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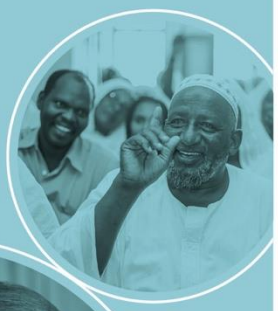

Central Project Evaluation

Support of the National Program for Sustainable Small-Scale Irrigation in Mali

PN 2016.2036.8

Evaluation Report

On behalf of GIZ by ICON-Institut GmbH

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The Evaluation Unit commissioned external independent evaluators to conduct the evaluation. The evaluation report was written by these external evaluators. All opinions and assessments expressed in the report are those of the authors.

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Abbreviations

BMZ	German Federal Ministry for Economic Cooperation and Development
CNOS	Comité National d'Orientation et de Suivi,
CTRC	Comités Techniques Régionaux de Coordination
DAC	Development Assistance Committee
DMS	GIZ data-management system
DNA	Direction Nationale de l'Agriculture
DNGR	Direction Nationale du Génie Rural
DRA	Direction Régionale de l'Agriculture
DRGR	Direction Régionale du Génie Rural
EU	European Union
GIZ	Gesellschaft für Internationale Zusammenarbeit GmbH
FC	coopération financière/financial cooperation
FBS	farmer business school
FFS	farmer field school
HF	field of activity (Handlungsfeld)
IPRO	Terme générique regroupant les Projets d'Irrigation de Proximité
IPRODI	Projets d'Irrigation de Proximité dans le Delta Intérieur du Niger
IRRIGAR	Initiative de Renforcement de la Résilience par l'Irrigation et la Gestion Appropriée des Ressources
KfW	Kreditanstalt für Wiederaufbau
MSME	micro, small and medium enterprises
OECD	Organisation for Economic Development
PARIZON	Projet d'appui aux acteurs pour le développement durable de la chaîne de valeur riz dans la zone de l'Office du Niger
PASSIP	Programme d'Appui au Sous-Secteur de l'Irrigation de Proximité
PPR	Project Progress Report
PNIP	Programme National d'Irrigation de Proximité / National Small-Scale Irrigation Programme
PNPBBF	Programme National des Petits Barrages et Bas-Fonds
ProGao	Employment promotion in the Gao region through supporting the vegetable value chain and livestock farming'
ProKayes	Reintegration and promotion of employment of young adults on the Kayes region within the sectors of small-scale irrigation agriculture and fishpond aquaculture
PV	programme proposal (Programmvorschlag)
REAGIR	REnforcement de l'AGriculture Irriguée
SEWOH	Sonderinitiative 'Eine Welt ohne Hunger' / Special Initiative 'One world – no hunger'
SRI	system of rice intensification
TC	cooperation technique/technical cooperation
ToC	Theory of Change
ToR	Terms of Reference
UNDP	United Nations Development Programme

The Project at a Glance

Mali, West Africa: ‘Support of the National Programme for Sustainable Small-Scale Irrigation’
(PN 2016.2036.8)

Project number:	2016.2036.8
Creditor Reporting System Code (CRS code):	Agricultural policy and administration
Project goal:	The rural population being engaged in small-scale irrigation improves its economic and nutritional situation
Project term:	01.01.2017 – 30.06.2019
Project volume:	EUR 28,674,118, including EUR 6.6 million from EU & EUR 10.4 million from Canada
Commissioning body:	German Federal Ministry for Economic Cooperation and Development (BMZ)
Lead executing agency/agencies:	Ministry of Agriculture
Implementing organisations (in the partner country):	The National Department for Rural Engineering (Direction Nationale du Génie Rural, DNGR) and its regional structures
Other development organisations involved:	EU and Canada (delegated cooperation)
Target groups:	Smallholders and micro-entrepreneurs of both genders in the processing sector
Organisational Unit within GIZ (OE)	1100/0820
Consulting	ICON-INSTITUT GmbH

Summary

Description of the project

The object of the evaluation is the technical cooperation project 'Support to the Sub-Sector of Small-scale Irrigation (PASSIP) in Mali' (PN 2016.2036.8), carried out by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) on behalf of the Federal Ministry for Economic Cooperation and Development (Bundesministerium für Wirtschaftliche Zusammenarbeit und Entwicklung, BMZ) and with co-financing from the EU and the Government of Canada.

The project has been supporting the Malian Ministry of Agriculture since 2008. Its third phase started in January 2017 with a total budget of EUR 28.7 million, as part of a joint cooperation with KfW lasting until June 2019. The project incorporated two delegated cooperation agreements with the EU (EUR 6.6 million)[1] and Canada (EUR 10.4 million)[2] with the purpose (outcome) of improving the economic and nutritional situation of 29,000 small-scale irrigation farmers.[3]

The objective of the Technical Cooperation (TC) module under the joint programme proposal (Programmvorschlag – PV) with the financial cooperation by KfW is: 'The rural population engaged in small-scale irrigation improves their economic and nutritional situation'.

Evaluation design

The mid-term evaluation refers to PASSIP III (overall project period January 2017 – June 2019). The evaluation took into account project progress and achievements up to May 2018. Previous implementation phases were also considered by analysing the results of the evaluation of June 2016 (GIZ, 2016c). Severe security problems and deteriorating political and institutional conditions characterise the environment in which the project was implemented and put limitations on the evaluation and the field mission.

The project was assessed in view of the OECD-DAC evaluation criteria: relevance, effectiveness, impact, efficiency and sustainability. The analysis questions from the GIZ standard evaluation matrix were applied to ensure comparability. The evaluation team also included the project's achievements towards additional criteria for German bilateral cooperation with regard to coordination, coherence and complementarity, especially in the context of SEWOH projects (Sonderinitiative 'Eine Welt ohne Hunger' / Special Initiative 'One world – no hunger'). A contribution analysis was carried out for key hypotheses of the theory of change (ToC) for the criteria 'effectiveness' and 'impact'.

Relevance was assessed by analysing the different planning documents, result matrices and logical frameworks.

The assessment of effectiveness and impact was mainly based on the first GIZ-PASSIP Project Progress Report (GIZ-PASSIP, 2018b). Additional evidence was gathered from more detailed information provided by the project team. Only limited first-hand information regarding the beneficiaries and the target group could be retrieved from field visits due to the security situation and travel restrictions in Mali.[4] The Results Model of PASSIP, visually depicting the chosen strategy, intended change processes, results logic, and the relations

[1] 'Convention de Délégation entre la Commission Européenne et la GIZ' (IRRIGAR) (GIZ, 2014b) – For the present PASSIP project phase, the agreement foresees EU funds of EUR 3.7 million.
[2] Agreement on Delegated Cooperation: Canada–GIZ' (REAGIR) (GIZ, 2014a).
[3] See also Results Matrix (GIZ 2018a).
[4] Only two 'older' irrigation schemes in Sikasso and Koulikoro regions could be visited. None of the 149 new schemes of the ongoing project could be visited.

between the required changes provided the basis for the project logic. Consequently, the analysis of effects and impacts was carried out based on the documentation made available by GIZ, including the GIZ TC-Module Offer to the BMZ (GIZ, 2016d), the updated Results Matrix (GIZ-PASSIP, 2018a), and the GIZ PASSIP Progress Report (PPR) (GIZ-PASSIP, 2018b). Additionally, semi-structured interviews and group meetings were conducted with relevant counterpart institutions, project staff, NGOs, consultants, donor agencies and other related institutions, such as KfW, the European Union (EU), the embassies of Canada and Germany, and other actors.

Efficiency was partially assessed by using the Excel efficiency tool provided by the GIZ Evaluation Unit. The tool, however, seems to be more appropriate for projects with balanced fund allocation for outputs and SMART indicators, and revealed some difficulties in the application within the context of the rather complex PASSIP project structure, with two delegated cooperation agreements and budget allocation deriving from both contracts.

As sustainability could not be checked directly on site at the level of the target group, considerations were made on the basis of the results already being achieved by predecessor phases or likely to be achieved by the end of the project. Institutional sustainability was assessed based on numerous discussions with project members and staff of the Direction Nationale du Génie Rural (DNGR), as well as representatives of other donors.

For some output indicators, results would be available only after the end of the term of the evaluation. The evaluation team consulted the comprehensive operation plan (GIZ-PASSIP, 2017a), the Project Progress Report (GIZ-PASSIP, 2018b) and other documents to assess the broad and interrelated fields of activity that became expanded through co-financing from EU and Canada.

The collection of empirical data through multiple participatory and qualitative methods ensured a triangulation of information. This allowed the rating of the different dimensions for the five criteria.

Results of the evaluation

The evaluation of PASSIP according to the five OECD-DAC criteria can be summarised as follows:

Relevance
The project fitted well with SDG goals 1 and 2, and with the BMZ country and rural development strategy, focal areas for bilateral cooperation and Malian development strategy for rural and agricultural development and for the irrigation sector in Mali. The multi-layer design and approach allowed for interventions in various fields to increase economic incomes and improve the nutritional situation of beneficiaries, although there might be some limitations in reaching the whole of the target group. The existence of two delegated cooperation agreements, as well as the need to subsequently incorporate additional results regarding job creation (GIZ Change Offers from 2017), posed challenges to the project in terms of project design and realistic intervention strategy.

