



Federal Ministry
for Economic Cooperation
and Development

Mineral and Energy Resources as a Factor in Development

A BMZ Policy Paper



STRATEGY PAPER 04E-2010

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The term **“raw materials”** is used in this paper as a synonym for the geological materials of mineral and energy resources. The former group of materials includes metallic ores (e.g. iron ore, tantalite, and wolframite as well as precious metals) and industrial minerals (such as diamonds, fluorides and quartz) and rocks (e.g. basalt, granite and limestone). Energy resources include natural gas, crude oil, coal and uranium. Therefore this paper deals with raw materials that are extracted through mining activities. Resources such as agricultural raw materials and wood are not included in this paper.

Preface

Not only the history but also the current economic, social and political situation in many developing countries has been determined by the wealth of natural resources available there. Only few countries have managed to turn this abundance of raw materials into a blessing for their people. Frequently these countries have lacked, and still lack, the know-how and the will to make use of such natural resources in a sustained manner for the benefit of all. For many countries, the abundance of raw materials actually became a curse. Many such countries were plundered by corrupt national elites and in some cases by external players; poverty grew, environmental destruction flourished and conflicts erupted. Today, some 75 per cent of the world's poor live in countries rich in natural resources.

The problems and challenges that many developing countries now face go well beyond the issue of using the available natural resources in a sustainable manner. However, for many of these countries, the prudent use of such resources is an important, if not vital step towards development which is sustainable in economic, social and environmental terms.

The last few years have shown how severe and unpredictable can be the fluctuations in commodity prices. Such fluctuations make it difficult to engage in reliable budget planning and to use the revenues from the sale of raw materials for development purposes and the common good. Until the turn of the century, raw materials were traded on the world markets at comparatively low prices. As a result of globalisation, the opening up of new markets and global growth, many

developing countries were able to realise huge export earnings between 2003 and 2008. From 2005 to 2008, many raw materials doubled in price. However, the recent financial crisis led to a sharp decline in most commodity prices from the autumn of 2008 onwards. Nevertheless, experts reckon that the unabated need for raw materials throughout the world and continuing economic growth, in particular in Asia's developing countries, will lead to significant price rises again in the medium to long term.

Whatever the prevailing price situation, the production of raw materials gives states the opportunity to earn revenues which can and must be used to promote development. In contrast, developing countries that need to import raw materials will have to expend precious foreign exchange, no matter what the price. Here too, development cooperation must help alleviate the situation. There are significant synergies between economic policy aims and development goals. It is a fact that a country needs to secure its raw material needs in order to be able to develop in a sustainable manner. The German government pursues these aims intentionally using a cross-departmental approach, which includes the private sector.

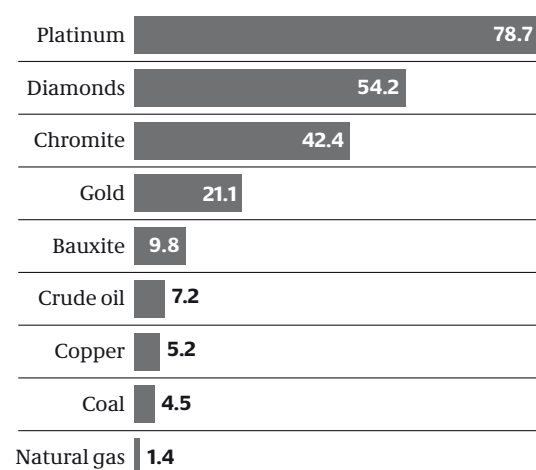
The question of raw materials offers a wide field from which to analyse the causes and impacts of underdevelopment. It is not the aim of this paper to expand on the largely very complex interrelationships in this area. Rather, its aim is to present the development policy position that Germany currently holds with regard to mineral and energy resources, and to set out the requirements and measures resulting from that position.

