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**LOOKING TO THE
LONG ROAD AHEAD**

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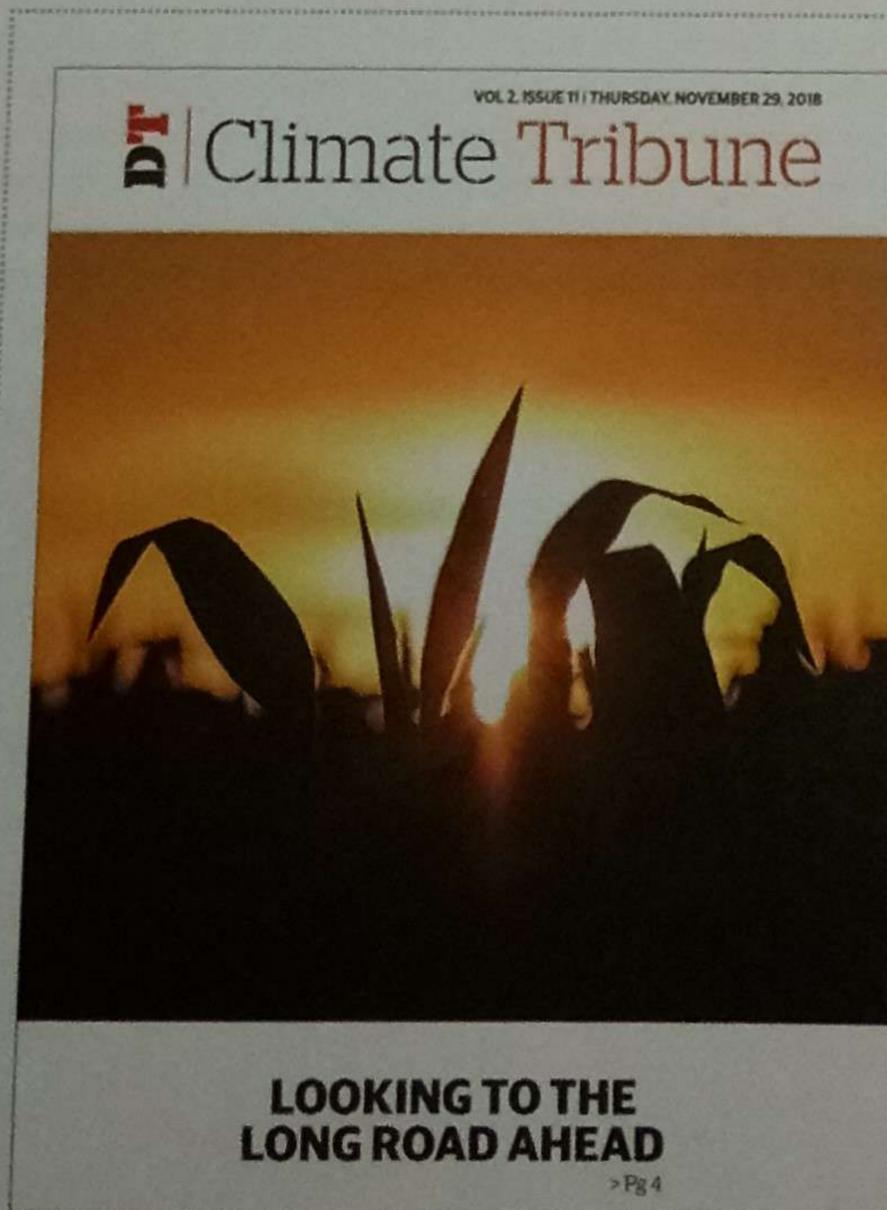
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COVER: THOMAS QUARITSCH

Editor's note

The focus of this Climate Tribune issue is on people we haven't met living in a world we haven't seen. Because the truth is, nobody knows what the future will hold -- whether in their own lives, their countries or even the world. Scenario building is just one tool to help us think about the future. It requires critically imagining different futures for Bangladesh, and evaluating the assumptions held within our current (assumed) trajectory.

The Zero Hunger, Zero Emissions project came together with the Environmental Change Institute at the University of Oxford, Oxfam Great Britain, Oxfam Bangladesh and ICCCAD to use scenario building to ask questions about the future of the country -- particularly in terms of climate change and food security. Throughout this issue, we will see the importance of scenario building, insights into the process, the scenarios that were developed by this project and how people reacted to them. ■

LOOKING TO THE LONG ROAD AHEAD

CREATING DEVELOPMENT PATHWAYS FOR ALTERNATIVE FUTURES

John Magrath and Meraz Mostafa

When Henry Kissinger infamously said in 1971 that Bangladesh would be a famine-prone "basket case," he could not have predicted that less than 50 years later the country would have moved from the brink of starvation to being well on the way to middle-income status, and become a shining star for development success in the process.

The country's GDP growth rate appears to be accelerating towards 8%. But more importantly, success has not just been measured in economic terms. Bangladesh was one of the few countries to meet most of the targets of the Millennium Development Goals; food insecurity -- in terms of access to calories at least -- is at an all-time low; and there are 23 million students in school and college, half of them girls. Development success has been people-centred and broad-based.

So, it would be nice to think the next few decades will mimic the last. But here is where it gets tricky. A constant temptation for planners and policymakers -- in fact, for us humans as a species -- is to assume the future will follow much the same trajectory as the past.

Trajectories are important; Bangladesh's development successes have been built upon the vision and steady determination of many in government and civil society. Without that drive, born out of the traumatic events of the nation's birth, the country's trajectory might indeed have been towards becoming a "basket case."

Yet, it is also risky to assume that things will just go on in the same way. As the government plans its 2041 Vision, it is worthwhile to think back, say, barely a quarter of a century to contemplate how quickly and radically things can change. Could anyone have imagined smartphones in 1985? Or Facebook's role in communications? Now societies are seriously contemplating the challenges raised by self-driving cars or robots replacing workers.

It seems strange too that if people thought about climate change back in 1995, they tended to think that it was something that threatened polar bears, not people. Now we wonder what happens if climate change suddenly accelerates. What if sea levels rise unexpectedly because of ice melting in far-away Greenland or Antarctica? And who could have predicted the scramble out of coal mining, partly because of



Despite reaching some significant MDGs, bangladeshi girls remain a vulnerable group

MEHEDI HASAN

climate change concerns, and the extraordinary rise of solar energy? Who can say just how far and how fast such trends will go in just the next decade?

We know that, inevitably, technological, environmental, and economic convulsions will happen. We just do not know what or when. But we live in uncertain times, and it is best we be prepared.

We also know that despite its development success so far, Bangladesh has a long way to go, and progress cannot be assumed. It is troubling, for example, to reflect on the persistence of stunting and malnutrition despite food security (by some definitions) being achieved; and more troubling that it is women and girls who are still particularly afflicted.

