

Ex-post evaluation

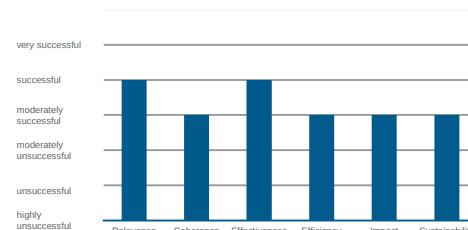
Rural Development/Productive agriculture program, Niger

Title	Rural development/productive agriculture program		
Sector and CRS code	Agricultural development 31120		
Project number	2011 66 909		
Commissioned by	Federal Ministry for Economic Cooperation and Development (BMZ)		
Recipient/Executing agency	Ministry of Planning / Ministry of Agriculture		
Project volume/ Financing instrument	EUR 15 million / budget grants		
Project duration	2013-2021		
Reporting year	2024	Year of random sample	2024

Objectives and project outline

The objective at outcome level was to increase income and agricultural production on the supported farmland. At the impact level, the aim was to contribute to food security. A total of 193 individual measures in the regions of Tillabéri, Tahoa and Agadez in Niger were selected and financed as part of a transparent and competitive selection process. The measures included the construction of small-scale irrigation infrastructure, rural roads, processing and storage facilities for agricultural products as well as water and soil protection measures. Training and operating resources were also financed.

Overall rating:
moderately successful



Key findings

Due to the very limited data available, no reliable conclusions can be drawn about the effect of the measures implemented by the project at outcome and impact level, which impairs the robustness of the evaluation results. For the following reasons, the project is rated as being moderately successful:

- The project has succeeded in strengthening the production and marketing capacities at the project locations.
- The available data indicate a better availability of staple foods and an increase in agricultural yields due to the expansion of irrigated areas, with potentially positive effects on food security in the supported areas.
- The project has been instrumental in supporting the Nigerien government in testing the national strategy to promote small-scale irrigation and, thanks to the replication of the project approach by other donors, has been able to develop structure-building effects.
- Sustainable maintenance is not guaranteed due to an inadequate supply of spare parts and limited repair capacities. The precarious security situation, difficult political and economic conditions and vulnerability to extreme weather events jeopardize the long-term sustainability of the project results.

Conclusions

- The participatory and demand-oriented approach made it possible to tailor the measures to the needs of the target group, implement them in line with demand and ensure strong ownership.
- The approach was holistic, as it promoted a sustainable improvement in production conditions, processing options, transportation and storage.
- The establishment and training of management committees for the operation and maintenance of shared infrastructure can strengthen the sustainability of investments.

Ex post evaluation – Rating according to DAC criteria

Overview of rating:

Relevance	2
Coherence	3
Effectiveness	3
Efficiency	2
Impact	3
Sustainability	3
Overall rating:	3

Overall context

Niger faces significant challenges regarding its water resources. Although three-quarters of Niger is classified as a hyper-arid desert, the country's total water resources, estimated at 32 billion cubic meters per year, are quite significant.¹ For this reason, Niger promotes the increase of irrigation efficiency and the strengthening of sustainable farming methods with the aim of improving the food situation. Between 2011 and 2021, the irrigated area increased by 40%, reaching 140,000 hectares in 2021.² Nevertheless, less than 1% of the cultivated area is irrigated. High costs and technical barriers, exacerbated by political uncertainty, hinder the widespread adoption of new water-gaining technologies.

The limited development of water resources complicates agricultural development. Between December 2022 and November 2023, the number of farmers experiencing yield problems due to insufficient irrigation nearly doubled.³ This has led to an increasing scarcity of agricultural products, which is further exacerbated by the impacts of climate change, such as frequent droughts and erratic rainfall patterns. Additionally, soil degradation and desertification, caused by unsustainable agricultural practices and overgrazing, intensify the challenges.

Due to the difficult conditions in agriculture, which simultaneously serves as the main source of income for many people, and a rapidly growing population, the country is marked by poverty. Rising food prices affect one-third of households, and Niger ranks last in the United Nations Human Development Index for the past 11 years (with the exception of 2016).⁴ The dramatic shift in the political landscape further exacerbates this situation. On July 26, 2023, the regime of President Mohamed Bazoum was overthrown in a military coup, leading to significant political instability.

The tense security situation in the country has immediate consequences for the present evaluation of the project. For security reasons, the evaluation was conducted without an on-site visit by the evaluation team. Visits to project sites and extensive data collection were therefore not possible. Few target group discussions took place in the form of qualitative telephone interviews and two focus group discussions in the Tillabéri and Agadez regions. Conversations with other stakeholders were conducted via video calls. The severely limited data situation affects the robustness of the evaluation results, which are primarily based on data from an evaluation study conducted in 2020, as well as qualitative impressions from individuals interviewed during the evaluation.

The present project is the first phase of the "Rural Development/Productive Agriculture Program" (in French: Programme de la Petite Irrigation et de la Sécurité Alimentaire, PISA). A second phase has already begun, but its implementation was halted due to the political situation at the time of the evaluation.

¹ Worldbank (2021), Farmer-led Irrigation Development in Niger.

² Adamou, Rabani; Ibrahim, Boubacar; Bonkaney, Abdou Latif; Seyni, Abdoul Aziz; Idrissa, Mamoudou (2021): Niger - land, climate, energy, agriculture and development: A study in the Sudano-Sahel Initiative for regional development, jobs, and food security, ZEF Working Paper Series.

³ Ibid.

⁴ FAO (2024), The Niger DIEM – Data in Emergencies Monitoring brief, round 8.

Project Summary

As part of the project, the Financial Cooperation (FZ) financed a total of 193 individual measures to promote agricultural production in the three regions of Tillabéri, Tahoa, and Agadez in Niger. The measures included the establishment of small-scale irrigation infrastructure, infrastructure for upstream and downstream services for processing, storage, and marketing of agricultural products, as well as measures for improved water and soil management. Accompanying investments financed consulting services for the sustainable operation and maintenance of the rehabilitated and newly constructed infrastructure.

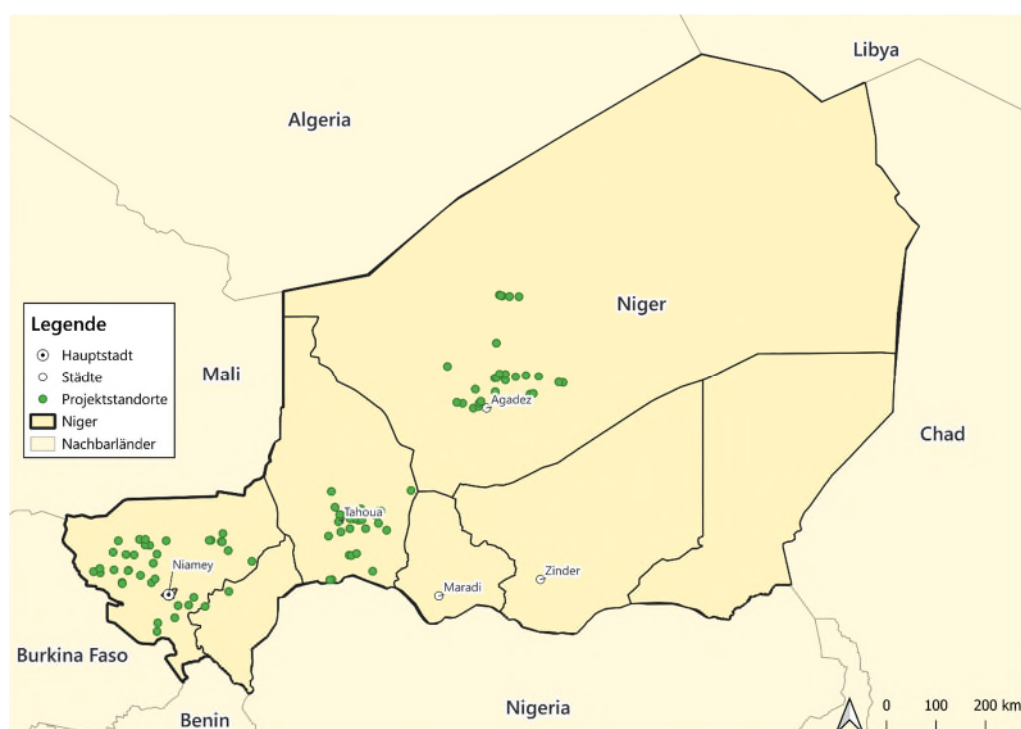
The project was implemented by the Nigerien Ministry of Agriculture (MAG/EL). Implementation was carried out by a technical implementation unit (Unité de Gestion du Projet, UGP) of the Direction Générale du Génie Rural (DGGR), which is responsible for national irrigation policy, supported by an international implementation consultant. The goal at the outcome level was to increase the incomes of smallholder families and productivity on the cultivated areas. At the impact level, this was intended to sustainably strengthen food security in the project region.

