Aluminium

Social Aspects

Aluminium
for Future
Generations

GESAMTVERBAND DER
ALUMINIUMINDUSTRIE e.V.

Foreword

Economy, ecology and social aspects are the three pillars that support the globally recognised guiding principle of sustainable development. This comprehensive presentation by the aluminium industry on social aspects at product and plant level, including international involvements, is a good contribution to the implementation and further development of the concept of sustainability.

This is a field where the mining and metals industry can look back on a long tradition of establishing social facilities, particularly in regions where there is little infrastructure. Mines and metal smelters tend to be found in somewhat isolated locations in most countries. A very long time ago, mining and metals companies were among the first to introduce the practice, now common, of building and maintaining schools, clinics and sports facilities. Such social facilities benefit not only the workers directly employed by the company. It is not uncommon for them to be made available to other people living in the vicinity of the company location, too. In recent years, such social services for the local population have even been improved. This is because companies have seized on the modern stakeholder concept. They give consideration to everyone involved who has a genuine interest and have applied this concept not only to the ecological rights of the public at large but also to social orientation.

Socio-politically important activities like these not only improve an industry's image, such as that of the mining and metals industry, but also take into account the demand for compensation for unavoidable external effects so that sustainable development can be achieved.

The aluminium industry and its companies play a leading role in such pioneering methods of social commitment and are among the most active worldwide, as shown by numerous examples from Australia, Jamaica, Brazil and Germany.

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Introduction

Is corporate citizenship now going to be the follow-up to lean management and shareholder value? The signals coming from the World Economic Forum in Davos or the Global Reporting Initiative indicate that the social dimension of how a company does business is not only gaining importance when it comes to the discussion about sustainable development.

An eagle – Germany's national emblem – made of aluminium, in the Lower House of Parliament.

Ever since the United Nations' conference in Rio in 1992, the guiding principle of sustainable development has gained general recognition. There is no controversy regarding the equal importance of economical, ecological and social objectives, which is the main idea behind this guiding principle; likewise, the need to ensure that resources are fairly shared by a given generation and between successive generations is now recognised. The German aluminium industry has also acknowledged the principles of sustainable development.[1]

Of course, in the past this discussion was dominated by ecological considerations in the highly developed countries. By contrast, the social dimension of the above-mentioned three-pronged target tended to be ignored. This now appears to be changing. One indication of this is that under the banner of "corporate citizenship" consideration is now being given to a company's social responsibility and to concepts of socially correct business dealings, while at the same time bearing the aspects of sustainability in mind.

The term "social" is used here in the generally accepted sense, meaning "relating to society or the public at large" or "beneficial to the community". The term is thus used to describe benefits that are outside the narrow confines of self-interest. It is related to the fulfilment of needs, to improving the standard of living, to a life that is "worth living".

There is undoubtedly still a lot that needs to be done in this field, but even so, a lot has already been achieved. Using the aluminium industry as an example, this report will show social aspects associated with this industry, its factories and the products it creates.

In reply to a question from the Bündnis 90/Die Grünen (United Left/The Greens) parliamentary party in 1997, the then German Federal Government stated that aluminium played an important role from a social point of view, too:

"Aluminium makes a significant contribution to satisfying basic needs, like mobility, housing, safety and security, healthy eating and medical care, in an economic and environmentally acceptable manner."[2]

[1] *GDA: Aluminium – A Sustainable Material, Düsseldorf*
[2] *German Federal Parliament, 13th Legislative Period. Bundestags-Drucksache 13/6833 dated 28.01.1997 (non-authorised translation)*

Social aspects at plant level

The German aluminium industry is an important economic factor with good growth prospects. Directly, it provides work and income for about 75,000 employees.

The aluminium industry is a significant economic factor and an important employer.

However, it is not only workers and their families who benefit from the economic strength of this industry, but also lots of people who are employed in:

- the plants of customers and equipment suppliers
- trading and service industries.

In addition, there are a lot of social factors at plant level that often go unnoticed by the public.

