

# Ex post evaluation – Jordan

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**Sector:** Primary education (CRS Code 11220)  
**Programme/Project:** Primary school construction Jordan, BMZ No.: 2000 65 326\*  
**Implementing agency:** Ministry of Public Works and Housing, MoPWH



## Ex post evaluation report: 2015

		Project A (Planned)	Project A (Actual)
Investment costs (total)	EUR million	14.80	13.96
Counterpart contribution	EUR million	4.60	4.41
Funding	EUR million	10.20	9.55
of which BMZ budget funds	EUR million	10.20	9.55

\*) Random sample 2015

**Summary:** The project involves the construction of primary schools and the procurement of school equipment in an open programme approach in Jordan. A total of 12 schools comprising 244 classrooms and 193 additional teaching and administrative rooms were constructed in the course of Phase I as a result of the construction measures. Using an average occupancy rate of 30-40 pupils per class (rural / urban schools), it was thus possible to create enough places at school for around 8,000 pupils. Relevant consulting services were financed for the implementation and supervision of construction work (planning, works supervision, official building inspection and supervision during the one-year warranty period). The construction contracts were awarded in 2005 and 2006. The last classrooms were completed in mid-2009, with some minor defects resolved in 2010, in some cases after the schools opened.

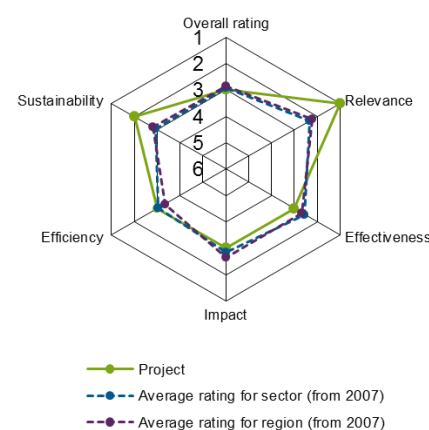
**Objectives:** The adapted project objective of the FC measure was to improve the teaching and learning conditions in the Jordanian programme schools supported. The adapted ultimate development objective of the project was to contribute towards a qualitative and quantitative improvement of primary education in Jordan.

**Target group:** The target group of the project were the pupils as users of the funded schools.

## Overall rating: 3

**Rationale:** The programme helped to replace unsuitable, dilapidated classrooms and in some cases rented premises in simple residential buildings that were previously used for teaching, first and foremost in areas of Jordan that previously had inadequate supply of appropriate school buildings. All told, as part of a larger education initiative (ERfKE) launched by the government in 2000, the programme helped to support a strong expansion of primary school education in Jordan with suitable school buildings. The newly built schools offer an open and bright atmosphere that is conducive to learning, while the construction method also reflects the common expectation of what an educational institution in Jordan looks like by means of the enclosed school grounds (perimeter walls), an idea that pupils and teachers clearly identify with. The schools are used and maintained as intended.

**Highlights:** In spite of the lack of funds for enhancements or additional furnishings in public schools, many schools displayed very creative improvements in the classrooms, corridors and assembly rooms (decorations, pictures, display cases for trophies, TV sets by entrances, etc.).



## Rating according to DAC criteria

### Overall rating: 3

#### Relevance

The project was part of an overall education initiative in the country (Education Reform for Knowledge Economy (ERfKE), phase I from 2003-2009), to which other donors also contributed significantly. From the outset, the project therefore represented an important contribution to resolving the core problem analysed by all stakeholders, namely the inadequate educational infrastructure. In addition to the lack of qualified teachers, the non-existent or unacceptable available space in many schools prevented the adequate provision of good quality education. It has been reported that lessons took place previously in substandard, rented flats and at times in several shifts. In this respect, and in view of the internationally recognised fundamental right to education, the relevance of the project has been assessed as high.

The coordination of this measure in the context of the ERfKE programme, with considerable support from the World Bank and in cooperation with the responsible Ministry of Education, confirmed the need for donor harmonisation and the integration of the partner country within the meaning of the Paris Declaration in order to ensure sensible planning. In this connection, the locations as well as key questions relating to design and equipment (as well as information and communication technologies in particular) had to be coordinated with the other donors under the guidance of the partner country, and there would certainly still have been room for improvement in terms of donor coordination, as was determined in the context of FC reporting. A total of 18 donor institutions contributed to the ERfKE programme in the first phase considered here, which in itself shows the complexity of good coordination. The second phase of the ERfKE reform programme began in 2009 and is still ongoing. According to information from the Ministry of Education, not just Jordan, but also the World Bank, the United States Agency for International Development, the Canadian International Development Agency, the European Union and Germany (BSCP II + III) are contributing to this reform. The focus is not so much on the physical infrastructure (although this is obviously still inadequate), and more on the quality of education, the training of teachers and the further development of curricula.

