

Bangladesh Priorities Eminent Panel Findings

Dhaka, Bangladesh
12 May, 2016

Background to the Project Methodology

[Bangladesh Priorities: Smarter Solutions for Bangladesh](#) is a research project that analyzes and promotes investments to establish how to achieve the most social, environmental and economic good for Bangladesh with every taka spent. The project is led by [Copenhagen Consensus Center](#), in cooperation with [BRAC's Research and Evaluation Division](#) (BRAC RED).

To date, the project has engaged with countless Bangladeshis, putting more than 1,100+ pages of peer-reviewed, Bangladesh-focused research into the public domain, and sparking a national discussion about priorities in the pages of the nation's biggest newspapers and online.

Bangladesh Priorities began with a thorough review of the [26 Background Studies](#) prepared for the 7th Five Year Plan (2015-16 to 2019-20) created by the General Economics Division (GED) of the Planning Commission. In-person interviews were held with thought leaders and experts from Bangladesh.

In 2015, Bangladesh Priorities held 20 [Ideas Roundtables](#), which brought together sector experts from government, NGOs, and universities from across the country to discuss and identify effective solutions to challenges facing Bangladesh, from expanding village courts and creating a secondary bond market to providing access to contraception and investing in nutrition and micronutrients for infants and young children.

In total, 450 participants participated in The Ideas Roundtables, which were co-hosted with BRAC. More than 1,000 possible interventions were identified.

This list of ideas for interventions was narrowed to 76 through online surveys with all the sector experts and vetted by a 'Reference Group' of leading Bangladeshis and development partners.

Research Papers were commissioned to analyze the costs and benefits of each of these 76 proposals, from more than 30 economists in Bangladesh and internationally.

Assumptions were standardized to allow for comparison between different interventions. Feedback and peer review were embedded into the research process, to capture a broad range of expert perspectives.

Peer groups of economists shared outlines and draft papers for feedback, and early findings were shared with sector experts and non-academics in Review Roundtables. These had the aim of gaining inputs from sector experts and fellow economists in order

to improve papers and their cost-benefit analysis. Sector experts from the government, donor community, academia and nonprofits attended the roundtables.

The feedback was incorporated into final cost-benefit papers and short reviews. All research papers are [publicly available](#).

In addition to the Eminent Panel, the project is engaging Bangladeshis from all parts of society, through publications in the country's highest circulations newspapers both in Bangla and English language, radio and TV interviews, meetings with decision makers, and forums for youth and rural communities, to develop a broader conversation about the best solutions.

The Eminent Panel

A panel of distinguished economic and development experts was invited to convene in Dhaka, Bangladesh, in May, 2016 to consider these issues. The members of the Eminent Panel are:

- **Professor Finn E. Kydland**, University of California, Santa Barbara (Nobel Laureate)
- **Selima Ahmad**, President and Founder, Bangladesh Women Chamber of Commerce and Industry
- **Dr. KAS Murshid**, Director General, Bangladesh Institute of Development Studies
- **Dr. Mushtaque Chowdhury**, Vice Chair, BRAC

The panel was asked to address the research and to answer the question: *Where should additional resources be spent first?*

The panel examined the 76 proposals in detail. Each proposal was discussed with its principal author. The panel was also informed by Viewpoint Papers and their own critical appraisals and discussions on assumptions and methodology.

Eminent Panel Prioritized List

In ordering the proposals, the Eminent Panel was guided predominantly by consideration of social, economic and environmental costs and benefits.

The Eminent Panel acknowledged the difficulties that cost-benefit analysis must overcome, both in principle and as a practical matter, but agreed that the cost-benefit approach was an indispensable organizing method.

In setting priorities, the Eminent Panel took account of the strengths and weaknesses of the specific cost-benefit appraisals under review, and gave weight both to the institutional preconditions for success and to the demands of ethical or humanitarian importance.

Each Eminent Panel member assigned his or her own ranking to the proposals. The Eminent Panel's ranking was calculated by taking the median of individual rankings. The Eminent Panel jointly endorses the median ordering shown above as representing their agreed view.

For some of the proposals, the panel found that information was too sparse to allow a judgment to be made. These proposals, some of which may prove after further study to be valuable, were therefore excluded from the ranking.

The panel recognizes that the selection process of solutions was informed by many of the most important stakeholders in Bangladesh and covered a wide range of relevant topics, but also acknowledges that there were other, important solutions, which were not assessed and hence not prioritized.

The panel also notes that quantifying social and other benefits was necessarily informed and in cases limited by the evidence available. Not all evidence from Bangladesh and elsewhere in the world on costs and benefits is equally robust. The panel makes a general point that further and deeper research is needed to better capture the social and other benefits of interventions.

