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Green Economy



BMZ Information Brochure 2 | 2011e

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Preface

Dear reader,

In 1992, the international community convened for the Earth Summit in Rio de Janeiro which continues to chart the policy course for the world today – towards sustainable global development. Twenty years on, Brazil is about to host another major UN Conference on Sustainable Development in 2012 (Rio 2012). The Green Economy in the Context of Sustainable Development and Poverty Eradication is one of the key themes to be addressed at this conference. It is an important issue: we need broad-impact economic development in order to lift people living in the world's developing countries out of poverty. And we also need a sustainable economy – one which is ecologically sound, socially equitable, and politically and economically viable.

In Germany, we have already embarked on this policy course, based on the further development of our social market economy. We have recognised that nature is worth protecting for its own sake. However, managing our resources responsibly also makes economic sense, for it makes us less dependent on expensive resource imports. Many environmental innovations and technologies therefore already bear the “Made in Germany” label. We are sharing our many years of experience in the renewable energies sector, recycling, resource-efficient technologies and organic farming with our partners in developing countries, often in successful cooperation with the private sector. This helps to build the capacities of our partners in the developing countries and speed up their progress



Dirk Niebel, German Federal Minister for Economic Cooperation and Development

along sustainable development pathways which will boost local wealth creation and enhance the value of their natural and social capital.

The Ministry for Economic Cooperation and Development (BMZ) assists German business to make sustainable and equitable investments in emerging and developing countries and thus promote “green” growth. Through their engagement in developing countries in particular, companies can and should demonstrate their commitment to sustainability and other social issues (“Corporate Social Responsibility” – CSR). BMZ supports this process at various levels: by strengthening the national and international frame-

work conditions for CSR, by providing direct support via our programme for development partnerships (www.develoPPP.de) and through dialogue measures for partnership and cooperation between governments and business. For that reason, we also support the United Nations Global Compact, the world's largest CSR network.

However, if we are to effect a broad-scale transition of the economy beyond niche markets, we need a new international framework. We must rethink our present approach and identify new assessment criteria as a basis for making the right decisions in politics and business. Environmentally harmful subsidies must be abolished in an equitable manner and standards for a sustainable "green" economy must be progressively implemented by companies.

Targeted smart management of natural resources offers developing countries in particular the opportunity for local, broad-impact economic growth with the potential to create incomes for the poor. Examples are access to safe and affordable drinking water, adequate access to sustainably managed fishing grounds, sustainable commercialisation of forest products and medicinal plants, and combating erosion to safeguard fertile arable land or pasture.

German development cooperation is working to ensure that at the Rio 2012 Summit, a common view of these issues emerges and binding international decisions are reached which support the transition to a sustainable global economy. Although the various

country groups' circumstances and pathways may vary widely, it is essential to shape the future in such a way that it guarantees quality of life for our own and future generations everywhere in the world.

This brochure illustrates the approach being adopted by German development cooperation in relation to the green economy and provides examples of practical approaches taken by projects in the field.

Two handwritten signatures in blue ink, one on the left and one on the right, appearing to be official or personal signatures.

Introduction

Economic growth, in its present form, is reaching its limits. Global energy and resource consumption is soaring, while forests are shrinking, drinking water is becoming scarce, and ecosystems are vanishing along with their flora and fauna. The industrialised countries' consumption patterns are unsustainable, not least because the world's population is increasing and people in developing and emerging countries now also aspire to a more consumerist way of life.

The conclusions drawn by the Intergovernmental Panel on Climate Change are unequivocal: in order to keep the increase in global temperatures below 2° C, the international community as a whole must radically reduce its CO₂ emissions. This makes the restructuring of our economic systems an urgent necessity. According to a report by former World Bank Chief Economist Nicholas Stern, unabated climate change



Nicholas Stern: Unabated climate change could cost as much as 20 per cent of global GDP by 2050.

could cost as much as 20 per cent of global GDP by 2050 and cause widespread impoverishment.

Furthermore, it is not only flora and fauna which are vanishing along with biodiversity: so are numerous opportunities to pursue a sustainable, pro-poor development pathway. According to economist Pavan





Pavan Sukdev: The world's protected areas, numbering some 100,000, provide services worth 4.4 to 5.2 trillion US dollars each year. Their loss would therefore incur huge costs.

Sukhdev, the 100,000 protected areas on Earth provide humankind with ecosystem services valued at between 4.4 and 5.2 trillion US dollars per year, so their destruction or degradation would have massive economic costs. By contrast, the investments necessary to conserve these areas add up to around 45 billion US dollars a year.

Protected areas are just one of many examples of the potential to generate new economic opportunities. The green economy concept aims to harness these potentials and put economic growth on a sustainable pathway. The transition to a green economy will not be easy, but it creates far more opportunities than risks – for the industrialised, developing and emerging countries alike.

It also offers new horizons for humankind, for a green economy not only benefits the environment and the climate: it is also a very effective tool to combat poverty and hunger. To achieve this, however, an appropriate international framework must be put in place. The upcoming UN Conference on Sustainable Development (Rio 2012, <http://www.uncsd2012.org>) offers an opportunity to do so, and German development cooperation is working towards this goal.



Left: Timber is vital to the economies of many developing countries. Yet the conservation and sustainable use of forests is crucial if biological diversity is to be maintained.

The East African Rift Valley harbours an almost inexhaustible geothermal energy resource. At a depth of just 700 metres, hot water vapour at 300 degrees Celsius can be tapped to drive turbines and generate green electricity.

