World Business Council for
Sustainable Development

Case study
2007

Lafarge/WWF
Partnering for sustainability

Concrete is the most used material worldwide. It is also very much linked to growth, particularly in emerging markets which often require increased infrastructure and housing. As a component of concrete, cement plays the role of “glue”, sticking together the different components involved - aggregates, sand and water.

Cement is made by grinding together limestone and shale and then firing them in a kiln. At very high temperatures, a chemical transformation occurs: limestone (CaCO3) becomes lime (CaO) and releases carbon dioxide (CO_2). 60% of Lafarge’s CO_2 emissions come from the chemical transformation of limestone at high temperatures, while 40% depends on combustion. The cement industry produces 5% of total worldwide CO_2 emissions, compared to transport which accounts for 20% or the power industry which accounts for 35%. Almost 40% of total emissions come from the building sector (heating, cooling, lighting, etc.).

Lafarge

Lafarge strongly believes that by combining its materials in an effective manner, it can help lower emissions from the building sector. Sustainable construction aims at promoting construction systems and solutions that respect both the environment and mankind.

The Lafarge Group is a world leader in building materials - cement, roofing, aggregates, concrete and gypsum. The Group employs 77,000 people in 75 countries. In 2004, it recorded sales of € 14.4 billion (US$ 18.5 billion). Several of its activities rely on the transformation of raw materials such as limestone or gypsum into construction materials.

Lafarge is of the firm opinion that there can be no sustainable economic performance without social progress and protection of the environment. Its commitment to sustainable development dates back many years. Beyond economic considerations, human, social and environmental dimensions are an integral part of the Group’s performance programs and management processes. Lafarge approaches sustainable development in a demanding, open, transparent and receptive manner.

In 1995, the Group publicly declared its environmental policy, clearly defining its commitments and, in particular, its firm belief in the need to pay attention to the environment. More than that, the Group was determined to derive a competitive edge from this outlook.

WWF

WWF is one of the world's largest independent conservation organizations, with over 5 million supporters and a network active in more than 100 countries on five continents. Since its creation in 1961, it has maintained a constant record of success. Today, WWF funds close to 2,000 projects and employs almost 4,000 people worldwide.

WWF's mission is to stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature, by:

- Conserving the world's biological diversity
- Ensuring that the use of renewable resources is sustainable
- Promoting the reduction of pollution and wasteful consumption.

To achieve its mission, WWF:

- Works in partnership with governments, local communities, international agencies, and business and industry, identifying realistic solutions to the world's most pressing environmental problems;
- Reinforces its program of field projects with policy work specifically designed to address the root causes of environmental degradation;
- Uses a rational and science-based approach to conservation, which focuses on key issues and priorities;
- Carefully stewards all funds received and, through global leadership, endeavors to obtain maximum value from these donations through leveraging the support of conservation partners;
- Promotes the replication of its conservation achievements through education and local capacity building, in partnership with other organizations, and through worldwide communications.

Partnering for sustainability

Lafarge's environmental policy has increasingly emphasized the development of long-term dialogue with its stakeholders and the establishment of a genuine partnership with society. The best illustration of this is the pioneering partnership it signed in March 2000 with WWF, the aim of which is to improve its environmental performance and contribute to raising standards in industry. In 2005, this partnership was renewed for a further three years.

WWF sees a future in which business makes a net positive contribution to the well-being of society and the planet. To achieve this, WWF will engage in challenging and innovative partnerships with business to drive change.

Lafarge firmly believes that there can be no sustainable economic performance without social progress and protection of the environment. Providing shelter to humans is a long-term, fundamental process that has a significant environmental impact. For years, Lafarge has been committed to mitigating this impact. The pioneering partnership with WWF was aimed at speeding up these improvements and contributing to raising standards across the industry.

Rules of engagement

Transparency in

- Public reporting (e.g., Harris superquarry)
- Allocation of funding
- Third party audit of indicators

Dialogue

- Freedom to criticize
- Possibility to disagree (e.g., waste fuel neutrality)

Commitment

- Challenging standards and stretch-targets, with time limit
- Solutions-oriented implementation
- Step-wise approach

Environmental Performance Indicators

- Environmental audits
- Quarry rehabilitation
- Emissions reduction
- Energy consumption
- Waste production & recycling
- Waste recovery
- Alternative / renewable fuels
- Water consumption

CO_2 target
On 6 November 2001, Lafarge announced its commitment to:

- 10% absolute reduction in gross CO_2 emissions - below 1990 levels - by 2010 in developed countries
- 20% net reduction per metric ton/cement worldwide

Real impacts

WWF's assessment of the 1st phase

- Relationship must return value to both partners
- Partners retain independence within a partnership of equals
    - Comparative advantage recognized, learning encouraged
    - Partners "earn" recognition for achievement of targets
- Communications clearly defined and managed
- No blanket endorsement of company or product
    - Agree to disagree

