Pathways to Equitable Healthy Cities

Key Stakeholders online engagement meetings on Housing and Neighbourhood Dynamics, Water logging and Flooding, Waste Management Strategies and Building Actionable Strategies for Establishing Healthy Communities in Dhaka city

PATHWAYS TO EQUITABLE HEALTHY CITIES

Contents

Policy Summary

Three workshops were held in September 2020 (7th, 14th and 21st) on waterlogging and flooding; waste management; and housing and neighbourhood dynamics linked with access to health and equity in Dhaka city. The interactive meetings were held online via the Zoom platform lasting 1.5h each. A diverse range of actors including researchers, practitioners and policy professionals from governmental and non-governmental organisations were invited to attend, as well as researchers from Pathways to Equitable Cities working on Dhaka[1]. The workshops were structured in three parts. First, participants were asked to voice issues on the specified topics and talk about how they were addressing those issues in their daily jobs; second, they were asked to reflect on potential and realistic solutions and discuss them in groups; finally, they were asked to share and continue the discussion in plenary, before concluding the meeting.

The meetings highlighted several cross-cutting issues linked to potential solutions as well as important linkages across the three topics. They included:

- Lack of integrated efforts among actors working on a topic or an area; this includes duplication of efforts by different governmental agencies as well as contrasting efforts of government and private sector.
- Lack of awareness campaigns and dialogue towards citizen-led solutions in all three areas, including around household waste management; use of land surrounding canals; neighbourhood safety.
- Lack of human resources and sufficient manpower to implement and enforce existing policies.
- Lack of political will and budget allocations leading to difficulties in enforcing laws and policies and funding initiatives, maintenance or interventions in all three topics. This has led to difficulties in pursuing long-term, sustainable solutions.
- Links between waste management and waterlogging, usually related to household waste clogging canals; these also relate to housing quality, neighbourhood safety, health and equity.

Some solutions were suggested, including:

- Dialogue and integrated platforms for actors to coordinate efforts, avoid duplication and ensure efficiency and sustainability.
- More data collection on waterlogging to inform future and coordinated efforts in planning for a more efficient drainage / canals system for the city.
- Environmentally friendly approaches to embankments and land management to ensure sustainability and avoid cascade issues.
- Waste handlers' safety is paramount and both authorities and workers need to be educated about it and potential impacts on health.
- Community-led approaches need to be acknowledged and prioritised for local waste collection, especially for slums/ informal settlements.
- Existing plans for local collection points and disposal should be implemented by relevant authorities and actively enforced.
- Tackling land tenure law can be daunting but steps need to be taken starting from collecting data on status quo and formalising existing tenure.
- Development of community areas is a key policy change that can support developing safer and healthier neighbourhoods.
- High-rise building construction should be monitored as well as rural-urban migration so that they can be embedded in future urban planning.
- Gender, accessibility and inclusion need to be integrated for these approaches to be sustainable in the longer term.

[1] A full list of participants is available in Annex A.

Overall goals

Pathways researchers organised three online engagement workshops to gain better understanding of the city's priorities around waterlogging and flooding; waste management; housing and neighbourhood and health equity. They aimed to include and actively engage with policy professionals, researchers and practitioners to tighten links between Pathways research and Dhaka's policy priorities.

Pathways members also presented the research being implemented by the Pathways to Equitable Health City Project in Dhaka on the different topics. BRAC James P Grant School of Public Health, BRAC University is undertaking the research activities in Dhaka City with the support and technical guidance of the Imperial College, UK, the lead of this multi-country project which is funded by the Wellcome Trust, UK.

This main goal of these online workshops was to learn from the city actors and to start investigating best ways of aligning Pathways research with the city's priorities around the different topics, cross-linkages and their impact on health equity.

1. Introduction of the workshops and Pathways work in Dhaka

For each of the workshops, Professor Zahidul Quayyum opened the session with a brief welcome address to the participants and introduction of the day. Camilla Audia then proceeded to give a few details about the Pathways project, the co-production theory behind it and the need to engage with stakeholders. She insisted that the session was made for researchers to mainly listen to stakeholders and gave an overview of the exercises of the day. Zahidul Quayyum gave an overview of BRAC and JPG School's work around Dhaka and specifically of the Centre of Excellence for Urban Equity and Health. He presented the work being carried out within the Pathways project mentioning the potential for further research in the different areas. The presentations focussed on GIS remote sensing techniques used to identify waterlogging hazards and showed maps of vulnerability zones linked with population density, slum household's distribution and good/poor housing conditions across the city for the first workshop; a more comprehensive presentation including preliminary results and findings on waste management was given during the second workshop, detailing the existing waste management practices from households, temporary disposal at the Secondary Transfer stations and final disposal at the landfills, the associated waste recycling and safety practices on the waste handlers and the effects of current waste practices on collective health and surrounding environment of waste disposal sites; and in the third workshop the potential avenues for housing and neighbourhood research that is at its initial stage for Dhaka city.

At every workshop, the BRAC presentations set the background and context for the subsequent sessions of the meeting.

