

Ex Post-Evaluation Brief

PR OF CHINA: Water and Waste Disposal Chamdo



Sector	1402000 Water supply and sanitation and waste water management - major systems	
Programme/Client	Waste water and waste disposal Chamdo (Tibet) - BMZ No. 1999 65 534*	
Programme executing agency	Chamdo Prefecture Urban and Rural Construction and Environmental Protection Bureau	
Year of sample/ex post evaluation report: 2013/2013		
	Appraisal (planned)	Ex post-evaluation (actual)
Investment costs (total)	EUR 10.0 million	EUR 10.17 million
Counterpart contribution	EUR 3.86 million	EUR 4.03 million
Funding, of which budget funds (BMZ)	EUR 6.14 million EUR 6.14 million	EUR 6.14 million EUR 6.14 million

* random sample 2013

Short description: The project originally consisted of a waste water component and a waste component. Due to differences of opinion between the project-executing agency and KfW about the specific objectives, the latter was cancelled and implemented independently by the Chinese party. Therefore this report only addresses the waste water component. This comprised the following measures: expansion of the sewerage systems in the three districts Chamdo Ba, Yunan Ba and Macao Ba, construction of a treatment plant (core element of the project), connection of the sewerage system to the treatment plant, construction of public toilets and equipping of the local environmental monitoring station.

Objectives: The adjusted **overall objective** was (after the cancellation of the waste component and adaptation to the new impact matrix) to make a contribution to water protection and improving health conditions, and thus to securing the sustainable development of the PR of China. The **Project objective** was (after the cancellation of the waste component), to make a contribution to environmentally-friendly waste water disposal in the town of Chamdo.

Target group: The target groups were the population of the town of Chamdo and its nearby areas downriver from Chamdo.

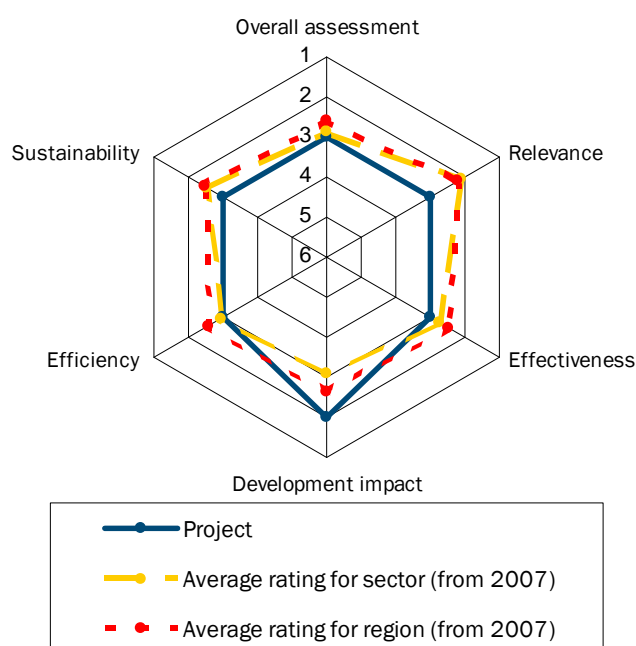
Overall rating: Note 3

Despite a low connection rate, the imperfect disposal of sewage sludge and an inadequate recovery of operating costs, we rate the project as satisfactory. The reason for this is that the treatment plant is operated correctly, the Chinese waste water standards are largely complied with and plant operation can also be secured in future through budget allocations from the state. On the one hand, the low connection rate can also be attributed to the current urban redevelopment. On the other, precisely this redevelopment is likely to increase the connection rate to a reasonable level over the medium term.

Points to note:

As Tibet's first treatment plant constructed 3,200 m above sea level, the project has an **exemplary character** for the region.

Rating by DAC criteria



EVALUATION SUMMARY

Overall rating: 3

Relevance

The project addresses one of the PR of China's greatest environmental problems, namely water pollution. The project appraisal established that the inadequate disposal of waste water in Chamdo leads to health risks for the town's population and to a contamination of the Lancang River (central problem).

