

Ex post evaluation – Mali

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Sector: Agricultural water resources (CRS code 31140)
Project: Irrigation N'Débougou III (BMZ-No. 2003 65 577) *
Implementing agency: Office du Niger (ON)

Ex post evaluation report: 2016

		Project A (Planned)	Project A (Actual)
Investment costs (total)	EUR million	14.00	14.00
Counterpart contribution	EUR million	2.00	1.10
Funding	EUR million	12.00	12.90 **
of which budget funds (BMZ)			
	EUR million	12.00	12.90

*) Project in the 2015 random sample; **) incl. residual funds from FC predecessor projects



Summary:

Expansion of the irrigation area of the N'Débougou perimeter by approx. 1,950 ha.

Objectives:

Overarching **development objectives** ("impact"): poverty alleviation, improved living conditions for the inhabitants of the project region and a contribution to national food security.

Programme objective ("outcome"): increase in agricultural production.

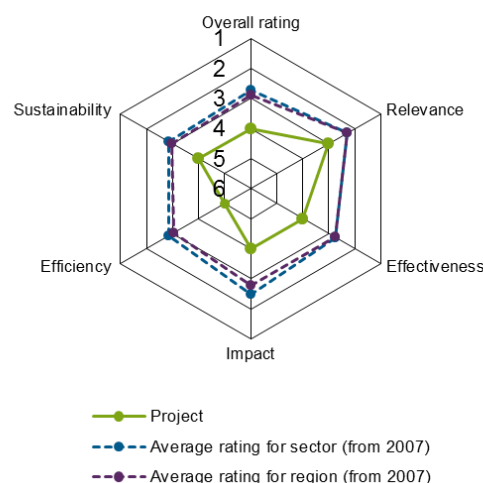
Target group:

The population living in the project region, who did not yet have access to the irrigated fields - 1,150 smallholder families with a total of 9,481 predominantly poor people, about half of them women.

Overall rating: 4

Rationale: At around 3.5 t/ha, the average yields for unpeeled rice ("paddy") are far below the target value of 5.5 t/ha (objective achievement around 64%). Likewise, at less than 100%, the originally intended cultivation intensity of over 110% is not achieved. The contribution to national rice production and income effects also decrease correspondingly: Marketable surpluses can scarcely be achieved on the small parcels of land (just under 1.5 ha compared with the 3+ ha aimed for at the project appraisal/PP).

Highlights: The results, which do not meet the corresponding expectations, can mainly be attributed to the fact that the project was not concerned with rehabilitating existing parameters, but with the transformation of bush and tree savannah into irrigation areas. Furthermore, the farmers (previously semi-nomadic livestock farmers) are not yet sufficiently versed in the cultivation practices. The norms of the ON, the executing agency, which request a minimum land parcel size of 3 ha, were not complied with, evidently due to high population and demand pressure.



Rating according to DAC criteria

Overall rating: 4

Relevance

From the current perspective, the relevance of the project is rated as still satisfactory. Essentially, the core problem identified at the project appraisal in 2004 (inadequate reclamation of the agricultural development potential in the region of the "Office de Niger" / ON) still exists today. Furthermore, Mali's strategy of food security by import substitution also makes political sense given the increasingly frequent food shortages and the conflicts in the north of the country. Mali (as a supposedly model democratic country until the military coup in early 2012) also benefited from international development cooperation in this area. That co-operation was suspended following the putsch, but resumed as the country gradually stabilised from 2013 onwards. The armed conflict in Mali, which has been ongoing since around 2011/2012 and was triggered primarily by a temporary alliance of Islamist and separatist groups, should be viewed in its more global context and is, in part, a result of the destabilisation of Libya. At present, Mali is no. 29 of 178 countries in the "Alert" category of the Fragile States Index¹, while it was not even listed among the then 76 countries constituting the first available index (2005, a year after the project appraisal/PA). This project, completed in 2011, was also not directly affected by the conflict situation.

The government of Mali makes a substantial budget available within the framework of the three-year "Contrat Plans" for investments in the rehabilitation and expansion of irrigation areas in the Office du Niger (ON) area. The project design itself was characterised by technically-oriented approaches to planning and implementation, with a forced increase in production (supply orientation) as a clear priority. By contrast, rather less importance was attached to ecological, institutional, socio-economic and target-group related aspects. The designed advisory component for this purpose ultimately fell short.

