

For the last three decades or so, the Indian economy has been growing at a fast rate, which has led to a nationwide increase in demand for natural resources. At the global level, the rapid growth of some other countries, most notably China, has led to the rise in demand for natural resources like energy and minerals. Though obtaining such resources from abroad is always an option, it makes better sense to source these minerals domestically as much as possible.

Access to natural resources and sharing of benefits from their use have long been contentious issues. While the so-called resource curse, reflected in depressed growth in resource-rich countries, has been a point of concern for exporters of such resources, the surge in resource nationalism has often bothered importers. Moreover, the uncertainty surrounding the prices of natural resources has been a source of worry for all.

Needless to say, at a broader level, extreme resource nationalism can be detrimental to all countries simply because no country has all the resources it needs. At the same time, it is also important that resource-rich countries get adequately compensated not only for the resources they part with, but also for the social and environmental costs incurred on development of resources. It is also believed that some countries are retaining their resources for future, while importing the same resources for current use. This often leads to controversy on development of natural resources in some countries, particularly during instances when these resources are exported to other countries.

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CONTENTS

Editorial

Impact of policy changes on copper production: case study of India

... Saswata Chaudhury, Anandajit Goswami, and Sanjib Pohit

Exploitation and development of mineral resources: the role of MNCs and government policies

.....Souvik Bhattacharjya

Non-fuel minerals and their relevance for India

....Arpita Khanna and

Swati Ganeshan

Book Review

Mining in Africa: regulation and development

....Anandajit Goswami

News in brief

Volume 4 Issue 2 March 2010

GALT Update

Development of Resources

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It is, therefore, important to have an effective governance of development and use of natural resources. This would ensure that the associated costs and benefits are equitably shared both across and within nations. Since most resources are shared among nations, there needs to be relevant governance at the global level that would formulate a framework of equitable sharing of costs and benefits across nations. The effectiveness of such governance mechanism, however, will largely depend on the international market structure and pricing mechanism.

Governance at the national level is also equally important because it determines how costs and benefits are shared within a country. Such governance exists not just at the central level, but across layers, right down to the community level. Resource-rich regions within a country might face a situation of strained financial resources and infrastructure. This can have an adverse impact on their development. Moreover, while the benefits of extraction of natural resources are felt at a macro level, the environmental and social costs are often borne—disproportionately and unjustly—by the communities inhabiting the areas around extraction sites. This often leads to violent conflicts that can severely dent economic growth. It is thus important that a reasonable part of resources and revenue generated from mining and other resource-based activities be deployed in the affected regions.

Another issue that is slightly ambiguous is the division of responsibilities between the state and companies that are engaged in use of natural resources. While the organizations may feel that they should not be held responsible for the environmental impact and other consequences of their actions because they pay taxes and royalties, the government might be of the opinion that royalties and taxes simply involve transfer of rights. The legal arrangements, in this regard, may not make the matter of establishing liabilities clear. It is, therefore, important to review existing laws, rules, and relevant institutions, including compliance and enforcement mechanisms.

Mining and other resource-development activities can contribute to the economic betterment of local communities through job creation. At the same time, they might also lead to marginalization of indigenous population due to changes in social security networks and living conditions. These conditions could be important factors that accentuate risk of conflicts across mining regions, thus impacting the adequate availability of raw material for development.

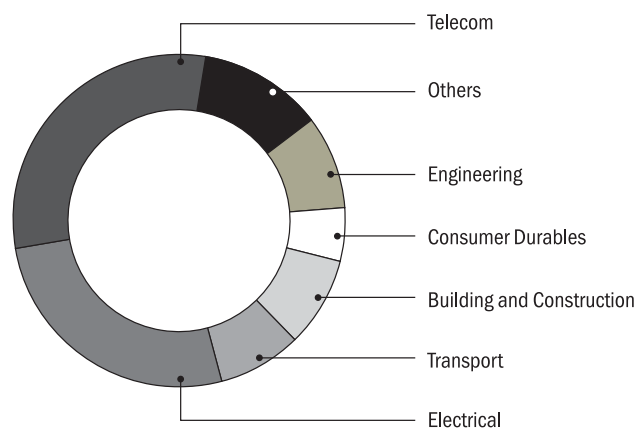
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Impact of policy changes on copper production: case study of India

Saswata Chaudhury, Anandajit Goswami, and Sanjib Pohit

Background

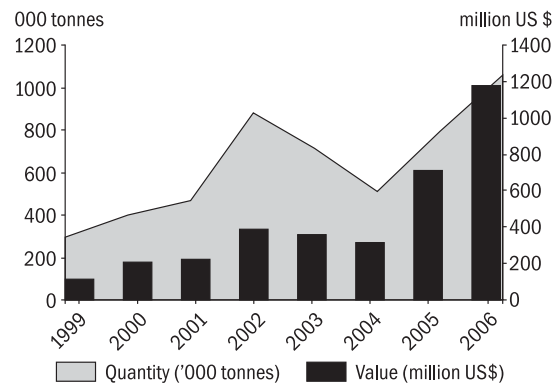
The high growth trajectory of the Indian economy is expected to have a spillover effect on sectors like infrastructure, services, and manufacturing. This, in turn, implies a surge in demand for natural resources like copper in telecom, construction, and electricity industries. This is because copper is used in the form of ores, scraps, refined copper, and wires across these sectors as well as in other industries including consumer durables.



Distribution of Copper Usage in India
Source ICRA (2006)

Use of copper in India is on the rise.¹ With the limited domestic supply failing to match up to an ever-increasing consumption demand, India has been resorting to importing copper ore and concentrate. The recent surge in economic growth implies that demand for copper ore, scrap, and wire usage will rise even further in future. The diagram below demonstrates the trend displayed over the years.

The fact that the quality of copper ore found in India falls below global standards has added to the problem



Import of ores and concentrates
Source ICRA (2006)

of limited domestic supply, and has created a situation of dependence on import of high quality ore.

Market structure

During the last decade, rise in import of copper ore has been accompanied by an increase in export of Indian copper products. A snapshot of the Indian copper sector reveals that domestic sources meet only 30%² of the demand for copper ore. Majority of import arrives from Zambia, Chile, Australia, and Indonesia. Three major players in copper industry are Hindustan Copper (public enterprise; integrated producer involved in mining, smelting, and refining), Hindalco (private player; engaged in smelting and refining), and Sterlite (private player; involved in smelting and refining). Additionally, many small-scale units are engaged in conversion of scrap to ingots. To gain access to copper ores of higher quality, Hindalco and Sterlite have made acquisitions abroad. Lion's share of revenue generation for Hindalco (60%) and Sterlite (50%)³ comes from copper-related production. Copper contributes to more than 30% of the operating profit of Hindalco and 10%–15% of the operating profit of Sterlite.

¹ Indian copper industry, ICRA 2006

² Comments received in presentation given in TERI on the Blue Skies Work – Emerging markets and resource security: case of copper

³ Information accessed from company reports available from their websites and also from www.metalworld.co.in/feature1-0208.pdf last accessed in March 2010

Tariff policy scenario

Currently, the custom duty on copper ore and concentrates is 2.1%, while the duty on refined copper products and copper scrap is 5.2%⁴. The excise duty on export of copper ore and products is 16.5%⁵.

With this background, in this article we explore the following research question:

How shocks like changes in import and export duties bring about a change in the production of copper ore and products in the Indian economy?

Methodology

In order to address the above research question, we have constructed a 41-sector-based Computable General Equilibrium (CGE) model. The model has a baseline social accounting matrix and an input-output table⁶ that encompasses monetary flow across major copper using sectors of the Indian economy. The input-output table consists of primary, secondary, and tertiary sectors (24 sectors in total) that use copper directly and indirectly. Additionally, when all other economic agents including households, government, private agents, factors of production, and external economy (through trade flows) are incorporated, the input-output table transforms into a social accounting matrix (41 sectors in total, including 24 sectors of the input-output table). Different sectoral transactions catering to use of copper ore and products are incorporated into the social accounting matrix. Copper products comprise refined copper wires, rods, bars, and other copper items. Finally, multipliers have been estimated for each sector of the Indian economy, showing the change in sectoral output due to an increase in demand in one particular sector. The interrelationship between policy shocks and their consequent effects on the sectors of the economy are also explored. These have been observed during scenario-building exercises that include import tariff and export tax shocks to the Indian economy. Import tariff shocks are given to copper ore, whereas export tax shocks are given to refined copper products to be in line with sectoral reality of the Indian economy. These shocks are incorporated in the CGE model by simulation, and the results are mentioned below.

For a 5% increase in import tax on copper ore, there is an increase of 0.05% in the production of copper ore. However, for a 5% increase in import tariff

on copper ore, a decrease of 0.02% in the production of copper products is observed. For a 5% increase in import tax on copper ore, there is a 0.06% increase in production of one of the substitutes of copper, viz. bauxite ore (used to produce aluminium that might substitute copper in power cables, electrical equipment, automobile radiators, and cooling and refrigeration tube). This amount might not be very significant in real terms for a large economy like India. But the indicative direction estimated through the modeling might help policy-makers in getting a preliminary sense of the directional effects of policy shocks on copper for the Indian economy.

