Institution: University College London

Unit of Assessment: 16 – Architecture, Built Environment and Planning

Title of case study:

Infrastructure governance and planning for the urban poor in the Global South

1. Summary of the impact

DPU's research by Davila, Allen et al into urban infrastructure has generated analytical tools used by policy-makers, practitioners and aid organisations to examine the distribution of and access to urban services. It has supported the development of training curricula used altogether by over 4,000 urban planners in cities of the Global South, and through partners in The Netherlands, India and Colombia. At the policy level, the research has informed local government actors in Colombia, and international bodies (e.g. UN-Habitat and the International Resource Panel) in planning, financing, monitoring and equitable delivery of infrastructure services. At the NGO level, new analytical approaches have been adopted by WaterAid in Mozambique, Nigeria, Zambia, and the Democratic Republic of the Congo as a result of DPU research.

2. Underpinning research

Today an estimated 3.4 billion people – almost half of the world's population – live in urban areas. In the Global South, rapid-paced urbanisation often occurs without adequate investment in infrastructure and basic services, with particularly severe consequences for the millions residing in low-income or unplanned areas. Research in the wider field of urban planning and development has shown that access to infrastructure services is vital to wealth creation, human well-being and environmental sustainability.

Through a series of action-research projects with other organisations in the Global South, researchers at the Development Planning Unit (DPU) have (i) documented governance shifts in the production of urban and peri-urban infrastructure; (ii) examined potential and existing non-market based approaches to the provision of universal services; (ii) investigated the effects of infrastructure development on well-being, environmental justice and social inclusion; and (iv) assessed the extent and ways in which infrastructure supports more resilient urban systems. An important contribution by DPU has been in demonstrating the existing efforts of communities to meet their needs, and highlighting where conventional supply-driven and centralised systems of infrastructure provision are inadequate to address the needs of the urban and peri-urban poor.

Between 2003 and 2013, researchers examined the governance of water and sanitation services in the peri-urban context. Led by Professor Julio D. Dávila (Head of Department), Dr Adriana Allen (Senior Lecturer) and Pascale Hofmann (Lecturer), a three-year research project in 2003–06, funded by DFID, analysed the access to water and sanitation in metropolitan regions of India, Tanzania, Egypt, Mexico and Venezuela. This produced a path-breaking diagnostic framework to analyse governance approaches to addressing water poverty, from the "policy-driven" to the 'needs-driven' **[a]**. Research findings showed that neither centralised supply policies nor the marketplace, such as through large-scale profit-making enterprises, can meet urban needs. Through case studies, the research showed that access is mainly needs-driven and informal, not the result of formal policies. The key to structural improvements in water and sanitation hence lies in the recognition of these practices and their re-articulation under new governance regimes.

This framework informed two subsequent projects. A study commissioned in 2007–08 by the International Water and Sanitation Centre (IRC) explored approaches to sanitation that work for the urban poor across the urban Global South. Researchers examined hybrid governance arrangements emerging in peri-urban areas and the role of 'service co-production' in supporting the urban and peri-urban poor to effectively access sanitation services **[b + d]**. Allen also advised WaterAid and Building Partnerships in Development in Water and Sanitation (BPD) on a project from 2009-10 that examined water and sanitation delivery in small towns, a context often overlooked in current debates. This research examined the opportunities and challenges faced by local governments, utility providers, citizens and external support agencies in six WaterAid country programmes in Asia and Africa. The findings **[c]** revealed that many existing assistance programmes in small towns result in finance and technology decisions that then dictate planning

and design; instead, it is desirable that technology and finance decisions be responsive to circumstances on the ground, particularly how each town is connected demographically, economically and politically to surrounding areas.