The target group consisted of the predominantly poor population engaged in agriculture in the mentioned regions. According to the final report of the implementation consultant, approximately 460,000 people could benefit from the project measures.

Total Costs

In EUR million	Investment (planned)	Investment (actual)
Total cost	14,5	18,44
Counterpart contribution	0,5	4,44
Financing	14,0	14,0
<i>of which BMZ funds</i>	14,0	14,0

Map/Satellite image of project country incl. project area/locations



Source: GADM; Coordinates of project locations, own representation.

Rating according to DAC criteria

Relevance

Alignment with policies and priorities

Until today, Niger has one of the highest birth rates in the world (6.74 children per woman in 2020). This has led to an increasing population density over the past decades, especially in rural areas. On one hand, this has increased the pressure on existing agricultural land, and on the other hand, it has contributed to the expansion of agricultural areas beyond the arable land. Between 1980 and 2012, the ratio of arable land per agricultural worker decreased from 11.8 to 1.1 hectares.⁵ The overexploitation of land and the pressure on nature and the environment have steadily increased, while the income generated per hectare has decreased.

In addition to these factors, food cultivation has always been hampered by natural disasters. Severe droughts in the 1970s and in 1984, along with resulting famines, prompted the Nigerien government to take strategic measures for rainwater harvesting, initially focusing on large-scale irrigation systems. Later, new techniques, such as check dams, were introduced.⁶

To structurally address the aforementioned challenges, the Nigerien government introduced a food security policy focused on irrigation shortly after the turn of the century. In 2005, it also developed the National Strategy for the Development of Irrigation and Rainwater Harvesting (SNDI/CER = Stratégie Nationale de Développement de l'Irrigation et de la Collecte des Eaux de Ruissellement), which outlined the key intervention axes for large irrigation projects but did not explicitly consider small-scale irrigation. To fill this gap, the government adopted the initiative "Les Nigériens Nourissent les Nigériens" (3N) in April 2012 as an overarching strategy for rural projects. The goal was to strengthen national food security through more efficient irrigation and the promotion of sustainable farming

⁵ European Commission (2019). Impacts ex-ante de la Petite Irrigation au Niger.

⁶ Ibid.

methods. The implementation of the initiative was carried out through the "Stratégie de la Petite Irrigation au Niger" (SPIN).⁷

Bilateral cooperation between Niger and Germany began as early as the 1960s.⁸ This was shaped by the aforementioned severe natural events and unstable political conditions on the ground. The portfolio of German engagement in Niger has changed since the turn of the century. For a long time, the focus was on poverty reduction and the promotion of decentralization. However, the latter was abandoned after the military coup in 2010 and, after a brief suspension of cooperation, was replaced by a new focus on promoting agriculture, particularly irrigation and soil protection.

The project to be evaluated, "Rural Development/Productive Agriculture Program", was part of the corresponding focal program of German-Nigerien development cooperation (EZ). The Financial Cooperation (FC) supports this focus in four of the five core areas of the 3N initiative. It concentrates on i) "increasing and diversifying agricultural production, ii) regularly supplying rural and urban markets with agricultural products, iii) increasing the resilience of particularly poor population groups to climate change, and iv) improving the food situation of the Nigerien population. Another goal of German FZ is to reduce Niger's dependence on food imports from other countries.

The project aligned with this focus from both a historical and current perspective. At the same time, the objectives set for the project were in line with those of Niger's 3N strategy.

Alignment with needs and capacities of persons concerned

Aside from the high birth rate, the core problem in Niger is the ongoing deterioration of climatic conditions. In the project regions, agricultural land is sometimes damaged or reduced [due to flooding], while in other areas, there is significantly less rainfall than before. Together with the continuous population growth and soil degradation, this leads to widespread undernutrition: one-third of households in Niger suffer from moderate to severe food insecurity, are affected by seasonal food deficits, and have low dietary diversity.⁹ According to estimates by the United Nations, more than 50% of children under five years old are chronically malnourished. The rates of acute malnutrition regularly exceed the threshold of 10% set by the WHO, which is considered seriously concerning.

PISA I included measures to increase agricultural production and income, thus addressing this core problem in the agricultural sector. The target group consisted of the predominantly poor population engaged in agriculture in the regions of Tillabéri, Tahoua, and Agadez. The project was expected to benefit approximately 460,000 people. Regarding resource allocation, it was initially considered to distribute funds based on the population size of the target regions. However, this was discarded in favor of a competitive approach that would provide equal access opportunities to all regions.

The project aimed for a participatory approach to mitigate potential risks as much as possible in the conflict-sensitive region. It sought to integrate a do no harm approach, where farmer user groups and local authorities would submit funding applications based on uniformly established criteria. In all three regions, the establishment of a committee for the review and pre-selection of submitted applications (Comité de Présélection, CP) and another committee for the final selection of measures to be financed (Comité d'Octroi, COR) was planned. According to review documents, the COR was to "consist of representatives from various sector ministries at the regional level, civil society, technical cooperation, a women's organization, and local authorities, and be led by the governor of the region." Local representatives were also to be involved in the technical acceptance and quality and quantity review of the work.

The principle of Leave No One Behind was to be implemented in this project primarily through a focus on the poorer population and women. To ensure women's economic participation, their access to irrigated land was to be increased by at least 25%. Additionally, training measures with women's cooperatives and organizations were planned. The project was therefore classified in the GG1 category. Through information campaigns via rural radio stations, it was to be ensured that all population groups were informed about the possibility of project funding. The project was thus aligned with the needs of the target group and had the potential to reduce the marginalization of small farmers in the project area, strengthen their capacity for sustainable water resource management, and improve the living conditions of the target group.

Suitability of project concept

⁷ Ministère de l'agriculture et de l'élevage (2016), SPIN Plan D'Actions.

⁸ GIZ, Niger, <https://www.giz.de/de/weltweit/315.html>

⁹ Adamou, Rabani et al. (2021), Niger - land, climate, energy, agriculture and development.

The underlying theory of change for the project addresses the correctly identified core problem of inadequate food security, increasing soil degradation, and worsening climate disasters. This was to be addressed through investments in small-scale irrigation infrastructure, infrastructure for upstream and downstream services for processing, storage, and marketing of agricultural products, as well as measures for better water and soil management. Specifically, the project planned the construction of check dams, wells, and other small-scale irrigation projects, as well as the construction of storage facilities and access roads. Additionally, maintenance committees (Comité de gestion, COGES) were to be established, and these, along with farmers, were to be trained in the maintenance of the infrastructure. Through investment and training measures, as well as equipping plots with water-saving devices, the technical prerequisites for resource-saving and more efficient water and soil use were to be created. At the outcome level, this was expected to lead to an increase in production on the cultivated areas and the incomes of small farmers, thereby sustainably strengthening food security in the target regions at the impact level.

The theory of change is fundamentally plausible and comprehensible from both a historical and current perspective, assuming internal stability and the absence of climate disasters. The outcome and impact level objectives were adjusted during the evaluation (see Effectiveness and Impact). The formulation of individual module target indicators, and particularly their scope, varies within the project documents, which complicates consistent evaluation and has a (slightly) negative impact on the assessment of relevance.

The selection criteria for the small-scale irrigation measures to be funded were already recorded in the project proposal and were to consider technical (suitability of the site, shape of the valley), social (social structures, gender, land rights), economic (costs per person, costs per hectare, profitability), and ecological aspects. Additionally, the measures were to be complex enough that they could not be realized by the population on their own, but without jeopardizing sustainable operation by the users after the end of funding. Thus, the project also aimed to promote the independence of the target group. The development policy potentials of participatory selection processes face risks to efficiency and effectiveness, some of which were indeed realized.