Effectiveness
Overall project effectiveness was difficult to assess due to the various interventions that are partly linked to other projects, the copious target group, and lack of hard data. There was evidence of improvements in different aspects, such as considerable improvements in yields and diversification of production, but not comprising all indicators.

PASSIP was to commence its TC activities at farm level once the irrigation scheme had been installed through the interlinked financial cooperation (FC) intervention (KfW) as outlined in the (Joint) Programme Offer to BMZ (KfW-GIZ, 2013). Consequently, subsequent effects of the TC-module were projected to take several years to occur, implying that PASSIP would be unable to achieve widespread results on those KfW financed irrigation

schemes within its three-year lifespan. Contributions of PASSIP III have been delivered, but it had to be accepted that only a fraction of the schemes established within the framework of the FC-module co-financed by the EU and Canada would be successfully 'valorised' by the end of the project. Even those irrigation farmers who did receive support from previous PASSIP phases[5] were still being attended by PASSIP III, indicating that the time-frame had been unrealistic, and that the project intervention strategy was not very effective. Factors such as a high rate of illiteracy, low funding capacities, difficult market access, etc. do slow down development processes.

The awareness of the need to reach the planned results and the project outcome by the end of the present phase was neither firmly anchored within project staff nor at the counterpart authority (DNGR). Work with target groups was mainly conducted by subcontractors (NGOs)[6] and partly by government extension workers. There were no detailed monitoring records for each of the 79 supported irrigation schemes (total target 149) and households to indicate the individually planned activities at each scheme or the envisaged and achieved results. To transfer learning experience to intermediaries and farmers directly, the project had developed a series of learning modules.

Different planning and implementation periods of other related projects, in particular the attached SEWOH projects, posed challenges for cooperation and leverage of synergies. The PASSIP management was making additional efforts, however, to allow for an appropriate coordination of these projects with PASSIP and shared learning effects.

Impact

The combination of project interventions, incentives for introducing new agricultural products, production and processing methods, and capacity-building measures on different levels was meant to contribute to improving the economic situation of farmers, to stabilising long-term production capacities of small-scale irrigation schemes, and to improving the target group's nutritional bases (availability and quality of food, food health) in the long run. However, although inputs were being provided by the project to demonstration farmers for demonstration purposes, the evaluation team was concerned that farmers might gradually understand the provision of inputs provided as a just payment for cooperation with PASSIP. Whatever impacts the project would attempt to achieve in the future, new farmers might expect to receive the same treatment. In terms of which advisory services, approaches, methods and concepts of the project were already anchored or institutionalised in the partner system, there was much appreciation of the project's achievements at target group and local level. The evaluation team, however, had some doubts about the institutionalisation of the National Small-Scale Irrigation Programme / Programme National d'Irrigation de Proximité (PNIP) as a strategic framework at national level.

The PASSIP III project, in general terms, contributed to long-term results and impacts, but due to the short evaluation period, most of the envisaged impact goals were not yet measurable, visible or documented. The Joint Programme had not appropriately planned and designed the time dimension between the FC-module and the TC-module in order to generate the promised impacts during the present BMZ-commissioned phase.

Efficiency

In general terms, fund distribution to the different outputs seemed to be in accordance with the needs identified in the operational planning and commitments of the project, especially by the EU and the government of Canada within the context of both delegated co-financing agreements. The distribution of costs in relation to output seemed appropriate, as the output with the most funds allocated made the most important contribution to the project outcome. It might be a matter of discussion whether or not service agreements to train local farmers and committees were the right way to build capacity, but it was convincingly explained that there were

[5] In particular, PASSIP II since 2014/2015.
[6] The so-called 'faire-faire' is an approach that compensates for the heavily reduced government extension services (due to the World Bank induced structural reform process and privatisation of government services).

no alternatives.

The number of project staff seemed high, even under the specific circumstances of fragility and difficult conditions under which the project was operating.

Little attention had been paid at the planning stage to possible interactions or even synergies between PASSIP (TC) and the FC-module implemented by KfW. Interactions or synergies with projects of other donors in the sector (other than the KfW FC-module) had not been considered sufficiently at the planning stage of PASSIP III. During implementation, PASSIP III exploited the donors' coordination group (Groupe Thématique Economie Agricole et Rural (GT EAR) and Sous-Groupe Thématique (SGT) Irrigation) for exchange about sector-relevant interventions, for information sharing and for harmonisation of efforts.

The evaluation team rated the allocation efficiency as limited, comparing the outflow of funds with the measurable results achieved so far. Overall, the efficiency tool (the version at that time) had some limitations regarding applicability to complex projects with co-financing, therefore the results should not be overvalued.

Sustainability
According to interviews and field visits conducted, there was no immediate relation between PASSIP staff and services and the irrigation schemes in various project regions at household level. There were indications from estimated figures that farmers were aware of yield increases generated on their irrigation plots as a result of the project. The provision of farm inputs and fertilizers – although also promoted by the government – contributed to dependence of farmers on PASSIP service providers and could be seen as a risk factor to be taken into account in terms of sustainable development of the irrigation sector. The infrastructure financed under the FC-module would most likely continue, in spite of some necessary rehabilitation works; qualitative data provided hints that small-scale irrigation farmers were internalising maintenance works for irrigation schemes as well as protection of soil resources. Institutional sustainability was considered rather critical as services and obligations of the Direction Nationale de l'Agriculture (DNA) and DNGR staff were financed by PASSIP in the form of allowances, per diems, travel cost, etc, which diminished prospects for institutional sustainability of the extension service under the responsibility of the Ministry of Agriculture.

Criterion	**Score**	**Rating**
Relevance	86 points	*Successful*
Effectiveness	75 points	*Rather successful*
Impact	80 points	*Rather successful*
Efficiency	67 points	*Rather successful*
Sustainability	73 points	*Rather successful*
Overall score and rating for all criteria	Average score of all criteria (sum divided by 5, max. 100 points see below) **76.2 points**	***Rather successful***

100-point-scale	6-level-scale (Rating)
92–100	Level 1 = very successful
81–91	Level 2 = successful
67–80	Level 3 = rather successful
50–66	Level 4 = rather unsatisfactory
30–49	Level 5 = unsatisfactory
0–29	Level 6 = very unsatisfactory

1 Evaluation Objectives and Questions

1.1 Objectives of the Evaluation

The technical cooperation (TC) project 'Support to the Sub-Sector of Small-Scale Irrigation (PASSIP) in Mali' (PN 2016.2036.8) as well as predecessor phases (PN 2013.2246.0 and PN 2007.2147.2) had supported the Ministry of Agriculture since 2008 in drawing up the National Small-Scale Irrigation Programme (PNIP). The project was part of a programme, commissioned by BMZ, composed of a financial cooperation (FC) component (implemented by KfW) and the TC-module co-financed by the EU and Canada. While the FC financed the infrastructure, the TC-module promoted enabling conditions in the small-scale irrigation sector, in particular better training, optimising the use of small-scale irrigation plots in the long-run and improved nutrition for 10,000 small-scale irrigation farmer households. The objective of the TC-module was: 'The rural population engaged in small-scale irrigation improves their economic and nutritional situation'. The TC-module contributed to the joint programme proposal (PV), defined in 2016 (GIZ, 2016d) as: 'The economic and nutrition situation of the rural population engaged in irrigation have been improved'.[7] The intervention strategy of the TC measure aimed to build capacities at individual, organisational and societal level.

The interim evaluation of the project, 'Support to the Sub-Sector of Small-scale Irrigation (PASSIP) in Mali', set out to rate the success of the current TC-module. This was to been done in line with the OECD-DAC criteria, based on data, facts and figures, and within the framework of a predefined rating system.

As noted in the terms of reference, the predecessor module (PN 2013.2246.0) was also considered within the framework of the evaluation. Those findings were taken into consideration in order to make statements on the long-term results and sustainability of the project. This was done also by taking into account the evaluation results from 2016, realised by GIZ.

This evaluation was an interim evaluation for the project period commissioned by BMZ and implemented by GIZ between January 2017 and June 2019. The stakeholders and intended users of this evaluation were:

- PASSIP project staff, who could use the results for improving their modes of delivery and promised impacts and results, and as an input for an upcoming planning exercise to consider a possible follow-up phase of the project,
- BMZ, which, as customer or principal client for this project evaluation, required evaluation findings concerning the effectiveness of the project and the fulfilment of the promised OECD-DAC criteria, with the intention of using the results for the upcoming bilateral negotiations with Mali and consideration of the possibility of commissioning a follow-up project phase,
- co-financing institutions (EU, Canada),
- partner institutions in Mali,
- GIZ Evaluation Unit, which has an interest in continuous development of evaluation instruments and formats, as well as the accomplishment of the planned targets for programme and project evaluations in the field,
- GIZ in general terms, using the evaluation as part of their internal knowledge management system and for generating transparency and accountability to the public.

1.2 Evaluation Questions

The project was assessed on the basis of standardised evaluation criteria and questions to ensure

[7] The joint programme proposal (PV) was changed in May 2018 (GIZ-PASSIP, 2018b).

comparability by GIZ. These are based on the five OECD-DAC criteria for the evaluation of development cooperation which are also valid for German bilateral cooperation: relevance, effectiveness, impact, efficiency and sustainability. Aspects regarding the criteria on coherence, complementarity & coordination are considered within these five criteria.