Lafarge's assessment of the 1st phase

- The partnership increased the momentum of environmental approach
- Quantifiable and time limited targets
- Tangible results were achieved in several critical areas
- Lafarge example impacted the whole sector
- Confidence, credibility and recognition were gained
- Communications were clearly defined and properly managed
- Not enough partnerships were developed at local level

What WWF has learned

- Influence on the whole cement sector
- Establish a close and constructive cooperation
- A novel way to challenge a company
- A transformation of the way WWF operates
- Measuring progress is key to this approach

What Lafarge has learned

- Expectations on both sides must be clearly and precisely defined
- Need for focus and accurate metrics
- Permanent dialogue helps solve controversies, and experiencing controversies leads to more openness
- Openness and transparency undermines criticism
- Setting stretch-goals gives momentum
- Experiencing partnership teaches patience and listening ability

Jointly defined environmental performance indicators

With the aim of highlighting areas for priority action and monitoring its progress on environmental issues, the Lafarge Group has identified the most relevant environmental performance indicators in conjunction with WWF and defined quantified targets for improvement for each division according to a detailed calendar. These indicators make it possible to assess progress achieved in the protection of the environment, and guarantee the transparency of the actions carried out by Lafarge.

Lafarge publicly reports these indicators in its Sustainability Report and CO_2 emissions are monitored and independently verified on an annual basis.

Indicators	Content	Targets	Progress
Environmental audits	Percentage of Lafarge sites audited in the last 4 years	100% of sites audited in 2004	In 2006 84% of sites had been audited
Greenhouse gas emissions	Direct Cement CO_2 emissions	20% reduction below 1990 levels by 2010 in net CO_2 emissions per metric ton produced worldwide 10% reduction below 1990 levels by 2010 in gross CO_2 absolute emissions in developed countries (Annex I of Kyoto Protocol)	Reduction of CO_2 emissions by 14.2% below 1990 levels per metric ton of cement worldwide in 2006 Reduction of CO_2 absolute emissions by 8.9% in developed countries (Annex I of Kyoto Protocol)
Energy consumption in all divisions Energy recycling	Energy consumption per TOE (metric ton of fuel equivalent) Rate (%) of alternative fuels used in the production of cement	Ensure that energy consumption, wherever significant, is measured in all Divisions by 2003 Set a target for recycling energy and using renewable energy	Objective achieved by Cement, Gypsum and Roofing Divisions Between 2001 and 2006, the use of alternative fuels rose to reach 10.7% of energy in 2006.
Dust emissions	Dust emissions in Cement plants	Reduce dust emissions by 30% between 2005-2012	Reduced 4.4%

Establishing high standards for quarry rehabilitation and biodiversity

For over 30 years, the restoration of sites has been an ongoing concern for Lafarge. The Group has developed expertise to integrate into natural landscapes: the creation of original environment and water zones conducive to the development of specific flora and fauna, treatment of quarry surfaces, replanting of land in high agricultural yield sectors, reforestation or ornamental planting and development of recreation areas.
In the context of their partnership agreement, WWF and Lafarge have defined a strategy to promote the re-establishment of the ecological value of its 800 quarries around the world.

Between 2000 and 2002, WWF was a member of the SQRP (Strategic Quarry Rehabilitation Project) working group within Lafarge that developed the principles for quarry restoration: a methodology that has been adopted throughout Lafarge's global operations since then.

As a result of the partnership, biodiversity was included in Lafarge's environmental policy document when it was redrafted in 2003.

By the end of 2006, considerable progress had been made, with Lafarge having implemented plans for restoration of quarry sites, in line with this methodology, in a vast majority of its operations.

Committing to ambitious CO_2 reduction targets in cement production

In 2001, Lafarge joined the WWF Climate Savers Program (major businesses prepared to make innovative efforts to mitigate climate change as part of their corporate responsibility; the Program demonstrates profitable and practical approaches to reducing CO_2 emissions and supports business efforts to implement carbon management strategies) and agreed to a set of greenhouse gas emission reduction targets. The company has committed to:

a) Reducing its absolute CO_2 emissions by 10% in industrialized countries below 1990 levels by 2010, which go far beyond the 5.2% target set under the Kyoto Protocol. This figure includes the accounting for burning fossil fuel based wastes such as CO_2 emissions and therefore this is the important target for WWF.
b) Reducing its absolute CO_2 emissions by 15% in industrialized countries below 1990 levels by 2010. (As Lafarge accounting methods consider fossil fuel based waste products as carbon free, this figure includes the burning of fossil fuel based wastes as CO_2 free).
c) Reducing its CO_2 emissions by 20% per metric ton of cement produced worldwide by 2010, discounting carbon from burning fossil fuel based waste products.

