghana Academy of Arts and Sciences, Accra, Ghana

CONFERENCE REPORT

Promoting Excellence in Knowledge
GHANA ACADEMY OF ARTS AND SCIENCES

Leopoldina
Nationale Akademie
der Wissenschaften

NASAC

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ACADEMY OF SCIENCE OF SOUTH AFRICA

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List of abbreviations

AIDS	Acquired immune deficiency syndrome
ASSAf	Academy of Science of South Africa
BMBF	Bundesministerium für Bildung und Forschung (German Federal Ministry of Education and Research)
COTVET	Council for Technical and Vocational Education and Training (Ghanaian institution)
CSIR	Council for Scientific and Industrial Research
ECOWAS	Economic Community of West African States
EU	European Union
FGAAS	Fellow of the Ghana Academy of Arts and Sciences
GAAS	Ghana Academy of Arts and Sciences
GDP	Gross domestic product
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (German Corporation for International Cooperation)
G20	Group of 20 most industrialized countries
HIV	Human immunodeficiency virus
IAP	InterAcademy Partnership
ICLEI	Local Governments for Sustainability (leading global network of 1,500+ cities, towns and regions committed to building a sustainable future)
ICT	Information and communication technology
MDGs	Millennium Development Goals
NASAC	Network of African Science Academies
OECD	Organisation for Economic Co-operation and Development
SADC	Southern African Development Community
SDGs	Sustainable Development Goals
UNESCO	United Nations Education, Scientific and Cultural Organization

TUESDAY, 3 JULY 2018
INFORMAL CONFERENCE OPENING

Professor Henry N.A. Wellington
(FGAAS; Chairman of the Local Planning Committee, GAAS)

The Chair of the local organizing committee and the master of ceremonies for the conference, Professor Henry N.A. Wellington, welcomed all participants present at the start of the informal opening of the conference at 7.00 p.m. on Tuesday, 3 July 2018. He mentioned that the conference was very important to the Ghana Academy of Arts and Sciences (GAAS) because it was going to serve as a launch pad for the activities of the academy geared towards achieving the 17 Sustainable Development Goals (SDGs). He then invited Mrs Jackie Olang-Kado, the Executive Director of the Network of African Science Academies (NASAC), to give her welcome message.

Mrs Jackie Olang-Kado
(Executive Director, NASAC)

On her part, Mrs Olang-Kado expressed pride that NASAC was associated with the conference as GAAS was one of the member academies. She intimated that linking science to development was very important and critical in achieving the SDGs. She mentioned that bringing on board young scientists was very important to NASAC, hence the formation

of the Leading Integrated Research on Africa, which had a key focus on sustainable African cities. She was also delighted that the GAAS had been able to build a magnificent office complex. She wished everyone fruitful deliberations at the conference. Professor Wellington then invited Professor Volker ter Meulen, the past president of Leopoldina and president of the InterAcademy Partnership (IAP), to offer his welcome message as well.

Professor Volker ter Meulen
(Past President of Leopoldina and President of IAP)

Professor ter Meulen started on a personal note by saying that the deliberations during the conference were going to be new for him as his background was in medicine. He looked forward to a period of fruitful discussions. He welcomed participants on behalf of the German National Academy of Sciences Leopoldina, one of the partners involved in organizing the conference. He also acknowledged the contribution of the other partners such as NASAC and the Academy of Science of South Africa (ASSAf). He added that the challenge of urbanization was the task that conference participants were going to be confronted with going into the future. He looked forward to the sharing of new ideas on the subject.

FIRST DAY: WEDNESDAY, 4 JULY 2018
OFFICIAL OPENING AND WELCOME REMARKS
(Chair: Professor Aba Bentil Andam, President of GAAS)

Professor Henry N.A. Wellington
(FGAAS; Chairman of the Local Planning Committee, GAAS)

The official opening of the conference started with Professor Wellington introducing himself as the master of ceremonies. He welcomed participants on behalf of the local organizing committee by offering traditional Ghanaian 'Akwaaba' greetings. He likened the conference to a small African Union or United Nations summit by virtue of the large number of countries (14) represented. He offered the Chair of the conference a collection of miniature flags of the countries represented at it as symbolic of her role. He then formally introduced the conference Chair, Professor Aba Bentil Andam, who was president of the Ghana Academy of Arts and Sciences and a distinguished chartered physicist.

Chairman's Opening Remarks
(Professor Aba Bentil Andam, President of GAAS)

Professor Bentil Andam thanked the local organizing committee for the honour given to her. She then said an opening prayer for the conference, after which she invited Professor Sefah-Dedeh to formally welcome the conference participants.

Professor Samuel Sefa-Dedeh
(Fellow and Vice President, Sciences Section, GAAS)

Professor Sefa-Dedeh welcomed all participants, especially the international delegates, on behalf of the president and the entire membership of the GAAS. He went on to say that the GAAS had a very special relationship with the German National Academy of Sciences Leopoldina. This relationship had started in November 2009 with a two-day workshop held at Fumesua in Kumasi, Ghana, on the theme 'North-South Cooperation in Health Research', with about 50 people participating. The second initiative was a collaborative work between the Ghanaian and German academies and the NASAC in 2012, which resulted in a symposium organized on 'The Changing Patterns of Health Problems in Sub-Saharan Africa; Impact of Communicable and Non-Communicable Diseases', held in Hamburg, Germany. This was followed by the signing of a funding transfer agreement in 2015 for the launch of a health booklet emanating from the 2012 workshop and the launch of the conference on 'Sustainable African Cities'. He acknowledged the German National Academy of

Sciences as the funding partner for the conference. He listed the other institutions in the partnership as the ASSAf and NASAC. He opined that the rate of urban growth brought with it challenges and opportunities. He hoped the conference would be a platform for scientists from different countries to share ideas on approaches to the sustainable development of cities, define roles for science academies and identify strategies that would accelerate the achievement of sustainability. He invited first-time visitors to Ghana to take the opportunity to see the country beyond Accra.

Professor Volker ter Meulen
(Past President of Leopoldina and President of IAP)

Professor ter Meulen started on a personal note by saying he had closely followed the discussions about the GAAS building since the first time he was in Ghana about 15 years previously. He congratulated GAAS for putting up a magnificent edifice. He thanked them for their collaboration in the lead-up to the conference. He also thanked the German Government for generously supporting the relationship between the Leopoldina and NASAC. He thanked NASAC, of whose members the lead organizers of the conference were the GAAS and the ASSAf. He further thanked the German Federal Ministry of Education and Research (Bundesministerium für Bildung und Forschung, BMBF) for providing support to the academies since 2011 on deliberations over issues important to Africa. He hoped that the conference would open up new perspectives for the academies involved. He mentioned that the creation of sustainable cities was not only an African challenge but a global one. As president of the IAP, which brought together over 130 global academies of science, medicine and engineering, he was very much aware that many of the academies around the world were trying to address this challenge by working on evidence-based advice for policy-making. He hoped that fruitful collaborations would develop among participants during the conference.

Ambassador Christoph Retzlaff
(Embassy of the Federal Republic of Germany to the Republic of Ghana)

Ambassador Retzlaff expressed pleasure about the partnership between the German and Ghanaian science academies. He hoped that the outcome of the conference would help to inform policy on urbanization in Africa. He opined that urbanization

in Africa and Asia was one of the defining trends in the twenty-first century and had some of the most profound social, economic and environmental effects. He admitted, however, that no country had developed without this shift in population to the urban area. Africa had the smallest proportion of urban dwellers (32%) but the highest number of slum dwellers (65%) and the fastest rate of urbanization. Africa already had seven megacities, but the fastest rate of urbanization was occurring in medium-sized cities which received less attention. This situation had been compounded by the demographic 'youth bulge'. He expressed concern that the situation of large numbers of unemployed youth could be socially destabilizing. Sustainable management of cities hence was crucial to achieving the 2030 and 2063 development goals. Cities were increasingly collaborating among themselves but needed to be well-resourced to achieve these goals. He enumerated four key areas of concern that city managers needed to pay attention to: informality, the urban–rural continuum, basic services and urban governance. He mentioned that the German Government was assisting on some of these issues that emanated from rapid urbanization such as sustainable and affordable power supply, environmentally friendly transport and good financial governance. In the framework of the G20 Compact with Africa, the German Government was providing the Ghanaian Government with an additional €100 million in this regard. He hoped to see more of such events that brought together people from academia, politics and business.

Mr Tirso Dos Santos
(UNESCO, Accra)

Mr Dos Santos started by saying that 3.9 billion people over the world lived in cities. In 2050 it was expected that cities would host 2.5 billion more urban dwellers. UNESCO was committed to enhancing the sustainability of cities through policy advice, technical assistance and capacity building by drawing on its experience. UNESCO was at the forefront of the implementation of the Urban Agenda and the 2030 Agenda. In the 2030 Agenda, the international community for the first time recognized the importance of culture to development. It was clear in SDG 11 on sustainable cities that culture had an important role to play in realizing sustainable urban development.

He mentioned that the cultural and creative industries were among the fastest growing in the world, employing about 30 million people. Culture was a powerful tool for reconciliation and the creation of peaceful societies. Intangible cultural heritage represented a form of resilience and knowledge for addressing key challenges including poverty,

education and climate change. Culture could serve as a key resource for city reconstruction and recovery while promoting community ownership, social inclusion and economic recovery. Cultural heritage and creativity needed to be embedded in integrated strategies that relied on both people-centred and place-centred approaches. The human and social sciences also had a crucial role to play in managing sustainable cities. They were needed for evidence-based policy-making, managing the profound social transformation envisaged and the commitment of the global agenda to leave no one behind.

Going further, he mentioned that migration, both internal and international, was noted to be transforming cities worldwide and changing the socio-economic fabric of cities including the health and well-being of its residents. UNESCO was working with national and local governments, civil society and the research community to develop policies, research initiatives and operational projects such as rejuvenating public spaces, sports and encouraging large-scale urban–rural migration that would build resilient and healthy societies.

He noted further that lifelong learning was a critical resource in achieving social and economic advancement as recognized in SDG 4. Science was key to providing solutions in urban settings by providing resilience both in water and sanitation provision and in disaster risk reduction. UNESCO was at the forefront of scientific and technological development, and it supported cities in growing in a sustainable manner through its hydrological programme and disaster risk reduction team. The SDGs were about '5Ps': people, planet, prosperity, peace and partnership. He hoped that the African scientists would partner with their European colleagues to provide the solutions to the urban challenges facing Africa, and vice versa.

Professor George Gyan-Baffour
(Minister for Planning, Ghana)

Professor Gyan-Baffour stated that the Ghanaian Government had fully embraced the SDGs and was committed to building and maintaining sustainable cities and communities. He said that the conference was in line with the government's attempt to domesticate the SDGs in line with its development agenda. SDG 11 on sustainable cities was related to all the other SDGs and of key relevance to Africa. The concept of sustainable cities was not new to Ghana but progress on its achievement had been slow. It was estimated that in the major towns and cities in Ghana, 22% of solid waste and 97% of liquid waste were not properly disposed of, 37% of city dwellers did not have access to potable water and 63% did not

have access to toilets. The housing deficit had been estimated by the UN-Habitat at 1.7 million housing units (as per 2015). It was in the light of such challenges that the President's Coordinated Programme for Economic and Social Development Policy (2017–2024), the development agenda of Ghana, focused on four areas aimed at building sustainable, spatially balanced and orderly developed human settlements and providing adequate, safe, secure and affordable, social housing and private housing solutions.

He stated further that to ensure the effective use of land, especially in the cities, the government was implementing the Land-use and Spatial Planning Act 2016 (Act 925) and the accompanying National Spatial Planning Framework. The government was determined to establish special growth centres and networks with spatially targeted interventions. The urban networks identified so far were Sekondi-Takoradi, Cape Coast, Tamale, Sunyani, North-East, Aflao and Wa. Also, the five-tier hierarchy of urban networks, namely villages, towns, secondary cities, cities and city-regions, would be implemented in addition to structured metropolitan city-regions around Accra, Kumasi and other metropolitan areas. A district capital and small-town improvement programme was also going to be implemented with a focus on supporting district assemblies to plan for infrastructure provision. Security and disaster prevention were being mainstreamed into urban planning. The government was poised to construct storm drains in Accra and other cities to address the reccurrence of floods. A national hydrology authority was being established to develop long-term solutions to flooding and to protect coastlines. There were also policy interventions to upgrade inner cities, Zongo settlements and slums, and to prevent the occurrence of new areas of poverty.

KEYNOTE SPEECH AND DISCUSSION

Keynote Speech: The Creation of Sustainable Cities for African Citizens
(Professor Edgar Pieterse, African Centre for Cities, University of Cape Town, South Africa)

Professor Pieterse started by saying that, in regard to sustainable cities, scholars and the academy were lagging behind. He hoped to leave the audience with how they could interrogate a different set of relationships between real-world experimentations towards sustainability and the job of basic, co-produced or translational research. It was time for the academy to spatialize thinking about how research and innovation happened and not assume that the national level alone should be the unit of analysis. The time had come for city-based systems to be the 'motto' of national academies. There was the need to differentiate between the different regions on the continent. East and West Africa were going to have the largest increases in urban growth within the next 35 years. Paying attention to these differentials was critical.

The different dynamics that were unfolding created a multiplicity of typologies around diverse urbanization trajectories. There was the combined effect of high fertility rates and the low gross domestic product (GDP) per capita. There was the predominance of informality in terms of social reproduction and how and where people lived and in terms of jobs. Over the past 40 years there had been a lack of investment in the built environment. Even more critical was the tendency of African governments to take on board any type of investment that came along. Very often these investments locked in unsustainable forms of urban reproduction. Across the various regions of the continent one could see urban outcomes characterized by dualism: formal–informal, rich–poor and splintered spatial forms and functions. There was the multiplicity of different cities working with different logics in the same urban conurbation. There was a lack of economic diversity and low levels of formal job creation and rising inequality. Few jobs were being created in the primary and secondary sectors; the only ones being created were in the services sector. This reinforced the skewed and lopsided urban form which had generated the current discourse. The effect of these had been the increase in slums.

In the past decade there had been a policy shift, as could be seen in Agenda 2063. There was recognition of the challenges of urbanization and that cities were the hubs of cultural and economic activities. Both access to the urban area and affordability were crucial. Research on sustainable urbanization had not kept pace with developments in the field. That notwithstanding, there had been some effort in this regard such as the African Universities Research Association, the Sustainable Urbanization Group, the African Research Initiative and the Association of African Planning Schools which had 55 members in 21 African countries. There had also been other large-scale donor-funded research projects. The problem was the disconnect between research and national urban policies. The key issue here was how to reposition research to influence the new national urban policies. Often missing in these policies were infrastructure investment programmes.

Professor Pieterse remarked that he was weary of the theoretical traps inherent in the policy frames which presupposed that it was possible to draw a balance between environmental, economic and social development in some form. The Urban Sustainability Working Group of the National Science Foundation in the United States defined sustainability not on the basis of the idea of a balance but by recognizing conflicting economic and political agendas. They proposed an approach that called for sustaining lives and livelihoods instead of sustaining development. The contexts of African urbanization were not the same as the historical conditions that informed the Brundtland definition. There was need for a stronger language on trade-offs because of the inherited contexts of Africa. The current extractive economic system was a direct cause of the current social and environmental challenges. Tinkering with the system would not solve the problem. What was needed was something much more transformational.

He proposed a working frame of four parts: first, the notion of environmental sustainability enabled the pivoting of the discussion towards green or sustainable economy; secondly, social inclusion could be connected to the challenge of basic services; thirdly, employment; and finally, institutional competence.