Based on the costs and benefits of the solutions, the panel ranked the proposals, in descending order of desirability, as follows:

#	INTERVENTION	TOPIC
1	TB Treatment	Health System & Access
2	E-Procurement Across Government	Digital Bangladesh
3	Nutrition & Micronutrients, ½-5 Year Olds	Food Security, Nutrition & Agriculture
4	Land Records Digitization	Land Administration
5	Bus Priority For Dhaka	Infrastructure (Transport)
6	Increase Secondary Education For Girls	Gender Equality
7	Iron And Folic Acid In Pregnancy	Food Security, Nutrition & Agriculture
8	Psycho-Social Stimulation For Stunting	Education
9	Immunize Children In Urban Slums	Health System & Access
10	Hypertension Medication	Non-communicable Diseases
11	Union Digital Center Migration Services	Migration
12	Retrofit Kilns, Outdoor Air Pollution	Environment and Biodiversity
13	More Services At Union Digital Centers	Digital Bangladesh
14	Treat Arsenic For 20% Worst Affected	Water and Sanitation
15	Newborn Homecare By Health Workers	Education
16	Reform VAT And Automate Collection	Fiscal Management & Revenue Mobilization
17	Access To Contraception	Gender Equality
18	Golden Rice R&D	Food Security, Nutrition & Agriculture
19	Expand Village Courts	Governance & Institutions
20	RMG Factory Compliance	Industrial Policy and Trade
21	Balanced Protein Energy In Pregnancy	Food Security, Nutrition & Agriculture
22	Solid Waste Management In Dhaka	Environment and Biodiversity
23	Multi-Drug Resistant TB Treatment	Health System & Access
24	Immunize Children In Remote Areas	Health System & Access

25	Facility Births With Skilled Attendant	Health System & Access
26	Tobacco Tax	Non-communicable Diseases
27	Shared Diesel To Replace Kerosene	Infrastructure (Energy)
28	Import Coal For More Power	Infrastructure (Energy)
29	Calcium In Pregnancy	Food Security, Nutrition & Agriculture
30	RMG Palli Special Zone	Industrial Policy and Trade
31	Gasifier Stove	Environment and Biodiversity
32	Ultra-Poor Graduation Programs	Poverty, Entrepreneurship and Growth
33	Skills Training For Migrants	Migration
34	Expand Broadband	Digital Bangladesh
35	Diabetes Treatment	Non-communicable Diseases
36	Trade Liberalization	Industrial Policy and Trade
37	Household Solar To Replace Kerosene	Infrastructure (Energy)
38	Group And Teach According To Ability	Education
39	Sanitation	Water and Sanitation
40	Biomass Cookstoves, Indoor Air Pollution	Environment and Biodiversity
41	Hand-Washing Promotion	Water and Sanitation
42	Stormwater Drainage In Dhaka	Urbanization
43	Transport Infrastructure For Dhaka	Infrastructure (Transport)
44	Treat Arsenic For All Affected	Water and Sanitation
45	Boost Agricultural Productivity	Climate change
46	Restoration Of Buriganga River System	Environment and Biodiversity
47	Early Warning Systems And Shelters	Climate change
48	On-The-Job Management Training	Education
49	Smokeless Tobacco Cessation	Non-communicable Diseases
50	Resettlement To Manufacturing Cities	Climate change
51	Improve Teacher Accountability	Education
52	Polders, Flood Level Less Than 3m	Climate change
53	Padma Bridge	Infrastructure (Transport)
54	Trade Facilitation	Industrial Policy and Trade
55	Improve School Management	Education
56	New Hybrid Kilns, Outdoor Air Pollution	Environment and Biodiversity
57	Seasonal Migration Stipends	Migration
58	Treat And Immunize Cervical Cancer	Non-communicable Diseases
59	Mangrove Protection In Sundarbans	Climate change
60	Livelihood Programs	Poverty, Entrepreneurship and Growth
61	Flexible Microfinance	Poverty, Entrepreneurship and Growth
62	Traditional Microfinance	Poverty, Entrepreneurship

		and Growth
63	Vocational Training	Education
64	Provide BAU Inputs Like Textbooks	Education
65	LPG Cookstoves, Indoor Air Pollution	Environment and Biodiversity
66	Unrestricted Roads To North East India	Infrastructure (Transport)
67	Unconditional Cash Transfers	Poverty, Entrepreneurship and Growth
68	Unrestricted Roads To Bhutan And Nepal	Infrastructure (Transport)
69	Import And Domestic Coal For More Power	Infrastructure (Energy)
70	Computer Assisted Learning	Education
71	Bond Market	Capital and Financial Markets
72	Polders, Flood Level More Than 3m	Climate change

The Eminent Panel chose not to rank four interventions:

The benefit of **Training of Traditional Birth Attendants** is inconclusive, and the panel was not convinced that the international studies were enough evidence for estimating benefits in Bangladesh.

In the presented analysis of **Delaying Child Marriage with Subsidies**, the benefits were solely driven by additional years of schooling for the girls. The evaluation of health, nutritional, social and other benefits of this intervention is yet to be performed.