An import shock means lesser import availability and, hence, entails larger domestic production of substitutes of copper like aluminium. An increase in production of substitute could lead to reduction in production of copper products to meet demand, and maintain the demand-supply equilibrium. Drop in production of copper products as a result of import tariff shock leads to a rise in production of aluminium to match the demand for aluminium in those sectors of the economy that use copper. Such a change occurs after accounting for all the intermediary shifts owing to policy shocks occurring in both the direct and indirect uses of copper in the Indian economy. Policy shocks can lead to price changes in intermediary sectors, and can impact the intermediary and final demand for resources that generate adjustments in supply within a CGE modeling structure. The net effect on copper supply through intermediary price changes in copper and its substitutes due to shocks are also tested through our CGE analysis.

An export tax shock of 8% on refined copper products (which leads to reduction in exports) leads to 0.12% change in copper product availability (measured in terms of percentage change in production) in the country. For a 20% export tax shock on refined copper products, 0.30% change in copper product availability occurs in the Indian economy. Larger the shock in terms of export taxes on copper products, greater is the availability of copper products in the country. For a 12% (20% - 8%) increase in export taxes on copper products, availability of copper products increases by 0.18% (0.30% - 0.12%). In this case, too, the shock impact might not be significant in real terms in context

⁴ www.crisil.com/india-budget-analysis/.../nonferrous_0910.pdf, last accessed in March 2010

⁵ www.crisil.com/india-budget-analysis/industry/nonferrous_0809.pdf

⁶ TERI Report No. 2008GL01, Emerging markets and linkages with security of natural resource — the case of copper

of an economy like India. Moreover, as part of the estimation process, uncaptured disturbances can appear in the CGE structure. Such a marginal change might also occur owing to actual disturbances in the economy. However, estimates of this modeling exercise can provide preliminary directions for developing mineral policies in future.

This exercise offers an indication on how policy changes can affect production of copper ore and copper products in India. Such changes also affect the intermediary small-scale unorganized sectors of the Indian economy that are engaged in converting copper ore to copper products. A change in production owing to policy changes can affect production, which can thereby affect the employment potential of related sectors engaged in the value chain of copper production.

While taking into consideration the preliminary direction offered by the model, it might help Indian policy-makers explore the need and implementation mechanism of the various relevant policies, although our model result shows minimal change with change in policy variables when it comes to production of copper ore and products. The next section explores these points by highlighting some of the policy discourses.

Policy discourse

Policies have to address the impact of shocks on copper substitutes. For instance, aluminum has the largest possibility of use as a substitute for copper in power cables, electrical equipment, automobile radiators, and cooling and refrigeration tube. Optical fibre is used as a substitute for copper wiring in many telecommunication applications. Plastics are often used in place of copper in water and drain pipes and plumbing fixtures. Transmission cables made of aluminium can malfunction in a humid environment. Safety is also an issue in aluminium wiring. Also, density of copper is higher than that of aluminium. Hence, if copper prices go up, substituting aluminium with copper might not be a feasible solution because of technical factors such as density as well as environmental conditions, and safety issues. All these should form part of policy consideration.

Although our model results show a minimal impact of policy shocks on availability of copper ore and products, if a relevant policy is designed in India it has to reflect on realities of resource scenario pertaining to substitute resources of copper, viz. aluminium. For such a redesigning, suitable modification needs to be made in the National Mineral Policy 2008, with greater emphasis given on creation of backward and forward linkages between mining of natural resources and value-added products from these minerals. In this context, it might be mentioned that the National Mineral Policy of 2008 mentions about enhancement in efficient utilization of scraps and wastes by infusing latest techniques of blending, sizing, concentration, beneficiation, calibration, pelletization, and purification.

Especially in India, a need can arise for technological innovation to enhance supply potential of minerals subject to import shocks. This can be achieved via effective fund allocation through appropriate fiscal measures in terms of mobilization, allocation, and channeling of money for larger exploration of minerals. Royalty structures, budgetary measures, grants, and concessions can be used as fiscal instruments to pool money for technological innovation to enhance production of copper in times of import shocks.

All of these would mean introspecting on the existing Mines and Minerals (Development and Regulation) Act (1957), Mineral Concession Rules (1960), and Mineral Conservation and Development Rules Act (1988). Policies should clearly define the roles of state, central agencies, private entrepreneurs, and investors in exploration and mining. Against the backdrop of increasing possibility of high copper consumption in India in the near future, a holistic resource governance and security policy have to be designed to oversee how the growth of different sectors of the Indian economy affects the demand for a natural resource like copper in the presence of policy shocks.

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Exploitation and development of mineral resources: the role of MNCs and government policies

Souvik Bhattacharjya

In an era of considerable economic activities that are leading to creation of a new socio-economic infrastructure, development and utilization of mineral resource across sectors play a key role. Industries and the government face an enormous challenge in sustaining a drive that balances economic growth and development. This is particularly true for mineral-resource-rich developing or less developed countries, who usually lack in some of the major pre-requisites like technological know-how, ability to explore and exploit mineral resources, and the expertise in utilizing these resources.¹ This absence presents multinational companies (MNCs) ample opportunities to exploit mineral resources in these countries.

Rise in flow of capital

A growing demand for mineral resources in both developed and developing economies, coupled with the rise in international prices of these resources, has aroused growing investor interest in extraction of these minerals. There are numerous instances of MNCs competing with one another to grab the mineral assets of resource-rich countries. The most-preferred routes of entry for MNCs are green field investments and cross-border Mergers and Acquisitions (M&As). Such strategic acquisition of assets strengthens the respective MNC's global presence through easy access to resources, markets, and cash flow, among others. This, in turn, leads to profitable growth—the strategic imperative of all industries.

Although foreign direct investments (FDI) in mineral resource industries account for a small share of the global FDI, they often form a major share in the

inward FDI in many low-income countries of Africa, Latin America, and the Caribbean. For example, in 2007, Latin America and the Caribbean witnessed their FDI inflow rise to a historic high of \$126 billion. The increase was the highest in South America (66%), where most of the \$72 billion worth of inflows targeted the natural-resource-based extractive industries. The inflows were supported by a continuing boom in global commodity markets. Cross-border M&As in extraction industries and related services continued to be a significant source of FDI in many mineral-resource-rich countries. In 2005, 25 MNCs across the globe involved in metal mining had a 42.3% share in the total value of world production. The corresponding share for the top 14 MNCs from developed countries in the same year was 25.5% (UNCTAD 2007).

Trade in mineral resources and price trends

Between 1965 and 2005, the annual value of trade in non-fuel based mineral resources increased approximately from \$23 billion to \$670 billion. In 2005, iron and steel accounted for \$249 billion, precious stones \$74 billion, copper concentrates and metals \$35 billion, and aluminum concentrates and metals \$30 billion² (WTO 2010). Between 1995 and 2007, growing international demand and soaring prices raised the total value of mined metals from \$50 billion to \$425 billion. It is estimated that in the next 40 years, further demand for mineral resources will result in five-fold increase in mining, thus creating more business opportunities and higher flow of financial resources across borders.³

¹ <<http://sp.lyellcollection.org/cgi/content/abstract/250/1/127>>. Accessed on 16 April 2010.

² <http://www.wto.org/english/res_e/reser_e/ersd201001_e.htm>. Accessed on 14 March 2010.

³ <<http://www.issafrica.org/pgcontent.php?UID=20558>>. Accessed on 22 March 2010.

Between 2003 and 2007, there has occurred an almost four-fold increase in the international price of copper. During the same period, the price of nickel and gold has risen by almost 2.5 times. In the long term, price trends in mineral resources will depend on demand and depletion rates, in addition to existing recoverable reserves. Deposits that are more expensive to develop and involve huge capital may also keep the prices hovering at high levels. Many MNCs have reaped the benefits of high prices by reaping huge profits. For example, between 2002 and 2006, the net profit of 40 of the world's largest mining companies rose from \$4 billion to \$67 billion (UNCTAD 2007).

Role of MNCs in overall economic development

Ideally, involvement of MNCs in extractive industries in mineral-resource-rich developing or less developed countries should lead to both direct and indirect economic benefits. Typical direct implications include financial contributions, transfer of technology in specific sectors, generating employment and imparting skills, and increasing production and income in the host country. Export promotion and generation of government revenues are some other areas of contribution. It is often argued that MNC participation enhances competitiveness of domestic industries. These corporations can also create linkages between foreign affiliates and domestic enterprises. Backward linkages occur when foreign companies acquire input from local suppliers, while forward linkages are established when such products are sold to domestic buyers.

In most cases, the short-term profitability objective of investments works against achieving some of the above mentioned benefits. Mineral extraction activities of MNCs are capital intensive and may have insignificant impact on employment opportunities, particularly in the least developed countries. In Botswana, where the mining industry accounts for 40% of the GDP, 90% of exports, and 50% of government revenues, the industry employed only 9200 people or around 3 % of the total labour force in 2007. In the same year, in Equatorial Guinea, where foreign companies account for more than 92% of oil production, the number of people directly employed in the sector was around 10,000 (4% of working population) with majority of them being expatriate workers (UNCTAD 2007).

Some of the MNCs engaged in extractive industries, which enjoy high geographical concentration with high import content, export their output unprocessed.

Due to poor technical know-how in less developed countries, most of those operations are owned entirely (rather than joint ventures) by foreign investors. The sharing of mineral rents is largely influenced by the respective MNCs' financial practices and their transfer pricing practices. This aspect has generated criticism because in some instances the conditions offered by the host countries for international projects in extractive industries have been generous, and have resulted in disproportionately low shares of government revenues in total rent. Additionally, it took a considerable amount of time before the foreign mining companies started paying taxes.

