



DevelopmentAid Dialogues

Episode 1: Flooded Toilets vs Empty Wells: The Impact of Climate Change on Sanitation | A Conversation with Dara Johnston, Chief of Section for Climate Resilience

Hisham Allam

Welcome to DevelopmentAid Dialogues, our new project exploring the heart of Humanitarian Aid's most pressing topics. I'm your host, Hisham Allam. We are joined today by Dara Johnston, Chief of Section for Climate Resilience in Water, Sanitation and Hygiene, Wash. With over 35 years of experience, Dara has led numerous initiatives addressing water, sanitation and hygiene challenges in developing countries. Good morning, Dara, and welcome to DevelopmentAid Dialogues.

Dara Johnston

Good morning, Hisham. Thank you for having me.

Hisham Allam

Dara, what is Climate Resilience, Wash and what is its importance?

Dara Johnston

I think first we have to look at what is wash, water sanitation and hygiene and its importance globally and to the global population. So, it's really the importance is all about health. Having clean water is a huge challenge and in order to keep it clean we have to have good sanitation and hygiene. Over the, you know, the past four or five decades the global trend has been there's been huge increase in the numbers of people who have access to safe water and sanitation and there. But there's still maybe about 800 million people don't have access to basic water and about 1.7 billion lack basic sanitation. So, there's still a huge challenge for just straightforward water and sanitation and if we are to reach the Sustainable Development Goals by 2030, the current trend has to increase by 6 times for water and five times for sanitation if we would reach these goals. But the problem that we see now in the past two or three decades is that climate change is reversing some of those trends and we're some of the gains made are being lost. So, that we need to employ even more tactics to ensure that the interventions are climate resilient. You see things like flooding and droughts are having huge effects on the infrastructure and the environment which you know take away from many of the gains made over the years for water and sanitation.

Hisham Allam

But as you have said that climate change has some kind of impact on your work or on the water access. So, are there any other things that we can talk about like the direct impact of climate change on access to water?

Dara Johnston

So water systems and sanitation infrastructure gets destroyed by floods and also when the with increasing heat you have droughts and you have water resources groundwater are depleting. So that many of the say groundwater systems which were quite prolific before, they're actually UH running out now and you're finding that UH groundwater is becoming scarcer in in many areas. When you have floods, sanitation infrastructure gets inundated and there's a huge risk to the environment and the you know, basic latrines in rural areas these can collapse. And so, the you know it's you, you've whole communities have to move and when they return to the area which was flooded, everything is destroyed. So, the other side, of course, as I mentioned you, you decrease in rainfall in some areas, you have reservoirs and springs and groundwater drying up and about 2/3 of the world's population experiences severe water scarcity at least one month a year now because of climate change.



DevelopmentAid Dialogues

Hisham Allam

And what is the situation like in South Sudan?

Dara Johnston

Well, in South Sudan it's been experiencing floods now for about four years, five years. And the rain, the rainy season has seen about a 20 to 30% increase in volume of rain which is which is flooded many parts of the country. For you know, in some cases the floods from last year have not gone away from when the new floods of this year arrive. So, a lot of water infrastructure has been destroyed. And you find that in many places the gains that are made in improving sanitation are completely lost. And so, people go back to defecating in the open because they've everything they invested before is completely gone.

Hisham Allam

And in such situation what does WASH do?

Dara Johnston

So what we have been doing now is to introduce some climate resilient infrastructure and advocate that where infrastructure has been built, there is some analysis of the risk of flooding for example. So, in the case of the urban wash, we where we have, we're building a large water treatment plant. These are situated in areas which are less prone, prone to flooding, but that's difficult because you usually build water infrastructure close to the water source which is naturally an area which might flood. So typically, we adjust the design so that the treatment plant is elevated and this of course adds to the cost. But in the long run of course it means that there is a water source available even when the floods occur. With regard to other buildings, we can do the same thing. Of course, the information is needed and that's not available as yet to be able to map out the risk areas. In building at the normal level for hand pumps in rural areas we also elevate the platform of the hand pump with a ramp going up to it and this is proven to be very effective in areas which flood for you know a few months of the year. And so, people are able to reach the hand pump by boat and they can still access safe water.

