This issue of the *World Resources Report (WRR) Update* provides information on the progress to date on the WRR, including news on upcoming working paper launches, ongoing research, and our stakeholder engagement.

**Working Paper Launches**

We will launch three WRR working papers this summer. In late June, we will launch *Confronting the Housing Crisis in the Global South on Three Fronts* by Robin King, Mariana Orloff, Terra Virsilas, and Tejas Pande. Following this, we will launch *Energizing Cities for All* by Michael I. Westphal, Sarah Martin and Lihuan Zhou from WRI, and David Satterthwaite from IIED. Finally, we will launch *Opportunities for Low Carbon Electric Cities in the Global South* by Chris Kennedy from the University of Victoria, Iain Stewart from the University of Toronto, and Michael Westphal.

**Progress on Working Papers**

This section provides descriptions of our ongoing work on four working papers on urban expansion, sanitation, water access, and the informal economy.

**Urban Expansion Working Paper:** *Striking a Balance: Urban Expansion and Access to Services in Growing Cities* by Anjali Mahendra and Karen Seto (Yale University)

This working paper proposes solutions for cities to manage urban expansion in a way that achieves more equitable access to core services while creating economic and environmental benefits. By merging and analyzing data from the Atlas of Expansion, Oxford Economics Dataset, and the UN’s City Prosperity Index, it considers the implications of urban expansion with an emphasis on struggling and emerging cities. The working paper discusses the role land markets and policies have in urban expansion, and the importance of ensuring that serviced land is available for urban development.

**Sanitation Working Paper:** *Moving Towards Sanitation Solutions for All* by David Satterthwaite (IIED), Diana Mitlin (University of Manchester and IIED), Victoria Beard, and Michael Westphal

This working paper examines how cities can move towards universal access to sanitation services for the under-served, and what economic and environmental implications this can have for the city. It describes the scale of deficiencies of sanitation services in struggling and emerging cities, focusing on current realities in informal settlements. It discusses definitional problems associated with the term “improved sanitation” as well as challenges in collecting the data needed to improve sanitation services. The paper focuses on approaches to fecal sludge management and the governance, finance, and planning required to implement these approaches.
Urban Water Access Working Paper: Access to Reliable and Affordable Water for All by Diana Mitlin (University of Manchester and IIED), David (IIED) Satterthwaite, Victoria Beard, and Michael Westphal

This working paper examines how cities can improve access to water for the under-served, and what economic and environmental implications this can have for the city. With a focus on affordability, the paper analyzes two types of interventions: (1) short-term solutions that improve water access (e.g., vendors, water trucks), and (2) medium-term, incremental solutions (e.g., kiosks, community stand pipes, rainwater harvesting). Exploring examples of improved water access, the paper analyzes governance, finance, and planning.

Informal Economy Working Paper: The Urban Informal Workforce by Martha Chen (Harvard University and WIEGO -- Women in Informal Employment Globalizing and Organizing) and Victoria Beard

In many struggling and emerging cities in the global South, most economic activity is in the informal economy. The paper asks what cities can do to make the informal economy more productive and more environmentally sustainable. The paper examines innovative approaches cities have taken to address the size and persistence of the informal economy and to improve conditions for informal workers. The paper is based on an analysis of (1) an extensive literature review and (2) WIEGO's proprietary data on the informal sector.

Case Studies of Urban Transformation

Our preliminary research suggests that when cities solve a seminal problem touching many people’s lives, the momentum for positive change can catalyze change in other areas, creating a virtuous cycle of transformation in the city. We define transformative urban change as change that affects multiple sectors and institutional practices, continuing across political administrations and over an extended period of time. Each case study examines how approaches to addressing seminal problems have or have not triggered broader transformative urban change.

All our case studies are led by local authors working closely with WRI staff. In Brazil, Rebecca Abers, Professor of Political Science at the University of Brasília is co-authoring case studies on Porto Alegre (with Daniely Votto) and Belo Horizonte (with Robin King). The case study on Pune, India is co-authored by Lalitha Kamath at Tata Institute of Social Sciences, Avinash Madhale at the Centre for Environmental Education, and Anjali Mahendra. Shuaib Lwasa, Associate Professor, Department of Geography Makerere University is leading the case study on Kampala, Uganda, in collaboration with Kate Owens. The case study of Johannesburg is led by Edgar Pieterse, Director at the African Centre for Cities, along with Kate Owens. We are hoping to add one additional case study in South or Southeast Asia.

Vignettes about Access to Core Services

WRI’s international offices and research consultants conducted 60 in-depth interviews about individuals and households struggling with the effects of urban expansion and with access to housing, energy, transportation, water, and sanitation and in seven cities in Latin America, Asia, and Africa. This primary data has been used in working papers and blogs, and will be featured on the WRR website. If you are interested in analyzing these interviews as part of your work, please e-mail Adna Karabegović. We are grateful to Alex Rogala for compiling and editing these in-depth interviews.
Water and Sanitation Primary Data Collection

We are collecting primary data to support working papers on water and sanitation. In collaboration with Professor Shlomo Angel at NYU Wagner Graduate School of Public Service and Professor Joe Brown in the School of Civil and Environmental Engineering at Georgia Tech, we piloted a methodology for testing the quality of drinking water in cities and a Water and Sanitation Key Informant Questionnaire in Cochabamba, Bolivia in March, 2017.

Piloting urban water and sanitation methodologies in Cochabamba, Bolivia.

