

## IMPROVEMENT OF HEALTH, HYGIENE AND NUTRITIONAL STATUS OF URBAN SLUM DWELLERS: A PROGRAMME OF RCE GREATER DHAKA, BANGLADESH

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RCE Greater Dhaka comprises the Dhaka megacity and the adjacent low lying, most vulnerable coastal zone, home to a population of more than 50 million. The core organisation of RCE Greater Dhaka is the Centre for Global Environmental Culture (CGEC) at the International University of Business, Agriculture and Technology (IUBAT), Dhaka. Other members of the RCE community are the Institute of Forestry and Environment at the University of Science and Technology Chittagong (USTC); Rotary District 3280, Bangladesh, with the Rotary Club of Greater Dhaka; The Department of Politics and Governance, GonoVishwavidyalaya, Dhaka; The Department of Environmental Engineering, Shahjalal University of Science and Technology (SUST), Sylhet; The Department of Agro-Technology, Khulna University, Khulna; World Wide Opportunities on Organic Farms (WWOOF), Bangladesh; Forestry Environment Plantation Crop and Permaculture Consultancy and Research (FEPPCAR); The Nawab Habibullah Model School and College, SS Enterprise BD, the Red Crescent Youth, Chittagong; and Green-Savers, Dhaka. RCE Greater Dhaka has been working actively with the core objective of mitigating the challenges of climate change extremes and human induced crises for a sustainable Dhaka megacity, and to reduce the sufferings of huge human settlements in and around Dhaka. To mitigate the crises and the unsustainable activities, the stakeholders have collectively organised a network or consortium to promote sustainable activities, undertake research projects, together with awareness and training programmes.

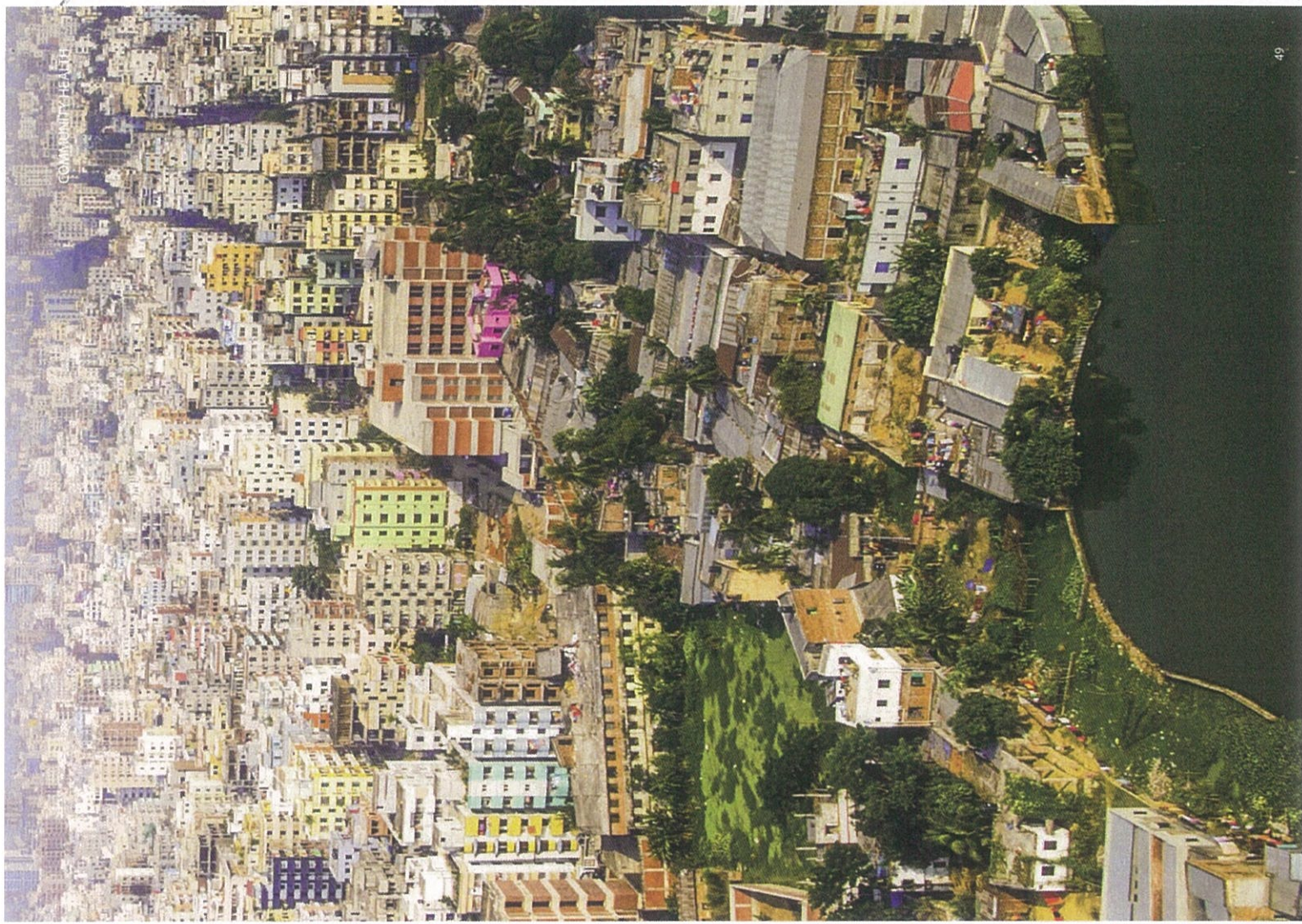
### Urban Slums in Dhaka – Health Challenges