In concluding, Professor Pieterse called for radical ways of thinking about futures. If affordability and inclusivity were the absolute norms for building sustainable African cities, there was the need to think in more ecliptic ways on what the adaptive African city might be. Also key was paying attention to disruptive technological impact. Further to that, there was need for localization and regional transitions. Three infrastructural foci were required at the regional scale: energy, mobility, and information and communication technology (ICT). Academies and

national science councils needed to begin looking at regional and city-wide scientific systems.

Panel Discussion
(Moderator: Mr Kwabena Agyepong, Executive Director, Ghana Institution of Engineers)

The moderator started the discussion by asking for a hierarchy of options that professionals in the built environment in Ghana could execute to achieve sustainable cities. Mrs Jackie Olang-Kado from NASAC asked what types of investment were needed to attain smart cities and why there was the emphasis on smart cities as opposed to smart villages. Dr Emmanuel Osuteye from University College London asked about the potentials of small and medium-sized towns and peri-urban areas, which were experiencing a lot of growth. Ms Sandra Owusu Koranteng from the Trades Union Congress of Ghana wanted to know whether the academies were focusing on inequalities in society, for instance in the provision of housing that was otherwise beyond the means of workers.

Professor Pieterse began answering by saying that the question of affordability was key. What was needed was a discussion on the political economy of urban investments. He used an example of a study on big-ticket investments across Africa. The instance of a highway constructed from Nairobi into the peripheries had led to the emergence of gated communities along it, which, he noted, had worsened the traffic situation into downtown Nairobi; and the money spent by the state on such a project reduced the resources available for other needed services. He further suggested that trade unions and other civil society groups needed to make their voices heard in the discussion. He reiterated the need to rethink what the components of a sustainable city should be: for instance, energy requirements, local economic development, social enterprises, infrastructure investments, social services, etc. The issues of lifelong learning and the upscaling of workers were key to these outcomes.

On the potentials of peri-urban areas, he called for the reversal of the hierarchy. There was the need to think of both scales at the same time. What was needed were investments that were in synchronization both with micro-economies and with the large ecosystems such as energy and transportation. On the question of substituting smart cities with smart villages, he answered that it was because of how the global economic system works, i.e. the need for agglomeration and economies of scale. Research

had shown that the centres that were knowledge intensive were going to be the centres leading in research, development and innovation. These tended to be in places with a large number of people. That notwithstanding, smart villages had a role to play in the areas of agricultural, social and cultural functions but could not be the main solution.

Professor Babatunde Agbola from the University of Ibadan, Nigeria, and the University of Technology, Durban, South Africa, commented on the need to interrogate received knowledge in relation to building sustainable African cities. He added that many African cities were not sustainable as their revenue base in terms of tax generation was very low. Professor Ralph Mills-Tettey asked for clarification on a table presented showing the per capita expenditure of some city administrations in Africa; he commented that Lagos, which generated a lot of revenue, was not captured in the table. Professor Songsore from the University of Ghana commented that there was a need to integrate the countryside into the discussion since cities on their own could not be sustainable as they consumed most of the ecosystem services generated from the countryside. Mrs Cindy Baidoo from the Environmental Protection Agency commented on the need to include culture, religion, norms and values, women empowerment, street children, etc. in the discussions on sustainable African cities.

Professor Pieterse began answering by focusing on the low rates of tax generation. Studies had shown that there was little confidence in the tax system; there was therefore the need to increase transparency in tax administration and utilization. He agreed on the issue of tax generation in Lagos as it has been one of the cities with the largest tax receipts over recent years. The city had also improved on its tax transparency and, even more importantly, were the services provided out of the taxes collected. He referred to a recent report entitled 'The Weight of Cities' by the United Nations Environment Programme, which drew attention to the total material requirement needed for a population expansion of 3 billion by 2050. He also agreed that the issues of gender, identity and differentiation were at the heart of the issue of localization.

In concluding, the moderator again raised the issue of what was needed to arrest the decline in African cities. He referred to the chaotic assemblage of institutions in the built environment in Ghana. What he felt was needed was a list of options from the academy on the way forward.

FIRST SESSION: THE CONCEPTUALIZATION OF CITIES
(Chair: Professor Ralph Mills-Tettey, FGAAS)

Conceptualizing the City in a Sub-Saharan African Context
(Professor Beate Lohnert, University of Bayreuth, Germany)

Professor Lohnert started by acknowledging Professor Elizabeth Ardayfio-Schandorf, who had been instrumental in her master's thesis field research work in Koforidua in Ghana some 30 years previously. She stated that her presentation was only an attempt to conceptualize the African city. The ongoing debates about the African city included attempts to find its uniqueness. Most of the discourse had been dominated by the prevalence of slums and informal settlements. Although African cities had a history predating colonial rule, she took the view that the colonial period had a major impact in shaping the African city. Very few cities had been founded after colonial rule, and there had been the recent emergence of new parts of African cities, showing their dynamism. The African city was diverse in terms of its functions, operationalization and definition. Most governments defined cities according to the population, size of infrastructure, political and administrative boundaries, etc.

The city was bound to the notion of the rural; hence she disagreed with the rural–urban dualism. She thought of it as a complex system and not as an independent one. For most people, the rural–urban divide was blurry as went about their daily lives. She called it the 'rurban social space'. Migration was the main cause of growth of many cities in sub-Saharan Africa. This was more fluid as cities and rural areas performed different functions. There was the spatial diversification of income production. This she termed a 'flow of bonds, exchange, cooperation and transactions'. There were also issues of emotional and cultural connections. The multi-locality and multiplicity of income sources for many households in sub-Saharan Africa was the normality rather than the exception. The ever-shifting hybridity blurred the imagined divide. Typically, place-based occupations such as agriculture had been de-placed, as seen in the emergence of urban agriculture. These processes had never been linear but varied in direction and velocity.

The mobility of African rural and urban dwellers accounted for the ever-changing city. The livelihood strategies of the poor and middle class were expressions of a special type of 'cityness'. This required creativity, inventiveness and informality. This notion of fluidity did not mean neglecting particular fixed capital and human expertise that enabled specific nodes in global urban systems. There was a strategic combination of established practices with global narratives that were reformed into an African 'cityness'. The complexity of colonial and post-colonial urbanism could be explored in terms of locally specific combinations of materials, practices and ideas drawn from different contexts.

The making of the city was not only driven by necessity but also by aspirations and dreams. The question of what citizens expect of the city such as liveability was often not interrogated. Quoting from a recent study, she averred that what people conceived to be a liveable African city could be crystalized around keywords such as incomes, education, health care, housing, infrastructure, governance, feelings of oneness, security, opportunities, belongingness, access to daily needs, relatively fair government, welfare, participation, and diversity. If these were considered, planning would look different from what it was today. Again, not enough was known about the everyday making of cities. The recent emergence of new city projects had led to the question of dreams or nightmares. Examples included Nova Cidade near Luanda in Angola built by the Chinese. Most of the apartments in this city were empty because those who could afford it preferred to live in the city and those who wanted to live there could not afford it. There were also examples from Equatorial Guinea, Roma Park in Lusaka, Zambia, Konsa Technology City, and the 'Silicon Savanna' development near Nairobi, Kenya. There were also experimental plans for combining rural and urban ideas.

She concluded that the African city was influenced by colonialism, characterized by high mobility, multiplicity, disparity, liminality, trans-locality, informality, flexibility and experimentality. There were not only problems but also strengths in African cities such as the hinterlands. There were opportunities to produce both for local and for global markets. There was a culture of flexibility that could be a basis for an African way of urban planning.

A Right to the City: Just and Inclusive Cities for All— African and Global Concepts and Perspectives
(Professor Fred Krüger and Dr Alexandra Titz, University of Erlangen-Nuremberg, Germany)

Professor Krüger started by saying that the right to the city was a precondition to shaping sustainable cities. He used an analogy of a dining table in a state after dining. From the disorganized state of the table after dinner, it was somewhat possible to conclude how the table was laid before dinner started. An even closer look would allow deduction of where the men and women sat and what kind food of food was served.

However, it would almost be impossible to deduce from the leftovers whether certain guests had deliberately been left hungry or had been served any food at all. On the whole, the table was a mess and so was the city. Using the city of Dar es Salaam as an example, he used the case of Margaret and her self-help group called the 'Drive-in Group', which occupied a stretch of open space along a road to engage in urban agriculture activities, growing vegetables for the market and for subsistence. This group was not officially entitled to use the land but was tolerated by the municipal authorities. Behind this urban farm was a shopping complex. The owner of the complex built a parking lot on part of this same open space and again was tolerated by the municipality. This reduced the land and water available to the urban farmers. This caused some tension, and the shopping complex owner employed a few of the farmers albeit on unsecured contracts. The US embassy nearby supported the urban farmers with a few hundred dollars a year, further complicating the issue. Opposite the street was a police station so the farmers feared they were under constant surveillance, probably even leading to a surprise eviction. The group was also supported by a Tanzanian network of farming cooperatives but it had lost confidence in that support owing to the network leader acting on his own authority rather than with the group's consent. In general, the self-help group members found themselves in a maze of conflicting pressures and opportunities.

This showed the complex layers of institutions that the members of this group had to navigate on a daily basis. It brought up the question of right to the city: who has secured access to the city and who is entitled to shape the urban living environment? This involves the interests and entitlements of the people. Professor Krüger conceptualized the right to the city through framing concepts derived from the works of Lefebvre, who talked of marginalization and that the city should be there to accommodate all; the city as place for urban contestation and negotiation. He tied this into the work of Susan Feinstein, who talked of the existence of equity and moral codes as preconditions for forming the just city. She argued that the neoliberal city must be transformed from within. This position is opposed by David Harvey, who argued that there was a fundamental transition in access to the urban space that could only be based on a new understanding of rights beyond capitalist logics. This called for a move beyond neoliberalism to change the conditions of the city. Peter Marcuse had spoken of the increasing mismatch between the desire for change in existing urban orders and the dwindling opportunities to actually realize these changes. Professor Krüger reiterated that these were all 'western' concepts and there was the need to question whether they were ideas that could be applied to the sub-Saharan Africa city. He identified with Pieterse's and colleagues'

talk of 'rogue urbanism', which focused on everyday urban dwellers and not just the elite.

Professor Krüger also drew attention to the need to use the appropriate vocabulary. What was meant by justice and right to space? What did equity, justice and fairness mean? He used the analogy of three children of different heights watching a baseball match obstructed by a fence. Equality would mean giving each of them a box of the same height to stand on. But since the children were standing on a slope, this did not enable all of them to actually stand taller than the fence. Equity would mean giving each a box tall enough to enable them to see over the fence. This still did not include justice, which would mean tearing down the fence in the first place. This called for resistance, ruptures, protests, conflicts and transformations. This, in turn, contradicted our everyday meaning of justice, which was stability, order, predictability, etc. There was therefore a discrepancy between what was meant by justice and what it entailed to sustain a rights-based urban lifeworld.

This was even more difficult to disentangle in disaster situations. He quoted Douglas and Miller, who defined 'extreme events' as 'violent disruptions of normal channels through which justice is pursued'. He argued that what was normal was not known; these were political issues as they involved governance and distribution of resources in the recovery phase. The African city could be seen as a continuous process of dealing with crises. He used the example of Onagawa in Japan after the tsunamis, where the city authorities realized they needed new forms of governance to deal with the recovery process of rebuilding the city. They brought on board new actors in a participatory process that included educating the people about town planning. This meant shifting responsibilities to other actors. The question arising from this was how much of such responsibilities could be shifted as the city was a mess. Professor Krüger then introduced Dr Alexandra Titz to present an example from a research project they were embarking on.

Dr Titz started by introducing the project 'AfriCity' (Adaptability, Food Security, Risk and the Right to the City in sub-Saharan Africa: Towards Sustainable Livelihoods and Green Infrastructure; www.africity.fau.de), a collaborative research, teaching and training project under the programme 'Partnerships for Sustainable Solutions with sub-Saharan Africa' funded by the German Federal Ministry of Education and Research (BMBF) and the German Academic Exchange Service (DAAD). The objective of the project was to explore and understand social vulnerability and adaptability with regard to environmental and resource change, with an emphasis on the issues of risk and food security, in sub-Saharan African cities.

The project sought to promote sustainable urban livelihoods and adaptability through understanding and communicating the right to the city with regards to the necessary green (and social) infrastructure. Mutual interests or shared values of citizens and other stakeholders were put forward against other, competing ideas and strategies, which often became part of everyday urban life. The project therefore regarded the city as an arena and riskscape for the articulation, negotiation and redesign of urban orders, of urban livelihhoods and food security, and of access to the design of urban living environments. Dr Titz then introduced the three main conceptual approaches of the project: the right to the city; the resilient and resourceful city; and green infrastructure as a 'vehicle' to bridge the first two concepts.

She then emphasized that a growing focus on green infrastructure and green infrastructure strategies was becoming increasingly evident both in research and in administration. To illustrate the diversity and the transformation of meanings of green infrastructure, she presented an early definition by Benedict and McMahon, who defined green infrastructure as a 'an interconnected network of green space that conserves natural ecosystem values and functions and provides associated benefits to human population'. Currently in different parts of the world there were many strategies on green infrastructure. For instance, the European Commission launched a green infrastructure strategy in 2013 acknowledging it as 'a strategically planned network of natural and semi-natural areas with other environmental features designed and managed to deliver a wide range of ecosystem services'. However, the core features of the green infrastructure concept related to urban green areas (green on buildings, near built structures, open kinds of green space) that were networked and multi-functional. The multi-functionality meant that the same green space served multiple uses. A single tree or a patch of greenery in the city would not qualify to be called green infrastructure. She noted that green infrastructure concepts still largely originated from a more functionalistic approach. However, the social implication of green infrastructure had hitherto been only weakly presented in the discourse. She gave an example from Denver/Colorado where a city park's use had been restricted to certain days of the week to allow for regeneration. Offenders who ignored the restrictions were to be prosecuted. This was an instance of how the green infrastructure, beyond the pure aesthetic dimension, could deliver moral behaviour in cities. She presented other examples where green infrastructure could be seen as a result of creativity and resourcefulness or a social set of practices. She concluded that the concept of the green infrastructure could provide access to a better understanding of the controversial realities of people living in (sub-Saharan) cities and could offer a mechanism for the appropriation of urban space and the demand for the right to the city.

Panel Discussion
(Chair: Professor Elizabeth Ardayfio-Schandorf, FGAAS)

Mr Emmanuel Ansah, who worked with the media, wanted to know from Professor Pieterse the peculiarities in the data that pointed to West Africa as early urbanizers and East Africa as late urbanizers. His second question was how the African regional groupings such as ECOWAS, SADC, etc. had affected their host cities. Professor Daniel Buor from the Kwame Nkrumah University of Science and Technology asked Professor Lohnert whether in characterizing the African city one could add things such as vulnerability, insecurity and poverty. Dr Peggy Oti-Boateng from UNESCO asked about the absence of land tenure systems in the discussions. Her second question was on the green city. Dr Ebele Mogo asked for empirical examples where the conceptualization of justice as transformation and not as order had taken place.

Professor Pieterse started by answering that the idea that regional bodies would impact their host cities may be far-fetched. But that notwithstanding, he argued for the need for the major cities across the different countries to network as in, for instance, exchanging research and development on the big-ticket infrastructure items. Professor Lohnert answered that she agreed with the negative characterization of the African city but wanted to highlight the opportunities in her presentation. Professor Krüger answered that every city was transformative; what was needed was a negotiation between order and transformation.

In the next round of questions, Mr Agyapong from the Ghana Institution of Engineers wanted to know the drivers needed to attain the sustainable city as used by the developed countries. A representative from the Trades Union Congress of Ghana asked about the institutions needed to achieve the sustainable African city. His second question was on the vibrancy of the informal economy and the attempts at its formalization.