So, adjusting the designs allows for it allows for us to avoid the floods as it were other things that we do using solar power for where we need energy for the water treatment plants especially and also for the groundwater supply course South Sudan has abundant sunshine. So, it's a very free and readily available resource and this of course reduces the carbon footprint and it also makes the cost of the water much lower. We've estimated that the production cost will be less than half if you're using diesel generators.

So, this has multiple benefits not just for reducing the cost, but it also has a much less impact on the environment and has a has a mitigating factor for climate change.

Hisham Allam

Relevantly millions of children around the world go to school with no drinking water, no toilets, no soap or hand washing and this is making learning difficult. What do you do to help them?

Dara Johnston

So we're introducing an approach in South Sudan working with the Ministry of Education and the Ministry of water Resources to have a standard at the schools where whereby it's measurable how good the water and sanitation infrastructure is at the school. So that any development agency that is investing in in water and sanitation schools they can they can aim to reach these standards you need to have enough latrine blocks for the population of students in the school and typically the global standard would be about 11 stances for 25 children. But we find in many of the



DevelopmentAid Dialogues

schools it's way above 40 or 50 and in some places it's even 11 toilet room for 100 children. So, increasing the number of toilets in the school but also providing running water is very important because you can't operate the toilets if you don't have water. And then of course we have to provide the children with the with the training, hygiene, promotion so that they are able to know how to use the toilets properly, hand wash etcetera.

And this has an added benefit because when the children learn, they bring the information home and it has an impact on the family as well.

Hisham Allam

And speaking about the hygiene in healthcare facility, the risk of spreading and fictitious disease is very high, especially during outbreaks like cholera, Ebola and the COVID-19. What does WASH do in such situations?

Dara Johnston

Yeah similar to schools of course you and probably more importantly you can't really have a healthcare facility if you don't have clean water. Most health interventions need hygiene and they need clean water. So, it's very important that the healthcare facilities have water and that's actually even less healthcare facilities than schools in South Sudan at the moment have safe water.

So again, we are we're promoting standards for Washington healthcare facilities to encourage all the partners and of course the government to make sure that healthcare facilities have safe water and sufficient numbers of toilets And of course the same as in the schools we and the healthcare facilities, these toilets have to be gender segregated for safety and so forth.

Hisham Allam

I have read some articles that's that we're speaking about the importance of access to water, to safe water and linking this to gender equality. How can we find this connection between access to safe water and toilets, poverty alleviation and gender equality?

Dara Johnston

Well, there's a number of aspects which affect gender equality. I mean the basic one is that in in most communities you find that women spend a lot of time collecting water and if the water source is far away, there are huge risks for women and risks from predators, wild, from wild animals to humans. And they also, you know simple things like snakes and so forth if they're if they're going far away from the homestead to collect water. But you know not only those risks but they're spending a lot of their time which could be used for other purposes either for childcare at home or for employment opportunities. So, you often find that it's in the men don't do their fair share for collecting water. So in in this you know, very basic way you can see that there's a big gender divide.

It also has an impact on girls' education because they're very often tasked with collecting the water in the morning and the evening and so they may be late for school or may not go to school and they may not have time in the evening to study. So, it has a lifelong effect really. So, putting water resources putting the water source closer to the home can have a huge impact on women and girls.



DevelopmentAid Dialogues

Hisham Allam

What is the average distance that girls use to walk to collect safe and Clearwater,

Dara Johnston

Well it varies a lot it's for a whole country you can't really know the average distance but you know you looking at some of the statistics you know for South Sudan when we you know the measure for water supply you have if you have a basic service then that means that it's available within 30 minutes and it's safe but only 39% of the population of South Sudan has this so the remaining 61% are travelling more than 30 minutes to collect water and in some cases they're 12% of those cases they're actually using surface water which of course has great risk to their health. This is it's less in urban areas. Urban areas about 65% have basic service, so 35% are travelling more than 30 minutes.

But in rural areas the number the percentage with basic access is 32%. So, you have 68% who are travelling more than 30 minutes to collect water. But sometimes these this is can be much more than 30 minutes. I've been to parts of the country where women say they travel for hours and in some cases when they have a big household, they may do more than five or six trips a day.