Labour costs and "hidden" benefits

The above-mentioned figure for the number of people directly employed represents a total wage bill of approximately four billion euros. For the individual plants these are labour costs, but for the economy it means, amongst other things, purchasing power, which in turn increases demand. The wage bill contains markedly different remuneration components, including:

- direct payments to workers for the time they spend at their place of work
- payments for days not worked, such as holidays and sick leave
- special payments, such as bonuses, Christmas and holiday bonuses and benefits linked to schemes to encourage savings.

In addition, the plants are faced with other labour costs, such as:

- mandatory contributions made by the employer to pension funds and to insurance schemes covering unemployment, medical care, nursing care and accidents
- payments related to a company's own pension scheme
- additional contributions made by the plants, such as the costs of industrial training and further education, facilities for the workforce, events to celebrate long service and works canteens.

Nowadays, in the German metal industry, these additional labour costs are equivalent to about 79 percent of the direct wage payments, or 58 percent of the gross total cost for wages and salaries. The figures for the aluminium industry will be of the same order of magnitude, too. This is equivalent to several billion euros that the companies make as "social" contributions.

Furthermore, the taxes paid by the aluminium industry at communal, regional and national level make additional government and social benefits possible, of course.

Human resources management: from traininig to exchange of ideas

A qualified and motivated team of workers is an important prerequisite for companies to be successful in the marketplace. This applies to the aluminium industry just as much as it does to any other industry. The key catchwords of modern human resources management are:

- training and further education,
- staff promotion,
- personal development and
- future staffing.

Particularly important from a social point of view is the fact that the companies offer young people apprenticeships, and with it the chance to make something of their lives. For example, the Gesamtverband der Aluminiumindustrie (GDA), the Düsseldorf-based trade association representing the aluminium industry in Germany, organises an exchange for young people seeking practical experience.

In addition, companies strive to utilise the experience and creativity of their employees in everyday working situations. Each company tries to tap the expert knowledge of its employees, such as by means of:

- suggestion schemes at plant level
- creativity offensives
- processes for achieving continual improvement or
- bourses for exchange of ideas.

Nowadays, one is not only interested in improving processes and work procedures and thus improving productivity. Lots of companies in the aluminium industry encourage workers to extend their suggestions to cover safety at work and the environment. The many suggestions for improvements made every year demonstrate the large potential the employees have to offer and how keen they are to contribute to the success of the company.

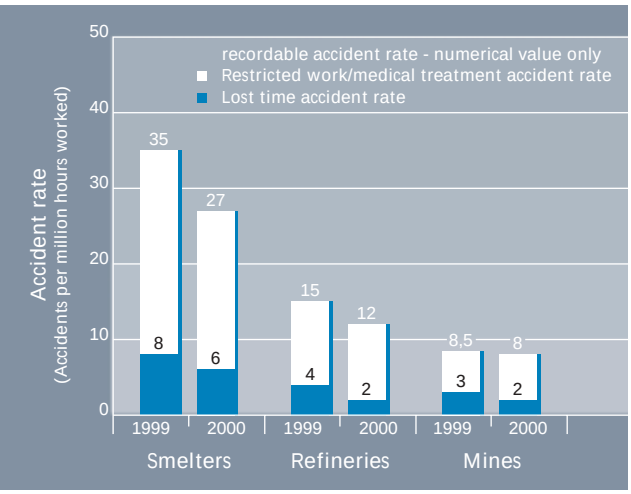
Economic success is impossible without qualified personnel. This also means that the aluminium industry has to attract young people.

Modern approaches to working hours: with an element of sovereignty over time

Whereas the eighties were characterised by the unions' demands for a shorter working week, the nineties were marked by the introduction of flexible working hours. This enables companies to respond better to fluctuations in demand and operate capital-intensive machines and equipment for longer periods. For the plants, it helps ensure their future against increasingly harder competition.

Modern schemes for working hours also offer more and more employees in the aluminium industry the possibility to open so-called "savings accounts" for working hours. Employees can use them as "deposit accounts" for extra hours worked, free days accumulated by flexitime or unused annual leave, and then take them off in large blocks at a later date or even use them to bring forward the date of their retirement. These arrangements, coupled with union agreements on shorter working hours for older workers, give an employee a certain degree of sovereignty over the time he has to work – he can arrange his working life more individually.