The preconditions for improving the situation were to be created by expanding the sewerage system to most of the city and constructing the first treatment plant in Chamdo. In view of the very rapid development and growth of Chamdo, even from the current perspective the project continues to be of very high relevance in addressing the central problem. From today's perspective, the project could have nonetheless better addressed the challenge, typical of the PR of China, of faulty connections to the rainwater system.

The construction of public toilets, a relatively minor component of the project, proves to possess little relevance from the current perspective. This can be attributed to the very rapid redevelopment of Chamdo, which began three years ago, and the associated building of flats with their own toilets.

The project is consistent with the shared concept and logic behind the involvement of German development cooperation in the area of waste water in the PR of China. No activities and projects of other international donors in Chamdo are known.

Sub-Rating: 3

Effectiveness:

The project objective was (after the cancellation of the waste component, which was implemented autonomously by the Chinese party) to dispose of waste water in Chamdo in an environmentally-friendly way. The project objective is regarded as having been achieved when the following adjusted indicators are achieved:

- Indicator 1: at least 60% of the water consumption measured among consumers in the districts of Chamdo Ba, Yunnan Ba and Macao Ba is fed into the treatment plant no later than one year after the completion of all construction measures.
- Indicator 2: no later than one year after the treatment plant goes into operation, the plant's discharge values meet Chinese standards.
- Indicator 3: the sewage sludge produced by the treatment plant is disposed of correctly no later than one year after the plant goes into operation.

Indicator 1 has not yet been met, as since the plant went into operation an average of only about 40% of the water consumption measured among consumers in the districts of Chamdo Ba, Yunnan Ba and Macao Ba is fed into the treatment plant. This can be attributed, on the one hand, to faulty connections to the rainwater network, and on the other hand to the current massive expansion and redevelopment of the town. In all probability, the latter will also involve a further expansion of the sewerage system in the years ahead. If one also considers that new buildings are also being connected to the sewerage system, it may be assumed that the project objective will yet be met over the medium term.

According to the comprehensive documentation of the discharge values, indicator 2 is being achieved by the treatment plant operator. The positive impression of the current state and professional operation of the treatment plant lends plausibility to the data.

Indicator 3 has been partly met. The sewage sludge is de-watered, to about 25% of dry matter. This figure is just about acceptable, but is relatively far below the strict specification of 40% demanded by the Chinese standards. It is then transported to an orderly landfill site outside the town. Thus far the land filling is not yet sustainable, since the sludge is deposited together with household waste (and this does not meet international standards). However, it is expected that this problem will be solved in the medium term.

As a significant increase in the connection rate is to be expected over the medium term and the disposal of the sewage sludge is at least partially satisfactory, we ultimately rate the effectiveness as satisfactory.

Sub-Rating: 3

Efficiency

The production efficiency of the project is predominantly rated as positive. The cost increase of around 30% over the cost estimate is understandable against the background of the delays and challenges that the implementation of the project was subject to. In financial terms, the subsequent destruction of the toilets built within the framework of the project plays a subordinate role.

Taking into account the local own contributions of about EUR 115 per capita and in light of the technological and topographical challenges presented by plants of this magnitude, the specific investment costs per inhabitant remain reasonable.

The allocation efficiency of the project is rated as positive overall, also taking into consideration the primary development impact (see below). 70% of the capacity of the treatment plant is currently being utilised, both in hydraulic terms and in respect of the resultant pollution load. This is consistent with the intended utilisation period of 10-15 years considered during planning. In view of the applicable Chinese standards, there would have been no alternatives to constructing the plant.

