Scaling Up Disability Inclusion in Water Projects
Case Study of PAMSIMAS

Background

More than 1 billion people worldwide, or 15 percent of the global population, have some form of disability (World Bank 2011) with higher rates in low-income countries. This number is expected to rise significantly due to factors such as aging populations, conflict, and the impacts of climate change (World Bank 2019a). For these reasons, disability-inclusive development is of interest to the Water Global Practice of the World Bank, to the World Bank’s twin goals of reducing extreme poverty and promoting shared prosperity, and to Sustainable Development Goal (SDG) 6 (to ensure the availability and sustainable management of water and sanitation for all). SDG 6 relates not only to water and sanitation access by persons with disabilities, but also to their engagement in the management of water and sanitation.¹ The new Environmental and Social Framework requires borrowers to look specifically at persons with disabilities as part of any social assessments, and the proposed International Development Association (IDA) 19 policy ensures disability inclusion in projects.²

Disability-inclusive development in the water sector is an emerging issue, particularly in water supply, sanitation, and hygiene (WASH). There is growing recognition that WASH facilities must be designed in a safe, accessible, and usable way, that benefits all members of a community, including people with disabilities. Although limited, some studies suggest that inclusive school latrines can be constructed...
at less than 3 percent of the total cost of a regular latrine (Jones 2011). Such examples may encourage decision makers to incorporate disability-inclusive interventions. The guidance note for water sector operations (World Bank 2017) promotes various disability-inclusive interventions, emphasizing both hard (e.g., infrastructure) and soft (e.g., training, guidelines) components. However, cost data on this more holistic disability-inclusive approach has been sparse to date. Establishing precise examples of the cost of both hard and soft components will help task teams to incorporate disability-inclusive designs into their projects.

Indonesia’s Community-Based Drinking Water and Sanitation Program (PAMSIMAS) includes comprehensive disability-inclusive approaches in its components. The project focuses on improving participation and access to disability-inclusive water supply and sanitation (WSS) facilities, and has managed to do so at scale. The first section of this case study summarizes the project and discusses why and how, with the Assistance of the Government of Australia (GoA), this project has been able to involve persons with disabilities through all stages of the process. The second section delves into the cost of disability-inclusive activities.

Overview of PAMSIMAS

PAMSIMAS is a rural WSS development platform that contributes to Indonesia’s national agenda of achieving 100 percent universal access to water. PAMSIMAS has helped Indonesia’s low-income rural and peri-urban population—spread across 28,529 villages—by providing improved water supply to 19.3 million people and access to better sanitation facilities to 15.46 million people (MIS data, June 2020). The third phase of the project (PAMSIMAS III, 2016–21), targets 15,000 new villages and provides technical assistance and follow-up support to almost 27,000 participating villages. The PAMSIMAS III project development objective and the components are summarized in figure 1.

Since the start of the project in 2011, PAMSIMAS has used a community-driven development approach for planning, constructing, and monitoring WSS services. To achieve universal access, village implementation teams (VITs) are formed to formulate community action plans (CAPs). Once a CAP is approved, block grants finance construction and rehabilitation of WSS infrastructure. These grants are shared among central (60 percent) and district (10 percent)...
governments; village funds (10 percent), and communities (20 percent). Communities contribute 4 percent in cash and 16 percent in kind, which results in villagers undertaking most of the nonskilled construction work.

Disability Inclusion in PAMSIMAS at a Glance

Legal Basis for Disability Inclusion

The Government of Indonesia (GoI) has a legal framework to ensure equal rights and inclusion of persons with disabilities. The government first formulated the law on persons with disabilities in 1997 (Law 4), and ratified the United Nations (UN) Convention on the Rights of Persons with Disabilities (CRPD) in 2011. Law 8/2016 on persons with disabilities adopts provisions stipulated in the CRPD. Under this law, central and local governments must ensure access to clean WSS for persons with disabilities. In 2017, the Ministry of Public Works formulated Regulation 14/PRT/M/2017, which introduces accessibility requirements. In addition, the National Medium Term Development Plan, 2015–19, sets targets of achieving universal access to WSS, which encourages localities to provide water access to persons with disabilities. Disability inclusion was introduced into PAMSIMAS at the end of 2016 by DFAT (Department of Foreign Affairs and Trade) of the Government of Australia (GoA).