The intervention for **Empowering Adolescent Girls** has robust evidence of positive family planning effects in Uganda, however similar programs in Bangladesh had null results. But other possible benefits from the program were not discussed in the analysis, and given the incomplete information, the panel chose to not rank this intervention.

The researchers informed the Eminent Panel that dowry and child marriage laws have no impact on marriage outcomes. Since both the researchers and the panel are all in favor of these, and see no reason to relax them, it decided to exclude **Strengthening Dowry and Child Marriage Laws** from the ranking.

All these addressed important issues in Bangladesh but the particular solutions did not have enough information to judge their effectiveness in the Bangladesh context.

Notes About the Findings

Health System and Access

Under this topic, eight interventions were considered. These ideas were discussed in a [May 2015 Roundtable of sector experts](#), which included participation from ICDDR, Diabetic Association of Bangladesh, BRAC University, BRAC, DNET, The University of New South Wales, RED BRAC, URB, and Centre for Injury Prevention and Research Bangladesh.

Two interventions, described in research by Anna Vassall, senior lecturer in health economics at the London School of Hygiene and Tropical Medicine, related to [Tuberculosis](#). Tuberculosis kills 80,000 Bangladeshis each year, constituting about 9 percent of all deaths. The research stated that spending a small amount -- Tk 7,850 per patient – on standard drugs and follow-up can avert TB transmission, leading to benefits 21-times higher than costs. Having considered this research, the Eminent Panel ranked **TB treatment** in 1st position.

Research on Multi-drug treatment indicated costs that are considerably higher, and that it can be much more effective to first treat those who can be reached with conventional treatment. **Multi-drug treatment** was given the ranking 24 by the Eminent Panel.

Five interventions related to [reducing maternal and neo-natal mortality and increasing immunization](#) were considered, in research by Jahangir A.M. Khan, Senior Lecturer in Health Economics at Liverpool School of Tropical Medicine and Associate Professor at James P Grant School of Public Health in Brac University, and Sayem Ahmed.

Research on the intervention of newborn homecare by health workers showed that this option is very cheap, costing just 850 takas over the course of a pregnancy. The research indicated that nearly 750,000 pregnant women could be targeted, and in all, homecare visits could save the lives of more than 8,900 infants. **Newborn homecare by health workers** was given the position of 16 by the Expert Panel

Research indicated that Facility births with skilled attendant may not be relevant for all pregnancies, including people in rural areas. **Facility births with skilled attendant** was given a ranking of 26.

The research showed benefits worth around 15 takas for every taka spent for immunization in urban areas. **Immunize children in urban slums** was given a ranking of 9. The research suggested that reaching children in remote areas with immunization would have a BCR of 8. The panel gave **Immunize children in remote areas** the position of 25.

Digital Bangladesh

Under this topic, three interventions were considered. These ideas were discussed in a [May 2015 Roundtable of sector experts](#), which included participation from D.Net, Prime Minister's Office, BRAC and BRAC International, United International University, World Bank, UNDP Bangladesh, Cabinet Division, Center for Research and Information (CRI), North South University, BASIS, and Bangladesh Computer Council (BCC).

Professor Wahid Abdallah, Assistant Professor in the Department of Economics and Social Sciences at BRAC University, presented his analysis on [e-procurement](#): transforming the current procurement system into one that uses online systems. Abdallah's study suggested that each taka spent on **Electronic Government Procurement** would achieve 663 takas of good. After considering this research, the panel gave this intervention the ranking 2.

The panel also considered research on [Union Digital Centers](#) by Rejaul Karim Bakshi, Associate Professor, Department Of Economics, Rajshahi University, and Tariqur Rahman, Freelance Researcher. The research suggested there would be high returns on this investment. This policy intervention proposed expanding UDC services to include receiving a citizenship certificate, applying for machine readable passports, conducting online banking, and paying utility bills online. This intervention **More services at Union Digital Centers** was given the ranking 14.

Research on [Expansion of Broadband](#) was written by M. Rokonzaman, Professor, Department Of Electrical And Computer Engineering, North South University.

The research suggested that broadband expansion is important, while costs to implementing a better system can be quite high. **Expand broadband** was given the ranking 36 by the Eminent Panel.

Food Security, Nutrition & Agriculture

Under this topic, five interventions were considered. These ideas were discussed in a [May 2015 Roundtable of sector experts](#), which included participation from Global SUN CSO Network, FAO, HKI, WFP, Health Nutrition and Population Program of BRAC, Micronutrient Initiative, Global Alliance for Improved Nutrition, USAID, Research and Evaluation Division of BRAC.

The Eminent Panel was presented with research on [Micronutrient Supplements](#) by Jonathan Rose, Consultant, South Asian Institute Of Advanced Legal And Human Rights Studies.

The research stated that early nutritional interventions are vitally important in determining long-term outcomes, and showed that nearly one-in-three children in Bangladesh under the age of 5 are considered “stunted.” Researchers indicated that benefits are 19 times higher than costs, which are low. **Nutrition & micronutrients, ½-5 year olds** was given the ranking of 3 by the Eminent Panel.

