Ex post evaluation – Nepal

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Sector: CRS code: 23220 (hydro-electric power plants)
Project:
A: “Middle Marsyangdi” hydro-electric power plant – BMZ No. 1998 65 072*
B: Accompanying measure to prevent conflict – BMZ No. 2002 70 108
Implementing agency: A: Nepal Electricity Authority (NEA) and B: Various executing agencies and user groups

Ex post evaluation report: 2017

		Project A (Planned)	Project A (Actual)***	Project B (Planned)	Project B (Actual)
Investment costs (total)**	EUR million	175.30	266.77	2.50	3.09
Counterpart contribution	EUR million	47.48	95.61	0.00	0.00
FC funding	EUR million	127.82	171.16	2.50	3.09
of which BMZ budget funds	EUR million	127.82	171.16	2.50	3.09

*) Random sample 2016 ** Figures excluding interest during the construction period
*** Actual costs without taking residual funds of EUR 1.8 million into account

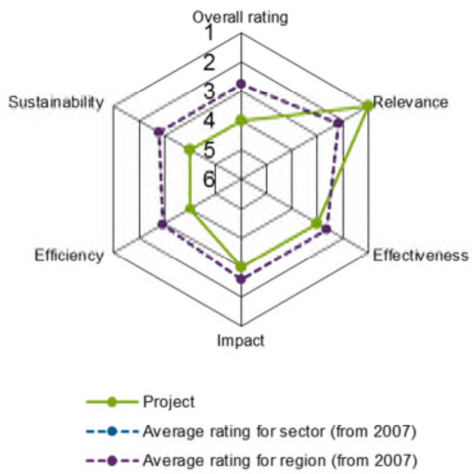
Summary: The investment project (A) consisted of the construction of the Middle Marsyangdi run-of-river power plant with an installed capacity of 70 MW (2 x 35 MW). The power plant is located in Central Nepal, to the north-west of the capital Kathmandu and at a distance of approx. 160 km by road. It is supplied with incoming water from the middle reaches of the Marsyangdi River, which is deflected at a barrage and then supplied to the power plant via a diversion tunnel that is approx. 5.5 km long. The storage area formed at the barrage allows the power plant to cover demand during times of peak loads, especially during the dry season, as well as having exclusive run-of-river operation. An **accompanying measure (B)** was assigned to avoid or reduce conflicts during the implementation phase of the investment measures by improving the standard of living of the population in the areas surrounding the hydro-electric power plant.

Development objectives: The **project objective** was to contribute to an efficient, reliable and both environmentally and climate-friendly power supply that is secured for the long term. Thanks to the efficient use of the power supplied, the project should then also make a contribution to economic and social development in Nepal and to global climate protection (**Ultimate objective**).

Target group: The target group consisted of all power consumers with a connection to the interconnected grid in Nepal.

Overall rating: 4

Rationale: The project tackled a significant development bottleneck in Nepal (relevance). It made an essential contribution to the improvement of the electricity supply in Nepal. The impact in terms of development policy is adversely affected by sectoral deficiencies, which it will scarcely be possible to eliminate in the foreseeable future: a lack of cost coverage and high system losses. On the project level, too, there are considerable weaknesses with a high risk for the sustainability of the power supply from the hydro-electric power plant: inadequate operation of the system under specific circumstances (high bed-load and sediment input), inadequate servicing and maintenance due to an insufficient provision of funds by the Nepal Electricity Authority. There are doubts about whether the power plant formed part of the most cost-efficient expansion plan. Negative impacts on the environment only exist with regard to an insufficient volume of residual water.



Highlights: In times of internal political conflicts in Nepal, the accompanying measure led to a high degree of acceptance of the hydro-electric power plant project among the population in the communities and regions affected by the construction, which continues to this day.

