

Pitfalls of open-pit mining

Exploitation of Phulbari coal deposit is a must for Bangladesh to meet the power demand of the country. Therefore, development of Phulbari coalfield through adopting underground mining method should be immediately undertaken.

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ASIA Energy proposed to extract about 10-15 million tons of coal from Phulbari Coal Field adopting open-pit mining method from a depth ranging from 250 to 300 metres by removing 4,400 million tons of overburden (rock, sand, mud, soil) covering an area of about 5.2 sq.km.

Mining operations will mainly consist of dewatering of aquifer, cleaning and topsoil stripping, overburden removal, rehabilitation of mined-out areas and overburden dumps.

The geological and hydro-geological environment of Phulbari coal basin is not favourable for open-pit mining, but underground mining method will be technically feasible and economically viable.

The major groundwater reservoir of Bangladesh covers greater Dinajpur and Rangpur districts. The groundwater resource of this region is the main aquifer, which is about 80-120 metres thick in the Dupi Tila formation and situated about 10-12 metres below the surface.

A study reveals that groundwater level is falling alarmingly in the northern districts. According to an NGO, the northern region may turn into a desert if the amount of water lifted from underground exceeds 15,000 cusecs a year. But about one lakh cusecs of water are being lifted for irrigation. Most alarming is that the

lifted water is not being proportionately compensated by regular seasonal rainfall.

Extraction of Phulbari coal adopting open-pit mining method will be disastrous for the north-western region due to dewatering of drinking and irrigation groundwater from Dupi Tila formation to the tune of 800 million litres per day over 38-years.

Experience shows that over-extraction of groundwater can cause land subsidence and lead to creation of underground vacuums which make us all the more vulnerable to earthquake. Extraction of a large quantity of groundwater at Phulbari will expose the north-western region to the threat of land subsidence, land sliding and earthquake.

According to Asia Energy, the topsoil will be removed and preserved once mining begins in a particular block. It will be preserved before it is brought back and spread on the top of the area filled, and utilised after completion of mining -- which may take 3-5 years.

At least 3-5 months will pass before the topsoil is used at the top of the filled-out mining block. During monsoon, the mined-out area will be filled up by rainwater, which will have to be pumped out. Mining will be difficult and may have to be postponed to facilitate that. Thus 2-3 months in a year may be lost, and uninterrupted supply of coal may not be possible.

About 200,000 people from 150 villages

will have to be evacuated from the mine area, and they will be deprived of their livelihood. Asia Energy's proposal to rehabilitate the people phase by phase and block by block in the refilled area cannot be materialised since coal mine regulations prohibit people from living close to an operative mine.

The coal seam lies more than 200 metres below the surface. The overburden of Phulbari coal deposit is unconsolidated and water-logged. Open-pit mining is not practiced below 150-200 metres. The unconsolidated and water-logged bed above the coal seam will cause instability of the working "bench." Installation of heavy equipments will be very difficult in the loose soils at intermediate depth.

Existence of major faults in the Phulbari coal basin indicates presence of a highly disturbed zone. This will facilitate rapid draw-down of the water table, which will disturb the stability of the major aquifer in the region. Major, massive and potential water reservoirs lie above the coal seams, and open-pit mining will damage the major aquifer.

There are agricultural lands, villages, townships, forests, etc. above the coal deposit. Rehabilitation and relocation in a congested area like Phulbari will be very difficult.

Germany is one of the most developed and industrialised nations in the world, while Bangladesh is one of the most thickly populated and least developed countries. The density of population in RWE mining areas vary from 290-529 inhabitants per sq. km., whereas it is about 916 per sq. km. in Phulbari area.

The people of Phulbari area are dependent on their agricultural land while RWE people are not dependent on the land that has been under mining.

RWE rehabilitated over 30,000 people in the last 50 years in barren and unused land, whereas about 2,00,000 people from Phulbari area will have to be rehabilitated in 30 years -- mostly in agricultural land or otherwise usable land.

RWE installed 1,400 wells for 100 percent re-injection of pumped out water, while Asia Energy proposes to install 80-100 dewatering tube wells for re-injection of 25 percent of the water. Phulbari coal basin lies beneath a massive and most potential aquifer, whereas RWE mine does not lie beneath one.