Jonathan Rose, with M. Enamul Hoque, University Of Queensland, Brisbane, additionally wrote research on [Nutrition Intervention during Pregnancy](#).

The intervention **Iron and folic acid in pregnancy** was ranked 7 by the Eminent Panel, while **Balanced energy in pregnancy** was given the ranking 21, and **Calcium in pregnancy** was ranked at 29.

The research panel also considered research by Uttam Deb, Principal Scientist (Economics), Icrisat, India on [Golden Rice R&D](#). The research showed that one in five children aged 6 months to 5 years is estimated to be vitamin A deficient, which is associated with negative health indicators. Furthermore, the research showed that rice accounts for 70% of daily calorie intake, and a strain has been suggested that could be metabolized into vitamin A. This intervention suggested increasing the investment in R&D for golden rice. Although there may be controversy about the real effects of the rice on Vitamin A deficiency, the intervention may have other positive effects such as increasing food security for the poor.

The Eminent Panel gave **Golden Rice R&D** the ranking of 19.

Land Administration

Under this topic, one intervention was considered. Land administration was discussed in a [June 2015 Roundtable of sector experts](#), which included participation from PRI, BIGD, RED, and Dhaka University.

The Eminent Panel considered research on [Land Administration](#) from Sultan Hafeez Rahman, executive director of the BRAC Institute of Governance and Development (BIGD), and research assistant Sumaiya Kabir Talukder.

The researchers found that three different ministries currently oversee the records system, working independently and with little coordination. They stated that the laborious and time-intensive records system is inefficient and costly.

The cost of digitization was estimated at Tk 2.8 billion (Tk 276 crore).

In addition to direct benefits, the largest benefit would come from increasing the security of property rights across the country. The researchers documented a link between more secure property rights and higher economic growth. Land digitization would likely bring benefits in terms of economic growth of more than Tk 160 billion (Tk 16,000 crore) over the next 15 years and possibly more than Tk 1.3 trillion (Tk 130,000 crore) by 2070. In total, the researchers found there would be Tk 619 in direct and indirect benefits result from each Taka spent to digitize land records.

On the basis of this research, the Eminent Panel ranked **Land Records Digitization** in 4th position.

Infrastructure (Transport)

Under this topic, five interventions were considered. These ideas were discussed in a [June 2015 Roundtable of sector experts](#), which included participation from World Bank, Rural Electrification Board of Bangladesh, UNPOS, Bangladesh Bridge Authority, Roads and Highways Department, Ministry of Roads, Transport and Bridges, Bangladesh Road and Transport Authority, BRTA Chatta Metro Circle-2.

One research paper on [Urban Transport](#) was written by transport planner Rob Gallagher, noting that Dhaka is one of the fastest-growing megacities in the world.

The Eminent Panel considered research stating that greater investment in bus systems and infrastructure would mitigate the need for private automobiles, motorcycles, auto-rickshaws and cycle-rickshaw, and save time and private investment in vehicles. The Eminent Panel gave a ranking of 5 to **Bus Priority for Dhaka**.

The panel was also presented with an infrastructure plan that sees continued high growth of autos and motor-cycles. The Eminent Panel ranked **Transport infrastructure for Dhaka** at 44.

The Eminent Panel also examined an intervention relating to the [Padma Bridge](#), in a paper by Ashikur Rahman, senior economist at the Policy Research Institute of Bangladesh, and Bazlul Khondker, economics professor at the University of Dhaka. This bridge would span the more than six kilometers of water between the Southwest region and the rest of Bangladesh. The research stated that the project is cost-beneficial. Although the project is a 'done deal', the Eminent Panel ranked **Padma Bridge** at 53.

The Eminent Panel also considered research on [Motor Vehicle Agreements](#) by Kazi Mahmudur Rahman, assistant professor of development studies at the University of Liberal Arts Bangladesh, and Md. Tariqur Rahman, an economic consultant. **Unrestricted Roads to North East India** was ranked at 66 and **Unrestricted Roads to Bhutan and Nepal** ranked at 68.

Gender Equality

Under this topic, five interventions were considered. These ideas were discussed in a [June 2015 Roundtable of sector experts](#), which included participation from [Bangladesh Nari Progati Sangha \(BNPS\)](#), USAID, UNICEF, GJD, BRAC, RED BRAC, UN Women, Australian High Commission, Department of Development Studies, DU, Poverty Reduction Centre, and UNDP.

Ahsan Zaman, assistant economics professor at North South University, presented evidence to the Eminent Panel on his research relating to [Reducing Child Malnutrition and Early Childbearing Through Girls' Education in Bangladesh](#). The author made the case that delivering more secondary education to girls would not only increase their education and hence later earning potential but also help them give their children better nutrition. The Eminent Panel ranked the intervention **Increase Secondary Education for Girls** at number 6.

