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Not Built to Last: Improving Legal and Institutional Arrangements for Community-Based Water and Sanitation Service Delivery in Indonesia

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ABSTRACT: The community-based water and sanitation provision model has been widely used since the 1990s, proliferating in Indonesia since 2003. Recently, Indonesia has made plans to achieve universal access to water and sanitation by 2019, primarily by using the community-based model. The model, however, has been criticised with respect to sustainability challenges, the excessive burden it potentially places on communities, and for inadvertently undermining local government engagement in supporting services. This paper analyses the legal and institutional arrangements for community-based water and sanitation delivery in Indonesia, and finds four key issues: (i) absence of legal personality, (ii) lack of asset security, (iii) lack of financial security, and (iv) lack of a service standard. These shortcomings could have implications not only in the long-term use of the infrastructure, but also in terms of human rights. This paper explains that such issues are caused by the prevalent “community empowerment” norm. Instead of a hands-off, post-construction government approach where communities are “left alone”, we propose legal reforms relating to these four areas which are in line with a co-management approach, one in which both the government and the community have responsibilities to support and manage service delivery.

KEYWORDS: Community, institutions, water supply, sanitation, sustainability, Indonesia

INTRODUCTION

In line with the Sustainable Development Goals agenda, the Government of Indonesia has put forth the ambitious goal of achieving universal access to safe water and sanitation in Indonesia by 2019 (Government of Indonesia, 2014). Currently, national statistics estimate that 71 percent and 68 percent of households, respectively, have 'proper access' to a water supply and sanitation (National Statistics Bureau, 2017a). Proper access to a water supply is defined as having access to 'protected sources', including utility-managed piped networks, hydrants, rainwater-harvesting systems, and protected wells (National Statistics Bureau, 2017b). For sanitation, proper access refers to a household that has at least

one flush toilet with a goose-trap design flowing to a septic tank or communal wastewater treatment system (Ministry of National Development Planning, 2010).

It is unlikely that the universal-access goal can be achieved by only relying on centralised piped-water services and sewerage. In 2012, twelve cities had centralised sewerage systems. These systems are under-utilised, and cover only a small fraction of the cities. For example, it is estimated that just two percent of the capital city Jakarta (10 million inhabitants) is covered by centralised sanitation services (World Bank, 2013). In the water services sector, district government owned water utilities (known as *Perusahaan Daerah Air Minum*, or PDAM) can only realistically contribute to a portion of the universal access target, with the remainder being covered by community-based systems.

The implementation and sustainability of adequate community-based water and sanitation services is therefore critical to achieving universal water and sanitation access in Indonesia. The aim of this paper is to outline the legal and institutional arrangements essential for the long-term use of community-based water and sanitation in Indonesia.

BACKGROUND

The situation in Indonesia is set against a broader global context where community management of water and sanitation services is the norm, particularly for low-income or rural communities. Since the community-based water and sanitation paradigm first emerged, it has faced difficulties in achieving sustainable services in practice. Following the International Drinking Water and Sanitation Decade (1981-1990) declared by the United Nations, the focus has shifted from supply-driven approaches for the provision of water and sanitation services for communities, to demand-driven ones that emphasise the importance of participation in, and management of, services by the communities themselves (Rosenqvist et al., 2016). Under this latter approach it is typically assumed that communities are willing and able to cohere to form institutions for cooperative management of water and sanitation infrastructure (Moriarty et al., 2013). However, the community-management approach in practice has faced numerous difficulties in sustaining services, including the challenges of fee collection to cover operation and maintenance costs (Foster and Hope, 2016), insufficient accountability and managerial capacity (Lockwood and Le Gouais, 2011), unsustained voluntary inputs from community members (Harvey and Reed, 2007), and low demand for the types of interventions advocated by donors (Montgomery et al., 2009). Community management has also been criticised for weakening institutional capacity by shifting the burden of responsibility of public service delivery from government authorities to communities (Chowns, 2015).

In response to the poor sustainability outcomes of the community management approach of the 1990s, alternative models have been put forth. These include household-level self-supply, varying levels of private sector involvement, and increased institutional support for community management (Harvey and Reed, 2007). Although individual households, non-governmental organisations (NGOs), and the private sector have important roles to play in the delivery of water and sanitation services, the declaration of water and sanitation as human rights especially implicates support from government. Further, the permanence and authority of government gives it a unique position to provide support to communities.

The literature presents a number of external support mechanisms that governments may be able to satisfy. Since communities are often challenged by financing and cost recovery of services (Montgomery et al., 2009), there are calls for governments to develop balanced financial instruments that can be used to address recurrent costs as well as upfront capital (Carter and Lockwood, 2011; Verhagen and Carrasco, 2013). The increasing role of local self-governance systems such as the Gram Panchayat in India (Hutchings, 2018) and the new Village Law in Indonesia, provide new opportunities for the financial support of rural water supply and sanitation. However, in Indonesia this also creates

complexities for coordinating existing community-based organisations (CBOs) which are independent from the village governance system.

Professionalisation of service caretakers and committees – for example through the provision of certified training and documentation that cements their status as service providers in legal, policy, and regulatory frameworks – may help to improve accountability (Moriarty et al., 2013). The declaration of water and sanitation as human rights compels states to develop service standards that can be monitored, in order to enable communities to redress violations of these rights (de Albuquerque, 2014). Finally, clarification of formal and legal asset ownership is a critical basis for the upkeep of major assets (Moriarty et al., 2013), an intervention which may need to come from the government in areas where ownership is not assigned by traditional means.

