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FOUNDER EDITOR: **LATE S. M. ALI**

Stop exploitation of Barind farmers

Comprehensive measures needed to address region's crippling water crisis

It is distressing to see the continued plight of famers in parts of the Barind region, known as the "rice bowl" of the country, where rapidly depleting groundwater levels have caused a catastrophic water crisis. A recent report by this daily shows how the distribution of irrigation water, through deep tubewells, has become a tool for individuals with political clout to exploit vulnerable farmers, particularly those from ethnic minority communities. This is what we can call "a crisis within a crisis", its magnitude exemplified by several farmer suicides, which calls for urgent interventions from the authorities.

The roots of the crisis can be traced back to the 1990s when deep tubewells were introduced, enabling farmers to cultivate multiple crops annually and transforming the Northwest into a thriving grain-producing hub. Ironically, it is this very success – on the back of excessive groundwater extraction – that contributed to the water crisis and attendant troubles. Although the Barind Multipurpose Development Authority (BMDA), responsible for overseeing irrigation, ceased installing new tubewells in 2012, unregulated private operators have continued to thrive. Today, these operators as well as the ones appointed by the BMDA are primarily responsible for much of the suffering being caused.

According to our report, farmers are supposed to pay a nominal fee for water under the BMDA management, which is Tk 85-125 per hour of irrigation. For context, there are approximately 16,000 government-run and 56,000 privately run deep tubewells in 16 districts of Rajshahi and Rangpur divisions. However, tubewell operators frequently sell water at higher rates to affluent farmers, breaching the "first come, first serve" policy. Marginal farmers are most at risk – sometimes the operators take away their smart cards and force them to enter into direct contracts with them, which means paying 6-28 times more than the government-fixed rate. Often, they are also denied water, leading to suffering and desperation. Despite some attempts to prevent it, however, political connections have continued to enable exploitation.

All this – against a backdrop of climate change and the region's crisis of groundwater, whose levels alarmingly fell by at least two feet over the last year alone – serves as a wake-up call for the authorities. Ridding the water irrigation/distribution process of exploitation, and ensuring equitable access for all farmers, is indeed the priority. Equally important, however, is finding a comprehensive solution that takes the bigger picture into account and addresses the water and livelihood crises in the region.

Stop risky living on hill slopes

Authorities must protect people and hills in Chattogram

Despite the well-documented risks of cutting or compromising the integrity of hills in Chattogram, it is disheartening to see this continuing to happen due to a lack of proper interventions from the authorities. According to a report by this daily, over 3,000 illegal structures have been constructed on nine hills owned by the Bangladesh Railway in various parts of the city. It is well-known that building such structures increases the risk of deadly landslides. Yet, over 5,500 people currently reside on these state-owned hills, while the latter are being subjected to degradation in various ways. Clearly, those enabling and profiting off of this risky venture, including politically connected individuals and corrupt government officials, care little about the danger residents face.

As per a study, some 400 people have been killed in landslides in Chattogram between 2000 and 2017. Subsequent years have seen little improvement in this scenario. The question is: Why are the authorities failing to prevent this? Just last month, two people died in a landslide at the Soloshohor Hill, where people are still living. This is partly because of a general lack of awareness, and partly because of the increasingly high house rent that drove many families to such settlements in landslide-prone areas. Reportedly, several syndicates of powerful individuals in collusion with corrupt government employees are responsible for the construction and maintenance of these buildings, violating relevant laws.

Similarly, land grabbers have been inflicting irreversible damage to the environment and biodiversity of hills under the nose of the local administration. Over the past 40 years, according to an estimate, some 120 hills have been lost in the port city. If the trend continues, we dread to think what will become of this still environmentally rich region. Experts have long blamed corruption and political interference for the lack of effective measures to stop the practice of hill razing. This must stop. We urge the authorities to undertake stern measures, including regular drives, to take down risky structures and rehabilitate residents, and also punish those responsible for this situation.