The availability of water is increasingly a problem for the large-scale development of new irrigation areas. At the same time, increasingly urgently needed measures to boost the efficiency of water use have not yet been initiated. From today's view, the key problems are the decreasing availability of water in the dry season (which makes a second harvest virtually impossible), the low productivity of agricultural water use and the considerable difficulties experienced by the ON in ensuring appropriate maintenance of the irrigation and drainage infrastructure that already exists. These challenges were largely disregarded in the conception of this project. The PA should also have considered the fact that the inland delta in the lower reaches of the Niger is under severe threat due to overuse (including the irrigation in the ON area). Current planning approaches, which are directed towards integrated water resource management (IWRM), pay far more attention to this problem. Overall, the project conception underestimated the (foreseeable) problems of water availability, chiefly during the dry season, the resultant low irrigation efficiency and the lack of experience in the cultivation of crops of a large part of the target group (former livestock farmers / nomads).

The target system is appropriate on the whole, while we believe there is no need, when considering the intervention logic, to take account of the aforementioned conflict situation that arose after the project was concluded. From a technical viewpoint, however, the aspiration level for the "production intensity" project objective indicator in comparison to the specific investment costs must be regarded as too low. A relatively easily measurable indicator to evaluate achievement of the overarching development objective "Contribution to national food security" could also have been defined at the PA.

The design of the project was in line with the priority areas of German DC for Mali valid at that time and with the sectoral development goals and strategy for combating poverty of Mali's government, which place a high priority on promoting irrigated agriculture in the area of the ON. The relevant donors (along with Germany, primarily the World Bank, the Netherlands and France) cooperated intensively to support the ON and continue to do so.

Relevance rating: 3

¹ <http://fsi.fundforpeace.org/rankings-2016>

Effectiveness

The average yields are significantly below the target figure of 5.5 t/ha (objective achievement around 64%). This can mainly be attributed to the fact that the project was not concerned with rehabilitating existing parameters, but with the transformation of bush and tree savannah into irrigation areas and with cultivation practices that the farmers are not yet sufficiently versed in. At the same time, the degree of mechanisation in the project area remains low. In addition, approximately 6% of the areas were still affected by flooding, which also had an adverse effect on rice cultivation.

Despite the project's efforts and the good results in the initial years, most of the cooperatives were no longer capable of functioning at the time of the EPE. The case was similar for the user organisations (Organisations pour l'Entretien du Réseau Tertiaire/ OERT) financed by the programme, which were supposed to be responsible for maintaining the tertiary network of channels. Of the 48 OERTs, only six are still operating at present, which is said to be partly due to insufficient support from the ON. Evidently there was too little focus on participation when selecting the members, as a result of which no real ownership has developed. The farmers neglect to maintain the tertiary network. However, this is a general issue in the entire ON area.

Measured using the indicators, the individual objective "Increase in agricultural production" was not achieved to a considerable extent. The cultivation intensity amounted on average to <100% (target value at PA >120%), with the yields for unpeeled rice ("paddy") being far below expectations and also below the average values for the ON since commissioning. One of the main reasons for this is the insufficient availability of water during the dry season. According to the ON, only about 10% of the project's irrigation areas are used for rice cultivation during that period. Vegetable growing ("maraîchage") is carried out over an area of 106 ha with moderate success (see also "Efficiency").

Interviews conducted locally indicated the continuing existence of drainage problems, even after the expansion of the main drainage system, "Kala Inférieur Est", under the programme. Thus far, there are no signs of salinisation problems.

Under the ON regulations, the users are initially granted a one-year usage right ("Contrat Annuel d'Exploitation" - CEA), which is converted into an indefinite usage right ("Permis d'Exploitation Agricole" - PEA) if the users cultivate the parcel of land as intended and meet their obligations regarding maintenance of the system and payment of the water tariff. The beneficiaries questioned stated that the allocation of parcels of land was largely transparent and unproblematic. However, complaints were voiced regarding the small size of the parcels, which were not large enough to achieve a marketable surplus beyond what was needed for the farmers' subsistence. Although the ON norms demand a minimum size of 3 ha, this was not complied with, evidently due to high population pressure.