The green economy from a development perspective

Historical context and terminology

The seeds of the “green economy” debate were sown in the 1970s, when the concept of the “limits to growth” was first mooted in a report by the Club of Rome. Its critique of the concept of growth sparked the idea of sustainable development, which led to the adoption of Agenda 21, among other things, at the Earth Summit in 1992. None of the debates has so far resulted in a shift away from the conventional growth pathway, however. But now, faced with the problem of climate change, the international community is coming under increasing pressure to accelerate the restructuring of the global economy.

The debate about the green economy draws its strength from this urgent need for change. Numerous institutions and organisations are involved in the debate, key actors being the UN organisations, first and foremost the United Nations Environment Programme (UNEP). The Organisation for Economic Co-operation and Development (OECD) is also currently working on a Green Growth Strategy.

There is as yet no agreed definition, or indeed a generally accepted concept, of what constitutes a green economy. The distinctions between the various terms used at the international level, such as “Green Economy”, “Green Growth”, “Global Green New Deal” or “Green Recovery”, but also “Qualitative Growth” and “Sustainable Economy”, are somewhat blurred. Essentially, the various terms mean very much the same thing, but they tend to emphasise different aspects. The terms most commonly used in the international context are “Green Economy” and “Green Growth”.

Green economy

In its working definition of a green economy, UNEP emphasises that all the interactions between the economy, society and the environment must be considered, on the grounds that a balance between these

three dimensions is essential to achieve equitable and sustainable development. This view accords with BMZ’s approach, which is based on the principles of the social and ecological market economy. The term “green economy” embodies the concept of sustainability while offering scope to debate the limits to growth – a debate pursued mainly in the industrialised countries and emerging economies. In this respect, the concept of the “green economy” is distinct from the notion of “green growth”.

Green growth

“Green growth” describes an economic growth strategy based on the ecological restructuring of existing economic processes, creating jobs and income generation opportunities in new “green” sectors of the economy and minimising environmental impacts. The concept of “green growth” is therefore of particular relevance in the development policy debate, for promoting qualitative economic growth is a key building block for sustainable development as well as for poverty reduction in developing and emerging countries.

The debate concerning the green economy

The urgent need for a reappraisal of our economic practices and a new direction, towards a green economy, first became apparent in the industrialised countries. Having taken the conventional development pathway during industrialisation, they have had longer to consider its environmental impacts, such as climate change and species loss. They therefore have a key role to play in developing and implementing alternative pathways in cooperation with other actors. However, the problems are not only faced by the industrialised countries.

All observers agree that the developing countries are already severely impacted by environmental degradation and climate change. Soil erosion, drought and

water pollution have a devastating effect on their populations, as these countries often lack the financial resources and knowledge required to prepare their societies for the challenges ahead. The same applies to some extent to the rapidly growing emerging economies, and especially their poorer population groups. An exchange of ideas and experience about the opportunities and challenges of the green economy in the context of sustainable development and poverty eradication is therefore important; this can take place in international forums, for example.

Differing national circumstances are one reason why the “green economy” debate triggers different responses in various countries. The capital- and technology-intensive economies, in particular, recognise the importance of the debate and the opportunities that it affords. Many developing countries, however, are worried about lower growth and the negative impacts on poverty reduction. Not all the measures to promote “green growth” necessarily help to alleviate poverty. For example, the shift from a coal-based energy supply to renewables may initially cause unemployment and social tensions, unless the process is managed in an equitable manner. The management of change therefore becomes an essential aspect of the transition to a green economy so that any potential or short-term risks arising during this process are identified at an early stage and strategies are put in place to ensure that there are development benefits for all sections of society.

Some developing countries regard the promotion of a green economy as an attempt by the developed countries to introduce trade barriers by stealth – a form of eco-protectionism. Elsewhere, however – notably in the Small Island Developing States (SIDS), whose very existence is under threat from climate change – governments have recognised that switching to an environmentally sustainable, low-carbon economy is their only chance of development. In Barbados, for example, the idea of building a green economy is part of the country’s national strategic plan for 2006–2025. And at the first Panafrican Conference on

Biodiversity and Poverty Eradication, which took place in Gabon in September 2010, African environment ministers approved a roadmap for the adoption of a green economy in Africa.

As the wide-ranging and often heated debate about the green economy shows, developing a shared ethos and strategy for action poses many challenges.

Taking the developing and emerging countries’ legitimate concerns as a starting point, it is important to identify the opportunities and potentials afforded by the green economy. Green economic strategies can help developing countries in particular to make more efficient use and enhance the value of their resources. Many strategies adopt a decentralised approach and



Achim Steiner, Executive Director of the United Nations Environment Programme (UNEP), presenting the “Champion of the Earth” award in 2008 to Liz Thompson, former Energy and Environment Minister of Barbados.

therefore primarily benefit local industries and markets. All these steps can help to reduce poverty and generate incomes, especially in rural regions, without damaging local habitats.

Mapping out these theoretical potentials is helpful, but the message must be reinforced with practical examples. To that end, it is essential to identify success factors and provide practical and positive examples of how the transition can be managed.

Flexible approaches must therefore be developed which are tailored to the specific country context and help to reduce poverty. The UN Conference on Sustainable Development in Rio de Janeiro (Rio 2012) offers a good opportunity in this context: it aims to produce a shared understanding of the concept of a green economy and a well-stocked tool kit for the transition. It is important to involve local stakeholders in this debate, which must focus particularly on the rights of poor population groups. Indicators are also needed to measure progress. German development policy will make a significant contribution here.

Core elements of the green economy from a development perspective

Without seeking to pre-empt the efforts under way at international level to clarify terminology, **core elements of a pro-poor green economy** can already be identified. From a development perspective, the following elements must be a part of all practical strategies for action:

→ Inclusive growth

is a prerequisite for development and poverty reduction. Future growth strategies should no longer focus solely on quantitative aspects of growth. Instead, the aim must be to achieve qualitative growth that benefits broad sections of society.