Background

The extraction and processing of raw materials are vitally important for sustainable growth in both industrial and developing countries. Without mineral and energy resources, most of the technical advances that are a part of our modern lives would not exist. They are basic materials not only for our industrial, transport and communications systems, but are also vital for our pharmaceutical and medical industries and environmental technology. Many countries are not able to adequately exploit growing revenues from natural resources for their own development because political conditions there favour only a small proportion of the population. Their institutions lack capacity, they have very limited supervision capabilities and too few experts with the right qualifications. Unfavourable external factors impede poverty reduction and the prevention of crises and conflicts. Then again, an abundance of raw materials can also act as a trigger for bad governance and weaken public institutions. Abundant resources and the revenues they bring offer fertile ground for corruption. They offer a temptation to political decision-makers to uphold inefficient systems that emerge from bad governance.

Industrial countries who import raw materials, too, have an interest in seeing stable and sustainable systems of resource extraction in place, since such systems help to secure a market-oriented, steady supply of raw materials. The raw materials that Germany requires mostly come from states that are not very stable or even fragile. Often, these states are sub-Saharan countries in a conflict or post-conflict situation. It is countries such as these which supply the major share of the metallic raw materials that Germany requires.

Extraction of selected mineral and energy resources in sub-Saharan Africa in 2007



Share of production worldwide in %

Opportunities offered by an abundance of resources for developing countries

In many developing countries, raw materials play a major role in economic terms and contribute significantly to public revenues as well as to the job market (where mining is involved). In 2007, export revenues from extractive raw materials came to some 170 billion US dollars in sub-Saharan Africa alone. The need to create the necessary physical infrastructure for the recovery of raw materials will create jobs and can lead to greater local value added (for example, in the construction, financial and commercial sectors). Revenues from raw material extraction can boost such growth and, in the medium term, even lead to the creation of higher skilled jobs both in the extractive industry itself and in ancillary sectors such as smelting, processing and recycling as well as crafts and trades.

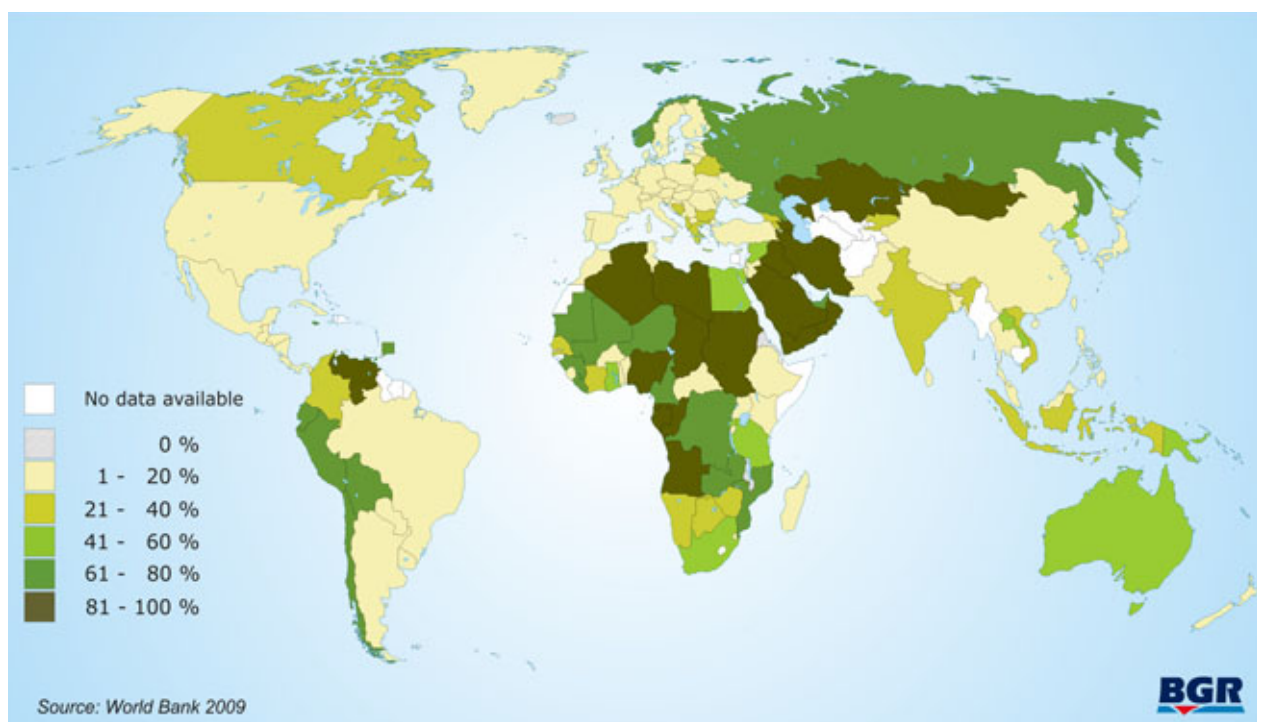
The value of global crude oil and natural gas production was some 2.6 billion US dollars in 2007. In many African as well as Latin American countries, such as Nigeria and Venezuela, the revenues from **energy resource exports** make up well over 80 per cent of their total export earnings. Throughout the world further crude oil and natural gas fields are being discovered in developing countries. The markets could develop in such a way that it will become economically feasible to tap deposits, the exploitation of which is currently considered unprofitable.