Due to political requirements, in Chamdo only about 50 major customers have to pay for the disposal of waste water. Moreover, at RMB 0.52/m³ the waste water tariffs are low (equivalent to about EUR 0.065/m³). Consequently, the necessary operation and maintenance costs are not covered by tariff income. The latter are therefore topped up by way of urban budget allocation. The available total budget must be regarded as too low for the sustainable operation and maintenance of the facilities, however special expenditure can be applied for separately for larger repairs. Furthermore, it appears realistic that the treatment plant operator will gain legal status in the near future, which will enable it to receive higher allocations and enjoy greater planning certainty.

Sub-Rating: 3

Impact

The adjusted overall objective is to make a contribution to water protection and to improving health conditions in the PR of China, and thus to securing sustainable development in the PR of China.

Chamdo is the urban centre of Eastern Tibet and the third-largest city in the province of Tibet. The environmentally-friendly disposal of waste water is, along with waste disposal, one of the greatest ecological and health-related challenges for the towns and cities of Tibet and their hinterland. In Tibet too, the economic development and expansion of urban centres can only be sustained if they are not at the expense of the environment and if the health of the resident population is not endangered.

The risk from polluted water to the few thousand people living downriver, which was set out in the project appraisal report, was comprehensible at that time. Today, the people living there no longer obtain their drinking water predominantly from the river.

In terms of the primary development impact, the project is nonetheless rated positively: the waste water produced by the inhabitants, currently about 100,000 in number, is channelled out of the town. The discharge values of the treatment plant are normally within the statutory thresholds, with the justified exception of the thresholds for nitrogen elimination in winter. It therefore makes an important contribution to water protection in the PR of China. Moreover, the project has served to bring the issue of environmental protection/water protection to the attention of politicians and the public to a greater extent.

The treatment plant in Chamdo is also the first urban treatment plant in the autonomous province of Tibet. The project's technological requirements lends it an exemplary character.

Sub-Rating: 2

Sustainability

The income from the waste water disposal is not yet sufficient to fully cover the required operating and maintenance costs. No full cost recovery is foreseeable. The operation and maintenance of the treatment plant therefore has to rely on subsidies, which are allocated by the municipal administration on an annual basis. Thus the operator only has limited financial planning certainty at present. While the tariff issue is difficult for political reasons, the adjustment of subsidies in the sense of an adequate budget does not seem unrealistic considering the discussions currently taking place in Chamdo.

Owing to the unclear legal status of the operator and the limited funds, since the treatment plant went into operation its staffing has been inadequate and the remuneration system unattractive. Thus there is a very real risk of a loss of further key personnel and suitable replacements would probably be difficult to find. It is hard to recruit qualified personnel. One possible solution would be to convert the current operator into a municipal utility with a clear legal form. A corresponding application has been submitted to the political decision-makers.

Until now, the disposal of sewage sludge in a new landfill site has only been partially sustainable. Considering the foreseeable growth of Chamdo, the landfill site is estimated to have a remaining capacity of about 10-15 years. Measures to improve disposal at the landfill site are possible. It has not been ultimately decided whether these measures will really be implemented due to the outsourcing of the landfill site's operation to a private operator, which is remunerated on a flat-rate basis.

Major development plans exist for the expansion of Chamdo, but not all their details are yet formulated. What is certain is that the capacity of the water supply will be doubled by early 2014. So far, the corresponding expansion of the treatment plant is only at the planning stage (feasibility study). No corresponding financing has yet been secured.

Overall, during the EPE the impression was gained that the local institutions are aware of the importance of an adequate water supply, waste water disposal and waste disposal. The resulting necessary consequences in the form of tariff increases and the adjustment of additional subsidies for operation and maintenance are recognised in principle. Nevertheless, in the present political climate the decision-making process is not an easy one, especially since the current focus is on expanding Chamdo. However, the modernisation of the town also offers a great opportunity, meaning that at present, and taking into consideration the expected positive development, the project is deemed to be sustainable.

Sub-Rating: 3

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

Projects (and programmes) 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:

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

Ratings 1-3 denote a positive or successful assessment while ratings 4-6 denote a not positive or unsuccessful 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. Ratings 1-3 of the overall rating denote a "successful" project while ratings 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" (rating 3).