Moreover, mere MNC presence might not always translate to high economic growth. Nigeria, despite being a major oil-producing country and enjoying presence of key MNCs in the sector, has not been able to transform its oil resources into economic growth. The gross domestic product (GDP) growth in Nigeria has remained even lower than its non-oil-producing neighbouring countries. The country's poor economic performance is explained by the dismal development of human resources and an inability to grow a broader industrial base. Similarly, in Equatorial Guinea—a country ranked 120 in the Human Development Index (HDI)—more than half of its people have no sustainable access to potable water. It is estimated that almost 60% of the population is struggling to survive on less than \$1 a day, with the average life expectancy just around 43 years (UNCTAD 2007).

Arrival of MNCs sometimes leads to small-and medium-sized producers moving away to marginal areas, rather than developing links that would increase capacity of local firms. The most common reasons cited to explain development of poor linkages in the host countries include constraints regarding availability, quality, and cost of local inputs, and lack of efficiency and competitiveness among domestic firms. Additionally, dearth of local suppliers with relevant capabilities, and lack of appropriate skills among the local work force can make it difficult to locally source out or expand activities downstream. Many countries have fared poorly in developing an effective mining policy that reflects objectives like integrating the mining sector into broader development objectives. However, the goal of generating technology spillovers has not been actively pursued.

Participation of MNCs in resource extraction of mineral resources can also have environmental and social consequences. The environmental impacts largely

depend on the kind of minerals extracted, the geological conditions, and the technology used. Also, social problems may emerge as a result of disagreements over compensation. In Indonesia and the United Republic of Tanzania, it was alleged that the relocated people experienced a dramatic fall in their living standards due to inadequate compensation (UNCTAD 2007). For indigenous people, who usually inhabit vulnerable environments, there are possibilities that MNC activities in extractive industries would threaten the local culture and interdependence of people and biological diversity, thereby adversely impacting traditional lifestyles and social welfare.

Overcoming key challenges

Increased competition among countries for attracting foreign investors, coupled with enormous pressure on investment promotion agencies to enhance quality and national development contributions of FDI, has led to rethinking of investment promotion strategies. However, this has led to an enormous opportunity for investment promotion agencies to consider the relevance of sustainable development—an aspect that has, in many cases, been completely overlooked. For sustainable development of mineral-resource-rich countries, primarily the less developed ones, government and policy-makers need to address an economic growth that is accompanied by environmental protection and social equity.

Need for a strong public policy

Presence of effective national policies and institutions is crucial to effective capital generation of the host country. This is because government revenue is among the most important benefits of mineral extraction. Institutions play a crucial role in not only shaping the relationship between MNCs and various stakeholders, but also influencing the behaviour of these companies in sharing resource rent.

By definition, foreign investment implies that a part of the value created will be amassed by MNCs. Hence, unbalanced bargaining power between corporations and governments of host countries can lead to undesirable outcomes. In recent times, many governments have taken steps to increase their share in profits generated through mining activities and rise

in international mineral prices. For example, in 2006, Mongolia introduced windfall tax⁴ rate (68%) on profits from copper and gold after the deduction of extraction costs, provided global prices exceeded certain levels. This led to doubling in royalty rates, and amendment of mineral laws. In Chile, low contributions from MNCs operating in the mineral extraction sector, as against national companies, forced the government to introduce progressive mining tax on the gross sales of minerals. Common progressive taxes include progressive profit taxes and price-based windfall taxes. However, one of the difficulties that the government might face in this regard is determining the scale of tax rates. This largely depends on the governments capacity to negotiate effectively with companies. Also, efficient tax administration plays a key role in effective collection and allocation of monetary resources.

Resource-rich countries need to properly utilize the generated revenue especially for human resource development. Poor education, lack of productive and technological abilities, and absence of appropriate institutions are the typical hindrances. Dedicated funds generated through taxes or otherwise by the government can be used in development needs deemed important by stakeholders. Consultations with policy-makers and/or MNCs can focus on areas like revenue sharing, undertaking assessment of needs, and stipulating adequate packages to be offered. In this regard, grassroot level co-operation between mineral-based industry and the local people can reduce conflict, promote efficient natural resource exploitation, and at the same time promote business profitability and sustainability.

The role of MNCs

To achieve excellence, MNCs involved in the mining sector need to adopt a holistic approach that covers the breadth of their value chain as well as the depth of the operating models adopted in different locations. However, the question often asked is, whether such initiatives would lead to financial benefits. In this respect, it should be pointed out that economic, social, environmental, and moral performance significantly affect shareholder value. The investment community is becoming increasingly concerned with environmental, social, and governance factors of businesses. The UN Global Compact comprises more

⁴ Tax levied by governments against certain industries when economic conditions allow those industries to experience above-average profits. Windfall taxes are primarily levied on companies in the targeted industry that have benefited the most from the economic windfall, most often in commodity-based businesses.

than 4700 businesses committed to adopting sustainable and socially responsible policies, and to reporting their implementation.

Despite there being numerous examples of MNCs who have adopted commendable sustainability efforts, business as a whole is at a relatively early stage of both learning and adoption of such efforts. Some of the key reasons are: (i) lack of definition about what level of action is sufficient, (ii) lack of tools or standards that allow corporations to measure their economic return and the correlation they have on the shareholder value, and (iii) inability to bring cultural change within business (EIU 2008). One way of addressing these challenges is to have a sustainable business model in place that will help in redefining the overall objectives, purpose or goals, internal and external environment, and ways to introduce and integrate into MNC's activities the ideas and values related to such practices. Before embarking on such a model, MNCs need to take a step back and understand the importance of sustainable development on their business.

Once the agenda is designed, it is imperative that the corporations connect to or engage with relevant stakeholders. Key stakeholders include the local community and community-based organizations, the government, and local industry. It needs to be identified at what stage in the value chain these stakeholders need to be involved, so that they will play a role in driving profits of the respective companies while promoting sustainable mineral resource mining in host countries. Needless to say, innovative ways of engaging with stakeholders can drive results to new heights. However, all initiatives need to have increased engagement of senior or global leadership who will help in ensuring effective and coordinated implementation and deployment of environment and social agenda (Moser 2001).

Conclusion

The economic recovery, coupled with rise in international price of resources, allows mineral- resource-rich

countries to use their resources in a manner that can promote sustainable development. Hence, it presents a significant opportunity to these developing countries to reduce poverty and achieve a path that will lead to broader sustainable growth. Since these countries are short of resources (capital, technology, and human), in such regions there is a dominance of MNCs. In this background, the governments' responsibilities for ensuring tangible development benefits through appropriate regulatory and institutional framework become even more significant. MNCs need to re-evaluate their existing practices and corporate strategies to ensure these contribute to efficient production. At the same time, they need to focus on national and local development needs that will help in achieving win-win situations for all.

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Non-fuel minerals and their relevance for India

Arpita Khanna and Swati Ganeshan

With more than 9% growth for three consecutive years (2005–08), the Indian economy is clearly climbing a rising curve. Two sectors that have played important roles in this impressive growth are the services sector and the industrial sector. The service sector grew at around 10% during 2007–08 and now contributes around 65% in the gross domestic product (GDP). During the same period, the industrial sector's growth was recorded at around 7% and its share in GDP now stands at around 18%.¹ Within the industrial sector, the manufacturing industry has complemented the country's excellent growth momentum, by growing from 3.2% in 2008–09 to 8.9% in 2009–10.²

To maintain this growth rate, it is important to address the issues that can act as potential roadblocks. One of these is security of minerals, defined in terms of availability in time and at an acceptable price. Minerals are fundamental inputs to domestic economy at scales ranging from individual consumers to entire manufacturing and engineering sectors. Even the agricultural sector—the mainstay of the Indian economy—is dependent on minerals to the extent that unavailability of key minerals like phosphorous, potassium, gypsum, and so on can hamper production of agricultural crops and exacerbate the problem of food security, which currently haunts our economy. Moreover, the mineral industry is flourishing, generating huge revenue and providing large-scale employment opportunities.

The importance of minerals is likely to grow in future with the expected escalation in their demand owing to increase in industrial activities, improvements in standard of living as reflected by the increase in per capita income, and emergence of a new middle-class with distinctive life styles and consumption pattern. In

addition, emergence of new products and technology will contribute to the growing demand for minerals.

Fuel minerals, particularly oil and coal, considered strategically important for national security have been extensively studied and debated. However, non-fuel minerals—despite increase in importance and growing demand—have not found way into discussions on India's national security. The reason can be attributed to the fact that no crisis of national proportion or proportion similar to the oil embargo in 1973 has been witnessed with regard to non-fuel mineral availability. However, due to the rapidly changing non-fuel minerals scenario at both global and national levels, there is a probability of crisis or the emergence of challenges. Therefore, it is important to look forward and assess the security of non-fuel minerals, whose unavailability can potentially halt economic growth.

Overview of non-fuel minerals in India

India produces 86 minerals, including four fuels, 10 metallic, 46 non-metallic, 3 atomic and 23 minor minerals (comprising building and other materials)³. In 2003, India was ranked among the top ten producers of certain minerals such as mica blocks and splittings (eighth), barytes (second), coal-lignite (third), chromite (second), iron ore (fourth), bauxite (sixth), manganese ore (eighth), kyanite/silimanite/andalusite (fourth), talc/steatite/pyrophyllite (third), and magnesite (ninth). However, even with the environment being geologically favourable, there has hardly occurred any discovery in fertilizer minerals, diamond, gold, nickel, copper, lead, zinc, platinum group of metals, and rare metals that points towards dependence on imports for many key minerals.^{4 5}

¹ The data is compiled from IndiaStat, with figures for growth rate representing quick estimates by RBI, and the figures for share in GDP representing revised estimates.