Reaction to changes/adaptability

After a delayed project start, the implementation of the project proceeded according to the design. However, there were changes in the implementing structure, during which the responsibility for implementation shifted from the Prime Minister's office to the Ministry of Agriculture (Direction Général de Génie Rural) (see Efficiency). Insufficient personnel capacity within the ministry and limited experience with FZ disbursement procedures were identified as implementation risks even before the start of implementation. These challenges were to be addressed by strengthening the implementation consultant. **Rating summary:** The core problem existing at the time of the design was correctly identified and was to be addressed through regionally adapted, technically supervised measures. Thus, the project conceptually aligned with the goals and strategies of the partner country (3N, SPIN) as well as German development cooperation in Niger. The planned measures were oriented towards the needs of the target group, which largely depends on agricultural production. Furthermore, a participatory application process using selection committees was intended to ensure needs-based funding and contribute to acceptance among the population. The theory of change of the project also appears plausible from today's perspective. The design is adequate but carries the risk of inefficiencies due to lengthy selection processes.

Relevance: 2

Coherence

Internal coherence

PISA was part of the long-standing and recently ongoing development cooperation program "Rural Development and Productive Agriculture" in Niger, which focused on poverty reduction through the promotion of agricultural production. The alignment of the project with the goal of increasing production and incomes of small farmers on the cultivated areas thus seamlessly integrated into the program's priorities.

In parallel to PISA, the technical cooperation module "Promotion of Productive Agriculture" (PromAP) was established and implemented in the project region. The complementarity of the technical cooperation (TC) and financial cooperation (FC) measures created synergies. For example, the target group of PISA benefited from consulting services provided by TC, as confirmed in interviews. There were also synergies with the FC module "Food Security through Strengthening the Agricultural Sector" (201769033), which provided people in the project region with high-quality fertilizer supplies. Additionally, the FC module "Smallholder Irrigation Agriculture in Niger" (2008

66491) increased rice yields for small farmers in the regions of Tillabéri and Dosso by rehabilitating ten large public irrigation perimeters near the PISA sites.

According to relevant project stakeholders and based on document analysis, despite intensive exchanges "in a positive atmosphere," some synergy potentials between TC and FC remained untapped. Respondents attributed this to different implementation timelines and insufficient coordination in the content design of capacity-building offers for the target groups (e.g., needs assessment before application submission and then at the end of infrastructure provision). Although PromAP was involved in some planning committees, including the selection committee for the projects to be funded, it could have been more strongly integrated into decision-making and the utilization of infrastructure. A place for TC in the pre-selection committee (CP) would, in TC's assessment, have improved the selection process and thus increased effectiveness. The reasons why this was not facilitated could not be conclusively clarified during the evaluation.

Overall, the project was consistent with international norms and standards, particularly with the fundamental principles of the international development agenda 2030. The project addresses the six transformation areas for the implementation of the agenda, with particular relevance for the quality characteristics "People" and "Planet" due to its focus on poverty reduction and sustainability. The broad composition of the selection committees with representatives from local civil society and cooperation with women's organizations promotes participatory rural development and decentralization. Additionally, through the financing of small-scale irrigation infrastructure and measures for better water and soil management, the project contributes to the climate protection commitments of the Paris Agreement.

External coherence

Numerous other donors were active in Niger's irrigation infrastructure during the project period of the PISA initiative. Most funded the rehabilitation and expansion of Niger's irrigation infrastructure similarly to FC, as well as measures for improved market access and storage of agricultural products. Some external donors also operated in the same regions as FC but focused more on capacity development. At the beginning of the project's implementation in 2016, coordination discussions were held with all relevant donors. There was also a platform for donor coordination led by the EU with changing moderators. During the project duration, the intensity of exchanges decreased; there was no exchange at all with the World Bank.

There were many overlaps with IFAD, whose "Program for the Development of Smallholder Agriculture" (Programme de développement de l'agriculture familiale, PRODAF) pursued similar goals to the project being evaluated and focused on financing the expansion of irrigation infrastructure in Tahoua. According to interview partners, there was particularly close communication here, which helped avoid any duplications. Regular coordination also took place with the AFD and EU projects "Rural Development Poles" (Pôles Ruraux de Développement), with a special focus on small-scale irrigation and agricultural services in the regions of Agadez and Tahoua. Furthermore, the MCC program to promote private sector agriculture improved access to irrigation infrastructure and markets in the development cooperation program regions of Tillabéri and Tahoua, supporting the agricultural productivity and market access of small farmers.

Rating summary:

The evaluated project aligned with the priorities and strategies of German development cooperation in Niger and meaningfully complemented the efforts of the federal government in bilateral cooperation. The cooperation with TC was initially well established and complemented by complementary activities in the same project regions. However, the technical knowledge of TC in one of the selection committees and further synergy potentials in the area of capacity building remained untapped, partly due to the delayed implementation start of PISA. Regarding external coherence, FC played an important role in financing small-scale irrigation and coordinated the activities for irrigation infrastructure with those donors that promoted similar approaches both in content and regionally. Overall, coherence can be assessed as satisfactory.

Coherence: 3

Effectiveness

Achievement of (intended) goals

The modified goal at the outcome level of the project within the framework of the EPE is: "The incomes of small farmers and the production on the supported cultivation areas are increased." In the present context, the target group primarily relies on subsistence-based agricultural production, which means that the development of income and agricultural production is closely linked. The measures to promote small-scale irrigation specifically aim at increasing production, while the construction measures in the areas of storage and marketing were primarily intended to impact income development.

The determination of goal achievement is based on four module target indicators, which are listed in the following table. The original impact matrix of the project also included an indicator for income development among the target group with associated value specifications. Such an indicator would have been excellent for measuring the goal, but the evaluation team did not have information on the scope and time frame of the collected income data, nor on the survey method, sample size, and underlying definitions. Therefore, the quality of the data could not be assessed. Generally, the collection of income data from subsistence-based small farmers in low-income countries is methodologically complex and error-prone, as a significant portion of the produce is produced for self-consumption, income usually occurs sporadically, is subject to strong seasonal fluctuations, and is typically earned in informal markets, thus not documented.

Several interview partners in the evaluation reported difficulties in formulating the indicators and in collecting the baseline and target values, particularly for Indicator 2 (yield increases) and the income indicator not considered here. The collection of baseline values was also complicated by the demand-oriented project approach, as the project sites were not predetermined but emerged only during the implementation phase. Despite this, a baseline study was conducted in 2016/2018. Although a monitoring and evaluation system was established during implementation with the involvement of the DGRR, there were still differing views on the formulation of the indicators and data collection. The lack of current values and the qualitative data collected during the evaluation indicate that the monitoring and evaluation system could not be permanently established in the involved institutions.

The data collection to measure goal achievement at the end of the implementation phase was conducted through an impact study carried out in 2020, which also formed the basis for the result reporting in the final control (AK) in 2021. However, the impact study has methodological weaknesses, which limit its usability. In particular, it does not explain how the individual data were collected. There are also no details on sample sizes. As a result, neither the quality of the data can be objectively assessed nor can a reliable comparison with the baseline data be established.

Current values (2023/2024) for the indicators could not be collected in this ex-post evaluation for the following reasons:

- The scope and mandate of the EPE, whose budget does not allow for comprehensive, costly data collection in the three regions. There are no national statistics or other secondary data at this level that would enable a reliable data comparison with these indicators, thus making primary data collection unnecessary.
- Due to the current security situation in the country, a trip by the evaluation team was excluded by the FC. The high costs of a trip with military escort to the regions, as well as the scarcity of domestic flights, also prevented a comprehensive deployment of a local expert.

The assessment of goal achievement at the time of the evaluation is therefore primarily based on insights from qualitative interviews with various stakeholders, including two remote focus group discussions in Agadez and Tahoua and ten telephone interviews with representatives of the target groups from all three regions.

