

CITIES AND CLIMATE CHANGE ACADEMY
Africa Workshop
Kampala, Uganda, 3 – 5 May 2011



Makerere University

Executive Summary

The Meeting brought together African Climate Change experts teaching urban courses at the university level or conducting research in the field of climate change. Experts exchanged their experiences and good practices in teaching climate change in urban programmes, discussed pilot interventions of CCCI in Kampala. In depth discussions on modules on Climate Change and Housing, Climate Change and Poverty, Climate Change and Disaster Risk Reduction and Urban Climate Change Vulnerability Assessments were held.

The meeting agreed on the following:

1. Regional inputs to the Global Meeting in Bonn which will decide on the details of (urban) university course development integrating climate change.

- Uniqueness of African urban development, African urbanization
- African case studies
- African representation in consortia
- African good practices (Botswana, AAPS)
- Major on-going activities in Africa (case studies, building on existing practice)
- Existing research needs to feed into the generic curricula: many issues are not (well) researched, a lot of research is not accessible (not published or published in a journal that is not accessible).

2. The following areas were prioritized for module development:

- Climate Change and urban Vulnerability Assessments
- Climate Change and Shelter
- Climate Change and adaptation and mitigation planning
- Climate Change and urban water cycle management / Water and Sanitation Challenges
- Climate Change and Urban Poverty (including food security)
- Urban Disaster Risk Reduction in the age of Climate Change

3. In addition, the following were recommended in the run-up to and for the Global Meeting:

- Mapping of existing lectures, course material and activities in the priority fields
- Ensure African involvement in consortia to develop modules.

4. For the future the African CITIES AND CLIMATE CHANGE ACADEMY group recommends the following:

- Make use of "Urban Gateway" setting up a CITIES AND CLIMATE CHANGE ACADEMY-Africa Group (community of practice)
- Better linkage between education and practice (local research and training).
- Mandated Compulsory Training (continuous professional development) – could also help generating case studies for university teaching and should hence be linked to the initiative.
- An urban climate change research agenda with focus on African cities drawing from existing research networks and strengthening the linkage between education and research.

Content

A. Background	6
B. Objectives and expected outcomes of the workshop	7
C. Summary of Proceedings	8
Opening and Introduction	8
Session 1: Climate Change and Urban Planning Education in Africa	9
Session 2: Conducting Climate Change Vulnerability Assessments.....	10
Session 3: Sectoral session – climate change adaptation.....	12
Session 4: Measuring CO ₂ equivalents and preparing for mitigation initiatives.....	13
Working Groups for Sessions 3 and 4	13
Field Visit	15
Session 5 Comprehensive climate change planning	16
Session 6 Way forward	18
Annexes	19

A. Background

UN-HABITAT has initiated the Habitat Partner University Initiative in order to respond to the effects of today's rapid urbanization. Universities produce the leaders, managers and planners required for adopting innovative and robust approaches to city development and they have the human capital and knowledge resources for promoting the solutions needed for sustainable urbanization which is needed if cities are to deal with the challenges of the future. The Initiative aims at strengthening the cooperation between UN-HABITAT and institutions of higher education, as well as facilitating exchange and cooperation between universities in developing and developed countries.

The Cities and Climate Change Initiative (CCCI) of UN-HABITAT aims to build momentum for local governments to more readily respond to the climatic threats they face (Climate Change adaptation) and take bold steps in reducing cities' climate footprint. CCCI aims to enhance policy dialogue and advocacy on the local and sub-national level, on the national level, on the regional as well as on the global level. Knowledge generation and management through the CCCI website and publications, Capacity building for all stakeholders through tool development and partnerships with the professional associations, universities and local government training institutes are other key elements of the initiative.

One key output of the Cities and Climate Change Initiative aims to have Habitat Partner Universities, local universities and local continuous learning institutions adapting their teaching curricula and research to incorporate the issue of cities in climate change and exercise action-research in CCCI partner cities. It also aims at creating maximum linkages with the HPU initiative, the activities relating to Climate Change and Urban Planning as well as the pilot initiatives.

Workshop on Climate Change and Urban Planning (May 2009)

A workshop on Climate Change and Urban Planning was held in Rotterdam between 28 and 30 May 2009. The workshop was organized by The Institute for Housing and Urban Development Studies (IHS), the Commonwealth Association of Planners and UN-HABITAT. One of the objectives of the meeting was:

"To reach a common understanding on how urban planning and design schools can better address climate change as an integral part of their curricula"

The meeting brought together urban planning practitioners and their associations as well as representatives of tertiary planning schools. Approaches to Teaching on Climate Change were discussed and it was agreed that a virtual Cities and Climate Change Academy was to be set up. This web-platform would collect lectures on Climate Change and Urban Planning. The modules could be combined to develop a complete semester course. The objective would be to mainstream climate change into existing syllabi. A road map (from the end of 2009 to 2011) towards the Cities and Climate Change Academy was also prepared at the workshop. It was agreed that UN-HABITAT will prepare a work plan on how to implement these recommendations from the working groups.

Outcomes of the Workshop on Climate Change and Urban Planning

Cities and Climate Change Academy

- The Cities and Climate Change Academy will be a web-platform where specially designed lecture sessions would be deposited for downloading.