² <<http://buzz7.com/news/highlights-of-economic-survey-2009-10.html>> Last Accessed on 5 March 2010.

³ Minerals scenario, National, <http://mines.nic.in/>. Last accessed on 5 March 2010.

⁴ Working group on Minerals Exploration and Development, Eleventh Five Year Plan 2007–12 January 2007. Planning Commission, Government of India <<http://planningcommission.nic.in/aboutus/committee/11strindx.htm#ind/>>

⁵ Eleventh Five Year Plan, Planning Commission, Government of India.

According to the Working Group on Minerals for the Eleventh Five Year Plan⁶, important minerals have been categorized into four sets: abundantly available, adequately available, deficit, and scarce minerals. As many as 20 minerals have been listed as abundantly available in India, including coal and lignite. Other minerals listed under that category are iron ore, bauxite, titanium, limestone, dolomite, barytes, bentonite, fullers earth, fireclay, kaolin, magnesite, sillimanite, silica sand and quartz, quartzite, garnet (abrasive), feldspar, calcite, and minor minerals such as marble, granite, and slate. The adequately available minerals include manganese ore, chromite, ball clay, mica, gypsum, graphite, steatite, wollastonite, ochre, vermiculite, pyrophyllite, and salt rock. Copper ore, lead-zinc ore, pyrite, apatite, rock phosphate, asbestos, fluorite, and kyanite are categorized as deficit minerals. While gold ore, silver ore (metal), gallium, magnesium, PGM, antimony, molybdenum ore, nickel ore, tin ore, tungsten ore, vanadium ore, cobalt ore, diamond, potash, native sulphur, and borax are considered scarce. India imports scarce minerals, many of which such as gallium and tungsten are essential for defence and allied applications. For other minerals, India needs to engage in research and development to build the requisite technical know-how to extract resources such as PGM.⁷

Minerals are being increasingly used in emerging technologies. For example, gallium arsenide is used in the manufacture of solar cells. The increase in use and importance of certain minerals for specific applications may increase with rapid technological changes, which might pose challenges for emerging economies like India.

Global non-fuel minerals scenario

In the global non-fuel minerals scenario, many emerging economies are pursuing strategies to protect and augment their resource base. China, for instance, has imposed export restrictions on non-fuel raw materials including aluminum, cokes, copper, nickel, molybdenum,

manganese, magnesium, high-tech metals (rare earth, tungsten, and indium) among others.⁸ In addition, these economies, with the aim of securing privileged access to raw materials, have substantially increased their economic engagement with resource-rich countries. For example, China is actively involved in developing infrastructural projects, and in exploration and extraction activities in countries that are rich in minerals like Zambia (copper), Democratic Republic of the Congo (copper and cobalt), South Africa (iron ore), Zimbabwe (platinum) and Gabon, Equatorial Guinea, and Cameroon (timber).⁹

India has also been attempting to secure resources beyond its borders. However, the feeble efforts have been facing fierce competition from other countries, especially China. Japan and South Korea are also gearing up to secure non-fuel minerals. Private companies from India have been involved in acquiring mineral assets to sustain and enhance their production capacities. According to media reports, Ashapura Minechem—one of the largest private Indian companies involved in mining of minerals—recently entered into a joint venture for Barite mines in Nigeria¹⁰, while Sterlite agreed to buy a bankrupt US copper mine in 2009.¹¹ The acquisition of iron ore resources in the US and mineral concession¹² in north Brazil are just some of the instances of the growing need for minerals and concurrent initiatives undertaken in the private sector.

To ensure energy security and tackle adverse impacts of climate change at the global level, significant emphasis is being laid on renewable energy and green technologies. Minerals are essential components of these technologies, hence highlighting the need to ensure the continuous supply of certain resources. For instance, hybrid cars and wind turbines utilize a significant amount of rare earth elements.¹³ Solar technology makes use of silicon. Lithium, a light weight metal, is used in batteries, laptops, and hybrid cars. It is estimated that the demand for such resources will keep on increasing over the next 15 years.¹⁴ The PGM market is also expected to expand, especially

⁶ Ibid, Working Group, XI plan, 2007-12

⁷ According to the Minerals Yearbook 2007, Bureau of Mines: estimated resources of 15 tonnes of PGM (platinum and palladium) have been established with 54% of the reserves in pre-feasibility and rest in inferred category and R&D for exploration needs to be undertaken.

⁸ The Raw Materials Initiative — meeting our critical needs for growth and jobs in Europe, communication from the commission to the European Parliament and the Council, Brussels, COM(2008) 699, Commission Of The European Communities, EU, 2008., Annex-4, Table 1.

⁹ Ibid, EU, 2008

¹⁰ Global Projects of Ashapura Minechem <http://www.ashapura.com/globalprojects.html>

¹¹ Vedanta-Sterlite industries-Operations <http://sterlite-industries.com/Our%20Business/Operations.aspx>

¹² Essar Group gets mining rights in Brazil. Business Standard. 19 January 2009.

¹³ Steve Gorman. As hybrid cars gobble rare metals, shortage looms, Reuters. 31 August 2009. <<http://www.reuters.com/article/newsOne/idUSTRE57U02B20090831>>. Accessed on 24 October 2009

¹⁴ Joshua Keating, "Bolivia's Lithium-powered future", 21 October 2009. Foreign Policy <http://www.foreignpolicy.com/articles/2009/10/21/bolivia_lithium_powered_future?page=full>

because of its increasing demand in automotive sectors due to tighter emission controls and stress on energy and fuel efficiency.

Non-fuel minerals in India: issues in perspective

India's future economic growth will be helmed by industries, which include automobiles, electronics, construction, transportation, and consumer durables among others. Industrial growth will lead to huge demand for non-fuel minerals. The timely availability of these inputs at affordable prices is thus important for economic growth. Various factors, both at national and international levels, can affect the supply of these key inputs. Therefore, it is important to understand these factors and undertake strategic actions to prepare ourselves against any kind of shortfall in their supply.

The determinants of supply risk vary with the period of analysis (short, medium or long-term). Thus, presenting a comprehensive analysis of all the issues is beyond the scope of this paper. Some of the generic factors that can lead to supply risk, however, are listed below.

One of the determinants of supply risk is the unavailability of domestic sources. Domestic unavailability of a non-fuel mineral leads to greater dependence on overseas sources, which, in turn, increases our exposure to geo-political risks. These risks are defined as physical supply distortions due to strategically motivated control of supply or break down in political and economic systems of exporting countries.¹⁵ Domestic unavailability can result from inadequate geological potential, which is assessed by geologically appropriate terrains for a given mineral, mineral associations, depths, grade, tonnage, and geometry of deposit within the national economy. Geological potential, however, is not the sole determinant of a mineral's availability. It is also important to be able to extract and process the mineral, which, in turn, is the function of various technical and economic factors. Thus, geological, technical, and economic factors collectively determine the availability of resources domestically.

Others factors that can restrict the availability of domestic sources include concentration of domestic supply in the hands of few suppliers. In such a case,

supply is prone to be restricted by opportunistic behavior of companies with market clout, which, in turn, leads to downstream users paying higher prices. Second, problem of access of a non-fuel mineral occurs if mineral-rich states face conflicts. For example, it has been reported that the Democratic Republic of Congo has been facing mineral-related conflicts.¹⁶ Third, concentration of production in a handful of mines can heighten vulnerability to mine-specific uncertainties such as labour strikes, technical problems, and so on, thus creating problem of access yet again. Last but not the least, owing to increased importance of sustainable development efforts among governments, industrial organizations, NGOs, and others, the environmental and socio-cultural dimensions of mineral supply are rendering supply sources increasingly complex, and bringing about unprecedented changes in the way mineral supply will be occurring in future.

In view of the above factors that can potentially restrict the availability of non-fuel minerals, which are fundamental inputs to the domestic economy, it is important to proactively embark on the process of determining policies and appropriate actions that can mitigate the impact of the potential restrictions in supply.

Understanding and addressing challenges

The international non-fuel minerals market is undergoing rapid changes. The causes are many, including rising prices caused by huge demand from emerging economies, particularly China; increasing concentration, at the levels of producing countries as well as companies; resource-rich countries facing violent conflicts over competition of control for natural resources; inequitable allocation of resource revenue; social and environmental externalities from mining activities; and so on. Given these developments in the international market, and the growing demand for minerals within the economy, it is critical that India shifts from its position of a silent spectator to that of a strategic planner.

It has been stated in the Working Group Report of the Eleventh Five Year Plan that India does not have the necessary economic power to survive solely on the import of strategic mineral resources. Currently, import of scarce minerals drains out a significant proportion of

¹⁵In cases where external supply sources are diversified and the supply is coming from politically stable economies, high import dependence for a mineral does not pose any risk. Therefore, high import dependence as an indicator for supply risk has to be treated cautiously.

¹⁶Faced with a gun what can you do: War and militarization of mining in Eastern Congo. Global Witness Report. July 2009

the foreign exchange reserve of the country.¹⁷ India is also encouraging global equity investments in the non-fuel minerals sector. What is needed is robust strategic investment that would ensure supply security and secure the nation's future. There is a need to emphasize on global non-fuel mineral investments in diplomatic endeavours. India should seek measures to forge and enhance relationships with resource-rich countries and encourage Indian private players in this sector to increase their investment beyond borders, especially when it comes to scarce minerals.

