

Ex post evaluation – Côte d'Ivoire

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Sector: Agricultural land resources (3113000)
Project: Rice Cultivation in the North (BMZ no. 1997 65 579)*
Implementing agency: Agence Nationale d'Appui au Développement Rural (ANADER)



Ex post evaluation report: 2017

	Project A Planned	Project A (Actual)
Investment costs (total) EUR million	3.68	3.68
Counterpart contribution EUR million	1.02	0.00**
Financing EUR million	3.68	0.50
of which BMZ budget funds (FC) EUR million	3.68***	0.50***

*) Project in the random sample 2017 ***) The counterpart contribution could not be quantified. ***) The Financial Cooperation (FC) contribution was a loan from budget funds.

Summary: The full project encompassed the rehabilitation of irrigated perimeters in northern Côte d'Ivoire and technical support for the agricultural consultancy organisation Agence Nationale d'Appui au Développement Rural (ANADER) and for water conservation organisations. The project was implemented in the form of a sectoral programme ("open programme") as a FC component. The predecessor organisation to today's GIZ implemented the TC component. At the end of 2002 political unrest broke out in Côte d'Ivoire which led to the project cancellation in mid-2003 due to the persistent confrontations akin to civil war. While planned figures amounted to 13 irrigated perimeters on 3,000 ha, at least 11 perimeters on 1,500 ha could be rehabilitated.

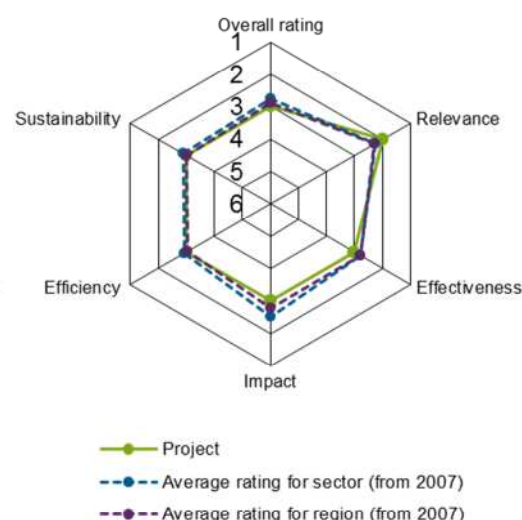
Development objectives: The overarching development objective (impact) was to improve the income of 8,000 family farms in the "Région des Savanes". The FC project objective (outcome) was farmers independently using the rehabilitated irrigated perimeters and an increase in rice production.

Target group: The target group was over 8,000 family farming operations, which already managed the 1,500 ha of irrigated land as of the project appraisal or held traditional legal titles to land due to be re-cultivated in the future. Assuming an average plot of 0.3 ha for each family farm, the project reached about 3,000 family farming operations.

Overall rating: 3

Rationale: The average annual yields per hectare on the irrigated land temporarily more than doubled. The associations that were formed to maintain the perimeters undertake simple maintenance works. The rehabilitated perimeters are still in use. Their state of repair is satisfactory but does only allow for one harvest a year.

Highlights: The rehabilitation work was concluded at 11 perimeters when political unrest broke out in Côte d'Ivoire at the end of 2002 and the project was cancelled in mid-2003 due to the persistent confrontations akin to civil war. The expansions of two large perimeters could no longer be implemented. GIZ data from 2007 provide evidence that the rice perimeters were operational during the civil war in Côte d'Ivoire. According to the provided information, rice production could not have been upheld during the crisis without the project.



Rating according to DAC criteria

Overall rating: 3

General conditions and classification of the project

At the time of the project appraisal in 1998, the agricultural sector generated around 30% of gross domestic product and employed around two-thirds of the labour force. It continues to be the dominant industry in Côte d'Ivoire, generating a quarter of economic output. The sector has been restructured since 1990 with support from the World Bank and German Financial Cooperation (FC): the country withdrawing from operating the irrigated perimeters created the space necessary for private sector competition to develop. Rice continues to be an important staple food for the population to this day. In addition, the country relies on rice imports – primarily from Asia – to meet its national demand.

The programme region around Korhogo, the "Région des Savanes" in northern Côte d'Ivoire is characterised by irregular seasonal rainfall. The Ivorian government continues to see great potential for rice cultivation in the region. Alongside rice, which is mainly cultivated at subsistence level (farms up to 5 ha in size), cotton, cocoa and oil palms are particularly cultivated in the region for export. Within the scope of the co-operative programme at that time between GIZ (then GTZ) and KfW, the FC components were intended to finance the rehabilitation of up to 13 irrigated perimeters (altogether over 3,000 ha), as well as the supply of project equipment. The rehabilitation included repairing embankments, cleaning watercourses, restoring water distribution structures, and renovating field canals and reservoirs. GIZ provided technical advisory services in the project by supporting the process of forming associations for water users and conducting training events.