→ Sustainability

of economic growth means taking account of the absorptive and regenerative capacities of ecosystems and the climate. As a central element, economic growth must be decoupled from resource consumption and greenhouse gas emissions. This can be achieved, for example, by promoting innovation and clean technology, and also by introducing agricultural techniques which conserve natural resources. The true value of environmental services must be recognised in the economy and by policymakers, and the general public, too, must be made aware of the importance of sustainability and the green economy.

→ Inclusive, sustainable growth must ultimately aim **to reduce poverty**. Not all measures to promote sustainable growth necessarily reduce poverty. The transition to a green economy must therefore be managed in a way which makes a positive contribution to socioeconomic development in the developing countries. It must create more jobs and improve access to essential services such as a water supply, basic sanitation, and energy. Compensatory measures are required to offset any additional burdens on poor population groups resulting from this economic restructuring.

German development activities to support the green economy

Levels of action, actors

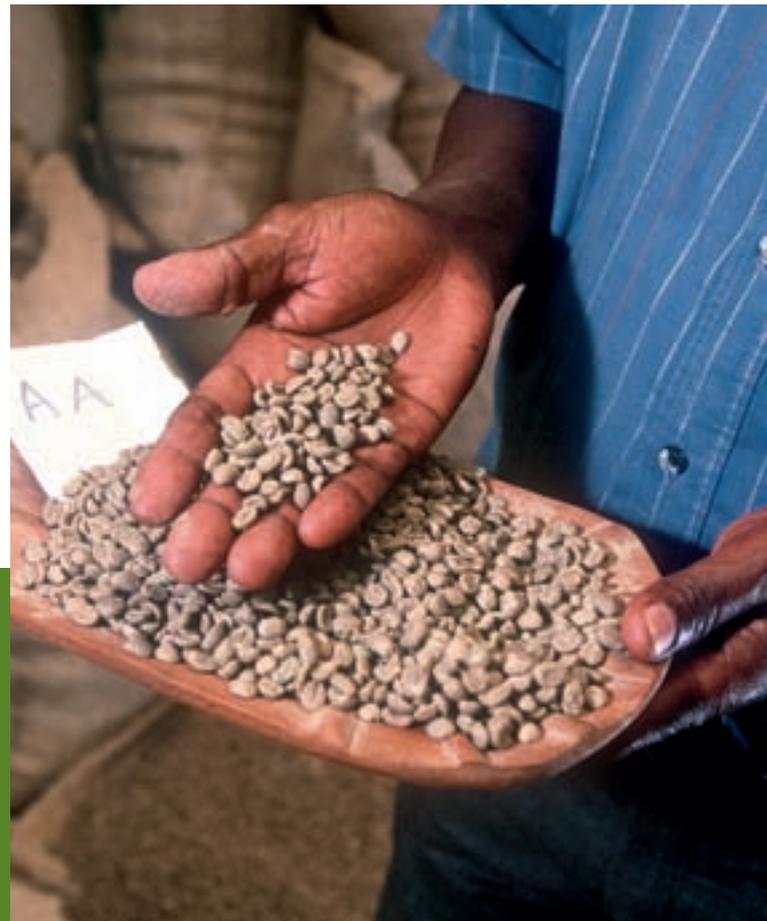
A variety of actors at many different levels have a role to play in this economic transition. This process is unlikely to be entirely conflict-free, for economic, energy, environmental, social and agricultural policies are motivated by different interests and pursue different approaches at national and international level. There may be a conflict between industrial and environmental policy, for example. These various policy areas must therefore be coordinated and harmonised. The green economy must be mainstreamed in the common agricultural and fisheries policies at EU level, as well as, for example, in the World Trade Organization (WTO) negotiations at international level.

National governments can promote a green economy by restructuring the general parameters for economic activity, creating incentives and encouraging citizens and companies to act in a sustainable manner. Production methods and consumption patterns should be a particular focus of attention here. Both are important elements of the green economy and relate directly to the key actors – the producers and consumers. Producer and consumer behaviour will crucially determine the extent to which there is a genuine transition to a sustainable and equitable economic development pathway. This transition can be supported in various ways, for example through reskilling for producers, or through education and awareness-raising.

Another option is to encourage actors to commit to environmental and social production standards or introduce environmental management systems. In Kenya, for example, the coffee industry has introduced sustainability standards along the entire value chain as part of an initiative which involved German

development agencies, the German Coffee Association, the European Coffee Federation and the Swiss State Secretariat for Economic Affairs. (See page 19.)

Whether and how quickly an economy can be restructured also depends on the available investment resources. Capital is required at all levels. At national level, these resources will be needed to restructure the energy sector, for example. At local level, funding mechanisms must be in place to speed up the energy



In Kenya the coffee industry has introduced sustainability standards along the entire value chain, with support from German development cooperation.

modernisation of both production facilities and households. Ethiopia is a good example: it meets 94 per cent of its end-use energy consumption from biomass, primarily wood. The use of energy-efficient stoves can radically reduce fuelwood consumption. BMZ is therefore supporting the dissemination of efficient stove technologies. (See page 21.)

Key themes and fields of action

The Ethiopian and Kenyan examples are just two of the numerous projects in which German development cooperation is supporting the transition to a green economy, with a focus on both bilateral and multilateral activities. BMZ attaches particular importance to thematic areas which promote linkages between the various stakeholders and levels of action. Development cooperation thus helps to create the right conditions and incentive schemes, builds capacity, provides investment funding, and encourages the mainstreaming of the green economy in international processes.