A forward-looking approach that involves assessing the current or future risks associated with the supply of key non-fuel minerals and undertaking strategic actions to mitigate the effects is important for sustaining current economic performance and moving towards a higher growth path.

In doing so, one of the challenges that need to be addressed is the augmentation of production from secondary sources (i.e. recycling). Enhancing secondary production will reduce our dependence on primary (or virgin) ores, and thus provide a great deal of flexibility in the event of supply disruption. Another challenge is to increase exploration and production of domestic ores. India is endowed with large mineral resources. However, exploration and survey activities to discover the full potential of these deposits have not been carried out. The public sector agencies engaged in exploration and prospecting like Geological Survey of India, Mineral Exploration Corporation, and so on, are constrained by inadequate capacity. Therefore, the legal and regulatory environment need to be improved to stimulate private sector investments and foreign direct investment (FDI). As India focuses on inviting FDI into the country, a key issue that would emerge is renewal or creation of interest among foreign investors. One way of ensuring this is to undertake a series of initiative beyond the nation's borders that would provide a comprehensive understanding of the various dimensions of the non-fuel minerals sector in India. This will not only usher in the necessary investment, but also the latest technologies and best practices from across the world.

For many a mineral it has been observed that while the country has the geological potential, the technologies to extract and process the mineral are yet to be developed. This calls for improvement in research and development activities and establishment of training institutions to meet the manpower requirements for the mineral industry.

Initiating joint activities with other nations in the R&D sector can also prove useful to augment technologies and methods utilized in the extraction and production of non-fuel minerals sector. Knowledge-sharing activities and capacity-building of various stakeholders, both in public and private domains, can aid in evolving the best practices while guaranteeing access to the minerals.

There is a pressing need to assess and identify measures for initiating robust diplomatic efforts that enhance relations with resource-rich countries, and supporting investment initiatives of private players. Increasing interdependence for resources and rapid globalization may create the possibility of an international framework. The framework will bring together producers and consumers of non-fuel minerals to create a favourable environment for enhanced cooperation and sustainable management of resources.

In an era where obtaining 'social license to operate' has become as important as obtaining 'regulatory license to operate', sustainable development of minerals—development of minerals in a way that internalizes the negative externalities associated with mine development—assumes a lot of importance. The challenge here lies in integrating the economic activity of extracting minerals with environmental integrity, social responsibilities, and an effective governing system. This will ensure the sustainability of mining activities in India and reduce the possibility of short-term disruptions.

Conclusion

India needs to augment its reserve base in certain significant minerals, find new sources for others, while it simultaneously addresses the issues of technology relevant for efficient exploration and production. Consecutively, there is a need to tackle other matters such as mining-related environment problems, and conflict with the local communities while conducting exploration for minerals that are vital for the economy.

In the coming decade, it is essential for India to proactively consider the security issue of non-fuel minerals. Resource security issues for India are inter-layered at both the domestic and global levels and have the potential to raise supply security issues, thereby leading to competition, monopoly or a potential for conflict. Some of the insights provided in this article highlight the significance of non-fuel minerals and reiterates the need for the sector to be given due importance by the government and the individual alike.

¹⁷Working Group on Minerals Exploration and Development, Eleventh Five Year Plan 2007–12. January 2007. Planning Commission, Government of India. (Chapter 4, 4.5.2, Identifying minerals with scarce resource base) <<http://planningcommission.nic.in/aboutus/committee/11strindx.htm#ind>>

Book review

Mining in Africa: regulation and development

(Edited by Bonnie Campbell, Pluto Press/IDRC, London/Ottawa, 2009)

Anandajit Goswami

Using five case studies on mineral resources in Ghana, Guinea, Mali, Madagascar, and Congo, the book edited by Bonnie Campbell ponders upon critical issues dealing with resource governance aspects in Africa that have interlinkages with community development. The common thread running through all these case studies is an analysis of the relationship between resource governance and poverty reduction.

For example, the case study on Ghana highlights how the mining sector has failed to generate sufficient revenue and employment due to tax concessions and fragmented regulatory regimes for retained earnings that have largely helped private investors. That the regulatory regimes have not substantially contributed to national development through channelization of resources of the mining sector has been validated in the case study that shows how revenue generation from mining sector has been hindered by the kind of capital allowances, and custom and excise duty exemption on equipments. Nonpayment of capital gains tax, dividends, corporate income tax, larger retention of revenue by companies, minimum usage of local labour, and low royalty payments for mining activities were some of the factors observed in Ghana. All of these have led to lesser generation of revenue for national development. Similarly, it has not upscaled local employment generation in mining activities.

The overall framework of regulatory regime marked by tax and royalty payment structures has been guided by the amended Minerals and Mining Act 703, 2006 that was formulated after amending the Minerals and Mining Law of 1986. The law defined quotas for employment, retention levels of rents, and license and lease fees. However, the country lacked a dedicated national mineral policy for defining the developmental agenda of those people who are associated with mining. The legal regime in Ghana has often been marked by

contradictory pieces of legislation that have added to fragmentation of the sector. The law defined stamp fees, surface rent, licenses, and various kinds of lease fees applicable for the mining sector.

Post 2006, there was a demand in Ghana to ensure larger public participation in policy formulation for the mining sector. Once the new mining codes became operational, various multinational firms applied capital intensive technology, or 'heap leaching' technology for surface mining. This not only led to displacement of unskilled labour, but also generated waste, thereby affecting the natural resources available to the local community. Corrupt practices at the community level resulted in opacity in the way mining contracts were being offered to mining companies who arrived for exploration.

Conflicts arose between artisanal miners and mining companies. Since most of the land was owned by big mining companies, the artisanal miners had to work on leased land or designated forest areas. Environmental audits were carried out and consultations took place among the government, industry bodies, and mining companies without involving the communities or taking into consideration the needs of the communities affected by mining. Stability agreements were signed between the mining companies and the government to ensure that no untoward incident disturbed mining operations of the companies for three years.

Mining companies have negotiated low royalty rate payments with the government. The contribution of these companies to the government revenue kitty has been less in comparison to profits these companies made through mining operations. Moreover, these mining companies also avoided paying capital gains tax to the government. Collection difficulties, accentuated by lack of interinstitutional coordination further added to the problem.

The mining sector in Ghana has operated in the form of an economic enclave with no interlinkages with other sectors of the economy. Moreover, local communities never felt that enough action and initiatives had been taken by the mining companies for community development. The government has been trying to convince these communities that efforts are being made to utilize the revenue coming from mining sector for community development. But these assurances have not convinced the people, especially women in the mining community who have not had any respite from the hazardous effects of mining.

Impact of mining is highlighted in a similar manner in the Guinea case study. In Guinea, the new mining code developed in 1995 was a sacrosanct document that led to greater emphasis on the role of private sector players in mining operations. The code laid down guidelines for development of the mining sector with a focus on provision of basic service delivery for the communities affected by bauxite mining.

Lack of institutional capacity, opacity in designing of mining contracts, and absence of effective fiscal and legislative frameworks for mining community development have also been observed in the case of bauxite mining in Guinea. Fluctuation in global metal prices has also added to the problems, when it led to volatility in revenue generation of mining companies that further affected the transfer of revenue for community welfare. Raw bauxite has been exported from Guinea to various destinations in Ireland and England, where the raw material has been transformed into value-added products.

A tax was imposed on the amount of raw material exported. The rate of tax on the exportable raw material was based on a floating rate linked to global prices of aluminium. This infused volatility in the level of tax and revenue collection, owing to fluctuation in aluminium's global prices. Distribution of this revenue to the community proved to be ineffective owing to inefficiencies in the institutional structures responsible for distribution of the revenues to communities.

Upswing and downswing in the global aluminium market also affected the fortunes of mining communities. Institutional capacities grew weaker due to the burden imposed by the structural adjustment programme that the country had adopted while obtaining monetary assistance from the International Monetary Fund (IMF). Such adjustments included more participation from the private sector and reduction in level of subsidies for public utilities. Drop in mining revenues

because of global price volatilities led to a fall in government revenues and weakened the prospects of availability of public finance for development of the mining community.

Owing to the fact that the economy was not diversified, such a condition worsened the overall economic scenario of the country. With a fall in state revenue, participation of the state in operations of mining companies in the communities lessened. The Mining Code of 1995 also gave significantly larger leeway to private operators in mining operations, thereby reducing the role and decision-making stake of the state. Exemptions in tax and royalty payments were provided to mining companies engaged in raw bauxite mining in Guinea. The contracts guiding the payment structures displayed lack of transparency.

In case of mining in Mali, the problems faced are: a) destructive effect on natural habitat; b) degradation of soil, soil contamination, and emissions; c) population displacement; and d) negative impact on agricultural activities. Revisions in the mining code of Mali led to reduced participation by government, drop in royalty rates and ad valorem taxes. However, in the Mining Code of 1999, provisions were incorporated about laying down social infrastructure for the communities engaged in mining. The revised code also emphasized on provision of employment for local people. But there were gaps in terms of implementation of the guidelines of the code. In the absence of environmental guidelines for resources like water, the mining companies brought about hazardous effects on the water resources in Mali via their mining operations. Cyanide wastes have impacted water resources around the operational mines in the country. Auditing was done for assessing effects of mining on water resources by foreign auditors—an exercise on which the state authority had no control and say. Acidic wastes were also generated owing to mining in select sites of Ashanti Gold in Mali.