2. Stop and listen

This session was key for all three workshops and focussed on group discussion around the topics of flooding and waterlogging (1); waste management (2); housing and neighbourhood (3). This activity aimed to create a space for stakeholders to talk about their current priorities, issues and concerns related to the three areas and health equity. Participants agreed to follow the principles of not interrupting, listening quietly and speaking openly. This activity has been conducted using Breakout Rooms for groups of 5 to 7 participants to encourage discussions.

a. Waterlogging and flooding (1)

In the first workshop, participants focussed on a lack of integrated approach and issues of multiple agencies being involved based on their expertise and capacities but lacking coordination and often duplicating approaches. A lack of political will to make changes was highlighted as well as a lack of coordination between city level projects such as the flood action plan and micro-drainage household-level projects. Coordination was also lacking between

government action and other organisation, often creating situations where projects that are implemented are inefficient and often not fit for purpose. Technical issues were also mentioned including lack of resources for long-term interventions and regular maintenance resulting in recurring issues. Participants also highlighted structural difficulties in drainage due to soil structure combined with mediocre drainage and provoking water logging; downward drainage which is necessary in this soil isn't available throughout the city as there has been a non-regulated grabbing of land and building across the city including in flooded areas close to the canals. The latrine system is also a cause of issues because of mismanagement, lack of manpower to maintain and rebuild as needed.

Some connections were also highlighted between drainage issues and drinking water contamination, waterborne diseases, communicable diseases. This emphasised the depth and breadth of the issue and possible ramifications. Participants highlighted some work being carried out across the city to understand different vulnerabilities, combined with some water modelling by WASA (Water and Sewerage Authority). The modelling led to identifying canals and projected potential evacuation to the outside of the city. RAJUK (the Capital Development Authority of the Government of Bangladesh) has created a detailed area plan that considers flooding and waterlogging problems. However, this is difficult to put in practice in a city that keeps developing in an unregulated manner.

One group also discussed the lack of drainage and sewerage systems and lack of database of those that exist that may exacerbate challenges. For example, it is hard to identify a leak on a drain without a map and hard to carry out ordinary maintenance in these conditions. The lack of a plan going forward, issues in natural drainage system being clogged due to non-regulated construction, lack of civic sense as well as lack of enforcement were brought up and discussed, with diverging and well defended opinions. Actors pointed out that flooding is a recurring issue in Dhaka city and that it has been happening since 1988. Participants pointed out there is no proper management of the Eastern side of the city and that canals are the main drainage system for the whole city. However, canals are usually blocked by waste which blocks the pumps that are supposed to drain the rain. The link between solid waste and waterlogging was thoroughly discussed. The discussion also covered that RAJUK and WASA are supposed to maintain up to 26 canals across the city but have focussed on only one canal. This leads to a clear need to enhance flood control capacity and proper drainage system to reduce the waterlogging. Discussion then moved to consider the canals. They are the main water bodies of Dhaka City and the only source of water; they have been reducing over time due to land grabbing and solid waste dumping. This led to multiple issues: as tides come towards the river, water levels increase and water in the canals needs to be pumped. However, if canals are narrower and pumps are blocked by waste, the whole system overflows into the city. Serious consequences of land grabbing and waste management need to be considered when talking about waterlogging.

Another group discussed differences between flooding, water logging and water congestions. This discussion highlighted the issue of the destruction of the natural drainage system surround the city and the move towards an artificial drainage system that then became politically controversial and economically hard to maintain. Participants also focussed on the differences between core causes and apparent causes of water logging; core causes included the disappearance of the natural drainage system, lack of flood plain zones around water bodies and lack of urban planning that destroyed the natural water cycle. Apparent causes also link flooding and water logging with population growth, unplanned urban development, reckless waste dumping, migration, violation of legal frameworks, lack of river management system. These points led to a discussion around linkages and interrelations between waterlogging and flooding in Dhaka with cultural, environmental and political aspects of city management.

After the group discussions each group was asked to report back in plenary key points were summarised as:

1) Coordination (or lack thereof): there are many agencies involved, 3 key ones but at least 7, interactions are messy, and duplication happens constantly.
2) Solid waste management / flooding waterlogging relationship. The drainage system gets blocked and overflows.
3) Proper levels of investments in increasing capacity in pumping are needed as well as regular maintenance and city waste management system. Growth and capacity of the system are an issue as well.
4) Lack of civic sense (this issue was debated and discussed and considered controversial). Some pointed out that people are less disciplined about managing waste. Waste dumping creates encroaching into the canal and embankment systems. Others think it would be better framed as poor governance issue. The canals will block again and again so the land grabbing around canals needs to be stopped.
5) Water congestion and waterlogging issues / lack of proper drainage system.

b. Waste management (2)

In the second workshop, the different groups discussed priorities, issues and concerns related to waste management and health equity. The discussion also continued in plenary as there was a smaller group of participants.