Access to affordable and efficient transport is another essential need of poor residents in urban areas. DPU researchers have thus also examined the role of progressive local governments in providing improved access to transport infrastructure for excluded low-income populations. Led by Davila, this was the first independent evaluation of an innovative urban upgrading and pro-poor transportation system in Medellín, Colombia's second largest city, where the world's first modern urban aerial cable-car mass transport system targeted at a low-income area had been implemented **[e]**. Medellín is fast gaining a reputation for a series of urban interventions backed by solid municipal management, aimed at redressing the city's deep and longstanding social and spatial imbalances. The research contrasted this experience with that of Soacha, a low-income, poorly run municipality near to Bogotá. It documented the institutional genesis and technical features of Medellín's cable-car lines and examples of innovation and political boldness. For instance, municipal investment in a comprehensive programme of upgrading of the areas served (e.g. social housing, public spaces, new libraries and schools, and training and employment opportunities) had an even wider impact on quality of life than the highly visible and attractive new form of public transport. These public facilities were designed by top architects using high-quality materials in a deliberate reversal of the conventional practice of providing low-quality services to the poor. Using participatory budgeting, whereby residents collectively decide on the use of public investment, city authorities are seeking to change an entrenched culture of patron-client politics.

3. References to the research

[a] Allen, A., Dávila, J.D. & Hofmann, P. (2006) 'The peri-urban water poor: Citizens or consumers?', *Environment and Urbanization,* 18 (2): 333–351. [DOI: 10.1177/0956247806069608]

[b] Allen, A. (2013) 'Water provision for and by the peri-urban poor: Public-community partnerships or citizens co-production?', in Vojnovic, I. (ed.), *Sustainability: A Global Urban Context*, Lansing, MI: Michigan State University Press, pp. 309–340. [Output submitted to REF 2014]

[c] Allen, A. (2010) 'Neither rural, nor urban: Service delivery options that work for the peri-urban poor', in Kurian, M. & McCarney, P. (eds.) *Peri-Urban Water and Sanitation Services: Policy, Planning and Method*, Berlin et al.: Springer, pp. 27–61. [DOI: 10.1007/978-90-481-9425-4]

[d] Allen, A. & Hofmann, P. (2008) 'Moving down the ladder: Governance and sanitation that works for the urban poor', in Verhagen, J., Silva Wells, C. da, Krukkert, I., McIntyre, P. & Ryan, P. (eds.), *Sanitation Services for the Urban Poor: Partnerships and Governance*, The Hague: IRC International Water and Sanitation Centre, pp. 89–135. [http://www.irc.nl/content/download/159155/567643/file/TP54_SanitationServicesUrbanPoor.pdf]

[e] Brand, P. & Dávila, J.D. (2011) 'Mobility innovation at the urban margins: Medellín's Metrocables', *City*, 15: 647–661. [DOI:10.1080/13604813.2011.609007] A more detailed investigation is given in Dávila, J.D. (ed.) (2013) *Urban mobility and Poverty: Lessons from Medellín and Soacha, Colombia*. London/Medellin, Development Planning Unit, UCL and Universidad Nacional de Colombia (published also in Spanish in 2012). [Available on request]

The quality of the underpinning research is demonstrated by the following grants:

- Davila, J.D. (PI), Tyler, N. & Levy, C. (CIs), and local partners, *Local Governance, Urban Mobility and Poverty Reduction. Lessons from Medellín, Colombia*, ESRC-DFID Joint Scheme for Research on International Development (Poverty Alleviation, September 2010 – November 2012 (£244,575). This grant led to output [e] above.
- Davila, J.D. (PI), Allen, A. & Hofmann, P. (CIs), *Governance of Water and Sanitation Services for the Peri-urban Poor: a Framework for Understanding and Action in Metropolitan Regions*, DFID, January 2003 – March 2006 (£341,437). This grant led to output [a] above.
- Allen et al on an international interdisciplinary expert panel advising WaterAid and Building Partnerships for Development (BPD), *Small Town Sanitation and Water Delivery*, Gates Foundation, March 2009 – March 2010 (£119,000). This grant led to output [c] above.