Results to date

Since signing the WWF Climate Savers agreement, Lafarge has made significant progress towards its reduction targets. The figures for 2006 show:

a) An absolute CO_2 emissions reduction of 8.9% in industrialized countries, which is on track for the original target of a 10% reduction. The CO_2 emissions reduction should be viewed in the context of increased demand, which at the time of setting the targets was projected at 10% for the 1990-2010 period. To date there has been in fact a 0.5% fall in this period in cement production in developed nations, which has helped Lafarge meet its target.
b) An 14.2% reduction of absolute CO_2 emissions below 1990 levels.
c) A reduction of 11.2% per metric ton of cement compared to 1990 levels, which testifies to the Group’s performance since this reduction is not related at all with market fluctuations. Lafarge is on track to achieve its target by 2010.

Key levers for the reduction of cement CO_2 emissions

Emissions reductions have been achieved through the following measures:

- Reduction of the use of clinker by substitution with cement like materials (such as fly ash and blast furnace slag4)
- Increased energy efficiency by modernizing plants and processes
- Reduction of fossil fuel use by increasing use of alternative fuels and biomass from rice and coffee husks, palm oil waste and increasing the use of renewable electricity for its offices. For example, by the end of 2005 wind turbines provided 40% of the energy needed at Lafarge's cement plant in Tetouan, Morocco.

The verification process

An independent auditor checks the accuracy and consistency of reported annual emission data. The results are published in Lafarge's Sustainability Report.

Local initiatives

The global WWF-Lafarge partnership has resulted in a number of local initiatives in countries where the two organizations operate. These joint efforts strengthen the worldwide partnership and ensure that WWF experts in the field can help Lafarge develop environmentally sound programs.

Austria / Biodiversity - quarry rehabilitation

Significant restoration work has taken place at the Lafarge limestone quarry in Mannersdorf to the east of Vienna. Slopes and embankments have been remodeled, trees have been planted and sanctuaries set up. Over 405 different plant species can now be found in the quarry of which 34% of them are part of the Red List of Austria (a list of threatened species). As a result of the restoration, a number of protected plant species (upright spurge, cutleaf teasel, adriatic lizard orchid, etc) and bird species (such as wood lark, black headed gull, Montagu's Harrier, rook and black woodpecker) have moved into the newly created areas.

Together with WWF, Lafarge Perlmooser designed a computerized monitoring system for restored quarries called the "long-term biodiversity index" (LBI). This index helps to assess the effectiveness of quarry restoration techniques by measuring the number of species and their status. It is also hoped that this can be used to limit the impacts of operational quarries on flora and fauna.

The Austrian "prototype" is being tested in Lafarge quarries in Sandrancourt, France with the hope that it can eventually be used in at least 25% of all quarries worldwide.

Canada - Biodiversity

In July 2004, WWF-Canada and Lafarge North America signed a partnership agreement to help conserve large carnivores, such as grizzly and black bears, timber wolves and cougars in the Bow River Valley in the Alberta Rocky Mountains near Banff. This is the only place where all these species are found together. Sadly, their long-term survival is not assured. They are under threat from industrial activity and tourism. Furthermore, a highway and railroad cut directly through the region. Fortunately, many Bow River Valley residents and Canadian and international tourists view their preservation as critical to maintaining the unique nature of the area.

Working with local stakeholders and the Alberta government, the partners are also undertaking a tracking project to better understand wildlife movements through various corridors that link up their habitats. Aware of the impacts of its activities on local communities and wildlife, Lafarge has also contributed financially to the conservation project, which is intended to help area companies avoid collisions between wildlife and road or rail transport of raw materials and finished products.

Lafarge has also helped supply cement and construction materials to create innovative highway underpasses for use by wildlife. In the future WWF and Lafarge will test the

feasibility of micro tunneling to create new means to minimize collisions between wildlife and road vehicles or trains.

China - Awareness raising

In 2003, WWF-China and Lafarge China, monitored, along with local stakeholders the status of panda habitat in a reserve area near Lafarge's cement plant. Next steps of the project include setting up a monitoring and evaluation system in Longxihongkou Nature Reserve.

In 2003, WWF helped to raise environmental awareness amongst Lafarge employees by training "Green Ambassadors" to act as environmental best practice representatives at work and in the local communities. The second round of training on the ambassadors will be undertaken in 2005.

Lafarge has supported WWF in establishing a children's environmental education website in Chinese. In 2004 the website won the Global Best Non-profit Website Award given by Web Marketing Associate. Further work is scheduled on content improvement and web promotion.

Partnership evolution

In March 2000, WWF and Lafarge launched a global partnership for a five-year period, with a mid-term review in 2002. Companies that enter into a partnership with WWF develop a unique relationship that is based on a balance between conservation, joint internal mobilization, joint learning initiatives and investment.