Safety at work: statistics show marked fall in accidents



Accident rates worldwide (Source: IAI Safety Performance Benchmarking 2000)

Safety at work, prevention of accidents and protection of health are just as important for the success of a company as product quality and productivity. For the firms in the German aluminium industry, the health and safety of their workers has the highest priority. This is reflected in accident figures, which have continuously been declining.

Besides investments in technical improvements, it is primarily practice-oriented training and qualification measures aimed at identifying risks that have contributed to this positive development. This is consistent with the experience that most accidents at work are behaviour and organisation related.

Some companies combine their preventive measures for worker protection with awards for the plant with the best safety record and with internal competitions and incentives. In one plant, for example, a draw is made at the end of the year. Anyone who did not have a reportable accident during the preceding year is eligible to participate. The main prize is a compact car and there are also several other lucrative prizes.

Today, safety at work is an integral part of the management system. As with environmental protection, in all companies that operate globally, the rules for safety at work usually apply on a company-wide basis. Systematic auditing, clearly defined standards and binding guidelines define the main requirements in the plants for safety at work from an organisational and technical point of view. Lots of companies have specifically stated that it is their intention to reduce work-related injuries and sickness to zero, and have increasingly met this target in recent years. To ensure that this remains so, many companies are also planning to check their safety standards regularly via audits.

EKD award – for exemplary aluminium plants

Awards are made to companies that demonstrate a special commitment to the social aspects of work and employment, for example by the Evangelical Church of Germany (EKD). Two companies from the German aluminium industry have been awarded the EKD's "Arbeit Plus" (Work Plus) seal.

For the past two years, the Evangelical Church of Germany (EKD) has been honouring companies whose involvement for work and employment has distinguished them from others and established social benchmarks. The winning companies are presented with its EKD "Arbeit Plus" (Work Plus) seal. As the first step in the evaluation, the independent Institute for Commercial and Social Ethic at the University of Marburg prepares an expert opinion on the company in question. A committee comprising, among others, representatives from the plant administration and trade unions then makes the final decision. So far, a company from the aluminium industry has been honoured each year.

Of the 13 award winners from German industry in 1999, a company from the aluminium industry was honoured for being above-average and exemplary in maintaining jobs and creating new ones, for taking on long-term unemployed, for its relatively large number of apprenticeships, for encouragement given to female employees and for the co-operation between the management and the works council.

In 2000, the EKD "Arbeit Plus" seal was awarded to another aluminium company. This time emphasis was placed on the company's involvement in the training of young people, its above-average employment of handicapped persons, the low level of sickness, the working-hours schemes in operation and the external co-operation with chambers of commerce and organisations representing employers and employees.

Examples of social involvement of plants and workforces

When it comes to the social aspects at plant level, one should mention above all the efforts of employees that go above and beyond everyday involvement.

Financial contributions: The aluminium industry, and the people who work there, offer their support in cash or in kind to projects from "neighbourhood schemes" through to projects in developing countries. The contributions are used in sport, culture, environment, health and church projects, or to support UNICEF, the United Nations' children's aid organisation:

- Workers from various aluminium companies made collections for earthquake victims in Turkey. Others have supported UNICEF by contributing an hour's earnings. And yet others have donated a part of their premium from plant suggestion schemes to support social facilities; at one company alone the sum involved was about euros 50,000, which in part went to support a refuge for battered women, children with cancer and a workshop for the disabled.
- Another example is the support that has been given for many years to a development project organised by the church in Zimbabwe. Recently, an aluminium-recycling furnace was installed there for training purposes.
- The aluminium industry also demonstrates its social involvement when it comes to school partnership projects. For example, one aluminium company contributed 5.5 tonnes of aluminium sheet to an aid shipment being sent to Mozambique, so that some of the partner schools could have a rainproof cover over their heads.

A case containing numerous teaching aids and illustrative material related to aluminium is one of the many items offered by the aluminium industry and the AIS (Aluminium Information Service).