Some raised the issue of health and safety of the waste workers as an item that hasn't been prioritised by local authorities; regardless of any extraneous circumstances, such as the Covid-19 pandemic, natural disasters or others, it has generally been overlooked and waste workers are always deprived of receiving the safety equipment and exposed to several health hazards. It was discussed that, generally, waste workers do not have any provision of (health/safety/work) insurance, any recognition of work, nor any security of health. These are the three major barriers to improve the overall waste management occupational system, which also act as barriers to its efficiency. Most of the waste collectors are unaware and lack proper training regarding the right process of handling wastes and maintaining hygiene. They don't use protective measures (e.g. gloves) while collecting waste attracting long term threats to their health.

Subsequently, participants went on to discuss how lack of waste collection in comparison to the waste generation persists; collection capacity is less than 2000 tons, while the rest is openly dumped into the environment causing air, water and soil pollution that ultimately results in public health issues. There was a consensus that existing landfills are not adequate in number and there is a need to develop more landfill sites in Dhaka city. In addition, participants highlighted that there is no practice of source segregation of waste in Dhaka city, hence possibilities like composting biodegradable waste and recycling cannot lead to innovative and waste-reducing practices such as changing waste into energy.

Lack of awareness at household level is a major barrier, especially regarding waste segregation. Participants discussed the need to make sure that people are correctly disposing of plastics and also need to ban the single-use of plastic. In fact, it was said that awareness programs are not conducted at the household level, they are yet to become all-inclusive and lack mass propagation. There is widespread misinformation and very little knowledge regarding solid waste management. Some participants suggested that a good initiative might be to add a chapter about the needs of proper solid waste management in the national education system, especially at the primary level.

Discussions also highlighted a lack of integration and cooperation among the stakeholders and the population due to the absence of cohesion among the dwellers and authorities regarding proper management of waste. This is a common issue across the three topics and also points out that the awareness programs are not beneficial enough, and people have difficulties in keeping their city clean. The authorities and city corporation also have lack of people centric attitude towards the household population regarding planned initiatives, with issues in communicating, implementing and enforcing waste segregation laws and policies.

Following improper waste treatment methodologies in the landfills is another barrier to conducting proper waste management practices. In slum areas, the situation is much worse than urban households, with slum dwellers located in the Dhaka North City Corporation (DNCC) and Dhaka South City Corporation (DSCC) throw their waste near their houses or into the canals because they do not have any proper waste segregation facilities (bins or dustbins) in the households and neighbourhood. This is worsened by a lack of regular maintenance of equipment, especially in the slums. Waste management has been recognised to be a key barrier to developing a healthy city. As the management of hospital/medical waste and industrial waste is more hazardous and critical, it needs to be prioritized. Industries create a huge amount of waste but do not dispose of it properly. This was also discussed as a critical problem in Dhaka's waste management system. Some participants also highlighted that waste could be considered as a resource; for example, urban agriculture could be a way to manage waste regarding compost.

Land tenure complexities are a major concern as there are only two final disposal (landfill) sites in Dhaka city despite the fact that secondary transfer stations (STS) are required everywhere to prevent open waste dumping. The two Dhaka City Corporations have a number of STSs and landfills for dumping wastes. DNCC has 52 STSs and a landfill (Aminbazar landfill) while DSCC has 21 STSs and a landfill (Matuail landfill). Due to large volume of waste disposal every day, both landfills have already exceeded their capacity, each having 27-30 feet high waste mounds. In addition to this, one participant mentioned that about 25% of total wastes of Dhaka city remains uncollected everyday which is a major challenge for the Solid Waste Management (SWM) system in Dhaka city.

It was agreed that waste management is yet to be a national priority, as a result a proper SWM system is yet to be developed. Participants insisted that this should change as Dhaka city alone produces 70% of the whole country's waste. But the budget allocation is inadequate to manage an integrated SWM system and there is a an issue of scarcity of lands for construction of waste dumping site (landfill or STS). Moreover, the city lacks adequate numbers of trained waste handlers for conducting proper waste management in existing STSs. In practice, city corporations and civil society organizations don't seem to prioritise devising solutions for the existing SWM problems. Usually, waste is collected from urban homes, taken to the STSs and then dumped in the landfills. But during transportation of waste to the STSs or landfills, hygiene/cleanliness is severely neglected. This is worsened by the fact that the system works during the day when streets are busy and people are aout and about.

In closing, participants mentioned that some policies on SWM have been undertaken by Government, but are still in draft format. Until these policies are finalised and streamlined, it is impossible to implement an integrated SWM system (monitoring waste collection, waste transportation as well as management of the STSs or landfills). New data acquired via GIS could be beneficial but would still need policies in place to be integrated into.

c. Housing and neighbourhood (3)

During the third workshop, participants discussed in depth Dhaka's high rate of population growth compared to other places in the country, a dynamic housing scenario, rapid urbanisation and patchy neighbourhood pattern. Housing in Dhaka is usually said to be provided by the

private sector and it is difficult to track and monitor house owners and real estate developers. Government oversees facilitation of housing but not provision of housing. This creates big issues in some of the slums where there is no formal relationship with the landowners or in some cases the homeowners, leaving dwellers with lack of tenure security and high risks of eviction, especially in case of slums. There was agreement that there was no proper health policy and no facilities considering the effect of neighbourhood planning on health. Housing isn't regulated and most areas outside the city centre don't have adequate health, education and transportation facilities to support the housing dwellers. Poor sanitation and water supply are the main problems in the slum areas and most of the people are suffering from their consequences. When building or planning to build a new housing area, these things need to be focussed upon along with the physical infrastructure of housing. Physical and social infrastructural patterns need to be considered when planning for Dhaka to be a healthy city; no policy has been focussing on social dynamics to foster change.