As for all central project evaluations in GIZ, specific evaluation dimensions and analytical questions have been derived from this given framework and are presented in the Evaluation Matrix as Annex 2 to this report. In addition, the contributions to the 'BMZ-Kennungen' (identifiers), SDG goals and Agenda 2030 and its principles (universality, integrative approach, 'leave-no-one-behind', multi-stakeholder partnerships) have also been taken into account, as well as crosscutting issues such as gender, the environment and human rights.

2 Object of the Evaluation

2.1 Definition of the Evaluation Object

Background (irrigation sector)

Mali has considerable irrigation potential, with an estimated 2.2 million hectares (ha), of which more than 1.8 million hectares are estimated to be in the Niger River Valley. To date, 30% of that potential is under irrigation (FAO, 2018). There is also significant potential for small-scale irrigation on an estimated surface area of around 126,000 hectares,[8] providing opportunities for significantly increasing and diversifying food production. It has been reported that the agricultural potential on the banks of the Niger, Senegal and Bani rivers is large enough not only to meet the domestic demand, but also to produce rice for neighbouring countries.

In addition to the Office du Niger and a series of other offices (covering an area of more than 100,000 hectares that is continuously irrigated by gravity from the dam near Markala, north of Segou), the Malian government has also, for several years, been trying to sustainably expand small-scale irrigation agriculture. Small-scale irrigation plays a key role when it comes to increasing and diversifying agricultural production and thus improving nutrition. This is reflected in the country's development and agricultural plans, which prioritise the goals of safeguarding agricultural yields by expanding irrigation and achieving food security for the Malian population (MDR, 2017).

The Government of Mali seeks to provide its population with staple foods, including rice, and to achieve food security. Mali's rice production so far covers only a part of the national consumption. The liberalisation of markets and the state's withdrawal from production and marketing have improved Malian competitiveness over the last 15 years, but Asian countries are still producing cheaper rice, aggravating development efforts towards better marketing of agricultural products.

Severe security and continuous political problems are hindering development activities in several regions, especially in the northern part of Mali and in areas along the borders with Mauretania, Burkina Faso and Niger.

History and development policy context of PASSIP

The National Programme for Small-Scale Irrigation (Programme National d'Irrigation de Proximité, PNIP) has laid the foundations for coordinated activities by the government and donors, with the aim of planning, building, operating and maintaining small-scale irrigation systems in line with common standards.

The technical cooperation (TC) module (PN 16.2036.8) as well as predecessor phases (PN 2013.2246.0 and PN 2007.2147.2) 'Support of the Sub-Sector of Small-scale Irrigation (PASSIP)' in Mali, assisted the Ministry of Agriculture from 2008 onwards in drawing up the Programme National d'Irrigation de Proximité (PNIP) as a reference framework for small-scale irrigation agriculture in Mali. It was part of a programme that also included a financial cooperation (FC) component, implemented by KFW and commissioned in 2016 by BMZ for PASSIP III. PASSIP was an integrated part of a joint-sector approach by the German Development Cooperation (FC and TC). PASSIP, as a TC-module, promoted enabling conditions in the small-scale irrigation sector, better institutional support and coordination, training, optimising the long-term addition of value to production on small-scale irrigation plots and to improved nutrition. It was aimed at the rural population engaged in small-scale irrigation to improve their economic and nutrition situation.

[8] PNIP has the objective of developing 126,000 hectares, benefiting potentially 3 million people. From 2016–2021, PNIP plans to develop 48,000 hectares of land under improved irrigation (GIZ-PASSIP, 2018b).

The intervention strategy of the TC-module aimed to improve capacity at individual, organisational and society level. The objective for the PASSIP TC-module was: 'The rural population being engaged in small-scale irrigation improves its economic and nutritional situation' (GIZ-PASSIP, 2016b).

In the framework of PNIP, KfW and GIZ signed important financial agreements with two co-financing agencies (EU and Canada). In the case of the TC-module PASSIP, the value for the EU delegated cooperation signed with GIZ in March 2014 was EUR 6.6 million[9] for a 5 year 3 month implementation period (until 2019); the agreement signed with the Ministère des Affaires Étrangères, du Commerce et du Développement du Canada (MAECD) comprised financing of CAD 14.9 million (approx. EUR 10.4 million) for a five-year period (the contract was signed in September 2014 and expires on 31 December 2019) (GIZ, 2014a).

The contract for the delegated cooperation arrangement between the EU and GIZ stipulated that EU funds be used in the Koulikoro, Sikasso, Mopti and Timbuktu regions (the latter two only involved nutrition activities) under the so-called 'Initiative de Renforcement de la Résilience par l'Irrigation et la Gestion Appropriée des Ressources, IRRIGAR'. It should be noted that the co-financing arrangement signed with the Government of Canada for approximately EUR 10.4 million (Renforcement de l'Agriculture Irriguée, REAGIR) related to the Koulikoro and Mopti regions and, for institutional support, to the Direction Nationale de Genie Rural (DNGR) / Direction Nationale de Agriculture (DNA).[10] The amounts assigned by the Government of Canada and the EU to KFW were EUR 49.7 million for REAGIR/Canada and EUR 25.0 million for IRRIGAR/EU. The German Development Cooperation, jointly as KfW and GIZ, by signing these delegated cooperation agreements with both agencies, assumed commitments to implement measures to promote small-scale irrigation in Mali for more than EUR 90 million under PNIP.

The agreements signed were conditional on the German Development Cooperation (KfW and GIZ) delivering by mid-2019 the defined results and impacts within the context of supporting the small-scale irrigation sector in Mali on time and to the required standard. This was of specific significance for this interim evaluation of the TC-module, since PASSIP, under this joint approach, had to valorise the infrastructure for irrigation schemes built and handed over from the FC after a three-year building and assistance period, as well as the consolidation of the organisation and management of the respective irrigation schemes. In addition, older irrigation schemes were also taken care of. As a consequence, PASSIP constituted a complex project, additionally conditioned by external financial agreements and with the obligation to deliver the promised results jointly with the FC-module under KfW responsibility in the defined time frame by mid-2019.

Specifications of delegated cooperation within the PASSIP TC-module

Both agencies, the Government of Canada and the European Commission (EC), have used the instrument of delegated cooperation in order to support the small-scale irrigation sector in Mali. The use of the instrument of delegated cooperation implies conditions that go beyond a mere co-financing support of PASSIP activities and are oriented towards an upscaling of the original core project PASSIP. The cooperation agreements were formulated as project documents, defining in their respective logical frameworks the specific project purposes and results to be achieved.

In addition to the target number of 149 irrigation schemes foreseen as being assisted by PASSIP under IRRIGAR and REAGIR, the EU influenced the definition of the module objective and the definition of the field of activities according to the existing logical framework. It was mentioned by EU officials that the inclusion of activities related to the nutrition aspect was mandatory in order to align the project to EU development policy standards for food security and agriculture.

[9] To this end, a further EUR 1 million was contributed from BMZ for the project IRRIGAR, as part of Component 3 of PASSIP (see GIZ, 2014b).
[10] According to the project, since 2014 the part of the funds foreseen for institutional support has been blocked due to the political situation.

Several other projects were considered as directly 'attached' to the PASSIP Programme. These were:

- SEWOH–Green Innovation Centre (GIC): This has the following project objective: 'Agri-food innovations have improved Mali smallholder farms, employment and regional food supply in selected rural areas'. The project is being implemented with EUR 28 million, including EUR 5 million as delegated cooperation from the EU from November 2014 until September 2022, mainly in the same regions as PASSIP (Mopti, Sikasso, Ségou, Koulikoro and Kayes).
- The SEWOH–Food Security and Resilience project has the objective: 'The food situation and resilience to household-level hunger crises for people at risk of becoming nutritionally vulnerable, especially women of reproductive age and infants, has improved.' The project is being implemented mainly in Timbuktu with EUR 14 million from December 2014 until September 2022.
- For the SEWOH–Agriculture Financing (AgFin), the project objective is defined as: 'The availability of financial benefits adapted to the economic models of agricultural holdings and the enterprises of the agricultural sector of the selected regions of Mali has improved'. This project has been commissioned by BMZ with EUR 3.5 million, and started its implementation in 2018.
- The 'PARIZON' project,[11] with EUR 1.25 million from BMZ funds and EUR 5.0 million as delegated cooperation from the EU, is preparing to assist the Office du Niger in irrigation issues for the sustainable development of the rice value chain.

Some of the 'attached' projects have similar objectives, goals and also similar target groups within the context of agriculture, small-scale irrigation, nutrition and employment in rural areas of Mali.

The complex project set-up required a comprehensive coordination structure between the above-mentioned projects under the leadership of PASSIP and resulted in a formal division of labour and complementary interventions by each of the projects, as well as a definition of possible synergies between all SEWOH projects involved. At the same time, the existence of various projects with partially overlapping purposes constituted a challenge for the project management, requiring close cooperation and alignment of efforts to complement activities and results, create synergies and avoid duplication.

The target group

The target group had been set in the 2017 change offer by GIZ as 29,000 beneficiaries (households) involved in irrigation farming, without giving further details and without referring to the FC targets that aimed to increase the small-scale irrigation area by 15,000 ha.[12]

As shown in Figure 1, the beneficiaries were located in the following project intervention areas: Koulikoro, Sikasso, Mopti and Timbuktu, Kayes and Gao.