The achievement of the goal at the outcome level can be summarized as follows:

Indicator	Status at PP	Target Value according to PP	Actual Value at AK (2021)	Actual Value at EPE (here AK 2021)
(1) Change in cultivated area for irrigated crops and subsequent crops in ha.	Baseline value 2016: 0 ha	Vegetable cultivation (irrigated crops) $\geq$ 600 ha	No consistent values available for vegetable cultivation (irrigated crops). AK states 1,036 ha, the consultant's final report states 355 ha.	Rain-fed cultivation $\geq$ 8,383 ha (supported by the provision of agricultural inputs and other accompanying measures)
(2) Change in pumpkin and sorghum yields on existing areas after rehabilitation (in kg/ha).	Vegetable cultivation: Tomatoes: 21 kg/ha	Yield increase for vegetable cultivation $\geq$ 50% after project completion	Yield increase for rain-fed cultivation of at least 15% (sorghum)	Vegetable cultivation (season 2018-20): Tomatoes: 35t/ha (equivalent to an increase of about 67%)
(3) Number of women with access to irrigated plots	5,437 women	Target value 2017: Increase by at least 25% after commissioning	June 2020: Value is estimated at 5,800 women for the year of AK, which corresponds to an increase of 6.9%.	Value not met (according to AK)
(4) Proportion of valleys rehabilitated with check dams where the groundwater level has stabilized (in %).	Average groundwater depth: 6 m (Tillabéri), 15 m (Tahoua), 3-10 m (Agadez)	Target value 2017: In $>$ 65% of the selected valleys rehabilitated with check dams, the groundwater level is stabilized or increased within the next three years	In at least 70% of the valleys, the groundwater level has increased or has not declined	Average values: 5 m (Tillabéri), 12-15 m (Tahoua), 1.5-8 m (Agadez)

Indicator (1): "Change in cultivated area for irrigated crops and subsequent crops in ha."

According to the information in the AK, the small-scale irrigation area could be expanded by 1,036 ha. However, the data do not match those in the draft version of the impact study available to the evaluation team and the final report of the implementation consultant—both report an area increase of only 5.5% or 355.64 ha. Since there is a lack of information on the calculation method, neither the quality of the data can be assessed nor the cause of the contradictory information in the project documents can be determined.

The AK also assesses the increase in cultivated areas for rain-fed agriculture under this indicator. According to the data from the impact study presented in the AK, 5,267.6 ha and 2,698.2 ha were cultivated with rain-fed agriculture in the agriculturally dominated regions of Tahoua and Tillabéri from 2018 to 2020. This would correspond to an average increase rate of 1.48% of the areas cultivated with rain-fed agriculture in these regions compared to the previous project period. For the Agadez region, whose low agricultural potential is highlighted in the report, an increase of 23.45% in the areas cultivated with rain-fed agriculture is recorded during the same period. With a total of 8,384 ha of additional cultivated area for rain-fed agriculture in all three regions, the target indicator value (2,000 ha) is thus achieved and significantly exceeded.

Indicator (2): "Change in pumpkin and sorghum yields on existing areas after rehabilitation (in kg/ha)."

Indicator 2 shows several changes depending on the project document. Originally focused on increasing the production of pumpkin and sorghum, the formulation in the AK now only mentions a targeted yield increase on existing areas after rehabilitation (through the construction of check dams and the establishment and rehabilitation of small-scale irrigation plots through drilling, wells, pumps, water distribution systems, and fencing). The formulation distinguishes between vegetable cultivation (particularly tomatoes) and crops from rain-fed agriculture (sorghum, millet, Niébé).

The impact study from 2020 reports yield improvements in Tillabéri and Tahoua, particularly in tomato cultivation (with an increase rate of 75.21% in Tillabéri and 84.31% in Tahoua), in potatoes (83% and 36% for Tillabéri and Tahoua), and in onions (22.36% in Tillabéri). Thus, a strong increase was observed in the Tillabéri and Tahoua regions. No yield increases were recorded at the sites in the Agadez region, or they were declining for potatoes. Reasons for the lack of data on yields for onions and tomatoes in Agadez were not mentioned in the report or in the interviews.

Although no yield increases were recorded in Agadez, the yield increases for tomatoes in Tillabéri and Tahoua exceed the target value of 50%. The results of the impact study also show that yields for rain-fed crops improved for all supported crops, except for Niébé in the Agadez region.

Indicator (3): "Number of women with access to irrigated plots"

According to surveys conducted as part of the impact study, there are significant regional differences regarding goal achievement. While in Tahoua and Agadez, the proportion of women with access to irrigated land increased moderately by nearly 6% (from 2,833 women to 2,995) and by 3% (from 932 to 958 women), a reported increase rate of 910% is noted for Tillabéri. Accordingly, the number of women is said to have risen from 1,672 in 2016 to 18,559 in 2020. The impact study does not mention possible reasons for this enormous increase. From the perspective of the evaluation team, it seems most plausible that an error occurred in the impact study when determining the actual value, and a five-digit result was mistakenly reported. This is supported by the fact that in the baseline year 2016, the number of women in the project area in Tillabéri was estimated at 1,672 individuals, which at that time represented 83.5% of the total number of farmers. We therefore assume that the actual value at the time of the survey was 1,859 individuals (instead of 18,559), which would correspond to an increase in the proportion of women by 11.2%. Thus, the number of women with access to irrigated plots in 2020 would be 5,812, representing an average increase of 6.9%. The targeted goal level was therefore not achieved in any of the three regions.

Indicator (4): "Proportion of valleys rehabilitated with check dams where the groundwater level has stabilized"

According to the 2020 impact study, which conducted field observations around the infiltration check dams and interviews with farmers, the groundwater level was stable in about 70% of the valleys rehabilitated with check dams. The target was thus achieved. Some qualitative data from the interviews also indicate a positive trend regarding the stability or even increase of the groundwater level. However, during this mission, it was not possible to conduct comparable measurements to assess the current situation of this indicator.

Contribution to goal achievement

The selection process for the funded measures was implemented according to the design. A total of 1,218 applications were submitted, of which 722 were deemed eligible for funding. Ultimately, 193 individual projects were supported. Thus, demand significantly exceeded supply. The approach was rated very positively by the target groups and committee members in all regions. The communities at the regional and municipal administrative levels were pleased that they could propose new infrastructure projects based on their local development plans. The selection system also appeared transparent, as regional councils participated in the selection committee meetings. According to the AK, the selection committees consisted of representatives from various ministries at the regional level, civil society (including a representative from a women's organization), municipalities, and traditional authorities. The selection of projects was based on technical (suitability of locations), social (land rights, social structures, women's quota), economic (costs per person and hectare, profitability), and ecological criteria (climate-adaptive and soil-protecting effects). Due to political directives, great emphasis was placed on achieving a balanced distribution of measures. Consequently, the selection process was lengthy, as the project itself did not finance the preparation of proposals. Instead, groups had to hire a local office to draft the project proposal after

being selected by the funding agencies. Another challenge was that some groups did not have the capacity to develop their project applications and failed despite support from the project during the selection process.

Based on the evaluation data, PISA can be attributed a positive contribution to the expansion of irrigated cultivation areas in the three target regions (Indicator 1). PISA financed the construction of 22 check dams (14 new check dams, 8 to be rehabilitated) for flood distribution and groundwater storage/increase, as well as the establishment and rehabilitation of a total of 1,036 ha of small-scale irrigation plots (drilling, wells, pumps, water distribution systems, fencing). The measures included various techniques adapted to the location. These included the half-moon technique, check dams, and wells. The half-moon technique captures runoff rainwater in semicircular depressions to enable plant growth in dry regions. Check dams slow down the water flow in riverbeds to allow water to seep into the soil and raise the groundwater level. Wells tap into deep groundwater reserves and secure water supply during the dry season. By combining the use of check dams and wells, communities in regions with irregular rainfall can ensure their water supply, especially during the dry season when other water sources are depleted. These techniques complement each other ideally to sustainably improve water availability. The resulting increased water control and availability upstream and downstream of the check dams has enabled the protection and recovery of land, the expansion of rain-fed cultivation areas in the valleys (8,383 ha), and the irrigated cultivation area (1,036 ha).

At the level of the intervention area, the project's contribution, according to estimates from the impact study, would mean an increase in irrigated areas by 5% compared to the reference situation of 2015-2016. The project documents also report that at the time of the AK, 90% of the newly constructed check dams were protected by erosion control measures and that 87% of the supported cultivation area was used for at least two production cycles. Anecdotal evidence from the focus group interviews conducted in the regions of Tillabéri and Tahoua as part of the EPE also confirms the project's contribution to the expansion of developed land (Indicator 1), the possibility of irrigation at any time of the year, and the resulting opportunity for beneficiaries to increase their production (Indicator 2) and strengthen their resilience. The project documents and interviews also suggest that PISA's contribution to increasing the use of rain-fed crops is plausible, particularly through the project's support for the production and multiplication of seeds in the form of operating capital provided to the user groups.