Scenario planning

To help understand how to usefully think about the future to inform decision making today, an initiative mounted this year helped people create and discuss scenarios -- which are "plausible descriptions of how the future may develop, based on coherent and internally consistent set of assumptions about key relationships and driving forces."

It was run by the Environmental Change Institute at Oxford University, Oxfam GB, Oxfam Bangladesh, and the International Centre for Climate Change and Development (ICCCAD). This edition of the Climate Tribune is devoted to the initiative and explains what was done and how.

Participative scenario planning involves imagining a range of different development trajectories. Widely used in business, industry and the environmental community, scenario-planning helps governments, development agencies, and business create plans that are resilient under different potential future social, economic, cultural, political, environmental, and technological conditions.

The challenge

The "zero-zero" initiative (zero hunger-zero emissions) starts from the core challenge arising from two imperatives. One is the Paris Agreement to halt runaway climate change, which says that in order to limit global temperature rise to 1.5 degrees Centigrade, the world must rapidly move to net zero greenhouse gas emissions. The other is the need for sustainable human development enshrined in the Sustainable Development Goals, particularly the goal to eliminate the scourge of hunger -- zero hunger. All nations will have to totally transform their economies to meet climate change, and environmental and economic challenges involved. In Bangladesh greenhouse gas emissions are still mostly from the agricultural sector, and energy use is rising. Can both goals be achieved, or neither, or one at the expense of the other?

The initiative did not seek to provide answers to these complex questions, but to find helpful ways for people to think about and discuss them by exploring different pathways into the future and their implications for decisions tak-



PIXABAY

en today. Because these issues are new, big and strange, they are difficult to discuss. The temptation is to leave them to a small group of specialists and even then, they may disagree depending on their expertise and priorities, whether that be food or energy or climate policy. So how can these issues be debated and by whom?

The process

Staff from Oxfam Bangladesh first went to interview young people in rural areas in Barisal and Rajshahi, because it is young people who will inherit the future that is being built now. They were asked about their lives, the challenges they faced, their views on climate change, how they saw the future of their country and their own futures. Some of what they said is reflected in an article elsewhere in this paper.

Then in April, some 30 experts from the food and climate change and energy communities came together for two days of discussions in Dhaka. After much deliberation, they concluded that the crucial components that underpin or undermine progress on development -- especially food security -- are two-fold: The status of governance, and the status of the environment. They began to sketch out four potential scenarios that might describe Bangladesh in 2041. These scenarios were developed further over the following months and then shared with rural people and with students for their reactions. Then in September, a further meeting in Dhaka brought together some of the original participants and others to finalise the scenarios. The next day the scenarios were presented to the Planning Commission.

PROJECTIONS

The final scenarios:

The Green Road: Bangladesh uses the SDGs to guide it. Its motto is 'leave no-one behind.' It places high priority on good governance, a more inclusive society, and a healthy environment, with active environmental management. There is a push to agro-ecology and use of digital technology for citizen empowerment. But the backlog of environmental degradation is hard to reverse, inclusive decision making needs time and deliberation, and shifts towards agro-ecology and land reform involve trade-offs with food production and profit targets.

The Middle Road: In this scenario, society muddles along in that historical trends continue; there are few radical departures from current policies and practices; governance, inclusivity, and environmental focus and management are patchy and despite good policies on paper, practice and implementation are often poor. Climate change impacts and environmental degradation increase. The capacity of governance systems to do much more than simply react to reduce the human impacts is severely challenged.

The Divided Road: In this scenario, Bangladesh takes a road which is much more divisive and divided. The government's motto is "a clean society," especially to clean up crime and corruption. It moves towards being a digitally controlled, more authoritarian state on the lines of some South-East Asian countries. Governance is more top-down, more directive and more effective in some ways and for some supporters -- but greater inequality is accepted and people are "in" or "out." Agri-businesses run agriculture. How people experience the state of the environment depends on where they sit in society.

The Rocky Road: It turns out Kissinger was ultimately right! Various political, economic, and environmental shocks, ex-

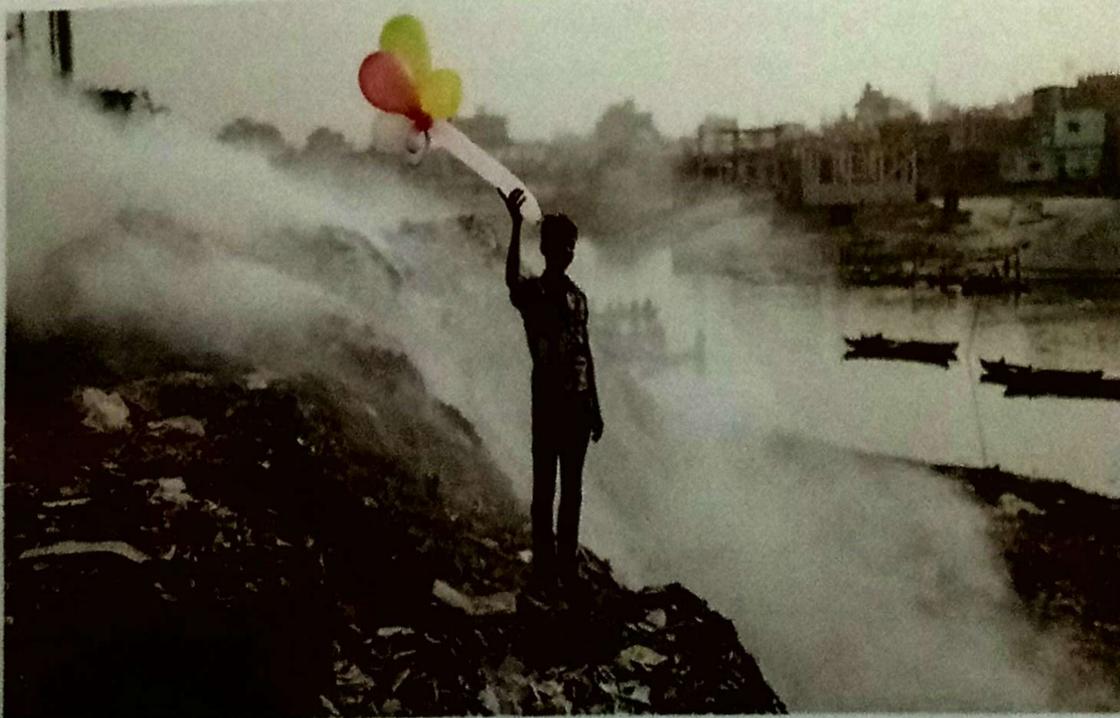
ternal and internal, see Bangladesh's development trajectory take a sharp downward pitch. Climate breakdown puts the political system under immense strain. Parts of the country effectively govern themselves or become battlegrounds for rival Yaba barons. The threat of famine re-emerges. Governance is weak and erratic. Environmental management -- and food security -- are largely off the agenda and this is a particularly harsh and unpleasant scenario for women and girls.