Rating according to DAC criteria

Overall rating: 4

The project has been given an overall rating of 4. On the one hand, this is based on the level of relevance at hand, the satisfactory project target achievement (Effectiveness) and the development policy impact which was satisfactory despite sectoral weaknesses and limited negative environmental effects. On the other hand, this is also based on inability to meet the minimum requirements of the Operational Test Criteria (OTC) on the sectoral level (Efficiency), the lack of micro- and macro-economic efficiency, and the uncertain prospects and risks in terms of sustainability.

Relevance

The project tackled a key bottleneck in terms of development policy. At the time of the project appraisal (PA), only 13 % of the 21.9 million inhabitants had access to public electricity. The annual per-capita power consumption of 42 kWh was one of the lowest in Asia. Despite this low consumption, the supply was unable to meet the demand. During the dry season, there was load shedding of about 60 MW on an almost daily basis.

The annual pro-capita power consumption now stands at approx. 185 kWh[1], though that is still low when compared with neighbouring countries (Bangladesh: approx. 300 kWh/a; India: approx. 800 kWh/a; Thailand: approx. 2,500 kWh/a). The demand for power continues to grow dynamically: from 2010 to 2015, the consumption of electrical power and the load demand increased by about 8 % per annum, a rate that was far higher than the gross domestic product (4.2 % p.a.). The power supply can only satisfy this increase in demand to an inadequate degree, due to the slow increase in the power plant output and a lack of transfer lines to India to be used for power imports. Up to now, hardly any measures for increasing the energy efficiency and so for reducing the power demand have been carried out in Nepal, partly due to a lack of the necessary political and institutional framework conditions.

Even today, the sectoral situation in Nepal is characterised by a supply deficit, even though it has been reduced to some extent by an increase in imports since 2017. In the 2015/16 financial year, the suppressed power demand on the day of peak load stood at approx. 550 MW, corresponding to almost 40 % of the total notional **peak load demand** of 1,385 MW. In 2016, the total **available output** in Nepal amounted to less than 700 MW. The installed output connected to the transfer network amounted to 851 MW, of which 802 MW were attributed to hydro-electric power plants. However, numerous power plants were damaged by the earthquake in 2015. Although it is possible to reduce the deficit to some extent with imports from India, the gap cannot be filled entirely due, in part, to a continued lack of transfer lines. In the context of the Nepal-India Electricity Transmission and Trade Project funded by the World Bank, it is planned to build a number of cross-border 400-kV transfer lines between India and Nepal in the coming years with a transfer capacity of more than 1,000 MW.

Up until the completion of these lines and the additional construction of further power plants in Nepal, there will be widespread, planned power cuts ("load shedding"). During the dry season in 2016, this load shedding amounted to up to 13 hours per customer per day. The volume of **electrical power that was not delivered** due to planned and unplanned power cuts was therefore estimated at 1,921 GWh. In other words: the power demand stands at about 38 % above the **electrical power** that is actually fed into the interconnected grid of 5,074 GWh[2]. It is impossible to accurately quantify the economic losses caused by an insufficient and unreliable power supply. A conservative estimate on the basis of the power generation costs incurred by private diesel generators of approx. 45 NPR/kWh (approx. EUR 0.38 when converted) leads to a value of undelivered power of NPR 86.4 billion (approx. EUR 740 million when converted), which corresponds to approx. 3.85 % of the gross domestic product at current prices. This process does not yet take account of secondary effects such as negative effects on the environment and the climate

[1] Estimated value in the 2015/16 financial year based on the assumption of technical system losses of about 15%.

[2] Specifications according to the "Load Dispatch Center". Other specifications from the NEA quantify the supplied volume of power at 5,100 GWh.

due to increased emissions of locally active pollutants (SO_2, NO_x, particulate matter) and greenhouse gases with global impact.

The Middle Marsyangdi hydro-electric power plant has the potential to reduce the gap between the supply and the demand (core problem). The impact relationships underlying the project conception are plausible: an improved power supply is an indispensable prerequisite for economic growth and the creation of employment opportunities in industry, trade and commerce. An increased supply of electric power is also potentially suitable for connecting additional consumers to the power grid and so improving their living conditions ("Sustainable Energy for All").