Of particular commercial importance amongst the **mineral resources** are ores such as copper, iron, nickel and zinc, as well as gold. In 2007, export earnings from gold alone came to 10 billion US dollars. In the Democratic Republic of the Congo about 10 per cent of gross domestic product comes from raw materials, with an estimated tax revenue potential of some 380 million US dollars annually.

Using raw materials in a sustainable manner and treating abundant resources carefully and responsibly are important factors in reducing poverty and preventing conflicts. The exploitation of raw materials finds itself torn between the conflicting demands of environmental protection on the one hand and commercial interests on the other, for the extractive industry's activities always entail interference with the eco-system – thereby also affecting the environment in which the local population lives.

Depending on the method of mining used – be this highly mechanised and automated **industrial mining** or (often informal) **small-scale mining** – the processes involved in the recovery of the raw materials will be very different. In many countries with abundant raw materials, both types of mining exist side-by-side. There are two types of small-scale mining: mining to cover one's own needs (raw materials for construction, for example), carried out by the local population using traditional techniques, on the one hand, and in

Share (in %) of mineral and energy resources being exported in 2007



the wake of and in parallel with industrial mining on the other hand. These activities frequently involve the mining of deposits that are not suitable for mechanical recovery. Because it promises quick profits, artisanal mining also attracts would-be miners from outside the local area. It is difficult to establish where informal small-scale mining stops and illegal activity begins. In many regions, labour-intensive small-scale mining is the only source of remunerative employment. Globally, around 20 million people – often women and children – are directly employed in artisanal or small-scale mining. The number of people whose livelihoods depend on small-scale mining is estimated at around 100 million.

Crude oil production presents a different picture. This high-tech industry offers few employment opportunities for the population living round the extraction sites. Often crude oil production barely impacts on the national economy, so that little or no ancillary supply or processing industry develops. The oil industry has what can be termed an “enclave” character. That along with the separate nature of the supervisory authorities and the local societies’ lack of control over the industry can contribute to the operations of the industry being less than transparent.

Apart from crude oil production and small-scale mining, the **extractive industry** is also growing in importance in both poor and more advanced developing countries. However, the process of adding value to the exploitation and processing of raw materials, or through ancillary industries either before or after extraction (in terms of goods and services), is still in its infancy in most resource-rich developing countries. International trade and commerce is beginning to play an increasingly important role as an actor and a partner in this process. Consumers around the world are paying more attention to where the products they buy come from. Therefore, how sustainably a resource is exploited in part determines its saleability. Corporate Responsibility thus becomes more than just a moral stance.