[11] 'Projet d'appui aux acteurs pour le développement durable de la chaîne de valeur riz dans la zone de l'Office du Niger' (PARIZON) will be implemented as part of the Mali country package of the global Green Innovation Centres programme (GIC) for the agri-food sector and aims to strengthen the ongoing activities of the CIV to successfully scale-up tested innovations.
[12] Change Offer (dated 05.12.2017) (GIZ, 2017d) to the Repeat Offer (dated 26.04.2017) (GIZ, 2017b)

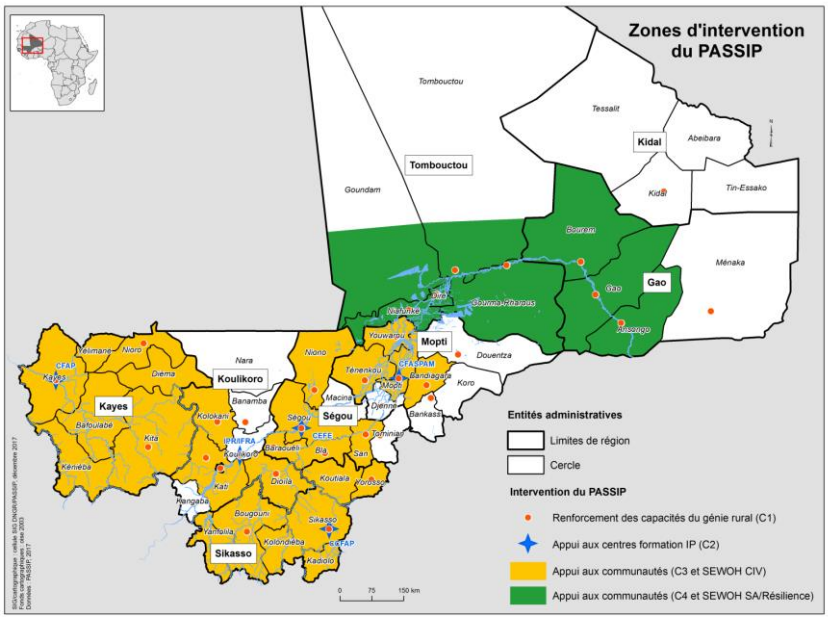

Figure 1: Map with the regions of interventions by PASSIP

It was not made clear to the evaluation team how the target group was distinguished from other farming households in the irrigation sector and whether PASSIP III would focus on the 'new' irrigation areas of some 15,000 ha established through the joint KfW intervention with some 29,000 'new' beneficiaries, or whether the 29,000 households would also include 'old' households of the 'old' irrigation schemes established under the former government Programme National des Petits Barrages et Bas-Fonds (PNPBBF), to which the project had provided continuous support since PASSIP restarted after the military coup in 2013/14. It was explained that PASSIP III in fact started to support IRRIGAR from 2015 onwards.

It has to be concluded that retracing the target group and numbers of beneficiaries in the various documents caused some doubts with regard to the mapping of various types of beneficiaries.

Areas of intervention

The objective of the TC-module (outcome) was defined as follows: 'The rural population engaged in small-scale irrigation improves their economic and nutritional situation.'

Three outcome indicators had been defined for achieving the module objective:

- **Outcome Indicator 1:** The gross margins of the main crops of small-scale irrigation farming by 29,000 small-scale producers (including 20% women) in the regions of Gao, Kayes, Koulikoro, Mopti, Sikasso and Timbuktu has increased by 10%.
- **Outcome Indicator 2:** The number of women's or youth organisations or small and micro enterprises run by women or young adults, which operates economic activities in the processing and marketing of small scale irrigation, fish and livestock products in the Gao, Kayes, Koulikoro, Mopti, Sikasso and Timbuktu regions, increases from 21 to 40.
- **Outcome Indicator 3:** The percentage of 10,000 households with small irrigation farming, which cover their need for nutritionally valuable food (based on the Score Consommation Alimentaire (SCA) with 12 food groups from their own food stocks, is increasing from 27.2% to an average of 40%.

According to the PASSIP project-planning documents, the project had been organised around four interrelated fields of action (Handlungsfelder – HF) and six outputs. The project had recently adopted a clear assignment between HFs and project outputs, namely:

Output 1:	**The Direction Nationale du Génie Rural (DNGR) ensures a better coordination for the implementation of the Program National d'Irrigation de Proximité (PNIP) in cooperation with key actors at macro, meso and micro level.**
HF 1:	This field of action aimed to strengthen national capacities at central level (DNGR) for an effective implementation of the PNIP and at consolidating the results and experiences from previous project intervention periods since 2008 (PN 2007.2147.2: period 06/2008 – 03/2014; PN 2013.2246.0: period 04/2014 – 12/2016). Capacity development on different levels should had led to better coordination and more sustainable implementation and continuous acceptance of PNIP as reference framework for small-scale irrigation in Mali.
Output 2:	**The public and private providers and multiplicators have the necessary technical, didactic and pedagogical skills for the implementation of the PNIP.**
HF 2:	This field of action aimed to strengthen public- and private-sector providers in their technical, pedagogical and didactic capabilities to disseminate their knowledge. Furthermore, it aimed to strengthen the ability of private sector and public actors (intermediaries) to advise the population on the optimal use of small-scale irrigation.
Output 3:	**The functionality of the small irrigation systems in selected regions is ensured.**
HF 3:	The field of action aimed to create a sustainable management, operation and maintenance of the small-scale irrigation schemes by user groups and committees in Timbuktu, Mopti, Sikasso und Koulikoro.
Output 4:	**The rural population adds value to the small irrigation areas.**
HF 3:	This field of action aimed to create sustainable use of small-scale irrigation schemes in order to improve agricultural production, productivity, processing and marketing of selected crops and also improve the food and nutrition situation in irrigation schemes in the regions shown Figure 1. HF 3 was the main task and responsibility for both co-financing agreements (EU-IRRIGAR and Canada-REAGIR).
Outputs 5 and 6:	**In the Kayes and Gao region sustainable employment opportunities for young people and women are created.**[13]
HF 3 & 4:	These fields of action aim to generate employment in areas susceptible to outmigration through the value chains of aquaculture and vegetable and livestock production (pastoralists) in the Kayes and Gao regions. Activities in the Kayes region have been started by Deutsche Welthungerhilfe (DWHH) under subcontract by PASSIP and at the time of the evaluation were under preparation for Gao region (not yet being implemented). For these two fields of action or 'new projects' (ProKayes and ProGao), as well as for the extension of activities in the Timbuktu region (together with SEWOH–Food Security and Resilience), two additional change offers and one repeat offer were submitted to BMZ by GIZ in 2017. Both commissions by BMZ changed the original set of outputs from 2016, e.g. the number of households.

Table 1: Project outputs and related fields of action (HFs)

[13] More specifically, Output 5 refers to the creation of sustainable employment opportunities for youth and women in the Kayes region, while Output 6 refers to the Gao region (GIZ-PASSIP, 2018b).

Based on the repeat offer of April 2017, GIZ was commissioned by BMZ with an additional EUR 4 million (EUR 2 million from the EU-migration partnership funds with Africa for reintegration and employment promotion of young adults in small scale irrigation agriculture and aquaculture in the Kayes region[14] and an additional EUR 2 million from BMZ funds (GIZ, 2017b).

A change offer from 5 December 2017, with a total volume of EUR 4 million was submitted by GIZ and commissioned by BMZ. An increase of EUR 1 million from the EU-migration partnership fund with Africa for ProKayes, as well as EUR 3 million for employment promotion in the Gao region in vegetables and livestock value chains[15] (ProGao) raised the total funds for the project to EUR 28,674,118. The change offer of 5 December 2017 increased the number of small-scale irrigation farmer households for module indicators 1 and 2.

The FC-module supported the provision of small-scale irrigation and accompanying infrastructure, and provided advice on their management and primary valorisation during the first two years after construction. The TC-module assisted DNGR/DRGR with the consolidation of organisation and management of the small-scale irrigation schemes – and DNA with consultations regarding cultivation, processing and commercialisation. The TC-module also promoted improvements in technical and organisational skills oriented towards the sustainable valorisation of small-scale irrigation schemes and improved nutrition (GIZ-PASSIP, 2016b).

The splitting of both co-financing agreements (EU and Canada) was necessary because the German development cooperation system set the conditions for the definition of financial cooperation (KfW) and technical cooperation (GIZ) as system boundaries. SEWOH project activities (e.g. the Green Innovation Centre) with innovative approaches to cultivation and consultation were partly implemented in small-scale as well as in large-scale irrigation schemes under PNIP. The project reported that upscaling of the system of rice intensification (SRI), a rice-cultivation method leading to much higher yields, will be supported by both GIAE and PASSIP to a larger extent from 2019 onwards.

It was evident that PASSIP covered a wide range of activities, not all of which contributed to the purpose of the project. Nutrition issues were dealt with at national, regional and local level, mainly through support in coordination with the Ministry of Health, WPF, UNICEF and other organisations. NGOs worked in the field in the form of paid advisers, and through nutrition awareness and education measures, supported by rural radio stations at (regional) local level, while job creation was limited to some the regions of Kayes and Gao. Small-scale irrigation development mainly took place where prior KfW-financed infrastructure and schemes of PNPBBF had been established.