The project is in harmony with the current sector concept of the Federal Ministry for Economic Cooperation and Development, "Sustainable Energy for Development". At the time of the project appraisal, the project was consistent with the priorities of the Nepalese partners ("Least Cost Generation Expansion Plan"). The project and its design were coordinated closely with other donors (especially ADB and the World Bank), who are continuing to support the development of the energy sector in the areas of hydro-electric power, transfer lines and distribution networks.

Relevance rating: 1

Effectiveness

The project objective (outcome) that was updated for the evaluation consisted of making a contribution to an efficient, reliable and both environmentally and climate-friendly power supply that is secured for the long term. The indicators shown in the following table were defined during the project appraisal for the measurement of the target achievement. They were then adjusted during the course of the implementation due to structural changes in the design of the power plant (installed output increased from 60 MW to 70 MW).

Indicator and target value	2011/12	2012/13	2013/14	2014/15	2015/16
(1) Peak output ≥ 70 MW	76.0 MW	76.2 MW	75.3 MW	76.0 MW	76.2 MW
(2) Electrical power ≥ 398 GWh	425 GWh	428 GWh	434 GWh	457 GWh	436 GWh
(3) Electrical power generation during peak hours ≥ 100 GWh	Due to the sediment deposits in the reservoir, the power plant is primarily used as a run-of-river power plant. In light of the fact that the period of peak load is defined as the time from 5 p.m. to 11 p.m. (a quarter of the day), it may be assumed that more than a quarter of the annual power generation is provided during peak load periods. Given a generation of more than 400 GWh, this requirement is fulfilled.				
(4) Sufficient residual water flow	The minimum flow that is needed for ecological reasons is not discharged throughout the year to the river below the dam.				

In 2015/16, the hydro-electric power plant contributed approximately 20 % to the power generation of the Nepal Electricity Authority (NEA) and approximately 8.5 % to the entire electrical power supply in Nepal (including imports from India and purchases from Independent Power Producers (IPPs)). The proportion of the power plant output installed in Nepal therefore stands at 8.2 %. An important function of the hydro-electric power plant is its contribution to satisfying the demand at peak loads. The power plant has therefore made a significant contribution so far to eliminating a key bottleneck in terms of development policy.

All targets were achieved, except for the final indicator. What exactly is meant by a "sufficient mandatory volume of residual water" was not defined either during the project appraisal or during the later course of affairs. There are no provisions under Nepalese law concerning the residual volume of water that is needed for ecological reasons. In our opinion, the mandatory discharge of water to the tail water for ecological reasons should amount to at least 1.5 m³/s to 2.0 m³/s throughout the year. According to our observations, however, there are considerable doubts about compliance with a sufficient residual volume of water in the lower reaches downstream from the dam, in order to preserve the aquatic life in this section of the river.

Moreover, there are considerable concerns about the operation of the hydro-electric power plant with regard to the following aspects.

- Accumulation of bed load and sediment in the reservoir, and erosion and scouring problems in the machinery at the barrage point
- Abrasion problems on the rotor disks and the guide blades
- Lack of compliance with the regulations for operating the plant, especially at times of high sediment input
- Qualification of the personnel, linked to a high turnover rate in some cases among the management staff
- Insufficient stocks of spare parts
- Insufficient health and safety equipment in the plant, including a lack of training and advancement of the personnel on this issue, and a lack of regular emergency drills

Apart from the inadequate operating budget, these deficiencies can also be regarded as the downside of the high level of utilisation of the plant. The Middle Marsyangdi hydro-electric power plant is currently the second largest power plant of the NEA and there is considerable pressure to minimise any interruptions with regard to the precarious supply situation. This has a negative effect on preventive maintenance and on the performance of urgently needed repairs.

It is generally true to say that the available budget for maintenance and repairs is much too low. In the past five years, the figure stood at less than EUR 500,000 per annum, whereas it is estimated that an average amount of EUR 2 million per annum would be required. Apparently, additional funds will only be provided when repairs are indispensable for the further operation of the plant. In 2017, for example, only EUR 650,000 was provided in order to implement the most urgent measures to safeguard the dam.