The GoA has a long history of supporting the WSS sector in Indonesia, including by providing grants to PAMSIMAS. Disability inclusion is a focus area for the GoA (GoA, DFAT 2016), and it supported the introduction of disability inclusion into the project.

Introduction of Disability-Inclusive Development in PAMSIMAS

In November 2016, PAMSIMAS invited the Christian Blind Mission (CBM), an international nongovernmental organization (NGO), to conduct a disability-inclusive WASH training workshop for national level government officers and provincial WASH facilitators (CBM 2016). It was the first step for PAMSIMAS to introduce disability-inclusive WASH. In 2017, the project applied a comprehensive disability-inclusive approach in 59 pilot villages in 26 districts. This meant not only developing the technical designs and constructing accessible WASH facilities but also involving persons with disabilities from planning to implementation. Community facilitators assisted in community-based planning, implementation, and operation and maintenance (O&M), and were trained to involve persons with disabilities in the planning process.

Although participation in community meetings by persons with disabilities increased, the evaluation of pilot villages showed a need to improve participation. Specifically noted were low facilitation skills of community facilitators, the absence of a common understanding of disability inclusion among community members, a lack of confidence among persons with disabilities, and insufficient development of accessible facilities. In light of these findings, the project developed standard operating procedures (SOPs) for disability-inclusive development, and refresher training was held for facilitators and central and local government officers. Subsequently, the disability-inclusive approach was introduced in all new villages supported by PAMSIMAS, with the goal of applying it in 10,000 villages by 2021.

Disability Inclusion in Project Activities

Community Planning, Implementation, and O&M

The first step in the process of implementing projects in specific communities is community mobilization, in which government facilitators visit villages to organize community meetings to explain the project process. The facilitators identify disabled people’s organizations and reach out to persons with disabilities so they can participate at the beginning of the project. Villagers review the current status of WSS services and identify the location and type of WASH facilities on a map. The facilitators encourage persons with disabilities to attend the meetings (which of course should be held at accessible venues), share their ideas, and ensure accessible WASH facilities are included in community action plans (CAPs). The continuous participation of persons with disabilities in implementation and O&M is also encouraged. Through this process, data on persons with disabilities in the village is collected.

At the implementation phase, villagers receive training in aspects such as construction engineering and financial management to assure smooth implementation of the CAPs. In addition, persons with disabilities continue to be encouraged to participate in all aspects of implementation. For example, some provide in kind contributions of labor for construction. They can also check the facilities to assure accessibility.

The project includes an option to subsidize water tariffs for persons with disabilities and the elderly because they tend to pay more for health services and transportation, and face barriers to education and employment opportunities. Further, including persons with disabilities in O&M work creates opportunities for them to take up leadership roles and build self-esteem.
**Capacity Development for National, District, and Village Levels**

PAMSIMAS has conducted continuous capacity development training, including trainings focused on disability-inclusive development held in 2017 and 2018. Online training for facilitators includes a module on inclusion of persons with disabilities (World Bank 2019b). The refresher training held in 2018 provided an opportunity for 61 staff to share the challenges they faced in the pilot villages, and to discuss possible actions for further improvements (CBM 2018). The first day of the training focused on refreshing the understanding of the importance of disability inclusion, sharing success and challenges from experiences of the pilot villages, and learning from disabled people’s organizations to deepen knowledge. On the second day, the participants met in small groups to discuss different topics related to strengthening disability-inclusive development at the community level. Finally, each participant created an individual work plan for the next phase using what they had learned in the training. As noted, adequately involving persons with disabilities in the planning process was identified as a common challenge. One of the lessons gleaned was that accommodating the specific needs of persons with disabilities to participate in community meetings required a proper understanding of disability inclusion among other village members, or it tended to be unintentionally neglected.