Moreover, the process of including new outputs may not yet have come to an end. The project may well receive more requests to extend its area of intervention, further increasing its scope and complexity.

Figure 2 gives an impression of the ambitious goal-setting and working areas of PASSIP.

[14] ProKayes: Reintegration and promotion of employment of young adults on the Kayes region within the sectors of small-scale irrigation agriculture and fishpond aquaculture.
[15] ProGao: Employment promotion in the Gao region through supporting the vegetable value chain and livestock farming.

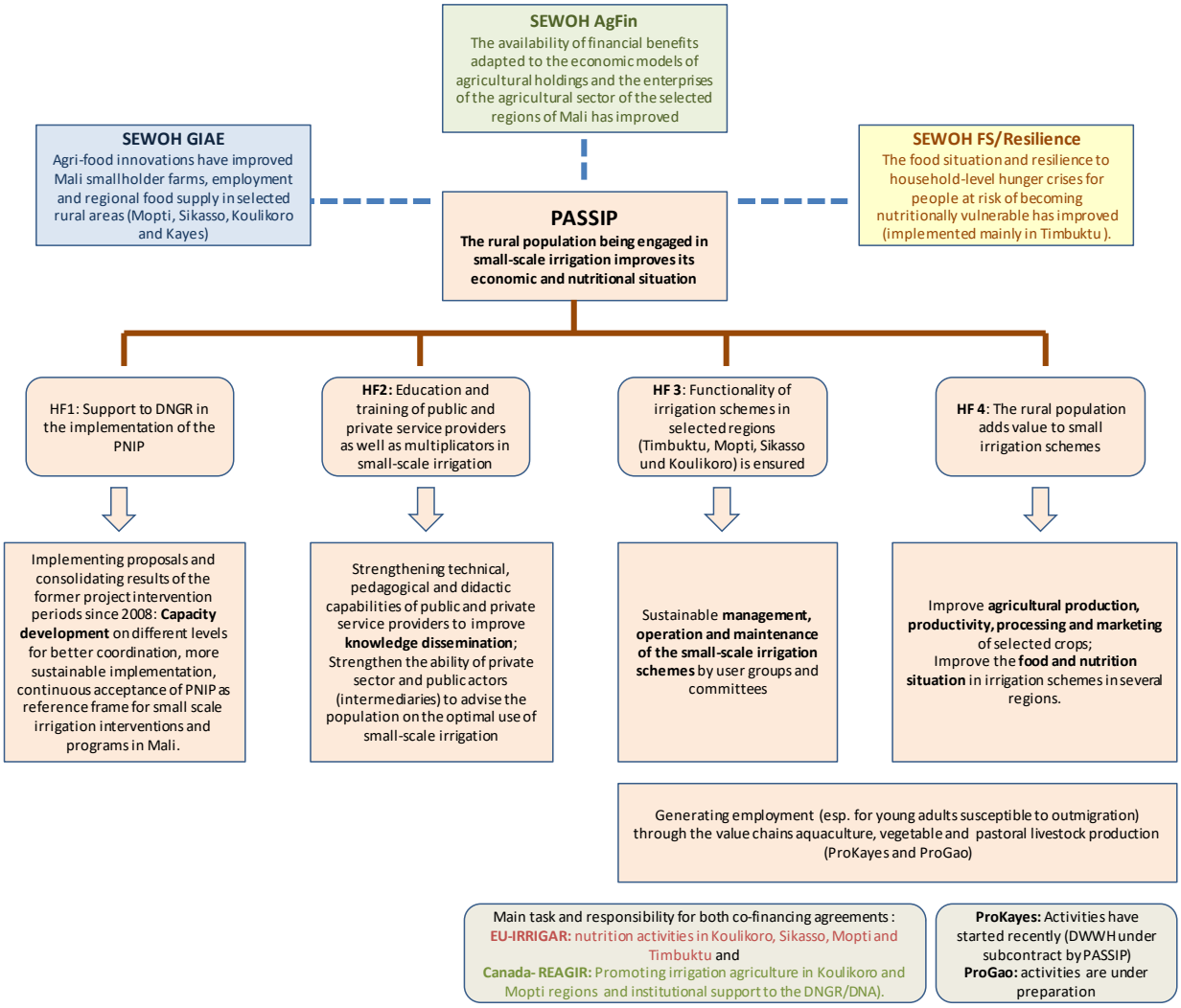

Figure 2: Project structure of PASSIP

Staff structure of PASSIP

Each of the HFs (fields of activity) had a coordinator and technical staff for organising the project activities on the different levels of intervention (local, regional, national). For the implementation of activities with the beneficiaries at the community level and in the different regions, PASSIP worked together with local NGOs (under contract and/or by local contributions) as well as with individual consultants. Liaison offices were established in the different regions (Sikasso, Koulikoro, Mopti, Kayes, with Timbuktu to be opened soon, and Gao), but with limited staff presence because of security reasons. HF 2 was subcontracted by GIZ and was implemented by AFC Agriculture and Finance Consulting (AFC) and ECO Consulting Group (ECO).

According to information from the project management (Int_GIZ staff), and based on the efficiency tool, PASSIP had an average total number of 80.75 staff members working at the main office in Bamako.[16] The PASSIP administration unit consisted of administration, accounting, office assistance staff and drivers, rendering services to all projects related to PASSIP. It was not possible to determine the respective percentage share. Five international experts under GIZ contract were involved in the implementation and administration of PASSIP III. Further personnel were employed under subcontracts as temporary consultants for specific issues. According to the figures received, 40% of the employees were technical staff, but only a few of them were stationed in the regional liaison offices.

[16] The staff numbers increased during the implementation period (Jan.2017–June 2018). According to the efficiency tool, over the 18 months of implementation relevant to this evaluation, the average staff number was 70 staff. For May 2018, when the evaluation took place, a staff number of 86.76 was reported in the efficiency tool.

Due to the existing political and continuing security crisis, the project was faced with particularly high security risks – mainly in the north of the country (e.g. Mopti, Timbuktu, Gao). These were addressed within the PASSIP structure by focusing its operations and by 'remote control' management of activities in the Timbuktu, Mopti and Gao regions, as well as partially in Kayes.

Project steering

PASSIP did not have a formally established steering structure. It came under the leadership of the Ministry of Agriculture, DNGR, DNA, and other important actors and PASSIP, who would meet regularly to deal with fundamental as well as specific current strategic and operational problems, to approve operational plans and joint contributions, and to discuss experiences and results.

The steering of PASSIP at different levels was conducted thus:

- by fixed weekly meetings between the director and his counterpart directors from DNGR and DNA for operational coordination purposes,
- at **project level**, by weekly and monthly meetings with the project director and his management team, technical staff and project administration,
- at **national level** by the so-called 'Comité de Suivi DNGR-PASSIP' (twice a year) and by a yearly meeting of Comité National d'Orientation et de Suivi du PNIP (CNOS) as the monitoring committee for the National Small-Scale Irrigation Programme PNIP, which took political and strategic decisions, and
- at **regional level**, more frequent meetings of the Comités Techniques Régionaux de Coordination (CTRC).

The most important external (political) steering structure was the 'Comité de Suivi', in which DNGR, DNA, the German Embassy, and the German FC and TC, the EU and Canada co-financiers (REAGIR and IRRIGAR) and USAID (FC co-financing) were represented. As available documentation shows (no protocols, only reports available), the committee has regular six-monthly meeting for receiving information from PASSIP. The committee apparently had no remit to analyse, discuss and take steering-relevant decisions.

System boundaries

Considering target groups, areas/regions of intervention and organisations to be assisted, theoretically there was a clear distinction between the PASSIP-project (TC-module) and the KfW (FC-module), as described above. According to interview partners, disagreement occurred during implementation by virtue of different concepts on follow-up and scope of services (e.g. rehabilitating of infrastructure, set up or re-establishment of irrigation committees, training).

The delegated cooperation agreements with both agencies – EU (IRRIGAR) and Canada (REAGIR) – defined conditions for both the FC- and TC-modules for KfW and GIZ to deliver the expected results. Both co-financing agencies expected a clear definition of tasks and responsibilities between both German institutions for the common results. However, such clear definition of boundaries within the context of the co-financing delegated cooperation agreements for PASSIP was still missing. The EU/IRRIGAR financed mainly the improvement of the nutrition and hygiene situation in irrigation schemes, and the transformation and marketing in the regions of Koulikoro and Sikasso. Canada/REAGIR followed different approaches in its intervention regions. In Dogon Land it initially focused on soil conservation and erosion control measures; later, support to the increase of production and productivity was authorised. In Youwarou, priority was given to processing and commercial enterprises. Only in Koulikoro were all of the activities implemented. Canada also intended to finance the general institutional support activities by PASSIP. Up to that point, the Canadian agency had financed training at irrigation-system level for target groups and also for 'old' irrigation schemes (PNPBBF), as well as for institutional staff on national, regional and local level (DNGR, DNA). The PASSIP project management explained the role of GIZ-PASSIP as development agency for IRRIGAR and REAGIR, providing results, findings and insights from the local level, and feeding these into institutional advice at national level (HF1).

2.2 Results Model including Hypotheses

A Results Model had been elaborated by the previous evaluation mission covering the current period of project implementation. This implied mainly slight adjustments and expansion of the results and objectives from the previous phase. Since then, new outputs had been incorporated, and the most updated Results Model (GIZ-PASSIP, 2018a) clearly reflects the complexity of the results and impact chains of the PASSIP III TC-module as well as its relation to the overall development programme objectives.

