

Ex post evaluation – Mozambique

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Sector: 4308200 Research and scientific facilities
Project: Regional Centres for Science and Technology (BMZ No. 2007 65 420)*
Implementing agency: Ministry for Science and Technology



Ex post evaluation report: 2018

in EUR million	Project (Planned)	Project (Actual)
Investment costs (total)	5.25	0.71
Counterpart contribution	0.75	0.00
Funding	4.50	0.71
of which BMZ budget funds	4.50	0.71

*) Random sample 2017

Summary: The FC project was designed to help implement Mozambique's strategy for science, technology and innovation by constructing buildings for three regional scientific and technology centres and equipping them with office and laboratory equipment. The centres in Gaza, Nampula and Tete Provinces were to offer courses, advanced training and seminars in various disciplines for training and educating the target groups, to improve access to scientific and technological knowledge, for example in the educational, agricultural and health sectors, and to encourage innovation. The project was terminated even before construction began as it was no longer supported by the partner.

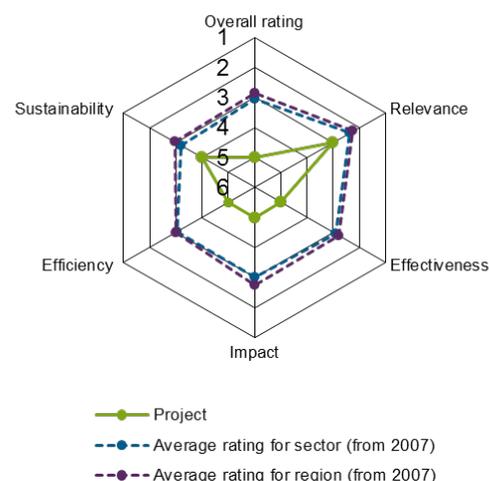
Objectives: The project's objective was to build, equip and use three regional centres for science and technology to coordinate, promote and mobilise technical, scientific and technological knowledge. The development objective was to contribute towards strengthening regional economic development.

Target group: The target groups included teachers and pupils from secondary schools and vocational schools, professors and students at universities, employees at scientific research facilities, employees of the provincial and district governments, as well as small and micro-businesses and innovators.

Overall rating: 5

Rationale: The FC project tackled a core economic problem in the country with relevance for development. However, it was terminated early by the German Federal Ministry for Economic Cooperation and Development after it became evident that the partner's institutional capacities were not sufficient, and the objective of the measures could not be achieved within the planned funding framework. Due to the premature termination, the project is evaluated as clearly insufficient with regard to the aspects of effectiveness, efficiency and sustainability. There was also no indication within the scope of the ex post evaluation that the partial results financed by the FC project would subsequently be used.

Highlights: Although the three regional centres are explicitly defined in the national strategy for science, technology and innovation from 2006, the responsible Ministry for Science and Technology did not provide appropriate support for the FC project with the agreed counterpart contributions.



Rating according to DAC criteria

Overall rating: 5

Ratings:

Relevance	3
Effectiveness	5
Efficiency	5
Impact	5
Sustainability	4

Overall context and projekt description

The Mozambican strategy for science, technology and innovation (Estratégia de Ciência, Tecnologia e Inovação de Moçambique (ECTIM)) determined in 2006 that three regional centres for science and technology were to be established¹. These centres were to contribute to improving access to and the availability of scientific and technical knowledge on a broad scale to promote the economic and social development of the country. The evaluated FC project entitled "Regional Centres for Science and Technology" (BMZ No. 2007 65420) was thus in line with the principles of ownership and alignment in the Paris Declaration from 2005.

Relevance

By building regional centres for science and technology, and using them to offer courses, advanced training and seminars for the target groups, the intention was to mobilise and promote cross-sector technical, scientific and technical knowledge. The intention was to compensate for and tackle weak points and deficits in scientific knowledge, technological expertise and technical science training in various sectors (such as the educational, agricultural and health sector) through the centres' activities.

Broadening the technical, scientific and technological knowledge in these sectors in line with the national poverty reduction strategy (Plano de Acção para a Redução da Pobreza Absoluta 2006-2009/10 (PARPA II)) was expected to have an important leverage effect for alleviating poverty in Mozambique – also given that Mozambique's economic growth in the previous decades had barely had any broad-scale impacts and had not triggered a corresponding reduction in the nation's poverty.

The FC project thus focused on a core economic problem of the country with relevance for development: the presence of a dual economy characterised by large investments in the raw materials sector and a high percentage of subsistence farming, and one that lacks dynamic small and medium-sized enterprises and qualified experts.

This core problem was the starting point for the structure of the project's underlying results chain. The development objective was to contribute to strengthening regional economic development by building, furnishing and using regional centres for science and technology. However, this chain only works indirectly and over the long term. Direct impacts from this project could only initially be expected in the areas of education and vocational training. It also requires efficient institutions and highly qualified specialists at all levels if this type of project is actually going to generate positive effects for the regional economy. From today's perspective, the fact these basic prerequisites were not available in Mozambique was not taken into account enough when the project was designed.