The rehabilitation work was concluded at 11 perimeters when political unrest broke out in Côte d'Ivoire at the end of 2002 and the project was cancelled in mid-2003 due to the persistent confrontations akin to civil war. Most remaining FC funds were earmarked for rehabilitating and expanding two significantly larger perimeters (area of around 1,500 ha). Around EUR 0.5 million had been paid out when the project was terminated, with EUR 0.234 million of this going directly to GTZ (for financing the rehabilitation of the first four perimeters) and EUR 0.266 million going into the disposition fund set up to pay for rehabilitation work. GIZ, as it is today, continued to be involved in a follow-up project in the region from 2004 to 2007.

Relevance

The project was based on the Ivorian government's overarching objective of the country achieving self-sufficiency in supplying rice – a staple food – by 2005. With this the Ivorian government wanted to save on foreign exchange and increase income for farmers. The objectives associated with the rehabilitation (increasing rice production, use of systems with independent responsibility) are in line with the priorities of the Ivorian government as well as those of the German Federal Government (country strategy for Côte d'Ivoire). The Ivorian government's ambitious plan to achieve self-sufficiency in rice fully by 2020 is still in place today. The plan should be evaluated critically similar to its predecessor, and the aim of total self-sufficiency should be questioned. Instead, the focus in science is currently on a strategy of food security, which relies on creating capacity to finance imports alongside domestic production. In line with (free) trade theories, the quantities stemming from domestic production and imports should depend on the competitiveness of different rice-producing countries and corresponding product prices, meaning that consumers can consequently obtain rice at affordable prices. According to the Global Hunger Index, the country is ranked 86th (out of 118) and still has a strained food supply for large parts of the population, although the situation has noticeably improved since the civil war ended in 2007.

Apart from the self-sufficiency aspect, the project's working logic continues to satisfy the requirements of the sector concepts for agriculture. Specifically, projects in the agricultural field can only be successful in the long term if they recognise the needs of the target group and encourage their own responsibility in working with the technology that is supplied. The project approach made provisions precisely for these aspects and can therefore be rated as coherent. The user group's participation in designing and implementing the construction measures is also worthy of a positive assessment. However, one point of criticism is that detailed plans were not made to charge general user fees to compensate for maintenance

costs. The risk of irrigation infrastructure becoming unusable in the medium to long term increases in the absence of regular maintenance and upkeep. Additionally, the aspect of potentially negative environmental impacts from intensifying agricultural activity (through use of fertilisers, effects on existing biodiversity and so on) was not taken into account, which must also be rated negatively from today's perspective.

Relevance rating: 2

Effectiveness

The FC project objective (outcome) was for the production potential of the water users' irrigated crops in the rehabilitated perimeters to be harnessed independently and sustainably.

The attainment of the programme objectives defined at the programme appraisal can be summarised as follows:

Indicator	Status PA, target value PA	Ex post evaluation ¹
(1) Five years after the project start, 100% of irrigable area is used in four pilot phase perimeters within each cultivation initiative.	PA: 355 ha; Target value: 100% of area (equivalent to 816 ha)	The first four perimeters on which work started managed to produce values beyond the 80% mark as of the project termination time (= 653 ha). 64% (approximately 960 ha) of the 11 rehabilitated perimeters' total area (around 1,500 ha) was irrigated by that time. Up-to-date irrigation data are not available for the areas rehabilitated at that time.
(2) Average annual yield in the rice areas	Target: 6 t/ha per year	Data from 2000-2003 demonstrate that 8.2 tonnes of rice were harvested annually on average per hectare. The rice yield in the whole region was 2.5 t/ha in 2015 (2011: 3.3 t/ha). Up-to-date data are not available at the perimeter level.
(3) Increased family income for association members	n.a.; target: 20% increase	Data from the GIZ final report from 2004 show that the association members were able to increase their yields in the first four perimeters by more than 100% between 1994 (start of GIZ measure) and the project termination. Assuming that similar yield increases were possible in the other seven perimeters and accounting for the price trend for rice and the rate of inflation ² during the same period, a rise in real incomes of at least 20% appears to be plausible (see Table 1).

1) Along with the current status, GIZ information is also included about the state of the rehabilitated perimeters at the conclusion of the project's follow-up phase, due to the project being terminated 14 years ago. The ex post information was provided by the project-executing agency at the time (ANADER) and the Office National de Développement de Riziculture (ONDR).

2) International Monetary Fund data demonstrate that the country achieved very moderate inflation rates, except for a few years (sometimes significantly below 5%). Exceptions to this were 1994 (26%), 1995 (14%) and 2008 (6.3%).