When it comes to the question of relevance, it should also be clarified whether the development bottleneck (core problem) could have been resolved in a different way or without the FC measure. This seems not to be the case here, as the country was so economically weak, both at the appraisal and in the years that followed – compounded by the burden of wars and crises in neighbouring countries – that it would scarcely have been possible to make sufficient budget funds available for the school construction programme. Jordan is still dependent on extensive aid from abroad (and regularly receives substantial funding in particular from neighbouring Arab countries and DC donors), which it can use to cover the investments in the construction of schools, for example. In this regard, the rapid expansion of educational infrastructure is competing with numerous other investments which are also urgent in the country (e.g. water supply and sanitation, health, energy sector, etc.). Thus, the question of whether the project was a priority and worthy of support at the time of the appraisal can also be answered in the affirmative. Despite the many delays, this situation as outlined has hardly changed to date.

The consistency of the results chain adopted at the appraisal is a necessary condition for the relevance of the project. The effect relationships adopted, according to which the established infrastructure (output) – which contributes to better access (outcome) and thus to better educational results (impact) – was methodologically plausible in the context of the proposed sector programme. The underlying problem analysis is also consistent and understandable from today's perspective.

As things stand now, the relevance of the project has further increased, as the current situation caused by the large number of civil war refugees from Syria (around 1.4 million people) is putting the country's social services under great strain. The number of additional school-age children coming from Syria is given as 129,000 (as of April 2015), which corresponds to a share of approximately 7 % of all pupils. However, their distribution throughout the country is not uniform, with most of them in certain cities and regions. The pressure to build new and expand current school capacities in the country has also increased.

Against this background, the relevance of the BSCP I project is assessed as very high.

**Relevance rating: 1**

**Effectiveness**

Based on the utilisation of the programme elements created - here the school buildings - and the resulting capacity, this criterion is used to assess whether the adjusted project objective has been achieved to a sufficient extent and with no serious side effects. Given the generally good to full capacity utilisation and use of the schools, this can be confirmed. Statements from the direct beneficiaries of the project, namely the students, teachers, parents and head teachers, relating to their satisfaction with the new school buildings were positive, as expected. The rooms were described as bright and friendly, and the equipment of the classrooms was praised. It was also evident in a number of ways that they were generally satisfied with the classrooms and with the school as a whole.

The project involved the construction of primary schools and the procurement of school equipment in an open programme approach. A total of 12 schools comprising 244 classrooms and 193 additional teaching and administrative rooms were constructed in the course of phase I as a result of the construction measures. Using an average occupancy rate of 30-40 pupils per class (rural/urban schools), it was thus possible to create enough school places for around 8,000 pupils. The higher number of 40 pupils per class ascertained during the final inspection suggests an even higher capacity, though this value is achieved only in individual cases, and average utilisation is lower. An evaluation of the program by the World Bank resulted in a good rating (“satisfactory outcome” in the World Bank’s rating system).

The adapted project objective of the FC measure was to improve the teaching and learning conditions in the Jordanian programme schools that were supported. The three indicators at outcome level defined at the programme appraisal are appropriate in retrospect and could be used in a similar way for a new programme.

The attainment of the indicators at outcome level defined at the programme appraisal can be summarised as follows:

Indicator	PA status, PA target value	Ex post evaluation
(1) Utilisation of newly built schools: student-classroom ratio (SCR) by rural/urban schools.	(1) The aim was an occupancy rate of 20-40 pupils (rural) and 30-40 pupils (urban) three years after completion of the schools.	(1) The planned capacity of 20-40 pupils (rural) and 30-40 pupils (urban) was well complied with in the seven schools visited with an average SCR of 31.1.
(2) Available classroom space per pupil in m <sup>2</sup> .	(2) The available classroom space should be an average of at least 1.0-1.2 m <sup>2</sup> /pupil.	With a capacity of 40 pupils per class, the available space is an average of 1.12 m <sup>2</sup> /pupil <sup>1</sup> ) and therefore meets the target. The highest SCR value of the schools visited was 38.5.

<sup>1</sup> According to the consultant’s final report, the surface area of the 244 classrooms comes to 10,938 m<sup>2</sup> and is thus approximately 1.12 m<sup>2</sup> per pupil at maximum usage.