The accompanying measure consisted of approx. 100 relatively small projects, particularly in the sectors of education, health, rural water supply, rural transport infrastructure and rural electrification. The measures carried out in the context of the Neighbourhood Support Program (NSP) were identified by the local communities and also implemented to some extent by local user committees. The relevant population still benefits from use of the improvements made to the infrastructure, with a few exceptions, and these are considered to be positive according to our surveys.

In summary, it can be concluded that the effectiveness fully satisfies the expectations on the basis of the indicators specified for the achievement of the project objectives – except for the mandatory water volume. However, these positive results are dampened by the weaknesses in the operational management, which will ultimately be evaluated under Sustainability. In addition, it was only possible to achieve the desired project impacts with a certain delay (cf. Efficiency). Overall, despite the limitations related to sustainability and efficiency, the effectiveness can still be classed as good.

Effectiveness rating: 2

Efficiency

The implementation time schedule has been delayed considerably (approx. 10 years instead of 66 months). Although the delays are partly due to exogenous causes such as the political instability with the Civil War (1996-2006) during the construction period, the actual implementation time was excessively long. At the time of the project appraisal, the project formed part of the Least Cost Generation Expansion Plan (LCEP) for power generation. However, the investment costs have increased by almost 50 % compared to the original plan, which led to relatively high specific output costs of approx. EUR 3,814/kW[3]. On the other hand, the redesign of the power plant in contrast with the original draft led to an increased installed output and to an increase in the average annual power generation.

In the ex post evaluation, there are doubts that the power plant can actually be regarded as the most cost-effective solution in the context of the power plant expansion plan due to the increased construction costs and the modified design. From the macro-economic perspective, the dynamic production costs (DPC) amount to NPR 9.21/kWh with a discount rate of 6 %, based on 2016 prices. A comparison with the long-run marginal costs of the expansion in Nepal is not possible due to the lack of an updated Least Cost Expansion Plan (LCEP). There is also no information available about the DPC of other NEA power plants. In lieu of that, a comparison has therefore been drawn with the purchase prices for power procurement from private investors (Independent Power Producers/IPPs). For power plants with an output of up to 100 MW, the power purchase contracts to be concluded with the IPPs are based on a price of NPR 4.8/kWh during the rainy season and of NPR 8.4/kWh during the dry season. Given the assumption that about two thirds of the generation occurs during the rainy season, this leads to an average purchase price of about NPR 6/kWh. Taking the system losses of 25 % into account, the purchase price per purchased kWh amounts to NPR 8/kWh. This means that the generation costs of the Middle Marsyangdi hydro-electric power plant are higher than those of other, comparable domestic sources of power.

A comparison with the costs of electricity imports is more difficult, as the terms and conditions of the contracts have not been disclosed. In the year 2015/16, the average purchase costs for imports stood at approx. NPR 7.5/kWh. Taking the system losses into account, the purchase costs for imports are therefore slightly higher than the generation costs at the Middle Marsyangdi hydro-electric power plant at present. In the cost comparison it is also necessary to take into account the investment costs required for the necessary infrastructure on Nepalese territory that is needed for the imports (transfer lines, substations, etc.) occuring in addition to the procurement costs.

In summary, on the **project level**, it should be noted that the power plant's production efficiency is not a certain aspect from today's perspective in light of the figures available, when compared with other power plant alternatives (e.g. IPPs), although additional costs were definitely incurred (e.g. for transport and security) during the civil-war period. In addition, with regard to the range of variation in the specific investment costs for hydro-electric power plants according to the figures from the IPCC and the IEA, the hydro-electric power plant under evaluation stands well above the median in both cases (cf. footnote 3).

On the **system level**, further serious defects were detected with regard to the production efficiency. The system losses of over 25 %, which have been unchanged since the project appraisal, are far above the limit stipulated in the Operationa Test Criteria (OTC) of KfW of less than 20 %. Instead of expanding the power plant, a reduction of losses would have been a possible alternative to consider. However, measures to this effect were already planned at that time as part of ADB's funding programme for the Kaligandaki A hydro-electric power plant, and the related expectations were not fulfilled.