Professor Pieterse answered that the historical context from which the developed countries emerged were different or no longer existed for African cities to follow. He continued to emphasize the need for research and development. Professor Lohnert answered that Africa needed to determine its own path for development. On informality, she argued against the conceptualization of informality as a marginal activity in the context of Africa. She took the view that informality rather was the normality and that it should be appreciated, both in academia and in policy.

SECOND SESSION: CASE STUDIES
(Chair: Dr Christiane Diehl, Deputy Director, International Relations, Leopoldina)

After a short introduction to the session by Dr Diehl about the necessity of linking the input from presentations to the actual challenges on the ground, the conference participants formed six breakout groups. Each group discussed a case study for one hour. Afterwards a representative of each group informed the plenum about the main points discussed.

Plenary Statements from Breakout Groups
Group 6

Mrs Shiella Victoria Bomita presented on behalf of group 6. The group looked at 'Implementing and monitoring the SDGs in an urbanizing context in Ghana', presented by Mr Raphael Frerking, Head of Programme for Support for Decentralization Reforms and Good Financial Governance, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ). From the presentation they got to know that the GIZ had assistance from the National Development Planning Commission and the Ghana Statistical Service in gathering data for the project. Ghana had some flagship programmes with respect to the SDGs such as 'One District, One Factory', 'Planting for Food and Jobs', 'Free Senior High School Education' and 'Affordable Housing'. The challenges with the implementation were a lack of data for monitoring, insufficient budget, low awareness of SDGs, etc. The data available were not disaggregated into the local-level categories. Mrs Bomita concluded that there was the need for more collaboration from all stakeholders.

Group 5

The presentation of the group was given by Dr Francis Mwape Ndilila on the topic 'Three Peri-Urban Compounds of Lusaka and Mazabuka'. It was a discussion on Zambia concerning forestry, housing systems and the vehicle for implementation, the resident development committees. The group were told that the resident development committees were formerly partisan but were no longer so owing to democratization. The planning system was not effective but one unique thing was the general access to land. With land title registration in place, land values had increased astronomically. There were also participatory development planning processes in place.

Group 4

Mr Kojo Akoto Boateng from Citi FM presented on behalf of group 5. The group looked at modelling

future cities. They got to know that there was the need to have proper platforms to model changes and plan accordingly. They were taken through the Eurpoean Union's LUISA Project, a territorial modelling platform and the opportunities it had for Africa. The platform was able to make macro-projections on land use, using inputs on the economy, agriculture, demographics, energy, etc. One of the challenges was how to get reliable data. Other projects included the Community of Practice for Cities, now being launched. Also, a flagship report on the Future of Cities was going to be published in May 2019.

Group 3

Mrs Cindy Baidoo from the Environmental Protection Agency presented on behalf of group 3. The group's presentation was on 'Urban Rejuvenation Initiatives in Africa', specifically with a focus on Accra by Professor Joe Osei Addo. The project presented was the rejuvenation of a run-down prime area with a sea front in Jamestown, Accra. The project combined art, culture, architecture, heritage, music and entertainment. It could boast of a café, restaurant, landscaping and waste management initiatives. The project had received international recognition with the partnership of the Australian embassy and the visit of the French president to the café owned by the project.

Group 2

Mrs Kate Boampong of the Ghana Academy of Arts and Sciences represented group 2. The group discussed 'The Analysis of Rental Housing in Urban Africa: The Case of Ghana', presented by Professor George Owusu of the University of Ghana. Housing was noted to include the physical shelter, services and infrastructure. Also discussed was how housing affected income, health, employment, municipal services, leisure and the economy. Other issues raised included the cost of housing, informality, etc. Mrs Boampong concluded that serious consideration was needed for rental housing for the poor and other low-income groups.

Group 1

Dr Christiane Diehl presented on behalf of group 1. The presentation for the group was on 'Integrated Urban Development Approaches in the Context of

South African – German City Network for Integrated and Liveable Neighbourhoods', presented by Ms Dawn McCarthy and Mr Lars Loebner, both from the South African – German City Network for Integrated and Liveable Neighbourhoods. The presentation was on the municipality of Nelson Mandela Bay in South Africa and the municipality of Halle/Saale in Germany. Despite the huge difference, the two cities faced similar challenges such as segregated neighbourhoods. There had been attempts in both cities to create spatial justice through civic engagements.

THIRD SESSION: SUSTAINABLE URBAN HOUSING
(Chair: Professor Daniel Buor, Kwame Nkrumah University of Science and Technology, Ghana)

Urban Housing Policies in Africa between Supply and Demand-Driven Concepts
(Professor Beate Lohnert, University of Bayreuth, Germany)

Professor Lohnert started by saying that housing was a multi-dimensional concept that was much more than shelter. It included the neighbourhood and infrastructure. Housing also had a psychosocial meaning: privacy, safety, comfort, independence, space for family life, culture and aesthetics, etc. There were two sides to housing: demand and supply. The challenge to housing in Africa was because the two did not match. The supply factors included financial, cognitive and cultural resources, networks and other social capital, preferences, etc. These had different consequences for housing policy and planning and the everyday production of houses. In terms of the supply side there was the role of the private and public sectors and the different ways of dealing with the housing crisis. There had been a degradation in rental housing as the demand was not being met by the supply. The production of housing in many African cities did not match the needs of the people. The consequence of this was the production of housing beyond policy and planning, meaning self-help interventions such as informal housing and owner–occupier housing.

She called for a definition of what was meant by adequate housing. This was very much context specific. For instance, UN-Habitat (2015) talked of adequacy in terms of the lack of services, materials, facilities, inadequate sanitation, inadequate space, uncatered needs of the disadvantaged, marginalized groups and lack of cultural identity. This was a whole arena involving actors, knowledge, power and materiality. There were governments and elites, individual households and international discourse with different ideas about modernity and development. Between these were travelling ideas that went through translations into certain contexts. Key to this was who defined adequacy, who held the definitory power and who set the standards. There were a lot of housing strategies, for instance between rental and ownership. There were also a lot of in-betweens such as condominiums, public housing, state subsidies, owner–occupiers, etc.

Professor Lohnert used the examples of South Africa and Ethiopia as case studies. The strategy in Ethiopia at the moment was condominium housing provided by the state. In South Africa, housing had always been a political issue, especially after apartheid. There was the 'One Family, One Plot' policy, which was single family housing on state-provided plots. These were highly subsidized by the state to enable many people to build houses. The Ethiopian example was an example for the middle class and not the very poor, and the South African example was for the very poor but with issues of maintenance coming in. In the end, it did not offer a solution for the poor and mobile groups. There was a need for regional consensus on housing standards for the poor and for the middle class as many of the housing standards were from the colonial era. Most of the housing in the African city did not meet these colonial standards. There was also the need for space for experiments at the local level. There needed to be flexible solutions with clear rules. More insight was needed in the everyday making of housing and more coordination at the city level. She ended by calling attention to the phenomenon of urban sprawl.

Condominium Housing in Ethiopia
(Ms Monika Wiebusch, planning expert, Planbar – Büro für Stadtplanung und Beratung, Germany)

Ms Wiebusch started by saying that the condominium housing programme in Ethiopia was one of the first mass housing programmes in sub-Saharan Africa. She had been involved in the programme from 2007 to 2009 for GIZ, supporting owners' associations.

In 2002, Addis Ababa had a deficit of some 233,000 housing units, with 70% of housing stock without adequate sanitation. The city government started the Low-Cost Housing Project in Addis Ababa in 1999 and the national government started the Integrated Housing Development Programme in 2005. The goal

was to achieve 400,000 housing units by 2010, 200,000 in Addis Ababa. The goal for 2020 was 750,000 housing units in Ethiopia. The number achieved was 133,000 in Ethiopia (5,000 in Addis Ababa) in 2010 and some 250,000 in all Ethiopia in 2017.

Ms Wiebusch addressed four selected aspects of sustainability of housing programmes.

First, efficient spending of public money. The programme aimed at improving livelihoods rather than providing houses: people were allowed to let the units partly or full immediately and sell them after 5 years. Because land in Ethiopia belongs to the state, its price was not factored into the pricing, making the condominiums in the city centre and outskirts cost the same. Soon the inner-city apartments were let and sold at astronomical prices. This resulted in public subsidies for private gain.

Secondly, large housing schemes at the outskirts of the city. A city growing at the pace of Addis Ababa will have to develop at the fringes. When housing projects in the peripheries are multi-functional and well connected to the public transport, they have a fair chance of being sustainable: people may find a job in nearby industries and services. Related to this, the Addis Ababa condominium sites were better planned than many others in the world.

Thirdly, understanding the complexity of condominiums. A challenge was the organization of the condominium associations. Ms Wiebusch gave an example of an association consisting of some 900 units with only two locations for waste and car parks. This made the association too big to be effective. She argued for associations covering a smaller number of units and a close allocation of 'infrastructure' such as waste collection, car parks and small gardens to allow for responsibility and accountability. Even though cultural issues were physically cared for in 'communal houses', many did not go functional for reasons of failed finance: people were expected to pay extra for them, which was often beyond their scope.

Fourthly, a reasonable mix of different housing strategies. There were various reasons for the government's 'condominium only strategy'. They wanted a strong state-led programme, not only providing houses but developing the construction sector and the labour market. They evaluated cooperatives as no reasonable partners and excluded a rental scheme—considering the experiences with the failures of public 'kebele housing'. Ms Wiebusch stressed that after the collapse of the Soviet Union in the 1990s, all post-Soviet countries had immediately privatized their public housing stocks, and state-owned rented housing projects had no advocates worldwide.

She recommended cooperative housing schemes as an alternative solution, providing long-term cost-efficient housing, supporting self-organization and different contributions (in money or in kind). In addition, the government wanted to improve the image of Addis Ababa as a modern city and thus did not support on-site upgrading strategies.

Lessons to be learnt for future public housing programmes included the following.

• Housing policies should be aligned to general urban planning policies with a polycentric emphasis; strategic distribution of housing sites over the city; mixed use, nearby sites for industry and commerce; adequate public transport.
• Strategic mix of different approaches: condominiums, cooperatives and *in situ* rehabilitation in defined areas.
• Reasonable plot sizes to make self-organization possible.
• Keep the money in the project: include cooperatives or other social businesses. In condominiums: subsidies for owner occupation only; no selling options at market prices.

Housing Finance and Strategies of Informal Settlement Dwellers
(Dr Christiane Rudic, Urban Geographer, Germany)

Dr Rudic started by saying that the presentation was based on her PhD thesis. Research on housing finance had mostly been focused on the owner–occupier. For informal settlement dwellers, formal sources of housing finance were irrelevant. The research was based in Dar es Salaam using mixed methods. In terms of strategies, there were owners as well as tenants investing in housing. Owners invested in their current homes and in new structures, while tenants also invested in their current dwellings as well as their own ongoing structures. Mostly this was financed through savings and a small amount of credit. The savings were from their informal economic activities. Towards their housing investments, people mostly saved 'in-home', meaning they purchased the building material gradually and saved it at home until they had quantities large enough to hire builders to work with. They then saved to hire the builders. Few saved at the banks, many more saved with savings groups called 'Upatu'. Another major source was from rental income, where landlords saved lump-sum payment of rents and invested it into other housing projects. Some of the investments were committed to improving already existing structures such as an additional toilet, etc.

Tenant investments ranged from minor activities such as changing the wiring to major ones such as putting

up the entire building on special arrangements with the landlord. She argued that tenants were also important in the discussion about sustainable urbanism. There was a third group of actors called 'quasi-owners' where the first owners of the house were dead, and the building had been taken over by the children or family. These had sometimes complex arrangements which made it difficult to determine who the actual owner was. Such houses were poorly maintained, and occupants had intentions of relocation. Again, informal sector home-based economic activities became hampered when tenants moved into their own houses, especially those in the peripheries. Many still went back to their former neighbourhoods to transact their businesses.

Dr Rudic concluded by asking whether credits were the only solution as the informal sector had embarked on housing finance without them. The credits were too expensive and beyond the means of the poor. Even the low-cost housing was too expensive for informal settlement dwellers. She argued that small loans with intense training had proved very beneficial.

Sustainable Governance for Sustainable Urban Settlements
(Professor Daniel Kipkirong Tarus, Moi University, Kenya)

Professor Tarus started by saying that his presentation was based on experiences from Kenya. He stated that 90% of rural–urban migration was in Africa and Asia. Africa was urbanizing at a rate of 3.3% compared with the global average of 2.5%. He contended that by 2030, 50% of Africans would be living in cities. Currently 50–60% of GDP in Africa was generated from cities. He mentioned that the determinants of sustainable cities were affordable housing, health, adequate water, security, efficient transportation, sanitation and power supply. All of these were predicated on good urban governance. The determinants of the mode of governance were location, how integrated the city was to the rest of the world, historical factors and political structures. A well-governed city should have an effective, efficient, transparent and accountable system, public participation, equity and fairness, responsiveness to residents, rule of law, etc.

He then gave a brief on Kenya. He mentioned that Nariobi, although it had 5% of the population, contributed 20% of the GDP. Challenges to urbanization in Kenya included poor planning, lack of access to services, poor sanitation, informal settlements, poor security, high cost of living, congestion, poor functioning land markets, etc. He then gave a brief on urban governance in Kenya. Under the new constitution enacted in 2010, Kenya operated a two-tier governance structure made up of the central government and 47 county governments within which the cities fell. The county was headed by a governor, with the cities being led by municipal boards with a city or municipal manager. For instance, Nariobi had a city board of 11 members, six of whom were elected and five appointed from different sectors of public service. Public participation was held to be very important. There were other technical departments and agencies that were part of the city government. Constraints to improve urban governance were the fragmentation of social and economic life, weak institutional structures, social inequality, overlapping jurisdictions, corruption, political patronage, bureaucratic bottlenecks, etc. To solve these problems there was the need for the devolution of power, partnerships for service delivery, stakeholder participation, etc.

Healthy Housing Policy: The Role of Housing in Health Creation
(Ms Amy Weimann, University of Cape Town, South Africa)

Ms Weimann started by saying that the presentation was based on her ongoing PhD thesis. Health considerations, she noted, were important to the achievement of sustainable cities. Studies had shown that the urban environment posed a threat to the health of the urban poor such as women, the elderly and children. She linked SDG 3 on good health and well-being to most of the other goals. Driving factors affecting health included individual lifestyles, the surroundings, social and community networks, living and working environments, and general socio-economic and cultural environmental factors.

She averred that the non-health sectors were very key to health outcomes. The World Health Organization had endorsed the 'Health in All Policies' approach, which called attention to the health implications of policy-making. Her research took this model and applied it in the context of housing, connecting SDGs 3 and 11. This went beyond the national level health context to the local. For instance, in a study comparing informal with formal settlement areas, it was found that hypertension was more prevalent in the informal area. So were human immunodeficiency virus (HIV) and diabetes. In the South African context, it was found that various disease-causing organisms and factors were more prevalent in the informal settlements. These included moulds, pests, asthmas and allergies, crowding and mental health issues. They hoped to expand the study to Cameroon. The research aimed at evaluating the need and readiness for implementing the 'Health in All Policies' approach within the African context to mitigate the health risks of inadequate housing.

Preliminary results so far showed that there was a data gap in the South African context, where the health impact of various housing policies was not known. There were two schools of thought in local governments: sectoral thinkers who wanted to keep to their organizations, and inter-sectoral thinkers who found it important to collaborate with others. There were also issues of hard and soft approaches: the hard approach focused on curative measures whereas the soft approach went beyond that to look at other environmental factors. Another issue was the output focus of politicians on the provision of tangible services as against being outcome-focused, which had to do with considering the social impact of the provision of such services: for instance, the impacts of such services on the health of city residents.