Ahsanuzzaman, Assistant Professor Of Economics, North South University, Dhaka, wrote an additional research paper on [Sexual and Reproductive Health](#). The research argued that providing access to contraception that delays pregnancy costs just 655 takas and can add nearly half a year of extra schooling for one girl, boosting lifetime earnings by 13.2 percent. The Eminent Panel ranked **Access to Contraception** at number 17.

The Eminent Panel also considered research from Erica Field, Professor of Economics, Duke University; Rachel Glennerster, Executive Director, Abdul Latif Jameel Poverty Action Lab at MIT (J-PAL); Nina Buchmann, Duke University; and Kyle Murphy, J-PAL, on efforts to [Reduce Child Marriage](#). While important, the research suggests that interventions to date have made relatively little impact. **Empowering Adolescent Girls, Dowry and Child Marriage Laws**, and **Delay Child Marriage with Subsidies** were not ranked by the Eminent Panel.

Education

Under this topic, eight interventions were considered. These ideas were discussed in a [May 2015 Roundtable of sector experts](#), which included participation from Institute of Educational Research, University of Dhaka, DNet, Education Programme of BRAC,

European Union, USAID Bangladesh, ILO, Canadian International Development Agency (CIDA), Access to Information (a2i), Prime Minister's Office of Bangladesh, RED BRAC. Economist Atonu Rabbani of the University of Dhaka presented evidence on [Education interventions](#) to the Eminent Panel.

The research looked at a Jamaica study showing that psycho-social engagement could help stunted children make up the income gap with their non-stunted peers. The researcher estimated that in Bangladesh, the cost of setting up an early childhood education program would equal Tk 12,450 per child each year, while an estimated wage increase of nearly 20 percent would be worth more than Tk 1.5 million (Tk 15 lakh) for each child over his or her working career. The research concluded that each taka spent on psychosocial stimulation programs for early childhood development would achieve 18 takas of benefits. The Eminent Panel gave a ranking of 8 to **Psycho-social Stimulation for Stunting**.

A ranking of 39 was given to **Group and Teach According to Ability**, where students are streamed, and **On-the-Job Management Training** was ranked at 49 by the Eminent Panel.

The intervention **Improve teacher accountability** was ranked at 31, while **Improve School Management** was ranked at 55, and **Vocational Training** ranked at 63 and **Provide BAU Inputs like Textbooks** at 64. The Eminent Panel gave a ranking of 70 to **Computer Assisted Learning**.

Non-communicable Diseases

Under this topic, five interventions were considered. These ideas were discussed in a [May 2015 Roundtable of sector experts](#), which included participation from National Heart Foundation Hospital & Research Institute, NCD Cell, ICDDR, NIDCH, ICDDR, URB, RED, BRAC, and BSMMU.

The Eminent Panel was presented with research on [Non-communicable Diseases](#) from Tracey Koehlmoos, Division Director and Associate Professor, HAS, Uniformed Services University; Elizabeth Brouwer, Health Economics Analyst, Disease Control Priorities; Alejandro Cravioto, Senior Epidemiologist At Global Evaluative Sciences, Seattle; Rachel Nugent, Clinical Associate Professor In The Department Of Global Health, University Of Washington And Director Of The Disease Control Priorities Network.

The research suggested that the benefit-cost ratio of reaching 60% coverage for treatment of hypertension is 38:1. **Hypertension Medication** was ranked 10 by the Eminent Panel.

Research was presented by the same authors showing that increasing taxes on cigarettes is a proven technique for reducing smoking. Researchers propose levying a uniform, and increasing tax on all tobacco products that is adequately enforced. The intervention **Tobacco Tax** was ranked 26.

The same group of researchers found that one third of all cervical cancers are in South Asian nations and well developed strategies are needed for prevention, screening and treating the disease, as well as efforts to target high risk groups. **Treat and Immunize Cervical Cancer** was given the ranking of 58.

The Eminent Panel also considered evidence on [Addressing Diabetes and Tobacco Consumption](#) by Professor Rumana Huque of the Department of Economics, University of Dhaka.

The author proposed a screening and treatment program for diabetes that targets the population aged over 25. Huque proposes screening via community clinics over a period of 5 years at a cost of \$5 per person. **Diabetes Treatment** was ranked at 36 by the Eminent Panel.

The researcher noted that the prevalence of Smokeless Tobacco usage is 27.9% in Bangladesh. **Smokeless Tobacco Cessation** was ranked at 50.

Migration

Under this topic, three interventions were considered. These ideas were discussed in a [May 2015 Roundtable of sector experts](#), which included participation from UN Women, Dhaka Ahsania Mission, SHISUK (Shikha Shastha Unnayan Karzakram), BRAC Migration, BCWWF, Ovibashi Karmi Kallyan Foundation (OKKAF), Bureau of Manpower, Employment and Training, World Bank, International Organization for Migration, International Network of Alternative Financial Institutions, BASTOB, Sheikh Fazilatunnesa Mujib Mohila Technical Training Center, Access to Information (a2i).