Much of the existing literature on external support to community-managed water and sanitation focuses on rural areas, and on water supply rather than sanitation. However, in some countries, a community-management framework is also adopted for sanitation services in urban areas. In Indonesia, it has been applied at considerable scale with 25,000 community-based systems already built in low-income areas (Mills et al., 2017). These systems have met with many challenges that are similar to those faced in rural water supply and, as this paper will explain, present similar legal issues which may jeopardise their ongoing sustainability.

METHODOLOGY

This paper draws on four research projects that each investigated aspects of the legal and institutional arrangements for community-based water and sanitation systems. Two projects focused on rural water supply, and two focused on community-based urban sanitation systems.

Each study employed qualitative research methods, including interviews and focus group discussions (FGDs) at both national and subnational levels. Participants included representatives from government, NGOs, and community-based organisations. In addition, specific legal and institutional analyses were also undertaken as part of each project. Legal analysis ascertains how legal norms operate in a particular circumstance (for example, 'Do CBOs legally own their assets?'), and determines the legal implications thereof (Holmes, 1899; Corbin, 1919). The institutional analysis undertaken in the studies was underpinned by a political economy analysis framework (Harris et al., 2011; Ostrom, 2011). This included consideration of the incentives provided by formal and informal rules operating within and between organisations, as well as issues of power, control over choice, and access to information. The latter was undertaken with consideration of the service delivery subsector dynamics for rural water supply and urban sanitation (Harris et al., 2011: 25) This qualitative methodological approach was appropriate for the research aims, which concerned legal and institutional arrangements, and were complementary to other studies conducted by others, including a quantitative study on the sustainability of the community-based water and sanitation model undertaken by Prabaharyaka (2014).

These methods and relevant participants are detailed in Table 1 below. In total, the evidence base for this paper comprises 54 interviews and 13 FGDs, with a total of 242 participants and more than 16 CBOs. (A note on terminology: we use 'regional' to denote 'district government' when referring to relevant regulations, organisations, etc; as this is the common translation of 'district' into English.)

FINDINGS

Overall, the policy and legal context for community-based water and sanitation services in Indonesia was found to demonstrate several key limitations that reduce the sustainability of these services.

Table 1. Summary of methods and participants.

Research projects	National engagement	Subnational engagement		Legal and institutional analysis
		Interviews	Focus group discussions/workshops	
Rural water supply (2013-2015)	FGD to shape research questions (19 participants) FGD to communicate findings and explore solutions (18 participants)	In-depth interviews conducted at various levels of government, with various stakeholders: village levels, regency/city levels, provincial levels, and national levels	Interviews and observation in Maukaro District, East Nusa Tenggara (four CBOs, one multi-system and three single system, all built by a Pro-Air project) FGD in Ende, East Nusa Tenggara (18 participants, including local government and local NGOs) Interviews and observations in Tlanak, Kemlagilor, and Lamongan villages (two CBOs); FGD in Lamongan, East Java (20 participants, involving local government and CBO officials from five CBOs, all part of the first and second Water and Sanitation for Low-Income Communities [WSLIC] projects)	Legal analysis was employed to assess (i) the role of government actors, and the legal form of CBOs and their implications; (ii) asset ownership, operation, and maintenance; and (iii) raw water security
Rural water supply – "Enterprise in WASH" (2013-2018)	Interviews with Ministry of Health, National Planning Agency, National Water Board Association	Interviews with East Java government agencies (public works and health)	FGD with members of the local drinking water association in Lamongan, East Java (five participants) FGD with members of a Tlanak, East Java CBO (15 participants), managing one water system built through WSLIC-2	Political economy analysis of factors affecting service provision and professionalisation of water and sanitation services
Community-based sanitation – "Effective Governance for the Successful Long-Term Operation of Local Scale Wastewater Systems" (2013-2016)	FGD at the Directorate General of Human Settlements (14 participants) FGD at the National Development Planning Agency (14 participants)			Legal analysis of (i) national regulation of local wastewater, (ii) regional regulation of local wastewater, (iii) public finance and its implications, (iv) asset ownership, and (v) appropriate 'legal forms' of CBOs
Community-based sanitation – "Increasing Local government responsibility for communal-scale sanitation" (2016)	Interviews with National Planning Agency, Ministry of Public Works, Ministry of Home Affairs Two FGDs focused on financing arrangements (25	Eight interviews in Kota Bogor, West Java (vice mayor; district secretary; planning, public works, environment, and health agencies; and an association of CBOs) Six interviews in Kabupaten Bantaeng,	Stakeholder meeting in Kota Bogor FGD in Kota Bogor (25 participants including planning, public works, health, and environment agencies, a water supply company, an association of 52 CBOs), with systems built through multiple programmes – USRI/SLBM-DAK/SANIMAS – and two	Legal analysis pertaining specifically to local government ownership of assets and financial regulations. This included analysis of selected case laws on state finance and regional budgeting Reviewed two major national government guidelines for

and 20 participants respectively)	South Sulawesi (district secretary, planning agency, public works, and a water supply company)	representative CBOs, each managing one system built through the SANIMAS program	community-based sanitation to consider how local government roles were articulated and clarified
Final FGD with Ministry of Public Works, National Development Planning Agency, and two local governments (Bantaeng and Bogor) (29 participants)	Site visits to 10 sites, and interviews conducted with community members and members of local CBOs	FGD in Kabupaten Bantaeng (20 participants including planning, environment, public works and health agencies, a water supply company, and an association of 22 CBOs) with systems built through multiple programmes – USRI/SLBM-DAK/SANIMAS – and two representative CBOs each managing one system built through the SANIMAS program	
An external expert on regional finance was consulted to validate findings and analyses, and to provide feedback to "draft guidance of local government expenditure"			