- A complete package for each session would contain: a lecture/power point presentation, supplementary lecture notes, a reading list, case studies, suggestions for studio/seminar work etc.
- Lecture sessions could be combined to develop a complete semester (or term) course, which would form one course module of a post-graduate (or graduate) degree. The objective here would be to mainstream climate change into existing syllabi.
- Individual lecture sessions could equally be used to address climate change in a traditional semester/term course. For example a lecture session on “transport planning and climate change” could be inserted in a general semester course on “transport planning”.
- The web-platform should be dynamic. Users should be able to provide comments, upload case studies, lectures, additional reading material etc.

Cities and Climate Change Research

- UN-HABITAT together with the World Bank and UNEP are planning to set up a “Cities and Climate Change Research Clearinghouse”. Hence, the Climate Change Academy would provide links to the clearinghouse but would not be a depository of research itself.

Mainstreaming Climate Change in planning specializations

- Planning education is as diverse as the work of planners. Planning courses and degrees are, for example, offered by planning and architecture schools or geography departments. Specializations exist for example in urban planning, regional planning, environmental-, housing- or transport planning.
- The various climate change impacts (e.g. flooding, drought etc.) and responses need to be understood by the planners. Specific modules should be developed to ensure that for each planning specialization adequate modules are available to address a wide range of expected climate change impacts.

Initial steps towards the Cities and Climate Change Academy

Three regional workshops are being organized to develop a better understanding of the experiences and needs of Universities in Asia, Africa and Latin America. The first workshop was held in Manila, 1-5 March 2010. The Africa Regional workshop (covered by this report) and the regional workshop for Latin America being planned for October 2011.

A global workshop will be held in conjunction with the Resilient Cities Congress in Bonn, 1-2 June 2011.

B. Objectives and expected outcomes of the workshop

The Rotterdam workshop concluded that the Cities and Climate Change Academy needs some preparatory work starting with a bottom-up approach. The regional workshops would explore existing gaps, collect good practices, develop initial course modules and region specific requirements for the initiative (see Annex 1 for the programme of the African Regional Workshop). The regional workshops therefore bring together academic staff teaching urban climate change courses. The African Regional workshop was attended by 15 participants from African Universities and the following countries were represented: Algeria,

Botswana, Kenya, Mozambique, Nigeria, and South Africa (see Annex 2). The workshop had the following objectives:

Objectives

- To develop country/region specific course modules that would be tested locally on Climate Change and Urban Planning.
- To reach a common understanding on how to develop more generic course material for the CITIES AND CLIMATE CHANGE ACADEMY.
- To further fine-tune the CITIES AND CLIMATE CHANGE ACADEMY.
- To prepare regional inputs to the global CITIES AND CLIMATE CHANGE ACADEMY workshop.

Expected Outcomes

- Conceptualize at least one university module for Africa to introduce Climate Change and Urban Planning (syllabus and supportive material such as lecture, background reading, case studies and studio ideas.)
- Conceptualize at least one university module (in at least one of the participating universities) on Vulnerability Assessments.
- Conceptualize at least one university module (in at least one of the participating universities) on climate change mitigation or measuring the Climate Footprint in cities.
- Conceptualize at least one university module on sectoral priorities relating to various disciplines of Climate Change and Urban Planning.
- Agreeing on how the specific modules (as they will be country specific) can be used to build up more generic modules of the CITIES AND CLIMATE CHANGE ACADEMY.
- Road map developed and agreed upon regarding the development of Climate Change and Urban Planning University strategy (regional level and city level).

C. Summary of Proceedings

Opening and Introduction

Dr. Shuaib Lwasa (Makerere) welcomed the participants on behalf of the Principal of the College of Agricultural and Environmental Sciences, Makerere University.

Mr. Bernhard Barth (UN-HABITAT) provided first a brief overview of UN-HABITAT and the Habitat Partner University Initiative. The Initiative brought together universities from around the world with the aim to collaboratively strengthen urban education, training of professionals, urban research and urban policy advice. He then introduced UN-HABITAT's Cities and Climate Change Initiative focussing on the policy advocacy work, the pilot initiatives in cities around the world, the tool development and the capacity development components. The Cities and Climate Change Academy lay at the interface between the Cities and Climate Change Academy and the Habitat Partner University Initiative. It aimed primarily at strengthening urban education but touched on climate change related urban training, research and policy advice. It feeds back outcomes to the Cities and Climate Change Initiative and is seen as a flagship initiative of the Habitat Partner University Initiative. **Dr. Shuaib Lwasa** introduced the workshop programme (see Annex 6.1 for the joint presentation).

Session 1: Climate Change and Urban Planning Education in Africa

Prof. A. Mosha (University of Botswana) provided an overview of urban climate change challenges, planning needs and a case study from the University of Botswana which had mainstreamed climate change into its urban planning course. This was a requirement for accreditation by the Royal Town Planning Institute. The last year undergraduate course in Urban and Regional Planning (URP 506 – Planning and Management for Climate Change) had as its goal: “Familiarise students with the theoretical underpinning of climate change and its mitigation through application of sustainable spatial planning practices”. This course provides guidance for spatial planners on how to meet the economic, social and environmental challenges that climate change raises for urban and regional development”. He summarized the course as follows:

- It brings together some of the recent research and scholarly ideas on the role of planning in combating climate change.
- It addresses both mitigation measures for reducing greenhouse gas emissions and adaptation to the effects of climate change.
- It provides an overview of emerging practice, with analysis of the drivers of policy change and practical implementation of mitigation measures, plans, designs, programmes and strategies.
- It scopes planning issues and opportunities at different spatial scales, drawing on both the African and international experiences and highlighting the need to link global and local responses to shared risks and opportunities

The course modules were based on the recommendations of UN-HABITAT’s workshop in Rotterdam in May 2009. In addition numerous other mandatory and voluntary courses in the Urban and Regional Planning programme saw the recent integration of climate change issues (see Annex 6.2 for the full presentation including an overview of course curriculum).