Wrap-Up: Urban Housing—The Challenges for the Next Decade
(Chair: Professor Daniel Buor, Kwame Nkrumah University of Science and Technology, Ghana)

Professor Buor began by asking about the housing deficit for the whole of Africa. The answer was deferred. A questioner from the ASSAf asked Dr Rudic about the definition of informal settlement because,

in the South African context, informal settlements did not come with buying land and plastering as she described. His second question was to Professor Lohnert concerning the subsidy provided for the 'One Family, One Plot' housing project in South Africa: according to him, the government had fully paid for all those houses.

Dr Rudic answered that informal settlement was context-defined: in the Tanzanian context it was informal housing. Professor Lohnert answered that she was aware that many of those houses were fully paid for. She wrapped up by saying that Ms Wiebusch had given good advice by saying that we 'keep the money in the house' and go back to the cooperatives. Dr Rudic had placed emphasis on appropriate financing for informal housing. Professor Kipkirong Tarus had mentioned that the key was good governance and not the money, even though that was also important. Ms Weimann spoke about the close relationship between housing and health outcome, which was also very important. Professor Buor concluded by saying that the housing issue was critical. He urged African governments and other concerned stakeholders to make adequate financing for the housing sector.

SECOND DAY: WEDNESDAY, 4 JULY 2018
FOURTH SESSION: URBAN ECOSYSTEMS AND ECOLOGICAL MANAGEMENT
(Chair: Professor Volker ter Meulen, Leopoldina)

Urban Water and Wastewater Management
(Mr Daniel Adom, Chief Technical Advisor, Water for African Cities, UN-HABITAT, Kenya)

Mr Adom started by saying that from his experience of the previous day he had modified his slides to focus on local-level practices. He mentioned that the African water vision was an Africa where there was equitable use and management of water for poverty alleviation, socio-economic development, regional cooperation and the environment. These included strengthening water governance, improving water wisdom, research and data gathering, meeting urgent water needs and improving the investment base. The African Council of Ministers on Water had several initiatives such as the Yamha Trust Fund, the African Water Facility, Rural Water and Sanitation Initiative, Water and Sanitation in African Cities Programme, Integrated Water Resource Management Initiative and the African Network of Basin Organizations. The African Union had made several commitments in the area of water policy, but the questions remained about the impact these would have at the sub-regional and national levels.

For instance, there were monitoring mechanisms to check how the Sham el Sheik Declaration was being implemented. The responses had been varied: while some were doing well, others were not. At the global level, there was the New Urban Agenda which was adopted in Quito and led by the UN-Habitat.

He mentioned that the human settlement remained the focus of any water infrastructure project. In terms of policies there was the 'Environmental and Sustainable Urban Resilient Urban Development'. The challenges that came up in terms of implementation in the human settlement were the challenges of urban growth. The state of water in the city was one of the key determinants of the quality of life. The key urban water management issues were fragmentation of institutions, pursuit of short-term goals, inflexibility and energy use. Owing to the low public revenues in developing countries, the water sector was usually supported by foreign grants and aid. He used the example of a multinational corporation that wanted to go into the water and sanitation sector in some African countries. After selecting some countries on the basis

of the expected rewards and estimated risks, they chose some African cities to do a detail analysis. The challenge they faced was the lack of data, which was a drawback for investors. Another concern was the uncontrolled sprawl.

Future water concerns included the increasing need for water and lack of appreciation for the urban water system–ecosystem nexus. Opportunities from effective water management included health and well-being, agriculture, industry, recreation and the ecosystem. In terms of challenges, there was the issue of untreated wastewater discharged into the sea. What was needed were integrated water approaches and water-sensitive designs. The key considerations for integrated urban water management were the issues of policy, innovative financing, and the promotion of a mix of technical options and data management. He also explained the urban water management transition framework, which was made up of cumulative socio-political drivers and service delivery functions that determined the state of urban water management at any point in time.

He concluded by saying that the conventional approach to urban water management was not sustainable and was failing; he therefore recommended the integrated urban water management approach.

Sustainable Urban Ecological Management in Accra, Ghana: A Mirage or Reality?
(Professor Rose Emma M. Entsua-Mensah, Council for Scientific and Industrial Research (CSIR) Ghana and FGAAS)

Professor Entsua-Mensah started by saying that she would be telling the story of Accra from an ecological point of view. She mentioned that the urban environment had three dimensions: the natural environment, the built environment and the socio-economic environment. There was a need to strike a balance among these. She gave a brief on Accra. Accra was generally low lying and had eight drainage channels. But the feeder streams and lagoons had all been encroached. Accra had continued to expand since the nineteenth century. This had led to many urban challenges, with the poor being worse hit. It currently had 265 slums with 76 informal settlements. It also had had a population of 5 million with a growth rate of 4%. Most of the sewage treatment plants were non-functional. Other major challenges were the problem of e-waste and plastics. She said that the fishermen were now complaining of fishing plastic instead of fish. Flooding was also common in Accra.

To this she offered solutions such as rain harvesting, micro-storage of water and dredging of water

channels. There was also the problem of air pollution. Implementation of the laws was also key. The people had to be involved in decision-making. She suggested the 'cradle to cradle' concept, which obliged industry to protect and enrich ecosystems. With this concept there was a 100% renewable energy use, water stewardship and social responsibility, and material health.

Sustainable Air Quality Management in Developing Urban Environments
(Professor Stuart Piketh, North West University, South Africa)

Professor Piketh started by saying that he was going to discuss air quality management in a developing environment using the case of South Africa; he hoped the lessons learnt could be applied elsewhere. He mentioned that the problem of air pollution was highly localized although the principles of air quality management were universal. Poor air quality was a major source of premature death on the African continent, ranked as the number three cause. The normal way of measuring air quality was to identify the sources of pollution, put emission standards in place and implement them.

In South Africa, many of the industries did not meet the minimum air pollution standards. Key to this was understanding the drivers of air quality. There was the ambient air quality and indoor air quality, which were handled by two different institutions in South Africa who cooperated very little with each other. One strategy in South Africa to achieve air quality had been to implement emissions offset projects.

The sources of air pollution were industrial sites, urban and suburban residential areas, traffic and the townships. Particulate matter was the biggest source of air pollution, and the residential areas were the biggest polluters. Coal-fired power stations were the biggest emitters in South Africa. He revealed that it would cost the South African economy 6% of its GDP to become compliant with minimum emissions levels. But this would only reduce the particulate matter in the air by 5%. The question then was whether there were more effective ways of doing this.

Residential sources of pollution such as solid fuel combustion had a higher impact on health than industrial sources. He used the example of a study of four communities in South Africa where they measured air quality. Many of the poor did not have access to electricity and therefore burned solid fuels, especially during winter. The percentage of particulate matter in the air varied according to income levels, with poor communities having higher concentrations. This meant that different solutions were needed for the

different income groups. In South Africa, ambient air standards were used as a proxy for indoor air quality during summer. The difference between ambient and indoor air quality increased drastically during winter as people burned solid fuels to keep warm. Some homes during this period had indoor air quality comparable to living in a chimney. This problem was compounded by the poor solid waste management in the low-income areas where uncollected rubbish was burnt.

He concluded by saying that tackling the residential air pollution had a bigger impact on particulate matter in the air. Every city needed its own unique solution, but much was achieved by finding a solution to residential sources of air pollution.

Interrogating the Ecosystem Health of Accra Metropolis for Human Well-Being: The Challenges and the Prospects for the Future
(Professor Alfred A. Oteng-Yeboah, University of Ghana)

Professor Oteng-Yeboah started by saying that the presentation was about global processes that cities such as Accra were supposed to take a cue from in areas of ecosystem health. He presented several such global processes. The first was the Sustainable Cities Index, which concerned issues of people, the planet and profits. Then there were the targets of SDG 11 on sustainable cities and communities. Next was the Convention of Biological Diversity, which emphasized the need to conserve life. This convention was people-centred, especially in the needs of rural dwellers. Another was Local Governments for Sustainability (ICLEI), an inclusive system that brought local government issues to the point where there would be agreement. The question was whether African cities were aware of these global initiatives. He mentioned further that ICLEI was made up of five pathways: equitable and people-centred development, low emissions development, circular development, nature-based development and resilient development.

There was also the United Nations Convention to Combat Desertification, which was mainly concerned with land. Next was the UN-Habitat Agenda III, which called for proper urban planning of cities. There was the United Nations Framework Convention on Climate Change, which recognized the role of non-party stakeholders such as city authorities. He raised the issue of the urban tree canopy and asked why Accra did not have one. Next was the Global Covenant of Mayors for Climate Change and Energy, which issued the Edmonton Declaration in 2016. The final process he presented was the African Mayors Group, which had recently met in Accra to compare notes. The question that remained for Professor Oteng-Yeboah

was how these global processes were going to affect ecosystem well-being.

Panel Discussion
(Chair: Mr Alfred Kwasi Opoku, President, Ghana Institution of Planners)

Professor Addai Mensah began by asking how urban water managers take into consideration what goes on upstream in the rural areas where the sources of urban water supply are. He then commented that most of the urban challenges were due to attitudes and mentalities. Professor Songsore was worried that there was no one present articulating the voice of the ordinary person. He also wanted to know what had changed in South Africa post-apartheid. He also doubted the capacity of the capitalist system to bring about global development. A participant from Zambia asked about the competencies available in city governments in Africa to meet these global benchmarks. Professor Lambi from the Cameroon Academy of Sciences asked about the strategies in place in Kenya to deal with urban water challenges.

Mr Adom started by answering that under the integrated water management approach the sources of urban water supply were to be taken care of, but the challenge had been with implementation. He further answered that Nairobi had an elaborate water governance system. Dr Simiyu added that there had been a lot of improvement to the water supply in Kenya. Water governance had been decentralized to the county governments. The issue now was with maintenance such as broken pipes, etc. Professor Yeboah answered that elected representatives needed to share the information they had with their constituents for feedback.

In the next round of questions, a questioner from the Nigerian Academy of Science enumerated several problems facing the water sector in Nigeria and wanted to know whether there were such problems in Ghana. Another questioner from the South African Academy of Science wanted to know how the siting of rubbish dumps close to the townships impacted air quality. Mr Kwabena Agyapong from the Ghana Institute of Engineers wanted to know the relationship between the academies and the political authorities and bemoaned the fact that the city authorities from the major towns in Ghana were not present. Mrs Cindy Baidoo from the Environmental Protection Agency contributed that the dumping of liquid waste into the Korle lagoon in Accra had stopped with the commissioning of a treatment plant. Dr Ebele Mogo wanted to know which frame worked best in achieving an ecosystem balance.

Mr Adom began by answering that the problems with the Nigerian water sector were similar across Africa. What was needed was to improve the management system. Professor Piketh answered that the problem of siting waste dumps in the townships was a simple problem that could be solved by carrying away the waste, but that did not happen. Professor Entsua-Mensah answered that the organizing committee reached out to the various stakeholders such as the city authorities, but they had not attended the conference. Professor Yeboah answered that the global initiatives were signed by governments as parties, but city authorities were non-party

stakeholders. He intimated that many African countries were interested in climate change issues because of the funding opportunities available there. He also mentioned the issue of a government initiative to have a green belt around Accra which was defeated by the land owners who quickly sold off their lands.

The Chair concluded by answering a question raised earlier of whether the city authorities were aware of those global initiatives. He said that there were attempts to break down illegal structures in Accra by the mayor. This was hampered by court litigations and political pressure on the mayor.

FIFTH SESSION: URBAN ECONOMIC AND SPATIAL DEVELOPMENT, LIVELIHOOD SECURITY
(Chair: Professor Jacob Songsore, University of Ghana)

Sustainable Industrial Development in the Construction Sector for Urban Youth Employment Creation
(Professor George Ofori, FGAAS)

Professor Ofori started by saying that his presentation was based on research he did for the Swiss Development Office the previous year on the issue of employment in the construction sector. He stated that the construction industry played a big role in any country. It created many jobs. He gave the example of the United States, where a study had been conducted on how many jobs could be generated in the construction sector by the investment of an additional dollar. Another study conducted in Cameroon had also shown that the construction sector created more employment per a dollar invested than many other sectors. This hinged on the need to provide more infrastructure in developing countries. According to another study by the International Labour Organization, employment creation could be achieved in three ways. One of them was to invest in particular sectors of the economy such as construction.

The scorecard from the Ghana Institution of Engineers painted a poor picture of the infrastructure situation in Ghana. The proportion of youth in the population was very high, as was youth unemployment. There were big gaps in the workforce in the construction sector in Ghana. This was a common problem in many countries. He presented the example of the United Kingdom, where the charity Construct Youth Trust exposed young people to opportunities in the construction sector. Another example was Employment UK. Despite the construction industry not being popular as a preferred choice for employment, a survey among people working in it had shown that

they were happy. He hoped that the Ghana Youth Employment Policy would be implemented to the full. He presented data showing that the construction sector paid well. He gave an example of an initiative in Ghana called 'YIEDIE', which was meant to attract people into the sector. He also mentioned that the Swiss Government was helping with the Ghana Skills Development Initiative III.

Informal Markets and the City
(Professor Tebarek Lika Megento, Addis Ababa University, Ethiopia)

Professor Megento started by saying that in Ethiopia the informal sector was an important avenue for the poor to find jobs. The informal sector was transforming the urban economy. Globally, 1.8 billion workers were in the informal sector. Women formed a large part of the informal sector. The sector was the foundation block of the African economy. That notwithstanding, it faced some challenges such as social exclusion, as it was characterized as illegal, marginal, etc. The authorities were not helping the sector by implementing skill upgrading, credit, etc. He reiterated the need for Africa to find home-made solutions to its problems.

The definition of the informal sector as given by the Ethiopian authorities excluded workers in the formal sector engaged in informal economic activities. The causes of the informal sector were rural–urban migration and government regulation. He emphasized the political and ethnic dimension of the informal economy in Ethiopia, which was skewed to favour particular political and ethnic groups. Cheap imports, especially from China, were also a causal factor.

Professor Megento also talked of the optimistic and pessimistic views of the informal sector.

He then focused on the footwear industry, which was dominated by the Gurage ethnic group located at Merkato market in Addis Ababa. The industry was facing stiff competition from Chinese imports. That notwithstanding, they were doing well owing to place capital and social capital. The strategies they used included downsizing their business, hiring the work force, seasonal migration to the countryside to farms, etc. As long as there was too much bureaucracy, the informal sector would continue to grow because it was the 'flavour of the society'. He concluded by re-emphasizing the spatial and social capital inherent in the informal economy. He also called for such informal clusters not to be relocated but rather upgraded.

Adequate Policy Frameworks & Urban Planning Approaches
(Mr Remy Sietchiping, Lead, Regional and Metropolitan Planning, UN-HABITAT, Kenya)

Mr Sietchiping started by saying that his role was to give a few ideas about some of the frameworks already presented. The key message in the SDGs was to leave no one behind; he also added that no space should be left behind. That meant taking care of the deprived and rural areas. He emphasized that context, place and people all matter. The issue about urbanization was not new: towns had always been growing. The footprint of cities went far beyond their boundaries. So, the conceptualization of cities should be on the functional area and not the administrative area. This made the issue of scales very important. The question here was whether Africa was ready to embrace urbanization. The UN-Habitat no longer saw urbanization as a challenge but as an opportunity to do things differently. This also concerned issues of governance and finance, namely leveraging city potentials to generate more revenue. The issue of security was also important. The SDGs were very important for any space.