Participants also discussed different authorities and their role; some mentioned that RAJUK (Capital Development Authority) is not able to properly control the development of housing and neighbourhood due to limited manpower to regulate and monitor and inconsistent political will and priorities. Water bodies become filled up by waste thrown haphazardly and consequently, water does not flow in a proper way from the roadside. This highlights a linkage between waste management, flooding and water logging and neighbourhood quality of life and health risks. Moreover, where policies exist, some believe that they are not properly implemented by RAJUK. Though there already exists detailed GIS data regarding the number of slums in Dhaka city, there is no formal record of this in official government reports or other official documents. Land tenure is also a major problem, especially among the slum dwellers. This leads to eviction insecurity of the slum people causing them to incessantly change dwelling areas. The terms and tenets of land tenures should be properly depicted in government guidelines. While city authorities have taken many initiatives to provide tenure security, many of these relationships and initiatives are informal and unable to make much headway.

Some discussions also mentioned the Local Government Engineering Department (LGED); from the perspective of construction, they are faced with issues of lack of sufficient space required for construction of smart buildings with enough ventilation, pure air, green space. In Dhaka city, one of the major problems is space restriction/land scarcity for construction of smart housing. Besides this, Dhaka city is also facing water logging, collapsed sewerage/sanitation system, excessive extraction of ground water etc. The linkages across the themes have been made explicit throughout the conversations.

The development of high-rise buildings has been said to create opportunity for more people to live in a particular small area. Such many people living in a small area ideal for a much smaller number creates traffic congestion, excessive pressure and burden on utilities and neighbourhood facilities. This situation is uncontrolled and according to participants, policies are needed to address this issue. Participants also discussed the inability of the concerned authorities to provide necessary facilities (e.g. green spaces, pond, shopping complex, mosque etc.) to the urban residents even in good residential areas, though there was a provision for these facilities by RAJUK. Every single space is being used for building residential housing. Thus, commercial mindset of the authorities is also another big challenge which is exacerbated by land scarcity. This commercial thinking neglects provision of a well-developed neighbourhood with education and health facilities, religious facilities etc.

Like for waste management and water logging, a lack of collaboration among different agencies because of poor governance and lack of government commitment to the provision of adequate

housing has been mentioned in the workshop. The overflowing issues are worsened by a very rapid rural-urban migration. This creates sustained public health related issues which include lack of proper air circulation, creating micro-climate, air pollution, lack of sunlight, overall environmental pollution, the collapse of the sewerage system (lack of infrastructural support causes the poor liveable condition in Dhaka city).

3. Thinking about solutions

In the first workshop, the "Stop and Listen" activity should have been followed by a Problem Tree activity. However, due to time restraints, the facilitators decided to transform it into a space to reflect on solutions to the issues summarised in the previous sessions. It was decided to keep this new structure for the other two workshop and focus the discussion on constructive and realistic aspects of engaging around these issues.

a. Waterlogging and flooding (1)

ISSUES	POTENTIAL SOLUTIONS
Less multi agency involvement based on the expertise and capacities of relevant agencies. Lack of coordination among the government and private sectors. Introduction of ad hoc solutions rather than integrated solutions	• Giving responsibilities properly to the relevant authorities and law enforcement. • Enhancing the capacity of agencies and govt, integration among government and private implementing agencies. • Ensuring City corporation has necessary expert manpower, engaging engineers and specialists regarding waterbody planning and management. • Drainage should be in one hand, preferably under City Corporation. • Promulgating laws on planning and management of water logging and flooding. • Regular meetings should be arranged to fix relevant agencies to solve specific problems. Need to organize meeting once a month to discuss ordinary maintenance and coordination. • A higher authority body should be created to direct all waterlogging relevant work. • Development of strict laws and strict implementation of laws and regulations. • Coordination required with the counsellors as well. • There are 26 sewage gates which decreases the intensity waterlogging and flooding but there is a need for more gates.