Ms C.W. Faling (University of Pretoria) presented “Learning moments from mainstreaming climate change into an urban planning curriculum” based on her teaching and the curriculum she had developed on behalf of the African Association of Planning Schools. Focusing on the experience of the University of Pretoria, she stated that the pressure of reducing the number of courses offered and a generally sceptical assessment of the need to teach on climate change it was agreed to mainstream climate change rather than setting up a separate climate change course as was done in Botswana. Examples for courses that saw an integration of Climate Change were: land use management (2nd year and masters level), spatial planning (3rd year level), and urban and metropolitan base planning interventions (4th year and masters level). She then summarized advantages and disadvantages of mainstreaming climate change in existing courses vs. a dedicated climate change subject.

Advantages:

- Students and planners regard climate change as part and parcel of what they ought to be doing, and do not treat it as an ‘extra’.
- Students learn how to integrate climate change with ‘traditional’ planning such as land use management and spatial planning from the start.
- No extra resources are necessary.

Disadvantages:

- When mainstreaming climate change into the planning curriculum, there may not be enough time to study in detail what climate change is, its impact on cities and the vulnerable, etc.

- The severity of the matter might not come across. Students and planners may see it as an 'optional' way of planning, but not as a necessity.

Ms. Faling also introduced the curriculum she had drafted on behalf of the African Association of Planning Schools: "Climate Change and African Cities in Planning Education". The curriculum presents the rationale and overview, case studies and a syllabus: "This syllabus was designed with one contact session of three consecutive hours per week, one week apart in mind. It is also assumed that students will work on projects between the contact sessions. If this timeframe is followed, a total number of 12 weeks will be necessary to complete all the subthemes in the module." Ms Faling's presentation (Annex 6.3) and the curriculum (Annex 7) are attached.

Prof. David Mungai (University of Nairobi) presented experiences from his University. He presented Climate related courses run by the Department of Geography and Urban Planning and Urban Environmental Planning course of the Department of Urban and Regional Planning. Whilst significant expertise in all areas existed, it remained a critical challenge to integrate existing courses and to provide urban climate change courses.

Prof. Mungai presented two courses that follow a comprehensive approach: First, the UNU-UNEP-UN-HABITAT supported Education for Sustainable Development (Sustainable Urban Development specialization, ESDA-SUD), which was currently being developed by a multi-disciplinary team from the University of Nairobi and Kenyatta University. He also presented the Sustainable Community (short) course that was jointly implemented by the University of Nairobi, the Asian Institute of Technology and Aalto University in Helsinki (see Annex 6.4 for his presentation).

Mr. Bernhard Barth presentation was titled 'Introduction to the tool: Planning for Climate Change – A strategic, values-based approach for urban planners.' The tool was developed with urban planners in mind. Whilst the tool can be used for climate change planning processes globally the tool focuses on planners in developing countries and considers primarily the planning challenges of small and medium sized towns. The tool follows a planning cycle and provides guidance on how to mainstream climate change throughout (see Annex 6.5 for his presentation).

Session 2: Conducting Climate Change Vulnerability Assessments

2.1 Presentations

Dr Shuaib Lwasa introduced the concept of vulnerability and how it can be measured. He introduced the components of vulnerability (exposure, sensitivity and adaptive capacity as per the definition of the Intergovernmental Panel for Climate Change, IPCC). He went on by providing interpretations of the concept (vulnerability assessments to determine the extent of the problem and vulnerability assessments as starting point for a climate change response. He then presented various dimensions of vulnerability as well as various examples of how vulnerability can be measured. He concluded by providing examples of vulnerability maps from Uganda and Kampala. (see Annex 6.6 for his presentation)

Ms. Najet Aroua, of the Ecole polytechnique d'Architecture & d'urbanisme of Algiers focused on urban vulnerability vis-à-vis hydro-climatic events. The underlying assumption of her assessment was that fresh water stress would increase due to climate change (increasing temperature and reduced rainfall) as well as increased water demand (due to population growth and urbanization). She presented the conceptual framework of her research which focused on the integration of the hydro-climatic challenges into urban planning. (see Annex 6.7 for her presentation)

Prof T.G.E. Belay, Addis Ababa University. After the broader introduction to vulnerability assessments of Dr. Lwasa and the thorough sectoral concept, Prof Belay provided a practical case study of a comprehensive climate change assessment in Addis Ababa. He presented the contribution of Addis Ababa to Climate Change as well as the various dimensions of vulnerability. (see Annex 6.8 for his presentation)

2.2 Working Groups

Two working groups were formed. The first group discussed the key components of a vulnerability assessment module whereas the second group critiqued the "Planning for Climate Change" tool.