To sum up, the outcome is as follows:

Indicator	Target value at PA	Ex post evaluation
Average paddy yield as of 2nd year after commissioning (i.e. 2013)	Rainy season ("hivernage"): >5.5 t/ha	2013/14: 3.70 t/ha 2014/15: 3.49 t/ha 2015/16: 3.50 t/ha (planned)
Production intensity	>110%	<100%

Effectiveness rating: 4

Efficiency

At roughly 7,000 EUR/ha, the investment costs exceed the regional average (EUR 6,000). Moreover, the reclamation of the production capacity created is far below expectations - both for rice (the main crop) and for vegetable growing. Under the prevailing conditions (poor market access, low demand, a lack of infrastructure for storage and processing), the latter is not very advantageous, since the income generated is too low.

Since the PA, the extent to which water tariffs (as a proportion of running costs) are covered has developed positively, rising from 35% (2010) to 43% in 2014. However, it should be noted that the collection rate deteriorated from 99% to 90% over the same period. Transfer payments from central government make up for the running costs not covered by tariffs. In the past three years, state subsidies for ongoing operations, which are primarily intended for maintenance of the primary network, were over 40% below the guidelines stated in the "Contrat Plan". As a consequence, the ON used a considerable amount of the water tariffs, which were actually intended for maintenance of the secondary network, to maintain the primary network, and this had a negative impact on cultivation efficiency.

To sum up, we assess the efficiency as clearly unsatisfactory for the following reasons:

(i) low business and economic profitability, (ii) insufficient production efficiency given the high investment costs relative to regional standards and (iii) an unsatisfactory level of cultivation intensity and yields (see "Effectiveness") - and therefore low allocation efficiency.

Efficiency rating: 5

Impact

After deduction of own consumption and following currency conversion, the agricultural family income from irrigated farming amount to 22 EUR/a for 1.5 ha and 230 EUR/a for 2.0 ha or 646 EUR/a for 3.0 ha of irrigated land, which is below what had been expected at the PA (f. 1 ha. 1,200 EUR/a, f. 2 ha. 2,600 EUR/a). Therefore this indicator was not complied with. Consequently, the contribution to alleviating poverty is also smaller. Furthermore, low monetary incomes can do little to support the objective of bringing about the transition from a subsistence economy to a modern market-oriented agricultural economy.

According to the ON, from commissioning (2011) to 2015 the share of project-induced production in the total production of the ON area and in total national production was, on average, 0.6% and 0.3% respectively. In light of the fact that the area for rice cultivation of the project area (1,950 ha) makes up about 2% of the total rice cultivation area of the ON (98,536 ha), the project's contribution to national rice production (overarching development objective) must be rated as below-average. This can presumably be attributed to the low yields per hectare and low production intensity.

Impact rating: 4

Sustainability

On the basis of the data available, we rate the sustainability as unsatisfactory overall. Tariffs and budget allocations only cover about 2/3 of the expenditure needed to maintain and operate the perimeters, which impairs their ability to function, at any rate in the medium term. In addition to this, the ON makes improper use of part of the income from water tariffs by using it to maintain the primary network rather than secondary network. Current estimates indicate that the financing of follow-up costs for operation and maintenance is not sufficiently secured.

The existing institutional reforms to decentralise operation and maintenance of the irrigation and draining infrastructures and to create appropriate structures are inadequate. Most of the user groups (OERT) established as part of the project are no longer able to function properly, meaning that the sustainability risk, already classified as high at the final review, persists.

Sustainability rating: 4

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 **impact**. The ratings are also used to arrive at a **final assessment** of a project's 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 development effectiveness of the project (positive to date) is very likely to continue undiminished or even increase.

Sustainability level 2 (good sustainability): The development effectiveness 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 development effectiveness 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 development effectiveness.

Sustainability level 4 (inadequate sustainability): The development effectiveness 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 development objective (“impact”) **and** the sustainability are rated at least “satisfactory” (level 3).