These scenarios are not meant to be probable; but everyone involved in the process agreed they are plausible, and this helped stimulate thinking about their implications for trends set in motion today. Discussions were wide-ranging, as this supplement describes, and broadened to discuss what sort of development path the country might take.

In a meeting with the Planning Commission, planners were asked to imagine themselves in the year 2041, living in a particular scenario and having to answer questions from their children or grandchildren: "Mummy/Daddy, what did you do back in 2018 that made the country like it is today, what decisions did you make then?" This brought the issue home that the consequences of decisions taken today will shape the long-term future, and that decisions taken in any one sector -- agriculture, food, energy, gender, social policy -- must not be considered in isolation because they have knock-on effects elsewhere.

A version of this article was originally published in the May edition of the Climate Tribune. It has been updated to reflect further developments. ■

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The middle road is not the ideal one

MAHMUD HOSSAIN OPU

Listening to Rural Youth

John Magrath



Photo: Pexels

What do young people from the countryside think about the past and present?

In March, Oxfam Bangladesh organized focus group discussions with 46 rural young people in Bakerganj, Barisal, and Puthiya, Rajshahi, asking them about their lives and their futures.

Almost all of them wanted to leave agriculture and the rural areas. One major reason cited was the stigma they felt is attached to farming, and how farming is not a respected occupation. They also spoke at length about the climatic changes they have observed including very hot and humid days, more rain, storms and lightning (responsible for several deaths). They were aware of the causes of climate change, noting especially about carbon emissions from brick kilns. But they also felt that climate change was

bound up with wider environmental and social problems that needed tackling all together. Human-induced water-logging, for example, was blighting crops in Rajshahi and in both places depletion of groundwater was a hazard to both agriculture and human health.

To reverse trends and restore respect for farmers they said the government should:

- Recognise the contribution of farmers
- Ensure proper land distribution, agricultural subsidies, interest-free or low-interest loans, and fair prices
- Take strong steps against corruption, including against diversion of funds for agricultural training and neutralise syndicates which dominate business
- Reduce the use of chemicals in the fields which were polluting soils and water courses and provide training on organic methods

Everyone believed in better care of the environment, generally to stop pollution, increase prosperity and resilience and reduce emissions, through measures including planting trees, stopping unwanted landfill, improving drainage, using improved cooking stoves, organic fertilisers, and pesticides, and more solar energy.

Youth in Rajshahi: “We want a green and healthy environment in 100 years and we aspire for a society where gender equality and enabling the environment for women will be ensured and there will be no early marriage. We dream about a country with zero poverty, equality, well-educated citizens, where there will be no corruption, drug addiction, violation of human rights, and where everyone will get an equal and fair price”

Youth in Barisal: “We envision a Bangladesh which will be independent in food production, all people will be employed, all women will be protected from any sorts of violence or discrimination, an equitable and just country will become an exemplar for other countries, the country will be corruption-free, there will be no violent extremism and above all Bangladesh will become a country which will help other countries to become developed rather than depending on others for aid”.

John Magrath is a writer who has worked for Oxfam GB for over 30 years in a variety of roles. He specializes in climate change issues.



The road ahead is paved with challenges



SYED ZAKIR HOSSAIN

1 The Paris Agreement on climate change says we need 'net zero' greenhouse gas emissions. The Sustainable Development Goals include 'zero hunger'.

A conference at Oxford University, September 2016, discusses whether a country like Bangladesh can prosper and feed everyone properly while cutting greenhouse gases, especially from food systems? How can people find ways to have such difficult discussions? Could scenarios help – i.e. creating plausible descriptions of the different ways the future may develop?

December 2015

2 Oxford University Environmental Change Institute, Oxfam GB and Bangladesh, and the International Centre for Climate Change and Development (ICCCAD) put a proposal together and get funding from the UK's Economic and Social Research Council and Department for International Development.

3 Consultations held in Bangladesh with people at the cutting edge of climate change impacts – rural youths, brick kiln owners trying to switch to non-fired bricks and with experts on agriculture and energy.

November 2017

4 First stakeholder workshop in Dhaka, April 2018, attended by 40 people from government, civil society, business and academia. They begin to imagine what alternative futures might look like. Four scenarios take shape.

April 2018

5 Consultations held with University students and people in rural communities. The scenarios are refined into four "roads".

6 A second stakeholder workshop is held in September 2018, then the scenarios are shared with the Planning Commission. A final workshop in Oxford in November finalises analysis.

September 2018

7 In 2019 Oxfam will use the scenarios to find out what sort of skills young people imagine they will need for the future. ICCCAD will work with the Planning Commission to share thinking on development matters, and will use scenarios to enrich the discussions.

2019



Dr. Monika Zurek of Oxford University:
 "Let's invite people to create scenarios – that is, draw up plausible descriptions of the different ways the future may develop".

"Women and men face different issues!"

"What do we want from an ideal food system? Calories or nutrition? Self-sufficiency or exports?"



Mamwara Begum displays a painting of her locale by her son Munwar in South Khoribari village, Dimia.

JOHN MAGRATH

VOICES FROM THE COUNTRYSIDE

REFLECTIONS ON THE SCENARIOS FROM RURAL BANGLADESH

John Magrath

In August, ICCCAD organized community consultations to discuss the four “roads” scenarios. The consultations were led by consultant Sanjib Saha and took place in Kawnia, Rangpur and Shyamnagar, Satkhira. A broad cross-section of the community took part – farmers and fishers, labourers, rickshaw pullers, carpenters, blacksmiths, cobblers, businessmen, unemployed youths, teachers, students, and others.

They began by listing the key challenges in their communities, which included decreasing income opportunities, river erosion and displacement, the credit and debt trap, lower wages for women doing the same jobs as men, price hikes and scarcity of drinking water. But, they noted significant trends that are resulting in big changes, particularly changes in the position of women via increased education opportunities for girls and more participation by “empowered and vocal” women in local government. These changes will continue, they felt, though less in the Rocky Road scenario.

They then discussed the credibility of each scenario and what would life be like if the country took that road? The conversations were wide-ranging and often overlapping, not sticking to the roads but taking them as starting points and going off them to discuss many issues. This may indicate the value of scenarios in opening up thinking and discussion.

People felt the Green Road offered most promise for farmers to get training and support, including by internet connectivity. But they were sceptical it would be possible to reduce inputs of chemical fertiliser and pesticides, given the drive to “produce more crop” or produce more shrimps. Agro-ecolo-

gy also requires land for experiment, and farmers often lack access to productive land.

They felt the Middle Road – the closest to current development pathways – would see more inequality, with the rich becoming richer and the poor poorer, and middle sectors of the rural population squeezed. Outmigration would continue and government efforts to retain people in villages were only “political jargon.” In the south however, shrimp farms are providing work and reducing migration, but salinity is a big problem for farmers. Some of the biggest changes in rural livelihoods, especially the expansion of shrimp and crab farming, had come about because of the effects of super cyclone Aila in 2009 which increased coastal saline intrusion.