Open-pit mining operations causes lowering of the groundwater level, which will ultimately generate acid mine drainage (AMD). Because of large discharge area, only innovative in-situ technology can be used to reduce the AMD.

Such a technology has been developed on a laboratory scale in German and is currently being tested in an aquifer already contaminated by AMD in a bid to assess and improve groundwater quality.

We are not aware of such a bid by Asia Energy in Phulbari. The geological and hydro-geological settings of Phulbari deposit are completely different from RWE deposit. RWE mines were developed by local experts, while the Phulbari mine may be developed by foreign experts.

The present recovery of 7 percent to 8 percent of coal from Barapukuria may be increased to 35 percent to 40 percent if "Hydraulic Stowing" is undertaken. Hydraulic stowing could also minimise the subsidence that occurred at Barapukuria.

If latest underground coal extraction technology is adopted, coal recovery from Barapukuria may rise to 60 percent to 70 percent. Therefore, the present low recovery of Barapukuria coal cannot be cited as



Underground mining is the best option.

a supportive example for open-pit mining at Phulbari.

Initially, BHP Australia discovered Phulbari coal in 1997 after extensive exploration. But, in 1998, BHP assigned the job to a lesser-known company, Asia Energy, and left Bangladesh. BHP probably realised that in a thickly populated country like Bangladesh where coal seam lies beneath three valuable resources -- water reservoir, agricultural land, township and villages -- open-pit mining will be disastrous.

Exploitation of Phulbari coal deposit is a must for Bangladesh to meet the power demand of the country. Therefore, development of the Phulbari coalfield through adopting underground mining method should be immediately undertaken.

Asia Energy may be advised to examine underground mining prospects at Phulbari and submit an underground mining proposal. 35 percent to 40 percent coal recovery is possible at Phulbari through adoption of underground long-wall mining method, which can run a 1,000 MW power station at Phulbari.

Moreover, using present and latest underground mining technology, 60 percent to 70 percent recovery of coal can be made. We don't need to recover 90 percent coal for export. We need to recover for our own consumption as per requirement. That is very much possible adopting underground mining method.

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The Maoist scourge in India



Since its independence, India has been fighting more than 60 terrorist groups operating in different parts of the country. The difference is that all the regional groups are secessionists in nature, while the Maoists want "regime change" through revolution and are gaining strength.

MAHMOOD HASAN

INDIA is at war against formidable non-state actors. The Maoist movement in India is clearly getting stronger by the day and poses a serious threat to the stability of "the largest democracy in the world."

On May 17, the Maoists blew up a bus

in Dantewada in Chattisgrah state, killing 40 policemen. On April 6, they massacred 76 soldiers of Central Reserve Police Force (CRPF) in Dantewada. On February 15, they slaughtered 25 policemen in West Bengal. There were many such attacks on security forces in the past. The two districts of Chattisgarh -- Dantewada and Bastar -- are considered to be the epicen-

ter of the India's Maoist movement.

Out of 626 districts of India, 223 are infested by Maoists. According to some estimates, the number of Naxals, also known as Maoists, is around 20,000 -- spread across Bihar, West Bengal, Orissa, Jharkhand, Chattisgarh, and Andhra Pradesh. These adjoining states are called the "Red Corridor," and the people are predominantly tribal. It has the highest percentage of illiteracy and people live in abject poverty.

The conflict between the state and the tribal people began decades ago over rights on land. The tribal people consider the forests as their land, and their livelihood depends on forest produce. They are determined to defend their traditional rights. On the other hand, the Indian constitution has made the state the custodian of tribal homelands.

Over the years, both the union government and the state governments have signed dozens of agreements (MOUs), worth billions of dollars, with multinational companies for mining and setting up large mills in the mineral rich states of the Red Corridor. Implementation of these MOUs will displace thousands of tribal people living in those areas for centuries.

Thus, the stage was set for a bloody conflict between the state and Naxals. Whenever the government tried to move ahead with the MOUs, the tribal people resisted, leading to bloody conflicts. The Naxals infiltrated the tribal areas to protect the rights of the tribal people. For the Naxals parliamentary democracy is a sham, which has failed to deliver for the poor. They see the state as an enemy, and crony capitalism as evil.