School projects: Today's schoolchildren are tomorrow's trainees. At an early age, young people should be able to get some work experience so that they can check out where their interests really lie and get to know what sort of training is available. This is achieved in part by project weeks, in which schoolchildren complete a practical course and in part by companies arranging guided tours of their plants, so that the various manufacturing sequences can be followed at close range.

It is important to extend and intensify these contacts between schools and plants. Good examples here are the projects involving aluminium companies and schools in which both sides develop topics to be covered in the classroom. These topics cover various aspects of aluminium and are dealt with in different lessons, such as

- "Geographical factors and deposits of raw materials" in geography
- "Electricity and magnetism" in physics
- "Environmental protection in the production of aluminium" in biology
- "Creative approach to aluminium" in arts and craft

Talks between a school and an aluminium plant generated ideas for 20 projects.

Together with teachers from the School/Industry Working Group, the Germany-based Aluminium Association (GDA) produced teaching material some years ago. This included texts, overheads and a teaching case full of illustrative material on the subject of aluminium. Project sheets suitable for schoolchildren are currently being developed in cooperation with the Chair of Didactics at the University of Erlangen-Nürnberg. The whole range of teaching materials was presented to a broader public at Education Fair 2001 in February 2001.

Social aspects at product level

The purpose of all economic activity is to satisfy human and social needs. The areas of need are wide ranging and only a selection can be dealt with briefly here. Aluminium products play an important role when it comes to modern day mobility, the protection and encouragement of good health, modern living standards, safety and more.

Aluminium in transport – an integral part of modern-day mobility

Transport without aluminium? It's unimaginable! For example, there wouldn't be any aircraft. Whether lorry, bus, train or ship – lightweight design is needed to save energy.

Nowadays, mobility is a basic need like eating, sleeping and living. Where labour is very specialised, passenger transport and the movement of goods are of key importance if people are to reap the benefits of living in an advanced industrial society. Goods come from all over the globe. The low-priced supermarket is usually to be found at an out-of-town location. Workplaces are rarely within walking distance. Relatives and friends often live several hundred kilometres away. People want to live an active and eventful life. This includes holidays in foreign countries, visiting events and lots more.

This is all inconceivable without efficient transport systems. And they all contain aluminium: whether it is a car, lorry, bus, train, ship or aeroplane – lightweight construction is needed to consume as little energy as possible and thus conserve finite resources for future generations and minimise emissions of greenhouse gases and pollutants that are a risk to health. On top of all this, the materials have to be such that they afford a high degree of safety. Aluminium is the material that fulfils these requirements.

Greater safety and more mobility for "small" purses: A reduction in a vehicle's weight benefits both active and passive safety because the lighter the vehicle, the shorter is its breaking distance. A few metres can decide whether or not an accident occurs and people are injured.

In addition, crash tests show that aluminium structures absorb at least as much energy as steel structures. Thus, flexible aluminium tubes are increasingly being used for the side-on crash protection in cars. Aluminium crash-boxes between the bumper and the front of the vehicle serve to dissipate energy in the event of a head-on collision. The aluminium industry is working together with car-makers to develop new materials, especially for lighter and stiffer components. Foamed aluminium is a new material that is lighter than water but nevertheless has an extremely high stiffness – a combination of properties which makes it possible to improve the design of the collapsible zone and offer greater protection if collisions occur.

When one thinks of flying one usually has the best time of the year in mind – a holiday. Whether it be a seaside holiday in southern Europe or looking for traces of foreign cultures in far-away places – once a year one wants to get away from the stress of work and relax, gain new impressions, enjoy the countryside and culture, recharge the batteries. Without aluminium it would be difficult to satisfy this desire. Since the early days of flying the key question has been how to reduce the weight of aircraft. When it comes to selecting materials, aircraft designers think first and foremost in terms of aluminium. New processes help to further reduce manufacturing and operating costs and thus also put flying within the reach of those on a limited budget. Nowadays, structural components for an Airbus wing can be milled from a single piece whereas 164 rivets and 15 components used to be required. This has reduced the manufacturing costs by about a quarter and the weight by about a fifth, and the life of the component has been increased tenfold.