Government initiatives for community-based provision of water and sanitation services have been implemented since 2003, when the government enacted the National Policy on the Development of Community-Based Water and Sanitation (*Kebijakan Nasional Pembangunan Air Minum dan Penyehatan Lingkungan Berbasis Masyarakat* hereafter referred to as the '2003 Policy'). This policy introduced a dual system for water services provision, one being institution-based and the other being community-based (Government of Indonesia, 2003). 'Institution-based' denotes services delivered by 'legal persons', which could be in the form of government departments, companies, or private entities (non-profit or for-profit). Meanwhile, the term 'community-based' is defined in the policy as water service management which places the community in the position of decision maker and responsible actor. In practice, however, the delineation between the two can be difficult. Our research shows that there are unresolved differences between regulatory stakeholders at the national level regarding whether the community-based system should be viewed as a temporary approach (until an 'institution' can provide services) or whether it should be viewed as a permanent service (Al'Afghani et al., 2015a). In order to facilitate the long-term use of community-level infrastructure, we believe that the related services provision needs to be recognised in terms of policy as well as regulation.

Community-based services, as explained in this paper, suffer from four main institutional issues: (i) absence of legal personality, (ii) poorly defined service standards, (iii) lack of asset security, and (iv) limited financial security. All four of these elements are necessary enablers for the long-term sustainability of the services. All of these four elements are applicable to community-based water infrastructure as well as sanitation infrastructure. There are other factors that may threaten the sustainability of community-based water supply systems, such as the available supply of raw water. This factor has been discussed in detail in the research report which underlies this article (Al'Afghani et al., 2015a), but is not discussed here since it is considered to be a natural problem, not a sui generis legal and institutional issue.

The following sections analyse in detail each of the four issues and their relevance to long-term use. This paper argues that these issues are caused by the dominant paradigm of 'community empowerment' in the Indonesian water policy discourse, and presents possible pathways forward with consideration of human rights implications, co-management as a potential service model, and the key institutional development steps required for more sustainable service provision.

Absence of legal personality

Legal personality for service providers is essential in Indonesia because national policy and legislation make it a prerequisite for important government support mechanisms. A legal personality is defined as the capability of becoming the subject of rights and duties (Adriano, 2015). In terms of assets, the absence of legal personality means that CBOs cannot legally own their land and building assets. In terms of financing, the new 2014 law on regional government (Law No. 23/2014 on Regional Government) prohibits the disbursement of government grants (*hibah*) to non-legal entities. This means that as of 2014 these CBOs are not eligible to receive government grants. Both cases will be dealt with in detail in the following sections (4.3 and 4.4).

Our research found that CBOs in Indonesia rarely have legal personality. Out of 19 CBOs we surveyed in East Nusa Tenggara, Eastern Java, and Sulawesi, only one CBO was found to be a legal entity, taking the form of a cooperative (Al'Afghani et al., 2015b). The remainder of the CBOs were either established before a notary as an 'unincorporated association', which is not a legal entity, or did not have any notarial deed.

The paucity of CBOs with legal personalities is likely driven by incoherence in the concept of community-based water and sanitation as it is described in the 2003 policy. Under this policy, the service providers are the community, and/or the institutions appointed by the community, and require no legal formality (Government of Indonesia, 2003), which implicitly reifies that only institution-based services are legal. However, the terms institution-based and community-based that are used in the 2003 policy are inappropriate. In reality, community-based systems are also based on formal and informal institutions that can (and indeed should) have 'legal personalities'. Most of these institutions are set up as unincorporated associations. The 2003 policy does not acknowledge the potential importance of this and, as such, is not conducive to supporting effective long-term arrangements for community-based water and sanitation service delivery.

The technical manual of the 2009 *Penyediaan Air Minum dan Sanitasi Berbasis Masyarakat* (Community-Based Water and Sanitation Provision System, or PAMSIMAS), which guides the largest community-based program run by the Ministry of Public Works, mentions that local communities may register their organisation at a notary or be processed further to obtain legal-entity status. The technical manual further states that all costs borne in this notarial process shall be borne by the community itself "as a manifestation of community empowerment". Thus, the 2009 policy slightly departed from the 2003 policy by acknowledging that CBOs may obtain legal personalities, although these were still not mandatory.

The 2012 and 2016 editions of the technical manual of PAMSIMAS mandate that CBOs be registered at a notary. In the 2016 technical manual, notary registration is one of the prerequisites for fund disbursement. The document also mentions that the purpose of notary registration is so that the CBO may become 'legally valid'. Nevertheless, the 2016 PAMSIMAS manual is still inadequate in enabling the continuity of community-based water and sanitation services because it has no requirement for CBOs to have a legal-entity status. In 2017, there have been some discussions with regard to the PAMSIMAS manual, suggesting that CBOs should be converted into village-owned companies *Badan Usaha Milik Desa* (BUMDes) (Ministry of Public Works, n.d.). However, BUMDes are not automatically legal entities.

For the future, the government must institute a requirement for CBOs to be established as legal entities, and to have the cost of the legal process subsidised. This is necessary if CBOs are to receive

government financing and to legally own their land and building assets. However, this initiative may run counter to the prevalent 'community empowerment' norm in Indonesian discourse, which holds that communities must be responsible for covering process costs in order to create a sense of ownership.

The need for service standards

Service standards are key to sustainable service delivery. They form a part of the 'regulatory quadrangle', along with tariffs/fees, network expansion, and the environment, each of which are competing regulatory objectives. (For example, an increase in service standards may incur higher tariffs and subsequently lead to less investment in network expansion (Al'Afghani, 2016)). Service standards are also important as a recourse mechanism for customers and as a parameter for monitoring and evaluation for the government.