Working Group 1: Developing key elements of a vulnerability assessment module

The group agreed that such a session module (unit) would have to lay basic foundations and given the complexity may in fact be taught over two weeks (two to three hour lectures each plus seminar work and assignments). In fact the group felt that this could also be a stand-alone course of 15 to 30 contact hours.

The groups summed up the learning objectives as follows:

- To help students understand the concept of vulnerability that is different from risk and disaster.
- To inculcate skills necessary for students to appreciate the degree of vulnerability dimensions
- To underline the causes of vulnerability in urban areas
- To impart skills on how to assess vulnerability in urban areas
- To orient students towards urban resilience in urban planning and implementation processes

In order to achieve these learning objectives, the session module(s) needed to address the following:

- Introduction - concepts and theories, Context of vulnerability-who is vulnerable, what areas/spaces, sectors are vulnerable and how
- Key dimensions and causes of vulnerability - social, economic, environmental, cultural, institutional, religious, political, motivational, physical and spatial.
- Methods and tools of vulnerability assessment - qualitative and quantitative methods, tools - GIS, Social mapping, wealth ranking
- Policies, strategies, processes, plans/interventions and case studies of resilience cities

The group recommended the following practical assignments (in group work) to deepen the learning:

- Studio-Study in informal settlements/slums
- Analysis of an urban plan which has been implemented
- Review of existing policies, strategies and scholarly materials on vulnerability and prepare report.

Working Group 2: How to use the Planning for Climate Change tool in Planning Education

The group had varying experience with using the tool. Generally the group agreed that the tool was a very good background document for an urban climate change course. The group stressed however that broader planning experience was a prerequisite for the use of the tool.

The group suggested that more in-depth case studies were needed in the final version of the tool.

The following were seen as particularly useful: The tool provides a good overview of how climate change affects cities and the participatory planning approach was well captured and the planning cycle (which went beyond monitoring was appreciated. The tools for assessing climate change vulnerabilities were very useful. The group suggested strengthening the sections on the drivers of urban greenhouse gas emissions providing a broader overview to mitigation options. Step 4 or 5 needed to be strengthened to make it clear what is being analysed before options are weighed. The group further felt that more of the tool needed to be devoted to the policy / governance of climate change. Last but not least the following case studies which had been presented earlier in the workshop were seen as lending themselves for the tool: Kampala, Botswana, Algeria.

Session 3: Sectoral session – climate change adaptation

Prof. A.C. Moshia of the University of Botswana presented on urban poverty and Climate Change. He stressed that climate change would exacerbate existing vulnerabilities relating to the precarious locations where poor people lived (e.g. particularly flood-prone areas) and their limited income and assets that would help to better prepare for and cope with disasters. He also stressed that until now, disasters, in particular those that affect the poor, make headline news for a few days but are rapidly forgotten. He provided a framework of six vulnerabilities which in turn provided entry points for policy action on local and national level. (see Annex 6.9 for his presentation)

Ms. C.W. Faling of the University of Pretoria presented on Climate Change and urban Disaster Risk Management. She recapitulated the major disaster risks due to climate change, addressed the concept of vulnerability, addressed what the drivers of risk and vulnerability were, explored the consequences of disasters and then focussed on how the above information changed the way planning ought to take place. She focussed on the need to build resilient cities and that successful development strategies build resilient communities, whilst ensuring vulnerabilities are not increased through development efforts. She emphasized that spatial plans were particularly important for disaster management and

climate change adaptation (as well as climate change mitigation). Land use management, in particular of disaster prone peri-urban areas and other unplanned settlement developments was crucial as vulnerabilities there were the most severe. Building regulations and the possible relocation of communities and more adequate infrastructure developments were also required. Resilient cities were only achievable with community participation. (see Annex 6.10 for her presentation)

Prof. W. Kombe of Ardhi University, Tanzania focused on Climate Change and housing, with particular emphasis on informal settlements. He explained the particular vulnerabilities of the sector and proposed a number of responses: Improved infrastructure, in particular storm water drainage and sanitation, raising the foundations of houses and toilets, coastal zone management, including mangrove rehabilitation. (see Annex 6.11 for his presentation)

Mr. S.C. Letema of Kenyatta University presented on Flood control and climate change. Mr. Letema highlighted common features in African cities: disappearing flood plains, inadequate drainage systems, lack of integrated urban flood-control. He suggested a number of responses such as constructive measures: protecting/designating flood plains, and better enforced building regulations, better protective infrastructure. Measures influencing behaviour were also presented: regulation, organizational framework, forecasting and early warning system. He concluded with the recommendation to integrate climate change in the city development and land use plans. (see Annex 6.12 for his presentation)

Session 4: Measuring CO₂ equivalents and preparing for mitigation initiatives

Prof. D. Mungai of the University of Nairobi presented the concepts of Global Warming Potential and CO₂ equivalents, stressing the need for all those dealing with Climate Change to understand how greenhouse gases affect the climate. He then described urban and sectoral climate change footprints, stressing the relationship between urban density and the generation of Greenhouse Gases and how this affects Climate Change mitigation strategies. Reversely, climate change affects urban settlements of varying population densities differently (micro climate) which needed to be taken into consideration for choosing the right mitigation strategies. He concluded by providing a brief overview of key urban sectors contributing to the emission of greenhouse gases and how these sectors are critical for mitigation measures (see Annex 6.13 for his presentation).