Mobility – a basic characteristic of our society. Active and passive safety are of paramount importance if everyone is going to reach his destination safely. Aluminium plays an important role here, and in reducing energy consumption, too.

Mobility has many faces: One travels long distances using the most appropriate means of transport but one travels short journeys under one's own steam, with or without any aids. Whether it be a scooter, cycle, escalator or pull-along shopping trolley – every day we use products that contain aluminium. This is especially the case when it comes to walking aids or transport aids for the disabled, the infirm or senior citizens. Aluminium is used here, too – for example in wheelchairs, walking frames and stair-lifts. The aluminium used here enables these citizens to also have an active social life without having to rely on third parties.

Aluminium in packaging – not just for healthy eating

Aluminium packaging provides protection for the goods and security for the consumer. From medication to foodstuffs – aluminium packaging helps conserve economic resources.

Packaging is indispensable if products are to reach the consumer undamaged, and thus avoid squandering economic resources. In a society where products are transported over long distances and are frequently handled before they reach the consumer, one cannot imagine what it would be like without packaging.

Aluminium packaging offers a number of benefits. It provides unique barrier properties, which ensure that food and medicines are protected against potentially damaging external influences. Even an extremely thin layer of foil maintains the freshness of foodstuffs that quickly deteriorate, such as milk; aluminium also enables medicines to be transported and stored in tropical regions.

Aluminium packaging is a guarantee for the consumer that the goods he purchases have not been tampered with. This is of great importance when it comes to sensitive products.

The manufacturers of aluminium packaging are continually developing new methods to make product manipulation easy to spot. Thus, for example, a tablet foil was developed that is characterised by a special colour spectrum that cannot be copied. By taking a quick look at the blister pack, doctors, pharmacists and customers can tell whether it is the genuine article or a fake.

In view of changing socio-demographic developments and eating habits, aluminium packaging is also beneficial. In small households and those in which both partners work, ready meals in aluminium foil dishes provide a warm meal without any time-consuming preparation and cooking. In social facilities, such as hospitals, canteens or when nursing the aged, they also ensure that the necessary standards of hygiene are adhered to.

Aluminium and health – from fitness equipment to noise barriers

Sport is good for health. It strengthens the heart and improves the circulation. One feels fit and is less susceptible to illnesses. Aluminium helps – with sports and fitness equipment that is rigidly built and safe.

In various chemical compounds, aluminium exhibits a healing effect. There is a range of aluminium preparations that are used in remedies that act as astringents (i.e. they have power to draw soft organic tissues together), disinfectants or as a means of preventing inflammation. Aluminium makes pain-killers such as Aspirin bearable. It is used for heartburn and gastric ulcers. As aluminium acetate it encourages grazes to heal. In gargles it acts as an astringent and alleviates throat pains.

It is generally well known that sporting activities are good for the heart and circulatory system. In one way or another, aluminium is present in many sporting and fitness activities: especially where lightweight materials improve performance. Aluminium is also around when 100-metre sprinters like Maurice Greene and Marion Jones set new world records or win Olympic medals. Their superlight running shoes are fitted with aluminium spikes that give them optimum grip on the tartan track. Such “wonder shoes” are restricted to a small elite group of athletes but there is lots of sports equipment made of aluminium to which the general public has access: for example, rowing machines or aluminium-framed cycles. Or one can think of aluminium high-tech scooters, which became *the* sales hit and dragged children and adolescents away from their computers and onto the streets in droves. This, too, is a benefit to health. The same applies to aluminium studs for football boots. It only needs the goalposts to also be made of the light metal, just as they are in professional matches, and the recreational pleasure is complete.

Aluminium can promote health in numerous ways. As a noise barrier along the side of motorways or railways it protects local residents from the sound of vehicles rushing by.

And aluminium-spring-interior mattresses were recently introduced for people who have problems sleeping. Aluminium dampens the vibrations and makes for a more peaceful night's sleep.