The Results Model for PASSIP III (Figure 3), as presented to the evaluation team in May 2018, is a diagram with arrows and text-boxes which has been updated by taking into consideration the additional funds and fields of activities of the actual phase until mid-2019. It was arose from a resumed planning exercise, and provides indications on the desired changes and the linkages between outputs, outcome and long-term impact, as well as key activities and GIZ instruments. It does not contain deliverables, nor the context factors of PASSIP III. The additional two outputs (HF 3/4 'Pro-Kayes and Pro-Gao') are presented together as one activity/output element, attached with one arrow pointing to the increase of income for rural population.

Obviously, not all the different interrelations elicited by a project like PASSIP III, with backward and forward links, can be reflected in such a visualisation; it only gives an idea of relationships. The project management stressed that learning experiences from prior phases had been integrated into the most recent phase.

In its entirety, the Results Model in its most updated version[17] strongly generalises the cause-and-effect relationships, without managing to reflect clearly the linkages between the PASSIP fields of activities (HF), the results, higher-level outcomes and impacts, due to its high number of pathways. These linkages would have been a necessary input and a useful tool for a contribution analysis. Underlying assumptions for the achievement of the intended (intermediary) results are not visualised, and interventions are not linked to particular sequences of effects and impact. The results, outcomes and impacts are, rather, presented as a mechanic sequence, planned by the project. As such, the model can serve only as a limited input for a meaningful basis for a Theory of Change (ToC) and does not enable a set of corresponding 'hypotheses from activities and instruments to intended outputs and outcome(s) up to intended impacts' to be derived. The linkage between the cluster 'the main products from the IP are transformed' and 'creation of sustainable jobs for young people and women (outputs 5 and 6 in Kayes and Gao)', where the project is not directly supporting irrigation schemes,[18] can be seen as one example of the limitations of the Results Model.

Outputs and outcome were formally agreed upon with BMZ and extensively discussed during the Project Progress Review, which took place shortly before the field mission of the evaluators. As during this process no serious defects had been identified, during the field mission the Results Model was only discussed briefly among the evaluation team and the PASSIP project team and not further analysed or changed. Nevertheless, based on these discussions, the analysis of the Results Matrix, the representation of the impact logic and the analysis of a complete list of activities (42), as reported by PASSIP in the Project Progress Report,[19] the evaluation team derived a set of hypotheses in order to perform a contribution analysis.

[17] A revision of the Results Model was made during a subsequent project progress review, and an updated version was elaborated as part of Project Progress Report in 2018 (GIZ-PASSIP, 2018b).
[18] According to the repetition offer (GIZ, 2017b), activities in Kayes focused on the establishment of fish ponds and vegetable gardens (cash-for-work), on improved processing and marketing of vegetable and aquaculture products and on strengthening of business competencies/MSME development (farmer field schools (FFSs), FBS).
[19] Results Model, Results Matrix, impact logic and a list of activities as presented in Project Progress Report (GIZ-PASSIP, 2018b).

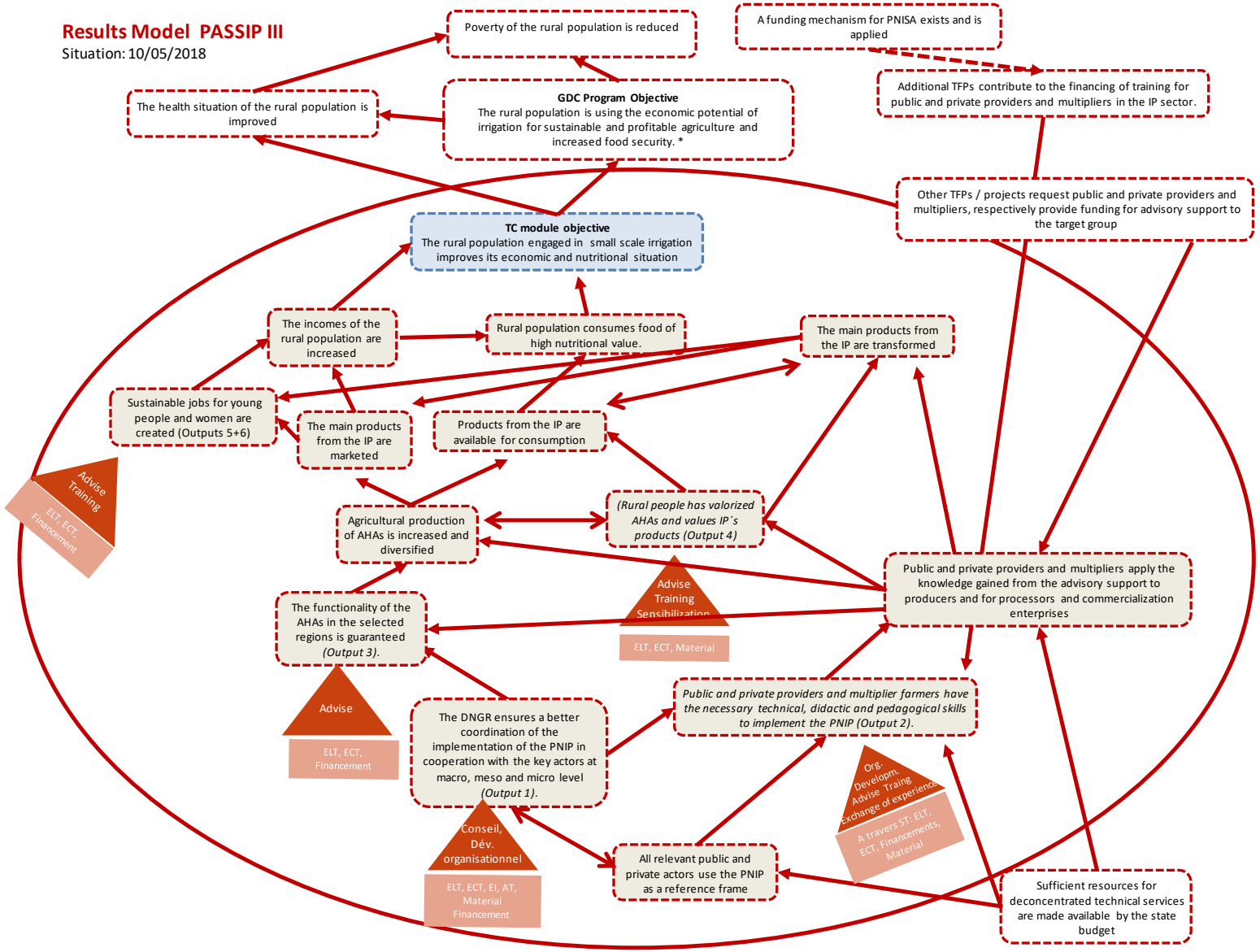

Figure 3: Results Model PASSIP III

3 Evaluability and Evaluation Process

3.1 Evaluability: Data Availability and Quality

Through the GIZ-Data Management System (DMS), PASSIP provided the information available for the project and the implementation period from January 2017 and before, especially in the form of reports, analyses, monitoring data and other documents to be assessed by the evaluation team. The project had produced an impressive number of documents and it was difficult to grasp their relevance to this evaluation, especially as they were partly made available only shortly before the field mission. The operational plan (GIZ-PASSIP, 2017a) consists of more than 130 pages and the M&E manual is also voluminous. Inconsistencies in data and in the structure of some documents, such as the operational plans for IRRIGAR and REAGIR, caused further difficulties for the evaluation team in analysing correctly the project progress and in gathering all necessary and complete information. The evaluation team had several meetings with the project team in order to update information and clarify inconsistencies.

Other data and documents had been made available for this evaluation from the GIZ Evaluation Unit, in particular in relation to the methodological approaches and different instruments to be used.

Updated information on the existing monitoring data system for the established unit by PASSIP was not available (the most recent document was from April 2015). The M&E manual was under revision, and the version available was very extensive; it was possible that some of the forms included were no longer required.

The monitoring data available were being collected by government extension workers (with expense allowances from the project) and used by PASSIP for reporting to BMZ and the co-financing agencies. According to information provided by the project, a survey had been recently started to countercheck these data for plausibility, coherence and quality. This seemed to be necessary as several data such as the gross margin for rice and other crops (e.g. tomatoes) showed considerable discrepancies. The project also reported that the M&E team regularly conducted field visits for quality control reasons. However, in different regions quality control could not be carried out by PASSIP staff in a satisfactory manner due to security reasons, especially in Timbuktu and Mopti. Additional independent data collection and/or quality control by third parties or other outsourced external agents (e.g., local consulting companies) could therefore help to improve the accuracy and quality of the data.

For HF1, an assessment study from 2015 (Falkenberg, 2015), a list for improving infrastructure and requested equipment, and general recommendations for structural and organisational improvements and measures were available for the Direction National du Génie Rural (DNGR) or the Direction Régionale du Génie Rural (DRGR) offices. However, the assessment study did not define any responsibilities for these measures (Ministry/PNIP/PASSIP). The study had not been updated with a capacity-development strategy for the current phase from 2017 onwards according to Capacity WORKS and the defined GIZ standard for PASSIP. A comprehensive capacity development strategy for the current phase of implementation was not available, thus diminishing the information basis on which to assess and define human capacity development issues at the different intervention levels and outputs defined by PASSIP.