Attainment of the project objective can be rated as satisfactory, at the end of the GIZ follow-up project in 2007 as well as today. Current data from the Global Water Surface Explorer and ANADER based on satellite images prove that the irrigated infrastructure rehabilitated at that time is still largely functional. However, rice is only one of many agricultural products used on the irrigated land (alongside cotton for instance). Along with the initially poor smallholders, the data suggest that small to medium sized agricultural enterprises are also using the existing infrastructure.

More than 80% of the planned 816 ha of irrigable cropland was actually achieved in the four pilot perimeters by 2004 (seven years after project start). This is below the intended target of 100% of the cropland being irrigable five years after the project start. However, we rate this proportion as positive under the prevailing political conditions and based on the fact that that project was terminated. The irrigable proportion of cropland was 64% (around 960 ha) for all 11 rehabilitated perimeters (instead of the up to 13 that were planned). According to information from ANADER, most of the areas can still be irrigated today by the 11 perimeters whereby close to 20 years after implementing the rehabilitation, new, large-scale investments in the irrigation infrastructure were urgently necessary in the case of some perimeters. Relevant measures are planned for this within the scope of the current national rice plan. The following table shows the yield trend in the first four perimeters from 1994 to 2003.

Table 1: Yield and price trends in rice production from 1994-2003 in the first four perimeters

Year	Irrigable cropland in ha	Average yields per year t/ha	Rice price FCFA/t	Consumer Price Index (source: IndexMundi, 2010=100)	Real rice price FCFA/t
1994	355	4.0	80,000	57.16	45,728
1995	405	4.7	83,000	65.33	54,224
1996	454	5.4	83,333	66.95	55,791
1997	504	6.1	90,000	69.65	62,685
1998	554	6.8	93,333	72.86	68,002
1999	604	7.5	96,667	73.37	70,925
2000	653	8.2	100,000	75.23	75,230
2001	653	8.2	100,000	78.51	78,510
2002	653	8.2	100,000	80.92	80,920
2003	653	8.2	100,000	83.59	83,590

The ambitious average annual yields were exceeded, even significantly in some cases, due to the successfully rehabilitated irrigation infrastructure. Data from 2003 provide evidence that a yield of 8.2 t/ha was sometimes achieved. No rice yield data are collected today at the perimeter level. According to ANADER, some perimeters no longer achieve this average yield, because two cultivation periods per year are not possible any more due to the degraded infrastructure. Other viable perimeters, however, continue to achieve satisfactory yields per hectare.

Effectiveness rating: 3

Efficiency

Only the FC funds actually spent were considered to evaluate the production efficiency.¹ At EUR 0.5 million, these are only a fraction of the originally authorised BMZ budget funds. Around EUR 0.234 million of this was disbursed directly to GTZ (as it then was, for financing the rehabilitation of the first four perimeters) and EUR 0.266 million into the disposition fund set up to pay for rehabilitation work. Both cost items included costs for rehabilitating the 11 perimeters. The work carried out included cleaning 92 km of canals and 34 km of watercourses, rehabilitating 40 extraction and distribution structures and newly constructing seven office and warehouse buildings. We can rate the use of funds as efficient compared with the overall original budget for the planned work.² Due to project termination the technically more complex and thus more expensive rehabilitation of the two largest perimeter was not carried out. The political unrest in the country made it impossible to continue at that time, as the region was occupied by rebel groups and was completely beyond central government control. In hindsight, terminating the project was a sensible decision as the executing agency had to withdraw from the region and could not have assured the efficient use of funds. The production efficiency is rated as appropriate overall.

Evaluating the allocation efficiency becomes complicated due to the project termination and cannot be rated in a completely reliable way from today's perspective. Particularly given the low use of funds, a positive point to note is the financed irrigation infrastructure continuing to be used today, with the user groups benefiting from it.

Efficiency rating: 3

Impact

Data on production and income would have had to be collected regularly at the regional level, or also for the individual perimeters if applicable, in order to rate the achievement of the ultimate objective (impact), namely the increase in family income in the project area. Robust information necessary for this is just as scarce ex ante (baseline) as it is for corresponding investigations ex post, because no indicators at all were specified at the ultimate objective level in the project appraisal.

The following indicator was therefore used for evaluation purposes as part of the ex post evaluation:

Indicator	Status PA, target value PA	Ex post evaluation ¹
(1) Increased family income for association members	n.a.; 20% increase	Data from the GIZ final report from 2004 show that the association members were able to increase their yields in the first four perimeters by more than 100% between 1994 (start of GIZ measure) and the project termination. Assuming that similar yield increases were possible in the other seven perimeters and accounting for the price trend for rice and the rate of inflation ² during the same period, a rise in real incomes of at least 20% appears to be plausible (see Table 1). The strong price rise for Ivorian rice could have

¹ The feasibility study, however, pointed to limited economic efficiency of the measure. The assumption was that not all perimeters can be operated viably for the target group. Potential yields were offset by investment costs of around EUR 2,500 per hectare. In hindsight, however, the limited economic efficiency can no longer be comprehensively evaluated in relation to the overall project due to the project termination.