ISSUES	POTENTIAL SOLUTIONS
Less public consciousness and civic sense of the normal people. Lack of coordination of the general public with the institutions, also poor institutional governance. No time in research and planning, no budget or time allocated for R&D.	• For managing these things for data collection and analysis, it may be possible to develop an act under which all the agencies will work in an integrated manner. • Giving priorities in research and planning, • Plan a long-term vision, learning lessons from Cordon approach. • Awareness interventions and activities should have more impact and should not be focussed on management. • Law Enforcement can nudge on the behaviour.
Improper infrastructure and drainage system and unavailability of enough downward drainages due to congested buildings.	• Natural water bodies, engineering solutions. • Digging canal and filling up with water enforcing law and policy. • Coordination is needed, enforcement is needed for WASA and city corporation. • Existing plans should be implemented by DAP (Detailed Area Plan) by RAJUK. • Political will should be corrected • Live database is needed, where existing drainage data is present. GPS can be used for real calculation of the drainage system. Differential GPS systems could be used. • Establishment of permanent solution in the internal canal system. • Drone can be used for detailed data. • Introduction of Proper Waste Management process and a frequent management of the canal. • Increasing enforcement capability. • Developing solutions to soil management problems • In the rainy season the water is higher than in other seasons – more management is needed at that time of the year.

ISSUES	POTENTIAL SOLUTIONS
	• While WASA has is trying to acquire land for 5 new canals in Dhaka, water pumping needs to be ensured in these and other waterbodies and we need to increase the capacity of the pumping stations.
Embankment	• The unequal siltation, because of embankment, needs to be managed, and every approach should be environment friendly. • Need to have long term vision and planning, it must be rightly identified, properly studied.
Lack of proper area planning by RAJUK and lack of enforcement of existing policies and poor governance	• Higher authority or a commission may help. • Boundary should be delineated properly and clearly (undisputable). • Avoid the wrong approach towards management, cordon approach should be abandoned, and open approach should be adopted (go for open approach as much as possible).
Lack of influence of Direct enforcement	• Political will is required more to solve this problem. • RAJUK doesn't have any political affiliation. Government has to take direct steps to solve this problem.
Improper waste management system and lack of proper maintenance of the different systems	• Waste of Dhaka city should be managed 100% by city corporation. • Solid waste problems which need to be mitigated by WASA. • Coordination between city corporations and WASA could reduce the problems of solid waste induced waterlogging; follow and implement the co-operation and co-ordination guidelines which has already been mentioned in the JICA master plan • Budget needs to be allocated specifically for this issue.
Lack of water management capacity	• "Coexistence with flood, not fight with flood"

b. Waste management (2)

CAUSES	POTENTIAL SOLUTIONS
Recycling and Awareness	● The private sector can participate in developing a framework in case of Dhaka. Organizations such as Waste Concern is already working in this sector. ● Specially the kitchen waste and plastic waste should be recycled. An NGO representative suggested a weekly scheduled collection of waste. e,g, Organic kitchen waste should be collected 4-5 days per week, non-degradable recycled waste can be collected each day, to be implemented by the City Corporation. ● The Government can initiate incentives for non-degradable solid waste. e.g., for 5 empty bottles will give them some money. It may be good to introduce a system for paying the general public for recycling waste products. ● Need to raise awareness and public concern on segregation system at HH level and all STSs ● Need for continuous monitoring and knowledge-based awareness campaigns for waste handlers ● Need to organize awareness campaigns to guide the behaviour of the general population ● Awareness programs need to start from the root level, Govt has not been taken any initiatives yet.
Health and safety issues	● Need to be concerned about the uncollected waste as it causes water and vector-borne diseases (Dengue problems) due to being left on roads ● Need to educate the waste handlers about the use of safety equipment and conduct awareness programmes targeting them
Waste Management at Household and community level	● Need to implement a community led sanitation approach for reducing waste generation at HH level ● Segregation should be started from the household level as dumping site hazards are increasing for not segregating the waste at the household level.

CAUSES	POTENTIAL SOLUTIONS
	● Manage separate bins according to compostable and non-compostable wastes, the bins provided by the government tend to be used for other purposes. Establish the practice to segregate organic waste mostly. ● Need to generate fuel(gas) from landfill waste. ● Both financial problems and lack of human resources prevail, mainly in DSCC. A regulatory body needs to be established to maintain this. Need to mention this in the policy, ● We may also need to implement strict laws on deciding how this should work and how the specific areas of work should be decided among the main implementing agencies.
Slum population	● Ensure whether slum people can discharge the waste properly, develop collection points and STSs near slums as it is so tough to manage the slum waste because of the wider population within a congested area. ● Ensure waste collection from the slum by pursuing alternative methods. City Corporation can initiate a trial and error process to address the problems. ● NGOs and local development organizations should work in slum areas regarding SWM. ● Need to implement a community-led total sanitation approach for waste generation at the household level. ● There should be a common collection point, encourage the slum dwellers to put their waste in specified bin.

c. Housing and neighbourhood (3)