Researchers Wasel Bin Shadat, lecturer of econometrics at the University of Manchester, and Kazi Mahmudur Rahman, assistant professor of development studies at the University of Liberal Arts Bangladesh, looked at [International Migration](#). Almost 5 percent of Bangladesh's total working age population is now migrant workers, and every year, roughly half a million more people leave the country to work overseas. The Eminent Panel considered evidence on ways to make migration cheaper and make migrants more productive.

The research suggested strong return on investment for formalizing migration. Formalizing migration through **Union Digital Center migration services** was ranked 11th by the panel. **Skills training for migrants** was given the ranking of 34.

Research was written by Mushfiq Mobarak, a Yale University economist, and Agha Ali Akram, a postdoctoral fellow with Evidence Action, on [Seasonal Migration](#). The evidence presented to the Eminent Panel suggests that helping people from rural areas migrate to work seasonally in urban centers can help families overcome the lean season. Spending on these programs can provide social benefits of four takas for each taka spent.

Seasonal migration stipends were given a ranking of 57 by the Eminent Panel.

Environment and Biodiversity

Under this topic heading, four interventions were considered.

These ideas were discussed in a [May 2015 Roundtable of sector experts](#), which included participation from BRAC DECC, Mesovision Consultancy Ltd., BRRI, VERC, BADC, BRAC RED, World Fish, BSMMU, BUFT/NSU, BRAC University, and BRAC. Two of the interventions related to [Outdoor Air Pollution](#), in research by economist Bjorn Larsen. He noted that during the dry season, Dhaka is one of the most polluted cities in the world. Air pollution levels during this period of the year reach 13-16 times higher than the international quality standard. His research shows that to decrease air pollution, kilns can either be replaced with entirely new ones that are cleaner and more efficient, or they can be retrofitted so that they burn cleaner and better.

The Eminent Panel gave ranking of 12 to the intervention, **Retrofit Kilns**, which the researcher stated has a benefit-cost ratio of 8. The research showed that adopting such an approach across Dhaka would cut air pollution from kilns by 40 per cent, saving more than 800 lives per year. Larsen found that another approach, new kilns, would require considerable investment, and the BCR is lower at 3. **New Hybrid Kilns** was given a ranking of 56.

The Panel also considered two approaches relating to [Indoor Air Pollution](#), in research by economist Bjorn Larsen. The research showed that over time, exposure to smoke from indoor cooking leads to deadly diseases such as lung cancer, stroke, and heart disease, making indoor air pollution the most deadly environmental problem globally. In Bangladesh, indoor air pollution is responsible for 10-15 percent of all deaths.

Gasifier Stoves was ranked by the Eminent Panel at 32; **Biomass cookstoves, indoor air pollution** was given a ranking of 41.

The Panel also considered two approaches relating to [Dhaka Livability](#) in research by associate professor of economics at the University of Southern Queensland, Khorshed Alam. Alam noted that roughly half of all solid waste in the city is dumped in roadsides, canals, or low-lying areas, creating environmental and health hazards. Investment in **Solid waste management in Dhaka** would have a return of investment of 6 takas. This was ranked 22 by the Eminent Panel.

The **Restoration of Buriganga river system**, which the researcher stated has become so polluted from household and industrial waste that its water harms humans and fish, was given a ranking of 44 by the Eminent Panel.

Water and Sanitation

Under this topic, four interventions were considered. These ideas were discussed in a [May 2015 Roundtable of sector experts](#), which included participation from VERC, ICCDRB, RED BRAC, UNICEF, WASH BRAC, Forum for Public Health, DORP, DAM, BRRI, HDRC.

The Eminent Panel was presented with research on [Water and Sanitation](#) by economist Bjorn Larsen.

A quarter of Bangladeshi households' water sources contain arsenic levels that exceed the World Health Organization guidelines. Larsen investigated two options.

Treat arsenic for 20% worst affected. Larsen found that focusing efforts on the 20 percent worst affected can result in up to 17 takas in benefits for each taka spent. This was given a ranking of 14 by the Eminent Panel.

Treat arsenic for all affected would have a lower BCR, according to Larsen. This was ranked at 45.

In addition, Larsen examined WASH programs, and their impact.

Sanitation was ranked 40, while **Hand-washing promotion** was given a ranking of 42.

Fiscal Management & Revenue Mobilization

Under this topic, one intervention was considered. Fiscal Management & Revenue Mobilization was discussed in a [July 2015 Roundtable of sector experts](#), which included participation from DU & ED, SANEM, World Bank, Centre for Policy Dialogue, Policy Research Institute, Economic Research Group, Economic Relations Division (ERD), Ministry of Finance, and Metropolitan Chamber of Commerce and Industry (MCCI).