In the context of Indonesia's decentralisation and regional autonomy, water and wastewater services are categorised as 'basic service-mandatory-concurrent affairs'. This means that the service is non-optional for local governments, and that they must be prioritised among other services. As a 'concurrent affair', however, it means that the central government has regulatory competence in terms of setting standards. This is known as the norms, standard, procedure, and criteria (*Norma, Standard, Prosedur dan Kriteria*, or NSPK) law. The law defines minimum service standards as "the provision regarding the type and quality of basic services which are mandatory Government Affairs in which each citizen is entitled to a minimum" (Law No. 32/2004 on Regional Government). Regions can enumerate service standards further through regional by-laws.

Articles 45 and 48 of Government Regulation No. 122/2015 (GR 122) on drinking water provision systems obligates state- or region-owned enterprises or government technical units to guarantee the quality, quantity, and continuity of its services in accordance with prescribed standards. However, provisions regulating water supply services delivered by CBOs contain no obligation to adhere to any standard (Al'Afghani, 2016). Article 51 of GR 122 mandates further regulation of the community-based water model through ministerial regulation but, to date, no such regulation exists. The Ministry of Health has the competence to regulate drinking water quality (Health Minister Regulation on the Quality of Drinking Water No. 492/MENKES/PER/IV/2010). This regulation is applicable to both community-based water supplies and regionally owned water utilities, or PDAMs. We shall argue later that the standard for the community-based model should be differentiated from that of PDAMs.

Of the six CBOs we visited in Eastern Java and East Nusa Tenggara, none of them could meet the parameters stipulated by the Ministry of Health. These findings are also corroborated by FGDs organised in Lamongan (East Java) and Ende (East Nusa Tenggara), in which we found no CBOs that were able to comply with prevailing drinking water standards. It is worth mentioning that most regionally (local government) owned drinking water utilities (PDAMs) will probably also fail to meet with drinking water quality standards, though some do manage to provide potable water at certain sites (Hadipuro, 2010; Zamaruddin, 2018).

GR 122 does not regulate wastewater in detail, thus no equivalent provisions exist. This means that currently, at the national level, there are no regulations on the minimum service standards for wastewater services, whether they are provided by the government, state-owned enterprises, or CBOs. However, regional governments can regulate wastewater service standards if they choose to.

Several regions, sponsored by a donor initiative, are currently drafting regional by-laws on wastewater services. We analysed draft regional by-laws in Makassar and Bogor, although since the draft by-laws were based on the same template, there is minimal variation between them. Both draft by-laws define service standards as

a parameter that can be used as a guidance for the undertaking of public service and a reference of service quality as an obligation and promise of a service provider to the community in order to provide a quality, speedy, easy, affordable and measurable service.

From this definition, the drafter clearly understands that the purpose of having a service standard is: (i) as an instrument of measurement, and (ii) as an instrument of right, in order to provide a basis for claim. Nevertheless, both draft by-laws are silent on the content of the minimum service standard.

This silence means that customers will face difficulty in complaining about poor wastewater services. For example, the Bogor draft by-law on wastewater services mentions that anyone who obtains wastewater services "not in accordance with the standard" can submit an objection. If such an objection is proven, the wastewater operator must compensate by reducing the retribution fee. If such compensation is not provided, the regional government can impose administrative sanctions on the wastewater operator. The said article, therefore, appears on first reading to protect customers. However, since the exact content of the standard itself is never detailed, customers in fact have no means of recourse. By comparison, for water supply services the detailed standard, including the compensation mechanism, is already clearly stipulated by a by-law in Bogor (City of Bogor, 2006).

Indeed, the lack of a wastewater service standard definition in the draft template and Bogor draft by-law affects both community-based and centralised services. However, one interesting detail in the Bogor draft by-law was the mention of a retribution fee. Under Indonesian regional finance law, retribution only applies to government services. Thus, the standards in the Bogor draft by-law – if the local government chooses to define their contents in the future through some regulation – will only be applicable to government-operated centralised services, but not to community-based services.

As a result of these gaps, community-based services throughout Indonesia are not subject to minimum service standards. Customers of community-based services have no legally based redress mechanism, and community-based operators have no related incentive to improve their services.

Lack of asset security

Asset security is one of the most crucial issues in community-based water and sanitation, and has far-reaching consequences for sustainability. Without legal clarity on the ownership of assets, there is no guarantee that assets that have been built through foreign and national funds, with community involvement, are secured. Unsecured assets mean that third-party claims or expropriation can arise later on, rendering all previous development efforts useless. This is true especially in urban settings where contestation over land tenure is high. The 2003 policy advocates for community ownership (Government of Indonesia, 2003). The same policy suggests that a legal framework be conceived by the government to smooth the transfer of assets from the government to the community.

We define 'asset security' as the clarity of the legal status of assets used to deliver water and wastewater services. Assets are considered secure if there is a clear legal relationship between the legal owner of the assets and the operator running such assets. In both community-based water and wastewater services, assets can be categorised into land and infrastructure construction, both above and below ground. Asset security can be legally measured by the existence of the following documents: (i) land ownership certificate or right-to-build certificate, (ii) land utilisation agreement, (iii) building permits, or (iv) a certificate of building ownership. A check of these documents is known as an 'assets security test' (Al'Afghani et al., 2015b). CBOs operating on *adat* (customary) land are excluded from the test as there are other methods for determining asset security which apply to them (Al'Afghani et al., 2015a). However, the majority of CBOs, especially in urban settings, operate on non-customary land. Discussion on asset security on *adat* lands can be found elsewhere (ibid), and is beyond the scope of this paper.

With regard to community-based wastewater, we conducted a random survey with contacts in several regions (in and outside Java) with the intent of obtaining copies of CBO legal documents. For community-based water services, we sampled CBOs in Eastern Java and Ende. In all cases, we found no CBO that could provide a document listed on the assets security test. This finding was validated through

various local, provincial, and national level FGDs. The findings suggest that in both rural water supply and urban wastewater settings, CBOs often operate with legally insecure tenure.