He then gave a brief on UN-Habitat, which had been in existence for 40 years. It had 70 programmes in different countries. One flagship programme was the New Urban Agenda. The UN-Habitat worked with several policy frameworks. These included Urban Policy, the International Guidelines for Urban and Territorial Planning, Public Space and Planning Principles. The New Urban Agenda required member states to have in place policies that set goals at a pre-determined point in the future. These policies had to be inclusive, transformative and support the production of resilient cities. He opined that policy should be seen as a process, not a document, and

engage with people, issues and opportunities. In partnership with the OECD, the UN-Habitat had put together a global report, 'The State of Urban Policy', which presented the status of countries in terms of their urban policies, the trends, what was working and what was not. The UN-Habitat also required frameworks that had urban–rural linkages. There was the Guiding Principles on Urban-Rural Linkages. There was also the Metro-hub, which brought together the various sectors of the metropolis such as financing, governance, planning, capacity, etc. Another was the Principles of Urban Planning and Design, which had five principles. It emphasized mixed uses, adequate public spaces, adequate density, etc. He ended with the stream of planning, which meant science and policy working together. There were also frameworks available from global to local scales.

Panel Discussion
(Chair: Professor Ralph Mills-Tettey, FGAAS)

The Chair introduced Mr Teiko Tagoe from the Accra Metropolitan Assembly's Planning Department as another panellist in addition to the speakers. The Chair then asked the various speakers to give a summary of their presentations. Professor Megento explained that he had presented on the informal economy in Ethiopia and the SDGs. Professor Joe Addo said he had presented on sustainability in our 'own words' in one of the breakout sessions the previous day. He believed that there was a long history of sustainability in Ghana and there was the need to appropriate that narrative. Mr Tagoe mentioned that he had worked with the city of Accra for the past 25 years as a development planner. His work was on urban and poverty reduction activities and slum upgrading. Currently they were working in old Accra, which was the core of the city. With the assistance of UNESCO, they were embarking on the Old Accra Redevelopment Strategic Framework. Mr Sietchiping mentioned that the main goal of UN-Habitat was to help member states find pathways to address the challenges of urbanization. Professor Ofori urged participants to read his slides but took the opportunity to acknowledge the Chair, who was his senior in school and who had urged him to join the academy.

Professor Takyiwaa, a fellow of the academy who had just retired from the UN Economic Commission for Africa, asked about issues of curriculum in schools preparing young people for the construction industry. She wanted to know how the recent political changes in Ethiopia would affect the informal sector. She also asked about the issue of industrialization, which she found missing in the presentation of Mr Sietchiping. Dr Maximilian Petzold, a Consultant at PCG, Germany, asked about how to ensure sustainable jobs in the

construction sector. He asked further, that because there was a large labour force ready to be employed in the construction sector, how were labour standards going to be maintained. Mrs Monika Wiebusch asked Professor Megento about the contestations between the formal shop owners and informal operators at Merkato market and whether he was right in saying that the informal operators were able to compete with Chinese imports. She questioned how this was sustainable. She also raised issues with the Ethiopian definition of 'informal sector' with fewer than ten people employed. Dr Francis Mwape Ndilila asked about the popular notion of lack of skills in the construction sector. Dr Chioma Onyige from the Global Young Academy raised the issue of the need to place more emphasis on skills acquisition at the secondary school level in relation to technical education. Her second question was on whether begging, which she found to be rampant in Ethiopia, should be considered part of the informal economy. Professor Addai Mensah asked about how city authorities were going to improve housing conditions without pulling down people's houses.

Professor Ofori began by answering that, concerning sustainable jobs in the construction industry, the industry itself, with the International Labour Organization and national governments, was looking at ways through which this problem could be solved. He mentioned that many countries had strict regulation in that regard, but the issue was with implementation. On low salaries in the construction sector, he said that research findings did not support such assertions. On technical education, he mentioned that COTVET in Ghana had a career-based training approach. On the notion of lack of skilled labour in the construction sector, he said the issue varied from country to country and was quite complex. Mr Sietchiping answered that, on industrialization, even the best performers in Africa such as Rwanda were growing not because of it, which gave impetus to the idea that Africa could come up with its own path to development not necessarily through industrialization. On not including the work of other UN agencies, he answered that he wanted to avoid the problem of misrepresenting them. Mr Tagoe answered that the Accra city authorities had embarked on a survey to identify old houses that needed improvement, and, being traditional family homes, they had careful dialogue with the families on the improvement strategies because of the cultural and emotional attachments involved. Professor Addo added that rebuilding the old city did not always mean pulling down houses. What was needed were improvements such as sanitary and waste management services. Professor Megento answered that on the political changes in Ethiopia, he was very optimistic. On the definition, he answered that it was specific to Ethiopia, hence the need for an operational definition. On the issue of beggars, he answered that it could be seen in two ways. First of all, as a profitable business and in that sense could be considered part of the informal sector. But most of the beggars were the very poor. The Chair concluded by reiterating the cultural attachment to the redevelopment of the old city.

SIXTH SESSION: URBAN HEALTH
(Chair: Professor Beate Lohnert, University of Bayreuth, Germany)

The Challenge of Urban Health
(Professor Daniel Buor, Kwame Nkrumah University of Science and Technology, Ghana)

Professor Buor started by saying that health is the end of development and a true mechanism for achieving it. He mentioned that Africa's population was currently 1.2 billion, with the urban population being 40.6% and expected to rise to more than 60% by 2050. Such population growth came with health challenges. Urban growth in Africa was 4.8% per year. Lagos, for instance, had a current population of 21 million and could grow to become the largest city in the world in 10 years' time. He added that natural increase contributed more to urban growth than migration. Most of the urban growth was taking place in West, Middle and East Africa. There was the issue of urban primacy, where one urban area was far larger than the others in the country. This put a lot of stress on scarce resources.

He defined urban health as the determinants of diseases within the urban context. He stated that African cities were besieged with diseases resulting from poverty, ignorance, environmental degradation, pollution, congestion and overcrowding, ethnic and political violence, etc. Most of these are preventable. The top causes of death in Africa were lower respiratory tract infections, HIV–AIDS, diarrhoea and heart disease. Mental health issues were also on the rise. Poverty was a key issue here and needed addressing. Pragmatic solutions were needed to stem the tide. Pollution in the forms of air, water, sound and on land were also key contributors. There was overcrowding even in the hospitals. About 42% of health facilities lacked a potable water supply.

Lifestyle changes such as smoking and consumption of junk and fast foods were an issue. There were also issues of changes in traditional values, such as sexual promiscuity. Climate change also affected diseases such as malaria and diarrhoea. Housing conditions were poor. Traffic congestion was rampant. Crime was on the increase. There was also the problem of state-sponsored violence. He advocated the adoption of the African Urban Agenda, good urban governance, proper planning and enforcement of sanitation laws. There was also the need to emphasize preventive health, and rural industrialization was needed to stem the tide of migration. He concluded by advocating collaboration among local and international researchers.

The Healthy African City
(Dr Ebele Mogo, ERIM Consulting, Canada)

Dr Mogo started by saying that health was very central to the conversation of sustainable cities. Urbanization when not well planned led to a lot of social and economic vulnerabilities, which would affect people's well-being. She mentioned that injuries were a leading cause of death in Africa. Her presentation was based on her doctoral thesis, which asked about the place of health in the city. The study involved looking at key government archives, the Lagos State Development Plan, the budget, government statistics, the manifesto of the mayor, etc. It also involved examining the built environment, specifically factors that might complicate health outcomes.

Her findings included the fact that planning was reactive rather than proactive. In terms of the built environment, there was physical disorder, poor power supply, waste management, road infrastructure and governance. In terms of signage, there were signs that promoted or impinged on health such as road signs, political campaign signs and commercial advertisements. The signs that promoted health like the road signs were few. There were not enough pavements/sidewalks, street lights, etc. Maintenance of the infrastructure was another challenge. Community transport services were also poor. In the high-income areas there were many private signs, private security and much noise from electric generators. In the low-income areas there was more social interaction among people. Also, non-health professionals saw little connection between their work and health.

Dr Mogo concluded that when health was not central to development, inequities could be aggravated. There was therefore the need for inter-sectoral and multi-level action, which should include more public participation in policy-making. Equity should be the core of government policy. She also called for the gap between research and policy to be closed.

Questions from the Audience
(Chair: Professor Beate Lohnert, University of Bayreuth, Germany)

Mrs Cindy Baidoo from the Environmental Protection Agency wanted the presenters to include a recommendation on prioritizing access to mental health care in Africa. She also wanted to know the gender breakdown in terms of mental health patients. A representative from the Ghana National Fire Service wanted to know how the problem of emissions from the increasing number of vehicles on the road was being addressed. Professor Songsore commented that, despite the health challenges in the cities, the urban areas were better than the rural ones. So he wanted the presenters to have placed more emphasis on inequalities in the city.

Professor Buor answered that the emphasis on the city was because, going forward, there were going to be more people living in cities. He added that there was a need to redesign city transport systems. There was also the need for more green areas in the city. Dr Mogo agreed with the need to prioritize access to mental health care. She did not have data on the gender breakdown of mental health patients.

In the second round of questions, Dr Patrick Cobbinah from Kwame Nkrumah University of Science and Technology wanted to know what the healthy African city was. A representative from Stanbic Bank re-emphasized the need to prioritize poverty reduction. Professor Lohnert also wanted to know what a healthy city looked like.

Dr Mogo answered that health was not just about cure but also the context in which people lived and went about their normal lives. In talking about the healthy city, there was the need to look at the environment. This would involve the different sectors working together.

SEVENTH SESSION: URBAN FOOD SECURITY AND LIVELIHOOD ISSUES
(Chair: Professor Jacob Songsore, University of Ghana)

The Challenge of Food and Nutrition Security and Agriculture in Africa
(Professor Sheryl Hendriks, University of Pretoria, South Africa)

Professor Hendriks started by saying that her presentation was based on the 2018 publication by NASAC and IAP that looked at food security and agriculture in Africa (report available at http://nasaconline.org/wp-content/uploads/2018/05/NASAC-FNSA-Opportunities-and-challenges-for-research-on-food-nutrition-security-and-agriculture-in-Africa.pdf). The study was about how science could support evidence-based policy-making to transform African agriculture and food systems. It used an integrated approach that looked at the food system from production through consumption to the issue of waste in terms of how it affected livelihoods and diets. The report was framed in SDG 2, which dealt with ending hunger, reducing food insecurity, improving nutrition and providing sustainable agriculture. Complementing that SDG was the African Agenda 2063, especially the Malabo Declaration on the agricultural growth agenda. The challenge for the study was how to provide the world's population with a sustainable and secure supply of safe, nutritious and affordable food that was of high quality, produced on the least land and with lower inputs, all within the context of global climate change and degrading natural resources. There was also the issue of the number of producers reducing while the number of consumers increased. Another issue was stability, as tensions rose with the degrading of natural resources.

She noted that Africa was the only continent that had experienced famine since the 1965 famine in China. There were three famine zones in Africa, with 29 of the 54 African countries needing external food assistance. Food security and nutrition was a continuum of experiences from malnutrition to obesity. From the four regional reports, the problems were similar, meaning that it was possible to learn from each other. Although progress had been made, Africa was still fragile in terms of food supply. There was need for large-scale interventions. The growing youth bulge was likely to compound the problem. This required good health care, particularly for children. As poverty dropped, food prices were also rising. She reiterated what made a sustainable diet was not known and that it could be culture related.

In terms of the Africa report, the first component was how to reduce risks: shortages, contamination, etc.

Managing the demand for food was one topical issue in all the UAP regional reports on food security and agriculture. This raised questions about how public policy could be used to shape the diet of people, reduce food waste and how to increase the shelf-life of food. There was need to improve urban food governance. There was also the need for investments in the rural areas where the food came from and in product diversification. This could throw up livelihood opportunities for urban dwellers. Maintaining indigenous preservation technologies was also crucial. Incentives were needed to make people give up using plastic packaging. Cold storage and refrigeration also needed to be made accessible. Epidemiological studies were also needed to ascertain the effects of microbes on food. The report ended on a positive note: that science and technology could transform African food systems and make them sustainable.

The Challenge of Food and Nutrition Security and Agriculture in Africa
(Professor Axel Drescher, Institute of Geography, University of Erlangen-Nuremberg, Germany)

Professor Drescher began with an aerial view of Frankfurt that showed a large area made up of Schreber Gärten (allotment gardens). He said that, after the Second World War, many people in Germany had small gardens all over cities for growing food. Many people also didi that in African cities. For some people, urban agriculture was a livelihood. Urban agriculture could contribute to urban food security. He argued that even though SDG 2 was on food, the issue of food was not emphasized enough in the SDGs report. Another interesting point was that although SDG 2 on food did not have 'urban' mentioned in it, SDG 11 on cities also did not have 'food' mentioned. There was a lack of linkage between the two SDGs. Having food systems on the urban agenda required planning. Urban agriculture in Africa was a reality and a necessity, and policy-makers needed to support it and not restrict it. A study linking urban agriculture to household livelihood security talked of two pillars, namely improved access to food products and increased household incomes. Professor Drescher, however, disputed the outcomes of the study, which said that there was no evidence that urban agriculture contributed to food security in low- and middle-income countries. He disputed the fact that it was a comprehensive study.

To him, the problem of the mismatch between urban governance and urban agriculture was

due to institutional confusion. Institutions were not working together. There was a need to create urban development platforms that would take the SDGs to the ground and make it their own. Urban agriculture was more than food production: it had to do with communities and daily lives, ecosystem services, etc. He concluded that there was the need to take urban agriculture out of the poverty trap into normality.

Agriculture in an Urban Society; Social Challenges and Implications
(Ms Maren Wesselow, Carl von Ossietzky University, Oldenburg, Germany)

Ms Wesselow started by introducing herself as coming from the University of Oldenburg and working on a project called ECOSOLA (Ecosystem-based solutions for resilient urban agriculture) in Germany. She mentioned that they had two study sites: in Dar es Salaam, Tanzania, and the Western Cape in South Africa. The research started in the previous year. She defined urban agriculture as 'agriculture taking place in inter-urban areas or in peri-urban areas of cities'. Urban agriculture tended to be smaller, scattered, more flexible and more adaptive and more integrated with non-agricultural activities than rural agriculture. Urban agriculture also took place in a social urban surrounding where there were diverse and changing social institutions. She introduced the framework of social resilience. Building social capital could be challenging in urban areas where there was social fragmentation, despite being a melting pot of social interaction. This raised the problem of trust, which was important for social resilience. Urban agriculture was more individualized than rural agriculture. There were integrated livelihood activities prevalent in the urban area such that people did not easily identify themselves as farmers, which was necessary to build networks.

She used the case study of a farmer group in George in South Africa. It was a lose network of about 200 farmers but with a core of 20 members. They came from diverse backgrounds. Their goal was to grow their own vegetables in home gardens and improve their nutrition. They had regular demonstrations on the yards of members. They aspired to a philosophy of working without money as it reduced the prevalence of conflicts. They had champions who led the group in the different parts of the town. They bartered their products for seeds and aimed at being independent from financial help. They also adopted ecological approaches and had a debating culture. She concluded that non-monetary forms of support could be helpful to build resilience.