Problems and challenges posed by the development-oriented use of raw materials

Countries such as Canada, Norway and Australia, alongside such African newcomers as Botswana and more recently Ghana, prove that being resource-rich need not be a “curse”. Rather, such wealth can lead to prosperity for the country and its people. The key to unlocking such prosperity lies in good governance and good management of a country’s resources as well as in diversification of its economy in the medium term. Unfortunately, it is often the developing countries which lack the general political conditions and stable structures needed to manage effectively the extraction and marketing of raw materials.

The basis for a sustainable extractive industry – so experience says – are transparent conditions that all interest groups can understand. This starts with the exploration of deposits and the award of concessions, and continues with the exploitation, marketing and processing of the raw materials. **Transparency** in the flows of goods and payments is a prerequisite for good governance and a good way of reducing opportunities for corruption, the financing of wars and the unfair distribution of earnings when trading such resources. Only after this has been achieved will it be possible to implement more far-reaching measures and use the additional revenues for specific purposes in the regions where the raw materials have been extracted.

In many developing countries, the lack of **competence** amongst the organisations and people working in the extractive sector is a further important reason why they have no sustainable extractive industry there. Often, these countries need to considerably improve the expertise that would enable them to assess raw material deposits and formulate effective conditions, laws and contracts for the extractive sector. Decision-making processes and negotiating ability (for example when awarding mining licences or negoti-

Sustainable extractive industries

The extraction of mineral resources necessarily has an impact on the environment and is restricted by the size of the deposit. It is all the more important therefore that extractive industries take into account **aspects of economic, environmental and social sustainability** in their activities. Therefore extraction must be carried out in a sustainable manner throughout the entire industry, and in keeping with internationally recognised minimum standards. This starts with the exploration of deposits of such resources and their extraction in keeping with socially acceptable and environmentally sound criteria, and continues with the mine closure and re-cultivation of areas that have been mined as well as the processing of the raw materials, and proceeds along the entire trading chain to the end consumer and the recycling of the end product. A key step towards sustainable extractive industries is transparency.

ating contracts) at state level are impaired by a lack of administrative, legal or technical expertise amongst the public servants responsible for these matters. Therefore the risk of improper or irresponsible conduct amongst the various players – both on the private and the public side – becomes all the greater. The same is true for public financial management. The raw material sector is often subject to rules of taxation that pose a particular challenge for the tax authorities when it comes to setting tax levels and auditing companies. The problem is often exacerbated by bureaucratic red tape and a lack of knowledgeable administrators. Faulty assessments – whether arrived at intentionally or unintentionally – often allow revenues from raw materials to be diverted away from the public purse.

The extraction and processing of raw materials have an **impact on the natural environment**. Insufficient know-how and lack of consideration for the consequences mean that often techniques are used which degrade the environment more than necessary, with sometimes dramatic effects on the food chain (in terms of water supply and arable land). The stringent enforcement of minimum environmental and other standards can help to avoid adverse impacts on society and the environment. However, to be able effectively to enforce such standards and, if necessary, apply sanctions to transgressing companies requires strong pub-

lic authorities. Building such capacities within the public authorities operating at regional and local level, as well as within small to medium-sized enterprises, and passing on simple, low-cost mining techniques to miners can help to sensitise the parties involved and minimise damage to people's health and the environment.

The commodity price boom up until the middle of 2008, and the resulting competition amongst international companies for mining licences and concessions, saw many resource-rich countries overhauling their mining-related policies on **investment, concession granting and taxation** so as to improve their situation in both political and economic terms. In order to exploit its wealth in natural resources for development, a country needs investments and is therefore often dependent on foreign capital. A bureaucracy that lacks transparency, an unstable security situation, insufficient legal certainty, inadequate infrastructure, and transport routes that are difficult to patrol and protect are all barriers to investment since they scare off potential investors. Therefore, establishing the same transparent conditions for all competitors is also in the interest of responsible investors.

The potentially high profits to be made from raw materials attract investors and **speculators** alike. Consequently, the price at which a commodity

is traded depends not only on actual supply and demand. The large fluctuations on the markets are naturally also reflected in the earnings of the state. Where the economy of a country lacks diversification and is therefore largely dependent on revenues from the trade in raw materials (or even only a single commodity), it is particularly severely affected by price fluctuations on the world market, which can often be huge and unpredictable.