Given the trends that people identified above, and others, they felt it hard to distinguish between the divided road and the Rocky Road scenarios. Both were plausible, and they didn’t feel that life might be worse for poor people than now, in either future. But they felt there was great promise if digital technology and a national ID system came into operation and enabled them to obtain social security and agricultural advice and inputs in a rapid and fair way. People greatly appreciated the social safety net program but, complained that they sometimes had to bribe officials to obtain support at the moment. They also felt the Divided Road offered opportunities for renewable energy, both biogas and solar. But they anticipated even more migration to the cities if rich business people took over farming and brought in more mechanisation. ■

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WRESTLING WITH WEIGHTY MATTERS

LET'S NOT PLAY BLAME GAMES

John Magrath

Around 36 participants from government, academia, business, and civil society met in Dhaka in September for the second workshop on future scenarios for Bangladesh. They included several people who had been at the first workshop in April.

They discussed the implications of each scenario for:

- Food security and the Bangladeshi food system (SDG2)
- Low carbon development and energy for Bangladesh (SDG13)
- Trade-offs between food security and low carbon development
- Inequality and gender justice

Then looking across the scenarios:

- Implications for strategies for food and agriculture
- Implications for strategies for low carbon development and climate action

Then finally implications of the scenarios for different stakeholders:

- National and local government
- Civil society organizations
- The private sector
- Youth

The discussants pinpointed and wrestled with several weighty issues in food systems, including:

- How to change behaviour, habits, and attitudes when it

comes to food and how far people are willing -- or able -- to diversify eating habits from rice to healthier diets, and also away from highly sweetened foods;

- How it might be possible -- or not -- to come off "the vicious circle" of chemical inputs into agriculture;
- How to reduce greenhouse gas emissions from the expanding beef, and dairy sectors and use emissions usefully, notably by producing biogas from dung and waste.

In energy discussions adopting new technology is key but that happens if people begin to think differently and mindsets change, so that fossil-fuel based polluting energy models are not default options. And budgets follow mindsets!

Young people especially pressed for open discussion of ideas, wider engagement and constructive questioning, and urged stakeholders not to play blame games or delegate (dodge) responsibilities.

Participants reflected that changing patterns in farming such as male migration and the feminization of the rural workforce represented challenges but also opportunities for positive changes and "doing farming differently" and better via support for small-scale, often women, farmers with advice and credit, appropriate technologies, community enterprises and co-operatives. Proper land-use planning and management are crucial too. ■

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WHICH ROAD WILL BANGLADESH TAKE?

THE MIDDLE ROAD



Middle Road
SHABABA HAQUE

In taking a Middle Road, historical trends continue. There are few radical departures from current policies and practices. Governance, inclusivity and environmental focus and management are patchy; despite good policies on paper, the practice and implementation leave a lot to be desired. In theory the Sustainable Development Goals unify policy, but in practice conventional economic growth takes priority. Despite a big expansion in solar power, the country is locked into coal; coal power generation in the Sundarbans is a big factor explaining the collapse of the ecosystem there. The Government strives to mitigate the impacts of disasters but accelerating climate change is eroding Government capacity to get ahead of the problems. Young people continue to drift to the cities and farming becomes increasingly feminized.

The Divided Road
SHABABA HAQUE



Run by a strong man, it establishes a digitally-controlled authoritarian system. Investment flows in from China as part of the Belt and Road initiative. Greater inequality is accepted. In some ways the Government is more effective; it creates a better economy and environment for some, but life is worse for many. The 'some' are the digitally-savvy middle class, many of whom live in the hi-tech new capital of Mymensingh. The many are people deemed to be "anti-social" or "bad citizens". The Government encourages agri-business and hi-tech farming, which saves water and chemical inputs, but needs little labour. Much food is grown for export to China. The environment is healthier for the better-off and there is a big boost in renewable energy, but the promise to 'clean up' environment and social problems is more a policy to 'clean away' poor neighbourhoods so they are no longer so visible.

THE DIVIDED ROAD

Bangladesh takes a Divided Road. A new Government comes to power which promises to 'clean up' society and the

WHICH ROAD WILL BANGLADESH TAKE?



Bangladesh Map
WIKIPEDIA COMMONS (HTTPS://COMMONS.WIKIMEDIA.ORG/WIKI/FILE:FLAG-MAP_OF_BANGLADESH.SVG)

THE GREEN ROAD

Bangladesh treads a Green Road. Despite their quarrels, all political parties agree to have the Sustainable Development

Goals as their guiding vision. Good governance, a more inclusive society and a healthy environment are all high priority. The Government motto is "leave no-one behind". 'Digital Bangladesh' is a great enabler of good and effective governance. There are great efforts to boost agro-ecology and green energy, and implement land reform and labour rights, to boost health, education and nutrition. As a climate leader, Bangladesh is a major recipient of money from the Green Climate Fund. However, there are still many problems. There is heavy pressure to continue to use artificial fertilisers and pesticides; agroecology runs up against land shortages; creating more inclusive government is slow, difficult and meets resistance. The legacy of environmental degradation proves hard to reverse in the short-term.



Green Road
SHABABA HAQUE

ment is weak and erratic; much of the economy is criminalised by being inflated by Yaba money. Parts of the country pretty much run themselves - some better than others. Whether a citizen lives well or badly depends on where they live, their connections with the powerful and how rich they are, as they can then buy services and security. Agricultural production falters and industry is unable to modernise; air and water pollution get worse; inequality increases and severe hunger returns. As even more men migrate to survive, women are left behind to face the dual burdens of care and work; farming is

THE ROCKY ROAD



The Rocky Road
SHABABA HAQUE

Climate breakdown, environmental decay and political in-fighting set Bangladesh down a Rocky Road. Govern-

FOOD FOR THOUGHT



Discussing the future

TASFIQ MAHMOOD

PLANNING FOR THE FUTURE

WHAT WILL YOU TELL YOUR CHILDREN?

John Magrath

The Zero-Zero project team presented the four “road” scenarios to senior government planners in a meeting at the Planning Commission in Dhaka in September. There was a lively discussion where participants were invited to imagine themselves in the year 2041 and answering a question from their children: “Mummy/Daddy, what did you do back in 2018 that made the country like it is today, what decisions did you make then?”

The planners felt that many of the characteristics of the Middle Road had already been achieved, and the country was, in some important ways, progressing on the Green Road. The promise of “Digital Bangladesh” is already happening and technology will improve further. Women in the country feel more secure and feminization of agriculture is happening - with pros and cons. However, as characterized in the Middle Road, the power sector is expanding to provide the country with sufficient electricity, but is not doing this in a low carbon manner. Other speakers pinpointed that moving to zero emissions, from energy and agriculture, is an enormous challenge and very expensive; the country needs adequate technology and international financing to achieve this.