4. Details of the impact

Research into urban infrastructure at the DPU connects theoretical and policy discourses with action. It creates practical tools and methodologies to support development practice, designing and delivering training curricula for practitioners in urban infrastructure services, and providing expert advice for institutions and governments. This research has helped to reframe the debate on urban infrastructure among planners and policy-makers, and DPU researchers have also been able to support the development of improved approaches to the planning and management of infrastructure in major cities in Sub-Saharan Africa and Latin America.

DPU research on the governance of water and sanitation services has influenced NGO partners to change their programmes and project strategies. On the basis of earlier research **[a]**, Allen was invited to act in the aforementioned advisory capacity for WaterAid and Building Partnerships for Development in Water and Sanitation (BPD) in small towns in six African and Asian countries from 2009-10. This project brought both WaterAid and BPD '*significantly further in* [their] *understanding of the approaches necessary to tackle the issues of water and sanitation services in small towns*' **[1; p. 32]**, and defined the areas for 'action research' to be taken forward by the two NGOs. Specifically, the research significantly influenced WaterAid's work through their *City-Wide Urban Planning for Sanitation and Water Project* in Lusaka (Zambia), Maputo (Mozambique), Lagos (Nigeria) and Kinshasa (DR Congo), with that work currently on-track to deliver high-level city planning **[2]**. It also helped to develop an operational framework to diagnose service delivery in small towns, developing city 'typologies' related to demographics, economic drivers, and autonomy in decision-making so as to inform specific intervention strategies and external support programmes. As the project report indicated, WaterAid '*intend[s] to test our approach with the ultimate goal of improving the way that WaterAid as an organisation, and the WASH sector at large, addresses small town issues*' **[1; p. 31]**. Additionally, the research is being continued through a funded EngD currently being undertaken by Hofmann that is expected to produce a tool-kit which will be used by WaterAid in relation to their work on urban water access **[2].**

DPU's research has influenced the re-tooling and capacity-building of professionals operating in the field, being used to develop reusable training materials to enhance the delivery of capacity development programmes in the Global South. Following from her work **[d]** with the International Water and Sanitation Centre in 2008, Allen was commissioned in 2009 by UNESCO-IHE, the largest international postgraduate water education facility in the world, based in Delft in The Netherlands, to design and deliver an online training course on policy, planning and methodological aspects of sanitation services in peri-urban regions delivered over a period of four months. According to UNESCO-IHE statistics, this course was received by over 3,000 planning officers and utility managers from all regions of the Global South. Allen's publications on water and sanitation in peri-urban areas, as well as a filmed lecture delivered at UNESCO-IHE in 2008 **[7]**, were key resource materials in this training module. Distance-learning participants use the book published by Springer **[c]** as the primary resource that gives structure to the programme.

In 2012, Allen designed and delivered a component for policymakers and practitioners on water justice, as part of a school on 'water governance and the human right to water', organised by the Centro Interdisciplinario de Estudios sobre Desarrollo (CIDER), Universidad de los Andes, and the Municipal Government of Bogotá. This was attended by over 30 policy-makers and practitioners, and has since been developed as a reusable educational resource to train 100 more people (including community leaders) on urban planning approaches to equitable water governance **[4]**. During 2010–12, the DPU team of Dávila, Levy, Cabannes and Allen advised the Indian Institute for Human Settlements (IIHS) on the design and implementation of their curriculum on urban settlements and services for working professionals, catering to 1,000 residential students **[5]**.

Following research in the transportation strand, Dávila has delivered over 20 lectures in eight countries on the institutional, social, spatial and environmental factors underpinning sustainable pro-poor transport interventions arising from the DPU's work on local governance, urban mobility, and poverty reduction. This has supported a heightened international discussion amongst policy-makers and planners on the linkages between urban mobility and well-being, and has been reflected in increased media attention and high-level workshop events. As an example, in 2011 Dávila and colleagues facilitated an international workshop in Colombia with over 200 participants to reflect upon the case of Medellín. This outlined the findings described in Section 3, and provided

an opportunity for representatives from aid agencies, national governments, municipalities, local communities, academics, students and international experts to share views on the effectiveness of the municipal interventions and assess the potential of applying this model in other cities **[6]**. The discussion gave rise to an international network of policy makers and professionals in urban development to exchange best practices on urban mobility, and led to a major book on the subject aimed at policymakers and practitioners in the Global South **[e]**.