On a positive note, however, the FC project started in November 2009 and was structured complimentary to activities of other donors and national strategies in other sectors, like the strategic plan for education and culture (Plano Estratégico da Educação e Cultura 2006-2010/11 (PEEC)), which included objectives like expanding access to secondary education and vocational training and improving their quality. At the

¹ Estratégia de Ciência, Tecnologia e Inovação de Moçambique (ECTIM), p.85.

same time, the evaluated FC project entitled "Regional Centres for Science and Technology" demonstrated a number of links to German development cooperation objectives in the priority areas of education, vocational training, decentralisation, rural development and sustainable economic development.

The national strategy for science, technology and innovation formulated in 2006 for a period of ten years was integrated into the FC project and was given a high priority by the Mozambican government and the president. However, the project's executing agency, the Ministry for Science and Technology (Ministério da Ciência e Tecnologia (MCT)), neither promoted the required cooperation between the donors in this sector, nor did it produce the contractually agreed administrative and financial counterpart contributions. The project was thus terminated by the German Federal Ministry for Economic Cooperation and Development (BMZ) in October 2014, even before one of the centres was built and equipped.

Evaluation results from other donors regarding support for the ECTIM strategy also clearly show that the institutional capacities of the Ministry of Science and Technology, which split off from the Ministry of Education in 2005, were not even remotely sufficient or even available to a satisfactory extent during the period of the FC project². The executing agency's weak absorbing and implementation capacities should have been taken into greater account during both the design and implementation of the project, for example, by focusing the planned science and technology transfer on only one sector, or by reducing construction to just one regional science and technology centre as a pilot project.

As the partner's lack of institutional capacities were not accorded enough significance in the design phase, we only evaluate the relevance of the project as satisfactory, despite its potential contribution to solving one of the country's most critical developmental bottlenecks.

Relevance rating: 3

Effectiveness

The project's objective to build, equip and use three regional centres for science and technology for the coordination, promotion and mobilisation of technical, scientific and technological knowledge was not fulfilled. Even before the planned construction measures began, the project was terminated as the necessary and agreed support from the Ministry of Science and Technology was not provided.

As a result of the premature termination, none of the project objectives were fulfilled for the underlying indicators. These included (i) the training of 300 teachers and professors in physics, biology or mathematics each year, (ii) a 25% increase in secondary school pupils focusing on maths and sciences, (iii) a 25% increase in middle to upper management with PC training at provincial and district governments, (iv) a 5% increase in the number of registered companies with patented products and (v) six workshops about technology transfer in the three regional centres.

The development objective was evaluated as realistic within the scope of the ex post evaluation, however, there was a strong focus on the output level, i.e. the construction of buildings and equipping the three planned centres. Adjusting the project objective and indicators with a strong emphasis on the actual use of the regional centres by the target groups would have been advisable within the scope of annual reporting if the project had been continued. In that case, following FC's line of thought of building only one flagship centre as a pilot project, it would also have been advisable to concentrate on the target of scientific and technology transfer in one sector (e.g. the agricultural sector), selecting the indicators accordingly.

However, the fact the project did not achieve the objectives can clearly not be attributed to how the objectives were formulated or how the indicators were selected. The pivotal factors for the inadequate success of the project were primarily (i) the generally very weak and passive role of the executing agency (which did not change even when key positions were reappointed during the implementation period) (ii) the lack of coordination between the central Ministry for Science and Technology employees and decentralised decision makers during the co-development of the project's content, and (iii) the repeated rejection of practical suggestions from the FC implementing organisation for adapting the project to the changed financial framework.

² Ugarte, Ernesto et al. (2015): STIFIMO Final Evaluation. Draft Final Report.

As there was also no indication within the scope of the ex post evaluation that the construction and machinery plans financed by the FC project would subsequently be used, we evaluate the effectiveness of the project as clearly inadequate.

Effectiveness rating: 5

Efficiency

In terms of the economic efficiency of the objective's achievement, both (a) production efficiency and (b) allocation efficiency were assessed as equally inadequate.

Add. (a): In the five years from when the operating concept for the three regional centres was presented (November 2009) until the project was terminated (October 2014), not a single building was built. It was only possible to contract an international consultant to the project to create an operations plan, a construction plan and a machinery plan for the three regional centres after a delay of around 12 months and at a higher cost than planned. However, the start of construction was still delayed for various reasons. These included difficulties when concluding contracts with suitable local building (sub)contractors, unexpected price increases in the Mozambican construction sector, higher consulting costs, a lack of financial support and insufficient administrative support for the project from the Ministry for Science and Technology.