Worries were expressed about the emphasis on digital technology in the Divided Road. Could hackers access national security systems? Participants were also worried about an emphasis in this scenario about intensive agriculture; food may be unhygienic or contaminated by synthetic chemicals.

The Rocky Road scenario excited considerable discussion. It was felt that it was still possible for the country to go down

this path if politicians lost sight of the Sustainable Development Goals, climate change accelerated, disasters increased, there was poor governance, wrong decisions were taken, and economic problems mounted. For example, remittances from Bangladeshis working abroad was slashed, while the national unemployment rate increased and there were fewer jobs for young people. They also worried if no initiatives were taken for family planning, and if drug addiction spreads. But generally, they felt that with foreknowledge and understanding of the possible consequences, the country can avoid or overcome such problems and move towards the Green Road.

Dr Saleemul Huq of ICCCAD pointed out how scenarios can help planners think about the whole picture -- holistically and not in isolation, and so understanding how solutions in one sector can be a problem in another. Md Syeedul Haque, chief, Programming Division, Planning Commission, had earlier emphasised the need for good policies for the country to succeed in achieving the goals it had set for itself, and he concluded by saying he had been very impressed with the approach taken in the meeting and it would help build the capacity of policy-makers. The Planning Commission and ICCCAD have signed a Memorandum of Understanding together to share learning on climate change and development issues. ■

John Magrath is a writer who has worked for Oxfam GB for over 30 years in a variety of roles. He specializes in climate change issues.



MAHMUD HOSSAIN OPU

THE TECH FIX THAT WON'T SECURE FOOD SUPPLIES

Anita Makri

Eight years ago, some 2,000 farming households in the Philippines signed up to a project designed to help them better manage how they grow rice and boost their incomes. The idea was to build a stronger system of irrigation, with a mix of other offerings such as marketing support and field schools for farmers.

After a five-year run, the UN agency behind the project - the International Fund for Agricultural Development (IFAD) - did an impact evaluation that brought some good news. The project had worked. It led to higher rice yields, better market access, and a higher income for rice farmers in two of the three areas it had targeted.

However, things hadn't gone according to plan in the third area - a part of the country that had been hit by Typhoon Hai-

yan in 2013.

"We hadn't factored in this kind of high-risk event," says Paul Winters, IFAD's associate vice-president of the Strategy and Knowledge Department. "It wasn't that the tsunami destroyed the irrigation system, but it destroyed the collective management of it." People simply had to deal with other, more pressing demands on their lives after the typhoon.

Winters believes the case shows why it's not enough to think just in terms of introducing technology - that this type of risk needs to be factored into projects from the start.

He says that, because climate change means conditions will keep changing, food security becomes a moving target. And this means tested methods of managing resources in the face of climate change now have a short shelf-life. "It's hard to know for sure whether the actions we're taking will be appropriate for a new context. We need to keep experimenting."



GABRIEL JIMINEZ

Set up to succeed

Programmes that introduce technology should find fertile ground for this - the drive to experiment is often part of life in agriculture. "As a farmer I know that we are constantly looking for ways to improve our lot," says Onyaole Patience Koku, an entrepreneur and farm manager in Nigeria. "If [a new] technology is available and accessible, most farmers will use it."

Climate change now adds urgency to the need for farmers to constantly adapt. Journalist Lisa Palmer, part of the Bellagio Science for Development residency taking place throughout November, witnessed this in 2016 while visiting the state of Punjab in northern India. She says a farmer eager to showcase his rice field explained how a process he had used for the first time meant his plants stayed healthy after a difficult season.

The problem was unpredictable rainfall: three months' worth of rain had fallen in the course of three days. Normally that would leave soils waterlogged and plants unable to grow. But after taking advice from the Borlaug Institute for

“ Because climate change means conditions will keep changing, food security becomes a moving target ”

South Asia (BISA), he held off from tilling or burning residue from the previous season's wheat harvest, retaining stems and roots in his fields. When the torrential rains came, this allowed water to drain through. "For him, that method was a form of risk reduction with the changing climate," says Palmer.

Countless initiatives have put forward methods to boost farmers' productivity and income - there's no shortage of proposed solutions. Over the past few decades, scientific and technological advances from crop breeding to fertilizers to a range of irrigation techniques have powered agricultural production in a bid to keep up with the food demands of a rising population.

But for some years now, that growth has faced natural resource limits: land and water scarcity, soil degradation, pollution from synthetic pesticides and fertilizers, and monocultures that deplete soils and crop diversity.

In the Punjab, for example, Palmer says that heavy subsidies for fertilizer and energy to power irrigation systems have led to over-fertilization and groundwater withdrawal, leaving the area with polluted and dwindling water supplies.

Immediate risk

These count as serious risks. But so does the prospect of having a poor harvest. And minimizing that immediate risk is part of technology's appeal: season after season, farmers need to make sure their crops will grow, and governments are eager to have a steady supply of food.

The problem is that technologies which promise greater efficiency and boost production trade off short-term, 'band-aid' solutions against resilience over the longer-term, says Gyorgy Scrinis, a senior lecturer at the University of Melbourne and academic writing resident at Bellagio. But there are alternatives, such as agro-ecology, that do offer that resilience. "Technologies are never neutral - they really tend to support particular types of agricultural and technological systems," he says.



DHAKA TRIBUNE



DHAKA TRIBUNE

Another trade-off, according to Scrinis, is that technologies often come with strings attached. Farmers can get “locked in” to obligations and contracts, which mean losing control over how they work their land. This can happen with reliance on a narrow range of seeds, for example, or on methods such as precision farming where seeds, water, fertilizers and pesticides are all managed through computerized systems - giving farmers precise control over their farm, but surrendering control and data to companies that provide these systems.

“Typically, farmers become indebted to agribusinesses when they take inputs on credit but their harvest gets wiped out by disease, climate shocks and other insecurities,” explains Anastasia Mbatia, Agriculture Technical Manager at the NGO Farm Africa.

Scrinis says there is some change in the food system, but it’s slow. “We’re heading in both directions - still going down that one path of producing big mega crops, but also diversification is happening on the farm.”

Zulfiqar Bhutta, a paediatrician based in Canada and Pakistan, sees similar signs of a gradual move towards so-called ‘nutrition-sensitive agriculture’ that aims to better align agricultural production with people’s nutritional needs.

Staying resilient

How can farmers keep experimenting to deal with the uncertainty of climate change, without resorting to technology that undermines autonomy?

There’s no easy answer. And farm size matters - a smallholder growing quinoa in Bolivia is very different from one growing the crop for export. But Scrinis believes that, over time, small - holders will play an important role in creating more resilient farming systems. “[They] still produce by some estimates over half of the food and the nutrition that we actually consume.”