The Role of Urban Agriculture and Ecosystem Services for the Development of African Cities
(Dr Maximilian Petzold, Planungsgruppe Grün, Germany)

Dr Petzold started by saying that he was also involved in the ECOSOLA project dealing with ecosystem services and urban agriculture, and how these contributed to the sustainable development of urban areas with a focus on Dar es Salaam. The pace of urban growth in Africa exceeded the capacity of the planning authorities, leading to informal urban development. Moreover, the benefits of ecosystem services were not properly considered. Ecosystem services were the benefits humans derived from nature. He described ecosystem services as provisioning, regulating and cultural. Even though ecosystem services were highly in demand in the urban area, the capacity of those areas to produce them were low. This led to the high dependency on rural areas for the provision of ecosystem services. This notwithstanding, there was a huge potential for urban areas to provide ecosystem services. When this potential was harnessed, it would contribute to sustainable urban development. One such potential was urban agriculture as it could provide ecological, economic and social benefits. Despite this potential, urban agriculture in Africa faced many challenges. In many cities it was not legally recognized, leading to issues of high insecurity of land use. There was the problem of pollution from the urban area, and urban agriculture itself could also be polluting.

He mentioned that the aim of their study was to run through an exemplary urban planning process and to investigate the environmental setting of the study area as well as preferences of residents on the different land uses and ecosystem services. On the basis of this information, an exemplary landscape plan for the study area and guidelines for future urban planning would be developed. Dar es Salaam was dependent on rural areas all over the country for its ecosystem service needs. The project area was located north of Dar es Salaam. The first task was to collect the background data. After the data were collected, goals were developed. The current stage was working on the draft plan. The preliminary findings were that the habitats consisted of bushlands, grasslands, temporary streams and gullies. Stakeholders in the area highly valued the ecosystem services. They were also able to draw the linkages between different ecosystems and the services. In the plan, they intended to plant vegetative barriers and to build small dams to control gully erosion and to set up woodlots to provide firewood as possible solutions to sustain the provision of ecosystem services in the study area.

Dr Petzold concluded by saying that, for sustainable urban development, there was a need to review

planning strategies and that the ecosystem services-based planning approach provided one means to do this. The challenge had been to gain acceptance from the planning professionals as they were not conversant with it.

Panel Discussion
(Chair: Professor George Ofori, FGAAS)

Mrs Monica Wiebusch added that 20% of the area of Frankfurt was used for agriculture, which was interesting because Frankfurt was better known as a financial hub. In contrast to the study that concluded that urban agriculture had no links with sustainable urban development, she referred to a study by the International Labour Organization showing that Havanna, Cuba, had a very healthy population, compared with other Latin American countries which was – partly – due to their urban agriculture. Professor Agbola called for the interrogation of received knowledge such as the old urban planning approaches which did not make room for urban agriculture. He wondered why state-acquired land not being utilized was not diverted to urban agriculture. He raised the issue of wastewater quality used for urban agriculture. Another contributor recommended a PhD study on urban agriculture in Berlin. She also wanted to know how green spaces were incorporated into urban planning for the purposes of harnessing ecosystem services. Another questioner wanted to know whether mosquitoes could breed on the leaves of maize.

Professor Drescher began by answering that he was not sure whether 20% of Frankfurt were being used for agriculture but he knew that much of the food for Frankfurt came from its region. On the study that concluded that there was no linkage between urban agriculture and urban sustainability, he answered that he had reviewed that paper and questioned the authors' use of certain terminologies, but they had responded that their study was small scale. He debunked the assertion that mosquitoes breed on maize as studies had proved that there was no evidence of urban agriculture contributing to malaria. On the issue of interrogating received knowledge, Ms Wesselow answered that although she was not an urban planner, one had to look at what was feasible. Dr Petzold added that urban planning in African cities was complex owing to colonial planning

schemes. He recommended new approaches such as community-based planning. On the issue of the health achievements in Cuba, Professor Hendriks answered that the health success of Cuba could not be narrowed down to urban agriculture alone. On integrating ecosystem services into development planning, Dr Petzold answered that the people should determine which ecosystem services they needed and where they could be found. This called for an understanding of what ecosystem services were.

In the second round of questions, Dr Diehl from the Leopoldina asked how science, technology and innovation could help fast-growing African cities to maintain agricultural land for urban agriculture. A participant from Zambia asked about the international policy on urban agriculture. He was also concerned about theft and post-harvest losses in urban agriculture. Mr Denis Quarcoe from the Land Use and Spatial Planning Authority wanted to know whether urban gardens under electricity pylons had health implications for the people. He also wanted to know whether landscaped areas could not be better used for urban agriculture.

Professor Hendriks began by referring to different countries where communities were taking control over their food systems, which offered lessons on how Africa could take back control of its food system. International policy was moving towards food systems and how they could be understood in a globalizing world. Many African countries were net food importers, and thus were dependant on other countries to meet their food needs. Also, other countries were investing in Africa to secure their food needs. There were transformations taking place in the agriculture sector in Africa, but these were not fast enough to generate the needed jobs. A more systematic strategy of agricultural development was needed.

In rounding up, Professor Drescher shared his belief that there was a lot to be learnt from the German urban agricultural system. Ms Wesselow stated that there were no ready-made solutions but rather processes. Professor Hendriks reminded participants not to forget to put food pathways on their urban agendas. Dr Petzold added that ecosystem-based planning was one way of making cities liveable. The Chair concluded by saying that there was the need to interrogate received knowledge.

THIRD DAY: 6 JULY 2018
EIGHTH SESSION: DISASTER PREPAREDNESS AND MANAGEMENT IN THE AFRICAN CONTEXT AND CLIMATE CHANGE ADAPTATION
(Chair: Professor Elizabeth Ardayfio-Schandorf, FGAAS)

Understanding and Addressing the full spectrum of Urban Risks
(Dr Emmanuel Osuteye, University College London, UK)

Dr Osuteye started by saying that his presentation would concentrate on small-scale risk in informal settlements without losing focus on the full spectrum. The presentation was based on a project funded by the UK Government. It focused on nine cities in six countries in Africa. It looked at the spectrum of risks, how risk accumulation occurred and how risk accumulation cycles could be broken. The goal was to see how researchers on Africa could build a bottom-up view of risk, how it could be understood and what could be done about it. The examples used in the presentation were from Karonga, Malawi, and Freetown, Sierra Leone. Risk evoked the idea of the likelihood of a disaster happening. It was conceptualized as hazards interacting with vulnerabilities, and a lack of coping capacity of people. When these factors were high, risks were high. The focus on urban areas was because risks accumulated faster in them than in rural areas. The cumulative effect was what made the city vulnerable. There was an unequal exposure of how risks happeedn. The frameworks in dealing with risks were very centralized in Africa as decentralized processes didi not work. In all of this, it was the urban poor who suffered most.

He mentioned that disaster could be looked at in three broad categories: the large-scale and intensive, the small scale and the everyday. There were also issues of risk traps. There were issues of how cities were built and how that induced risks. The entire riskscape had to be considered and research questions developed that interrogated the interaction of hazard and vulnerabilities, and the actors and relationships involved. This would reveal the current development practices in place. There was a need to think of alternative practices. What was needed was a disaggregate grassroot view of the factors shaping these practices. In Freetown some of the coastal areas were being reclaimed, which led to floods during the rainy season.

He added further that, beyond research, his institute wrote four-page policy briefs that were circulated to city authorities. Multi-stakeholder engagements were needed in research and research dissemination. There were alternative and innovative approaches to assessing urban risks which worked very well at the local level. An example at University College London was the 'Remap risk', which was a community-based

tool. In Karonga, the risk density was concentrated in the city centre. He concluded that the use of visual tools such as maps was also effective in eliciting the interest of people.

African Coastal Cities: On the Frontline in the Anthropocene
(Professor Bruce Glavovic, Massey University, New Zealand)

Professor Glavovic started by saying that he was born in Harare and grew up in South Africa. He wanted to share the significance of coasts in the urbanization of Africa. He said that many people in Africa had their backs to the coast, with only a few making a living off it. The coast was incredibly productive, spatially confined and susceptible to over-exploitation. It was a shared public space and a meeting place of land and sea, people, etc. The coastal areas were each unique but shared a lot in common. Most major cities in Africa were located along the coast. The future of cities in Africa was dependent on how the challenges that faced coastal cities were navigated.

According to Professor Glavovic, the Anthropocene referred to the era of humans dominating the globe. This was manifested, for instance, in the issue of global warming, which had resulted in rising sea levels. In the future, the largest cities would be in Africa and Asia. This raised the issue of coastal squeeze as increasing numbers of people lived in coastal cities. Sea level rise would continue to pose a challenge going into the future. Africa, among the different continents, had least exploited the potential of its coastal economy, albeit taking account of the recent exploitation by foreigners. Governance approaches had to be framed in a way that included these issues. Coastal hazard risk was socially constructed and had become the dominant discourse in recent times. These issues affected human development because the underlying political, economic and cultural issues were not addressed. It was in the context of building the enabling environment that human development was fostered.

He added further that there was an important and complex relationship between risk, resilience and sustainability. The unsustainable pattern of development itself was resilient to change. The status quo resisted change. The issue was not choosing between bottom- or up-approaches but how to bring the two together in a meaningful way. The question was how to reconcile the technical and formal with

the informal and disruptive. He argued further that in the long-term, protective approaches such sea defences would be rendered useless. There was a need for transformative approaches such as getting off the addiction to fossil fuels and other patterns of unsustainable and inequitable forms of development.

Professor Glavovic mentioned as an example of such an initiative the 'Future of Coasts', which was a network of researchers. It had the 'Our Coastal Futures Strategy', which worked at the regional scale. He averred that regional level as well as community level work was important. There was the need to understand the community and the riskscape, deciding on short-term actions and adaptations. Defining the community was key in this process. Difficult decisions had to be made as there were going be losers and winners. There was a range of decision tools available, but the challenge remained political. He concluded that the role for the African science academies was to create safe spaces for 'rogue science'.

Urban Development, Climate Change and Disaster Management Nexus in Africa
(Professor Babatunde Agbola, University of Ibadan, Nigeria)

Professor Agbola started by saying that the current planning approaches in African cities would lead to disaster. He mentioned that his presentation was anchored on cause and effect. Many times, cause and effect were not as people perceived them. Effects could only be traced to the causes when they occurred. Disasters were not random incidents, they did not just occur. They were things that could be planned for. Disaster could be natural or human induced. Disaster risk management concerned mitigation, protection and adaptation. These were about modifying the human vulnerability to them. Disaster risk management included accepting the risk, avoiding the risk, transferring the risk, reducing the risk, etc. Typical disaster risk management would involve procedures, practices, responsibilities, etc. He asked about how the concepts of smart city, green city and sustainable city fitted into the African context. These concepts needed to be interrogated. Cities could only be sustainable if the life support system on which they relied on were resilient. He concluded that the urban poor must be the business of everyone. Africa was the most prone region to disaster but the least equipped; governance was key in changing this.

Questions from the Audience
(Chair: Professor Elizabeth Ardayfio-Schandorf, FGAAS)

The Chair urged participants to propose solutions to the problems raised in the presentations, which could be recommended to policy-makers. Ms Amy Weimann was concerned that the prevalence of some diseases was a normality for many. She wanted to know whether the media could be brought in to help with information dissemination. Professor Lohnert commented that all the presentations had talked about vulnerability, central to which was the coping mechanism. He said it should be noted that the poor were sometimes engaged in coping strategies that were harmful in the long term. Professor Krüger questioned the conceptualization of risk as a function of hazards. He opined that such a notion affected the ability of people to adequately assess hazards. He also questioned the conceptualization of community. He argued that such a concept did not exist in reality. Mr Emmanuel Mensah wondered whether regional bodies such as ECOWAS could play a role in disaster management. He also thought the telecommunications companies could be used as an early warning mechanism for disasters. Mrs Cindy Baidoo wanted to know the gender breakdown in the urban disaster risk studies done by Dr Osuteye. Dr Mogo asked about the role of the private sector and indigenous knowledge systems in disaster risk management. Professor Buor wanted to know what scholars were doing to develop models that dealt with the period before disasters.

Professor Glavovic began by answering that there was a critical role for the media and the private sector as well as other stakeholders. On the concepts used, he opined that their value was that they created spaces for debate. Dr Osuteye also agreed that the media had an important role to play. On the concept of community, he differed from the opinion expressed by Professor Krüger. He thought community existed. On risk, he answered that the focus had shifted from calculating risks to people's experiences of it, which he found to be a powerful tool. On the gender breakdown, he answered that the experiences of the different genders varied. Professor Agbola answered that sometimes people failed to heed early warning systems.

In the closing comments, Professor Glavovic shared the idea that the perception of risk needed to be opened to alternative frames. Dr Osuteye urged that the conversations needed to continue, and that the small and everyday risks should feature in the discussions. Professor Agbola called for re-education and the interrogation of received knowledge. The Chair concluded that the discussions should continue to find ways in which academies could contribute to building sustainable cities.

NINTH SESSION: INNOVATIVE FRAMINGS OF THE AFRICAN CITY
(Chair: Dr Christiane Diehl, Deputy Director, International Relations, Leopoldina)

The Chair started by saying that there would be opportunities for participants during the discussion in the last session to make contributions they had not yet had the opportunity to do so. She also announced some amendments to the programme.

Making Science, Technology and Innovation Work for Sustainable Development of Africa
(Dr Peggy Oti-Boateng, UNESCO, Zimbabwe)

Dr Oti-Boateng started by saying that her presentation was a summation and the way forward for the conference. What she felt had not been dealt with in the conference so far was the role of the academies of science in making science and technology work for Africa. She introduced herself as the Regional Science Advisor of UNESCO for Africa. According to her, Africa was not doing well in terms of science and technology. Africa needed to build partnerships that would be win–win. Africa should not only be a recipient of science and technology. For the first time, Africa was part of the process of formulating the SDGs. The SDGs were based on '4Ps': planet, people, peace and partnership. Ghana was also actively involved. Africa had its own vision before the SDGs, which was 'Africa 2063', formulated in 2013. Dr Oti-Boateng argued that SDG 9 on science, technology and innovation drove the whole process. SDGs 1–6 were the unfinished business of the MDGs. The African Union had a vision of prosperity for all and that no one should be left behind.

The potential of African natural and human resources had to be harnessed. What was needed was science, technology and innovation to add value to the human resource to make it human capital. But many African countries were not investing in science and technology. There were deficits in the high-end skills such as engineering. This varied across Africa, with anglophone West Africa doing better than the others. Higher education was not robust. The academies could drive this process. She argued that there was a correlation between science, technology and innovation and economic growth and development. The African Union wanted 1% of GDP dedicated to science, technology and innovation and only South Africa had achieved this. Africa was not partaking in the fourth industrial revolution. There were 167 targets under the SDGs, and come 2030 most African countries would not have achieved these because of a lack of commitment to science and technology. There was the need to work together from all levels. She added that investments in science and technology should be based on ethics.

Some of the science and technology and innovations for sustainable cities were policies, capacity building, renewable energy, small islands development states, freshwater, sustainable cities, geodiversity, climate change, gender equality, etc. She revealed there were funds available for climate change programmes in the Green Climate Fund. The academies had to be the think-tanks to bring the other constituents together. She mentioned again that African countries had developed TESAC 2024. The gender dimension was also key in the discussion. Big data were also needed to inform policy. There was the need also to look at ecotourism, youth empowerment, curriculum development, and monitoring and evaluation, and a synergy of actors. All these need to be communicated well. She concluded that sustainable development of cities needed to be integrated into the other SDGs.

Making Africa Urban: Africanizing Global Urban theory
(Professor Jennifer Robinson, University College London, UK)

Professor Robinson started by asking what a good relationship between research and policy was. She enumerated some urban challenges and concluded that many of these problems lay with governance, politics and power relations. So far in the conference there had been a lack of focus on global processes because Africa was shaped by them. She asked how the multiple processes shaping Africa could be matched. The insights of African urban scholars had been left out from the urban discourse. She opined that Africa was not incomparable. She asked about the relevance of theories fashioned from elsewhere to Africa. She also queried whether ideas had to be transformed on the basis of learning from Africa. She mentioned that there was a strong repertoire in African urban studies that pointed to the fact that the urban was just not in a physical territory but that urbanization processes were spatially very extensive. There was therefore the need to draw in distinctive thinking of wider conceptualization of urban circuits. What could we learn from the different instantiations of urbanization?