We also investigated the asset transfer mechanism in two community wastewater programs: the Asian Development Bank-supported Urban Sanitation and Rural Infrastructure (USRI) programme and the nationally supported *Dana Alokasi Khusus Sanitasi Lingkungan Sanitasi Berbasis Masyarakat* (Special Allocations Fund for Community-Based Sanitation, or DAK SLBM) programme. In both the USRI and DAK SLBM programmes, there was no requirement that the 'legal title' should be transferred to the relevant CBO, although for DAK SLBM-funded systems, local governments have an option to place the assets on their register since they build them. However, in both cases the programmes' technical guidance only contained a standard transfer of assets form, without further obligating the forms to be processed accordingly. This was validated by the legal documents we obtained from CBOs in the field.

There are two main reasons why these asset transfer mechanisms were flawed. First, in most circumstances, over the course of construction of relevant infrastructure the legal process stops at a grant letter. This document is merely a privately executed letter from the holder of the land title, declaring that they approve the land to be used for water/wastewater services by the CBO. The grant letter alone is insecure as it can be revoked by the grantor. In order to be legally secured, it must be notarised and processed at the land registry, however the technical guidance of the programmes makes no mention of this. Second, the recipient of the title – the CBO itself – must be a legal entity. Under Indonesian law, only a person and a legal entity can own land. As discussed earlier, most CBOs lack legal personality and thus cannot be entitled to land ownership.

To conclude, we have not been able to locate any single CBO which legally owns the buildings and the land on which its assets are located. However, ownership of land and buildings by CBOs is not the only way to achieve assets security. The same security can be achieved if the local government owns the land and building assets and the CBOs are allowed to maintain and operate such assets. This appears to be a rare circumstance. One local government reported in an FGD that they operated this scheme in their region, but we have not yet been able to verify the documents (Al'Afghani et al., 2015b).

Why do CBOs operate with legally insecure land tenure? Through several FGDs, the reason given for why programme documents did not require further legal process on the land status was that the government expected the community to do it itself, in accordance with the community empowerment norm which holds that a sense of ownership would be instilled in the community if it bore the procedural burden.

Challenges and solutions for financial security

A large number of community-based water and sanitation services which have been built in Indonesia require financial support in order to be sustainable. Previous research in Indonesia notes that tariffs and profits are among the most important elements for long-lasting rural water supply services, the lack of which contributes to compromised maintenance (Prabaharyaka, 2014). In the community wastewater sector in Indonesia, user fees are often inadequate for covering routine, intermittent, and asset-renewal costs and CBO voluntary time (Mitchell and Ross, 2016). In general, there are three options for financing the post-construction costs: (i) increasing user fees, (ii) inventing a new business model, or (iii) government funding. Increasing user fees and government funding are discussed below. Inventing a new business model is outside the scope of this paper.

Increase user fees

User fee collection often faces legitimacy challenges. As community services are considered informal, there is often no legal mechanism that can authorise and empower CBOs to collect fees. Local communities in Indonesia often collect fees for religious activities or to develop their local

infrastructure in the absence of government support. The fees are called *iuran*, and are mostly voluntary and have no legal basis. This is what sets *iuran* apart from official levies such as *retribusi* (retribution), which is used for solid waste in urban areas, and the tariffs imposed by PDAMs in rural and urban areas.

Lately, there has been an effort to legalise the *iuran* for water services through regional by-laws (Regency of Bima, 2011; Regency of Sikka, 2012). However, even these by-laws suggest that *iuran* should be subject to community approval in accordance with their purchasing power. Rural water and sanitation services have more opportunity to formalise *iuran* through village regulation because, under a new law, villages are recognised as self-governing entities with regulatory power (Law No. 6/2014 on Villages). The situation is more difficult in urban settings where no similar provision exists.

One possible strategy for generating user fees, especially for wastewater services and for urban settings, is to combine CBO collection with official PDAM tariffs or retribution. However, at present no legal mechanism exists under the regional budget regulation that could enable such a joint levy.

Government funding

Ultimately, as a 'basic service-mandatory-concurrent affair', local government has the legal responsibility to provide water and sanitation services (Law No. 23/2014 on Regional Government). This responsibility means that local government should always have a budget tab for water and sanitation services. However, since community-based water service assets are not owned by local governments, they cannot easily provide funding for maintenance, operation, and repairs. Our case study of rural water supply in Ende, East Nusa Tenggara, and Lamongan, East Java, as well as community urban wastewater services in Bogor and Bantaeng, confirmed that local governments face difficulty in providing financial support to local CBOs, although local governments are financially able and willing to finance some of the CBOs' post-construction costs.

At the moment, most post-construction support to CBOs is conducted through a grant mechanism (*hibah*), using an account called "goods and services expenditure to be transferred to third parties" under Indonesian regional finance regulations (Minister of Home Affairs Regulation No. 21/2011 on Guidance for the Management of Regional Finance). This is different from assets which are owned by local government and whose maintenance may be funded using the 'capital expenditure' account.

Through this grant scheme, the government could transfer goods and services to a third party (such as a community). Thus, if a local community needs to repair or extend a network, the grant scheme requires that the local CBO submit a proposal to the local government, which will then be validated by a technical agency (*dinas*) dealing with water services. This proposal would then be included in the agency's budget as a part of the local government's subsequent budget, and submitted to the local parliament for approval. If it is approved, the CBO will receive the grant in the form of goods (pipes, equipment, etc), but not money.