Baseline studies, which are essential for the monitoring of progress in relation to the defined indicators, e.g.

increase of agriculture production and productivity as well as gross margins of the selected crops, were incomplete in several cases and only partly available for all major agriculture crops and regions. Studies for rice and several vegetables were only available for Sikasso and Koulikoro. The project reported that baseline studies had been conducted in Sikasso, Koulikoro, Mopi, and Timbuktu. Best-practice studies had been made available for nutritional status in Timbuktu through DMS (Yarro, 2016), but no other baseline studies concerning crops were available.

From the viewpoint of the evaluation team, it would have been desirable to establish a data-mining system, including comparison of data for the monitoring of irrigation schemes. That would have allowed an assessment of incremental benefits (without and with project benefits) in order to measure the effects and impacts of project interventions in the field, at crop and farmer level. The project argued that locations and irrigation systems were too different from one another to allow for that kind of comparison.

General documentation on agricultural policy and irrigation, as well as food security and investments plans for the agricultural sector, were available and had been consulted by the evaluation team. Recent annual reports and analysis from the Ministry of Agriculture (DNGR/DNA) for the (small-scale) irrigation sector were requested during the field mission but had never been received by the evaluation team.

The following documents were used as the main data sources:

- Project documents, such as the TC-module and FC-module offers of PASSIP II (PN 2013.2246.0) (GIZ, 2013b; KfW, 2013a), along with the evaluation report of that project (GIZ, 2016e), and the TC-module offer for PASSIP III (GIZ, 2016d), the Project Progress Report (GIZ-PASSIP, 2018b),
- The PASSIP Operational Plan 2017–2019 (131 pages) (GIZ-PASSIP, 2017),
- content of standard documents such as context analysis, gender analysis, environmental and climate assessment for PASSIP, and
- specific documents such as BMZ documents and documentation of SEWOH global and other GIZ projects in Mali.

Relevant secondary data from KfW, EU, FAO, UNDP, WPF and UNICEF was also consulted for this evaluation.

Two older irrigation schemes (constructed 15 years ago) had been visited, and semi-structured interviews conducted with selected men and women of both schemes in order to find out whether there had been improvements to their economic situation, and the effects of activities related to PASSIP, especially on nutritional aspects. In addition, the local evaluator visited the project regions of Mopti and Kayes, facilitating meetings and discussions with local PASSIP project staff, representatives of Direction Régionale du Génie Rural (DRGR), Directions Régionale de l'Agriculture (DRA), decentralised government and administration and other project partners, as well as representatives from target groups (see also section 3.2).

The statements made in the various discussions and interviews during the field mission in Mali were partly subjective but could to a large extent be verified by cross-checks and triangulation.

Basic document	Is available (15/5/2018) *(Yes/No)*	Estimation of actuality and quality	Relevant to OECD-DAC criteria
Projects proposal and overarching programme/funds proposal (etc.) and the Ergänzende Hinweise zur Durchführung (additional information on implementation).	Yes	TC-module Offer, 2016 (GIZ, 2016b); co-financing contracts with Canada and EU (GIZ, 2014a, 2014b)	To all
Modification offers, where appropriate	Yes	Change and repeat offers from 2017 (GIZ, 2017a, 2017b, 2017c)	To all
Contextual analyses, political-economic analyses or capacity assessments to illuminate the social context	Yes	Context analysis for PAPDR from 2015, not for PASSIP	Relevance
Peace and Conflict Assessment (PCA Matrix), Gender analyses, environmental and climate assessments, Safeguard & Gender etc.	Yes	Results Matrix (GIZ, 2016b, 2018a), Gender Strategy (GIZ, 2016a), Environmental and Climate assessments and text (GIZ–PASSIP 2017b and 2017d)	Relevance
Annual project progress reports and, if embedded, also programme reporting	Yes	Project Progress Report (GIZ-PASSIP, 2018b)	To all
Evaluation reports	Yes	PASSIP II Evaluation Report (GIZ, 2016e)	To all, especially Efficiency & Effectiveness
Country strategy BMZ	yes	Mali Chapeau Paper (BMZ, 2017)	Relevance
National strategies	Yes	Politique Développement Agricole (GoM, 2013); PNISA (MDR, 2014); Strategie Nationale Sécurité Alimentaire Mali (MDR, 2017) PNIP (Ministère de l´Agriculture, 2010); Loi d´ Orientation Agricole, (GoM, 2005)	Relevance

Table 2: Basic documents

3.2 Evaluation Design

This mid-term evaluation was considered by the GIZ Evaluation Unit as an external and independent one.

As a systematic basis for assessing the PASSIP intervention, based on OECD-DAC criteria, an Evaluation Matrix was elaborated by the evaluation team, reflecting the PASSIP context. For each of the criteria, the guiding questions were phrased as concrete evaluation questions, and the indicators and respective data sources and evaluation methods were identified. The Evaluation Matrix can be found in Annex 1.

Methods used

Data collection methods and evaluation methods for each OECD-DAC criterion were documented in detail in the Evaluation Matrix in Annex 1. The following presents a brief summary of the methods applied for this evaluation:

- **Document analysis** has been applied for all OECD-DAC-criteria and all evaluation dimensions with a systematic approach. Documents referred to in the report are listed in the Bibliography in Annex 2. However, the main source for the evaluation team's findings was the review of PASSIP documents.
- **Field visits** provided insights into the project implementation and results in the different project regions. These were limited, as only two sites (Sikasso region/Bougouni irrigation scheme and Koulikoro region) were visited by the international evaluators, without them having the opportunity to carry out structured group interviews due to time limitations.[20] In order to complement these insights, the local evaluator realised important rapid assessment visits to Mopti and Kayes regions in order to observe and report on modalities and effects by PASSIP interventions in these two regions. In Mopti (Bandiagara) and Kayes, the local evaluator conducted visits and interviews with representatives of the target groups in the form of individual interviews and focus-group discussions. He interviewed representatives of decentralised government and administration structures, the district council in Bafoulabe, agricultural extension services and training institutes, various NGOs, and regional cooperation partners.[21] In total, 15 interviews were conducted with representatives from partner institutions. Furthermore, discussions were held with the local PASSIP-teams. In addition, information was gathered at target-group level; interviews comprised individual and group interviews with producers and village councils in Mopti and with fish farmers in Somankidi and Somankidi Coura, and visits to Diallola-Perimeters in Mahina and vegetable gardens in Gallé.
- A series of **structured and semi-structured interviews** and group discussions with the various partners of PASSIP at national and regional level, and with donor representatives, resulted in further evidence for the assessment of all OECD-DAC criteria and evaluation dimensions. The project staff, service providers (NGOs, individual consultants), representatives from the public and private sectors at national and regional level, as well as those from the bilateral and multilateral donor and financing agencies, the German Embassy and other German Aid institutions and consultant companies involved in the irrigation, were part of an intensive programme of structured and semi-structured interviews. These allowed an exchange of views and provided detailed information not only on the quality of the processes but also on factors relating to the political context, highly relevant in terms of achieving results, all of which helped to clarify the evaluation questions.
- The methodology of **contribution analysis** was applied, together with the management team of PASSIP, in order to gain additional insights into how project interventions influence results and change processes

[20] The field mission took place in the middle of the 2018 Ramadan period.
[21] In total, 15 interviews were held with representatives from Direction Régionale du Génie Rural (DRGR), Direction Régionale de l'Agriculture (DRA), Direction Régional de la Pêche (DRP), Conseil Régional de Développement, Chambre Régionale d'Agriculture, Centre de Formation Agro pastorale, ONGs.

in a complex project setting. A complete list of 42 activities carried out by PASSIP was established by the evaluation team in order to identify possible effects and impacts for each of those activities (GIZ, 2018b).

- Systematic **data triangulation** and/or **method triangulation** was applied whenever possible. The complementary insights from field visits to Sikasso, Koulikoro, Mopti and Kayes regions were helpful for the team in the triangulation for several key questions in the evaluation process. Triangulation of preliminary results also took place at the end of the mission with the PASSIP project team.

3.3 Evaluation Process

The evaluation was conducted by a team consisting of one national and two international evaluators. The evaluation process started in March 2018 and ended in November 2018. The Inception Report was handed over and approved by GIZ before the field missions started in May 2018. The field mission in Mali took place between 19 May and 5 June 2018.

The definition of the evaluation process itself, as well as the methodology and instruments to be used, had been established by the GIZ Evaluation Unit and according to the Terms of Reference (ToR) for this evaluation. Before leaving for Mali, the evaluation team held an interview with the responsible desk officer for Mali at BMZ headquarters.

Subsequently, the stakeholders of the evaluation were defined within the context of their relevant project participation and within the planning and implementation of PASSIP as TC-module. The evaluation team, with the assistance of the GIZ Evaluation Unit and the PASSIP management carefully identified all necessary stakeholders to be considered for this evaluation. However, due to time constraints during the field visit of the evaluators, it was not possible from the PASSIP side to organise interviews and meetings with all relevant multilateral and bilateral institutions acting in the agriculture and irrigation sector in Mali (e.g. interviews with the World Bank, the Africa African Development Bank, and Agencia Española de Cooperación Internacional para el Desarrollo (AECID) were missing). Nevertheless, stakeholder participation at different levels during the field mission was assured by the various meetings at central and regional/local level with different institutions involved in the context of PASSIP.