Following the pilot, we are collecting data in Bangalore and two additional cities in India; Rio de Janerio and two other cities in Brazil; Cochabamba, Bolivia; Mexico City, Mexico; Mzuzu, Malawi; Nairobi, Kenya; Lagos, Nigeria; and Kampala, Uganda. Data collection is being supported by Celine Jacquin in Mexico, Daniely Votto in Brazil, and Vittal Boggaram in India. Data collection is scheduled to be complete by the end of June.

Recent & Upcoming Engagements

Land and Poverty Conference 2017: Responsible Land Governance—Towards an Evidence-Based Approach

As part of the World Bank’s Land and Poverty conference on March 22, 2017, lead author of the upcoming paper on urban expansion, Anjali Mahendra moderated the session titled Urban Expansion: Measurement Challenges and Implications for Policy. Panelists included Shlomo Angel, who leads the NYU Stern Urbanization Project; Mark Roberts, Senior Economist at the World Bank and co-lead on the Regional Urbanization Flagship; Chandan Deuskar, former Urban Planner at the World Bank and currently PhD student at the University of Pennsylvania; Annette Kim, Associate Professor of public policy at the University of Southern California and the founding director of SLAB, the Spatial Analysis Lab; and Kim’s student, Arthur Acolin.
Anjali Mahendra moderating a panel on urban expansion at the World Bank’s Land and Poverty conference.

The session included 1) brief presentations by all panelists on their research on urban expansion, and 2) a policy discussion. The session was recorded for further dissemination and is available on the World Bank website. Follow the link to watch the session: http://www.worldbank.org/en/news/video/2017/04/11/urban-expansion-measurement-challenges-and-implications-for-policy.

MIT: Shifting the Lens of Urbanization in Latin America: A New Understanding of Intermediate Cities

Robin King presenting the WRR working paper, Confronting the Housing Crisis in the Global South on Three Fronts, at MIT.

MIT held a workshop aimed at mid-level officials on April 28, 2017, where Robin King, lead author of the WRR housing working paper, presented as the principal speaker on an all-female panel entitled “Redefining housing approaches: 
housing policies reveal the political economy that underlies urban planning.” Other speakers included Professor Cynthia Goytia of the Universidad Torcuato di Tella, Argentina and several speakers from MIT and other Boston-based organizations. A former official from the city of Sao Paulo moderated the panel. Robin’s presentation covered three key challenges in the global South and approaches to addressing them. The challenges are: (1) the growth of under-served, substandard housing, often in informal settlements; (2) a policy overemphasis on home ownership and inappropriate land policies; and (3) regulations pushing the poor out of the city. Approaches explored to address these challenges are: 1) participatory in situ upgrading in informal settlements rather than relocation, if there are no location-based risks; 2) support for rental markets to increase the stock of affordable, adequate, and secure housing; and 3) conversion of underutilized urban land to affordable, adequate, and secure housing via changes in regulations and innovative financial structures.

Global Learning Forum
Michael Westphal, lead author of forthcoming paper, Energizing Cities for All, is attending the Global Learning Forum 2017, a solutions-focused dialogue on the transition to 100 percent renewable energy in cities. At this annual gathering of Renewable Cities in Vancouver, Canada between May 17 through 19, Michael Westphal will be speaking on a plenary panel, “How Renewable Energy is Changing Conventional Thinking about Energy for Cities,” discussing how renewable energy offers new opportunities to address energy equity and energy access in cities in the global South.

Brown Bag Presentation: Bright Lights, Big Cities: A Review of Research and Findings on Global Urban Expansion
Lead author of the working paper on urban expansion, Anjali Mahendra presented preliminary research at the World Bank’s brownbag session on May 9, 2017. Anjali’s presentation was one of two presentations. The first was on a recent paper published by WRR collaborator, David Mason entitled, Bright Lights, Big Cities: A Review of Research and Findings on Global Urban Expansion, followed by Anjali’s presentation of ongoing work on urban expansion. The presentations concluded with a critical discussion with World Bank staff about the approaches proposed in the WRR working paper on urban expansion.

Seminar Series
Our seminar series has recently shifted its focus to the ongoing analytical work of our own staff. Most recently, we hosted the following two seminars:

Formalizing Informal Public Transport: Pilot test of GPS technology in La Paz
Sebastian Castellanos and Diego Canales presented their ongoing project with the city of La Paz, Bolivia to implement a pilot project to test the performance of GPS technology in an informal transport system. The project also evaluates the utility of this tool in improving service quality at a city-wide scale. The
seminar delved into the challenges currently faced by the city, and discussed different ways of formalizing elements of the transport system.

**Operationalizing a Land-Use and Transportation Accessibility Tool**
In partnership with the World Bank, WRI Ross Center for Sustainable Cities has developed an open-source software platform for measuring accessibility. The Land-Use and Transport Accessibility Tool leverages the power of the OpenTripPlanner engine and open standardized data to model block-level accessibility. The added value of the tool is its ability to easily calculate accessibility of various opportunities and transportation scenarios. Diego Canales presented a demo and provided examples on how accessibility analysis can be used to (1) evaluate baseline access to employment using public transport, (2) compare different transport scenarios and projects, and (3) decipher land use patterns.

**Moving Forward**
Our team now includes Robin King, Director of Knowledge Capture and Collaboration, who will be helping with the city case studies and the working paper on the informal economy. We are excited Kate Owens is co-authoring two city case studies in Africa. And, we welcome a new intern, Jillian Du, from American University. Please contact Victoria Beard and Anjali Mahendra if there are ways in which you would like to contribute to the WRR.