So, and the cumulative amount is very high. I've heard of areas where women have to arm themselves with guns to when they go to collect water because of the risks from hostile elements in in the area. So, there's not just it's not just time and that that is the challenge why it is women only task why men are not engaged in the process of collecting water. Now that's a cultural issue really. I mean it's a good question and, in some places, when you when you show these statistics in some countries the men of course say no this couldn't be true. But we know from the surveys we've done that it's it is the case and it's a gender disparity which is you know in many things. You know you have you have child marriage you have all sorts of challenges like this which are affecting women and until you know you can change the social norm this is going to continue.

Hisham Allam

So from your experience, how do you involve local communities in wash initiatives and how do you employ strategies for capacity building to ensure sustainability.

Dara Johnston

So I it's different for water than for sanitation. Water supply usually requires some infrastructure construction and this this will require financial resources. So there, there, it needs to be provided externally, but for the operation and maintenance and communities. Need to take ownership of the infrastructure and they need to have the knowledge to maintain it. So, if you have something like a simple hand pump it's possible to train local technician and some of the most successful stories of that are when you're able to train women to maintain the hand pumps because sometimes when you train the men then they they're not there when it breaks or they say when it does break, they say oh it's the women who have been using it they should fix it. So, there is there is a challenge there. So, we are we find sometimes that it's better to train women if, if, if the culture will allow to train women to maintain the hand pumps. But it's also necessary to have a committee within the community to collect money from the households to repair the hand pump when it breaks.

And this has to be realized from the beginning, there's no point in setting up the committee when the hand pump breaks. It needs to be set up from the point of when it's installed. So, you end up with something that's owned by the community and maintained by the community. But beyond that you need to have a supply of spare parts provided by the private sector which is which is a challenge especially here in South Sudan when the private sector is weak and the humanitarian assistance has been very strong for a long time. So, we're looking at turning that around now and helping the private sector to grow again. So, it's more sustainable in urban context where you have large water



DevelopmentAid Dialogues

treatment systems and you need to have a system of actually collecting tariffs or collecting a fee at the water point so that there are sufficient funds. You have people operating the treatment plant, you have chemicals for its operation, you have to pay for the electricity. And of course, as I mentioned, if you have solar power that can be a much more convenient.

But regardless, there's always operation costs in in the larger urban systems. So just like a developed country you used to, you need to collect fees for the water use one way or the other. For sanitation.

It's a bit different you're not necessarily aiming at building toilets as such, but what you want to do is convince people not to defecate in the open. Of course, the solution is to use a toilet, but the reason that you want this behavior change is to remove, remove human waste from the environment.

So, the solution of course is, is people use toilets. But what we found is that if we have a programme of building toilets for people, when the toilet breaks, they don't fix it. They think that, oh, I can't afford that. I want the agency who built it to come back and fix it.

So, this has been a lesson learned over many years or decades even that it's not the act of building a toilet, but it's the change in the social norm that you need to create, that people need to understand that they should not defecate in the open. So, they build toilets the same way they build their house.

And if they have a House of mud walls, then they would have a toilet with mud walls. If they have a brick house, they would have toilet made from brick. And once they begin to have this habit, then you will find that they build the toilet closer and closer to the home and soon it becomes something that's part of the home. So, it's different from water supply, which is infrastructure. It's a behavioral change approach. Of course, in urban areas you need wastewater treatment, but urban areas it's a bit easier for changing behavior because you can. You can have regulations, you can impose laws because of the density of population, but it's not possible to regulate people's behavior so easily in rural areas.

Hisham Allam

But why don't you make kind of partnership with civil society organizations in South Sudan to help you to read the public awareness about this critical topic.

Dara Johnston

Oh, we do, we have we work with local NGOs and it's it wouldn't be possible without local organizations to reach out to the remote communities and to you know in in some areas especially South Sudan they have many different ethnic groups. So, the language barrier alone is a challenge. You need, you need to partner with local organizations and especially with local government in order to be able to even just communicate with the communities.

Hisham Allam

I have an experience in South Sudan we have spoken about earlier and I see that the bureaucracy is a very important barrier for making a concrete development. How do you deal with this?

