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Inclusive development of urban water services in Jakarta: The role of groundwater

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ABSTRACT

This paper applies the perspective of inclusive development to the development goals – past and present – for increasing access to urban water supply. We do so in order to call attention to the importance of ecological sustainability in meeting targets related to equity of access in cities of the global south. We argue that in cities where the majority of urban water circulates outside a formally operated centralized piped systems, inequities in access are grounded in conditions of deep ecological vulnerability. We examine this relationship between environment and equity of access in the context of Jakarta, Indonesia, where failure to address contamination and over abstraction of groundwater has exacerbated inequalities in access to water within and beyond the centralized piped network. We first present research results from in-depth interviews with key informants and secondary data to document the role of shallow sub-surface and deep contained aquifer groundwater within urban water services and causes and implications of declining groundwater quality. We then explore the uneven impact of this degradation through a comparative case study of water access strategies in two low-income settlements. Survey results reveal the significance of shallow sub-surface groundwater services for the poorest residents, and negative impacts of declining groundwater quality on equity in terms of cost and volume of consumption between income groups. We conclude that for urban water services to be inclusive, environmental and social priorities need to extend beyond piped water.

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1. Introduction

The year 2015 marked the year of transition from the Millennium Development Goals (MDGs) to the post-2015 development agenda set out in the Sustainable Development Goals (SDGs). While the MDGs devoted one out of eight goals to environmental sustainability, ecological dimensions take a much more prominent stage among the SDGs. Almost all goals aim to be (ecologically) sustainable, as ecological sustainability is seen to be fundamental for economic, environmental, and social development. The challenge for the present and future of development is the integration of ecological sustainability with social inclusion. Experience shows

that in practice, sustainability often leads to trade-offs in favour of economic goals at the expense of social inclusion (Gupta, Pouw, & Ros-Tonen, 2015). Sustainability approaches of the large development institutions have been critiqued for reconciling economic growth with environmental preservation,¹ and ignoring - or exacerbating social inequalities (Atkisson, 2013).

The concept of inclusive development responds to these critiques of the approaches to sustainability (see Schwartz and Gupta, this issue). While agreeing with emphasis on the urgency of addressing environmental issues, the perspective of inclusive development stresses the necessity of taking into account how these (and the measures taken to address them) are distributed

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¹ See, for instance, the World Bank's 'inclusive green growth', which aims to "reconcil[e] developing countries' urgent need for rapid growth and poverty alleviation with the need to avoid irreversible and costly environmental damage (World Bank, 2012, p. 2).

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through society. This paper is part of a Special Issue dedicated to understanding the role of inclusive development in achieving urban water services in the global South. For, despite the achievement of the MDG in increasing access to water at a global level being met in 2010, this overall success conceals considerable variations between and within countries. Critiques of the MDG achievement have highlighted the lack of attention to equity of access, as well as failing to consider ecological dimensions such as the quality of water delivered (Onda, LoBuglio, & Bartram, 2012) and continuity of access (Burt & Ray, 2014).

In addition, for urban water supply, scholars and practitioners have highlighted the insufficient attention paid to water sources and service delivery strategies which lie outside - or alongside - access to a piped network (Andreasen & Møller-Jensen, 2016; Obeng-Odoom, 2012; Satterthwaite, 2016). In this paper, we argue that extending inclusivity to consider these sources and services is urgent in light of the SDGs, as it is precisely these “alternative”, “informal”, or “out-of-network” supplies used alongside or in place of utility which remain reliant on ecological services – and, as a consequence, vulnerable to- and constitutive of ecological degradation. The realities of urban water services in many Southern cities mean that residents – across all income classes – rely on diverse water sources and modalities of service provision which may be outside of the formally recognized piped water network. This includes groundwater (Wright & Jacobs, 2016), rainwater (Nastar, 2014), or even wastewater (Meehan, Ormerod, & Moore, 2013). These complex configurations of urban water supply were not “counted” within the MDGs (Nganyanyuka, Martinez, Wesselink, Lungo, & Georgiadou, 2014) and goals of both equity and environmental sustainability for access to water sources outside the network or through informal service providers are overlooked (Chakava, Franceys, & Parker, 2014; Srinivasan & Kulkarni, 2014).