Creating the right conditions and incentives

Governments can promote economic transition by putting in place the right conditions and financial incentive schemes, e.g. by using ecological tax and financial reforms. Financial support can be provided for new technologies such as renewable energies and energy efficiency. The reduction of environmentally harmful subsidies can also help to reduce emissions. German development cooperation advises its partners on ways of creating the right conditions and incentives.

With support from German development cooperation, Viet Nam became the first Asian country, in 2010, to adopt framework legislation which levies a tax on both fossil fuels and substances that harm the environment, such as CFCs, chemicals and pesticides. (See page 26.)

In Chile, German development cooperation is working with the Energy Ministry to develop mechanisms to support the use of renewable energies. As a result, pri-



In Ethiopia, 94 per cent of the people cook with firewood. As the wood becomes scarcer, women must often spend hours searching for it and carrying it home over long distances.



Viet Nam became the first Asian country levies a tax on environmentally harmful

vate investors are planning to invest a total of 4 billion US dollars in the expansion of the wind energy sector in this South American country. This policy approach is creating jobs, reducing the need for fossil power plants and decreasing the country's dependency on oil and gas imports. In China, German development cooperation is assisting the Ministry of Economic Affairs to bring industry into line with sustainability criteria. All these measures also aim to safeguard and increase participation by poor and marginalised groups.

Building capacity

There are many barriers which must be overcome in order to harness the potential of the green economy. This applies especially to the developing and emerging countries, where there is often a shortage of financial resources, technology and expertise. German development cooperation therefore invests in basic and advanced training and in product marketing and certification, and works with partners to improve their value chains.

Ecuador is one example: here, BMZ is supporting indigenous farmers' efforts to cultivate high-quality cacao. The advisory services provided by Germany have built farmers' capacities to market their products more effectively and boost their incomes. The scheme also promotes the diversity of cacao varieties and discourages farmers from growing monocultures. (See example, page 20.)

Providing finance and investment

Financing plays a key role in the transition to a green economy, particularly during the early stages, when start-up funding is required. In BMZ's view, greentech (efficient, low-carbon, sustainable technologies), green construction, renewable energies, public transport, organic farming, eco-tourism and sustainable resource management are key areas requiring support. Various funding mechanisms can be considered, ranging from microcredit schemes which support local producers' switch to sustainable farming, for example, to sector investment programmes for the reconfiguration of the energy sector in partner countries. The forms that



to adopt framework legislation which substances.



German development cooperation helps to boost the environmental performance of manufacturing facilities in partner countries; the picture shows solar-powered systems.

these financing approaches can take are highly diverse, as three separate examples show. In Tajikistan, the microfinance institution MADINA, with support from BMZ, offers microloans to householders to enable them to insulate their homes and thus reduce their energy consumption by as much as 30 per cent. (See page 24.)

In Viet Nam, BMZ supports the afforestation of degraded areas by providing farmers with deposit accounts. During the afforestation phase – when conservation measures do not yet produce any yields – the farmers can draw on funds from the deposit account. However, funds are only paid out if the farmers have reached agreed afforestation targets. (See page 18.)

In South-East Europe, the European Investment Bank and Germany's KfW Entwicklungsbank have set up a fund which will provide loans to companies seeking to modernise old production facilities. (See page 24.)

Leveraging international agreements and processes

International law and multilateral regimes must also facilitate and support the green economy. The World

Trade Organization (WTO) and the World Intellectual Property Organization (WIPO), for example, must reshape their agreements in line with this goal. The same applies to the OECD Guidelines for Multinational Enterprises, which are currently undergoing revision.

Criteria guiding promotion of green economy approaches

In order to promote green economic activity, it is essential to identify priority actions and develop appropriate strategies. Development cooperation can provide an impetus here and discuss the various options with partners, prioritising action according to national circumstances. In agrarian economies, the dependency on natural resources such as water, soil and genetic resources is particularly high.

This opens up numerous development pathways based on a variety of support mechanisms. Besides sustainable farming, eco-tourism is another potential area of action. Biodiversity offers opportunities to market medicinal or cosmetic products, for example.

Countries which protect their biodiversity should be rewarded for their responsible policies via new financing mechanisms such as those established under REDD (Reducing Emissions



In a public-private partnership (PPP), the Green for Growth Fund is boosting investment in renewable energies and energy efficiency in Southeast Europe and Turkey.

from Deforestation and Forest Degradation). Countries which demonstrate that they are conserving their forests as carbon sinks should be able to access alternative sources of income via this mechanism. Agreement in principle on the REDD mechanism was reached at the climate negotiations, and various practical issues must now be resolved.

In gearing development cooperation towards a green economy, there are very many options available to partners, so it is important to identify key selection criteria. From BMZ's point of view, the following criteria are appropriate and should all be fulfilled as far as possible:

1) Steering effect, inclusiveness

The measures taken – such as an ecological tax and financial reforms – should reach a range of economic and private actors and should offer substantial potential for poverty reduction. Viet Nam's afforestation programme, for example, is improving the economic status of around 100,000 families, and the regenerated forests will capture 15 million tonnes CO₂ by 2025.

2) Specific competencies and comparative advantages

German development cooperation has substantial experience in various areas of relevance to the green economy, including, for example, sustainable forest management and integrated water resources management. Germany is known for the excellence of its technologies, financing instruments and expertise, especially in the renewable energies and energy efficiency sector. It therefore makes sense to focus Germany's activities to promote the transition to a green economy particularly on these thematic areas.