Furthermore, it is evident that PISA activities, in conjunction with the activities mentioned in the previous paragraph, have contributed to improving production conditions. Although the quantitative data in the reports and the qualitative data from the interviews indicate regional differences in yield increases (which are primarily due to agro-ecological differences between the regions), they still confirm a positive trend following the establishment of small-scale irrigation infrastructure. It is plausible to assume that the erosion control and restoration measures taken on 1,240 ha of land (including protective planting and the establishment of half-moons), the construction of 483 compost facilities, and the financing of seeds, animal feed, and fertilizers have contributed to yield increases.

The impact study and the AK attribute the increase in agricultural yields in the project area also to investment-accompanying measures of the project, particularly the provision of inputs and consulting and training offers. The qualitative data from the focus group discussions particularly confirm the role that the improvement of fertilizers through the project's supported use of compost, storage in shops, and the increase in mobility through access roads plays, thereby reducing prices for food and transportation. Generally, a positive harvest trend is reported among respondents under favorable climatic conditions (the heavy rains in 2024 severely affected many harvests, with significant losses in the project areas). As a preliminary conclusion, it can only be plausibly stated that the yield situation in the project region has improved and that the project measures have contributed to this. It is even more difficult to make statements about income development based on the available data. Since a large part of the harvest in the project region is still used for household self-sufficiency, the higher yields are not necessarily directly associated with higher income but rather with a higher self-sufficiency rate for staple foods and vegetables. In addition to methodological problems in measuring income data, the determination of the income effects of the project is complicated by the fact that the causal relationship between project measures and income increase depends on a variety of internal and external factors related to the conditions of production, processing, and marketing. Important external factors primarily include climatic conditions, which strongly influence yields and thus also incomes (recurring droughts and floods, as well as heavy rainfall in 2020 and 2024, were repeatedly mentioned by the interviewed beneficiaries and have severely impacted yields), groundwater depletion, pest infestations on some plantations, and the condition of the soils. The conditions for production and marketing are also influenced by other economic and institutional factors, such as the management of the *Comités de gestion* and support from the municipalities. Additionally, fuel costs and access to gas, the financing of certain equipment, and the expressed need for more capacity building in the areas of technology, maintenance, marketing, and distribution, as well as for knowledge exchange, were mentioned. Regarding marketing, the presence of sales intermediaries who retain a large portion of the marketing profits was also noted. Other factors, such as the distance

between the production site and the storage, processing, and sales facilities financed by the project (especially in the Agadez region), the limited financial means of some beneficiaries, and the lack of protection for production sites against flooding and sedimentation were also cited as major obstacles.

Although some deficiencies were noted, particularly regarding measures to protect production sites and an increased need for training, the project's efforts to holistically address various dimensions were essential in contributing to the achievement of project goals.

Moreover, the connection between the project activities (related to enhanced control and availability of water above and below the check dams, combating erosion, and restoring soils) and the stabilization of the groundwater level for irrigated agriculture is plausible (Indicator 4). However, due to the lack of current data on groundwater levels in the affected areas, this could not be verified during the evaluation for the year 2024.

Project documents and interviews with KfW officials emphasize that external factors, which can only be partially or not at all influenced by the project, impaired goal achievement. The difficult security situation, particularly in the Tillabéri region, led to numerous delays in execution, such as in the construction and repair of check dams. The outbreak of the COVID-19 pandemic during the implementation period also caused difficulties and delays, particularly in the delivery of equipment due to border closures. Finally, climatic factors (especially drought and severe flooding) led to a deterioration of infrastructure (severe rainfall in 2020) and continue to burden the sustainable use and yields of agricultural land (see chapter on Sustainability).

Quality of implementation

Despite significant delays at the beginning of the project, the quality of implementation is positively assessed in both the project reports and the interviews conducted during the evaluation.

In particular, the participatory, demand-oriented approach that involves stakeholders at all levels was positively evaluated and identified as a success factor. This approach promoted the financing of measures identified based on funding applications from communities and user groups, taking into account the development and land use plans of the municipalities. The evaluation data suggest that this approach, which was innovative in this sector in Niger, was important for testing the implementation of the SPIN strategy in Niger. Furthermore, this way, the beneficiaries' sense of ownership for the projects was fostered and supported by a broad information and awareness campaign among the target groups. The approach also included the mandatory self-contribution of the target group and the establishment of management committees (comité de gestion as part of the accompanying measure), which were considered essential for the institutional setup and sustainability of the subprojects over time.

Despite some difficulties in implementing a new and participatory approach that involves many actors at different levels, the collaboration among stakeholders was generally assessed as good, and the quality of the infrastructure was deemed adequate. The qualitative data from the focus group discussions also indicate a positive assessment of the implementation of the subprojects by the PISA beneficiaries. According to the respondents, the main errors and deficiencies identified in the infrastructure area have been addressed or will be resolved through support in the follow-up project PISA II.

However, the evaluation also identified some deficiencies. These include the limited resources of some farmers and the difficulty in making their own contributions (mentioned in the consultant's final report and in the mid-term evaluation), delays in mobilizing personnel (especially administrative and financial experts and the procurement expert), as well as bureaucratic hurdles that particularly led to delays and a relatively long procurement process. On a technical level, the evaluation mentioned the need for capacity building in some departments (e.g., GIE/GSC). The interviewed stakeholders also pointed out weaknesses in the training offers for beneficiaries, which were not adequately tailored to their needs. A criticism of the training was that it was only partially didactically suited to the specific needs of illiterate individuals.

During the evaluation, the interview partners did not identify any unintended effects. However, as mentioned in the AK, unforeseen positive effects were achieved, such as occasional imitations by agricultural cooperatives that independently established irrigation plots based on the same cultivation model alongside the project-supported sites. The final semi-annual PISA report also notes that efforts were made to develop and purchase seeds at most PPI sites through the farmers' own initiatives.

Rating summary:
A robust assessment of goal achievement at the time of the evaluation is only partially possible due to the lack of current data. The available data primarily come from an impact study financed by project funds in 2020, which, from the perspective of the evaluation team, has methodological deficiencies. According to the information in this

study and based on qualitative assessments from various interview partners, the module goal was partially achieved, although not to the intended extent. Based on the available data, the project can be attributed a positive contribution to goal achievement in the three target regions. Despite minor deficiencies in protecting production sites and the need for training, the holistic approach from increasing production to marketing was a key success factor of the project. Another success factor was the participatory, demand-oriented approach that involved relevant stakeholders at all levels. The quality of project implementation was good. Overall, effectiveness is assessed as moderately successful.

Effectiveness: 3

Efficiency

Production efficiency

The project was planned for a duration of 5 years from 2013 to 2017. However, there were significant delays between the contract signing (November 2013) and the start of implementation (February 2016), which were due to changes in the implementing structure, the increasing differentiation of the implementation structures of the 3N initiative, as well as lengthy bureaucratic processes and coordination loops between the Nigerien Ministry of Agriculture, the implementing organization, and the FC during the international tendering of consulting services.¹⁰ The cumbersome communication with the Prime Minister's office (Cabinet du Premier Ministre) and complex coordination processes with the focal point for decentralization issues also delayed the start. Ultimately, the project was carried out from February 2016 to December 2020. Furthermore, the long bureaucratic processes and coordination loops unnecessarily tied up capacities in the involved organizations, which also partially slowed down implementation.

The total costs of the project amounted to 14.97 million EUR, which is slightly below the estimated total costs of 15.5 million EUR at the project start (by 3.4%). The planned measures were fully implemented, and the targeted outputs were mostly achieved, with some even exceeded. Approximately 56% of the funds were invested in infrastructure, including 39% for small-scale irrigation infrastructure, 11% for marketing-relevant infrastructure, and 6% for erosion control measures. An additional 11% went into consulting and equipping small farmers, as well as studies and detailed planning, 32% into project implementation (construction of office buildings, implementation consultant, personnel and administrative costs, public relations), and 1% into audits and evaluation.¹¹ Thus, the actual administrative costs significantly exceeded the planned size of 20%. The increase to around one-third of the total costs is attributed by project managers to a more extensive use of consultants deemed necessary to minimize the risks arising from the institutional weakness of the Ministry of Agriculture. Interviews confirmed that the support of MAG/EL by the implementation consultant proved effective, especially since it was a project with widely dispersed locations that required more personnel capacity and coordination.