Switching to renewables is easier than we think

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Energy produced from natural resources (that is, renewable energy) regenerates over the span of a human's life without depleting the planet's resources. These resources, which include biomass, tides, waves, sunshine, wind, rain, and thermal energy stored in the earth's crust, have the advantage of being accessible in some capacity from almost everywhere. They are practically inexhaustible. More importantly, they don't harm the climate or the ecosystem as much. Renewable energy is gradually becoming more affordable; it is equitable and secure, and has the potential to create jobs.

In contrast, fossil fuels like oil, coal, and natural gas are only found in finite amounts. They eventually run out as we continue to extract them. Even if they are created through natural processes, they are not replenished quickly enough to make up for what is consumed by humans. More emissions are produced by burning fossil fuels than by producing electricity from renewable sources. The key to solving the climate catastrophe is switching from fossil fuels – which now produce the majority of emissions – to renewable energy.

The energy sector in Bangladesh is heavily dependent on fossil fuels. Both domestic and imported fossil fuels play a significant role in our energy production. In 2022, more than 98 percent of all energy production originated from natural gas, oil, diesel, and coal. Less than two percent of the energy mix consisted of renewables. Over the years, the reliance on fossil fuels has intensified. However, the Renewable Energy Policy of Bangladesh, which was introduced in 2008, aimed at harnessing the potential of renewable energy resources and technologies in the country. The policy set a target of meeting five percent of total power demand by 2015 and 10 percent by 2020 using renewable sources. These targets were never met. There are, however, conflicting targets in various governments' policies and plans. The Mujib Climate Prosperity Plan (MCPP) was introduced in 2021 to enhance the nation's resilience against climate change. This plan aims to reach 30 percent renewable energy share by 2030 and at least 40 percent by 2041. In contrast, under the draft Integrated Energy and Power Master Plan (IEPMP), Bangladesh has set a clean energy (renewable *and* nuclear) target of 40 percent by 2041. Also, the government's annual budget documents set different targets. The real picture shows that Bangladesh's progress towards switching to renewable energy has remained slow and uncertain.