3) Innovative methods

A further criterion is the availability of innovative approaches. These can play an important role in ensuring that transition processes are managed as efficiently as possible. The campaign against illegal logging is a good example. In some countries, illegal logging accounts for as much as 90 per cent of all logging activities. The EU has therefore developed the Forest Law Enforcement, Governance and

Trade (FLEGT) process and, with Germany's support, is currently negotiating voluntary partnership agreements with forest-rich developing countries. The agreements aim to ensure that only legally harvested timber is imported into the EU from countries agreeing to take part in this scheme. In exchange, the partner countries receive support to establish a scheme to verify the legality of timber exported to the EU. FLEGT thus offers a new basis, via a multi-stakeholder process, on which to assist the efforts being made by many timber-exporting countries (e.g. Ghana, Cameroon, Congo) to combat illegal logging, by utilising the incentives created by a shift in consumer demand in the EU and US towards sustainable timber products. FLEGT is now a key topic in international forest policy.

In Tunisia, German development cooperation is promoting management methods in industrial and commercial zones to make it easier and cheaper for companies located there to invest in recycling, energy efficiency, and waste/wastewater management systems. (See page 22.)

4) Active private sector participation

The involvement of the private sector is essential in order to achieve social and environmental goals. Craft, trade and industry are important market actors. They not only have the knowledge to introduce new techniques and technologies; in many cases, they can also provide some of the funding that is required. BMZ is therefore promoting cooperation with the private sector, both in partner countries and in Germany itself. For example, in order to manage water catchments more effectively and thus respond to the problem of water scarcity, German development cooperation is working with the world's second largest beer producer, SABMiller. The shared objective is to reduce the water footprint of each litre of beer produced in brewing operations in Peru, South Africa, Tanzania and Ukraine from 4.3 to 3.5 litres. (See page 23.)

Based on these criteria, German development cooperation is already working, in its bilateral activities, for equitable and sustainable policies to promote the green economy. BMZ is also a strong advocate for the green economy at national and international level.

BMZ will develop further priority actions and focal areas in preparation for the UN Conference on Sustainable Development (Rio 2012) and beyond.

At EU level and within the United Nations framework, BMZ will work to ensure that inclusiveness and the potential for poverty reduction are key criteria in the selection of green economic strategies and that there is active involvement of the private sector. It is also important to “join up” the sustainability debate at Rio 2012 with the Millennium Development Goals agenda. In order to firmly establish a green economy in developing and emerging countries as well, these countries must be enabled to participate actively in international forums, exchange ideas and experience, and learn from each other. This exchange can take place, for example, within the framework of the Green Economy Coalition, which aims to analyse how the world can move towards sustainability, identify solutions, and speed up the transition.

German development cooperation advises and supports partner countries’ efforts to implement green economic strategies in thematic areas in which Germany has a comparative advantage. BMZ also aims to create synergies between private sector activi-

ties in Germany and partner countries. This can be achieved, for example, by developing and marketing innovative technologies, initiating policy dialogues, launching pilot projects and funding support mechanisms.

Furthermore, German development cooperation supports private sector initiatives which aim to promote the green economy. These include the Donor Committee for Enterprise Development (DCED), comprising around 20 bilateral and multilateral donor and implementing organisations. It supports donor harmonisation and the exchange of expertise and experience among partners.

The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) and BMZ are hosting a high-level conference on “The Water, Energy and Food Security Nexus – Water Resources in the Green Economy” (www.water-energy-food.org), which will take place in November 2011 as a German contribution to Rio 2012. In Rio de Janeiro, the German Government will present successful examples of German development cooperation in core thematic areas of relevance to the green economy.



View across Botafogo district (in the foreground) to 396-metre Sugar Loaf Mountain, the emblem of Rio de Janeiro. This will be the venue of the next high-level conference on global sustainability.

Green economy case studies

Alleviating poverty and conserving resources are not mutually exclusive – on the contrary. German development cooperation already combines these two ele-

ments of development policy in many projects. The following examples show how varied the initiatives can be and how successfully they work in practice.

Since the mid-1990s German development cooperation has been helping Viet Nam restore its forests, which were severely degraded by war and over-exploitation.



In Kenya, German development cooperation is engaged in a public-private partnership (PPP) with coffee exporter Sangana Commodities Ltd.



Strengthening local value creation

Replanting forests and generating local income – “green” deposit accounts in Viet Nam

The project

As part of its financial cooperation, German development cooperation has been helping Viet Nam since the mid-1990s to reinstate its forest areas, which were severely degraded by war and over-exploitation. Under the scheme families are given rights to use state-owned forests for a period of fifty years. By implementing this measure, the government is combining conservation with poverty alleviation.

Each family is given a plot of two hectares. In return the family makes a commitment to plant trees on the land and to manage it sustainably. As start-up capital the families receive saplings and fertiliser, and they are also trained in methods of sustainable forest management. In the early years the farmers do not earn any income from the newly-planted forest, for example from sales of honey or forest fruits. For this reason

each family is given a deposit account credited with 500 US dollars. This amount corresponds to a farming family’s income for three years. The family receives the money when it has fulfilled its commitment to plant the trees.

Results anticipated/achieved

● Forest management reduces poverty

Around 100,000 families have taken part in the forest programme since the project started. As a result of managing the forests the farmers are increasing their incomes by as much as 30 per cent. This benefits the children in particular, because the parents invest the extra income in their education, for instance.

The families can also use the money to meet their basic needs, for example to buy clothes. Alternatively they invest some of their earnings in their farming business. Many families are now also using the deposit accounts to safeguard their livelihoods and are building up reserves for difficult times.



Farmers receive training in sustainable forest management in the course of reforestation work.

- **Afforestation produces positive environmental effects**

The programme is having a very beneficial effect on the environment. Soil erosion is being reduced and soil fertility is improving. The reinstated forest gives better protection to numerous species. In addition, the forests are becoming more resistant to storms, drought and disease. Water supplies and the micro-climate have also stabilised. The new forests will capture a total of 15 million tonnes of CO₂ by 2025, thus contributing to climate change mitigation.