Working Groups for Sessions 3 and 4

Working Groups: Developing key elements of a climate change adaptation module

Working Group 3: Urban Disaster Risk Reduction in the age of Climate Change

The group agreed that the target group (urban planning students) would need to have prior knowledge and skills in: Geographic mapping and GIS, environmental processes, planning theories, instruments and methods, research skills and

needed to have an intrinsic understanding of vulnerability.

The learning objectives the group proposed were:

- To help students understand the concept of vulnerability, disaster, risk and resilience, and how understanding these are essential for climate change adaptation action.
- To impart knowledge necessary for students to understand the disaster management cycle.
- To understand underlying vulnerability and risk factors.
- To impart skills on how to assess vulnerability and risks in urban areas
- To understand and apply urban resilience in urban planning and implementation processes

In order to achieve the learning objectives, the module needed to address:

- Introduction: concepts and theories, Africa-specific context of risk and disaster.
- Key dimensions and causes of risks, compound risks, everyday risks and domino effects: natural and human-made.
- Impacts of disasters: social, financial, physical, political, etc.
- Methods and tools of risk and vulnerability assessment. What are risks (types), who is exposed and vulnerable to risks, what areas/spaces, sectors are vulnerable to which risk and how as well as participatory planning and processes.
- Policies, strategies, processes, plans/interventions
- Good and poor case studies (including local responses.)

The group suggested the following for studio work and seminars:

- Studio: conducting a risk and vulnerability assessment of a specific community.
- Developing a disaster risk management plan for a community / embedding disaster risk reduction measures into urban planning processes and practices.
- Conducting studies into local knowledge and responses to risks and hazards.
- Seminar: evaluating and critiquing existing urban planning policies, strategies and interventions on risks and disaster and prepare reports.

Working Group 4: Urban Poverty Reduction and Climate Change

The group agreed that the target group (urban planning students) would need to have prior knowledge and skills in: Concept of planning, poverty, the nexus between climate change and poverty, development, climate change mitigation and adaptation and how these affect urban poverty.

The group identified the following learning objectives:

- To understand the nature, significance, intensity and trend of urban poverty and the drivers of poverty.
- To understand the linkages of urban and rural poverty and the linkages between poverty and climate change.

- To understand how the use of physical plans, urban design, urban functions can influence/mitigate climate change
- To be able to take a normative strategic policy/advocacy stand
- To be able to prepare poverty profiles of the study/contextual areas
- To be able to integrate climate change concerns into such profiles
- To be able to prepare strategic spatial plans/models for poverty reduction

In order to achieve the learning objectives, the module needed to address

- Introduction: Issues, concepts, theory, history of climate change, poverty in relation to urban development
- Causes, consequences and links of climate change to poverty
- Value based vulnerability mapping
- Actionable adaptation through- building density, settlement planning and design, urban planning, sectoral plans.
- Alternative policy scenarios, planning policy dialogue processes, national, state, local and community.

Specific ideas for studio work and seminars

- Seminars, staff, expert group presentation, student term papers
- Studio/live projects, slum upgrading, urban redevelopment plans, livelihood analysis, poverty profile, poverty mapping, modeling, posters for presentation, competition (best practices)

Field Visit

Dr. Shuaib Lwasa gave a brief overview of the field excursion which aimed to expose participants to on-going projects that have been implemented in partnership between Makerere University, communities as well as other stakeholders on adaptation to climate change. Dr. Lwasa informed the group that they would visit two of the several pilot projects on adaptation to climate-change. The participants visited Ms. Harriet Nakabale who has implemented an integrated crop-livestock system in the confined space of a low-income neighbourhood. She rears chickens, grows high value vegetables utilizing space-saving technologies. She also continuously teaches other community members to adopt the technologies. The idea of crop-livestock systems is to recover nutrients from wastes, produce soil-conditioning for crop cover, to increase infiltration in the neighbourhood to reduce flooding. The approach seems sustainable as it provides Ms Nakabale with a livelihood. Responding to questions by participants, Ms. Nakabale highlighted the dual benefit of the integrated system that has attracted neighbours to learn although she still faces problems of theft of the produce. She Emphasized that for the interventions to be effective, many people in the neighbourhood have to adopt the technologies to increase the infiltration and flood reduction.

The participants also visited a group called "Kawaala Recycling and Manufacturing Group" in the same neighbourhood that has innovated by recovering peels from bananas, potatoes, sweet potatoes and cassava, dried and milled these to make chicken feed. Led by George Tamukedde and James Kizza, the group has interested its immediate neighbours to deposit peels from their food. The peel is dried close to the houses where it spread on the ground as well as on roof tops to reduce moisture content before milling. Mr Tamukedde explained that they had researched the feeds by taking samples to the Laboratory at Makerere University which confirmed its nutritional value. They then

tested the new feed by rearing chickens. A control group was fed on maize bran with no significant differences in weight gain. On acquiring a motorized mill, KARAMDEG has expanded its production but still faces marketing challenges. Despite the increased acquisition of peels, the mill ran below capacity. In responding to questions by participants Mr. Tamukedde highlighted that this adaptation measure would reduce the waste accumulation by 50% and would also reduce flooding caused by choked drainage channels due to indiscriminate dumping of wastes.