The physical indicators as set forth above were well met, with the exception of the lower number of schools built (12 instead of the planned 25 new primary schools with 437 instead of around 350 classrooms and essential auxiliary rooms). The construction defects in the roof insulation (including water damage, cracks in walls) identified in some schools (particularly in the Marj al Hamam al Awsat and Al Mesherfeh schools which were visited) have still not been resolved since the final inspection point to problems in the transfer of responsibilities from the Ministry of Education to the Ministry of Public Works and Housing.

The equipment of the schools, the structure of the facilities and the bright rooms and colours appeared friendly and made a good impression during the tour. Certain design flaws should, however, be noted. In some schools, the toilet facilities in the building were closed/not working and had been replaced by facilities outside the building in order to avoid offensive odours. The Ministry of Education stipulates the exact opposite; in order to keep walking times for pupils to a minimum, toilets should be installed on each floor. Other design errors concerned the slats in front of the east- and south-facing windows, which are likely ideal nesting sites for birds. The meeting rooms, which had a ceiling height of 7-8 m, were criticised for being difficult to clean and for it being difficult to replace lighting. Overall however, the design of the schools was assessed as reasonable and successful.

Equipping the schools with computer labs was supported only very reservedly at project appraisal and only included one room in each case if competent personnel were available. The importance of school-based IT lessons has since grown significantly, and therefore from today's perspective this equipment would not suffice. While the PC rooms visited were in good working order and were even being used during the tour, this could be due to the announced visit, as there were hardly any signs of wear on the already recognisably older devices, and there was little documentation and few data carriers compared to what would usually be required.

The schools have responded flexibly to the growing demand for pre-school education (nursery). Since nurseries do not exist as standalone facilities in the public education sector in Jordan, the schools have also begun to provide for younger children. In virtually all schools one or two rooms are used as a nursery which is probably at the expense of often under-utilised classrooms (biology, physics, chemistry; schools often lack the specialist teachers for these subjects). This decision by the respective school head teachers has been viewed very positively by all participants.

One encouraging aspect of the chosen design that should not go unmentioned, and which was also evident during the visits to the schools, was the robust construction of the buildings and equipment with the lowest-possible maintenance requirements, which should lead to low maintenance costs on the whole. This was also confirmed in principle by the responsible directorates. In addition, the teachers emphasised the great benefit of the building heating in the winter months. Although maintenance problems and a lack of heating oil were reported in the final inspection in this context, the availability of heating systems for the schools appears to be very positive. The ministry has declared this the standard for all school buildings.

The overall effectiveness of the project was therefore assessed as satisfactory.

**Effectiveness rating: 3**

### Efficiency

The efficiency of the programme has been greatly affected by the long delays in the planning and implementation phase. A high risk of delays due to local coordination processes was already evident at programme appraisal in mid-2000, which ultimately ended up coming to fruition beyond measure. An implementation time of 28 months (until 2003) was calculated at the programme appraisal. In the final inspection of 2010, the last schools were reported to have been launched by June 2009. The implementation time was calculated taking into account the time from the date of the loan agreement, so exactly 72 months from June 2003 to June 2009, which means there was a delay of 44 months, or more than three and a half years. If we factor in the first three years of planning and preparation up to contract conclusion, the implementation time was extended to 9 years. In addition to the numerous delays caused by external factors, the time-consuming coordination with the local implementation consultant is also repeatedly stressed as a factor.

At the programme appraisal in 2000, around 25 schools and 350 classrooms plus specialist and auxiliary rooms were aimed for. After presenting the first study with the preliminary design and detailed cost estimate, this had to be reduced to around half (12 schools) in 2003. In reports from the time, detailed reasons were given for this, including developments in the costs of construction, delays in the selection of consultants, as well as design changes requested by the Jordanian side. The schools that could not initially be financed were delayed until phase III. This early reduction in programme scope should not be regarded as a lack of efficiency in terms of implementing the programme, but instead as an adaptation to realistic planning values taking into account changed circumstances (in particular the Iraq War, which be-

gan in 2002). Criticism has to be made that estimates relating to the extent and rate of increase in the construction costs were clearly too optimistic at the time of the appraisal. In the risk assessment at the time, only a medium level of risk was recognised for “design, cost, schedule” with a medium to high level of ability to be influenced. Upon completion of the FC loan agreement in mid-2006, however, the planning data were realistic.

A further issue for the effectiveness of this project relates to the costs of construction (production efficiency), after the explanation of the adequate and successful design and equipment of the schools provided above. This design is also consistent with the requirements of the ERfKE programme and therefore with the standards for new school buildings which are currently valid in the partner country. A comparison between planned values and realised costs is possible in this context, as is a unit cost comparison (in this case the construction costs per school, per m<sup>2</sup> or per classroom) against similar construction projects in the country.