There were also features of cities that didi not 'travel', such as gentrification. There was the need to think across these features to learn more about the African context. What could be learnt from each other in a much looser way? There was the need to build urban concepts and understanding from policy work. But these had their limits. These separate processes worked together and were not isolated. What do we do with large-scale investments? There were the sceptics, but

not many studies had been done in this area. On issues of rights to the city, she asked how they had been understood elsewhere.

Professor Robinson concluded that there was the need to think outside the normative three-tier government structure and to think about the way in which projects were assembled. There was a wide range of actors who had to negotiate and benefit from development. Development should not just be written off as a waste of resources; there was a need to examine more closely what this meant. For instance, in Shanghai there were upgrade investments in infrastructure from which the government then reaped tax returns. In London, the returns that investors could make were capped as these could lead to some perverse urban outcomes. Johannesburg had a blend of property taxes no matter where one invested in the city. There were a lot of key actors who were not being researched. There was the need to focus research on the emerging urban issues such as large-scale infrastructure developments, and on this there was the possibility of learning from the differing contexts.

Modelling Future Cities: Ongoing and Upcoming EC-JRC Initiatives
(Ms Ine Vandecasteele, Joint Research Centre, Ispra, Italy)

Ms Vandecasteele started by saying that learning from policy was not enough: policy should also learn from us. The work of the Joint Research Centre was to give the European Union scientific evidence for policy-making. It also worked in various parts of the world. There was a project on Africa where it provided data support and tools. It also wrote policy briefs on urban issues. From 2019 it was going into some cities in Europe and possibly some African cities. The tools used were satellite images. There was also a land-use model which looked at possible futures. For instance, how would cities or agriculture develop, what would that mean and how could this be optimized? In 2012 there was a project on safeguarding Europe's waters and natural water retention measures. Such an exercise helped decisions about what measures could be applied in which place. Another example was a project that looked at the compact nature of cities and how that would affect air quality. There was also work done on shale gas exploitation in Poland and how it would affect land use, water and water use. Another example was the impact of energy crops. The analysis was done by looking at several indicators. All the work done so far was available online on the urban data platform. This was being applied to the African case at 100-metre resolution starting from 1 kilometre. There was already a baseline available and work was ongoing in building scenarios. She concluded by saying that data were available for

use with the intention of building a community of practice.

Panel Discussion
(Chair: Professor Fred Krüger, University of Erlangen-Nuremberg, Germany)

The Chair started by saying that, from the discussions, he realized a growing disjuncture between global urban framings and local, situational, temporal challenges in the city. Starting with Professor Robinson, he asked whether she believed that the global framings allowed for a thinking without growth and whether such framings should not be abandoned. She answered by saying that there had been attempts to bring on board more voices to these global discussions such as city authorities and African governments; therefore she would not completely agree with such assertions. The useful point here, she thought, was not to give a set of prescriptions as if they were set in stone. This emphasized the need for evidence-based global policy-making. Professor Lohnert added that the scientific community had a role to play in being the link between research and policy-making by reviewing the research dissemination strategies. The role of the media was also critical. Dr Oti-Boateng added that it was important to think globally but act locally because we did not live in isolation. There was no need to reinvent the wheel as there was need to leap-frog. This could be done if we thought and looked globally. There was also the need to appreciate that many of the local issues would depend on good governance. Mrs Adodoo from the Ghana Institute of Architects added that, beyond the academics, there was the need to understand how local contexts work. Ms Vandecasteele added that, coming from the background of the question raised earlier about what Africa was doing, she believed Africa had a lot to add by way of its experiences; Africa had a lot to contribute to the global discussion.

Professor Krüger probed further by asking whether the average town planner bucked down with the challenges of addressing the pressing needs of their city considering the SDGs in their everyday work. Mrs Adodoo began answering by saying that she did not think the planner would have the SDGs in mind every day. She went on to say that she thought professionals in the built environment in Ghana had failed the country because development was preceding planning. For instance, she thought there was the need to work towards changing the pattern of traffic moving in only one direction at peak times. Professor Robinson added that the SDGs were rolled out at a time when the urban area was under so much assault from many forces. This called for working together to overcome those challenges. Professor Lohnert added

that although the planner may not have the SDGs in minds on a daily basis, their work by its nature – if done according to the planner's mission and allowed by policy – was focused on achieving the SDGs as they worked to improve urban life. Dr Oti-Boateng added that the SDGs had to be internalized. For instance, African countries had decided to prioritize seven of them that were interrelated with the African aspiration.

The Chair then invited the audience to join in the discussion. A contributor raised the issue of Africa being described as if it were one country or a homogenous entity. She thought there was the need to go beyond the general models of Africa to the different sub-regions and countries. Professor Addae Mensah wanted to know whether the United Nations took Professor Jeffrey Sachs' advice to have more scientists than economists on the discussion of the formulation of the SDGs. He also shared the promotional activities of the Ghana Academy of Arts and Science on the SDGs. He called for a more optimistic outlook on what was being done. A contributor took issue with an earlier suggestion of the planning capacity in Africa. He was of the view that the planning capacity was low, taking Ghana as an example in terms of personnel and competencies. He called on the academy to help push more planners into the system.

Dr Oti-Boateng began answering by saying that she agreed on the need to have more scientists at the global decision-making level, but the onus was on member states to propose such changes. She agreed with the earlier comment on inadequate capacity in Africa. She lamented the low representation of Africans in the United Nations system. She urged that Africa needed to position its people strategically into such places. There was also the problem of inadequate data. On the issue of inadequate capacity in Africa, Professor Lohnert still held on to the position that the knowledge existed in Africa despite the low personnel numbers. So, what was needed was the governance framework that enabled such knowledge to be used. Ms Vandecasteele

responded to the issue of Africa being referred to as a homogenous entity. She agreed with the contributor's assertion but was of the view that, in the search for solutions, looking for commonalities was critical. Professor Robinson agreed with these assertions and added that looking at the issue from the point of transnational territorial approaches revealed many agile actors who were shaping these local processes. Mrs Adodoo added that the academy needed to champion the collaboration between research and policy by bringing together the professional groups in the built environment to set the agenda.

Dr Eugenia Date-Baah added that Ghana was quite advanced in domesticating the SDGs by implementing them at the local level such as meeting market women and translating the goals into local languages. She wanted to know why Dr Oti-Boateng left out 'prosperity' from the '5Ps' associated with the SDGs. She also added that, despite the commonalities, there were unique things about the African situation, for instance talking about the African worker. One such distinction was the level of social interaction. She wanted to know whether social interaction was something important in studying the African urban context. Another contributor re-emphasized the need to contextualize the issues raised to suit the varying local circumstances. He wanted planning authorities to enforce planning regulation and at the same time to find innovative means for solving urban problems. He also called for more engagement with the media on these issues.

Dr Oti-Boateng was happy about what was happening on the SDGs in Ghana. On the '5Ps', she answered that she was referring to UNESCO's '4Ps'. More also needed to be done in the area of communication and advocacy. Professor Robinson urged that the discourse should not stop at the point of differentiating the African city but to go on to form a new thinking about the urban area. The Chair concluded by saying that there was the need to internalize policies, and to examine closely how everyday living in the city was processed.

PRESENTATION OF CONFERENCE DRAFT COMMUNIQUÉ
(Mr Benedict Arko, University of Bayreuth, Germany)

This presentation can be found in the Appendix on page 31.

VOTE OF THANKS AND CLOSE OF THE CONFERENCE

The master of ceremonies asked the participants to provide input into the communiqué for its finalization within two weeks. On behalf of the international and local planning committees for the conference, he expressed gratitude for support received from the National Academy of Sciences of Germany Leopoldina. He singled out Professor ter Meulen for his commitment. He also expressed gratitude to NASAC for their support. He next commended the ASSAf. The Federal Ministry of Education and Research of Germany was thanked for its support. He also thanked the Ghana Academy of Arts and Science. He was also grateful to those who had made financial contributions towards the conference: the Ministry of Environment, Science, Technology and Innovation; the Ministry of Water Resources, Works and Housing; the Energy Commission; the Council for Scientific and Industrial Research; and the Architects Registration Council. Other private individuals and organizations that had provided support included Sutherland

and Sutherland, an architectural firm; S. Tetteh and Associates, another architectural firm; Multicard Consultancies; McDann Building Interiors; the Ghana Institute of Architects; and GTZ. He also thanked the presenters, Chairs, moderators and everyone who took part in the conference.

Dr Christiane Diehl added that funding for the conference came from the Federal Ministry of Education and Research of Germany. She also expressed gratitude to the media present from the African News Network and SciDev.Net. The conference had appeared in several newspapers the previous day and in online news.

This was followed by announcements from the master of ceremonies. He then invited Professor Elizabeth Ardayfio-Schandorf to give a closing prayer for the conference.

**APPENDIX
COMMUNIQUÉ ISSUED AT THE END OF THE CONFERENCE ON SUSTAINABLE AFRICAN CITIES HELD IN ACCRA, 3–6 JULY 2018**

Preamble

We, the participants of the conference held under the theme, 'Sustainable African Cities; Debating Current Challenges and Exploring Future Pathways' in Accra from 3rd to 6th July 2018, jointly organized by the Ghana Academy of Arts and Sciences, the German National Academy of Sciences Leopoldina, the Network of African Science Academies and the Academy of Science of South Africa, consisting of academics and practitioners in the subject area from fourteen countries around the world, deliberated on the issue for the past three days through presentations, group break-outs and discussions. We are ever more aware of the enormous challenges that confront urbanization in Africa, the linkages between urban and rural areas, the potential inherent in urban areas as well as the progress made so far at managing urbanization.

Issues of concern

Some of the key issues discussed were sustainable urban housing, urban ecosystems and ecological management, urban economic and spatial management, livelihood security, urban health and health equity, disaster preparedness, risk management, resilience and climate change adaptation. Drawing inspiration from SDG 11 on sustainable cities and communities and the imperative to 'leave no one behind', we are convinced of the need to interrogate received knowledge on the issue and the need for home-grown solutions compatible with the socio-cultural aspirations of the people. We would like to address the following concerns to governments, local governments, practitioners, academics and indeed everyone concerned with the sustainable management of African cities.

Key considerations

1) The people must be the centre

   In the light of competing interests for dominance in the African urban space, the need to prioritize the welfare of the general population is paramount. Key to this are policy strategies that would secure the health of urban dwellers and provide food sufficiency, adequate housing, efficient transport systems, security and decent employment. A good balance is needed between the profit motive of businesses both foreign and local, and the health and well-being of all people to address the inequities that exist in the African city. A focus on prevention and promoting health and well-being in the contexts where people live, work, play and pray is critical. This will include collecting data on the social determinants of urban health, breaking down the data to unveil and act on inequities and mapping these data to services such as waste management and physical and social aspects of the urban built environment. Preventive health measures such as proper waste management, awareness creation on physical and mental health and lifestyle changes would ameliorate the burden placed on curative health care. There is need to investigate key intersections between the environment, health and economic challenges, particularly exploring the role of the urban poor in value creation and incentives to encourage eco-friendly investments in issues affecting the health of the urban poor—waste management, transportation, electricity, housing, for example.

2) Colonial understandings of the city must be interrogated and modified

   There is a need also to revisit the issue of land tenure reforms and colonial-era planning approaches that are out of touch with the current realities of the African city, especially in the professional development of future urban planners. This would go a long way to mitigating the housing challenges faced by many African cities as well as making room for productive urban agriculture and the benefits drawn from other ecosystem services. Different investment options available for putting in place efficient and reliable transport systems need to be looked into as alternatives to urban sprawl as well. The water storage systems, both at the household and at the city level, as one of the means to check flooding in cities, also need to be looked into. The need to create decent employment opportunities cannot be overemphasized. Apprenticeship programmes to equip young people with requisite skills for the job market are needed. Labour-intensive construction approaches are known to be one of the sectors that create more jobs per dollar invested.

3) There is need for research co-production between scholars and leaders to support the well-being of urban dwellers

The positive correlation between research and development and inclusive growth and development in cities elsewhere is well proven. The disconnect between research, industry and policy-making concerning urbanization in Africa needs to be addressed. African governments at the national and local levels as well as the private sector need to invest more into research to inform policy-making. Dialogue platforms need to be created and institutionalized between academia, industry and policy-makers. Academics also need to be encouraged to do more policy-relevant research, even as they need to enhance their collaboration with practitioners. Integrated knowledge-translation activities targeted at policy-making are also needed.

4) There is need for a sustained pan-African discourse on African cities and the well-being of their inhabitants

Urgent attention should be given to efforts being made to enhance collaboration and synergy among the governments of African cities through the investment of community, financial and social capital. Mayors and other political and technical actors in charge of running African cities need to be exposed to the opportunities and benefits of collaborating and sharing ideas among themselves. This can be done through collaborative partnerships, research, experiences and best practices on issues of mutual interest. This also includes inter-sectoral partnerships between experts in various fields: urban planning, environment, health, risk and resilience, justice and economics, among others. Sister-city relationships must be looked at as real opportunities for genuine partnership and cooperation among equal partners with common interests. Organizations such as ICLEI (Local Governments for Sustainability) offer the platform to address the local impacts of global change phenomena such as climate change and urbanization.

5) The black box of governance must be deconstructed and intervened on.

The need for good urban governance cannot be overemphasized. Many of the challenges faced in African cities can be traced to the issue of governance. Bringing on board all the relevant actors to the governance space is crucial to urban outcomes. Genuine participatory approaches are needed to bring governance to the doorsteps of the people. In line with this are accountability and transparency processes required to build trust with the people. Equity is needed in the distribution of urban goods and that must be seen to be done. The implementation and enforcement of policies and laws without fear or favour would engender the needed trust in the system. Participatory processes and effective communication strategies can create public awareness and education of urban policies and laws to elicit the desired popular consent and concurrence. There is also need for a reorientation of urban leaders to understand how their decisions impact on health and well-being, and how to intervene in urban contexts in ways that promote urban health and health equity. Using participatory approaches, the public also has to be sensitized to transform existing social capital, both traditional and contemporary, into stewardship of the urban neighbourhood environment, and hence avoid preventable diseases.

Conclusion

It is our firm conviction that the opportunities offered by urbanization in Africa can be enhanced to overcome the challenges it poses, if the suggestions offered in this communiqué are taken on board in addition to what is already being pursued.

Issued on 6th July 2018 in Accra.

Professor Aba Bentil Andam, President of the Ghana Academy of Arts and Sciences

Conference Chairman

ADDITIONAL ISSUES CONSIDERED DURING THE CONFERENCE (AS ADD-ON TO COMMUNIQUÉ)

Several issues were considered during the conference discussions which could not be satisfactorily integrated into the communiqué in time. These are summarized below.

Other issues of concern raised by participants at the 'Sustainable African Cities' conference included the admission that Africa is shaped by global processes. A deeper understanding is therefore needed on how these global processes shape Africa and vice versa. This would be key to better policy-making and implementation. Additionally, in the attempt to better understand urbanism in Africa, care should be taken to avoid approaches that treat the urban as disconnected from the rural. Rather, urbanism in Africa should be understood as a continuum of social processes that encompass both the urban and rural. Key in this process is the issue of the informal economy, its workings and how operators therein can be assisted to improve their productivity by using aggregating mechanisms such as cooperatives. There is also the need to rethink the antagonistic approach to dealing with the informal economy by addressing the structural issues that lead to it creation. Any policy targeting the informal economy should do well to include access to small loans, non-monetary forms of support and intense training. This highlights the concern about how sustainable urban development can be aligned to the cultural aspirations of the people.