The allocation efficiency is measured from the economic point of view and in accordance with the Operational Test Criteria (OTC) of KfW, in particular through coverage of the energy supply costs by the income from the project-executing agency. As a minimum requirement, at least 80 % of the costs of the power supply must be covered by the average energy price paid in practice by the end consumers.

However, the tariff structure and the tariff level do not permit the NEA to cover the costs for the power supply. As a result, the NEA has suffered losses in recent years and will continue to do so, despite the tariff increase of about 19 % that was introduced at the beginning of the 2016/17 financial year. According to our calculations, this tariff increase will not be sufficient to comply with the minimum requirement of 80 % for the covering of the costs as specified in the OTC.

[3] In the specific investment costs for hydro-electric power plants, there is a high degree of variation as the costs depend very heavily on the respective site conditions. According to IPCC figures, the median value stands at USD 1900/kW (based on 2010 prices), with a variation range of USD 500/kW to USD 8,500/kW (source: http://www.ipcc.ch/pdf/assessment-report/ar5/wg3/ipcc_wg3_ar5_annex-iii.pdf). The International Energy Agency (IEA) gives the relevant statistics as follows: median value USD 2,493/kW (based on 2013 prices), with a variation range from USD 598/kW to USD 8,687/kW (source: IEA, Projected Costs of Generating Electricity: 2015 Edition).

The following table gives an overview of the development of the indicators addressed in the OTC for the production and allocation efficiency from the **sectoral point of view**.

Indicator and target value	2011/12	2012/13	2013/14	2014/15	2015/16
Production efficiency System losses* ≤ 20 %	25.0 %	25.1 %	24.8 %	24.4 %	25.8 %
Allocation efficiency Economic degree of coverage** ≥ 80 %	62 %	68 %	63 %	66 %	57 %

* System losses according to NEA figures. The system losses as calculated by us were slightly higher.

** The cost recovery ratio is calculated according to the specifications of the OTC, but excluding any revaluation of the fixed assets. No information was available on the subject.

Despite the sectoral deficiencies, the excellent collection rate must be noted (97.2 % in the 2015/16 financial year), which indicates a positive level of appreciation among the consumers.

In summary, the aspect of efficiency must be assessed as unsatisfactory from today's perspective.

Efficiency rating: 4

Impact

The development policy objective (**Impact**) was to contribute to economic and social development in Nepal and to global climate protection through the efficient use of the power supplied.

Despite the soundness of the cause-and-effect chains, it is difficult to measure the project's specific contribution to the **economic and social development** of the country, and to attribute this to the project. As a rule, such a contribution is deemed to have been made if the corresponding project objectives have been achieved. The extent to which an improved power supply has contributed to economic growth, productivity growth, employment, and generally improved living conditions would need to be further investigated based on (impact) studies. These would need to examine the significance of the power supply to economic and social development, and the relevant impacts, as well as the quantification of losses due to lacking or unreliable electric power supply (load shedding, voltage and frequency fluctuations). Yet unfortunately, there are no up-to-date studies of this nature available.

However, it is undisputed that an adequate and reliable power supply is a necessary prerequisite for the economic development of a country, and may be regarded as a significant contribution to an improvement in the quality of life. Without the Middle Marsyangdi hydro-electric power plant (or a similar power plant), the supply situation with regard to electric power would be even more precarious than it already is. The expansion of the power generation output has helped to improve the power supply of the consumers who were already connected at the time of appraisal. At the same time, it opened up the possibility of connecting new consumers and thus of improving their production and living circumstances.[4] At the time of the project appraisal, only 13 % of the 21.9 million inhabitants at that time had access to the public power supply. Since then, the proportion of households with a power grid connection has increased to 69 %. This was achieved through an increase in the installed power plant output in Nepal from 285 MW at that time to the new level of about 850 MW and through increased imports from India. Another 7 % of the population of around 28.3 million people are supplied via decentralised sources. Although the provision of a reliable power supply does not reduce poverty per se, it still forms a strong foundation for development.