CAUSES	POTENTIAL SOLUTIONS
Tenure insecurity/Land scarcity	• Sufficient space is required between two buildings for proper air circulation. • Minimum 20% space should be kept for green space and other facilities (already in RAJUK policy, but needs proper enforcement). • Land digitization can be a big solution.
High rise buildings	• Implementation of the existing Detailed Area Plan (Development of High rise buildings in one particular zone) is needed. • Wide approach road for transportation • Self-sustained building system with rainwater harvesting system and renewable energy system.
Poor Governance: Lack of coordination among the concerned authorities	• Collective initiative should be taken through coordination among all stakeholders.
Ownership issue/plotting system. Commercial mindset of land developers	• One big solution can be changing the existing land ownership/tenancy. Implementation of land pooling initiative in a particular area leaving temporary ownership letting the development of neighbourhood and smart city. • Discussions and deliberations about research, and design with architects, urban planners.
Land morphology	• The existing land morphology should be changed.
Lack of proper housing system for the Informal people (Equity issue)	• Formalized/legal system should be initiated • Gender friendly approach should be taken in all aspects
High density of population in Dhaka city	• Rural urban migration should be controlled
Public health issues	• All professionals should be emphasising the importance of public health aspects when designing new buildings and housing.
Lack of facilities in the neighbourhood of Dhaka	• This can be possible through policy change, coordinated involvement of govt. and private sector, overall involvement of community people.

CAUSES	POTENTIAL SOLUTIONS
	• This initiative will provide quality housing with good neighbourhood to the community people where a particular percentage of the community area will be open space for developing school, park, greenery, mosque etc
Lack of collective initiatives and policy implementation	• Strong policy and political commitment is also necessary for the development of good housing and neighbourhood in Dhaka city with necessary facilities.

The Pathways team concluded the meetings by thanking the participants for their time, effort and active participation and insisting that this exercise would be the beginning of a longer and sustainable dialogue between the stakeholders and Pathways researchers to ensure that research findings would be embedded in current issues of Dhaka City.

4. Reflections and conclusions

As Pathways' teams re-think engagement in a COVID-19 world, these online workshops provided a practical example of Zoom activities that are effective and can be useful in connecting with people across countries and institutions. Pathways members felt that the limited amount of time per workshop (1.5h) and the possibility to join remotely were key in getting more participation, especially from higher level officials and those based outside Dhaka who may have had to cancel otherwise. The workshops created an opportunity to build relationships between policy professionals, government authorities, researchers and practitioners around key topics of Pathways' work in Dhaka city. We felt that holding workshops over three consecutive weeks allowed enough time for people involved in more than one workshop to attend as well as space to reflect, learn and make connections between and across topics.

In terms of content, these workshops highlighted some issues that are high priority for Dhaka and many overlapping themes linking, for example, waterlogging to waste management and flooding to housing and neighbourhood issues. More specifically, themes such as **political will and commitment** and **lack of coordination between different actors** seem to be cross cutting and key to all the proposed solutions. Both are linked with **budget allocations** and **sustainability of interventions**. This applies for example in the case of waterlogging, where Dhaka City corporation, Water Supply and Sewerage Authority (WASA) and the Capital Development Authority of the Government of Bangladesh (RAJUK) suffer from duplication of efforts as well as lack of common long-term vision. Duplication has an impact on human and budgetary resources allocated to address issues of flooding and is a barrier to sustainable actions that can be enforced. In terms of housing, lack of facilities in parts of the city and informal settlements leading to inequalities and health-related issues would also benefit from a more integrated approach, in this case by integrating private sector largely managing housing in Dhaka and government authorities involved in providing services.

All workshops also mentioned **implementation and enforcement of policies**, linked with **collective initiatives and civic responsibilities**. In the case of housing, lack of political commitment and lack of connectedness between government action and dwellers of different parts of the city has been identified as both a key barrier and a potential enabler for further action. This has also emerged in the waterlogging and flooding and waste management workshops; the former focussed on awareness interventions and positive activities combined with fine systems to educate, encourage good reactions and discourage bad habits. The latter

formalised practical solutions in terms of combining household-level awareness campaigns with citizens-led initiatives regarding local collection points, frequency of collection, etc.

Participants from all backgrounds highlighted that **underlying issues were impacting on all three topics that were in fact closely interrelated**. For example, it was made explicit that lack of awareness around knock-on effect of household waste disposal was a major contributing factor in waterlogging problems of the drainage system; lack of integrated action and planning around waste management has an impact on housing quality, neighbourhood safety and urban health; in turn, lack of a legal system for informal settlements and slums leads to limited facilities for specific neighbourhood enhancing issues of equity, especially around health.

The project's next steps include reflecting on current state of these issues, potential solutions that will be modelled as policy scenarios to support decision-making at city level. These cross-topic and cross-authority linkages are extremely important for Pathways' work as they support focussing researchers' attention on relevant priorities of Dhaka city as well as the nature of potential interventions the project will suggest. Integrated and systematic analyses of how different factors and variables relate to each other and ramify are key for Pathways' future work; future workshops will also focus on how to scheme up policy responses that aren't siloed but rather anchored in the overarching urban system of Dhaka. Pathways' researchers aim to identify an integrated approach of sharing information and knowledge across stakeholders to prevent undertaking inefficient projects and wastage of resources across the topics.