For Lafarge, the aim was to work closely with one of the world’s foremost conservation organizations to boost and further improve its approach to environmental issues, and therefore strengthen its competitive advantage.

WWF has been committed to a strategy of engaging with business and industry in order to transform private sector behavior. To this end, WWF has set up partnerships with some of the most progressive leading companies.

The first phase of the partnership included commitments and joint work in the following areas to:

- Reinforce the environmental policy of Lafarge, by implementing and monitoring annually performance indicators and targets (environmental audits, reduction of fossil fuel consumption, waste recovery, emissions control, etc),
- Combat the greenhouse effect by curtailing emissions of CO_2,
- Develop a strategy for the ecological rehabilitation of quarries,
- Heighten awareness amongst the widest possible audience on the importance of environmental preservation through local partnerships such as in Kenya, Austria, France and China.

Following encouraging progress, significant results and successes, WWF and Lafarge have renewed their partnership for a further three-year period, from 2005 to 2007.

Both partners are striving to make the cooperation more dynamic and ambitious. The scope of the partnership has therefore been broadened to tackle new challenges in the fields of climate change, biodiversity, sustainable construction and persistent pollutants. The ambition also includes further development of joint initiatives between WWF local offices and Lafarge Business Units.

Climate change and CO_2 reduction

Lafarge believes that every effort should be made to ensure that the global temperature increase will stay below 2°C. Lafarge has therefore reaffirmed its commitment to reduce its CO_2 emissions.

In line with Lafarge's strategy to grow in emerging markets, Lafarge is committed to finding solutions that will enable these countries to pursue their development while ensuring that the growth in their CO_2 emissions is contained. Lafarge and WWF will set up a working group of internal and external experts to develop ways of how the Group could curb the rise in CO_2 emissions in its developing country operations, and develop sustainable construction programs.

Both partners will also start to work together closely on how to extend the replacement of traditional fuels with sustainable biomass in several cement plants in China, East-Africa and Brazil. In Europe, Lafarge has started to purchase green electricity for approximately 100 offices in France through the French electricity company POWEO. This electricity is being produced as close as possible to the standards set by the European Green Electricity Network. Lafarge is also exploring the procurement of green electricity in other European countries.

Special focus on China

In China, WWF and Lafarge will explore ways of supporting China's development while tackling the issue of CO_2 emissions. Lafarge aims to become a benchmark for the industry in this country. The two organizations will also work on promoting sustainable construction, along with the Business Council for Sustainable Development in China.

Global reporting system to monitor and enhance biodiversity

Ecosystems perform vitally important functions. Forests help prevent soil erosion and floods by capturing and storing rain, as well as diluting the impact of climate change by absorbing carbon dioxide and producing oxygen. Wetlands help purify water by trapping sediments and nutrients. While more than half the medicines used today are based on molecules derived from wild plants. We all depend upon biodiversity for our survival.

However, biodiversity is being destroyed as a result of unsustainable use of natural resources. By the end of 2004 the Lafarge Group had begun implementing plans for restoration of 80% of quarry sites in line with the target set for the end of 2004.

New challenges

Based on the joint experience in Austria, WWF and Lafarge have decided in the new phase of the partnership, to focus on biodiversity, and to set up a global reporting system to monitor, evaluate and enhance ecological biodiversity in Lafarge quarries around the world.

It will provide a framework for Lafarge employees involved in quarry planning, management, and rehabilitation that will enable them to improve the ecological value of their site. The new target is then to develop a simple biodiversity enhancement tool kit for the Lafarge staff in charge of managing land before, during and after exploitation, by mid-2006. This tool will need to be scientifically validated, reliable and easy to use. It will make it possible to assess the biodiversity value of quarries and

other sites, and provide a basis for improving their ecological integrity and for monitoring progress. The aim is to start deploying the process in 25% of Lafarge's 800 quarry sites around the world.

Local initiatives

With the renewal of the partnership, both organizations are encouraging the development of new local initiatives on reducing climate change, promoting biodiversity and sustainable construction. After a selection process to identify the most appropriate and strategic projects, local WWF and Lafarge teams will be allocated funds to carry out ambitious action plans related to the jointly defined fields.

About the WBCSD

The World Business Council for Sustainable Development (WBCSD) brings together some 200 international companies in a shared commitment to sustainable development through economic growth, ecological balance and social progress. Our members are drawn from more than 30 countries and 20 major industrial sectors. We also benefit from a global network of about 60 national and regional business councils and partner organizations.

Our **mission** is to provide business leadership as a catalyst for change toward sustainable development, and to support the business license to operate, innovate and grow in a world increasingly shaped by sustainable development issues.

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