The predetermined budget of EUR 14.8 million for the construction of 12 schools from FC funding and the country’s own resources were fallen short of by EUR 0.9 million. In the end, the available FC loans were therefore reduced by around EUR 0.7 million. The average investment per school thus amounted to EUR 1.2 million (this value should be used for comparison despite the large differences in size between 11 and 30 classrooms). When compared to the school building programmes of the World Bank and the European Investment Bank (EIB) under the ERfKE programme, the FC project lies in the lower midfield. While World Bank schools ran up costs of approximately EUR 1.6 million, EIB schools were slightly less at EUR 1.1 million. Even if the information relating to construction volumes, equipment details, class sizes, etc. had been made available and comparable for all programmes, the knowledge gained from a more extensive cost comparison would have likely been minimal. Differing circumstances, such as for example the construction timeframe, the capacity of the construction companies at the relevant location, etc., would explain the respective differences. It can be assumed that the initial delay in the planning phase (2001-2003) meant the cost estimates from the project appraisal were not observed. The realised costs during the construction phase (2005-2009) were then around twice as high as assumed at the project appraisal.

An assessment of allocation efficiency in the form of a cost-benefit analysis is not appropriate and would be dependent on too many arbitrary assumptions. In this respect it is sufficient to simply note that existing evidence from around the world shows that it is wise to invest in primary education.

Against this background and in view of the observed delays, the efficiency is assessed as satisfactory.

**Efficiency rating: 3**

**Impact**

The adjusted ultimate developmental objective of the project was to contribute to the qualitative and quantitative improvement of primary education in Jordan.

Since no indicators were defined at the programme appraisal, the following, relevant, state-of-the-art indicators are used.

Indicator	Ex post evaluation
(1) Increase in gross enrolment rate (m/f).	Jordanian national gross enrolment figures for basic school education grades 1-10 amounted to an overall 102 percent in the year 2000, while in 2012 this was only 98 percent, a decrease of 4 percentage points. According to the UNESCO Education for All Global Monitoring Report, both girls and boys have access to the same degree of basic education. One indication of this is the Gender Parity Index (GTI), which was 1.01 in 1999 and 1.00 in 2011. A GTI greater than or equal to 1 means that girls have equal or more frequent access in comparison to boys.
(2) Learning performance improvement in core subjects.	Trends in International Mathematics and Science Study (TIMSS): Average values for grade 8.

<p>The international comparative school performance study TIMSS is carried out every four years. TIMSS compares the performance of pupils in mathematics and science at the end of primary school.</p> <p>The average value for this comparative study is 500. In addition to this, there are the following classifications: Advanced International Benchmark (625), High International Benchmark (550), Intermediate International Benchmark (475), and Low International Benchmark (400).</p>	<p>2003: 475 Science; 2007: 482 Science; 2011: 449 Science; 2003: 424 Mathematics; 2007: 427 Mathematics; 2011: 406 Mathematics.</p> <p>According to the TIMSS study, the learning outcomes for 2011 fell below the baseline level from 2003. Girls continued to outperform boys, however.</p>
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The most important element when evaluating a programme for improving the educational infrastructure of a country is the quality of teaching that takes place in financed schools. However, the evaluation also depends on the country's educational system as a whole, on teacher training, on the establishment of curricula and on the organisation of the education system (decentralised decisions relating to staffing, material cost budgets, etc.). The best assessment of learning success and thus of the real performance of a school system is made possible through objective comparison tests, such as the TIMSS surveys also carried out in Jordan. The results of the TIMSS study from the years 2003, 2007 and 2011 initially show a strong upward trend, however, this falls back below the baseline level between 2007 and 2011. Interestingly, however, girls score consistently better than boys.

Another international study comparing learning success is carried out by the Organisation for Economic Co-operation and Development (OECD) within the framework of programmes for International Student Assessment, or PISA (Programme for International Student Assessment) studies. The PISA study assesses the learning success of 15-year-olds, which is generally the age of completion of grade 10 and thus marks the end of Jordanian primary school. The country took part in PISA comparative testing in 2006, 2009 and 2012, and is also set to participate in 2015. However, in light of the small number of 12 funded schools involved in this project, with just under 10,000 pupils benefiting from the project directly, only a marginal relation can be ascertained to the educational success of the Jordanian education system. This development is therefore considered in terms of an assessment of the conditions under which the investments are to be rated. Jordan's 2012 PISA results were in the bottom fifth of the 65 participating countries for all subjects (mathematics, reading, etc.). While this indeed signalled a slight improvement over previous years, a clear trend is not discernible. Unfortunately, an on-site discussion with the respective PISA coordinator for Jordan did not take place.