Thus, the grant scheme is not suitable for financing emergency repairs (except if it is caused by a disaster, in which case another account called 'social expenditure' enables monetary transfer). If the system breaks down and requires large funds for repairs, the community must wait several months and follow the regular regional budgeting process.

Further, there are two other obstacles that local communities face in accessing the grant scheme. First, under the revised law on regional government only a legal entity can participate in the grant scheme (Law No. 23/2014 on Regional Government). CBOs that have no legal personality are thus not allowed to accept grants. Second, the grant scheme can only be provided on an incidental basis, and does not provide repeated or ongoing funding. This means that when a CBO receives a grant one year they cannot apply the following year.

There are three possible solutions to the constraint imposed by these budget rules, the first two dealing with the question of asset ownership. The first solution is to turn CBO assets into local

government assets, while the CBO remains in charge of day-to-day management of the services. As a local government's owned asset, they could finance them in the same way that they routinely finance other assets that belong to them, using various accounts. However, there is a ministerial regulation that requires third parties to finance operation and maintenance of government assets if they are operating them, so this regulation would require an amendment. The second solution is for the assets to remain under community ownership, but for the government to change the regulation on regional budgets that prohibits routine disbursement of grants to CBOs. Failing this, the prerequisite for the CBO to be constituted as a legal entity remains. The third solution, which is applicable only to CBOs in rural villages, is to convert their status to BUMDes. The new law on villages would enable village governments to allocate some funds for BUMDes. Nevertheless, there is a legal complexity with respect to BUMDes' status in terms of whether they are *per se* a legal entity, in which case they still require conversion into other legal forms (cooperatives or limited liability companies), and thus some notarial process is still required for BUMDes to achieve legal entity status (Dewi, 2010; Ridlwan, 2013, 2014).

Summary

Our research found four institutional and legal issues facing community-based water and sanitation systems in Indonesia: (i) absence of legal personality, (ii) poorly defined service standards, (iii) lack of asset security, and (iv) limited financial security. These findings are similar to experiences that have been described for other countries, including Timor-Leste (Willetts, 2012), India (Hutchings, 2018), and a recent multi-country study by the World Bank (2017) that included Bangladesh, Benin, Brazil (state of Ceará), China (Zhejiang and Shaanxi provinces), Ethiopia, Ghana, Haiti, India (Punjab and Uttarakhand states), the Kyrgyz Republic, Morocco, Nepal, Nicaragua, the Philippines, Tanzania, and Vietnam.

DISCUSSION

The findings presented above demonstrate significant hurdles which must be addressed in order to provide a more conducive environment for achieving sustainability of community-based water and sanitation services in Indonesia. The following discussion highlights three key areas that may point to a way forward. First, a human rights perspective confirms the state as the ultimate duty bearer, and that it is therefore the state that needs to set appropriate service standards applicable to community-based systems and provide an associated regulatory framework. Second, the emerging concept of co-management may offer a viable means of partitioning tasks, roles, and decision-making between local governments and communities to jointly provide the service. Third, there are several key areas of institutional development that would be required to enable such a joint management approach in the Indonesian context. These include efforts by national ministries and local governments that would enable the latter to provide the necessary financial support, technical support, and dispute resolution.

The following sections elaborate on these three key areas.

Human rights implications

Under the human rights framework, CBOs are categorised as 'non-state service providers' (de Albuquerque, 2010). CBOs are therefore considered a duty bearer under the human rights framework, although the state remains the ultimate duty bearer. When non-state service providers are involved, the primary obligation of the state is to regulate through setting standards, establishing clear accountability mechanisms, and ensuring that grievance mechanisms are in place (ibid).

The enforcement of human rights in decentralised water services poses unique challenges. It is difficult to uniformly regulate decentralised water services because types of water supplies and the service levels that they can realistically achieve vary widely throughout the country. But this condition

does not exempt the state from its obligation to regulate community-based services in accordance with human rights.

Another challenge to enforcing human rights in this setting is the implementation of a grievance mechanism which, as previously mentioned, is linked to service standards (ibid). The absence of a particular service standard for CBOs means that customers have no basis to complain with respect to that standard. Additionally, the majority of CBOs would not have grievance mechanisms even if standards were in place.

What sort of regulatory framework should be applied to community-based services to address these challenges? In her report to the UN General Assembly, former Special Rapporteur de Albuquerque notes that a 'distinct regulatory instrument' may need to be developed for decentralised small-scale service provision (ibid). She also notes that legal instruments for regulating CBOs must be adapted to this situation and, in this respect, the role of local government is vital (de Albuquerque, 2014).

In terms of urgency, the right to water and sanitation can be expressed as two obligations: (i) a minimum core which must be immediately provided, and (ii) progressive realisation – the obligation to take steps in the shortest possible time, subject to the availability of resources, in order to fulfil an adequate standard of living (Winkler, 2012). A minimum core is the starting point towards full realisation (ibid), it is regarded as the 'floor' and full realisation as the 'ceiling'. Thus, progressive realisation is 'raising the floor' (Chapman and Russell, 2002). We argue that for community-based provision, the service standard should be viewed as raising the floor. This means that, except for some minimum core, the national regulatory framework should function as an enabler of service standards. The detail of the standard itself should be adjusted to the natural conditions of each site, subject to the agreement of the local community. For example, in the context of water supply the standard would be in terms of quantity, quality, and continuity, whereas in sanitation it would include, among other things, emptying of pits or tanks that collect human excreta and maintenance of sanitation systems (Winkler, 2016). The regulatory framework should also set up goals and plans. Once a particular CBO has been able to improve its services (for example, achieving a more regular supply), the standard for that particular site should be raised in order to adjust to a new service level (hence 'raising the floor'). Regulatory frameworks can facilitate partnerships and allocate responsibilities between CBOs and local governments through 'co-management' as explained below.