Session 5 Comprehensive climate change planning

Session 5 was designed to pull the previous sessions together. It addressed the issue of whether local climate change plans ought to be developed or whether climate change needs to be solely integrated into existing plans. The session also addressed the issue of the need for national planning framework reform to provide local actors with a mandate (and space) to address climate change in a comprehensive manner. Lastly the session addressed the question what was different from planning for climate change and a traditional planning process.

Prof. Amino Naran from the Universidade Eduardo Mondlane in Maputo, focused on integrating climate change into urban planning and used air pollution as an entry point. Deforestation for charcoal and firewood was a significant problem (emission of greenhouse gases, air pollution, increased run off and flooding, and local climate change). Prof Naran suggested that air quality was a good proxy indicator for successful urban planning interventions. (see Annex 6.14 for his presentation)

Prof. Babatunde Agbola of the, University of Ibadan: Integrating climate change in urban planning. Prof Agbola made a strong case for the need of integrating climate change concerns in Land Use Planning as well as Master Plans, Action Plans, Sectoral Plans, and plans on various levels such as regional plans, urban plans, neighbourhood plans. Just like the previous speakers he made a strong point for community participation. (see Annex 6.15 for his presentation)

Working Group 5: Teaching comprehensive climate change planning.

Group 1 suggested that a module on comprehensive climate change planning should be split into at least two contact sessions within a dedicated climate change course.

Session one.

Introduction to comprehensive climate change plans - Setting the scene, vision, getting the picture and thinking about the process of comprehensive planning.

Session two

The second session should be held towards the end of the course, bringing all elements together. The idea would be to come up with a comprehensive plan in this session.

The learning objectives of Session one were defined as:

At the end of this session, students should be able to:

Understand the concept, meaning and process of comprehensive planning and be able to develop a vision for the city.

Debate comprehensive planning vs. mainstreaming climate change.

Session two

At the end of this session, students should be able to:

Apply the knowledge of comprehensive planning.

Integrate sectoral plans into a comprehensive plan.

In order to achieve the learning objectives, the following needed to be included in the sessions:

Session one

- Concept of comprehensive planning
- Process of comprehensive planning
- Stand-alone vs. comprehensive plans
- Develop a vision for the city
- Analyze the context (SWOT analysis)
- Discuss case studies.

Session two

The group suggested that session 2 should best be developed as student-led learning activity such as a climate change planning studio project (group work)

- a) obtain relevant sectoral information
- b) Development a comprehensive plan for the city

Group 2 suggested to teach a module on comprehensive climate change planning mid-way through an urban planning course (for example year three or four of an undergraduate programme). The group felt this was best as students would have acquired the basics (urban planning and climate change) during the introductory year and can apply the knowledge in the subsequent practicals like studios and seminars

The following learning objectives were suggested:

- Appreciate the nature of multidisciplinary of urban planning-climate change interaction
- To acquire tools and skills to be able to mainstream climate change concerns in urban plans
- Understand the linkage between city level climate plans and national level climate plans
- To take a normative, strategic, policy, and activist stand
- Place importance on physical plans, urban designs and a sense of place, which can mitigate impacts of climate change

To achieve the learning objectives the module would need to include:

- Introduction: Key concepts and theories of climate change and urban planning interaction
- Causes and consequences of climate change and policy and planning issues surrounding mitigation and adaptation
- Climate change and its impacts on cities: cities' contribution to climate change and climate change and its impacts on cities
- Cities' vulnerability to climate change
- Climate change adaptation and urban planning:
- Integrating climate change in city plans: steps, procedures and processes: alternative approaches i.e. mainstreaming or stand alone
- Climate change governance: Legal, regulatory, institutional, fiscal, political

Session 6 Way forward

The meeting organizers had drafted a summary presentation (see Annex 6.16) that was discussed and amended during the final session.

In Summary, the meeting agreed on the following:

1. Regional inputs to the Global Meeting in Bonn which will decide on the details of (urban) university course development integrating climate change.

- Uniqueness of African urban development, African urbanization
- African case studies
- African representation in consortia
- African good practices (Botswana, AAPS)
- Major on-going activities in Africa (case studies, building on existing practice)
- Existing research needs to feed into the generic curricula: many issues are not (well) researched, a lot of research is not accessible (not published or published in a journal that is not accessible).

2. The following areas were prioritized for module development:

- Climate Change and urban Vulnerability Assessments
- Climate Change and Shelter
- Climate Change and adaptation and mitigation planning
- Climate Change and urban water cycle management / Water and Sanitation Challenges
- Climate Change and Urban Poverty (including food security)
- Urban Disaster Risk Reduction in the age of Climate Change

3. In addition the following was recommended in the run-up to and during the Global Meeting:

- Mapping of existing lectures, course material and activities in the priority fields (see Annex 6)
- Ensure African involvement in consortia to develop modules.

4. For the future the African CITIES AND CLIMATE CHANGE ACADEMY group recommends the following:

- Make use of "Urban Gateway" setting up a CITIES AND CLIMATE CHANGE ACADEMY-Africa Group (community of practice)
- Better linkage between education and practice (local research and training) Mandated Compulsory Training (continuous professional development) – could also help generating case studies for university teaching and should hence be linked to the initiative..