An unexpected positive effect of the school construction programme can be seen in the establishment of nurseries in schools. During the evaluation mission it was found that the schools had already partially implemented the establishment of nurseries as recommended by the Ministry of Education and as part of the ERfKE reform programme by equipping one or two unused rooms (classrooms or other rooms) for this purpose. There remains little which can be said about the quality of this approach, though it seemed to generate a positive response in all locations.

The plausibility of arguments suggests that learning success is better in the newly built schools than could be achieved under the conditions which previously existed. The discussions with teachers, parents and school head teachers as well as the short insights into the teaching situation during school visits confirm this expectation without limitation. Naturally, concrete evidence cannot be given for the sample. However, in the neighbouring Palestinian Territories – which have similar requirements to Jordan in many areas – a



study<sup>1</sup> has been carried out on this relationship, the results of which confirm the positive effects that bright, friendly school buildings and classrooms have on learning success.

The information set out herein suggests that the overarching developmental impact can be assessed as satisfactory.

**Impact rating: 3**

### Sustainability

The sustainability of the school building programme initially depends directly on the useful life of the funded schools, which is influenced by the quality of construction and maintenance. The aim in this project was high-quality construction, which tends to lead to higher construction costs, but also to a long useful life of 40-60 years and low maintenance costs. The schools were brought into operation in 2007-2009, meaning that there has now been 6-8 years of usage experience. While many minor shortcomings were pointed out at the final inspection in 2010, the condition of the schools is now satisfactory. The competent administrative bodies (educational directorates), which would have ordered major repairs and maintenance, confirmed (as was expected) the low maintenance costs as compared to older schools under their responsibility.

In two of the visited schools in particular, however, certain structural defects remain, such as cracks in the walls and moisture damage. However, this could easily be resolved if the competent administrative body took appropriate measures (the fact this has not yet occurred is down to reasons of capacity and of who is responsible for taking such measures; the budgets are available). These shortcomings do not significantly hinder the operation of the school during the summer months, but would lead to issues if it were to rain. During the visit, relevant reports were made by representatives of the Ministry of Education and remedial action was promised.

At the time of the ex post evaluation, the new schools were in good or very good condition in terms of maintenance and repair, with some schools showing construction defects (damp, cracks) that needed to be resolved. At the final inspection it was criticised once again that no concept has been developed for the maintenance and repair of schools and their equipment. The situation has clearly improved in this regard. It was confirmed at all levels that the responsibilities for minor repairs (schools), major maintenance works (educational directorate) and new builds and extensions (Ministry in Amman) are clearly regulated. It was claimed that the corresponding budgets were available, but this could not be verified. Overall, the maintenance costs were very low, as stated above. The schools also collect small fees from parents and often benefit from private donations (including from companies).

The education budget in Jordan makes up around 12.7 % of the total budget, or 3.8 % of the country's GDP (2011). While the share of the budget is low in comparison to neighbouring countries (where it is often up to 20 %), the share of GDP is entirely appropriate. During the project planning and implementation period (2001-2010), the education budget rose to 170 % of the initial value in real terms, in JD it increased to exactly 244 % in nominal terms, which points to the increased importance of investments as well as of salaries in this sector.

From today's perspective, it seems plausible that the Jordanian government will utilise the schools – which it has taken over from the BSCP I school construction programme evaluated here – as planned in the long term, and will provide the funds for the operation and maintenance of the facilities from the state budget. The other framework conditions also suggest the continued full utilisation of the funded schools in the long term.

Sustainability is therefore assessed as good.

**Sustainability rating: 2**

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<sup>1</sup> The Impact of Improved School Design on the Academic Achievement of Students in the Palestinian Territories: an empirical study; 2009, MoE, Ramallah.

### 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:

<b>Level 1</b>	Very good result that clearly exceeds expectations
<b>Level 2</b>	Good result, fully in line with expectations and without any significant shortcomings
<b>Level 3</b>	Satisfactory result – project falls short of expectations but the positive results dominate
<b>Level 4</b>	Unsatisfactory result – significantly below expectations, with negative results dominating despite discernible positive results
<b>Level 5</b>	Clearly inadequate result – despite some positive partial results, the negative results clearly dominate
<b>Level 6</b>	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).