Many developing countries earn a significant proportion of their state revenues from the export of raw materials and from the **export duties** levied on them. Export duties in turn can help stimulate the development of processing industries in poorer countries. Alternative forms of support such as subsidies are often not available to such countries. A reduction in export duties, as often

demanded by the international community or in bilateral negotiations, should therefore be considered with care and be linked to reform of the taxation system.

In recent years, much political and media attention has been focused internationally on the role that raw materials can play in fomenting armed **conflicts**, as well as in bankrolling and prolonging them. Schemes to certify the origin of raw materials that do not come from conflict zones (such as the Kimberley Process Certification Scheme¹), to involve the extractive industry in regional peace processes (as in the Great Lakes region of Africa), to make the natural resources sector more transparent, and to promote regional and bilateral cooperation are nowadays proving useful in counteracting such effects.

The “resource curse” – what are the dangers involved in having abundant natural resources?

If a country is rich in natural resources, that does not necessarily mean that it will experience positive economic and social development. It is often the case that the population of resource-rich countries become poorer rather than richer. The term “**resource curse**” expresses the paradox that economic growth in countries largely dependent on the export of mineral and energy resources can be lower than in countries with few such resources. Commercially valuable resources in particular can often lead to a distortion or displacement of local market structures (referred to as the “**Dutch disease**”). Increased inflows of capital from abroad lead to the appreciation of the local currency, a decline in purchasing power and the collapse of other industries. If a country exports only a single raw material, then it is particularly susceptible to price fluctuations on the international market. Very expensive commodities, such as gold or diamonds, are often connected with “**conflicts over resources**”, i.e. violent clashes for control over the deposits and marketing of such resources. Structures that allow smuggling, corruption and the misuse of power contribute further to such conflicts. Moreover, the extractive resources industry is not without impact on the natural environment. **Environmental changes** are the result. It is possible to minimise the negative impact of such activities on the health of the local population and the damage to soil and water supplies by ensuring that miners are sufficiently well trained and that good supervisory structures and proper legal provisions are in place, as they often are in the industrial nations.

1 The Kimberley Process Certification Scheme (KPCS) is a scheme to certify “non-conflict” diamonds.

The Contribution and Aims of German Development Policy

It is in the special nature of raw materials that they attract the **interest** of both developing countries and industrialised nations. The raw materials sector is linked directly with all the major cross-cutting development issues² and can provide the **financial means** needed to secure long-term the development goals that developing countries may have set in these areas. In the process, both industrialised nations and developing countries are dependent on a supply of raw materials that is stable and follows the principles of a free and fair market.

Many consumers in the industrial countries consider it important to know where a raw material comes from and how it is processed – in other words, they want to know that **minimum standards** apply in social, political and environmental terms (e.g. no child labour or “blood diamonds”). The developing countries need to improve the way they harness the potential of their resources to foster development at home in a sustainable way, whilst in international trade they must do justice to the expectations of their customers for acceptable terms and conditions.

This requires coordinated measures and programmes not just in the country of origin. The sustainable use of raw materials can only be assured through a **global regime** that prescribes the observance of standards of transparency, fair and equitable world trade, and security of supply – and thus helps to ensure sustainable development. To establish such a regime will no doubt be a long and difficult political process.

In the **international sphere**, we need first and foremost to introduce measures in the following areas and then mechanisms to help coordinate these measures:

- Create conditions for **comprehensive certification** of trading chains. This includes setting standards and norms that not only govern the quality of raw materials but also the methods of extraction. In addition, ways of tracing the origin of a raw material must be improved (for example, through methods of “fingerprinting”).
- Promote **good governance** in the raw materials sector, and include state, private sector and civil society in the process (multi-stakeholder process).
- Achieve further improvements to the international **trade regime** so as to give all participants fair access to the markets.
- Introduce measures specifically designed to keep tight control of the raw materials sector wherever raw materials are used to help finance **conflicts**.