As the SDGs renew commitment of improving access to water, we highlight the need to look not only at the ways in which social priorities are included within pathways to sustainability, but – given the reality of access in cities of the global South – how sustainability impacts equity. We explore this relationship between social inclusion and ecological sustainability of urban water services within the context of Jakarta, Indonesia. Although the MDG target with regard to improved water access in Jakarta was met in 2010, the achievement relied on improved access to groundwater – not piped water - sources. Water from the shallow subsurface, and the contained aquifer below, provide the largest volume of water for bulk water, and is the second most preferred drinking water source, after bottled water (BPS, 2012). The dominance of groundwater from the contained aquifer in meeting urban water needs presents concerns for ecological sustainability, as the massive overuse is linked to salinization of the upper layer, land subsidence, and increased flood risk (Delinon, 2008; Kagabu, Shimada, Delinon, Nakamura, & Taniguchi, 2013). In turn, the degradation of shallow subsurface water quality carries larger implications for equity of access.

In the following section of the paper we review the concept of inclusive development and identify its relation to the SDGs for urban water services. In Section Three we describe our research methodology and survey sites, Section Four presents the result of the semi-structured interviews and secondary data to document the role of groundwater in Jakarta’s urban water services. Section Five analyses the results of a household survey to identify the impacts of groundwater quality on access strategies and equity of access.

2. Inclusive development and water

The call for inclusive development as a particular development

approach linking social and ecological goals emerged in response to the process of drafting the SDGs. Although the translation of the term into a theory of inclusive development is recent (see Gupta et al., 2015), the roots of this perspective go back to many development traditions, such as Amartya Sen’s capabilities approach of human development (Sen, 1999, 2000). Concerned with exclusion from development, marginalization, and inequality, an inclusive development approach emphasizes fairness and social justice, and participation in development (Beall & Fox, 2007; Figueiredo & Perkins, 2013; Sachs, 2012; Sultana, 2009). Gupta et al. (2015) revisit these priorities in the wake of the Anthropocene to include the dimension of environmental sustainability. Recognizing that goals of social development are no longer plausible without attention to the environment – all of development, now more than ever, depends on the condition of the Earth – they define inclusive development as ‘development that includes marginalized people, sectors and countries in social, political and economic processes for increased human well-being, social and environmental sustainability, and empowerment.’ (p. 546).

The revival and re-emergence of inclusive development during the transition of global development policy from MDGs to SDGs has taken the original concerns with exclusion, marginalization, and inequality into the calls for environmentally sustainable development. Advocating for inclusive development responds to the concerns of how sustainable development is implicated in practice (Dubash, 2012; Lele, 1991). Efforts to ‘green the economy’, or to making growth inclusive marginally work to redress/readjust economic growth for development in the current context of a global environmental crisis. The resulting neglect of social inclusion for the sake of creating environmentally sustainable economic growth has led to ‘weak’ sustainable development, in which one component of sustainability has become secondary to the other two (Gupta, 2014). Inclusive development thus responds to the prioritization of environmentally sustainable growth, over concerns of equity and inclusion.

Applying the concept of inclusive development to urban water services offers an opportunity to (re)consider relations between ecological sustainability and equity of water access. A look at the MDGs reveals that this relationship was not considered sufficiently, if at all. Target 7C pledged to halve, by 2015, the population of people without access to an improved drinking water source and sanitation facility. Although Target 7C is part of Goal 7, which is concerned with ensuring environmental sustainability, environmental dimensions of access to water and sanitation are not considered – the indicators mainly register quantity (proportion of population) of access, with the only quality-criteria being that the water source or sanitation facility is ‘improved’. This is primarily a matter of categorisation and is not (directly) concerned with either equity of access or environmental interrelationships which favour or hinder this access. Thereby, although the target for drinking water was achieved ahead of time in 2010, this overall success conceals inequities in water access, such as big differences of access between the poorest and the richest households within cities, gender-related challenges in access, and barriers for persons with disabilities (WHO/UNICEF JMP, 2015). Moreover, measuring access in absolute numbers of households connected excludes the quality of the access, such as the number of hours a day a household is connected, the quality of the water itself, the sustainability of the water access, the sociotechnical barriers in accessing the facilities, or the ways in which households combine different sources of water to meet their water needs (Satterthwaite, 2016).

The limitations of the MDG indicator and its measurement for access to water are to some extent addressed in the SDGs. For instance, Goal 6.1 now includes equity of drinking water access, in addition to being affordable, safe, and universal. At the point of

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