Adequate attention was not given on effects of mining on community health. Moreover, there was lack of information dissemination regarding these effects. In Madagascar, environmental and social dimensions were incorporated in the mining code while setting up a mining project. This was also aligned with the national environmental policy of the country. Moreover, there is also a marked reduction in state participation in mining activities followed by a gradual growth in participation of foreign investors and companies facilitated by the legal and regulatory regimes.

In the case of Democratic Republic of Congo (DRC), revenue from mining sector has been considered a panacea for curing a case of weak governance. However, such a philosophy did not work because of the fractured legal, political, and regulatory regimes. This fragmentation resulted in distributional aspects of revenue from the mining sector for welfare of the communities not being taken care of.

A new mining code was established in DRC in 2002 that led to a very liberal tax and customs regime. Private capital was allowed in the mining sector, while control was placed in the hands of private players. Thus, the state was no longer actively involved in mining operations. Revenues from the mining sector were dependent on the private capital that flowed into DRC. In terms of regulatory aspects dealing with mining operations, an organization called CAMI was established in 2003. CAMI shut shop in 2004 after it failed to bring in efficiency in the mining contracts and nature of mining leases. Inefficiency of institutions dealing with governance of mining sector also played a key role in inept functioning of the mining companies who did not bother to address the community needs.

The legal guidelines mentioned in the mining code were not implemented in reality. Revenues from the sector were channeled to other sectors. Corrupt political practices added to the overall inefficiency in operational aspects of the mining sector. There have also occurred instances of violation of human rights in DRC during mining operations. The DRC experience reveals that there is a need for a developmental approach and strict corporate governance guidelines to ensure welfare of the mining communities. Mere formulation of legal, regulatory, and fiscal framework are not sufficient.

The DRC case study raises many pertinent questions: a) What is the role of institutions in effective implementation of the legislative principles of mining code? b) How can favourable living conditions be created for individuals residing in the mining communities that will not compromise on growth in mining activity? c) How international norms and standards can be incorporated in the mining sector of DRC? d) How mining liabilities for communities can be ensured through committed funding assistance from the international funding community? e) How an integrated framework can be formulated to bring the DRC economy out of an enclave framework? and f) What role can the civil society and unions play in ensuring sustainable mining in DRC, while addressing the welfare issue of communities?

The book highlights the role, importance, and types of political interventions that become a hindrance towards sustainable development of mining communities by adversely affecting their livelihoods, living standards, and income. Fiscal and regulatory frameworks determining economic rents from the sector and its subsequent distribution across communities are also discussed in great detail through the five case studies. Complexities of public finance issues related to revenue and tax generation from the mining sector and their effective distribution are also mentioned in the individual case studies. The book links governance framework with the economic reforms process that many of these countries have followed over the years through structural adjustment programmes of the IMF and while availing of the lending facilities of the World Bank.

In spite of such meticulous research, the book does miss out on some points. One of these is the reason behind the existence of a knowledge gap about the effects of mining technology applied in mining sites in Ghana and Mali. Also, it fails to address how that knowledge gap could have been reduced and a technology suiting the needs of the local community could have been employed in the mining sector to curb labour displacement and waste generation. Intermediate technologies that are not highly capital- and skill-intensive can be an option to tackle labour displacement. Enhancement of efficiency in such technologies can reduce the hazardous impacts of technologies on communities. Technology transfer regimes and availability of mining technologies from south with an aim towards bringing about welfare of mining communities are some of the research issues that can be explored.

The process of creating transparent governance regimes that include in their folds social and environmental aspects of the respective communities are not emphasized to an adequate extent in the book. Even though the problem arising from political economy—fragile state, regulatory, and legal regime in the mining sector of the enclave economies—are mentioned in the book, a way forward can be to explore how such problems can be addressed in the long run to ascertain the welfare of communities around the mining regions. Establishment and functioning of effective institutions, technology, and knowledge transfer dealing with sustainable mining practices from south to these countries can be a feasible option.

NEWS IN BRIEF

Trade Winds

India's FTA shopping

During the recent visit of Canadian Prime Minister Stephen Harper, India and Canada signed a memorandum of understanding (MoU) for establishing a joint study group (JSG) to examine the feasibility of a comprehensive economic partnership agreement (CEPA). The two nations also inked an MoU on bilateral cooperation in the field of energy, including cooperation in the civil nuclear sector, renewables, oil and gas, and power generation.

Meanwhile, Iran has expressed its keenness to finalize a Preferential Trade Agreement (PTA) with India. It has urged Indian—as well as local—companies to revamp and upgrade their business engagement by adopting a time-bound action plan that would lay down a clear roadmap for tie-ups in non-oil sectors, strengthen investment, and encourage R&D cooperation. However, Iran is also intending to move beyond bilateral cooperation to regional and global cooperation in order to usher in peace and stability in the region.

*Source: The Business Line, 18 November 2009.
Financial Express, 14 November 2009.*

US, China to fight protectionism

The US President Barack Obama wrapped up his three-day China visit after discussing trade issues with Chinese Premier Wen Jiabao. The two countries pledged to work together to fight protectionism, but appeared to make little progress on resolving differences over China's currency policies. The US has, in recent weeks, reiterated its calls for China to appreciate its currency, saying it has been devalued by Beijing and has led to trade imbalances.

On Wednesday, Obama and Wen also discussed the recent spat between the two countries over import duties. The US imposed preliminary anti-dumping duties worth \$2.6 billion on Chinese oil-well pipes, and Beijing responded by imposing duties on American cars. The two countries have pledged to cooperate on a number of global issues, ranging from climate change to nuclear proliferation, even though their differences over trade and human rights appear to remain unresolved.

Source: The Hindu, 20 November 2009.

WTO ministerial ends quietly

The Seventh Ministerial Conference of the WTO took place in Geneva, from 30 November to 2 December 2009.

The general theme for the discussion was 'The WTO, the Multilateral Trading System and the Current Global Economic Environment'. The conference, attended by over 150 trade ministers, remained a low-key affair with the Doha Round of negotiations being virtually kept out of the agenda. The Doha Round of talks, initiated in 2001, seek to liberalize global trade. The talks have been stalled a number of times because rich nations and third world countries failed to agree on the norms proposed. India and other developing countries have been demanding flexibility in imposing import curbs on farm products in order to protect poor farmers. In addition, the developing nations have been insisting that rich countries like the US should cut down on farm subsidies.

Source: Financial Express, 4 December 2009.

US moves WTO on textile sops

The US has asked the World Trade Organization (WTO) to examine whether India still qualifies for concessions that allow it to grant export subsidies to the textiles and clothing sector. India, however, is confident that its subsidies to textile exporters cannot be challenged at the multilateral forum because the subsidies are mostly short term.

The US, in a recent submission to the WTO committee on subsidies and countervailing measures (SCM), stated that it has reasons to believe that India has met the definition of 'export competitiveness', as defined in the SCM Agreement for certain products.

Source: The Economic Times, 3 March 2010.

India, Brazil, and the EU converge on non-tariff rules

India, Brazil and the EU have come together to press for convergence of all national standards with relevant international standard to check arbitrariness in rules that often leads to rejection of shipments by importing countries.

In a recent submission at the WTO, the group has argued that members should agree to a review of their technical regulations at regular intervals, and make necessary changes to harmonize them with relevant international standards set by bodies such as the International Organization for Standardization (ISO), International Electrotechnical Commission (IEC), International Telecommunication Union (ITU), and Codex Alimentarius.

Source: The Economic Times, 19 March 2010.

Investment Current

Global M&A investment lowest since the crisis

Worldwide investment in mergers and acquisitions (M&A) shrunk to its lowest year-on-year level since the beginning of the economic crisis in 2007. As per OECD estimates, the monthly average M&A activity was worth just under \$50 billion in the year, upto February end. This is estimated to be around 35% of the levels reached two years ago. The decline in international investment activity during the economic crisis was concentrated in the OECD regions. After the peak in 2007, international investment in the OECD countries has declined by almost 70% over the past two years. During the same period, international investment inflows dropped by around 55% for the rest of the world.

Source: <http://www.reuters.com/article/idUSTRE62M3NV20100323>

FIPB's approval power for FDI doubled

The Government of India has empowered the Foreign Investment Promotion Board (FIPB) to clear Foreign Direct Investment (FDI) proposals of up to Rs 12 billion (\$260.86 million) from its current ceiling of Rs 6 billion (\$130.43 million). Earlier, for proposals that involved investment of more than Rs 6 billion, approval was required from the Cabinet Committee of Economic Affairs (CCEA). Under the new norms, only equity investments will be considered while deciding whether a project will be put up before the CCEA, as against the earlier practice of taking into account the total project cost. Further, in cases where entities have already taken prior FIPB or CCEA approval for their initial investments or under sectoral caps, no fresh approval would be required.