[4] Given an average consumption of approx. 650 kWh/a per household customer in the year 2016, it would be possible purely theoretically to cover the power consumption of more than 600,000 new consumers with the Middle Marsyangdi hydro-electric power plant, if the electric power was used selectively for that purpose.

In general terms, the development of hydro-electric power for the generation of electric power in Nepal is making a contribution to the reduction of global greenhouse gas emissions and so to **climate protection**. No indicator was formulated for the objective of the contribution to global climate protection. It was presumed during the project appraisal that no electricity generation from fossil sources would be replaced and so no additionality in terms of the avoidance of greenhouse gases is given. The average emissions factor in the Nepalese power grid amounts to about 4 kg CO_2/kWh[5]; in contrast, this value in the interconnected grid in north-east India stands at more than 900 kg CO_2/kWh, because the power generation there comes primarily from fossil fuels. From the regional and global point of view, a significant reduction in greenhouse gases is linked to the extent to which it is possible to avoid imports from India through the provision of hydro-electric power produced without any emissions. However, it is not possible to attribute these gases to individual power plants. At present, it is not possible to quantify them due to the lack of a specific expansion plan for hydro-electric power in Nepal and reliable assumptions about the future deployment of power plants in India. There is a similar situation with the potential reductions of greenhouse gases that would arise if the use of diesel power plants by private self-providers were to be reduced due to an improvement in the power supply in Nepal.

The decrease in imports of power, diesel and liquefied petroleum gas (for cooking) could also potentially have positive impacts for Nepal's **trade balance**.

There are no known permanent, negative **social impacts** from the project. The population groups affected by the project were involved in the planning at an early stage. The 65 households affected by the relocation have been integrated well into their new surroundings according to all appearances and the statements of the Village Development Committees. The relocated households not only received financial compensation but also new homes with deeds of ownership. Moreover, they were also offered professional training programmes and employment during the construction of the power plant. There are no known complaints about the relocation and yielding of cultivation areas (in total, slightly over 300 affected households). Alternative fishing possibilities were offered to the fishermen who were affected by the lower water level in the lower reaches of the barrage.

Negative **environmental impacts** are largely limited to the failure to discharge the mandatory volume of residual water in the lower reaches of the dam and the consequences for the aquatic life there. Beyond this, no significant, long-term environmental impacts were identified in the frame of the the Environmental Impact Assessment (final report).

The infrastructure investments made in the frame of the **accompanying measure** have predominantly led to positive effects on the local economy, at first mainly during the implementation phase in the form of increased employment opportunities. Mitigation of conflict can also be assumed. Overall, however, the measures also represented an investment in the future of the local population in the form of improved educational opportunities at the supported schools, an improvement in the performance of the health facilities and an improvement in the water supply. Similarly, new or improved rural roads and extension of rural electrification helped to expand the existing economic activities and open up new areas for business development.

In summary, despite the sectoral weaknesses (high system losses reduce efficient use) and the limited negative environmental impacts (lack of mandatory residual water volume), we consider the development impact of the project to be satisfactory thanks to the contribution to the secured power supply in Nepal and to climate protection.

Impact rating: 3

Sustainability

The sustainability of the project is exposed to the following risks:

- The problems specified under Effectiveness in terms of operational management represent a major risk to the sustainability.

[5] Source: IEA, “CO_2 Emissions from Fuel Combustion”, Paris 2015

- It will scarcely be possible to eliminate the deficiencies specified under Efficiency regarding the system losses and the cost recovery in the foreseeable future.
- The economic and financial situation of the executing agency, which has been strained for several years, represents a major risk to sustainable operation. The funds that are available at NEA for sustainable operation, for regular servicing and maintenance and for urgently needed repairs of the plant are entirely insufficient by international standards. Due to the tariffs that do not cover the costs, it is to be expected that little will change in this situation in the short to medium term.