Potential for co-management

To address the challenges described in this paper, and to provide a practical route forward for operationalising a local government's legal mandate to provide water and sanitation services, we propose that co-management can and should be part of the solution. Authors who are focused on the relative roles of state and citizens in the production and delivery of public services differentiate between co-governance, co-management and co-production (Brandson and Pestoff, 2006). Co-governance is defined as the engagement of both parties in defining how planning and delivery will take place; co-management is defined as the collaborative production of the given 'service'; and co-production is a situation where citizens partially produce their own service. Co-production was recently suggested by Hutchings (2018) as a potential solution for rural water supply in India. However, given that both water and sanitation service delivery include elements of service delivery that are beyond the capacity of communities or community-based organisations, it follows that co-production (which to some extent is represented in the current model) is insufficient. This is particularly true because the current model of co-production is based on two drivers: the failure of government to provide services, and the specific challenges of the context (Joshi and Moore, 2004), rather than a negotiated choice made by citizens.

In its place, we suggest that *co-management* is required, whereupon appropriate boundaries are delineated between the tasks, roles, and decision-making authority of the local governments and

relevant communities in the joint production of the service. This is particularly important given the above discussion concerning the right to water and sanitation, which entails that the state step forward and increase its role. It is also important with respect to the goal of empowerment of communities through their engagement in service delivery. Empowerment is not a likely outcome if communities are left with responsibilities that are beyond their means without relevant support from local governments. The increasing role of local government in a community-based model, however, may require a certain fiscal capacity (Hutchings, 2018). Thus, the relevance of the co-management model that we are proposing will likely depend on national or local fiscal capability.

Co-management is not a new concept in the context of the water and sanitation sector, neither in the Global North nor in the Global South. In the United States, guidance that supports the management of wastewater in rural areas defines a range of possible models for 'responsible management entities' to engage in co-management of services with government (WERF, 2009). Such entities may be private, state-owned, or community-based. Examples in the Global South include efforts to engage local governments in strengthened roles through collaboration on the right to water and sanitation (see www.righttowater.info/making-rights-real/) which are being followed up by engagement with local governments in Burkina Faso, India, and Ghana.

The question then arises as to how to develop such models of co-management in practice. Here, design theory and practice have something to offer in providing approaches for different stakeholder groups to negotiate the 'rules of engagement' in the production of a public service. The approach used in one of the studies on which this paper draws (Mills et al., 2017; Mitchell and Ross, 2016) is co-design. Co-design provides tools and approaches to assist governments and citizens to explore the nature of the required service, different possible ways of configuring that service, and options for negotiation of roles and responsibilities (Rosenqvist and Mitchell, 2016). An important factor in this equation will always be the financing requirements and possible financing mechanisms, as described earlier in this paper.

Recommended institutional development in Indonesia

A co-management model would require that the existing regulatory and institutional framework be adjusted. Each level of government, from the national and provincial levels to local government and villages, should have a role to play. We first outline that Indonesia is not alone in terms of formally recognising community-based water models, and give examples from Timor-Leste and South Africa to highlight this. We provide insight into the institutional development that is required in order to accommodate the co-management model, drawing on views expressed by different stakeholders during the research.

The first step towards regulating a community-based water model is to acknowledge and formalise the system through legislation. For example, Timor-Leste Decree-Law 4/2004 (Decree-Law) assigns the provision of water supply outside of urban areas through "community-run water supply systems, without prejudice to the right of the State to intervene" (Government of Timor-Leste, 2004). Nevertheless, the Decree-Law stipulates that the community groups shall not have any legal personality, thus runs counter to what we propose here. Furthermore, it also states that the community groups "shall be established in accordance with the customary rules", and this might contradict our proposal towards a more formalised – albeit flexible – service standard for community-based models. Similarly, in South Africa, the Municipal Systems Act also recognises community-based organisations as possible water providers (Government of South Africa, 2000), however, in implementation, this must be conducted through an agreement with the government, and the regulation places onerous procedural requirements on municipalities before they can engage with community-based organisations. In a 2002 white paper, the South African government realised that a one-size-fits-all approach in water regulation

was not possible and that regulating community-based models will pose different challenges from regulating urban water utilities (Government of South Africa, 2002).

Likewise, in Indonesia, currently GR 122 recognises 'community groups' as water providers (but not yet as wastewater services providers) and this is an important first step towards formalising community-based services. The regulation also states that regents/mayors have a duty to 'supervise' community-based services. Meanwhile, the duty to conduct 'fostering (*pembinaan*) and support' lies with the village government, however nothing further is described. The regulation also states that community groups are only allowed to operate outside of a regional water utility's 'coverage area' (*daerah jangkuan*). Thus, slowly there is a shift of paradigm towards a larger governmental role, but this has not been elaborated in terms of regulatory details. For example, existing regulations have yet to set out in detail the 'minimum core' for community-based water services and to resolve that when CBOs fail to fulfil the minimum core, provincial or municipal authorities should step in. These issues were discussed during the 2013 and 2014 national FGD (Al'Afghani et al., 2015a).

Thus, in Indonesia, Timor-Leste, and South Africa, there is an emerging recognition of community-based water models, however there are limitations to the current approaches and disagreement as to what the regulation should ideally look like.