The research on [Strengthening the Tax Base](#) was written by Biplob Kumar Nandi, Senior Lecturer, Department of Economics, East West University, and Bazlul Haque Khondker, Professor, Department Of Economics, University of Dhaka.

They made the case that sustained and improved domestic resource mobilization offers a cure to aid dependence in developing countries and creates more fiscal space for promoting growth. They argued that when it comes to strengthening the tax base, VAT is a crucial issue, because revenues collected from it and income tax combine to account for 70 per cent of all tax revenue. The researchers found that their two-part solution—abolishing the tariff-setting process and automating VAT collection—would raise the nation's tax-to-GDP ratio by nearly 1 percentage point, equivalent to Tk 100.4 billion of additional tax revenues per year. Every taka spent toward making the VAT system more efficient and effective in this way would do almost 6 takas of good, assuming the revenues are spent on infrastructure projects. The Eminent Panel ranked **Reform VAT and Automate Collection** 16th.

Governance & Institutions

Under this topic, one intervention was considered. Governance & Institutions were discussed in a [June 2015 Roundtable of sector experts](#), which included participation from PRI, RED, BRAC, BIU, UNDP, JICA and BIGD.

Md. Shanawez Hossain, Phd, Research Fellow, BRAC Institute Of Governance and Development, BRAC University, and Nabila Zaman, Research Associate, BRAC Institute of Governance And Development, BRAC University presented research on [Operationalizing Village Courts in Bangladesh](#).

They noted that Bangladesh has a backlog of around 2.7 million cases as of 2014, and rural areas may struggle to achieve justice for their most impoverished and least influential members. They propose increasing the power and number of local “village” courts, so those with little legal recourse would be better represented in the legal system. Furthermore, they suggest reserving a number of the seats for women. The researchers note studies found that these local courts substantially decreased the load on district level courts. They find the BCRs to be in the range of 15.78 to 18.06. **Expand village courts** was ranked by the Eminent Panel at 19.

Industrial Policy and Trade

Under this topic, four interventions were considered. These ideas were discussed in a [July 2015 Roundtable of sector experts](#), which included participation from Metropolitan Chamber of Commerce & Industry (MCCI), Mutual Trust Bank, Bangladesh Women’s Chamber of Commerce and Industry RED, BRAC, and UNDP.

The Eminent Panel considered research on [Readymade Garment](#) industrial policy written by Wasel Bin Shadat et al. The authors noted that the readymade garment industry is expected to reach more than \$50 billion USD in exports by 2021, and currently constitutes most of the manufacturing jobs in Bangladesh. Ensuring firms’ compliance with safety regulations is important to workers safety, as well as helping the ability to export to other countries. The intervention of **RMG Factory Compliance** includes increases in compliance monitoring and requirements, with a benefit-to-cost ratio of 14. This intervention was given a ranking of 20 by the Eminent Panel.

The authors also made the case for a **RMG Palli Special Zone**. This is an intervention to set up an area similar to an industrial park, with ample infrasture and easy compliance observation, for firms to produce RMGs. The researcher argued that there would be significant increases in economic activity from moving industrial production of a specific commodity to a centralized location. This was ranked at 30.

The Eminent Panel was additionally presented with research on [Trade Liberalization and Facilitation](#) by Selim Raihan, Professor of Economics, University Of Dhaka, and Farazi Binti Ferdous, Research Fellow at The South Asian Network on Economic Modelling.

The authors note that Bangladesh has undertaken substantial liberalization policies since the 1970s, and has seen large increases in exporting activity. Bangladesh has no quotas, seasonal tariffs or import levies, but maintains an import tariff of around 13 percent. **Trade liberalization** was given a ranking of 37 by the Eminent Panel.

Trade Facilitation involves decreasing the transaction costs involved in trade. The researchers note that this is a substantial cost for developing economies, as they may have inefficiencies at all levels of trade. This intervention is mainly aimed at decreasing borders in Southeast Asia, through increases in infrastructure and improvements in customs management. Compared to trade liberalization there are higher costs and smaller BCRs. The Eminent Panel ranked this at 54 on its list.

Infrastructure (Energy)

Under this topic, four interventions were considered. These ideas were discussed in a [June 2015 Roundtable of sector experts](#), which included participation from World Bank, Rural Electrification Board of Bangladesh, UNPOS, Bangladesh Bridge Authority, Roads and Highways Department, Ministry of Roads, Transport and Bridges, Bangladesh Road and Transport Authority, BRTA Chatta Metro Circle-2.

Dr A. K. Enamul Haque, Professor of Economics, East-West University, Dhaka, presented research on [distributed solar home systems](#). **Shared diesel to replace kerosene** was given a ranking of 27; **Household solar to replace kerosene** was ranked 38.