In addition, existing bottlenecks in the transfer network could endanger the discharge of the electric power generated at the hydro-electric power plant. The transfer line from the Middle Marsyangdi hydro-electric power plant to the Lower Marsyangdi hydro-electric power plant possesses a thermal transfer capacity of 120 MW. Due to the additional construction of further hydro-electric power plants in the upper reaches of the river (IPPs and the Upper Marsyangdi hydro-electric power plant (50 MW)); this capacity will not suffice to transfer the total locally generated power. In addition, there is a further bottleneck in the output of the transformer in Lower Marsyangdi, which is designed for only 100 MW. However, according to information provided by the executing agency, these bottlenecks are to be eliminated within the foreseeable future.

In the medium term, NEA is setting its hopes on increased imports from India and the construction of additional hydro-electric power plants which could reduce the pressure to maintain the operation of the power plant even in unfavourable operating conditions and thus postpone the necessary maintenance and repair works. However, the resulting financial cost would presumably tend to burden the economic and financial situation of NEA further, so that there would still be insufficient funds provided for operation and maintenance of its own power plants.

In times of internal political conflicts in Nepal, the accompanying measure led to a high degree of acceptance of the power plant project among the population in the communities and regions affected by the construction, which continues to this day. Overall, the implemented measures were assessed positively by the majority of the local population. With regard to the measures in the areas of “Rural electrification measures” and “Water supply”, positive effects were still observed even during the evaluation, but the sustainability proved to be problematic in the areas of “road infrastructure” and in projects relating to “education and healthcare”.

In summary, despite initial signs of hope in 2017 in the form of funds from the NEA for urgently needed repair works on the dam and the removal of the first turbine for repairs, the sustainability must be assessed as extremely uncertain from the technical and economic point of view.

Sustainability rating: 4

Notes on the methods used to evaluate project success (project rating)

Projects are evaluated on a six-point scale, the criteria being **relevance, effectiveness, efficiency** and **overarching developmental impact**. The ratings are also used to arrive at a **final assessment** of a project's overall developmental efficacy. The scale is as follows:

Level 1	Very good result that clearly exceeds expectations
Level 2	Good result, fully in line with expectations and without any significant shortcomings
Level 3	Satisfactory result – project falls short of expectations but the positive results dominate
Level 4	Unsatisfactory result – significantly below expectations, with negative results dominating despite discernible positive results
Level 5	Clearly inadequate result – despite some positive partial results, the negative results clearly dominate
Level 6	The project has no impact or the situation has actually deteriorated

Rating levels 1-3 denote a positive assessment or successful project while rating levels 4-6 denote a negative assessment.

Sustainability is evaluated according to the following four-point scale:

Sustainability level 1 (very good sustainability): The developmental efficacy of the project (positive to date) is very likely to continue undiminished or even increase.

Sustainability level 2 (good sustainability): The developmental efficacy of the project (positive to date) is very likely to decline only minimally but remain positive overall. (This is what can normally be expected).

Sustainability level 3 (satisfactory sustainability): The developmental efficacy of the project (positive to date) is very likely to decline significantly but remain positive overall. This rating is also assigned if the sustainability of a project is considered inadequate up to the time of the ex post evaluation but is very likely to evolve positively so that the project will ultimately achieve positive developmental efficacy.

Sustainability level 4 (inadequate sustainability): The developmental efficacy of the project is inadequate up to the time of the ex post evaluation and is very unlikely to improve. This rating is also assigned if the sustainability that has been positively evaluated to date is very likely to deteriorate severely and no longer meet the level 3 criteria.

The **overall rating** on the six-point scale is compiled from a weighting of all five individual criteria as appropriate to the project in question. Rating levels 1-3 of the overall rating denote a "successful" project while rating levels 4-6 denote an "unsuccessful" project. It should be noted that a project can generally be considered developmentally "successful" only if the achievement of the project objective ("effectiveness"), the impact on the overall objective ("overarching developmental impact") and the sustainability are rated at least "satisfactory" (level 3).