The financial audits conducted by auditors and progress checks by KfW found no indications of misappropriation of funds.

The accompanying measure was financed 97% by grant funds from the FC, totaling 14.528 million EUR, minus reimbursements of 8,513 EUR. The Nigerien state contributed 0.153 million EUR in own funds to cover the increased personnel and administrative costs resulting from the delayed project start. The self-contributions of the target group, which were provided as planned within the framework of the construction investments, amount to a total of 0.285 million EUR (originally estimated at 0.5 million EUR). The self-contributions in the form of user contributions varied between 5% per structure and 50% for additional structures (e.g., fencing). Despite some difficulties, the mobilization of user contributions from small farmers and agricultural cooperatives appears to have been satisfactory.

Based on document analysis and interviews, it can be concluded that the outputs of the project were implemented in a timely manner and within an appropriate economic framework. The funds for investments and consulting services amounted to 10.4 million EUR against a rain-fed cultivation area of 8,383 ha and an irrigated

¹⁰ Originally, the project start was scheduled for immediately after the signing of the financing agreement between the Nigerien Ministry of Planning and the FC at the end of 2013. In January 2014, the Nigerien Prime Minister's office submitted a request to change the implementing structure of the project. The Prime Minister's office was to remain a strategic partner, but the responsibility and technical implementation were to be transferred to the Ministry of Agriculture (MAG/EL). This change was approved by the BMZ in July 2014, and the necessary contract adjustments were signed in August 2014. The change initially postponed the implementation start to the second quarter of 2015. Further delays occurred.

¹¹ Minor discrepancies in the information in the AK: Project management and operation were partially reported as 30% and partially as 32%. The reason for the discrepancies could not be clarified during the evaluation.

area of 1,036 ha. This results in costs of 1,100 EUR/ha, a very cost-efficient factor compared to similar projects. **Allocation efficiency**

Overall, the project demonstrates positive allocation efficiency. The measures for water control and availability have led to a more efficient use of water resources. This enabled an expansion of agricultural usable areas (8,383 ha of rain-fed agriculture and 1,036 ha of irrigated land) as well as additional cultivation cycles, with positive effects on agricultural productivity.

According to interviewed representatives of the FC, the desired effects could not have been achieved more cost-effectively through an alternative approach. The project implementation costs for other comparable projects are similarly high, and while participatory processes may increase costs, they positively impact the sustainability of infrastructure use. It was confirmed that the applied solutions—e.g., half-moon irrigation—were the most technically sensible and resource-efficient solution. The adoption of this technique by other local actors not directly supported by project funds underscores this. The aforementioned shift towards a higher proportion of administrative costs reduced investment funds but was also a justifiable consequence of the implementer's low project administrative experience and ultimately had a positive effect on allocation efficiency.

The recovery and protection of land for irrigated agriculture and pasture indicate an improved condition and allocation of land resources. The high utilization rate of the rehabilitated areas indicated in the project documents (100% for rain-fed agriculture, 80-90% for irrigated areas) shows that project funds are being used efficiently. The equipping of sites with access roads (59%) and marketing-relevant infrastructure (100%) further enhances allocation efficiency by facilitating access to markets and reducing transaction costs. The empowerment of municipalities and user groups for self-responsible management (100% functional management committees) also contributes to allocation efficiency, as local actors are better able to allocate resources according to local needs and conditions. The diversity of cultivated crops (grains, legumes, vegetables, animal feed) indicates an efficient allocation of agricultural resources that considers various market needs and ecological requirements.

However, there are also aspects that indicate potential for improvement in allocation efficiency:

- Unequal distribution of infrastructure: The discrepancy between the complete provision of marketing-relevant infrastructure (100%) and the only partial provision of adequate access roads (59%). The evaluation could not clarify whether and to what extent this affects the usability of the storage facilities.
- Regional differences: The varying management rates of irrigated areas in different regions (90% in Tillabéri and Agadez, 80% in Tahoua) suggest possible regional differences in allocation efficiency.

In summary, the FC module overall demonstrates good allocation efficiency, as it has led to improved use of water and land resources, diversification of agricultural production, and strengthening of local capacities. The high utilization rates of the created infrastructure and cultivated areas underscore this positive assessment. Nevertheless, there is room for further improvements, particularly regarding the even distribution of infrastructure investments and the alignment of regional differences in resource use. **Rating summary:** During the implementation period, there were no major delays that would have affected production efficiency. The process before the start of implementation, however, was marked by delays due to extensive coordination. Overall, the costs were kept within the planned framework, and production efficiency largely meets expectations. The same applies to allocation efficiency. In summary, efficiency can therefore be assessed as successful.

Efficiency: 2

Impact

Overarching (intended) developmental changes

The adjusted goal at the impact level within the framework of the EPE is: "Food security is sustainably strengthened in the supported areas."¹²

Regarding the assessment, the same limitations apply as for the module target indicators (see Effectiveness). The project documents did not provide quantitative information on goal achievement. The AK refers to national statistics and surveys or a representative survey of farmers as a data source, without specifying concrete values. Reliable secondary data on the development of the food situation in Niger and the project regions are not available. The same applies to data on the self-sufficiency rate for staple foods and vegetables (Indicator 1) and the intended use of small-scale irrigation areas (Indicator 2).

The achievement of the goal at the impact level can be summarized as follows:

Indicator	Status MV	Target Value according to MV	Actual Value at AK	Actual Value at EPE
(1) Change in self-sufficiency rate for staple foods and vegetables	Increase in self-sufficiency rate three years after commissioning	n.a.	n.a.	Not determinable due to lack of data
(2) Proportion of small-scale irrigation areas used as intended	> 80% three years after utilization	0	n.a.	Value met (according to qualitative statements)

Contribution to overarching (intended) developmental changes

Due to the lack of primary and secondary data on production and yield levels, the share of agricultural products used for self-consumption and marketed, and income development from agricultural activities, the contribution of the project to overarching development policy objectives cannot be determined either quantitatively or qualitatively. Collecting such data would require a comprehensive field mission with visits to all project sites in the three regions, which was not possible in the context of this evaluation, also due to the tense security situation in the country.

Current studies for the period 2023/2024 predict a decline in extreme poverty rates despite trade restrictions (due to the closure of the trade border with Benin, which led to an increase in food prices) and higher inflation, due to positive agricultural growth. World Bank forecasts also indicate GDP growth, particularly supported by oil production and oil exports, which is also attributed to improvements in agricultural production following the expansion of irrigated areas.¹³ According to World Bank estimates, however, 13.1% of the population is still affected by severe food insecurity. Furthermore, the floods in August 2024 caused hundreds of deaths, destroyed thousands of homes, and affected irrigation infrastructure and crops.

Based on these facts, the available information on module target achievement for the year 2020/2021 (see Effectiveness), and insights gained from interviews and focus group discussions, it can only be stated that a positive contribution of the project to increasing the self-sufficiency rate for staple foods and thus also to food security can be plausibly assumed. More substantiated statements cannot be made based on the available data.

The PISA project began against the backdrop of a desired methodological shift in Niger towards an approach that is more focused on the expansion of irrigated areas and integrates access to irrigated land for vulnerable groups in the SPIN strategy and the 3N initiative. As confirmed by the project implementer, the PISA project was the first initiative in Niger to enable the implementation of the SPIN strategy. The project was pioneering in promoting

¹² At the time of the review, the program goal at the impact level was adopted. This stated: "The contribution of Nigerien agriculture to economic growth and food security is sustainably improved." Given an investment volume of around EUR 15 million and the fact that the target group primarily produces for self-consumption, the evaluation team did not expect a noticeable effect on economic growth. Due to the precarious data situation, reliable statements about the contribution of Nigerien agriculture to economic growth would not have been possible anyway.