Strategies presented at the conference included the use of infrastructure provision to propel economic development. The world over, infrastructure is known for its capacity to propel growth and prosperity. Despite the efforts to provide adequate infrastructure in many African countries, more needs to be done. This must include prioritizing the provision of basic services. Care should be taken so that the push to liberalize the sector does not preclude the poor from accessing such vital services. Also key is infrastructure that would address the effects of climate change such as droughts and floods at the macro- and micro- levels, and protecting the sources of urban water supply. Additionally, there is the need to pay attention to the issue of green infrastructure. The need

for growth and development should not encumber the maintenance of green spaces, which is also critical to healthy urban living. Preference should be given to approaches to infrastructure provision that maximize the creation of jobs. Care should also be taken to ensure that there is value for money in the provision of these infrastructures. Added to that is the issue of maintenance, which needs to be prioritized.

There is also the need to place more emphasis on preventive health approaches as opposed to curative health care. Efforts are needed to tackle residential as well as industrial air pollution. Policy-makers need to take cognisance of the 'cradle to cradle' concept, which obliges industry to protect and enrich ecosystems. The policy of banning the use of plastic packaging, as has been done in some parts of Africa, needs to be emulated. In all this, the coast, which serves as the interface between land and sea, should not be left out. Africa has not fully explored the benefits it can derive from its coastal resources. Recent issues of over-fishing and dwindling fish stocks need to be addressed. Strategies to empower the artisanal fisheries sector need to be prioritized, such as the provision of cold storage and other fish preservation and processing facilities.

On areas for further research, there is the need to deepen understanding about the processes of the everyday creation of the African city. Beyond that, members of the academy need to review their research dissemination strategies to make research more beneficial to the people. The use of policy briefs and other communication strategies needs to be explored. Academies should also consider how research funding can address the issue of research dissemination.

Finally, to make the SDGs more relevant in the everyday lives of people, there is the need to adopt communication strategies that make the message meaningful to different people in society. This should include the translation of the SDGs into different languages. Also key in this process is mainstreaming issues of gender into every aspect of implementing the SDGs in the context of African cities.

PROGRAMME
SUSTAINABLE AFRICAN CITIES: DEBATING CURRENT CHALLENGES AND EXPLORING FUTURE PATHWAYS
3–6 JULY 2018, GHANA ACADEMY OF ARTS AND SCIENCES, ACCRA, GHANA

3 July 2018

Informal Opening

18:00 – 18:20   Welcome

1. **Professor Henry N.A. Wellington**, Fellow, Ghana Academy of Arts and Sciences (GAAS); Chairman of the Local Planning Committee, GAAS
2. **Mrs Jackie Olang-Kado**, Executive Director, NASAC
3. **Professor Volker ter Meulen**, Past President, Leopoldina; President of the InterAcademy Partnership (IAP)

18:20 – 19:00   Drinks reception

19:00 – 21:00   Opening Dinner

Day One: 4 July 2018

08:00 – 08:30   Registration

Official Opening

Chair: Professor Aba Bentil Andam, Fellow, Ghana Academy of Arts and Sciences; President, GAAS

Master of Ceremonies: Professor H.N.A. Wellington, Fellow, Ghana Academy of Arts and Sciences; Chairman of Local Planning Committee, GAAS

08:30 – 09:15   *Opening and Welcome Remarks*
1. **Professor Samuel Sefa-Dedeh**, Fellow, Ghana Academy of Arts and Sciences; Vice President, Sciences Section, GAAS
2. **Professor Volker ter Meulen**, Past President, Leopoldina; President of the InterAcademy Partnership (IAP)
3. **Professor George Gyan-Baffour**, Minister for Planning, Ministry of Planning, Ghana
4. **Ambassador Christopher Retzlaff**, Embassy of the Federal Republic of Germany to the Republic of Ghana
5. **Mr Tirso Dos Santos**, UNESCO, Accra

09:15 – 09:45   *Keynote Speech: The Creation of Sustainable Cities for African Citizens*
Professor Edgar Pieterse, African Centre for Cities, University of Cape Town, South Africa

09:45 – 10:10   *Questions from the Audience*

Moderator:
Ing. Steve Anoff Amoaning-Yankson, President, Ghana Institution of Engineers

10:10 – 10:40   Cocoa/coffee break

The Conceptualization of Cities

Chair: Professor Ralph Mills-Tettey, Fellow, Ghana Academy of Arts and Sciences

10:40 – 11:15   *Conceptualizing the City in a Sub-Saharan African Context*
Professor Beate Lohnert, University of Bayreuth, Germany

11:15 – 11:50   *A Right to the City: Just and Inclusive Cities for All – African and Global Concepts and Perspectives*
Professor Fred Krüger and Dr Alexandra Titz, University of Erlangen-Nuremberg, Germany

11:50 – 12:30   *Panel discussion*
Moderator: **Emerita Professor Elizabeth Ardayfio-Schandorf**, Fellow, Ghana Academy of Arts and Sciences; Immediate Past Vice President (Arts Section), GAAS

Panellists:
1. **Professor Beate Lohnert**, University of Bayreuth, Germany
2. **Professor Fred Krüger**, University of Erlangen-Nuremberg, Germany
3. **Dr Alexandra Titz**, University of Erlangen-Nuremberg, Germany
4. **Professor Edgar Pieterse**, African Centre for Cities, University of Cape Town, South Africa

12:30 – 13:30   Lunch break

Case Studies

Chair: Dr Christiane Diehl, Deputy Director, International Relations, Leopoldina

13:30 – 13:45   *Introduction to Session and Formation of Breakout Groups [Parallel Presentations]*

13:45 – 14:35   *Integrated Urban Development Approaches in the Context of South African – German City Network for Integrated and Liveable Neighbourhoods*
Mr Lars Loebner, City of Halle (Saale), Germany and **Ms Dawn McCarthy**, Nelson Mandela Bay Municipality, South Africa

Analysis of Rental Housing in Urban Africa: The Case of Ghana
Professor George Owusu, University of Ghana

Urban Rejuvenation Initiatives in Africa
Professor Joe Osae-Addo, ArchiAfrika, Accra

Modelling Future Cities: Ongoing and Upcoming EC-JRC Initiatives
Ms Ine Vandecasteele, Joint Research Centre, Ispra, Italy

Towards a Sustainable Zambian City: Experiences of Three Peri-Urban Areas in Lusaka and Mazabuka in Zambia
Dr Francis Mwape Ndilila, Nominee of Zambia Academy of Sciences

Implementing and Monitoring the SDGs in an Urbanizing Context in Ghana
Mr Raphael Frerking, Head of Programme for 'Support for Decentralization Reforms' and 'Good Financial Governance', GIZ

14:35 – 14:55   *Plenary Statements from Breakout Groups*

14:55 – 15:15   **Cocoa/Coffee break**

Sustainable Urban Housing

Chair: Professor Dr Dr Daniel Buor, Fellow, Ghana Academy of Arts and Sciences; Kwame Nkrumah University of Science and Technology, Ghana

15:15 – 16:00   *Urban Housing Policies in Africa between Supply and Demand-Driven Concepts*
Professor Beate Lohnert, University of Bayreuth, Germany

16:00 – 16:25   *Condominium Housing in Ethiopia*
Ms Monika Wiebusch, Planning Expert, planbar - Büro für Stadtplanung und Beratung, Germany

16:25 – 16: 50   *Housing Finance and Strategies of Informal Settlement Dwellers*
Dr Christiane Rudic, Urban Geographer, Germany

16:50 – 17:15   *Sustainable Governance for Sustainable Urban Settlements*
Professor Daniel Kipkirong Tarus, Moi University, Kenya

17:15 – 17:40   *Healthy Housing Policy: The Role of Housing in Health Creation*
Ms Amy Weimann, University of Cape Town, South Africa

17:40 – 18:00   *Wrap-Up: Urban Housing – The Challenges for the Next Decade*
Professor Beate Lohnert and presenters

Day Two: 5 July 2018

Urban Ecosystems and Ecological Management

Chair: Professor Volker ter Meulen, Past President, Leopoldina; President of the InterAcademy Partnership (IAP)

08:30 – 08:55   *Urban Water and Wastewater Management*
Mr Daniel Adom, Chief Technical Advisor, Water for African Cities, UN-HABITAT, Kenya

08:55 – 09:20   *Sustainable Urban Ecological Management in Accra, Ghana: A Mirage or Reality?*
Professor Rose Emma Mamaa Entsua-Mensah, Fellow, Ghana Academy of Arts and Sciences; Deputy Director-General, Council for Scientific and Industrial Research, Ghana

09:20 – 09:45   *Sustainable Air Quality Management in Developing Urban Environments*
Professor Stuart Piketh, North-West University, South Africa

09:45 – 10:10   *Interrogating the Ecosystem Health of Accra Metropolis for Human Well-Being: The Challenges and the Prospects for the Future*
Professor Alfred A. Oteng-Yeboah, Fellow, Ghana Academy of Arts and Sciences; University of Ghana

10:10 – 10:30   *Panel discussion*
Moderator: **Mr Alfred Kwasi Opoku**, President, Ghana Institute of Planners

Panellists:
1. **Mr Daniel Adom**, Chief Technical Advisor, Water for African Cities, UN-HABITAT, Kenya
2. **Professor Rose Emma Mamaa Entsua-Mensah**, Fellow, Ghana Academy of Arts and Sciences; Deputy Director-General, Council for Scientific and Industrial Research, Ghana
3. **Professor Stuart Piketh**, North-West University, South Africa
4. **Professor Alfred A. Oteng-Yeboah**, Fellow, Ghana Academy of Arts and Sciences; University of Ghana
5. **Dr Sheillah Simiyu**, Great Lakes University of Kisumu, Kenya

10:30 – 10:45   **Cocoa/Coffee break**

Urban Economic and Spatial Development, Livelihood Security

Chair: Professor Jacob Songsore, Fellow, Ghana Academy of Arts and Sciences

10:45 – 11:10   *Sustainable Industrial Development in the Construction Sector for Urban Youth Employment Creation*
Professor George Ofori, Fellow, Ghana Academy of Arts and Sciences

11:10 – 11:35   *Informal Markets and the City*
Professor Tebarek Lika Megento, Addis Ababa University, Ethiopia

11:35 – 12:00   *Adequate Policy Frameworks & Urban Planning Approaches*
Mr Remy Sietchiping, Lead, Regional and Metropolitan Planning UN-Habitat, Kenya

12:00 – 12:45   *Panel discussion*
Moderator: **Professor Ralph Mills-Tettey**, Fellow, Ghana Academy of Arts and Sciences

Panellists:
1. **Professor George Ofori**, Fellow, Ghana Academy of Arts and Sciences
2. **Professor Tebarek Lika Megento**, Addis Ababa University, Ethiopia
3. **Mr Remy Sietchiping**, Lead, Regional and Metropolitan Planning UN-Habitat, Kenya
4. **Professor Joe Osae-Addo**, ArchiAfrika, Accra
5. **Mr Gabriel Nii Teiko Tagoe**, Town Planner, Accra Metropolitan Assembly

12:45 – 13:45   Lunch break

Urban Health

Chair: Professor Beate Lohnert, University of Bayreuth, Germany

13:45 – 14:15   *The Challenge of Urban Health*
Professor Dr Dr Daniel Buor, Fellow, Ghana Academy of Arts and Sciences; Kwame Nkrumah University of Science and Technology, Ghana

14:15 – 14:45   *The Healthy African City*
Dr Ebele Mogo, ERIM Consulting, Canada

14:45 – 15:00   *Questions from the Audience*

15:00 – 15:30   Cocoa/Coffee break

Urban Food Security and Livelihood Issues

Chair: Professor Jacob Songsore, Fellow, Ghana Academy of Arts and Sciences

15:30 – 15:55   *The Challenge of Food and Nutrition Security and Agriculture in Africa*
Professor Sheryl L. Hendriks, University of Pretoria, South Africa

15:55 – 16:20   *Urban Agriculture as a Means to Sustain Food Security in Cities*
Professor Axel Drescher, The Institute of Geography, University of Erlangen-Nuremberg, Germany

16:20 – 16:45   *Agriculture in an Urban Society. Social Challenges and Implications*
Ms Maren Wesselow & colleagues, Carl von Ossietzky University Oldenburg, Germany

16:45 – 17:10   *The Role of Urban Agriculture and Ecosystem Services for the Development of African Cities*
Dr Maximilian Petzold, planungsgruppe grün, Germany

17:10 – 18:00   *Panel discussion*
Moderator: **Professor George Ofori**, Fellow of the Ghana Academy of Arts and Sciences

Panellists:
1. **Professor Sheryl L. Hendriks**, University of Pretoria, South Africa
2. **Professor Axel Drescher**, The Institute of Geography, University of Erlangen-Nuremberg, Germany
3. **Ms Maren Wesselow**, Carl von Ossietzky University Oldenburg, Germany
4. **Dr Maximilian Petzold**, planungsgruppe grün, Germany
5. **Dr Raphael Olanrewaju Babatunde, University of Ilorin, Nigeria**

Day Three: 6 July 2018

Disaster Preparedness and Management in the African Context and Climate Change Adaptation

Chair Professor Yaw Serfor-Armah, Fellow, Ghana Academy of Arts and Sciences; Dean, Graduate School of Nuclear & Allied Sciences, University of Ghana

08:30 – 09:00   *Understanding and Addressing the Full Spectrum of Urban Risk*
Dr Emmanuel Osuteye, University College London, UK

09:00 – 09:20   *African Coastal Cities: On the frontline in the Anthropocene*
Professor Bruce Glavovic, Massey University, New Zealand

09:20 – 09:40   *Urban Development, Climate Change and Disaster Management Nexus in Africa*
Professor Babatunde Agbola, University of Ibadan, Nigeria

09:40 – 10:10   *Questions from the Audience*
Moderator:
Emerita Professor Elizabeth Ardayfio-Schandorf, Fellow, Ghana Academy of Arts and Sciences; Immediate Past Vice President (Arts Section), GAAS

10:10 – 10:40   **Cocoa/coffee break**

Innovative Framings of the African City

Chair: Dr Christiane Diehl, Deputy Director, International Relations, Leopoldina

10:40 – 11:00   *Making Science, Technology and Innovation Work for Sustainable Development of Africa*
Dr Peggy Oti-Boateng, UNESCO, Zimbabwe

11:00 – 11:30   *Making Africa Urban: Africanizing Global Urban Theory*
Professor Jennifer Robinson, University College London, UK

11:30 – 12:15   *Panel discussion*
Moderator: **Professor Fred Krüger**, University of Erlangen-Nuremberg, Germany

Panellists:
1. **Dr Peggy Oti-Boateng**, UNESCO, Zimbabwe
2. **Professor Jennifer Robinson**, University College London, UK
3. **Professor Beate Lohnert**, University of Bayreuth, Germany
4. **Professor Edgar Pieterse**, African Centre for Cities, University of Cape Town, South Africa

12:15 – 12:30   *Modelling Future Cities: Ongoing and Upcoming EC-JRC Initiatives*
Ms Ine Vandecasteele, Joint Research Centre, Ispra, Italy

12:30 – 12:45   *Vote of Thanks and Close of the Conference*
Professor Henry N. A. Wellington, Fellow, Ghana Academy of Arts and Sciences; Chairman of the Local Planning Committee, GAAS

12:45   **Lunch and departures**

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