At **national level** within developing countries, it is important to bring about improvements in the following areas:

- Strengthen good governance, in particular with regard to **legislation** governing natural resources, and bring about **good finan-**

² Reduction of poverty, promotion of good governance, protection of the environment and natural resources, crisis prevention, rural development and sustainable economic development

cial governance, in particular as regards the award of mining concessions, methods of extraction, trade and income management, through to the efficient management of funds from natural resources.

- Extend **transparency initiatives** to promote good governance all along the value-added chain in the raw materials sector.
- Develop and enforce constitutional regulations, and **fight corruption**.
- Build suitable structures and ensure that personnel at all levels of the public sector have the necessary qualifications (**capacity building**).
- Put in place the physical, commercial and social infrastructure needed to increase

the value added in the country where the raw materials are extracted.

- Promote **diversification** of industrial sectors so as to lessen a country's dependence on, and vulnerability to volatile commodity prices.
- Reduce structural causes of crises and conflicts by introducing mechanisms such as a **balancing of interests, participation and transparency**.
- Adopt principles of **responsible business conduct**, in particular with regard to respecting minimum social and environmental standards. The UN Global Compact or the OECD Guidelines for Multinational Enterprises can serve as an international frame of reference for responsible business conduct.

Transparency in the extractive sector

An abundance of natural resources can lead to positive development if structures are in place to prevent corruption and abuses of power. Key factors in this connection are transparency and **good governance** – from the very beginnings of exploration and the award of concessions to trading and processing the resources.

Transparency in both payment and commodity flows reduces undesirable developments such as corruption, the financing of armed conflicts and the unfair distribution of the proceeds. At the same time, transparency is also needed so that activities connected with extraction are accepted and can be carried out.

To achieve transparency, it will be necessary to establish a system of certification which is internationally recognised and verifiable, as well as a standard for specific types of mineral resources. The **Kimberley Process** provides a useful initial scheme for trade in such an expensive commodity as diamonds. Certifiable proof of origin (such as geochemical **fingerprinting**) and **certified trading chains** (CTCs) which provide proof that all participants have adhered to international core standards (ILO labour standards) are further steps towards ensuring that the extractive industries are sustainable.

Just like the successful quality seals used for products in the agricultural sector, the success of such quality standards and certificates in the extractive industries depends on the cooperation of all interested parties, whether from civil society, business or government (multi-stakeholder approach). Such a regulatory scheme is very clearly being applied in the **Extractive Industries Transparency Initiative**, currently the most important transparency standard worldwide.

This bundle of measures leads to an investment-friendly environment, which in turn encourages the manufacturing industry (finishing and diversification) to set up business in the country in which the raw materials are extracted. A stable political and social environment makes it easier to develop business partnerships with private companies. This means that the world markets need to be opened comprehensively: investments will only flow when risks can be assessed and calculated, and both the business structures and partners involved are reliable.

German development policy with regard to raw materials

Within the community of G8 nations, Germany gave a clear signal at the Heiligendamm Summit in 2007 that it intended to support a new kind of international cooperation with regard to raw materials, based on a policy of sustainable development. Sustainable resources management is also part of this policy. Its aim is both to enable resource-rich countries to exploit their raw materials so that they can successfully foster the social, economic and environmental development of their countries, and to help guarantee a secure supply of raw materials globally.

The primary objective of German development cooperation is to contribute to the sustainable management of the raw materials sector. In this way, optimum use can be made of the sector's potential to help **reduce poverty** and promote sustainable development – whilst adhering to basic social and environmental standards –, and to foster security of supply. To achieve this, an enabling political, economic and social environment needs to be encouraged and securely established in the partner countries themselves.

In its cooperation with its partner countries, Germany pursues a broad development policy approach. Its aim is to help bring about improve-

ments in the **entire raw material value chain**. Measures to this effect will address every part of the chain, from exploration and extraction to trade, processing and re-use. Promoting good governance in terms of managing and spending revenues from raw materials is an important aim of German development cooperation.