Aluminium offers safety and security

There is no denying the need for safety and security. These are often closely related to questions of health. But being safe from criminals and accidents is also important.
Security when it comes to break-ins and theft, for example. Everyone immediately understands the need for government buildings to be given special protection. At the chancellor's office in Berlin, a special steel and aluminium façade means that break-in attempts are doomed to failure from the start. However, given the growing number of burglaries, protection of one's own four walls is becoming increasingly important. In many cases, burglars go about their business using a simple screwdriver and force windows or doors open in broad daylight. Greater wall thicknesses and hidden aluminium profiles can be effective in thwarting burglaries in such cases. With windows and doors, an aluminium construction combined with fireproof glazing will also prevent flames and smoke spreading to adjacent rooms and corridors, for example in office buildings, hospitals and hotels.
Because it is heat resistant and does not burn, aluminium is also suitable for protective clothing. Fire brigades and emergency services can get close to sources of heat or fire if they are wearing aluminium-coated full-body protection. The so-called space blankets that every German motorist now has to carry in his first-aid kit are vapour deposited with aluminium: primarily, to keep the injured warm. We should also not forget to mention aluminium stretchers. They make things easier for rescuers – regardless of whether they are having to go to the fifth floor of a block of flats or to the scene of an avalanche in the mountains.
An aluminium snap-link can also be life-saving when it comes to the worst on a precipitous rock face. This can lead to sudden, extremely high tensile forces of up to 5,000 kilograms, which the aluminium hook has to withstand.
In discotheques, cinemas and other places that host events, aluminium can ensure that stairways and emergency exits remain visible even when it is pitch-dark – and practically without consuming energy. The secret lies in an enamel with an aluminium coating on the steel. This material only needs to be exposed to light for a few minutes and it will glow for up to 20 hours.
There are lots of other examples that can be added to those mentioned here. There are a number of aluminium products that are "safety-relevant". One only has to think about protective systems used to prevent flooding, bulkheads on ferries, fire-escapes on multi-storey buildings, but also items like household ladders etc. These are all examples of aluminium products being of high social importance.

Saving lives, protecting people. Protective clothing made of aluminium affords safety and reliability, and enables rescuers to get close to the "action".

Aluminium and living – more than just a roof over one's head

Innovative furniture design: For example, this dining table made of beech and a new material – aluminium foam. An innovative material, lighter than water. Aluminium combines functionality with aesthetics.

People spend the major part of their life indoors: at home, at work, when shopping, and in the course of a lot of leisure activities. Buildings affect our lives - as dwellings, office buildings and factories. Living is more than just having a roof over one's head. The demands placed on accommodation change with increasing prosperity. Today, living comfortably means more than just having intact sanitary facilities, heated rooms or running hot water. In addition to physical comfort there is also mental well-being. Thus, the quality of life, aesthetics and design are becoming more important. People don't just want to live comfortably, they also want to have a pleasant ambience.

Aluminium fulfils both demands – functionality and aesthetics. The use of aluminium is not restricted to doors and windows. The designers of consumer products have discovered the silver-coloured metal for furniture and parts of the interior design: for example, for the fronts of cupboards, bed frames, tables, chairs and shelving systems. Besides this, there are a lot of household or designer items made from aluminium, such as wall or hanging lamps, which not only provide light but also create a pleasant ambience. Aluminium even makes something out of such commonplace items as stepladders and rubbish bins.

Modern, sustainable building – aluminium is an important material in this respect. It encourages architects to use new designs to create areas for living and working that make people feel good.

Housing and industrial buildings: The architecture of buildings and the materials used epitomise the image of a town and the countryside just as the interior decoration of a house or flat reflects the personality of the person living in it. One only has to think about the drab high-rise buildings from the East German era or the dreary factories of the past. Modern buildings don't only have to fulfil functional and economic criteria, they also have to satisfy socio-cultural demands. From an architectural, town-planning and aesthetic point of view, one should use materials that are modern and which make people feel comfortable. This is also expressed in the guide to sustainable building issued by the German Federal Ministry of Transport, Building and Housing.