- **Structural effects:**

Studies by the Vietnamese government and German development cooperation show that the forest projects have led to new standards and can act as a model of best practice for further projects in other regions of the country. Key strategic elements have already been taken on board by the Vietnamese government and other donors.

The Common Code for the Coffee Community

The project

The Common Code for the Coffee Community (4C) Initiative aims to improve working conditions and environmental standards in coffee growing. To this end voluntary sustainability standards have been introduced along the entire value chain. Several components are important for success.

As well as the Code itself, a system for monitoring compliance has also been introduced. All stakeholders are included in the participatory decision-making process. Those who implement the Code are assisted with financing and expertise. German development cooperation has been working on the development and implementation of the Code with the German Coffee Association, the European Coffee Federation and the Swiss State Secretariat for Economic Affairs since 2002.

The Code consists of 28 principles and the abolition of ten particularly abhorrent practices such as child and forced labour. The Code's social principles are intended to create jobs and improve living standards for farmers and their families and employees. The environmental principles protect virgin forests and natural resources such as water, soils, biodiversity and energy. The economic principles are aimed at transparent price mechanisms, profitability, better market access and appropriate wages.

Results anticipated/achieved

- **Local producers achieve higher incomes**

Producers in developing countries are benefiting from the initiative in a variety of ways. They are able to reduce their costs and increase the quality of their products. In addition, they have better access to markets and can obtain credit more easily. Under the scheme they have been able to boost their incomes by an average of 30 per cent. Those involved can also participate in training and workshops. This further training guarantees jobs and at the same time helps to implement environmental standards.

- **The project implements environmental and social standards**

The 4C Initiative is deliberately abstaining from developing a green niche product, but instead is aiming to change mainstream coffee production. That is why there is no 4C label informing final consumers about the initiative. In total, in 2010 more than 280,000 workers worldwide were already growing coffee to 4C standards on around 453,000 hectares. Potential production amounts to around 12 million sacks of coffee per year, i.e. ten per cent of global production. Well-known companies such as Aldi, Dallmayr, Lidl, Kraft Foods, Nestlé and Tchibo are already members of the organisation and are increasingly selling 4C coffee. The steady growth of the initiative confirms the success of the strategy.

Biodiversity generates high incomes – cocoa growing in Ecuador

The project

In Ecuador cocoa is grown mainly on small family farms. In most cases traditional fine cocoa varieties are crossed with bulk cocoa varieties. These hybrids are gradually displacing the genetic material of fine cocoa. Since 2006 German development cooperation has been helping the indigenous Kallari Initiative to specialise in the more challenging cultivation of the Cacao Nacional variety.

The aim is to safeguard the farmers' rural livelihoods and conserve biodiversity. The project promotes better market access in order to increase the farmers' income. To this end the initiative is setting up direct contacts with manufacturers of speciality chocolates. The Swiss company Max Felchlin is the first established buyer of Kallari cocoa.

Results anticipated/achieved

- **Farmers foster biodiversity**

The farmers are planting more than 40 different species of trees and shrubs on their land. By doing

this, the Kichwa families on the edge of the Amazon Basin are creating a biologically diverse and sustainable environment. Because the families are earning adequate incomes from cocoa growing, they are continuing the tradition of cultivation in a way that protects species. At the same time they avoid planting monocultures and clearing pristine rainforest.

- **Indigenous families achieve higher incomes**

141 small communities have already organised themselves into the Kallari Initiative. As a result Kallari marketed ninety tonnes of dried cocoa beans in 2010. Since more and more small producers are coming on board, the 2011 crop may well turn out to be twice the size. Through its work Kallari is safeguarding the livelihoods of 2000 families in Napo Province. The incomes of participating families have increased fivefold from 62 US dollars in 2006 to around 305 dollars in 2008. To provide further support for farmers, the initiative is building the capacities of the cocoa producers' associations and is promoting product quality and supporting certification procedures for environmental and social standards.



Since 2006 German development cooperation has been helping the indigenous Kallari Initiative specialise in the high-grade Cacao Nacional variety.

Ethiopia: biomass stoves conserve resources and create jobs

The project

In Ethiopia the general population and industry meet 94 per cent of their energy needs with biomass, i.e. wood, charcoal, cow dung and green waste, but they use the biomass very inefficiently. Half the energy is used to prepare “injera”, the staple food, in traditional ovens. Since 1998, German-Ethiopian development cooperation has therefore been designing and distributing modern biomass stoves. The project is developing markets, supporting the creation of businesses, training employers and fostering networks of small businesses which produce the stoves locally.

Results anticipated/achieved:

- **Modern stoves reduce pollution**

So far the project has provided some 134,000 people with modern energy-efficient stoves. They use up to 80 per cent less wood than the traditional fireplaces. This efficiency, coupled with the high number of users, has reduced wood consumption and thus minimises the pressure on the forests. Furthermore, the modern stoves protect the health of

women and children, since fewer fumes and less dust are given off during cooking.

- **The stoves create jobs**

Jobs are created in rural areas in particular by the production and marketing of modern biomass stoves. The stove producers are earning considerably more than before. There are already 455 small producers manufacturing stoves in 225 districts and five regions, with almost 300,000 stoves having been produced by mid 2009.

Producing energy-efficient biomass stoves creates employment and boosts incomes in rural areas.



Improving manufacturing conditions

Environmental management strengthens Tunisian industry

The project

One in every two Tunisian industrial companies is located in a designated industrial zone. The operators of these industrial zones can act as intermediaries between policy-makers and the companies, helping to ensure that government environmental guidelines are implemented cost-effectively and the consumption of resources is reduced.