Agricultural systems that integrate livestock and multi-crop farming can help build resilience, according to Rikin Gandhi, executive director of Digital Green. Diversity is important - even among farms of a certain size, environmental

“The problem is that technologies which promise greater efficiency and boost production trade off short-term, ‘band-aid’ solutions against resilience over the longer-term”

conditions and agricultural practices will vary. “No institution is going to be able to figure out the perfect ‘package of practices’ for an individual farmer,” he said during a SciDev. Net debate on food security earlier this week.

Gandhi believes that to counter the potential downsides of new tech, development organizations need to “really start with the farmers themselves, to empower them with the know-how and data to make their own informed choices,” so that technology is an enabler, not something that locks them in.

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A SMARTER SCENARIO

USING SCENARIO BUILDING TO ADDRESS THE SDGS WORLDWIDE

The Club of Rome Press Release

Only a profound economic transformation in the next decades driven by “non-conventional policies” is likely to deliver prosperous societies within planetary boundaries, according to a new scientific report.

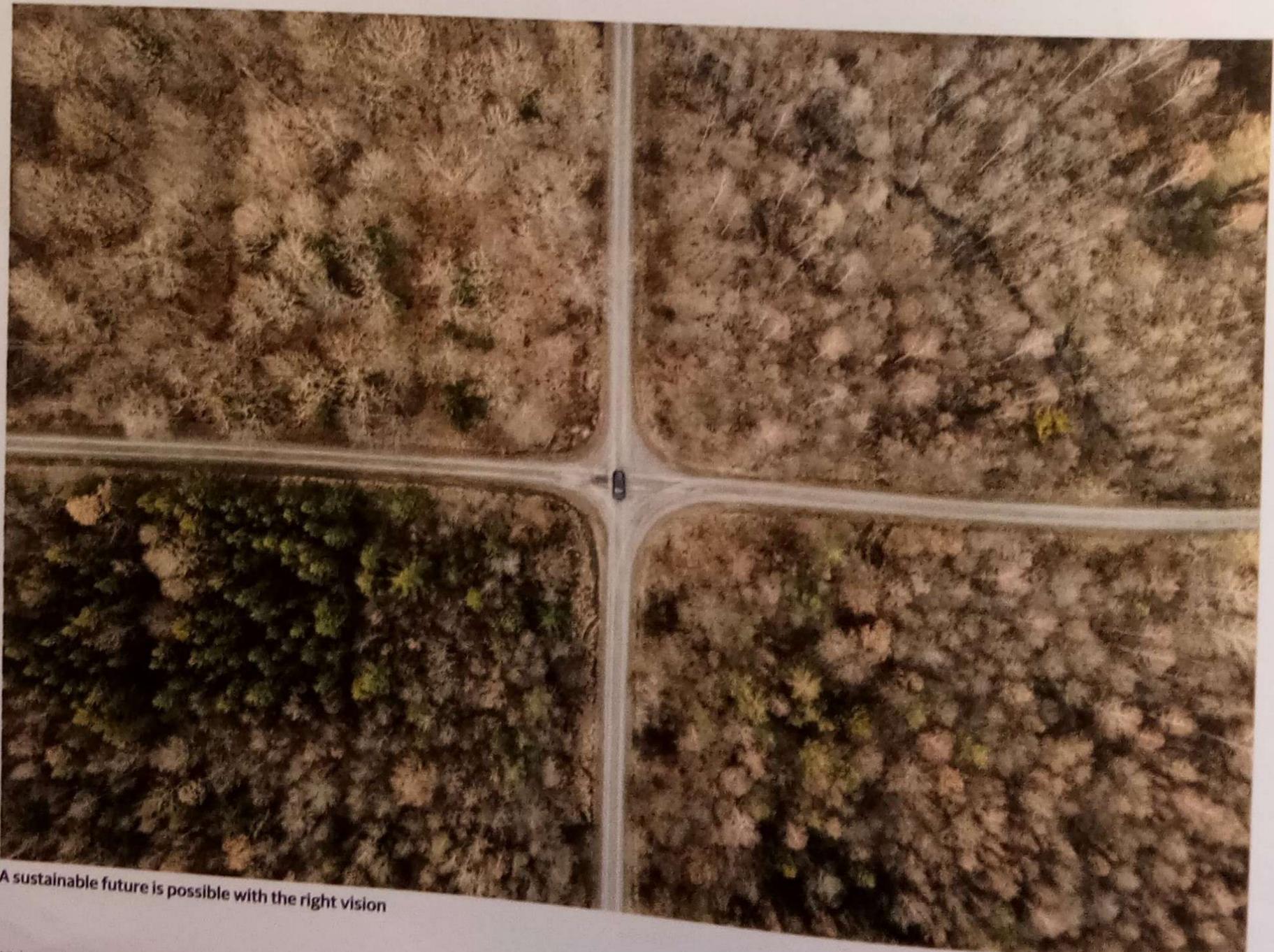
The report, commissioned by the Club of Rome for its 50th Anniversary, updates the think tank’s legendary first report, *Limits to Growth*, published in 1972, which predicted severe economic turbulence in the 21st century without action to constrain environmental resource use.

“Most of the *Limits to Growth*’s original conclusions still hold true. While this is scientifically satisfactory, for societies it’s not,” says centre researcher Johan Rockström, an author of the report and Director Designate of the Potsdam Institute for Climate Impact Research.

Four future scenarios

At the base of the report are the UN’s Sustainable Development Goals. The authors explored four future scenarios to examine how the world can successfully meet the 17 goals relating to poverty, health, energy and the environment by 2030. The key twist is how to meet these goals while also remaining within planetary boundaries - beyond which Earth’s vital systems could become unstable.

The scenarios the team explored ranged from sticking with existing economic policies that deliver relatively slow growth rates but have successfully reduced poverty, to introducing policies for economies to grow faster, or a third scenario of introducing stronger policies to meet individual objectives relating to poverty, education, health or energy. But only the fourth and final scenario explored by the team brings long-term success.



A sustainable future is possible with the right vision



MARKUS SPISKE

“ Most of the Limits to Growth's original conclusions still hold true. While this is scientifically satisfactory, for societies it's not ”

“We found one scenario that can deliver both for humanity's goals and for the planet. The solution rests in a shift to non-conventional policies and measures. The world needs transformational change,” said Per Espen Stoknes, the Norwegian Business School in Oslo, co-author of the report.

The fourth scenario, dubbed “the Smarter Scenario”, included five policies that, if implemented can meet the goals. They are:

1. Exponential renewable energy growth. The world needs to halve emissions from fossil fuels every decade from 2020. This is entirely feasible and economically attractive and aligns with the latest UN climate report.
2. Accelerated sustainable food production. Feeding 10 billion people by 2050 will require an overhaul of existing food

systems - improving sustainable agriculture intensification by an extra 1% per year.

3. New development models for growth in poorer countries that adopt elements of economic models from, for example, South Korea, Ethiopia or Costa Rica.