Annexes

Annex 1 Programme

Day 1, Tuesday, 3 May 2011	
8.30 – 09.30	<p>Opening and Introduction</p> <p>Welcome, Dr. Shuaib Lwasa on behalf of the Principal of College of Agricultural and Environmental Sciences, Makerere University</p> <p>Background, Bernhard Barth, UN-HABITAT</p> <p>Introduction to the workshop, Shuaib Lwasa</p>
09.30-10.00	Self-introduction of participants
10.30-11.45	<p>Session 1 Climate Change and Urban Planning Education</p> <ul style="list-style-type: none"> ▪ Prof. A.C. Moshia, University of Botswana, Incorporating Climate Change in Planning Specializations and other Urban Courses at the University of Botswana. ▪ Ms. Willi Falig, University of Pretoria, Learning moments from mainstreaming climate change into an urban planning curriculum. ▪ Prof. David Mungai, University of Nairobi (10 minutes) <p>Discussion</p>
12.00-12.30	<p>Introduction to tool: Planning for Climate Change – A strategic, values-based approach for urban planners, Bernhard Barth, UN-HABITAT</p> <p>Discussion</p>
14.00-15.15	<p>Session 2: Conducting Climate Change Vulnerability Assessments</p> <ul style="list-style-type: none"> ▪ Dr Shuaib Lwasa (15 minutes) ▪ Najet Aroua (15 minutes) ▪ Prof. T.G.E. Belay, Addis Ababa University: (10 min)
15.45-17.30	<p>Working Group 1: Developing key elements of a vulnerability assessment module</p> <p>Working Group 2: How to use the Planning for Climate Change tool in Planning Education</p>
17.30-18.00	Feedback from Working Groups
18.30-20.00	RECEPTION

Day 2, Wednesday, 4 May 2011	
08.30-10.30	<p>Session 3: Sectoral session – climate change adaptation</p> <ul style="list-style-type: none"> ▪ Prof. A.C. Moshia, University of Botswana: Urban poverty and Climate Change (10 min) ▪ C.W. Faling, University of Pretoria: Climate Change and urban Disaster Preparedness (10 min) ▪ Prof. W. Kombe, Urdhi University, Tanzania: Climate Change and housing (10 min). ▪ S.C. Letema, Kenyatta University, Flood control and climate change (10 min). <p>Session 4: Measuring CO2 equivalents and preparing for mitigation initiatives</p> <ul style="list-style-type: none"> ▪ D. Mungai, University of Nairobi. Teaching Climate Science to urban students. (15 min)
11.00-13.00	<p>Working Group 3: Developing key elements of a climate change adaptation module</p> <p>Working Group 4: Developing key elements of a sectoral module (integrating adaptation and mitigation)</p> <p>Feedback from working groups</p>
14.00-15.00	<p>Student Presentations (two presentations, 10 minutes each) and feedback.</p>
15.00-18.00	<p>FIELD VISIT</p>

Day 3, Thursday, 5 May 2011	
08.30-10.30	<p>Session 5: Comprehensive climate change planning</p> <ul style="list-style-type: none"> ▪ Prof. A. Naran, Mozambique, Integrating climate change into urban planning (10 min) ▪ Prof. B. Agbola, University of Ibadan: Integrating climate change in land use planning
11.00-13.00	<p>Working Group 5: Teaching comprehensive climate change planning.</p> <p>Feedback from working groups</p>
14.00-16.00	<p>Session 6: Way forward</p> <ul style="list-style-type: none"> ▪ How to advance the CITIES AND CLIMATE CHANGE ACADEMY for Africa ▪ Preparing for the Global CITIES AND CLIMATE CHANGE ACADEMY meeting in June 2011 <p>Closing and Departure</p>

Annex 2 List of Participants

No	Name and contact details
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12	Daniel Bwanika Director For Planning & Development/ International Coordinator Kampala University Kawuku Lane, P.O.Box 25454, Kampala, Uganda Tel:+256(0)312 111294, Mobile:+256(0)775-051239 URL: www.ku.ac.ug
13	Timbitwire Musa Makerere University Student
14	Kasaija Peter Makerere University
15	Dr. Stephen Mukiibi Makerere University
16	Bernhard Barth UN-HABITAT

Annex 3 Working Groups - Guidelines

Working Group 1: Developing key elements of a vulnerability assessment module

In your group

1. Select a rapporteur, please report back using PPT (or word document) – please be as specific as possible as based on your group's work CITIES AND CLIMATE CHANGE ACADEMY is to be advanced.
2. Do we have to start with the basics – what knowledge can we build on?
3. What are the key learning objectives of a module on vulnerability assessments?
4. What does the module need to address the key learning objectives (building on the presentations and your own knowledge, sketch out a syllabus)?
5. Is one module (i.e. one lecture + related elements) enough? If not how many lectures are needed?
6. Specific ideas for seminars and studio work.

Working Group 2: How to use the Planning for Climate Change tool in Planning Education?

In your group

1. Select a rapporteur, please report back using PPT (or word document) – please be as specific as possible as based on your group's work CITIES AND CLIMATE CHANGE ACADEMY is to be advanced.
2. Is the tool useful as background reading? Can it be used for teaching at university level?
3. What is useful, what is lacking?
4. How can it be improved, a) as background reading and b) as a teaching source?
5. Do you have case studies and tools that would enrich the document?