The well-armed Maoists collect funds from the local villagers, extort businesses, abduct and kill "class enemies." Their targets have been the security forces,

government officials, banks, jails and government leaders.

To complicate matters, the union government, in June 2005, hit upon a novel idea to contain the Naxalites. It encouraged local villagers to form a counter-insurgency civil militia called "Salwa Judum."

Though originally the idea was that villagers would spontaneously organise themselves to fight the Naxalites, it actually turned out to be a paramilitary force of the government -- recruited from amongst the locals who are loyal to the state leadership.

Salwa Judum soon spread out to tribal areas and went on a rampage. To weed out Maoists they burnt down villages and resorted to atrocities similar to those committed by the Maoists. The two forces are now locked in a struggle for supremacy, with poor villagers paying a heavy price.

After each incident of killing, the union government invited the Maoist leaders for talks. The moot question was -- what would be the agenda for such talks? The union government has never indicated the issues it wants to discuss. Clearly, the Naxals are in no hurry to negotiate with the union government. If Nepal's Maoist insurgency is any guide, then the Maoists will wait till they gather enough strength before talking to Home Minister Chidambaram.

What is amazing is that the Maoist movement in India seems to have strong support of a large section of the intelligentsia. M.K Narayanan, former national security adviser, said that it was the intellectual appeal of the Maoist that is letting India down in its fight against them.

He said that unless the government can divorce the two, defeating the Maoists would not be easy. Human rights activists, left leaning researchers, journalists and

intellectuals seem to be sympathetic to the Maoist cause. These groups are extremely critical about the failure of Indian democracy to improve the conditions of the poor people.

There are deep divisions of opinion among the people on how to control the Maoists -- should they be eliminated totally by force or persuaded to cross over to the constitutional process. If the Maoists have to be destroyed, why not use the army and the air force?

The argument here is, if Pakistan can bomb the Taliban why can't the Indian Air Force do the same against the Naxals? Another school of opinion asks, if Delhi can negotiate with Ulf, Kashmiri militants, the Nagas, etc. why not with the Maoists?

Indian Army Chief Gen V.K. Singh categorically rejected the idea of using the army or the air force against the Naxals, as they were "our own people." Though Chidambaram vowed to eliminate the Maoists within the next couple of years, it is evident that his government does not have any comprehensive counter-insurgency plan.

Since 2004, more than 6,000 people have died due to this bloody insurgency. No wonder Prime Minister Manmohan Singh, in 2006, referred to the Naxalites as "the single biggest internal security challenge ever faced by our country."

Unable to contain the insurgency the government of India banned the CPI (Maoist) on June 22 2009. Since then, its leaders have either been arrested or gone underground. The armed units, however, continue their ferocious attacks unabated.

Salwa Judum is a flawed strategy of the government, as it seeks an extra-judicial solution to the Maoist problem. Similar experiments have failed in Kashmir and the North East.

The government needs to raise a well-trained police force capable of dealing with the insurgents. Currently, the police force is ill-equipped, ill-paid and highly corrupt. They are not trained to fight insurgents. There are strong views that Salwa Judum should be disbanded.

Since its independence, India has been fighting more than 60 terrorist groups operating in different parts of the country. The difference is that all the regional groups are secessionists in nature, while the Maoists want "regime change" through revolution and are gaining strength.

In South Asia, neighbours of India need to be watchful. Terrorists and insurgents find it convenient to help each other across national borders, despite ideological differences. India's Maoists have good relations with the Maoists of Nepal. Though Nepal's Maoists are now part of the constitutional process, they have thrown Nepal into a deep morass. It is a pity that outdated doctrines, borrowed from far-off China and now defunct Soviet Union, continue to ravage the countryside of India.

The Indian government should genuinely be worried about the slow but steady progress of these non-state actors in different states. It is true that the original Communist Party of India has splintered over the decades, and today there are nearly two dozens Communist streams in India, but the Maoist group is the most violent of all and is gaining strength. The government should act quickly to contain the Maoist scourge, before it is too late and more lives are lost.