¹³ Worldbank, Profil du Niger.

small-scale irrigation for the country and allowed the Nigerien side to test central elements, such as the participatory and demand-oriented funding approach, and to learn from the insights gained for further funding measures. According to the respondents of the evaluation, these insights and the approach used in PISA served as a model for other projects at the national level, including those supported by other external donors such as the Swiss development cooperation. The insights gained could also be used for the evaluation and revision of the strategy in 2025. Thus, the project has created structural effects and contributed to a paradigm shift. The multidimensional approach of the project, which considers production, processing, and marketing aspects, can represent a first step from subsistence farming to marketing.

Contribution to overarching (unintended) developmental changes

In the context of the EPE, no contribution of the project to unintended development policy changes could be identified. Neither the project managers nor the user communities indicated any unintended changes.

Rating summary: The findings indicate that the project has contributed to higher yields and improved availability of staple foods, which should positively impact food security in the supported areas. Unfortunately, due to the precarious data situation, a well-founded assessment of goal achievement at the impact level is not possible. Based on the discussions held and considering the prevailing framework conditions, we do not consider a full achievement of the goals to be plausible. However, it can be said with certainty that the implementation of PISA I, with its participatory and demand-oriented approach, provided an important foundation for testing key principles of the SPIN strategy in the small-scale irrigation sector in Niger. This has led to valuable insights and initial approaches for access to irrigated land for vulnerable groups within the framework of the SPIN strategy and the 3N initiative. As a pioneering project, PISA thus contributed to a paradigm shift that remains relevant in light of climate change and the importance of irrigation for the predominantly rain-dependent agriculture in Niger. Overall, the impact is assessed as moderately successful.

Impact: 3

Sustainability *Capacities of persons concerned*

The contextual conditions in Niger have significantly deteriorated since the completion of the project. On July 26, 2023, the Nigerien military detained President Mohamed Bazoum and declared him removed from office. The economic sanctions imposed by the Economic Community of West African States (ECOWAS) following the military coup have led to a further worsening of the food situation and an increase in inflation in the country. These developments burden the overall living situation in Niger and are likely to affect the target group of the project.

Regarding the capacities of the target group, it can be noted that they still largely live in poverty and that agricultural production continues to be their livelihood. The financed infrastructure remains functional several years after commissioning, although functionality has been affected in some places by severe weather events. Trained management committees and user groups possess the necessary knowledge and skills to carry out maintenance and repair work.

The military coup has significantly weakened local governance. The removal of elected mayors and the appointment of security officials, who often have little experience with local administration, have impaired the municipalities' ability to act, according to interviewed FC staff. The already limited financial resources of the municipalities have further shrunk, which could complicate necessary maintenance and repair measures for the projects in the future, potentially affecting sustainability. ***Contribution to support for sustainable capacities***

The project strengthened the capacities of the involved actors and user communities through investment and advisory measures that expanded the production and marketing opportunities for the target group. The application-based, participatory process, complemented by a mandatory self-contribution, motivates user groups to actively engage in the management and maintenance of the infrastructure even beyond the project's end. Additionally, the active participation of the target group and the strengthening of local associations and cooperatives significantly contribute to the social and economic resilience of the Nigerien population.

Since the irrigation systems are owned by the user groups and form the basis of their production and livelihood, there is a fundamental self-interest in their maintenance and upkeep. To ensure the long-term operation of the facilities, farmers and user groups, as well as technical services and local authorities, received advice and training in the operation, technical maintenance, and upkeep of the irrigation systems and marketing-relevant infrastructure. Furthermore, management committees were established and trained for the proper administration and

maintenance of the financed structures. Although the advisory approach of the Direction Générale de l'Agriculture (DGA), a unit of the Ministry of Agriculture, was often formal and technical, it provided farmers with a solid, application-oriented complement to their previous knowledge. This strengthened technical competencies, particularly in the areas of plant protection and fertilization.

The maintenance and functionality of the established structures at the local level were generally rated as satisfactory in interviews conducted as part of the evaluation, although some infrastructures were affected by flooding. The established management committees are largely active and fulfill their tasks. Focus group discussions also confirmed that there is a maintenance plan for the infrastructure by the management committees, and in the meantime, some defective pumps have been replaced. However, there is only irregular supply of necessary spare parts and low-quality fuel. Additionally, the limited capacity building at repair workshops was noted, which complicates the long-term functionality of the infrastructure. Another challenge is that the structures of many of these cooperatives are supported by only a few active members and still require support from local administration.

As part of the project, the implementing unit (Unité de Gestion du Projet, UGP) was supported by an international implementation consultant. However, the implementer's efforts to build sustainable capacities were hindered by high staff turnover. Even during the project duration, the partner on-site faced frequent personnel changes. The situation has worsened due to the coup. This poses additional challenges to the medium- and long-term sustainability of the built capacities and requires stronger support and training to close the gaps in knowledge and skills of local officials and ensure the long-term functionality of the projects. ***Durability of effects over time***

As outlined in the previous section, the established infrastructure remains largely intact, and measures have been taken within the project to ensure the permanent operation of the facilities.

However, the greatest risks to the durability of the effects are external factors that cannot be influenced by the project, foremost the current political situation. Since the military coup, the BMZ has temporarily suspended bilateral development cooperation with the Nigerien central government. Ongoing bilateral TC and FC projects, including the follow-up project PISA II of the evaluated PISA I project, are affected. Other international donors have also temporarily restricted cooperation with the Nigerien government. This results in a lack of significant funds to secure achieved successes and further advance the expansion of small-scale irrigation. In January 2024, Niger, together with Burkina Faso and Mali, announced its withdrawal from ECOWAS, which is set to take effect in early 2025. This could further destabilize the political situation in the country and the entire region and further restrict food import opportunities.

Additionally, extreme weather events such as droughts or floods, which are becoming more frequent and intense due to climate change, pose risks to the sustainability of project results. While flood and sedimentation protection measures have been implemented at just under half of the sites, comprehensive implementation was not possible due to limited time and financial resources, as well as a lack of detailed studies. In particular, the century flood of 2020, which caused damage to small-scale irrigation systems, highlights the vulnerability of the infrastructure to environmental disasters. The analysis of satellite images conducted as part of the AK in November 2021 showed that the small-scale irrigation systems at the Korja Gourma site were partially destroyed by the severe flooding. Several other project sites also reported minor flood damage. In interviews, FC staff confirmed that some of these infrastructures were restored as part of the second phase (PISA II), yet the long-term sustainability remains uncertain in light of the deteriorating climate. In August and September 2024, exceptionally heavy rainfall again caused severe flooding in Niger, Mali, and Nigeria. This disaster led to the destruction of homes, health facilities, water supply and sewage systems, schools, roads, and extensive agricultural land. Consequently, there was also a loss of seeds and dramatic crop failures, as confirmed by individuals from the user groups during focus group discussions. In Niger, over one million people were directly affected by the floods. There are also significant risks to public health: limited access to clean water and sanitation facilities increases the risk of the spread of waterborne diseases such as cholera.¹⁴

Despite ongoing efforts to restore and rehabilitate the infrastructure, the long-term impact of the project heavily depends on external framework conditions. The repeated climatic extremes, economic challenges, and political instability complicate the sustainable continuation of measures in the follow-up project and the assurance of long-term yields. The coup and the political tensions that have led to economic and social crises may further weaken the resilience of the target group as well as the institutional and personnel capacity of the partners. In an environment characterized by high uncertainty, securing the positive effects of previous measures without sustainable

¹⁴ European Commission (2024), EU provides €5.4 million in response to floods in the Sahel and Lake Chad regions. Online: https://civil-protection-humanitarian-aid.ec.europa.eu/news-stories/news/eu-provides-eu54-million-response-floods-sahel-and-lake-chad-regions-2024-09-20_en.

and stable political, economic, and climatic framework conditions is challenging. However, the project has succeeded in strengthening the resilience of the local population to these challenges. **Rating summary:**

PISA I has strengthened the capacities of user groups through targeted training and the establishment of management committees and cooperatives, enabling extensive maintenance of the infrastructure. An application-based selection process and mandatory self-contribution promoted acceptance and engagement from the target groups to maintain their facilities in the long term. However, challenges exist due to inadequate spare parts supply and limited repair capacities, which may affect the sustainability of the infrastructures. The strengthened capacities at the implementer are not sustainable in the long term due to high staff turnover. Since the completion of the project, the political, economic, and climatic framework conditions have significantly deteriorated, further increasing the already high risks to the sustainability of the achieved results.