In order to respond to the issue of assets and their maintenance in Indonesia, there is a need for a policy framework for community-based water and sanitation services, ideally set by the Ministry of Public Works. Such guidelines must answer basic questions which address CBO financing mechanisms regarding who should own the assets: the community (as a legal entity), local government, or villages. During the research, these areas were discussed, and there was recognition of the inherent complexity of achieving this, since it would require changes in the policy frameworks of not just the Ministry of Public Works but also of the Ministry of Home Affairs, which regulates regional budgeting and assets (Al'Afghani et al., 2017). If assets are to be owned by the community, then budgeting rules should allow routine transfer of funds from local government to community. On the other hand, if assets are to be owned by local governments or villages, asset rules should allow local governments to finance capital maintenance costs of assets operated by CBOs. Local government is the spearhead of post-construction support. In general, local government in Indonesia ideally can take four primary roles (Al'Afghani et al., 2015a): (i) financial support, (ii) technical support, (iii) dispute resolution, and (iv) standard-setting and enforcement. Similar local government roles have also been identified in other research on rural water supply in Indonesia (Soeters et al., 2018). Such roles can be defined in a regional by-law and in regulations of local government heads. Despite the growing interest in regulating community-based water services at the local level in Indonesia (Regency of Bima, 2011; Regency of Dompu, 2012; Regency of Sikka, 2012; Regency of Ende, 2014), we did not find any regional by-laws that sufficiently accommodate the above four roles.

Financial support is provided by disbursing funds, and for some regions this has been carried out through the Drinking Water and Environmental Health Regional Action Plan (*Rencana Aksi Daerah Bidang Air Minum dan Penyehatan Lingkungan* or RAD AMPL) (Government of Indonesia, 2016). Under RAD AMPL, water and sanitation budgets are dispersed to several regional technical agencies and most are dedicated to the development of new infrastructure. If the national regulation on regional finance were amended as suggested by this paper, then in the future RAD AMPL could incorporate the post-construction costs of existing CBO infrastructure (including depreciation, uprating costs, etc).

The second important role for local government is technical support for major repairs that are beyond the capability of existing CBOs. There has been discussion during the research as to whether the technical role should be assumed by existing dinas, by an entirely new agency, or even by the local drinking water utility company acting under delegated responsibility from the local government. All are possible institutional arrangements, which could be left flexible for each local government to decide.

The third important role is dispute resolution, particularly in light of the right to water and sanitation (de Albuquerque, 2014). At the present time, we have yet to find any institutionalised dispute-resolution mechanism accessible to CBOs and their users (outside of courts). Disputes can occur between CBOs and their customers or between different CBOs with respect to a bulk water sources, and dispute resolution is therefore a key area requiring further development.

Finally, each CBO should define its own standards in a democratic manner. In approving CBO standards, local government has two roles: (i) evaluating if the minimum core is fulfilled, and (ii) evaluating if new standards incorporate 'raising the floor', that is, whether there is an increase of minimum standards as compared to the previous standards. In the rural water supply sector, monitoring of service levels is currently limited, and is primarily conducted by voluntary associations in collaboration with the World Bank PAMSIMAS programme, but the need for attention to it has been identified (Soeters et al., 2018), as it has with regard to community-based urban sanitation systems (Mitchell and Ross, 2016).

We therefore suggest that co-management is required, and appropriate boundaries need to then be delineated between the tasks, roles, and decision-making authority of the local governments and relevant communities in the joint production of the service.

CONCLUSIONS

At the beginning of this paper, we highlighted some of criticisms directed towards community-based water services: there is evidence that they are unsustainable and that they place excessive burdens on communities, which consequently weakens the state's capacity to deliver public services. We found that the legal and institutional arrangement for community-based water services in Indonesia is weak. The main reason for this stems from a national policy direction that promotes the dominant paradigm of 'community empowerment', which assumes that communities are able to 'sort things out by themselves'.

We have demonstrated that the legal and institutional weaknesses in community-based water and sanitation services are evident in four areas: the absence of legal personality (which carries implications for assets security and government financing); lack of service standards (which carries implications for stagnant service levels, customer rights, and access to justice); lack of asset security (which means that the majority of community-based water and sanitation assets are legally ownerless); and lack of financial security (which means that local governments face difficulty in supporting maintenance and operation because they do not own the assets).

Instead of conflicting government and community-based services, we argue for retooling the state through a co-management model. This model requires both the state and the community to clearly delineate their respective roles and responsibilities. In this model, any tasks beyond the capacity of the community should be taken over by the state. Such a model would depend on the acknowledgement and formalisation of community-based water services in legal and policy frameworks.

For Indonesia, the state's presence should be manifested in developing policies and a regulatory framework across the four above areas: legal personality, asset ownership, service standards, and post-construction financing. The issue of legal personality and asset ownership can be best resolved through guidelines from the Ministry of Public Works. Guidelines should require CBOs to be established as legal entities. Guidelines can also leave the option open as to whether assets should be owned by the local government or by the community. If assets are to be owned by CBOs, then the guidelines should require the proper certification of both buildings and land assets on behalf of the CBO.

The issue of post-construction financing should be dealt with through regulation. Two kinds of regulation need to be reformed: regulation on regional finance should be reformed so as to allow a regular financing scheme from the government to the CBO, and regulation on local asset management

should also be reformed in order to allow CBOs to operate water infrastructure assets owned by the government.

In order to acknowledge and formalise community-based water and sanitation, the regulatory framework should allow diversified service standards for community-based water and sanitation. The general framework regulation for service standards should be enacted by the national government, outlining the guarantee of a minimum core, and obligating the local government to step in in the event that services fail to meet a standard. The actual standard should be decided democratically by each CBO and approved by local government. Dispute settlement mechanisms caused by violations of service standards must be regulated by the national government, and local government should monitor its application.

Achievement of the activities proposed in this paper is likely to lead to a more conducive legal and institutional environment for enabling sustainable community-based water and sanitation services in Indonesia. Sustainable community-based services will, in turn, make a significant contribution towards achieving the nation's goals of adequate water and sanitation for all.

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