**Management Information System Monitoring Mechanism**

Data on persons with disabilities is systematically collected as part of the web based management information system (MIS), and available in the project website, such as the number of persons with disabilities in a village and the number of participants with disabilities of each community meeting and training. Community facilitators collect a wide range of village-level data and send it to district coordinators. Provincial and regional level operators monitor the data and provide support to the district coordinators, if necessary.

**Cost of Disability-Inclusive Development for WASH**

Using the cost data from the MIS as of May 2019, this case study details the costs of disability inclusion in each activity. Data are available on the soft component (training, meetings, technical assistance, the technical specifications of inclusive water facilities, and data collection) and the hard component (water sanitation infrastructure and facilities).

**Cost of the Soft Component**

The overall costs of each activity and the share of disability-inclusive portions are shown in table 1. PAMSIMAS reached out to 6,000 new villages in 2018, including 1,154 villages that have applied disability inclusion. Since the disability-inclusive work is embedded in each activity, the cost of disability inclusion in each activity is estimated by the task team and the project management unit. The soft component includes the following:

- **Training for community facilitators.** In total, 84 trainings for community facilitators were held (World Bank 2019b), and the two-day training specifically on disability inclusion was held in October 2018. The disability-inclusive portion covers

<table>
<thead>
<tr>
<th>TABLE 1. Cost of Disability Inclusive Activities in 2018</th>
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<tbody>
<tr>
<td><strong>Disability-inclusive activities</strong></td>
</tr>
<tr>
<td>-------------------------------------</td>
</tr>
<tr>
<td>Training for community facilitators</td>
</tr>
<tr>
<td>Community training</td>
</tr>
<tr>
<td>Technical assistance</td>
</tr>
<tr>
<td>Accessible technical design in the SOPs for disability-inclusive development</td>
</tr>
<tr>
<td>Data collection</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

*Source: Data from MIS as of May 2019.
Note: SOP = standard operating procedures.

a. Theoretically, the total soft component costs about US$6,000 per village (US$36,044,684 per 6,000 villages), while the total disability-inclusive portion costs about US$870 per village (US$1,005,370 per 1,154 villages). However, some activities, such as the accessible technical design, could be used in other villages without a cost. Thus, the costs of the overall soft component and disability-inclusive portions would be lower when new villages introduce disability inclusion.
the preparation of training materials and delivery of the training.

- **Training for the communities.** This refers to the dedicated disability-inclusive development training for community members. The cost covers preparation of training materials and delivery of the training.

- **Technical assistance.** This includes overall technical assistance for community-based planning, implementation, and O&M. It covers staff time of the national management consultant, provincial and district management consultants, and facilitators.

- **Inclusive water facility specifications in the SOP for disability-inclusive development.** The technical designs for inclusive water facilities were developed and included in the SOP for disability-inclusive development. The figure of disability-inclusive portion is the cost of developing technical designs, and the total is the overall cost of producing the SOP.

- **Data collection.** This covers the annual monitoring and supervision costs of the MIS.

### Cost of the Hard Component

The cost of the hard component is analyzed through the sample villages that constructed water and sanitation facilities with and without disability inclusion. Details are shown in table 2.

Due to the limitation of the sample data, there are neither villages with disability inclusion in Banten province nor villages without disability inclusion in Jawa Tengah province. This case study looks at only school WASH facilities such as school latrines and school handwashing facilities.8

Table 3 shows the detailed profile of the sample villages with disability inclusion by types of school WASH facilities constructed and by the number of persons with disabilities. A majority of villages (72) constructed inclusive latrines, but not hand-washing facilities while 26 villages constructed only inclusive hand-washing facilities. The remarkable point is that 39 villages introduced disability-inclusive school latrine(s) or handwashing facility(s), even though there were no persons with disabilities in these villages. In Indonesia, schools are usually open for the public, and villagers not attending the school can use the disability-inclusive wash facilities in schools. (See photographs 1 and 2.)