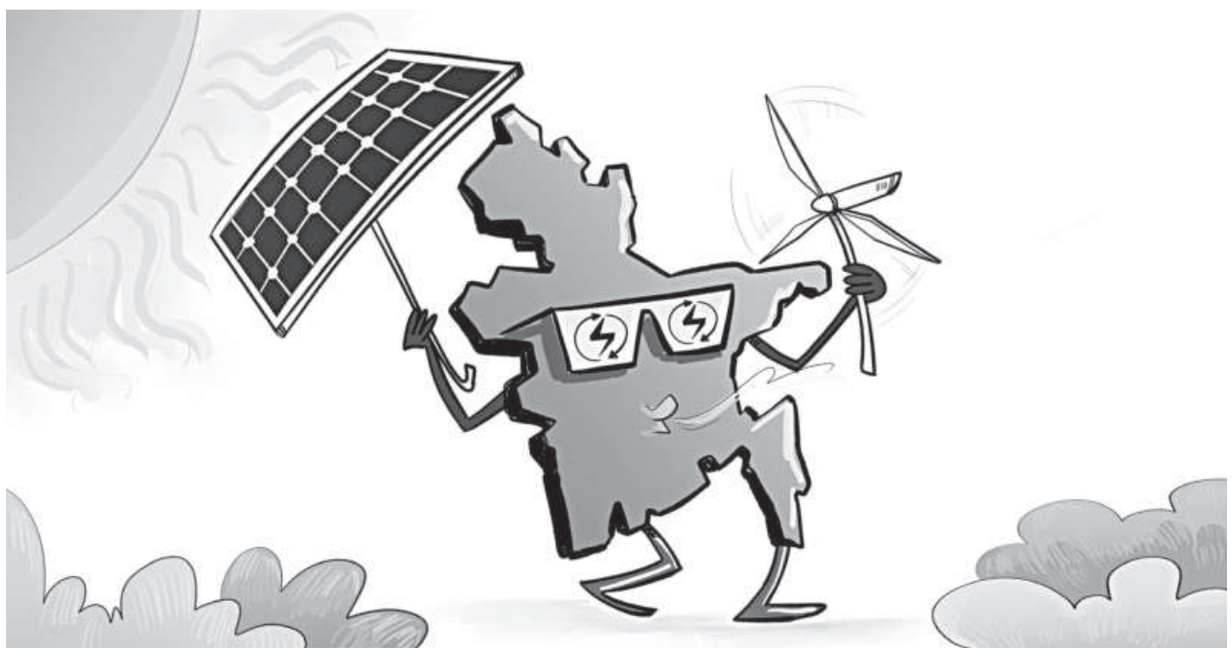

ILLUSTRATION: **REHNUMA PROSHOON**

There is no denying that the viability of renewable energy in the country will depend on the market price or value of renewable energy, the costs of renewable energy in comparison to those of other energy resources, policies to promote renewable energy, and environmental goals that increase the costs of using fossil fuels and/or subsidise the costs of renewable energy. As such, the wider adoption of renewable energy is hindered by pressure from fossil fuel lobbies, ineffective governmental regulations, outdated infrastructure, expensive initial installation costs, a lack of proper battery storage systems, a lack of knowledge and awareness, and a lack of relevant policies and subsidies.

To transform Bangladesh's energy systems and speed up the shift to renewable energy in the next decade or so, a few critical actions need to be prioritised. In line with the statements of the UN Secretary-General Antonio Guterres, the following actions can be suggested.

Firstly, there is a need to ensure easy access to renewable energy. Renewable energy technology needs to be accessible to everyone and not just for the wealthy. Energy from renewable sources, such as solar and wind, can be stored and released whenever people, communities, and businesses need power thanks to technologies such as battery storage systems. Due to their special ability to quickly absorb, hold, and re-inject electricity, they help increase the flexibility of the energy system. And, when combined with renewable sources, battery storage technologies can offer dependable and less costly electricity in off-grid settlements and isolated networks. Bangladesh also needs to explore the opportunities for importing renewable energy from neighbouring countries like India, Bhutan, and Nepal.

Secondly, a steady supply of raw materials and components for renewable energy is crucial in order to ensure broader access to all the necessary resources. In addition, the management of renewable energy waste is important in order to create supply chains that safeguard ecosystems.

Thirdly, there is a need to create a level playing field for technologies utilising renewable energy. Domestic policy frameworks need to be quickly changed to streamline and accelerate renewable energy projects and spur private sector investments. Policies and procedures must be put in place to lower market risk, enable investment, and provide incentives – including by streamlining the planning, permitting, and regulatory processes and avoiding bottlenecks and red tape. The adoption of solar and wind energy technologies can be accelerated by the availability of modern energy transmission infrastructure, clear and strong policies, transparent processes, and public support.

The country needs to switch energy subsidies from fossil fuels to renewable energy. One of the largest financial obstacles preventing the country's transition to renewable energy is fossil fuel subsidies. The cost of subsidising the fossil fuel industry alone is enormous and includes direct subsidies, tax benefits, and costs for health and the environment that weren't factored into the pricing of fossil fuels. Subsidies for fossil fuels are unfair and inefficient. Subsidising renewable energy instead reduces emissions and has the potential of fostering sustainable economic growth, job creation, improved public health, and greater equality, especially for the poorest and most vulnerable people.

It is also critically important to make considerable investments in renewable energy. There is a need for commitment and accountability, especially from the banks and other public and private financial institutions, which must direct their lending portfolios toward hastening the transition to renewable energy.

Finally, resources must be shifted between competing industrial sectors and political constituencies as part of a sustainable energy transition. As stakeholders in this process hold varying degrees of political and economic power, understanding how political and economic factors influence the transition to renewable energy is crucial in order to formulate effective policies and facilitate the shift to sustainable energy systems.