Annex A

1. Waterlogging and flooding workshop. Zoom, 7th September 2020

Agenda:

Sessions	Time	Details	Who
S1	10 mins	**Introduction** Introduce who's present	Zahid/Camilla
S2	10 mins	**Sharing what we are doing** Presentation from the Dhaka team outlining key themes they've selected for the city and more specifically on the water logging and flooding theme.	Zahid
S3	15 mins	**Stop and listen** This is a space for the stakeholders to talk about their current priorities, issues and concerns related to flooding and health equity. We will follow the principles of not interrupting, listening quietly and speaking openly.	Groups and leaders to discuss informally in whichever language people are more comfortable in.
S4	10 min	**Share** What has your group heard from the stakeholders?	Frans to chair 1 rep per group to share
S5	20 mins	**Problem tree exercise** In smaller groups if needed or just informally, start thinking about a problem tree on flooding and water logging in Dhaka. Can you select one key issue around the topic, and can you keep asking why, rather than pointing out the consequences? How far can we go, and can we get to a root cause, smaller issue, or determinant?	Activity introduced and facilitated by Camilla. Same groups as S3, in whichever language people are more comfortable in.
S6	10/15 mins	**Sharing the problem tree and thinking about solutions** If in groups, each gets 4-5 min to share their process and explain their determinant. If in plenary, summarise discussion and explain the root cause in English.	Zahid/Dhaka team facilitate in English.
S7	10 mins	**Concluding remarks and ways forward** Where do we go from here and how can we continue to touch base?	Zahid

Sessions	Time	Details	Who
		What can Pathways do?	

Participants:

Stakeholders			
SL	**Name**	**Organisation**	**Designation**
1.	Dr. Tariq Bin Yousuf	Dhaka North City Corporation (DNCC)	Chief City Planner
2.	Mahfuja Aktar	Capital Development Authority (RAJUK)	Deputy Town Planner (Town Planning & Implementation)
3.	Md Sumon Ali	SNV Netherlands	Sanitation Engineering Advisor
4.	Zillur Rahman	BRAC WASH	Head of Programme
5.	Dr. Md. Didar-ul-Alam	Department of soil, water and environment, Dhaka University	Professor
6.	Abu Saleh Khan	Institute of Water Modelling	Executive Director
7.	Prof. Dr. Khondaker Mohammod Shariful Huda	Department of Geography & Environment	Professor
8.	Ruhul Amin Munshi	SNV Netherlands	City Coordinator
9.	Md Ainul Haque	Bangladesh Water Development Board	Executive Engineer
10.	Engr. Taqsem A Khan	Dhaka Water Supply and Sewerage Authority (WASA)	Managing Director
11.	Dr. Md. Mahmudur Rahman	Dushtha Shahstha Kendra (DSK)	Director (Health)
12.	Sharif Jamil	Bangladesh Poribesh Andolon (BAPA)	General Secretary
13.	A.K.M Shahid Uddin	Dhaka Water Supply and Sewerage Authority (WASA)	Director (technical)
Pathways to Equitable Healthy Cities Researchers, and rapporteurs			
1. Adrian Butler		Imperial College London	
2. Md Uzzal Chowdhury		BRAC JPGSPH	
3. Prianka Sultana Hema		BRAC JPGSPH	
4. Frans Berkhout		Kings College, London	
5. Md Tanvir Hasan		BRAC JPGSPH	
6. Rafiul Alam		BRAC JPGSPH	

7. Salma Akter Urme	BRAC JPGSPH
8. Simon Moulds	Imperial College London
9. Zahidul Quayyum	BRAC JPGSPH
10. Hasna Hena Sara	BRAC JPGSPH
11. Shahriar Hasan	BRAC JPGSPH
12. Camilla Audia	Kings College, London
13. Marzuka Ahmad Radia	BRAC JPGSPH
14. Delufa Tuz Jerin	BRAC JPGSPH
15. Baby Naznin	BRAC JPGSPH

2. Waste Management workshop. Zoom, 14th September 2020

Agenda:

Sessions	Time	Details
S1	10 / 20 mins	**Introduction** This session includes time for participants to arrive and settle Introduce who's present Give the outline of the session, explain that is participatory and interactive (with a bit of description of using Zoom), and is about drawing together learning. Point out that we're in an experimental space, rather than prescriptive one.
S2	10 / 15 mins	**Sharing what we are doing** Presentation from the Dhaka team outlining key themes they've selected for the city and more specifically on the waste management theme.
S3	20 mins	**Stop and listen** This is a space for the stakeholders to talk about their current priorities, issues and concerns related to waste management and health equity. We will follow the principles of not interrupting, listening quietly and speaking openly.
S4	10 min	**Share** What has your group heard from the stakeholders?
S5	20 / 30 mins	**Can we conceptualise solutions?** This session takes into account extra time/time to catch up if we are late. As we've identified several issues, can we think about potential solutions? Think realistically. **How** would you tackle some of these

Sessions	Time	Details
		issues and their root causes? **What** could Pathways **realistically** do in the nest 6-12 months?
S6	15 mins	**Share** In plenary, summarise discussion and point out some key solutions in English (3 min per group – facilitator to keep time)
S7	10 mins	**Concluding remarks and ways forward** Where do we go from here and how can we continue to touch base? What can Pathways do?