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The significance of Pentecost

Pentecost is of great significance in the lives of the individual Christians and in the life of the Church as a whole. While the Church owes its beginning to this event, both are to be led by the Holy Spirit for meaningful existence.

MARTIN ADHIKARY

TODAY, Pentecost Sunday, Christians the world over celebrate one of the five great Christian festivals -- the Pentecost or Whitsun, Christmas, Good Friday, Resurrection, Ascension. Christmas commemorates the incarnation, Good Friday about Christ's death, Resurrection his coming back to life with a spiritual body, Ascension his going back to heaven and Pentecost of the outpouring of the Holy Spirit on the earliest disciples of Christ on the 50th day from the Resurrection.

The single thread of the Holy Spirit runs through all these events in the Christian calendar. Pentecost is of great significance in the lives of the individual Christians and in the life of the Church as a whole. While the Church owes its beginning to this event, both are to be led by the Holy Spirit for meaningful existence. So Pentecost has great Christological, experiential and ecclesiastical significance.

The event of the Pentecost is narrated in the New Testament book of Acts (Chapter 2). The Holy Spirit (or God's Spirit) was poured out upon the apostles of Christ just as he had promised them on the eve of his ascension to heaven on the 40th day

following his resurrection.

The power of the Spirit empowered and completely transformed their lives. They were able to preach the good news of salvation in Christ to both the Jews and the gentiles with courage, and their preaching was accompanied by miraculous works. "You shall receive power when the Holy Spirit has come upon you; and you shall be my witnesses in Jerusalem and in all Judea and Samaria and to the end of the earth," he had told them (Acts 1:8).

The Spirit came upon the Jews, then on the half-Jews, i.e. the Samaritans, and also on the non-Jews from different nations in course of time. Christianity spread from Jerusalem to Rome as a result of the work of Spirit. This is recorded in Acts, the first Church history book. That's why this book could also fittingly be called the book of the acts of the Holy Spirit.

Because of the complete work of Christ

for the salvation of man through his birth, innocent suffering, death, resurrection and ascension he singularly had the authority to pour out God's Spirit upon all flesh. Each and every work that he did is a testimony to the Spirit's work. He was installed into his Messianic position by the Spirit. By the power of the Spirit he was led to be tempted by the devil. He also resisted the devil by this power. The Spirit also equipped his apostles for their mission and work of bringing the good news to a sin-sick world.

The Bible, as a whole, depicts the works of the Holy Spirit as opposed to those of the fleshly or carnal mind. We see this clearly mentioned in the Epistle to the Galatians. Two millennia ago Paul wrote to them: "The works of the flesh are plain; fornication, impurity, licentiousness, idolatry, sorcery, enmity, strife, jealousy, anger, selfishness, dissention, party spirit, envy, drunkenness, carousing and

the like. But the fruit of the Spirit is love, joy, peace, gentleness, goodness, faithfulness, patience,

self-control (New Testament: Galatians 5:19,22).

The Holy Spirit will come to dwell in our hearts and empowers us when we acknowledge our weakness in our fight against the desires of the flesh and the adversaries of this world. The Holy Spirit guides us towards the welfare of our total personality -- body, mind and soul. He can affect a total spiritual revolution in us, transforming the character and attitude to life and the world.

Believers need to repent for their failures, and trust in the leading of the Holy Spirit so that they overcome the devil. There is always the constant need of renewal of our minds, thoughts and our whole beings. We need to receive spiritual illumination for understanding the Word and Will of God and the inspiration from

the Holy Spirit for us to be vehicle of God's grace for other people, serving and caring for them.

The human race is going through too many problems. The dilemma and the problems that the world is in is a spiritual one. So its solution has to be the spiritual. This is true for every human being who is in the trap of sin. The historic Pentecost, as described in Acts is, an once-and-for-all event, but the promise and the power of the Holy Spirit is for all believers of all ages if one is willing to receive it.

Let our prayers today be that the transcendental gift of the Holy Spirit continues to renew our lives that we may be effective in the renewal and healing, peace and reconciliation that our world cries out for.

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