Because PAMSIMAS introduces the WSS system at a village level, data of the total WSS system and facilities costs2 and data of the inclusive school latrines and handwashing facilities are available at a village level. **Cost analysis does not differentiate incremental costs for accessible features (i.e., ramps or rails) versus non-accessible features.**

Table 4 shows the costs of total WSS system and facilities, and the cost of school latrine or handwashing with and without disability inclusion.

According to the sample data in Table 4, the unit costs of an inclusive school latrine and handwashing facility appear to be lower than those of a non-inclusive school latrine and handwashing facility. Part of this may be driven by differences in the facilities’ locations as the province

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**TABLE 2. Sample Villages with and without Disability Inclusion**

<table>
<thead>
<tr>
<th>Province</th>
<th>With disability inclusion</th>
<th>Without disability inclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jawa Barat</td>
<td>23</td>
<td>53</td>
</tr>
<tr>
<td>Jawa Tengah</td>
<td>55</td>
<td>No data</td>
</tr>
<tr>
<td>Jawa Timur</td>
<td>35</td>
<td>66</td>
</tr>
<tr>
<td>Banten</td>
<td>No data</td>
<td>16</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>113</strong></td>
<td><strong>135</strong></td>
</tr>
</tbody>
</table>

Source: PAMSIMAS task team.

Note:

a. Approximately 10 percent of the villages introduced disability-inclusive water facilities throughout Indonesia in 2018.

**TABLE 3. Profile of Sample Villages with Disability Inclusion**

<table>
<thead>
<tr>
<th>Types of school WASH facilities constructed</th>
<th>Number of villages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Only inclusive latrine(s)</td>
<td>4</td>
</tr>
<tr>
<td>Inclusive latrine(s) but non-inclusive handwashing facility(s)</td>
<td>72</td>
</tr>
<tr>
<td>Only inclusive handwashing facility(s)</td>
<td>26</td>
</tr>
<tr>
<td>Inclusive handwashing facility(s) but non-inclusive latrine(s)</td>
<td>10</td>
</tr>
<tr>
<td>Both an inclusive latrine and inclusive handwashing facilities</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of persons with disabilities in village</th>
<th>Number of villages</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>39</td>
</tr>
<tr>
<td>1-100</td>
<td>58</td>
</tr>
<tr>
<td>101-300</td>
<td>11</td>
</tr>
<tr>
<td>Above 300</td>
<td>4</td>
</tr>
</tbody>
</table>

Source: Data from MIS as of May 2019.
that reported a larger number of disability inclusive WSS infrastructure (Jawa Tengah Province) had a lower cost of living/cost of materials than the province reporting no data on numbers of disability inclusive WSS (Banten Province). When comparing cost of accessible and non-accessible handwashing facilities in the same region (Jawa Timur Province), inclusive facilities cost 1 percent more than non-inclusive facilities (figure 2). However, most likely a larger driving factor is simply that the incremental cost of the handwashing infrastructure and latrines compared to the total cost of the WSS system is so small, that disability inclusive approaches and adaptations do not add in any significant way to infrastructure costs, and in this case actually cost less. For example, the proportion of total WSS costs attributed to the construction of a non-inclusive school latrine is only 5.4 percent of the total system cost, and for a non-inclusive hand-washing station, this is only 0.5 percent of total costs; moving towards inclusive latrines only represented 5.2 percent of total cost and the same cost (0.5 percent) for inclusive hand-washing stations. Even when “soft” components – many of which diminish on the margins (for example inclusive designs) – are spread over many villages, they also do not add significantly to overall costs (in this case 2.8 % of soft costs).