This research by Davila and others in DPU attracted widespread interest from government actors aiming to incorporate findings about the impact that a relatively old technology such as cable-cars can have on dense, hilly, low-income urban areas. This input into policy thinking is demonstrated by the fact that, in April 2012, officials in Bogotá and Cali, as well as La Paz in Bolivia, requested copies of the DPU's detailed research reports for each case study. Colombian government officials also requested copies of the final reports, and the book **[e]** was requested by municipal and national officials in Colombia, Bolivia, Argentina, Chile, Mexico and Cuba, including by Medellin's Metro Company **[10]**. Between 14 December 2012 and 8 November 2013, the Spanish version of the book was accessed 4,264 times from the research website **[9]**. As municipal interest in aerial cable-cars multiplies around the world, this demand to look at outputs from the DPU's research demonstrates an eagerness to understand the potential economic, social and transport impacts of such systems. The Medellín model as examined by DPU researchers was also incorporated into international policy-making guides for pro-poor urban upgrading. For instance, it was included in the UN-Habitat Guides and launched at Rio+20 in 2012, and in the International Resource Panel report **[3]**, a clear recognition that urban sustainability requires cities to provide a greater diversity of energy-efficient, low-emission transport with low environmental impact to reduce inequalities.

The contribution of DPU research to the global debate on urban transport policy is demonstrated also by its widespread coverage in the popular media. For example, Dávila was interviewed about his research findings for TV and radio in Colombia (*Su Madre Naturaleza* TV programme; Universidad Nacional Radio, twice) and Mexico (Guadalajara ITESO internet radio), and the reach has been further extended through coverage in major British and North American media outlets with global audiences, such as the BBC World Service and CBC **[8]**.

5. Sources to corroborate the impact

[1] WaterAid/BPD (2010) *Small town water and sanitation delivery. Taking a wider view* [Available on request]

[2] Statement by Senior Urban Policy Analyst for WaterAid about how DPU's research defined areas for 'action research' in their programme of work at a country level [Available on request]

[3] Dávila, J.D. and D. Daste, D., case-study book chapter on 'Medellín's aerial cable-cars: Social inclusion and reduced emissions', in *Cities, Decoupling and Urban Infrastructure*, UNEP - IPSRM Cities Report, 2012 [Available on request]

[4] The development of a reusable educational resource used to train 100 people on urban planning approaches is confirmed in a statement provided by an Associate Professor at the Centro Interdisciplinario de Estudios sobre Desarrollo (CIDER) [Available on request]

[5] The fact that DPU researchers advised the Indian Institute for Human Settlements on the design and implementation of a curriculum on urban settlements for 1,000 residential students is described in statement provided by the Director of the IIHS [Available on request]

[6] Statement from the Director of the Medellín Municipality Planning Office on the impact of DPU on in the design of new cable-car initiatives and their integration into public transport systems [Available on request]

[7] YouTube video of Dr Adriana Allen delivering the programme on 'From water poverty to water justice' at UNESCO [http://www.youtube.com/watch?v=GgJo0yJKnmo&feature=plcp]

[8] Examples of media coverage of links between health, well-being and urban infrastructure: BBC World, 30 May 2012 [http://www.bbc.co.uk/news/technology-18248075; http://bbc.in/1hOBTNB) and CBC (featuring the Colombia case studies), 29 May 2012 [http://bit.ly/17djec8]

[9] Data from statistical report on the DPU's Colombia research website [Available on request]

[10] Letter from Medellin Metro Company confirming the DPU book [e] was distributed to staff and Executive Board members, and was valuable for their cable-car projects [Available on request]