Bangladesh is one of the world's most densely populated countries with a population of 165 million in 147,570km<sup>2</sup> and has 1,116 persons/km<sup>2</sup> (Bangladesh at a Glance, 2017; World Population Review, 2017). The great Ganges-Brahmaputra, Meghna riverine system carves its way through Bangladesh forming a large delta that covers one third of the country's area and is home to 70% of the population. This coastal region is rich with fertile soil and biodiversity but is vulnerable to cyclonic storms, tidal surges, floods and water logging, erosion, salinity intrusion

and pollution. Millions of people are affected every year by the resulting crises such as food shortage, water scarcity, pollution, biodiversity loss, damage to agricultural crops and housing, loss of domestic animals, damage to structures and embankments etc, and thus suffer from famine and malnutrition. These crises are forcing people into abject poverty and migration to the cities, especially to the capital city, Dhaka, and its suburbs for food, shelter, and work opportunities.

The cities are the ultimate shelter during major disasters such as floods, tidal surges, cyclones, tornadoes and famine (Miyan and Rahman, 2010); while the urban population has been increasing quickly. Evidence shows an 18-fold increase in the urban population from 1951 to 2011 (Islam, 2013), and by 2050 urban dwellers are expected to comprise 50% of the total population (Howlader, 2011). The number of households in urban slums has increased concomitantly. Currently there are one million slum households living in 9,000 slum clusters. Population density in the slums is about 200,000/km<sup>2</sup>.

Dhaka is a megacity; its population is projected to rise to 20 million by 2020, and it will become the world's third largest city (Saru and Ovi, 2009), with one third of the population living in slums. Because of climate change, air, space, light, water, other logistic support and services to the citizens are becoming increasingly hampered, and the city is becoming uninhabitable. Dhaka has been ranked 139th least liveable among 140 cities (Economist Intelligence Unit, 2013). Population pressure and unplanned settlements in the city have seriously affected the well-being of people at work and at home. Research shows that more than 40% of the female workers in factories suffer from chronic diseases such as gastrointestinal, sexually transmitted diseases, reproductive tract infections, menstrual and blood pressure problems, anaemia and family planning related illnesses (Economist Intelligence Unit, 2013). It reveals that the major causes of ill health of the huge workforce are single track work under stress and long working periods without any relaxation or amusement, unhealthy living conditions and nutritional deficiency. Most of the workers are underfed, illiterate and





do not have any knowledge about the nutritional value of foods. Poor sanitation and congested living, with four to five people in a 10m<sup>2</sup> room, leads to infectious diseases such as diarrhoea, dysentery, typhoid, dengue and pneumonia. The lack of proper nutrition and low immunity result in high child deaths, stillbirth, blindness and physical malformation. (*Economist Intelligence Unit, 2013*).