Sustainability: 3

Overall rating: 3

The FC project "Rural Development/Productive Agriculture Program" has high relevance both from a historical and current perspective. The core problem existing at the time of conception was correctly identified, and the funded measures were adapted to regional conditions. The alignment with the goals and strategies of the partner country (3N, SPIN) as well as German development cooperation in Niger was also present. Furthermore, the project was closely aligned with the needs of the local population through its participatory approach and transparent selection process for the measures to be funded.

The project meaningfully integrated into the FC portfolio in Niger. Despite close collaboration with TC, the synergy potentials between TC and FC could not be fully exploited. Regarding external coherence, KfW played an important role in financing small-scale irrigation and implementing the SPIN strategy. Despite a significantly delayed project start, the project was implemented efficiently.

Due to a very limited data situation, no reliable conclusions can be drawn about the effects of the measures implemented by the project at the outcome and impact levels. However, the available data suggest improved availability of staple foods and increased yields through the expansion of irrigated areas, with potentially positive effects on food security in the supported areas. In addition to the close involvement of the target group, the holistic, multidimensional approach of the project is a significant strength: the measures support the production process from cultivation to marketing. The project was the first of its kind to promote small-scale irrigation in line with the Nigerien SPIN strategy. The approach was later replicated by other external donors, hence creating structural effects.

Moreover, it has succeeded in strengthening production and marketing capacities at the project sites. Sustainable maintenance is not guaranteed due to inadequate spare parts supply and limited repair capacities. The precarious security situation, political and economic framework conditions, and vulnerability to extreme weather events threaten the long-term sustainability of project results. Overall, the project is assessed as somewhat successful.

Contributions to Agenda 2030

The FC project contributed to the goals of the 2030 Agenda, addressing several Sustainable Development Goals (SDGs). The main focus was on SDG 6, which aims for long-term water availability and efficient water use through water resource management. In particular, the techniques applied for the introduction of small-scale irrigation systems in the project regions contributed to more efficient water use. In the long term, these measures should lead to increased and diversified agricultural production (SDG 1 "No Poverty," SDG 2 "Zero Hunger") and enhance the resilience of particularly poor population groups in the context of climate change (SDG 13 "Climate Action"). Furthermore, the project sought collaboration with women's organizations and strongly promoted them in one region, thereby making a regional contribution to SDG 5 "Gender Equality."

Universal applicability, shared responsibility, and accountability: The project aligned well with the goals of the national government and German-Nigerien cooperation, promoting the implementation of the 3N and SPIN strategies in the country.

Interplay of ecological, economic, and social development: The project aimed to connect the three development dimensions. The project lies at the intersection of the three dimensions through its focus on sustainable, inclusive agriculture, income security, and poverty reduction.

Inclusivity/Leave No One Behind: The project enabled the participation and involvement of the target group in important decision-making processes and promoted self-responsibility in the use of water resources. The project also aimed to specifically support disadvantaged individuals or groups, particularly women. There are no indications of negative impacts on specific (vulnerable) groups. The project adheres to the principle of the 2030 Agenda "Leave No One Behind."

Project specific strengths/weaknesses and general conclusions/lessons learned

Strengths and weaknesses of the project included:

- The central problem of inadequate food security, increasing soil degradation, and worsening climate disasters was correctly identified. The measures aimed at utilizing limited water resources more efficiently and increasing yields, which are a sensible response to this issue.
- The participatory and demand-oriented approach allowed for greater ownership among beneficiaries, needs-based implementation, and a targeted focus on the beneficiaries.
- The approach was holistic in that it promoted sustainable improvements in production conditions, processing options, transportation, and storage.
- There were imitations by agricultural cooperatives that independently established irrigation plots based on the project model.
- The project significantly supported the Nigerien government in testing the national strategy for promoting small-scale irrigation and was able to create structural effects through the replication of the project approach by other donors.
- Long-term capacity building beyond the project end remains necessary – both for sustainable resource use and maintenance of infrastructure, as well as for the development, preservation, processing, and marketing of agricultural products.
- Potential synergies with TC for improved support offerings and capacity building for target groups remained untapped.
- There is a high risk for the long-term effectiveness and sustainability of the achieved results due to changes in the framework conditions (e.g., political instability, security risks, climate change, and economic fluctuations), which, however, lie outside the project's influence.

General conclusions and lessons learned:

- Participatory, demand-oriented funding approaches in small-scale agricultural irrigation, where beneficiaries must make an appropriate contribution, have the potential for needs-based support, high acceptance, ownership, and consequently sustainability.
- The establishment and targeted training of management committees for the operation, maintenance, and management of community-shared infrastructure can strengthen the sustainability of investments.
- In contexts with a high proportion of illiterate individuals in the target group, increased use of visual aids, practical demonstrations, and oral explanations is recommended for a needs-oriented training offer.
- In demand-based support for small-scale measures in agriculture, a certain spatial clustering of supported individual measures can be sensible from the perspectives of efficiency, effectiveness, and sustainability.

Evaluation approach and methodology

Methodology of ex post evaluation

Ex post evaluations follow the approach of a rapid appraisal, i.e. a data-supported, qualitative contribution analysis resulting in an expert opinion. Effects are attributed to the project considering plausibilities, based on thorough analysis of documents, facts and impressions. This includes – if possible – the use of advanced technology (e.g. satellite imagery, online interviews, geocoding). There is a follow-up on possible conflicting information, attempting to eliminate inconsistencies and to base the rating on information that – to the extent possible – has been confirmed through different sources (triangulation).

Documents:

Report of the final control, final report of the implementation consultant, strategy papers, scientific studies, module proposal, monthly and quarterly reports of the consultant, mid-term evaluation, evaluation study.

Data sources and tools of analysis:

Household

Interview partners:

Usergroups, executing agency of project, FC stakeholders, TC stakeholders, external consulting firm

The analysis of project effects is based on the theory of change defined at project appraisal and documented within the impact matrix, which may be updated for the purposes of the evaluation.

The evaluation report argues which factors contributed to the observed effects and why – as well as the probable extent of the project's contribution (contribution analysis). The context of the project is taken into account concerning its influence on the results.

The conclusions are put into perspective regarding the availability and accuracy of the available data.

The framework of the evaluation is established by the evaluation conception.

This method provides a balance between cost and usefulness, generating evaluation findings with appropriate effort and expense. Also, it allows for a systematic success rating across the FC projects. Thus, an isolated ex post evaluation cannot fulfil the requirements of a scientific assessment in the sense of a strict causality analysis.

Following aspects caused limitations for the evaluation::

The evaluation was significantly limited by several key factors. First, the fragile context and political situation in the project country posed a challenge. These conditions severely hindered access to information and certain regions, which affected comprehensive data collection. Second, the overall data situation can be described as inadequate, particularly regarding the availability and quality of relevant data and the possibility of validating existing information. Detailed analyses were therefore only very limited. Furthermore, personnel changes within the involved organizations/companies led to a loss of knowledge and continuity, which further complicated data collection and the validation of information. The focus group discussions and interviews conducted as part of the evaluation were also coordinated by staff from the follow-up project, making it impossible to fully ensure an independent selection of interview partners. For these reasons, the present evaluation partially relies on anecdotal evidence that could not be validated by other data sources. Data collection was conducted on-site by local consultants (2 focus group discussions with 10-15 participants each from user groups in Tahoua and Agadez, as well as telephone interviews with 10 individuals from Tillabéri and Agadez), monitoring data from partners, GPS data from project documents, data from literature, and qualitative interviews.

Rating methodology

Projects are rated on a six-point scale for each of the OECD DAC criteria. The scale is as follows:

- Level 1** very successful: result that clearly exceeds expectations
- Level 2** successful: fully in line with expectations and without any significant shortcoming
- Level 3** moderately successful: project falls short of expectations, but the positive results dominate
- Level 4** moderately unsuccessful: significantly below expectations, with negative results dominating despite discernible positive results.
- Level 5** unsuccessful: despite some positive partial results, the negative results clearly dominate
- Level 6** highly unsuccessful: the project has no impact or the situation has actually deteriorated

The overall rating on the six-point-scale is compiled by weighting all six 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 ("impact") and the sustainability are rated at least "moderately successful" (level 3).

The annex to this report is available upon request.

About this publication

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