Source: <http://m.economictimes.com/PDAET/articleshow/5563052.cms>

Asia-Pacific is the top destination region for FDI

According to the recently launched Global Outlook Report for 2010, one of the key global trends is that the Asia-Pacific region remained the top destination for FDI in 2009, despite attracting 16% less FDI projects than 2008. This is primarily because the Asia-Pacific is a low-

risk FDI location. Analysis of source markets for greenfield investment reveals that western Europe— responsible for 49% of projects— remained the top source region for FDI, with only Latin America and the Caribbean increasing their outward FDI projects, and thereby witnessing a 4% hike. The financial services sector remained the top sector for global FDI projects for the second year running, accounting for 9% of all projects in 2009, despite witnessing a decrease in FDI projects when compared to 2008. The real estate sector suffered the largest decline in FDI projects. For the first time since 2003, sales, marketing, and support business activity were the most popular activities for FDI, accounting for more than one-fifth of all projects, despite a fall in number of projects as compared to 2008. Of all activities, manufacturing projects still entailed maximum capital investment.

Source: http://www.fdimagazine.com/news/fullstory.php/aid/3262/Global_Outlook_Report_2010.html

Increase in FDI equity inflows in India during 2009–2010

According to statistics from the Department of Industrial Policy and Promotion, there is a 4% rise in FDI equity inflows in India during the financial year 2009–2010. Major part of the FDI inflow has originated from countries like Mauritius, which has shown an increase of inflow by 43% during 2009–2010. Singapore and the USA follow, having shown an increase of 9% and 8% respectively for the same period.

Source: http://dipp.nic.in/fdi_statistics/india_FDI_February2010.pdf

Third Place for India in global foreign direct investments:

According to the UNCTAD 'World Investment Prospects Survey 2009–2011', India has been ranked third among the largest FDI recipient countries for this year. This has been largely possible owing to the positive perception about India's industrial output, and the growing consumer confidence in India.

Source: <http://www.ibef.org/economy/fdi.aspx>

Energy and Resources

US-China energy cooperation

The presidents of USA and China have jointly announced a package of energy cooperation between the two countries. The package comprises six different programmes, viz., Clean Energy Research Center, Electric Vehicles Initiative, Energy Efficiency Action Plan, Renewable Energy Partnership, 21st Century Coal and Shale Gas Initiative. Establishment of the US-China Clean Energy Research Center—for facilitation of joint research and development of clean energy technologies by experts from both countries—is a part of the package. Equal public and private partnership from the two nations will fund the center with at least \$150 million over the next five years.

Source: <http://www.america.gov/st/texttrans-english/2009/November/20091117145751xjsnommis0.63081.html&distid=ucs>

India wants energy cooperation with Norway and Australia

India is interested in bilateral cooperation with Norway and Australia in the energy sector. Norway is a major exporter of fossil oil natural gas. India is seeking bilateral cooperation in renewable energy, hydropower, and hydrocarbon sector. India and Norway are already engaged in intensive trade and investment. On the other hand, with Australia—a major producer of coal and natural gas—India is likely to discuss areas of cooperation in the energy sector like nuclear energy, coal, and natural gas.

Source: http://www.mynews.in/News/India_seeks_energy_cooperation_with_Australia,_Norway__N39671.html

Impact of Chilean earthquake on copper price

A massive earthquake measuring 8.8 on the Richter scale in Chile during end-February has led to a rise in copper prices in the international market. Chile is the largest copper producer in the world, and supplies one-third of the global supply. However, the northern region of Chile, which is marked by the highest concentration of the copper industry, has not been majorly affected by the earthquake. Thus, it is expected that the spike in prices will not sustain for a long time.

Source: <http://money.cnn.com/2010/03/01/markets/copper/index.htm>

Investment in coal mine abroad: joint venture plan by Indian power trader

PTC India Ltd, India's largest power trader, is planning to form joint ventures with both foreign and Indian companies for purchasing stakes in mining projects abroad. Once realized, this would assure fuel supplies for Indian power producers, who are currently facing problems due to shortage of coal. PTC India Ltd plans to buy coal mines

in Indonesia and Australia. It plans to sell the imported coal through long-term contracts to independent power producers or sell it off in the Indian spot market.

Source: <http://paguntaka.org/2010/02/23/ptc-india-plans-joint-ventures-for-coal-mining-assets/>

Kuwait-France nuclear energy cooperation

Kuwait and France have signed a cooperation agreement that stipulates peaceful use of nuclear energy. This is the first step in the joint endeavour between the two countries to share experience in the nuclear field. Kuwait is planning to establish a civilian nuclear project mainly for power production. It already has a national committee that looks into peaceful use of nuclear energy. The agreement is for 20 years and allows the "supply of nuclear material, equipment, and facilities" as per international treaties, along with training, exchange of technology information, and research.

Source: <http://www.middle-east-online.com/english/business/?id=36657>

East Asia: World Bank report on future energy strategy

According to a recent World Bank report—*Winds of Change: East Asia's Sustainable Energy Future*—renewable energy should be developed and utilized in the next 10 years to meet East Asia's energy needs. In the last 30 years, a significant increase in the gross domestic product (GDP) of East Asian countries has resulted in increased energy consumption. China, Indonesia, Malaysia, the Philippines, Thailand, and Vietnam are included in the study. The report is based on each country's growth forecast and power plan. It has also emphasized on promoting energy efficiency and use of renewable energy sources. The recommendations include energy-pricing reforms, regulations, and financial incentives, which can lead to a 'level playing field' between traditional fossil fuel and renewable energy investments.

Source: <http://www.abs-cbnnews.com/business/04/19/10/world-bank-urges-east-asia-invest-renewable-energy>

Joint venture in Nigeria

The Nigerian National Petroleum Corporation (NNPC) and Mobil Producing Nigeria (MPN) have formed a joint venture for construction of a 500-megawatt electricity plant in the Akwa Ibom state of Nigeria. The plant's output is enough to generate power for the entire country. An official revealed that the plant is part of a domestic gas synergy project, which also includes construction of a 56-km-long pipeline to deliver gas to the national grid. To improve energy supply in the domestic market, the joint venture is going to set up facilities to ensure 100 million cubic feet of gas per day.

Source: <http://allafrica.com/stories/201002110289.html>

Environment and Development

Copenhagen Accord at the fifteenth conference of the parties of UNFCCC

The participants of the fifteenth session of the conference of the parties to the United Nations Framework Convention on Climate Change have agreed on a Copenhagen Accord. The Accord is a political agreement and is not of a legally binding nature. It covers all the main elements of the Bali Action Plan, including a long-term goal, mitigation, adaptation, finance, technology, forests and measurement, reporting and verification. Among other things, the Accord calls for establishing a Copenhagen Green Climate Fund as a channel for delivering finance and setting up a high level panel 'to study the contribution of the potential sources of revenue' toward funding goals.

Source: Pew Center on Global Climate Change
<http://www.pewclimate.org/international/copenhagen-climate-summit-summary>

Thimpu statement on climate change at the SAARC Summit

At the sixteenth summit of SAARC countries, the Statement on Climate Change was adopted with a view to make South Asia a world leader in low-carbon technologies and renewable energy. The statement also emphasized the importance of promoting climate resilience, which will lead to development and poverty eradication in a sustainable manner. One of the planned initiatives is the SAARC Inter-governmental Monsoon Initiative on the evolving pattern of monsoons that will assess the member states' vulnerability to climate change.

Source: The Financial Express
http://www.thefinancialexpress-bd.com/more.php?news_id=98978&date=2010-04-30

Polar bear and shark proposals rejected at CITES

The fifteenth meeting of the conference of the parties to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) was held from 13–25 March 2010 at Doha. No new trade measures to protect marine species was agreed upon. The proposals to include polar bear in Appendix I was rejected on grounds of insufficient scientific evidence. Similarly, proposals to include sharks in CITES Appendix II were also rejected implying trade in the species can continue without any CITES permit.

Source: Press release, Convention on International Trade in Endangered Species
http://www.cites.org/eng/news/press_release.shtml

Draft protocol on ABS ready

The ninth meeting of the Ad Hoc Open-ended Working Group on Access and Benefit-sharing was held in Cali, Colombia from 22–28 March 2010 to finalize the negotiations of the international regime on access and benefit sharing. The parties agreed upon a draft protocol on access to genetic resources, and fair and equitable sharing of the benefits from their use as basis for further negotiation. This draft is expected to be adopted at the Nagoya Biodiversity Summit in Japan in October 2010.

Source: Convention on Biological Diversity
<https://www.cbd.int/wgabs9/>

Government announces moratorium on Bt brinjal in India

After a round of public hearings, the Indian Minister of Environment and Forests announced a moratorium on release of Bt brinjal 'till such time independent scientific studies establish to the satisfaction of both public and professionals, the safety of the product from the point of view of its long-term impact on human health and environment, including the rich genetic wealth existing in brinjal in our country.'

Source: Ministry of Environment and Forests
http://moef.nic.in/downloads/public-information/minister_REPORT.pdf

Huge quantities of radioactive waste surface at Delhi scrap market

Large amount of radioactive Cobalt-60 was found in shops of scrap dealers belonging to the Mayapuri area of New Delhi. Around 10 bunches of scrap material containing radiation sources were removed from the market. The source of the radioactive substance was traced to the Chemistry Department of Delhi University. Now, the Atomic Energy Regulatory Board is contemplating penal action against the University Department.

Source: News item, The Hindu, <http://beta.thehindu.com/news/national/article415299.ece>

Oil spill in Gulf of Mexico

An oil spill caused by an explosion at an offshore oil drilling rig in Gulf of Mexico off Louisiana on 20 April has been continuing to cause grave danger to the marine biodiversity of the region. British Petroleum, the operator of the rig, has been heavily criticized for the incident. The US administration has also come under a lot of flak for relying on off shore oil companies to manage such mishap.