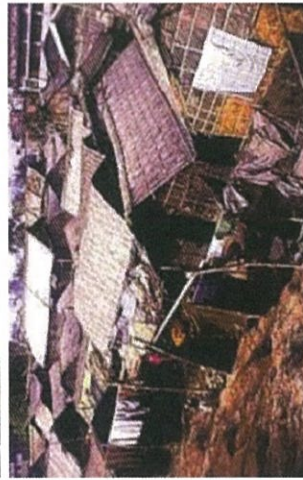
The proportion of women in the slums of Dhaka using different types of healthcare is much lower than that of the urban population of the country. The current use of Family Planning (FP) is 54% in the slums and 66% in the urban areas of Bangladesh. The use of Ante Natal Care (ANC) is 39.9% in the slums and 45.5% in the urban areas; and the proportion of institutional deliveries, i.e. childbirth in hospitals and clinics, is 39% for slum dwellers and 58% for urban people in the country. On the other hand, access to sanitation in the project area increased from 33% in 2007 to 73% in 2011. In the comparison area, it increased from 59% in 2007 to 68% in 2011 (*Alam et al., 2011*).



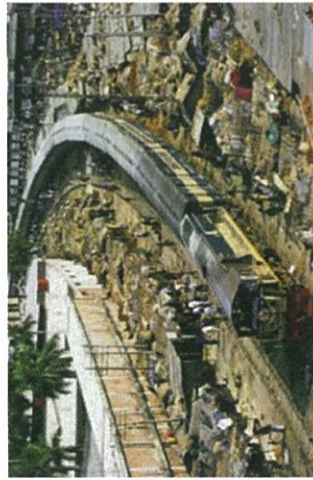
Garment workers suffer from poor health and slum children from malnutrition (RCE Greater Dhaka).

Dhaka city is noted for a serious shortage of housing facilities (*Hossain, 2006; Rakanuzzaman et al., 2013*). Willcox (1979) showed that due to physiographic features such as low lying agricultural lands and natural barriers such as rivers, canals and depressions, the expansion of the city has been seriously constrained. Lack of proper infrastructure facilities and unplanned urbanisation have created new hazards in informal settlements. The UN Millennium Task Force on slum dwellers reported that the lack of provision of water and sanitation and high levels of overcrowding,

contribute many communicable and non-communicable diseases, injuries and premature deaths in several urban slums in the megacity of Dhaka (*UN Millennium Project, 2005*).



Unhygienic sanitation and miserable conditions in the slums of Dhaka (RCE Greater Dhaka).



A slum along the railway line at Tejgaon (RCE Greater Dhaka).

The lack of adequate education and skills results in most urban migrants working in the informal sector as rickshaw pullers, van and auto drivers, construction workers, daily wage labourers, vendors and street hawkers. A noteworthy occupation especially for women is as workers in garment factories. A significant number of the urban migrants live in slums. Generally, these people consume rice two or three times a day, but rarely consume milk, meat, fruits

and vegetables. Therefore malnutrition, especially among women and children, is a serious problem in Dhaka.

Protein-energy malnutrition, anaemia, iodine deficiency disorders, and vitamin A deficiency are common (*UNICEF, 2011*). The World Food Programme (2004) estimated that 47% of pregnant women in Bangladesh suffer from anaemia. Malnutrition passes from generation to generation as malnourished mothers give birth to malnourished children, and the underage-five mortality rate is 59 per thousand (*World Bank, 2011*). The inadequate consumption of protein and micronutrients results in various long- and short-term health problems, such as stunting, underweight, osteoporosis and low bone-mass (*Leslie, 1991; UNICEF, 2011; Rahman, 2015*).