It became increasingly clear that the project could not be implemented within the FC financial framework of EUR 4.5 million, so a suggestion was made to the responsible Ministry for Science and Technology in December 2012 to reduce the project to one or a maximum of two regional centres. After a temporary standstill in project activities (as necessary permits from the Ministry were not provided on time, among other factors) and as the foreseeable financial gap kept growing with ongoing construction cost increases, reducing the project to building and equipping only one pilot centre using FC funds seemed to be the only feasible solution in mid-2013. However, the partner did not accept this proposed solution, and for (internal) political reasons insisted on building and equipping two centres as well building a third centre at a later date. After the political decision to terminate the FC project was made within the German Federal Ministry for Economic Cooperation and Development (BMZ), this was communicated to the Mozambican partner in October 2014, and a possible reallocation of the remaining FC funds (EUR 3.8 million) to a different FC project was suggested. With regard to production efficiency, this decision to terminate should have been made much earlier in view of the apparent risks.

Add. (b): At the time the project was terminated in October 2014, the main component of the project – building and equipping three science and technology centres – had not yet begun. The FC funds amounting to EUR 0.71 million deployed since the start of the project in November 2009 were only used for consulting costs to prepare operating concepts, tender documents as well as construction and equipment plans. Since not a single building was completed, this is considered entirely inappropriate with regard to the allocation efficiency. Major losses in efficiency were caused by a lack of ownership by the Ministry for Science and Technology. This manifested itself in the Ministry's inadequate ability or insufficient political will to give appropriate administrative support to the FC project and to provide the contractually agreed financial counterpart contributions.

The role of the FC-financed consultant should also be evaluated critically. The admonishment from the Ministry for Science and Technology stating that the consultant spent too much time on project presentation and consensus building with stakeholders and underestimated the time needed for planning the buildings and machinery may be exaggerated³. The fact is that a significant part of the funds earmarked for the consultant within the context of the FC project were already spent before it was even possible to begin construction.

With regard to the production efficiency and allocation efficiency of the project, the results were clearly insufficient. Even though there were some positive partial results from creating the operating concepts and

³ The consultant actually provided some of the quarterly reports behind schedule and only for 2012. However, the Ministry was responsible for managing the consultant. It is possible that the criticism from the Ministry was an attempt to exculpate itself from its own (joint) responsibility for the project delays.

the construction and machinery plans for the three regional centres, these were clearly outweighed by the negative results.

Efficiency rating: 5

Impact

The FC project was intended to contribute to reinforcing regional economic development in Mozambique, but this was not possible due to the termination of the project.

In addition to the general problem of where to assign the direct and overarching developmental impacts of this type of project, one critical factor related to formulating the development objective was it assumes a results chain where the underlying theoretical construct has question marks with regard to the result at the impact level.

The state promotion of science, technology and innovation can contribute to economic development if it is institutionally embedded together with other growth-stimulating factors in an interactive national system. International research indicates that an effective system for science, technology and innovation requires efficient institutions and highly qualified specialists at all levels to have growth-stimulating or poverty-alleviating impacts. As these conditions were not fulfilled in Mozambique and aggregated impacts could be expected at the level of education and vocational training at best, adjustments to the overarching development policy objective would have been urgent had the project been continued⁴.

The evaluation of the Finnish-Mozambican cooperation in the area of science, technology and innovation (STIFIMO) also came to the clear conclusion that no overarching developmental impacts were generated by the measures within the scope of STIFIMO⁵. The Mozambican strategy for science, technology and innovation that was embedded in the FC project entitled "Regional Centres for Science and Technology" should thus have been subject to a more critical analysis and assessment of the Mozambican system before implementing the various measures, to facilitate results at the impact level.

Against this background, we evaluate the project's overarching developmental impact as completely inadequate.

Impact rating: 5

Sustainability

At the time the project was terminated, it was still not known when construction would begin on any of the three planned buildings for the regional centres for science and technology, especially because the funding framework was apparently not sufficient to realise the project as planned. As it was not possible to achieve the agreed results of the project⁶, the sustainability is evaluated as insufficient.

Positive (partial) sustainability effects of the project could possibly have been taken into account if the construction project had been continued by the partner after the German Federal Ministry for Economic Cooperation and Development (BMZ) terminated the promotion, and if input from the FC project – the plans the consultant created for constructing, equipping and operating the centres – had been used. Based on the available documents, however, this question cannot be answered as no relevant information has been documented since the decision was made to terminate the project in October 2014⁷.

⁴ For more on this, also see the statements under "Relevance".

⁵ Ugarte, Ernesto et al. (2015): STIFIMO Final Evaluation. Draft Final Report.

⁶ Construction of three buildings for the regional centres, putting the centres into operation with laboratories containing technically flawless equipment, training the centres' technical staff, learning about the target group and using the service package and the services of the centres.

⁷ On Google Maps (accessed 19 January 2018) it is not possible to see whether the buildings for the regional centres have been built in the meantime on the three properties listed in the inception report from the consultant.

CRCT South in Xai-Xai: <https://www.google.de/maps/@-25.0806574,33.6931551,299m/data=!3m1!1e3;>

CRCT Centre in Tete: <https://www.google.de/maps/@-16.1263806,33.6039633,300m/data=!3m1!1e3;>

CRCT North in Nampula: <https://www.google.de/maps/@-15.1170385,39.2066465,304m/data=!3m1!1e3>

From today's perspective, the project cannot be associated with a development effectiveness rating and is thus evaluated as insufficiently sustainable overall.

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).