To do this, Germany uses the full panoply of instruments at its disposal: from measures of Financial and Technical Cooperation through to providing personnel and carrying out training and further training measures. Germany has turned its particular attention to cooperation with and promotion of **private enterprise** under a programme called “develoPPP.de” (www.developppp.de). On the multi-lateral side, it also supports measures carried out by international organisations, participates in international dialogue on resources policies, and supports in particular international initiatives that address transparency and conflict prevention.

Germany supports the Extractive Industries Transparency Initiative (EITI) both politically and financially as an internationally recognised standard bearer of transparency. The Federal Ministry for Economic Cooperation and Development (BMZ) is currently promoting **transparency** in the resources sector and good fiscal management by the state in its bilateral technical cooperation programmes with the Democratic Republic of the Congo, Ghana and the Central African Economic and Monetary Community, CEMAC (Communauté Économique et Monétaire de l'Afrique Centrale).

In the small-scale mining sector, the BMZ supports projects that are exemplary in lessening negative impacts on the environment. Such projects serve to improve local people's quality of life and are in particular demand amongst women working in this sector. With the help of specific **micro-finance projects**, even cooperatives can afford to buy modern extraction and enrichment technologies.

It is often not possible for individual donors to tackle a number of sector-specific problems or to tap the development potential in the sector on their own (e.g. stemming the illegal trade and exploitation of resources, developing transparent and fair market conditions, or establishing value chains). That is why German development policy is focusing to a greater extent on **international cooperation**, as well as encouraging bilateral and regional cooperation via, for example, supra-regional trade organisations. And finally, the raw materials sector itself is also an important partner in all this. The development and implementation of business practices which avoid causing conflict, and the active integration of extraction activities in the local economy all contribute to securing investments on a lasting basis and help to increase the contribution of such investments to the sustainable development of the local area.

Within the German government, the topic is also discussed **across various government departments** in the Interministerial Committee for Policy on Raw Materials (IMA Rohstoffe). Since 2007, nine ministries – including the BMZ – have been members, and the Federation of German Industries has an advisory role. The Committee is concerned in particular with the political issues involved in securing raw materials. The Committee's work complements that of a European Raw Materials Initiative which is seeking, amongst other things, to develop effective instruments to remove distortions to trade and competition that currently exist in the international commodity markets. Development aspects are becoming increasingly important in the Initiative's activities.

Conclusions

Numerous developing countries possess mineral and energy resources, and therefore considerable potential to mobilise funds which they can use for their own sustainable development. Income from the raw materials sector can help reduce poverty – provided such revenues are generated transparently and on the basis of comprehensible rules of good financial governance. Globalisation means that transparency and development-oriented action are becoming more important as a strategic factor in a sustainably managed raw materials sector. In addition, framework conditions must be established, both nationally and internationally, which allow the fair and free trade of raw materials, the extraction of which has been both legal and in keeping with certain basic standards.

This is where the focus of German development policy lies: it supports international initiatives and helps with their formulation, whilst at the same time providing support for proven, effective measures with the potential to have a multiplying effect. In doing so, Germany helps

- to create framework conditions that are socially, economically and environmentally sustainable and set standards for the raw materials sector;
- to formulate reliable and transparent legislation for the extraction of raw materials;
- to promote the accumulation in the developing countries of know-how in all raw material sectors;
- to develop small-scale mining so that it is socially and ecologically sustainable;
- to add value by helping to set up a manufacturing and processing industry in the country of extraction;
- to reduce the role that raw materials can play in causing and prolonging (armed) conflicts.

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Published by the
Federal Ministry for Economic Cooperation and Development (BMZ)
Division for development education and information

Edited by
BMZ Development education and information
BMZ Water; energy; urban development, Andrea Richts, Dr. Antje Wittenberg

Design and layout
Typo-Druck GmbH, Bonn

As at
February 2010

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