That is why German development cooperation has been promoting the GMG associations (Groupement de Maintenance et de Gestion) since 2008. Organised as non-profit associations, GMGs support the companies located in the industrial estates. In parallel, German development cooperation is advising the Tunisian Ministry of Industry, Energy and Small and Medium Enterprise on more robust use of the industrial zoning structure to implement a sustainable growth strategy.

Results anticipated/achieved

- **The environmental impacts of industrial production are reduced**
GMGs help their member companies to work together to invest in recycling, energy efficiency, and waste and wastewater disposal and thus save money. It also informs its members about government grants, as well as liaising with the communities in the surrounding area and consulting on planned investment. This coordinated procedure cuts the cost of environmental investment considerably, making it affordable even for small companies.
- **Improved competitiveness safeguards jobs**
Harnessing synergies among different industrial enterprises in one site is a highly successful approach developed in Germany. In the field of German development cooperation, innovative ideas tried and tested in Germany, such as intercompany production, can be used to develop a competitive advantage and reduce resource consumption. Through technical cooperation German expertise can contribute to emissions reduction, local business promotion and regional development. Industry represents 35 per cent of Tunisian GDP and makes a significant contribution to safeguarding jobs.



GMGs help their member companies invest jointly in recycling, energy efficiency, and waste and wastewater management.

Smart management reduces water consumption

The project

SABMiller is the second largest beer producer in the world. As the company needs to use enormous quantities of drinking water for its beer production, it aims to work together with local stakeholder groups to manage the water catchment areas more efficiently, thereby safeguarding supplies in the long term.

Everyone concerned will benefit from this. The company has launched a joint programme with the WWF (World Wide Fund for Nature) and German development cooperation. Between 2008 and 2015 SABMiller aims to cut its water consumption from 4.3 to 3.5 litres per litre of beer produced. In addition to the quantitative target the partners are also aiming to safeguard water quality. This public-private partnership operates in the four countries of South Africa, Tanzania, Peru and Ukraine. As a further objective of the project, the results of the cooperation shall serve as a model of best practice for other companies in the future.

Results anticipated/achieved

- **Water catchment areas are better protected**

If water becomes scarce, questions soon arise over

distribution, namely between local population groups and industries. This harbours potential for conflict. Joint management encourages a partnership-based approach. As part of the project, the risks in the water catchment are identified and solutions subsequently worked out in dialogue with other key public, private and civil society stakeholders.

- **Better management of water catchments reduces water consumption**

SABMiller is aiming to cut its water consumption mainly in the agricultural cultivation of its process inputs, which is responsible for up to 95 per cent of water consumption across the whole product life cycle. In the last two years, consumption in Peru was successfully reduced by seven per cent to its present level of 4.3 litres of water per litre of beer. Under the scheme the farmers are receiving education and training in alternative methods of cultivation.

- **Positive health outcomes**

The measures are intended to secure or improve water quality in the long term and therefore reduce health hazards as well.

In Peru, German development cooperation, WWF and beer brewer SABMiller have succeeded in cutting the water consumption attributable to the company's beer production by seven per cent in just two years.



Funding investment

Tajikistan: microloans help to insulate houses

The project

Poorly insulated buildings increase heating costs, produce unnecessarily high CO₂ emissions and waste resources. Tajiks use a very large amount of wood for heating, and as a result, a great deal of forest is destroyed. The consequence – where the forests disappear – is soil erosion. Since 2008 German development cooperation has been supporting the Tajik microfinance institution MADINA to develop loan products through which private homeowners can finance better thermal insulation.

MADINA links its offer of loans to technical advice for its customers, and has set up its own energy efficiency department for this purpose. In this way MADINA is taking on a key mediating role between customers, producers and construction workers, leading to higher quality. The loans run for a period of one year, with repayment dates geared to customers' incomes.

Results anticipated/achieved

● Energy consumption falls

Investment in thermal insulation is cutting the energy consumption of houses by an average of 30 per cent. These results are so encouraging that the experiences are now to be disseminated nationally via the microfinance association. Energy consumption and CO₂ emissions are falling, and deforestation is decreasing.

● Investment pays back

The customers very quickly see the benefits of the investment, as the insulation pays for itself within two years.

The Green for Growth Fund finances investment in energy efficiency in Southeast Europe

The project

The Green for Growth Fund aims to improve energy efficiency in Turkey and the Balkan region and promote the expansion of renewable energies. The fund was set up by the European Investment Bank and



With German assistance, the Tajik microfinance institution MADINA is developing loan products through which homeowners can invest in better thermal insulation.

Germany's KfW Entwicklungsbank. It is replenished by donor organisations, international financial institutions and institutional private investors. Loans are awarded via local financial service providers to small and medium-sized businesses, private households and local authorities wishing to invest in energy efficiency or renewable energies.

However, the fund does not restrict itself purely to financial transactions, but instead provides an innovative combination of financial and technical support. Funding is used to train the staff at the lending institution; they are to provide comprehensive advice on the subject of energy efficiency. Furthermore the fund is supporting the creation of an energy efficiency database, which bank staff can access.

Results anticipated/achieved

- **Greenhouse gas emissions fall**

The loans are used to fund the modernisation of outdated systems, and innovative production processes are being introduced. Both considerably reduce energy consumption. In addition the fund is also financing smaller decentralised renewable energy projects. Over the next four to five years the fund will generate 400 million euros for these purposes.