Health education campaign and RCE volunteer interviewing slum people (College of Nursing, IUBAT, RCE Greater Dhaka).

High inequity exists between the slum dwellers and other residents of Dhaka city in respect of use of healthcare facilities (*Bangladesh Urban Health Survey, 2013; Jahan et al., 2015*). This is partly due to high income inequity. While several factors limit the demand and supply of healthcare; nevertheless, limited access to healthcare is a serious constraint to their use of healthcare. Although the government has a primary healthcare system, organised healthcare facilities are absent in the slums.

**Baseline Research**  
A research study entitled "Benchmarking the Nutritional status in the Tongi-Ashulia Road Slums" was jointly conducted by the College of Health Sciences and Nursing of IUBAT and Simon Fraser University, and was published in Centre for Policy Research Commentary No. 7 (*Richards et al., 2010*). Results of the study showed that although the urban poor consume sufficient high calorie cereal based food, it lacks adequate quantities from the full range of nutrients of the various food groups. Results also showed that people are habituated to smoking, chewing betel leaves and nuts, and drinking beverages, on which they spend a significant portion of their income. Based on this research, investigation has continued on the improvement of the nutritional status for women in low-income households. According to a publication of CPR (*Shahrin and Richards, 2012*), women face problems of inadequate calorie intake and lack of dietary variety. Many women suffer from deficiency of necessary vitamins and micronutrients that are present in fruits, vegetables and dairy products. While nearly all women in the rural sample use hygienic tube-well water, most urban women use unhygienic tap water.

The project started with a survey to assess the nutritional status of low-income urban slum dwellers. The study was conducted in Abdullahpur, Kamarpara, Tongi, Ashulia and Uttara slums, and the survey was restricted to households living in non-pucca houses. A household included all people living together in the same dwelling, sharing assets and income. The surveyors randomly selected the households for interview. A pair of surveyors, a male and a female, went to each household to interview the respondents. The survey consisted of a questionnaire with semi structured or open ended questions. They also conducted focus group discussions. The discussions focused on nutrition, smoking behaviour, income generation initiatives, food habits, hygiene status, availability of fresh drinking water, and their connection to poverty. Data was statistically analysed and the results reviewed from a policy perspective. Specific integrated intervention strategies were developed.



## Strategies and Activities to Address Challenges

RCE Greater Dhaka partners started Education for Sustainable Development (ESD) programmes to create awareness on health and related determinants as a voluntary initiative. Community priorities and leaders were identified through community assessments. After preliminary meetings with the community leaders, their support to mobilise community participation was enlisted. A local representative was elected to coordinate the programme activities.

Students of the College of Health Science and Nursing are engaged in the programme in the surrounding Tongi, Ashulia and Uttara areas and are also involved in the Uttara community. Tongi and Ashulia are industrial townships adjacent to the Uttara residential area, and huge slums have grown along the embankment and highways close to the university campus. The programme includes awareness raising, training, developing consciousness about adopting a healthy lifestyle, free immunisation and health check-ups, access to medicines, blood donation, and conducting research on the nutritional status of the slum dwellers.

Project partners organise awareness programmes on a regular basis, which involve the Government's Health and Education departments in these programmes. The RCE also collaborates with NGOs to conduct health awareness programmes in villages and urban slums. General as well as specific health awareness camps that focus on diseases like anaemia, dengue, chikungunya and Malaria, eye, ear, dental problems, HIV/AIDS and H1N1 (Swine Flu) have been organised. Awareness programmes on ante-natal and post-natal healthcare, reproductive health, child health and nutritional status, were also conducted. Child-to-child and child-to-community strategies have been adopted in some places to spread vital health messages. For example, youth have been trained on tuberculosis with the help of the Medical and Health Department, and they in turn are encouraged to spread the message to the community through presentations, special games and play devised for the purpose. Positive Deviance / Hearth approach<sup>2</sup> has been adopted in some places to address malnourishment among children in the 0-5 years age-group. Under this approach, the positive deviants (families with well-nourished children) are identified to understand the unique behaviours that enable them to outperform their neighbours, and this wisdom is shared with the families of malnourished children through well designed nutritional health education programmes. To sensitise pregnant and lactating women on maternal and child health and to reduce women and infant mortality rates,