Working Group 3 and 4: Developing key elements of a climate change adaptation module

Proposed Group 3/4: Poverty / DRR

Please assume that the module you develop is one module of a third year planning course (12 modules) (or of a taught course as part of a post graduate course on Climate Change and urban planning)

1. Select a rapporteur, please report back using PPT (or word document) – please be as specific as possible as based on your group's work CITIES AND CLIMATE CHANGE ACADEMY is to be advanced.
2. What knowledge can we build on?
3. What are the key learning objectives of the module (please consider vulnerability/adaptation as well as GHG assessments/mitigation)?
4. What does the module need to address the key learning objectives (building on the presentations and your own knowledge, sketch out a syllabus)? Focus on African needs.
5. Specific ideas for seminars and studio work.

Working Group 5: Teaching comprehensive climate change planning.

Please assume:

A. That the module you develop is one module of a third year planning course (12 modules) (or of a taught course as part of a post graduate course. On Climate Change and urban planning)

B. That you have taught the basics on cities and Climate Change, Vulnerability Assessments, and basic adaptation and mitigation options.

1. Select a rapporteur, please report back using PPT (or word document) – please be as specific as possible as based on your group's work CITIES AND CLIMATE CHANGE ACADEMY is to be advanced.

2. Should this module be early on in the course (for example the 4th session) or should it be the concluding session, bringing all elements together.

3. What are the key learning objectives of the module?

4. What should be the components of the module - sketch out a syllabus

5. Specific ideas for seminars and studio work.

Annex 4: Glossary

Comprehensive Plan Integrated Development Plan (links to sectors) – Climate Change concerns need to be mainstreamed. This plan may be a City Development Strategy, a master plan etc. This is a strategic policy platform.

Stand-alone Climate Change Plan This plan could be a supplement/part of the Comprehensive Plan. It would serve to communicate climate change concerns externally, for example to donors (e.g. for accessing adaptation and mitigation funding), and the local community and would help to rally the local government behind climate change action and would provide the platform for coordination.

Only if there is a climate change department, a **Sectoral Climate Change Plan** would make sense. The stand-alone climate change plan could answer to following:

Sectoral Plans for example solid waste management, water and sanitation, land use plan plans etc. which lend themselves for mainstreaming climate change concerns. All sectoral plans ought to integrate climate change

Course / semester course / session: It is assumed that each graduate course would comprise of 12-15 weeks, the modules to be developed, if strung together, should provide the user with a full syllabus for such a course which could be an integral part of an urban planning course.

Module / session module / unit/topic. It is assumed that the Cities and Climate Change Academy would develop approximately 20 modules (seen Annex 5) which would cover all key issues of concern to cities and planners vis-à-vis Climate Change. A module would consist of a lecture, lecture notes, case studies, ideas for seminar and studio work.

Annex 5 Mapping of courses, tools/background literature and case studies

"Sessions" / Units	Who, what, how, universities	Case Studies	Background Literature
Introductory Session on Climate Change (setting the scene, basic climate science, emissions, climate models, vulnerabilities)	Curriculum African Association of Planning Schools. TACC,		IPCC, GRHS (2011),
Climate Change and Cities	University of Botswana, CC 506	CCCI, ACCCRN, GIZ, Chicago,	GRHS, ARC3, GRHS (2009, 2011), SWCR and regional SCR
Climate Change and adaptation and mitigation planning	African Association of Planning Schools, IIED	CCCI cities (4 original cities, St Louis, 2 cities in Sri Lanka, Pekalongan, C40 cities, ACCCRN)	Planning for Climate Change, Developing Local Climate Change Plans, GRHS (2011). CITIES AND CLIMATE CHANGE ACADEMY Africa/Asia, IHS decision making tool
Climate Change VA Assessments	African Association of Planning Schools, TACC, IIED	CCCI cities,	Planning for Climate Change, UNEP, Sorsogon etc.

Climate Change Governance (local, national and international decision making and CC)	TACC	National scoping studies in CCCI	Documentation collated by UN-HABITAT
Climate Justice (focus on inequity, poverty and climate change, inter-regional inequity),			CITIES AND CLIMATE CHANGE ACADEMY Africa
Climate Change and Gender	Various tools	Sorsogon	UN-HABITAT tool, background document for GRHS
Climate Change and Shelter/Housing			Various documents Housing Policy Section
Climate Change, Building/Construction		Sorsogon	Various documents on building materials
Climate Change and land-use planning		Sorsogon	GLTN tool
Climate Change and (urban) health		Kathmandu, Nepal, Samarang, Indonesia	WHO
Climate Change and integrated water cycle management including Water and Sanitation	ESDA	Lake Victoria, Katmandu, Port Vila	

Climate Change and DRR	University of Pretoria	Maputo	CITIES AND CLIMATE CHANGE ACADEMY Africa
Climate Change and transport planning		GRHS 2013	GRHS 2013
Climate Change and SWM			
Climate Change & Urban Energy			
Climate Change and food security			
Climate Change and urban eco-systems / bio-diversity		Pacific	UNEP

Annex 6 Presentations:

Annex 7 Climate Change Curriculum – African Association of Planning Schools