- **Investment in energy efficiency rises**

It is not easy for private households and small businesses to obtain loans to invest in energy efficiency, because until now private banks have regarded them as too high-risk. By guaranteeing credit for these clients, the Green for Growth Fund is now making the idea acceptable and reducing the risk for private banks. Experience in other regions shows that the banks are now more willing to invest in this loan sector, which is leading to a further increase in investment volumes. As the repayments on the loans go back into the fund, the energy conservation effect is multiplied, thus further boosting the effectiveness of emissions reductions.

East Africa: geothermal electricity reduces emissions and secures electricity supplies

The project

One of Kenyan-German development cooperation's key targets is to remove regional and social inequalities. However, for this to be achieved, a modern energy supply for local communities is essential. The project therefore aims to provide more people from poorer groups with connections to the electricity grid. In future they can be supplied with sustainable energy from geothermal power stations. The East African Rift Valley offers an inexhaustible source of energy for countries such as Kenya, Ethiopia, Uganda and Tanzania. By drilling to a depth of just 700 metres, hot water vapour at 300 degrees Celsius can be accessed, so the conditions are ideal for geothermal power plants. In Kenya alone around 2200 megawatts of electricity can be produced using geothermal heat – twice the amount all the power stations in the country are generating at present.

Expansion of capacities is a key requirement for being able to supply more people with electricity. To date only one household in five has access to electricity, and in rural areas this falls to a mere twelve per cent. Electricity demand is rising and is exacerbating the energy crisis. This is because the supply depends on old hydropower plants. As a result of frequent periods of drought they produce only limited electricity, which is why the electricity grid regularly shuts down. The breaks in supply have to be bridged using expensive and polluting diesel generators. The cost to the national economy of the inadequate power supply is estimated at two per cent of Kenyan GDP.

Using geothermal heat to a greater extent could stabilise the energy supply, but the development costs are very high. For this reason geothermal heat is only meeting eleven per cent of Kenyan energy requirements so far. 90 kilometres northwest of Nairobi, the Kenyan capital, is Africa's largest geothermal power station, Olkaria II. Here hot water vapour at a temperature of 300° C from a depth of 2000 metres drives two turbines. Before building could start, the German government funded the expensive exploratory and development drilling and thus laid the foundation for its construction.

Due to the very promising prospects for profit-making, private investors took on the construction and running of the follow-up project. Olkaria III has been generating electricity since 2001 and is Africa's first privately-owned geothermal power station. The operators now want to increase the capacity from 13 to 48 megawatts. To do this the operator of Olkaria III has received a long-term loan from a consortium which includes Germany's KfW Entwicklungsbank.

Results anticipated/achieved

- **Geothermal electricity prevents CO₂ emissions and secures the energy supply**

The project is reducing greenhouse gas emissions and securing the energy supply. As a result of the investment in geothermal heat the country is saving 180,000 tonnes of CO₂ per year – and this is a conservative estimate.

- **Geothermal electricity promotes manufacturing and creates jobs**

The expanded power plant Olkaria III will in future provide 430,000 people as well as commercial businesses and enterprises with reliable electricity supplies. In this way the expansion of the plant is sup-

porting the promotion of the private sector initiated by the Kenyan government, as well as the transfer of technology. A reliable energy supply for manufacturing industry is the cornerstone for growth and employment, and thus alleviates poverty. Kenya's neighbours Ethiopia, Tanzania and Uganda could also develop their geothermal heat potential in the Rift Valley, as yet completely untapped, in the fashion of this model of cooperation.

Creating incentives

Viet Nam taxes emissions and pollutants

The project

The Vietnamese government wants to curb the increasing pollution of the environment and is deliberately focusing on market-based instruments to do so. In November 2010 Viet Nam became the first country in Asia to adopt extensive framework legislation for this purpose. It taxes both energy such as fuels and coal and environmental pollutants such as CFCs and



90 kilometres northwest of Nairobi, the Kenyan capital, is Africa's largest geothermal power station, Olkaria II. In Kenya alone around 2200 megawatts of electricity can be produced using geothermal heat.

pesticides. German development cooperation assisted the government in drafting the legislation in various ways, for example by promoting inter-ministerial coordination and local consultations. Furthermore specialists, mainly from the finance ministry, but members of the national assembly as well, were given the opportunity to make fact-finding trips for detailed consultations with experts from other countries, so that they could assess the impacts of the draft legislation.

Results anticipated/achieved

- **Pollution and emissions decrease**

With the aid of the legislation Viet Nam is introducing economic incentives to make production more efficient and also to change consumer behaviour. It is estimated that the country's annual CO₂ emissions can be cut by up to 7.5 per cent by means of the legislation. That represents an absolute reduction of up to nine million tonnes by 2012.

- **Revenue generation increases scope for public investment and compensation**

The revenue from the environmental tax will also provide the government with more scope for further environmental investment. It anticipates an

additional income of up to 1.5 billion euros for the year 2012. The country can use these funds firstly to invest in innovative technologies and secondly to compensate for the hardship caused by the legislation, for example by giving government support to the fishing industry, which will be particularly hard hit. Both types of investment promote the green economy in line with development policy objectives.

- **The legislation strengthens local competitiveness and promotes innovation**

Considerable investment in low-carbon and resource-efficient technologies is anticipated as a result of the economic incentives. This will boost the competitiveness of Vietnamese businesses.



More and more people in Viet Nam can afford a car or at least a motorcycle. Rising emissions are the downside of such mobility.

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

Edited by
BMZ, Division for environment and sustainable use of natural resources
Michael Netzhammer, Hamburg, Journalist

Design and Layout
BLOCK DESIGN Kommunikation & Werbung, Berlin

Printed by
Bonifatius Druck und Verlag, Paderborn
Printed on FCS-certified paper

Photo Credits

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As at
February 2011

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