Semiconductors can be the new RMG

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With the consistent growth of our IT sector in recent years, Bangladesh's endeavour to become a knowledge-based economy has already gained significant momentum. While labour-centric sectors like the ready-made garment (RMG) industry remain a key driver in our economy, it is important now to expand the focus to skill-intensive sectors so that we can stay globally competitive and can create employment for the educated masses. The emerging semiconductor industry can play an instrumental role in this regard.

It may sound like an overstatement to say that the semiconductor industry has the potential to gain the same status as the RMG industry in the future. However, in view of the global and local prospects of this booming industry, we can definitely hope to witness such a scenario.

A lifeline for all electronic devices and systems, the global semiconductor industry is set to grow exponentially in the coming decade. According to Precedence Research, the market value of this industry stands at $664.2 billion at present, and is expected to rise to over $1.88 trillion by 2032, reflecting a remarkable compound annual growth rate (CAGR) of 12.28 percent.

Bangladesh currently earns around $5 million annually from the semiconductor industry, mostly by providing integrated circuit (IC) designing services, while high-end services such as fabrication, packaging, assembly, and testing remain untapped by local semiconductor companies. But our achievement is not negligible either. Virtually non-existent two decades ago, the nascent industry has gained traction rapidly in recent years. If the revenue has been able to reach $5 million over such a short period, we can definitely set our sights high and hope for the semiconductor industry to catch up with the RMG industry in the long run.

Most importantly, our demographic dividend is already a big advantage for this endeavour. A country with a 28 percent youth population, Bangladesh sees around 20,000 students graduate with computer engineering and electrical and electronic engineering (EEE) degrees every year. If trained properly, they can provide the necessary fuel for the growth of semiconductor industry.

However, a series of challenges stand in our way of achieving this goal, the biggest being the massive investment required for its development. Like most tech-based sectors, the semiconductor industry is highly capital-intensive, making it extremely challenging for companies to expand operations without the government's support.

Considering the immense potential of this sector, many countries around the world have taken initiatives to grow their respective semiconductor bases. For instance, the Indian government launched a programme named Semicon to promote the production of semiconductors in the country, with an incentive of 76,000 crore rupees. In order to take our industry forward, the Bangladesh government should mull over similar steps for the days to come. It can also accelerate semiconductor expansion by initiating bilateral dialogues with experts such as Taiwan, South Korea, and Japan.

The lack of an adequately trained workforce is another key challenge for the country's semiconductor industry. Back in 2007, I started Ulkasemi in Bangladesh with only four engineers. Creating a pool of trained professionals in line with our gradual expansion was a Herculean task. The workforce problem mainly stems from the lack of hands-on experience of our engineering students. Their academic knowledge of semiconductors is not sufficient to meet the professional requirements in the industry. Therefore, rigorous training is necessary to turn them into competent professionals.

The most effective way to overcome this challenge is to strengthen government-academia-industry collaboration. By engaging with academia, semiconductor experts can encourage students to take an interest in the field. It is equally important to include semiconductor-related topics such as advanced-level VLSI courses in the students' academic curriculum so that they can develop their knowledge of IC design, production, packaging and fabrication at an earlier stage.

The government recently declared its ambition to build a $10 billion semiconductor industry by 2031. If provided with the necessary support, Bangladesh's semiconductor industry could even surpass this target. The kind of support the RMG industry received during the 1980s-1990s, such as subsidies for electricity and gas supply, can lend impetus to our industry.

Currently, over $40 billion in gross revenue is earned annually by Bangladesh's RMG industry. However, it requires five million workers to generate this revenue, whereas the semiconductor industry could earn the same amount by employing only around 100,000 engineers. It shows the tremendous potential Bangladesh has in this thriving industry. It is high time we started shaping it as our gateway to a knowledge-based economy and a prospective alternative to the long-serving RMG industry.

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