Herath Gunatilake, Director, South Asia Department, Asian Development Bank and David Roland-Holst, Professor, University Of California, Berkeley and economist Bjorn Larsen contributed to research on interventions relating to [Energy options](#). The research noted that Bangladesh historically has exported a great deal of natural gas as a source of income, and British Petroleum estimates that existing reserves will be exhausted in less than 20 years, requiring Bangladesh to seek alternate sources. He argues that importation of gas is likely to be cost-infeasible, and one alternative is coal.

Import coal for more power was given a ranking of 28 by the Eminent Panel. **Import and Domestic Coal for More Power** was ranked 69 by the Eminent Panel.

Poverty, Entrepreneurship and Growth

Under this topic, five interventions were considered. These ideas were discussed in a [May 2015 Roundtable of sector experts](#), which included participation from BRAC, University of Liberal Arts, and USAID.

Munshi Sulaiman, Research Director of BRAC International, presented research on two options.

BRAC's Ultra-Poor Graduation Model uses the transfer of assets as well as other interventions to help the poor "graduate" out of poverty. Research showed that targeted approaches like BRAC's have been shown to be effective. This comprehensive intervention is aimed at fully exhuming individuals from poverty, starting by providing initial consumption support, then building to provide the skills for persistent income. **Ultra-poor graduation programs** were given a ranking of 33 by the Eminent Panel.

Livelihood programs cover a diverse group of programs intended to improve training, adoption of technology, or improve access to other commodities. These programs were given a ranking of 60. **Unconditional Cash Transfers** were given a ranking by the Eminent Panel of 67.

Additional research was presented by Subir Bairagi, an economist at the Institute of Policy and Social Sciences (IPSS), and Wasel Bin Shadat, executive director of IPSS and lecturer of econometrics at the University of Manchester, on [Microfinance](#). The authors argued that incorporating flexible repayment models into microfinance can increase its benefits, particularly to borrowers. The panel gave a ranking of 61 to **Flexible Microfinance** and 62 to **Traditional Microfinance**.

Urbanization

Under this topic, one intervention was considered. Urbanization was discussed in a [June 2015 Roundtable of sector experts](#), which included participation from International Centre for Climate Change and Development, Centre for Equity and Health System, BRAC University, UNICEF, BRAC Urban Program, UNDP, BUDP, UN Women, and UNPOS.

Khorshed Alam, Associate Professor of Economics at the University of Southern Queensland, presented evidence on [Community-Managed Wetlands](#). The research stated that wetlands have been degraded by unauthorized use and blockage by roads or structures, which has caused flooding problems during the rainy season, as the

waterways cannot deal with the additional storm water. The proposed intervention involves increasing the number of pumping stations, re-excavating the drainage system, and making general improvements to the canal system, and has a BCR of around 2. **Stormwater drainage in Dhaka** was given a ranking of 43 by the Eminent Panel.

Climate Change

Under this topic, six interventions were considered. These ideas were discussed in a [May 2015 Roundtable of sector experts](#), which included participation from BRAC DECC, Mesovision Consultancy Ltd., BRRI, VERC, BUET, BRAC RED, University of Dhaka, ICCCAD, IUB, Islamic Relief, Drinkwell, and C3ER, BRAC University.

Research by economists Alexander Golub and Elena Strukova Golub examined several solutions that can help tackle [Climate Change](#) impacts over the short or long term.

The research presented two options that were designed to focus on making Bangladesh a wealthier country better able to handle climate shocks better. One option would see Bangladesh increasing productivity of labor employed in agriculture through investment in capital and training. The cost would be just over Tk 700,000 per worker over the next two decades and could increase agricultural productivity by 10 percent. In all, the research showed that each taka spent could provide a return of 3.7 takas over 20 years. The panel ranked **Boost agricultural productivity** at 46.

Resettlement to manufacturing cities would involve moving agricultural workers into more productive jobs by relocating them to second-tier manufacturing cities. This was ranked 51.

More specific climate investments were proposed by the authors, including protecting Mangroves serve as a natural buffer to cyclones and provide additional benefits.

Mangrove protection in Sundarbans was given a ranking of 59 by the Eminent Panel.

A proposal was considered relating to **Early warning systems and shelters** where people can take refuge when a cyclone strikes. This was ranked at 48.

The Eminent Panel also considered research on the creation of Polders - tracts of land surrounded by dikes that protect agriculture, housing, and infrastructure from flooding.

Polders, flood level less than 3m were given a ranking of 52 by the Eminent Panel;

Polders, flood level more than 3m were given a ranking of 72.

Capital and Financial Markets

Under this topic, one intervention was considered. Capital and financial markets was discussed in a [July 2015 Roundtable of sector experts](#), which included participation from MTB Capital Ltd, BRAC EPL Stock Brokerage, and RED BRAC.

The Eminent Panel was presented with research on [Establishing a Secondary Bond Market](#) by M G Mortaza, Economist, Asian Development Bank and Wasel Bin Shadat, Lecturer In Econometrics, University Of Manchester. This research proposed the creation of a **Bond market**. Based on the research, the Eminent Panel gave this a ranking of 71.