Aluminium can look back on a long tradition as a building material. Architects used to choose the light metal because it was weather resistant, required little maintenance and was long-lasting; nowadays there are aesthetic aspects, too. As a material for roofs, walls and façades, aluminium improves the appearance of lots of buildings and the adjoining open spaces: power stations, office blocks, opera houses, clinics or shopping arcades. As a large, shiny profile sheet it prevents people looking right into the building; as a supporting structure in combination with glass it creates bright rooms, flooded with light. One even comes across the material in Alpine huts and shelters – such as the Meilerhütte, which is rich in tradition and located in the Wetterstein mountain region, at a height of 2400 metres. Here, where the wind can reach speeds up to 240 kilometres an hour and there are extreme temperature fluctuations, one turned to aluminium as the material for the windows and the façade structure a few years ago when the shelter was refurbished. And following a fire, aluminium was also chosen for the reconstruction of Europe's highest railway station, on the Jungfraujoch mountain in Switzerland.

Social aspects at international level

The globalisation of trade means that a company's social responsibility does not cease once the company is operating across the border.

This is particularly true for a business like the aluminium industry, which is characterised by its internationality. Some of the countries that are of particular importance to the global aluminium industry will be used as examples to illustrate the social aspects of the production.

Commitment at plant level worldwide

Jamaica: The Caribbean island is not only one of the world's largest bauxite and alumina producers. The aluminium industry is an important economic and social factor in the country, too:

- It accounts for about 50 percent of Jamaica's exports and is thus the country's second largest source of foreign currency.
- It provides direct employment, with well-paid jobs, for over 4,000 people. For example, the least qualified workers earn up to four times the legally required minimum wage.
- Farming on land that is not yet being - or is no longer being - mined, results in the aluminium industry also being the island's largest producer of milk and meat.

The aluminium industry also has a major social involvement.

Typical measures are:

- safety-at-work programmes and safety training to reduce accident rates in the plants – if possible to zero.
- medical care and teaching for workers and their families and co-operation with local communities in these fields (for example, providing equipment for hospitals, building schools or providing grants for school fees, text books or places for further education or training).

If people from mining areas have to be resettled temporarily while bauxite is being extracted, this is carried out under fully acceptable social conditions. After it has been mined, the land is returned to its original owners, who will have been accommodated in adjoining areas during the intervening period. The farmers receive compensation for lost production and are then given the necessary basic quantities of seeds and seedlings free of charge for three years after they return. In addition, the social and technical infrastructure of the villages is upgraded significantly when the villagers return.[3-4]

Bauxite extraction and aluminium production contribute to the economic development in certain poorer regions of the world, for example in Jamaica.

[3] *Wirtz, A. / Schäfer, J. H. 1999: Jamaica's Bauxite Industry – A Methodological Approach to the Identification of External Effects. In Braunkohle / Surface Mining 6/99 (only summary in English)*

[4] *Gocht, W. / Martens, P. N. / Röhrlich, M. 2001: Quantification of external effects of bauxite mining and alumina production. In Erzmetall Vol 54 No 5 (only summary in English)*

Australia: Australia is the largest producer of bauxite and alumina and the fifth largest producer of primary aluminium in the world. The industry employs about 16,000 people. As far as social aspects are concerned, one should mention above all the close partnership that has developed between the aluminium companies and the Aborigines. The native inhabitants are closely involved in the recultivation of bauxite mines. This applies, for example, to the landscaping, road-building projects and medical care. Among other things, the aluminium industry has awarded the Aborigines long-term contracts for the transport of bauxite or the provision of seeds for land recultivation. This ensures that the native inhabitants have a reliable source of income for decades.[5]

Apart from measures to rehabilitate bauxite mining areas, a large part of the social measures is devoted to children, such as the setting up of schools.

Brazil: There are about 50,000 people directly employed in the country's aluminium industry. Of special importance is bauxite mining, three quarters of which is carried out in the Amazon basin at Porto Trombetas. The facility is operated by Mineraçao Rio do Norte (MRN). In the Trombetas region, one forewent the establishment of further industries in favour of nature reserves and biological protected areas.