Source: <http://www.washingtonpost.com/wp-dyn/content/article/2010/04/26/AR2010042604308.html>

Current projects

'Responsible sovereignty' and energy resources

Supported by: Konrad Adenauer Foundation

What does 'responsible sovereignty' entail in the context of energy minerals resource development? What does it imply in the context of the principal-agent relationship? These are important questions as nations exercise sovereign control over resources, of which they are custodians on behalf of the people. This study examines these issues as they translate into control and governance of key energy resources. It will focus on coal and uranium in India and be woven around three broad governance themes—global investment strategies, sharing of benefits and burdens from such development, and issues pertaining to the policy and institutional framework. The project is in its preliminary stage now and work for the three modules is yet to start. Meanwhile, work is going on for the following background papers.

- Sovereignty and resources
- Production and use of coal
- Production and use of uranium
- Trade and investment issues for coal and uranium
- Coal and uranium pricing and the institutional structure in the power sector

Study on exploration of scope on raising meat and mango export from India through regionalization

Supported by: Ministry of Commerce and Industry

If there is an outbreak of mad cow disease in the UK, countries will not stop importing beef from France or Germany. Whereas if there is a bird flu outbreak in the state of Assam in India, exports of poultry meat from the state of Tamil Nadu would also suffer, though geographically Tamil Nadu is far away from Assam in comparison to the distance between UK and Germany. Is there a remedy to ensure that if a small region in a country experiences disease or pest outbreak, the whole country does not suffer an import ban. Regionalisation is one of the ways to address this challenge. Regionalisation entails creation of disease-free zones within geographical boundaries based on homogeneity of production in an exporting country. This project assesses the existing status and gaps in

India for creation of disease and pest-free zones for regionalisation implementation, in order to enhance poultry meat and fresh mango exports from India to the US and the EU. Further it highlights the strategies for regionalisation implementation in India. The project has made significant progress and preliminary findings are already available, which are to be discussed in a stakeholder meeting before preparing the draft report.

Patent pooling and access to knowledge: a case study of biotechnology

Supported by: International Development Research Centre (IDRC), Canada

This is a trans-disciplinary study conducted by TERI, which examined the issue of access to patented knowledge in its different dimensions. It also looked at the potential and feasibility for patent pooling to act as an effective mechanism to make patented knowledge available, particularly in developing countries including its possible nature and institutional structure. The study examined these issues with special reference to biotechnology in India. The project is almost at its fag end. The draft report is already ready, which will be discussed in a meeting of stakeholders.

There are some important findings in this project that have significant policy implications such as the following.

- Access to complementary patent has already created problems and some potential products could not be brought into the market.
- Indian companies often find foreign markets more lucrative. In fact, there are products by Indian companies that have been marketed outside but not in India. There could be a possibility that companies that are more innovative are becoming less inclined to serve Indian markets. Indian IPR and innovation policies may be moulded appropriately to deal with this.
- With a stronger IPR regime in place, there might be an increase in the abuse of IPR. India must put in place an appropriate framework to deal with this problem.

TERI-ITEC Courses for 2010/11

The Energy and Resources Institute (TERI) is offering seven courses for the academic year 2010/11 under the Indian Technical and Economic Cooperation (ITEC)/ Special Commonwealth African Assistance Programme (SCAAP) of the Government of India.

Each course is a three week residential programme held in India where participants from other developing countries attend the course. The courses are designed to meet the needs of senior, mid-career government and non-government officials from ITEC/SCAAP countries.

COURSES OFFERED, DATES, INTAKE, AND ELIGIBILITY CRITERIA

Integrated approach towards sustainable development—5 July 2010–24 July 2010

(Maximum number of participants—30) Bachelor's degree in any discipline

http://www.teriin.org/index.php?option=com_events&task=details&sid=306

Applications of biotechnology and its regulation—2 August 2010–22 August 2010

(Maximum number of participants—30) Bachelor's degree with science in school; work experience of 2 years

http://www.teriin.org/index.php?option=com_events&task=details&sid=307

Designing and implementing solar-based livelihood project for rural communities—6 September 2010–24 September 2010

(Maximum number of participants—30) Bachelor's degree in any discipline; work experience of 2 years

http://www.teriin.org/index.php?option=com_events&task=details&sid=308

Climate change and sustainability—25 October 2010–12 November 2010

(Maximum number of participants—30) Bachelor's degree in any discipline; work experience of 1-2 years

http://www.teriin.org/index.php?option=com_events&task=details&sid=309

Decentralized energy solutions - planning and implementation—22 November 2010–10 December 2010

(Maximum number of participants—30) Bachelor's degree in any discipline; work experience of 2 years

http://www.teriin.org/index.php?option=com_events&task=details&sid=310

Trade and sustainable development - issues for developing countries—22 November 2010–11 December 2010

(Maximum number of participants—30) Bachelor's/ Master's degree; work experience of 2 years

http://www.teriin.org/index.php?option=com_events&task=details&sid=311

Renewable energy and energy efficiency—3 January 2011–21 January 2011

(Maximum number of participants—30) Bachelor's degree in engineering/technology; work experience of 2 years

http://www.teriin.org/index.php?option=com_events&task=details&sid=302

APPLICATION PROCEDURE

Fill up the ITEC/SCAAP application form available at (<http://itec.mea.gov.in/>) and submit it to the nodal government department/agency designated to nominate candidates. The nodal department/agency will, in turn, forward the applications to the Embassy/High Commission of India. Selected participants will be informed by the Indian embassy of the respective ITEC/SCAAP country.

SCHOLARSHIP

The cost of the course, travel, and stay of the selected participant will be borne by ITEC Ministry of External Affairs, Government of India. (See <http://itec.mea.gov.in/termsconditions.html>)

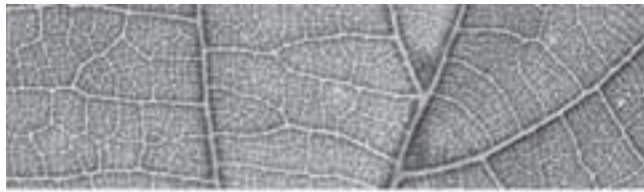
ACCOMMODATION

The hostel accommodation for the participants will be on sharing basis in the TERI RETREAT/TERI University.

FOR FURTHER INFORMATION, CONTACT:

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MUST READ

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E-waste

Implications, regulations, and management in India and current global best practices

by Rakesh Johri

E-waste is among the fastest growing waste streams across the world today and its disposal is a major problem because of the presence of various toxic elements. Therefore, there is an urgent need to adopt an environment-friendly and simple technology for recycling these wastes. There is also a need to create awareness among stakeholders, including workers involved in e-waste recycling units. The book addresses these issues and also covers international best practices and regulations on e-waste.

Year: 2008; Hardbound
Price: Rs 880.00
Pages: 376
Size: 6.25 × 9.25 inch
ISBN: 978-81-7993-153-0

The book is designed to fulfil the much-awaited need for a handy, scientific, and easy-to-understand comprehensive handbook for, among others,

professionals dealing with electronic items or e-waste, researchers, students, scientists, and policy-makers. Besides the sheer breadth of the topics covered, ample case studies using data for India make this book a relevant and an authentic reference book.

Contents

Current status in India and Europe – status, economics, and projections • Global e-waste growth • Dark shadows of digitization on Indian horizon • E-waste generation, mitigation, and a case study, Delhi • Whither e-waste in India – the Indo-German-Swiss Initiative • WEEE (waste electrical and electronic equipment) – toxicity and health perspective • Hazardous substances in waste electrical and electronic equipment—toxicity and release • Occupational and environmental health perspectives of e-waste recycling in India: a review • E-waste regulation – Indian and international status • E-waste legislation in the European Union and the Basel Convention • Regulating e-waste: a review of the international and national legal framework on e-waste • Extended producer responsibility: a key tool for international rules and regulations on e-waste • Recycling technologies for e-waste • Optimal planning for computer waste • Recycling of e-scrap in a global environment—opportunities and challenges • Technologies for recovery of resources from electronic waste • Guidelines for environmentally sound management of e-waste

Visit <http://bookstore.teriin.org>

About TERI

A dynamic and flexible not-for-profit organization with a global vision and a local focus, TERI is deeply committed to every aspect of sustainable development. From providing environment friendly solutions to rural energy problems, to tackling issues of global climate change across many continents and advancing solutions to growing urban transport and air pollution problems, TERI's activities range from formulating local and national-level strategies to suggesting global solutions to critical energy and environmental issues. With staff of over 700 employees drawn from diverse disciplines, the institute's work is sponsored by ministries and departments of the government, various bilateral and multilateral organizations, and corporations of repute.

About GALT

The Centre for Global Agreements, Legislation, and Trade (GALT) is an area within the Resources and Global Security Division of TERI. The broad objectives of the area are:

- To engage in research on trade, investment, resource development and use, and sustainability issues from a multidisciplinary perspective;
- To engage in capacity-building through training programmes, workshops, and seminars;
- To create awareness through an effective dissemination of knowledge and dialogue amongst policy-makers, academia, practitioners, and other stakeholders.

Thrust Areas

- Trade and environment (such as linkages between the World Trade Organization, trade agreements, and multilateral environmental agreements, including on climate change, and their implications on national and international regulatory regimes of governance).
- Resources, trade, and development (such as trade implications on poverty, inequality and economic development, minerals and metals security, trade in commodities, globalization, and vulnerabilities of countries and groups).

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