Conclusion and Way Forward

PAMSIMAS is highly driven by community engagement. Mainstreaming disability-inclusive development contributes to ensuring access to WSS services for persons with disabilities and to breaking social and attitudinal barriers for persons with disabilities and other members of the community. The analysis reveals that the soft component, such as capacity building, required higher costs than the hard component. Because disability-inclusive development is embedded in each component, the proportion of disability inclusion is

<table>
<thead>
<tr>
<th>Types of school wash facilities</th>
<th>Average cost with disability inclusion</th>
<th>Average cost without disability inclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of villages</td>
<td>Total WSS system and facilities per village (US$)</td>
</tr>
<tr>
<td>Latrine</td>
<td>77</td>
<td>21,259</td>
</tr>
<tr>
<td>Handwashing facility</td>
<td>37</td>
<td>21,906</td>
</tr>
</tbody>
</table>

Source: Data from MIS as of May 2019.
Note: Village data from sample villages in Java, as mentioned in table 3. The number of villages is the cumulative number. WSS = water supply and sanitation.
FIGURE 2. Average per Unit Cost of Handwashing Facilities in Jawa Timur Province

Source: Data from MIS as of May 2019, based on average cost of 34 accessible and 64 non-accessible handwashing facilities in Jawa Timur Province (in USD).

a modest amount if the disability-inclusive development is incorporated at the beginning of the activities. Retrofitting, however, would be substantially more expensive.

Since PAMSIMAS has introduced the community-driven development (CDD) approach, the monetary costs of embedding disability inclusion in the soft component are modest (2.8% of total soft costs). However, improving the quality of disability inclusion in each activity requires more time and innovative approaches to promote persons with disabilities’ participation in all stages of the project.

In constructing disability-inclusive school WASH facilities, the incremental costs for items such as ramps and rails are marginal or non-existent relative to the much larger costs of pipes and pumps of the WSS system. The average proportion of the inclusive latrine and handwashing facility in the total WSS system and facilities is equivalent to non-inclusive latrine and handwashing facilities. \textbf{Therefore, when implemented at scale, the cost of the hard component should not affect the decisions made by governments or communities on whether disability-inclusive WASH facilities are constructed.}

A challenge is creating an enabling environment for persons with disabilities to participate in society. Evidence collected by the project task team through the supervision works reveals that strengthening facilitators’ capacity and promoting a shared understanding among government officials and other community members on disability-inclusive development are important to success, and represent areas to improve further.

Notes

4. The project employs the Washington Group’s Short Set of Disability Questions to identify the number of persons with disabilities; see the website “Short Set of Disability Questions” at http://www.washingtongroup-disability.com/washington-group-question-sets/short-set-of-disability-questions/.
5. For example, meeting venues should be accessible for all and information should be delivered in appropriate formats, encouraging persons with disabilities in respectful manners.
7. Cost data used in this analysis are originally in Indonesian rupiah. The average currency rate of 2018 is applied to show the U.S. dollar equivalent figures (US$1 = Rp 147,000).
8. The PAMSIMAS also works for household connections and public taps and hydrants, but they are not included in this study.
9. It shows the overall cost of the WSS system and facilities, including pipes, water intake facilities, water treatment facilities, public WSS facilities, consultant fees, and labor (except for community contribution).

References


Acknowledgments

This case study was prepared by Ayumi Koyama (Junior Professional Officer) under the guidance from Soma Ghosh Moulik (Practice Manager) and Sarah Keener (Senior Social Development Specialist). The team appreciates valuable support and comments received from the PAMSIMAS task team: Dea Widyastuty (Operations Officer), George Soraya (Lead Municipal Engineer), and Onny Trijunianto (Consultant). The study benefitted from a series of discussions and inputs from Charlotte McClain-Nhlapo (Global Disability Advisor), Deepti Samant Raja (Disability and Development Consultant), Mari Koistinen (Senior Social Development Specialist), Toyoko Kodama (Water Supply and Sanitation Specialist), Kamila Galeza (Social Development Specialist), and Amjad Muhammad Khan (Young Professional). Special thanks are due to Marie-Adele Tchakounte Sitchet (Program Assistant) for administrative assistance and Erin Barrett (Publishing Associate) for publication support.