4. Active inequality reduction through fair tax systems in all countries - ensuring that the richest 10% take no more than 40% of income.

5. Huge investment in education for all, gender equality, health, and family planning to stabilize the world's population.

Feasible transformation

“We believe this transformational scenario is feasible. Market forces are showing signs that they can drive a new energy revolution through the global economy. Technologies also exist for sustainable agriculture. But inequality will be the hardest nut to crack, politically,” explained David Collste a researcher at Stockholm Resilience Centre.

The analysis is based on a new computer simulation, Earth3, that uses economic and social data from the last four decades to explore what is in store in the coming decades. The conclusions will be presented on 17 October at the Club of Rome's 50th anniversary summit in the Italian capital.

The report has been produced by the Stockholm Resilience Centre and Norwegian Business School in Oslo. It was funded by the Global Challenges Foundation. This press release was originally published:

<https://www.stockholmresilience.org/research/research-news/2018-10-17-a-smarter-scenario.html> ■

OPINION

HOW LONG-TERM PLANNING CAN WORK

SCENARIO BUILDING AND THE SDGS



Keep it clean

RAWPIXEL

Saleemul Huq

Bangladesh has a strong tradition of medium term planning through the periodic Five Year Plans, of which we are now in the 7th Plan. At the same time, the country has a large number of professional planners both within the Planning Commission as well as embedded within the Planning Department of every ministry who help develop the sectoral plans for each ministry.

This is a strong foundation of human skill and capacity based on which the country can now move towards making longer term plans for different sectors as well as for the country as a whole. There are already a number of sectoral and national plans being developed for longer time scales. These include the 17 Sustainable Development Goals (SDGs) and the climate change goals which all have a time horizon to 2030.

Very recently, the government has also approved the de-

velopment of the Delta Plan which will have a time horizon until 2100. Only the Netherlands (with whose assistance Bangladesh is developing it) has done a plan for such a long time horizon so it will be quite a daunting task for us. At this time horizon, it is likely to be more of an aspirational goal rather than a detailed plan.

Finally, we are expecting the prime minister to soon unveil her Vision 2041 for Bangladesh which will be more of a vision for the country than a specific plan.

Under the above circumstances, the country will need to modify the standard processes for the Five Year Plans by the Planning Commission in order to think about the longer-term vision and to involve not only all the different parts of the government but also other stake-holders from outside the government. In other words, it will not only have to take a whole-of-government approach but also a whole-of-society approach.

The government is well-aware of this need and has already put in place a special unit in the Prime Minister's Office (PMO) to monitor the implementation of the SDGs under the leadership of very senior people. They have already started ensuring that each ministry develops its own SDG-related targets and ways of monitoring them.

Civil society actors and academics have also set up groups around each of the SDGs for implementation and monitoring progress.

In the realm of climate change, the government has already developed the Nationally Determined Contributions (NDC) as required under the Paris Agreement on Climate Change and will be preparing the National Adaptation Plan (NAP) soon. At the same time, the Bangladesh Climate Change Strategy and Action Plan (BCCSAP) of 2009 is also being updated with a new time horizon of 2030.

While all these ambitious planning processes are to be lauded, the proof of the pudding will be in the eating, and unfortunately while we are relatively good at making plans, we are less good at implementing them effectively and on time.

Hence, as we move forward to the next phase of our long-term planning, both nationally and sectorally, we need to improve our implementation of the plans, which in turn means improving not just monitoring and evaluation (m&e) but more importantly, our monitoring, evaluation and learning (mel).

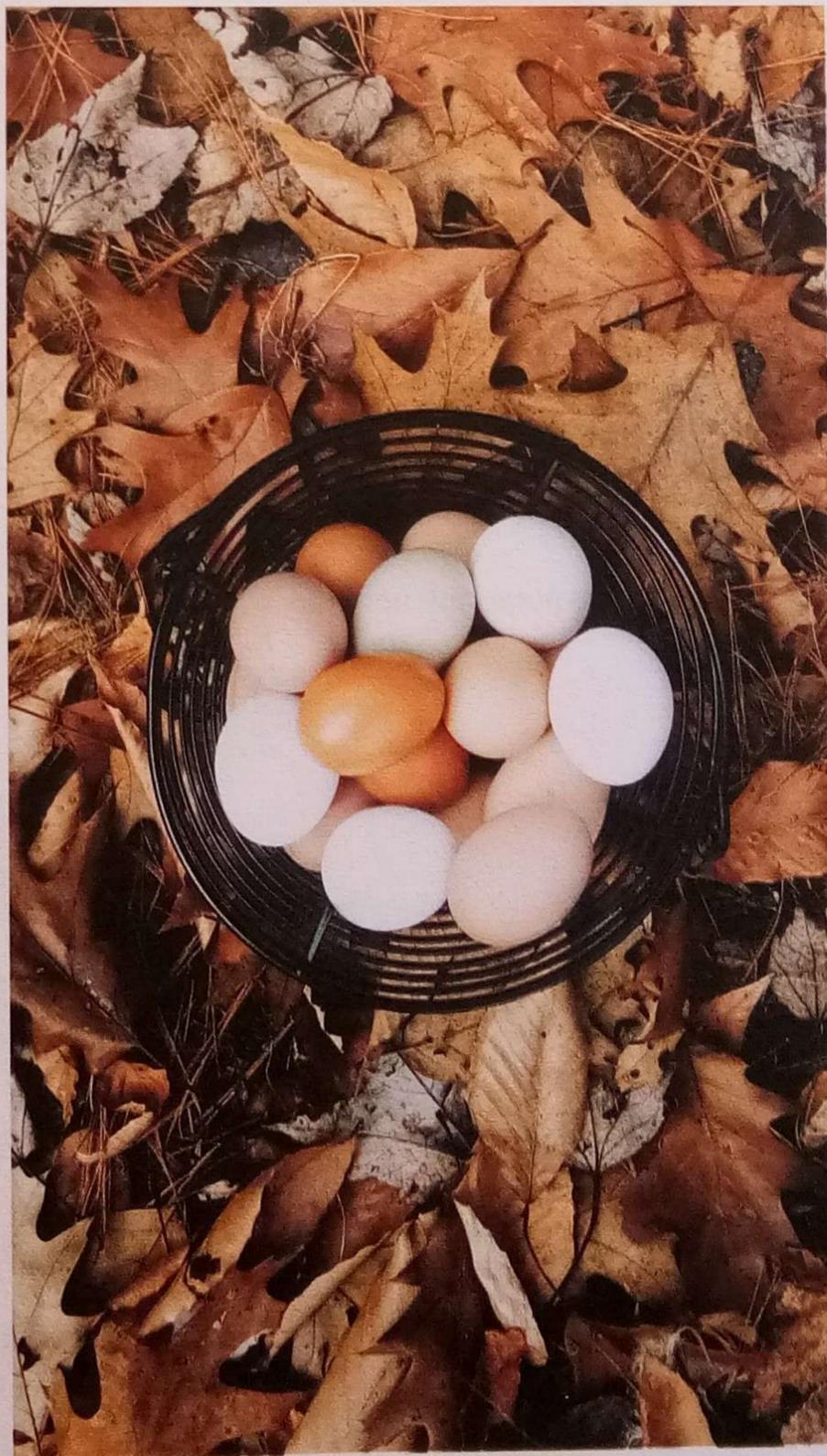
One big difference between medium-term and long-term planning is that the latter must be a learning-by-doing process where the learning must be systematic and sustained in order to understand what works and what doesn't, and then scale up what works and avoid what doesn't.