² At the time of the appraisal, this included cleaning 250 km of canals and 100 km of watercourses, rehabilitating 54 extraction and distribution structures and newly constructing 13 office and warehouse buildings. Reservoirs, emergency spillways and access roads were also to be financed. The cost for these was estimated at EUR 3.68 million.

		compensated for the recent fall in yields (according to ONDR data from 2013: 35,000 FCFA/t).
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1) As mentioned in the section above on effectiveness, up-to-date data are only available to a limited degree.

2) Annual rice production in the region dropped from around 5,800 t to only 1,100 t from 2012 to 2015, according to ANADER. Alongside the cultivation of other agricultural products, this may also be related to some perimeters having degraded over 20 years since the start of the first rehabilitation work.

The project's role in securing and promoting rice cultivation in northern Côte d'Ivoire deserves special mention. The rehabilitated perimeters were the only functioning rice fields in the region during the civil war and following the termination of the German involvement, and they provided a livelihood for around 40,000 people. The rice farmers stress that it would not have been possible without the project to maintain rice production during the crisis and the effects of the violent confrontations would have become significantly more dramatic. Increases in yields were even possible in the difficult circumstances (as mentioned previously).

The increased yields also had a positive effect on the income of the association members. As of the project appraisal, the assumption was that there should be a 20% income rise. We can assume that the smallholders particularly afflicted by poverty at the time of the appraisal have strongly benefited from the measure, meaning that the project has strongly contributed to poverty reduction in a disproportionately poor region of the country. The price and yield trends during the project suggest that the planned income rise was achieved. The fact that medium-sized farms are also found in the area today may indicate that some poor smallholders have successfully advanced economically and socially due to the improved production conditions. It is important to mention that placing focus on a single crop always carries certain risks. Falling rice prices could have negatively affected income despite increased yields in terms of cultivation.

The consulting within the scope of the TC component improved the user groups' management capacities in the rehabilitated perimeters. 50% of farms were organised on a cooperative basis in 2003. The data from then in 2004 show that the target group had sound knowledge about rice cultivation, and the current agricultural activities indicate that the implementation of the acquired knowledge is still a success today. This most probably cannot be attributed only to the cooperative programme, but also to activities of other national and international initiatives. According to ANADER, associations brought into being at that time still exist today. However, their functionality is somewhat limited, especially in the case of the perimeters that are no longer adequately maintained. Nevertheless, the national rice body, ONDR, emphasised that many new associations have formed in the project region since 2013 in particular. The current membership totals 8,500.

On the other hand, due to the joint GIZ and KfW project being terminated, we can assume that the effects did not have the broadest impact possible. A full-scale execution of the project could definitely have reached even larger areas. Considering the implementation circumstances, however, the existing developmental impacts are considerable.

Impact rating: 3

Sustainability

An attempt was made to reconstruct the current state of the rehabilitated perimeters over 14 years after the project termination. The data is primarily reliant on information from ANADER, ONDR and satellite imagery of the project region, indicating a significant local information shortage. It is also necessary to stress that around 20 years after the first rehabilitation measures were carried out, the infrastructure financed then could not continue in its original form, and the infrastructure visible today was built later or the original infrastructure was heavily modified over the course of time. This can now no longer be reliably evaluated.

The continued functioning of the irrigated infrastructure during the civil war and until today, however, indicates satisfactory sustainability on the part of the financed measures. The fact the associations continue to exist and more were newly founded after the project ended suggests that the project has a satisfactory

level of sustainability overall. There are currently no general user fees for the perimeters, according to the former project-executing agency. Associations collect membership fees, which finance the general upkeep of the infrastructure. Large-scale rehabilitation measures cannot be financed via these budgets for the most part, however. Generally, the state financially supports the farmers in this context, which had not been the case so far in this project. That said, up-to-date data from the project region demonstrate that rice is no longer the predominant agricultural product. Only a fraction of the land is used for rice production. In light of the obsolete goal of self-sufficiency in an open market-environment, this is to be rated positively. The cultivation of cash crops such as cocoa, palm oil and especially cotton seems to be much more widespread. We can hence assume that agriculture in Côte d'Ivoire will become even more commercial and diversified in the future, as large national and multinational agricultural companies are noticeably becoming involved in the sector.

Sustainability 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:

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).