Participants:

Stakeholders			
SL	**Name**	**Organisation**	**Designation**
1.	Dr Abdullah Al Muyeed	WaterAid	Head of Policy and Advocacy
2.	Liza Hagidok	Solidarites International	WASH programme Supervisor
3.	Dr Farhat Chowdhury	Asian Development Bank	Senior Environment Officer
4.	Shahriar Islam	DFAT	Senior Programme Manager
5.	Md Billal Hossen	Practical Action	Assistant Project Engineer
6.	Syed Hafizur Rahman	Department of Environmental Sciences, Jahangirnagar University	Professor
7.	Md. Shoriful Alam Mondal	UNDP	National Solid Waste Management Specialist

Pathways Equitable Healthy City Project researchers, and rapporteurs	
Md Uzzal Chowdhury	BRAC JPGSPH
Prianka Sultana Hema	BRAC JPGSPH
Frans Berkhout	Kings College, London
Md Tanvir Hasan	BRAC JPGSPH
Rafiul Alam	BRAC JPGSPH
Salma Akter Urme	BRAC JPGSPH
Zahidul Quayyum	BRAC JPGSPH
Hasna Hena Sara	BRAC JPGSPH

Shahriar Hasan	BRAC JPGSPH
Camilla Audia	Kings College, London
Marzuka Ahmad Radia	BRAC JPGSPH
Delufa Tuz Jerin	BRAC JPGSPH
Baby Naznin	BRAC JPGSPH

3. Housing and Neighbourhood workshop. Zoom, 21st September 2020

Agenda:

Sessions	Time	Details
S1	10 / 20 mins	**Introduction**
S2	10 / 15 mins	**Sharing what we are doing** Presentation from the Dhaka team outlining key themes they've selected for the city and the activities of BRAC JP Grant School of Public Health
S3	20 mins	**Stop and listen** This is a space for the stakeholders to talk about their current priorities, issues and concerns related to waste management and health equity. We will follow the principles of not interrupting, listening quietly and speaking openly.
S4	10 min	**Share** What has your group heard from the stakeholders?
S5	20 / 30 mins	**Can we conceptualise solutions?** As we've identified several issues, can we think about potential solutions? Think realistically. **How** would you tackle some of these issues and their root causes?
S6	15 mins	**Share** In plenary, summarise discussion and point out some key solutions in English
S7	10 mins	**Concluding remarks and ways forward** Where do we go from here and how can we continue to touch base? What can Pathways do?

Participants:

	Stakeholders		
SL	**Name**	**Organisation**	**Designation**

1.	**Brigadier General Muh Amirul Islam, PSC**	Dhaka North City Corporation	Chief Engineer
2.	**Dr. Khurshid Jabin Hossain Tawfiq**	Urban development Department	Director
3.	**Gopal Krishna Debnath**	Local Government Engineering Department (LGED)	Supervising engineer, planning
4.	**Md Rakibul Hasan**	UNDP	Housing Finance Coordinator
5.	**Anisur R Chowdhury**	OXFAM Bangladesh	Urban Manager
6.	**Professor Haroon Ur Rashid**	North South University	Professor, Department of Architecture
7.	**ASM Raihanul Ferdous**	City Development Authority (RAJUK)	Chief Engineer (Project and Design)
8.	**Mousumi Zahur**	Centre for Urban Studies Department of Mathematics and Natural Sciences, BRACU	Associate Professor & Executive Council Member,
9.	**A S M Shahriar Jahan**	UNDP	Community Housing Coordinator
10.	**Fuad Mollick**	BRACU,	Dean, School of architecture
11.	**Washim Akhter**	BRAC UDP	Programme Coordinator
12.	**Sirajul Islam**	BIGD	Programme Manager
13.	**Dr Jannatul Ferdous**	UNICEF	Health System Advisor
14.	**Hossain Adib**	Practical Action	Head of programme Implementation
15.	**Professor Shilpi Roy**	Khulna University, SHLC Project	Country lead and Assistant Professor
16.	**Dr. Md. Shanawez Hossain**	BRAC Institute of Governance and Development (BIGD)	Assistant Professor and Head of Capacity Building and Partnership
17.	**Ms Nusrat Sumaiya**	Bengal Institute for Architecture, Landscapes and Settlements.	Research and Design Coordinator

Pathways Equitable Healthy City Project researchers, and rapporteurs	
Camilla Audia	Kings College, London
Judith Rodriguez	Harvard T.H. Chan School of Public Health
Marzuka Ahmad Radia	BRAC JPGSPH
Delufa Tuz Jerin	BRAC JPGSPH
Dr Simon Moulds	Imperial College
Zahidul Quayyum	BRAC JPGSPH
Hasna Hena Sara	BRAC JPGSPH
Salma Akter Urme	BRAC JPGSPH

Frans Berkhout	Kings College, London
Md Tanvir Hasan	BRAC JPGSPH
Rafiul Alam	BRAC JPGSPH
Haisom Aftab Evan	BRAC JPGSPH
Md Uzzal Chowdhury	BRAC JPGSPH
Shahriar Hasan	BRAC JPGSPH
Baby Naznin	BRAC JPGSPH