Another excellent tool for enabling planners as well as others to participate more effectively in the long-term planning as well as visioning process is the use of scenario development where groups of stake-holders develop their long-term vision and then work backwards to develop the plan to reach their vision.

“ We are expecting the prime minister to soon unveil her Vision 2041 for Bangladesh which will be more of a vision for the country than a specific plan ”

This can be done for both the sectoral and the national planning processes. A recent scenario development exercise linking SDG 2 (Zero Hunger) with SDG 13 (Zero Emissions) done by Oxford University, Oxfam and ICCCAD with experts from the Planning Commission and relevant ministries developed several possible scenarios (some good and some bad, but all equally plausible and possible) and then shared with the Planning Commission to discuss how to make the good scenario a reality and avoid the bad scenario. More such exercises will be very useful going forward with long-term planning for the country. ■

Dr Saleemul Huq is the direction of ICCCAD at IUB. A version of this article originally appeared at the Daily Star Bangladesh.



AUTUMN MOTT RODEHEAVER

LETTER FROM THE FUTURE

LIFE IN THE GREEN ROAD

Afsana Afrin Esha

Dear Tara,
I know it's stupid of me to write and feel everything I am feeling right now, but I have to talk to you. Because I know how happy you would be if you knew how our world has changed. You know how you used to talk about making space for your flowers in between my rice field? It came true, not for me, but for everyone else. Everybody now has various trees on their roofs and possibly wherever they can make a little space.

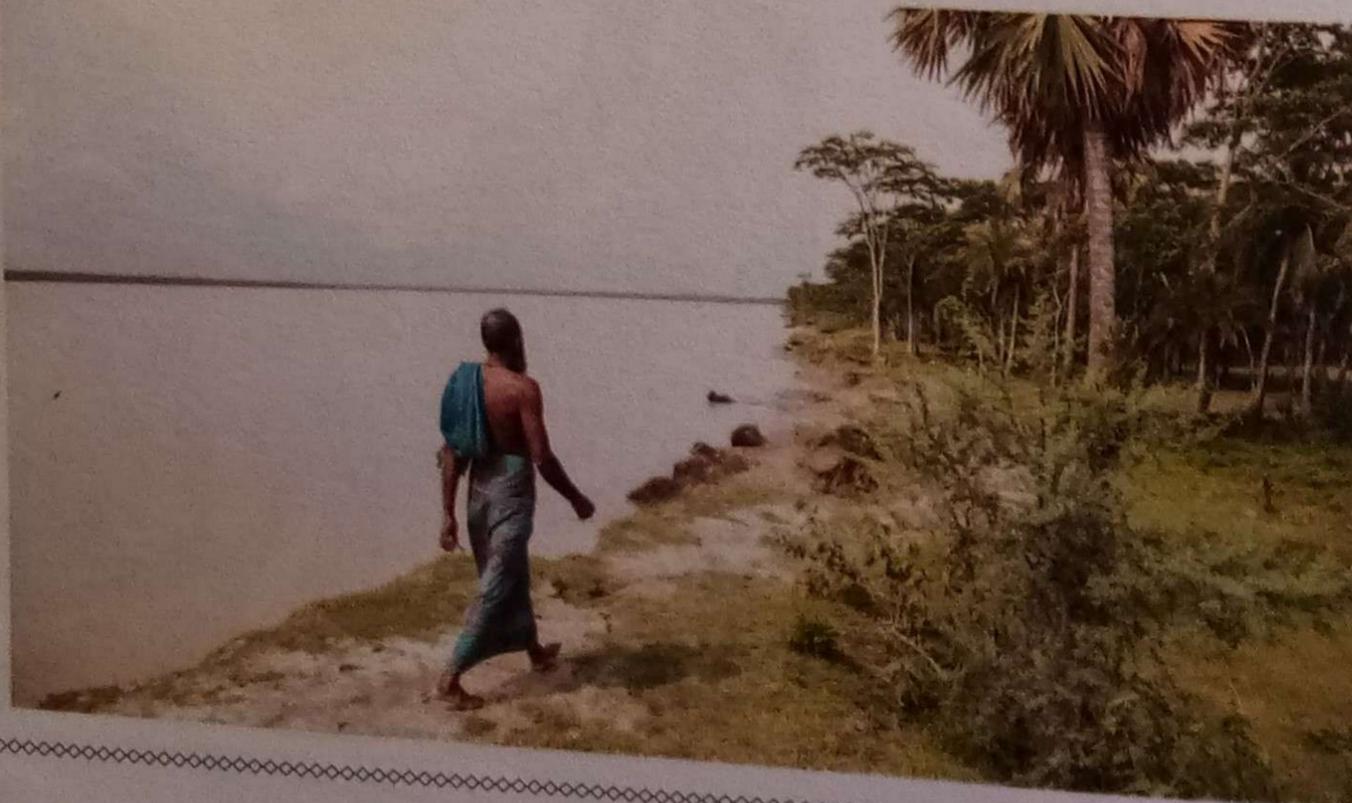
I don't know how to put my feelings into words. For a fact, I know you would be alive and well now, if we had what I have now. Our daughter Asha now trains women and children to protect themselves during disasters, she earns what I got in six months back then. Our son Sohel goes to school with the rich children of our village. It feel so different, because Selim left this world because he was too poor to be in the shelter with them during the cyclone. But I know you are happy now, we are too. We get to eat nutritious food at all times, I wish you could try the new rice they made, tastes a bit funny, but keeps my heart strong.

Oh...and the best part? We have got a television, gadgets, electricity. Sohel does not keep complaining about how hot it is anymore. The supplies are all renewable, I know you loved nature, you would be so proud of this exat moment. We have various new ways of planting crops.

We live in better houses now. I wish the changes taking place right now happened a long time ago. I wish the sustainable discoveries were made earlier, the inclusivity of education, society, the training, the economic advances. Because if we had everything we have right now, you would still be here in my arms. ■

Yours,
The man who never gave up

Afsana Afrin Esha is an Environmental Science student at the Independent University, Bangladesh who attended the Climate Youth Retreat as part of the ZHZE Project.



Bangladesh has a lot of choices to make heading into the future

TASFIQ MAHMOOD