## Learning from Experience

The services offered are now part of a regular programme, since the slum dwellers that have been participating in the health camps have benefitted from them. Coordination among the partners has been a major factor for successfully achieving this goal. CGEC has been organising and keeping on schedule the activities, namely training and health campaigns, health check-ups, blood donation, and observing an immunisation day. It has built a close relation between the university, the slum dwellers and Uttara communities. The Coordinator of the College of Nursing of IUBAT has been monitoring the programme.

The project has contributed to learning and knowledge generation about sustainable and healthy lifestyles, malnutrition in relation to poverty, and healthy life for the urban poor. It has also contributed to the identification of the root of the problem and working collectively, while keeping in mind humanity, leadership and coordination. Indeed, the whole programme is based on an ethical, humanitarian perspective and approach, given around three million urban people in Dhaka have been suffering due to critical issues of poverty, malnutrition and unhygienic conditions, while the rich and so called civil society, government and political organisations have ignored these very important issues of a large section of the city dwellers.

The RCE volunteers did not face any significant barriers during their work in the slums. The volunteers' approach was friendly, and the slum dwellers gladly cooperated by providing information, receiving training and practicing lessons about hygiene and nutrition for a healthy and sustainable life. Finance, although an important issue, was not a constraint as IUBAT, Rotary District Greater Dhaka, and Simon Fraser University have been funding the programme, and Quantum Foundation and Sikder Medical College have been supporting it with medical and healthcare services.

This programme has motivated the Uttara community and the slum dwellers to take proper care of their health, hygiene and nutrition. The programme is widely publicised through research monographs, print and electronic media, with partner organisations, and has thus also influenced other urban communities nationwide.

The programme is progressing through voluntary collaboration with partner organisations for awareness, training and campaigns. It has been attracting hundreds of volunteers from the country and abroad. Volunteer nurses from Canada, USA, Australia, UK, Netherlands and Japan, and the students of the College of Health Science and Nursing have been visiting the slums, doing research and practicum, gathering data and experiences, training the urban poor, thus enriching the health standard of the illiterate urban people, especially of women and children. The programme has also been extended in the rural area of Jamalpur District (Shahrin and Richards, 2012).

With the intervention of RCE Greater Dhaka, awareness has been built up in many organisations, including the Government departments, NGOs, private organisations and donor agencies, about the conditions in slums. This awareness has, to some extent, led to more work on improving the conditions. In recent years the World Bank, for example, has taken on the project, "Bangladesh Poverty Diagnostics for Water Supply, Sanitation and Hygiene" (World Bank, 2016).

A lot, however, remains to be done. Effective measures are needed to increase both demand and supply of services, thereby leading to integrated development. The project has been a great opportunity to reflect on the responsibility and relevance of the involvement of academic institutions with the community. This was especially a good chance for students and volunteers to experience the life among the low-income slum population, including their lifestyle, food habits, sanitary conditions and the health status especially of women and children. The positive behavioural changes observed in the community from the beginning were quite motivational and led to more large scale projects. They prompted the government and other NGOs to initiate such integrated programmes on health, hygiene and nutrition not only in urban slums but also in rural areas.

RCE Greater Dhaka encouraged other partners to join in the health and nutrition projects, and the area of study has been expanded due to the emergence of serious concern about the widespread outbreak of dengue, chikungunya, Malaria (mosquito borne viral diseases) and HIV, especially in the slums. Another important issue of concern is the large scale increase in caesarean deliveries. As pollutants

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RCE Greater Dhaka conducts health awareness camps and runs Nutrition Centres at the university campus that provide nutrition supplements and health check-ups. The list of the project partners and their roles is presented in Box 1.