Around the bauxite mining area there are a number of small villages, so-called quilombos, which were set up about 200 years ago by escaped slaves (quilombolas). The quilombolas use the rain forest in a traditional manner. Therefore, with the participation of the Brazilian environmental authorities, one is trying to balance out the interests of the quilombolas and MRN. This covers not only questions of relocation but also regulations that result from the setting up of nature reserves and protected biological areas.

MRN is actively engaged in a number of social projects that help the quilombolas to help themselves, including projects in the following fields:

- poultry and fish farming, fruit and vegetable gardens as well as beekeeping, in order to improve the nutrition and income in the quilombos. (MRN received a prize from the US Chamber of Commerce in São Paulo for this measure in 1999.)
- schooling
- medical care
- helping the villages make claims for the land rights in their local areas with the Brazilian government.[6]

Bahrain: In 2000, Aluminium Bahrain was honoured by the International Chamber of Trade and the United Nations' Environmental Programme for its contributions to environmental protection. The company is also actively engaged from a social point of view. It regularly awards scholarships to the children of its employees to enable them to have a university education. So far, 190 scholarships have been awarded. For the younger children of employees, summer camps are held every year and these offer the children the chance to participate in a number of leisure activities and sports. Older children are offered courses to learn computer skills.

[5] *Martens, P. N. et al 1999: Aspects of Bauxite Winning at Weipa Opencast Mine in Australia, with Special Emphasis on Recultivation. In Braunkohle / Surface Mining Vol 51 No 2 (only summary in English)*

[6] *Sliwka, P. / Bauer, C. 2000: Bauxite Mining at Porto Trombetas. A discussion of sustainable development in mining. In Braunkohle / Surface Mining Vol. 52 No 4*

Mozambique: There are numerous other examples of aluminium projects that have contributed to the development of poor countries. One will be mentioned briefly here, the new Mozal primary aluminium smelter in Mozambique, one of the poorest countries in Africa. The plant is the largest investment in the country since it gained its independence from Portugal in 1975 and has been operating since 2000. It employs 750 people and nine out of every ten workers are Mozambicans. At a stroke the plant increased Mozambique's GNP by seven percent and doubled its exports.

Solar cookers – helping people to help themselves

South Africa: One development project where aluminium can provide useful support is the widespread use of solar cookers in Third World countries. According to the charity Deutsche Welthungerhilfe, there are about two billion people in the world today who rely on firewood for cooking. In some regions, the local forestry can no longer satisfy people's needs. In addition, chopping down trees leads to heavy soil erosion, the ground becomes impoverished, the water table is lowered and once-fertile land becomes desert.

The use of solar cookers helps counteract this development. The collectors, which are similar to a satellite dish, are made of anodised bright-polished aluminium sheet and they focus the suns rays. The cooking area is at the focal point and can reach temperatures of 700 degrees Celsius.

The aluminium industry promotes the wider use of solar cookers. For example, the Germany-based Aluminium Association (GDA) is supporting a joint project between the German Federal Ministry for Economic Co-operation and Development and the German Society for Technical Co-operation, GTZ. This covers the manufacture and distribution of solar cookers in South Africa.

Firewood for cooking purposes is essential for a lot of people in Third World countries. However, there is often not enough to go round. This is where solar cookers can help.

Germany: Aluminium companies have also supported various solar cooker projects in recent years by supplying the material for high-grade aluminium mirrors free of charge.

Conclusion

It has been shown here that aluminium has lots to offer – also from a social point of view. The industry and its manufacturing plants are actively participating locally and globally in the discussion on the social responsibility of companies towards their employees and society. This applies to both the process level and the product level.

When it comes to materials competing to offer the best solution for a given product, aluminium plays an important role, not only from a functional but also from a social point of view. It provides benefits for today's generation and for future generations, too.[7] As a reusable material that demonstrates its recyclability every day, aluminium enters into a social "agreement between generations", which also extends far into the future.

Aluminium
for Future
Generations

[7] *Glimm, St. / Schäfer, J. H. 2001: Aluminium – a contract between generations. In Aluminium 1/2001*

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