Dara Johnston

Well, we work closely with governments at national and state and even at county level because we're out, we're not here on our own. We're partnering with government and we're supporting the government all the way. So, it's very important that we're working hand in hand with them wherever we have programs at this national level we develop we have the government to develop standards and guidelines and then to disseminate them at state and right down to the village level where the where they're being implemented. And if it's not something that we're doing together with



DevelopmentAid Dialogues

government, then when we're not going, it's not our, you know, we're outside of our mandate. Our job is to, to support the government and help them to develop the country. So, but yeah, I mean every, every country, every government you're going to have bureaucracy.

You're going to have challenges and that's you know part of the part of the work you have to, you have to help them to be more efficient and to have regulations which are more effective and that's it. That's always an ongoing process. We're currently working with the government here to review the, the, the water Bill so that it can become an act in Parliament and that will streamline many things around the country in the sector. We're also helping them to review the policy and this will be something which is have to be to involve all the stakeholders.

NGOs, the CSOs and even communities and the different stakeholders such as women's groups and youths all need to be involved with these kinds of reviews. Yeah, I I, I need to discuss this further.

[Hisham Allam](#)

Could you elaborate on your involvement in the formulation of policies and your advocacy efforts about water, sanitation and hygiene issues, a path domestic and global scale.

[Dara Johnston](#)

OK, so for the water policy that has been developed is quite straightforward, really short you know laying out the roles and responsibilities of different layers of government and it's connected to targets which the government wants to reach. For example, the government wants to have the country open defecation free by 20-30. So, in line with that, we've worked with the sector to develop an open defecation free road map which details how we would achieve various stages of this goal by 20/25/2027 and 2030. And this allows the government to plan and the other sector partners to plan for how they will work together to achieve this particular goal. So yeah, this allows us to have a clear strategy as we move forward so that all the partners are moving in the same direction outside of your professional life.

[Hisham Allam](#)

Do you have any hobbies or interests that you feel have contributed to your work and Wash?

[Dara Johnston](#)

I mean personally I'm very interested in environment and climate change. I'm reading a lot about that. So, its kind, you know that that it became something critical for Wash was fortunate. So that I find it very interesting the whole science of climate change and of course it's had a huge impact on water and sanitation. So that's one area and perhaps another area is photography. I like to take photographs, which is very useful for my work rather than taking notes, you know, take a photograph of a certain situation and you can look back at it when you when you're sitting at your desk it reminds you of what you what you encountered and what the ideas are that came from that. And yeah, and then that would be the two that I would say this type of work, it's a master to be located in places that people are suffering. There's a shortage of something.

[Hisham Allam](#)

How do you maintain your passion and drive for the work you do in, in the face of these challenges?

[Dara Johnston](#)

Yeah, it can be a challenge and it can be quite daunting when you see the, you know when you hear of how people are suffering and when they're you know going with very little limited amounts of water and suffering from sanitation related illnesses. I think you can draw strength from when you have a big success, when you when complete a large



DevelopmentAid Dialogues

infrastructure program, when you see the water is flowing at the kiosks and you see people are able to get water more effectively and more much lower price.

When you go to communities and you when they've when they've changed their sanitation behavior and you see their understanding now that by changing this behavior now, they have better health and better dignity and girls can go to school etcetera. So, when you see those changes, it motivates you. But it yeah, it can be quite daunting when you look at especially the humanitarian context where you see people fleeing from floods or what is happening now sometimes is still is fleeing from conflict. So, there's yeah, there's challenges there.

Hisham Allam

It has been an absolute pleasure having you at DevelopmentAid Dialogues, and your insights into the WASH, and the challenges it faces and the strategies to overcome them are truly inspiring. Your dedication to improving access to water, sanitation and hygiene in developing countries such South Sudan is admirable. Thank you for sharing your experience, your passion, and your vision for future where everyone everywhere has access to clean water, sanitation and hygiene.

To our listener, thank you for joining us on this episode of DevelopmentAid Dialogues. We hope you found this discussion as enlightening as we did. Stay tuned for more conversations on pressing topics on humanitarian aid. Until next time because your host, Hisham Allam, signing off.