Blood donation and health check-up (College of Nursing, IUBAT, RCE Greater Dhaka).

### Box 1. Main Partners of the Project and Their Roles

The main project partners and their roles are as follows:

1. Centre for Global Environmental Culture (CGEC) is the lead organisation that initiated and is coordinating the programme
2. International University of Business Agriculture and Technology is providing the logistic support
3. College of Health Science and Nursing of IUBAT is providing health services, training and conducting research on the nutrition status
4. Rotary District Greater Dhaka 3280 is supporting the programme financially
5. Centre for Policy Research (CPR) is conducting research and helping to bring out publications
6. Quantum Foundation is conducting health checkups and blood donation camps
7. Sikder Medical College is conducting health checkups and blood donation camps
8. Simon Fraser University, Canada, is providing technical and logistical support.

<sup>2</sup> Positive deviance/Heath is a community-based approach for behaviour change by promoting positive practices of households of the same socio-economic status among the wider community. Initiated in the 1970s, the programme has been widely promoted by several NGOs across countries among communities, especially among mothers of preschool children, for improving nutritional and health practices.



have a great effect on pregnancy, it has become necessary to find out if there is any link between the high rate of caesarean operations and these wider determinants. A sample study and an awareness campaign are now being conducted in this area. The programme is also assisting women in taking preventive and curative measures relating to various gynaecological conditions. This programme has been running effectively since 1 January 2014 under a hitherto defunct programme of the Amina-Muhammed Ali Foundation.

## Conclusion

Health, hygiene and nutrition are an integral part of people's day-to-day lives. Without sufficient knowledge about these, many suffer from malnutrition and different infectious and non-infectious diseases, which cause early deaths, abnormalities in reproductive health and pregnancy. The fact that about 30% of the urban population lives in slums in the developing countries without access to the required health, hygiene and sanitation facilities is significant. It is therefore essential to learn about the lifestyle of the slum dwellers and the poor, to bring the activities of the project under the ESD programme and to help fulfil the Sustainable Development Goals (especially SDGs 3 and 4). The need for community involvement to ensure well-being of the poor in terms of improvement of nutritional status and gender equity, and the need to provide knowledge about sustainability are the important learning outcomes of this programme.

RCE Greater Dhaka has been working as the frontrunner of meaningful ESD in Bangladesh. The success of the project is a result of the involvement of other stakeholders. To implement the SDGs, it is essential to ensure wide-scale involvement of the communities for the overall improvement of health, hygiene and nutritional status for a better life. The programme Improvement of Health, Hygiene and Nutritional Status of Urban Slum Dwellers, undertaken by the RCE has also been supporting the Global Action Programme (GAP) to integrate ESD into international and national policies in education and sustainable development. An enabling policy environment is crucial for mobilising education and learning for sustainable development and scaling up ESD action. The project supports the call to strengthen and continuously build the capacity of educators, trainers and other change agents for ESD.

Empowering and mobilising youth is a priority area of GAP as they have a high stake in shaping a better future for themselves and for the generations to come. The project does so by supporting both students and youth volunteers in their role as change agents, especially in the areas of health, sanitation and nutrition education, action and research. The ESD approach of this project aims to ensure

that all concerned understand the health problems of vulnerable groups. This includes how gender inequalities may affect health and well-being, learning about direct strategies to be included in the ESD programme. These strategies focus on promoting health and well-being, through for example, vaccines, healthy food, physical activity, mental health, medical consultation, education, sexual and reproductive health education, including education on pregnancy and safer sex. Indirect ways of learning to promote health and well-being, can be in the form of political programmes for health insurance, affordable prices of medicine, health services including sexual and reproductive healthcare services, drug use prevention, transfer of knowledge and technology, reduction of pollution and contamination, and early warning of disasters and overall disaster risk reduction.

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