4 Assessment of the Project According to OECD-DAC Criteria

4.1 Relevance

Evaluation basis and design for assessing relevance

Among other important documents (e.g. PASSIP II Evaluation Report (GIZ, 2016c) a basic document for the evaluation of the relevance of the project was the GIZ PASSIP III TC-module Offer (GIZ, 2016d) and the Project Progress Report (GIZ-PASSIP, 2018b), with the corresponding updated Results Matrix (GIZ-PASSIP, 2018a), which showed considerable alterations to the original TC-module offer presented in June 2016. Major changes occurred regarding the regional focus, the composition and size of the target group (newly incorporated households and 'traditional' PASSIP beneficiaries from 2013/14) as well as the accommodation of 'new' components with different objectives. In addition, project logical frameworks for the two co-financing contracts, REAGIR and IRRIGAR, were considered in order to better understand and evaluate the PASSIP III concept and design (GIZ, 2014a; GIZ, 2014b). Furthermore, the KfW FC-module Offer (KfW, 2013) was reviewed in order to better understand the role of PASSIP and its relevance within the context of the joint KfW-GIZ programme proposal to the BMZ (KfW-GIZ, 2013a; KfW-GIZ, 2013b) with respect to interactions and possible synergies. The answers to the evaluation questions and the subsequent assessment of project relevance only refer to PASSIP III, however.

The delegated cooperation agreements with the EU (IRRIGAR) and Canada (REAGIR) were considered as extensions of GIZ's original project proposal and understood as an integrated part of PASSIP III. Indeed, their logical frameworks show differences to the Results Matrix, as established and updated within the GIZ offer. Consequently, findings of the evaluation team regarding project relevance do not necessarily refer to REAGIR or IRRIGAR, which are co-financing components (HF3), nor to the KfW FC-module.

Dimension 1: The project fits into the relevant strategic reference frameworks

The key essence for analysing this dimension can be summarised by the question: Is the project's overall objective in line with national and international frameworks, policies and strategies?

The objective of PASSIP III fits into SDG 1: 'End poverty in all its forms everywhere' and SDG 2: 'End hunger, achieve food security and improved nutrition and promote sustainable agriculture', as well as into Agenda 2030 objectives and other overarching development initiatives such as the G5 Sahel, the EU (ECHO, the 11th EDF) and the United Nations (e.g. FAO, UNDP), addressing specific Sahel regional problems. (EU-GoM, 2015; EC, 2015; Sahel Alliance, 2018; FAO, 2016)

The objective of PASSIP III is in line with that of the National Agricultural Policy (GoM, 2005; MDR, 2014) and the National Program for Small-Scale Irrigation (MDA, 2010) as well as with BMZ's rural development objectives and strategies (e.g. BMZ, 2010; BMZ, 2013) and the BMZ country strategy (BMZ, 2017).

However, throughout discussions during the field visits with representatives from international donors and organisations, doubts arose over the consistency of the declared political willingness of the Government of

Mali (GoM) to implement the formulated national policies and strategies and the limited resources provided, particularly for irrigation schemes. External financial support from the international donor community plays an important role in this field, as concepts and capable staff are missing in the agricultural extension services. Interview partners of international donors and organisations reported that agricultural policies and sector strategies were implemented when bilateral donors or multilateral institutions provided financing, including most of the necessary running costs. On the other hand, interview partners in the field (Mopti and Kayes) emphasised the usefulness of the multi-layer approach of PASSIP, with its introduction of new agricultural products and methods of production and food processing leading to increased productivity and incomes, improvement in nutrition, the provision of training, inputs and equipment, and the functioning of small-scale irrigation systems under the management of local water committees.

The German technical and financial support to the irrigation sector in Mali goes back to 1975. From 1993 until 2009 joint efforts had been made by KfW, GTZ/GIZ (among others Programme Mali Nord) and DED to assist the irrigation sector in Mali. In 2008, PASSIP started as a TC-project, with its first phase (PASSIP I, PN 2007.2147.2) supporting the small-scale irrigation sector. The irrigation sector has therefore been highly relevant to bilateral cooperation between Germany and Mali for more than a decade.

Germany has agreed with the GoM to focus its bilateral cooperation on three sectors in Mali (BMZ, 2017):

1. decentralisation and good governance,
2. agriculture (especially irrigation), and
3. water and sanitation.

PASSIP was embedded in sector 2, and thus covered one of the focal areas of extensions of the original GIZ cooperation between Mali and Germany (small-scale irrigation). Up to now, the GoM has provided staff and office space for component 1, as stipulated in commission by BMZ. In the next bilateral negotiations, more substantial financial contributions from the Malian side will be requested.

In summary, the project fits into the relevant strategic reference frameworks at the different levels (national policies and strategies, international standards, strategies of German development cooperation). As some doubts have been reported with respect to financial commitments of the GoM, and some additional learning from experience by other projects could have been considered, the evaluation team decided not to award the full score, awarding this dimension **35 out of 40 points.**

Dimension 2: The project is suitable to match problems and needs of the target groups

In general terms, management and maintenance of irrigation schemes seem to be one of the main problems in this kind of project, followed by water and access to means of production for farmers of both sexes participating in small-scale irrigation.[22] Thus, project design of PASSIP comprises activities for improved access to land (in particular for women), and cooperation with financing institutes for improved access to financial services for agricultural smallholders and contract-farming (GIZ, 2016d).

The provision of free kits was meant as an incentive for the target group to test and to convince them of the usefulness of new products and production methods (introduction of potatoes and mangos, fish farming in ponds, and production of parboiled rice). In addition, it should serve to verify increased productivity and showcase job-creation in agribusiness. Interviews with households in two irrigation schemes, Guérékélé and Tabakoro, showed that these issues are relevant for the target groups, although some interviewees enumerated additional support in other fields (e.g. health issues, access to land and children welfare) they

[22] These areas of improvement are confirmed in COMPUSTAT, 2018, p 41.

deemed desirable.

Indicators were specifically defined to target women (and young people), and the project incorporated the different perspectives, needs and concerns in an adequate manner.

It was quite obvious that most of the small-scale farmers in Mali lived under unsatisfactory economic conditions, and a corresponding objective had been defined as the module objective of PASSIP III. According to the former GIZ proposal (GIZ, 2013b), the core problem for small-scale irrigation farming was: 'Private and public actors are unable to valorise the potential of small-scale irrigated agriculture in order to improve their economic and nutrition situation'. The project's definition regarding the actual core problem had been changed in 2016 to: '*The rural population is* unable to valorise the potential of small-scale irrigation areas in order to improve their economic and nutritional situation'. The change from private and public actors (as in 2013) to rural population (as in 2016) without considering shifts in core problems due to progress already achieved after several years of support was an indication for the evaluation team that current core problems might not have been taken into account in all their complexity (GIZ, 2016d). A possible definition of the core problems could be: 'Small-scale producers with potential for irrigation do not have access to adapted and functioning infrastructure, to land and services that would allow them to achieve better income through increased agricultural yields, value creation and marketing.'

Core problems were addressed by the project in various ways: the non-existence of basic infrastructure was tackled by creating irrigation schemes and supporting committees; the lack of access to land, especially for women, was being tackled by awareness-raising regarding land-law issues as well as through involving the Fédération Nationale des Femmes Rurales (FENAFER) in the implementation of PNIP; and limited access to finance was dealt with through the SEWOH-project AgFin. (See also GIZ-PASSIP, 2018b.)

In general, although evidence remained rather anecdotal, the COMPUSTAT study (COMPUSTAT, 2018) tended to show that PASSIP has been largely relevant to the surveyed populations.

Relevance of nutrition

Nutritional problems (especially with respect to food considered valuable by 'nutrition physiology'[23]) at the level of irrigation farmer households have not been referred to as a major development issue prior to the project design. Instead, irrigation households have generally been considered privileged because their access to water and land makes it easier for them to access food, even nutritionally valuable food, than for households conducting rain-fed agriculture under increasing impacts from climate change. Nonetheless, the baseline study on nutrition by PASSIP, a study based on the conceptual framework for food insecurity analysis adopted by the World Food Programme (WFP) (DNGR-GIZ, 2015) pointed out a relatively high degree of malnutrition in a major agricultural production region (Sikasso) without reference to nutrition physiology. There was broad agreement among project staff and others that those findings did, in fact, justify the relevance of the nutritional aspects within the project objective at module level (Int_ with other donors and subcontracted NGOs by PASSIP). Thus, the module objective combined improvements of the economic situation with enhancements of nutrition aimed at raising consumption of food that was nutritionally valuable within the target group.

Improvement of nutritional status and prevention of malnutrition are among the priorities of the GoM, and changes in agricultural land use (e.g. irrigation, adapted crops with better nutritional value) have a strong potential for contributing to the achievement of these goals. In this context, food security is relevant for

[23] The term *'ernährungsphysiologisch wertvoll'* (nutrition-physiologically valuable) is not defined in the development context and SDGs. Nutrition physiology refers to nutritional requirements and quantities for individuals.

PASSIP III, and PASSIP III is relevant for food security.

In summary, the core problems and needs of the target groups defined were not been totally addressed within the actual design of PASSIP III. Women (and young people) were adequately considered. Outputs 3 and 4 were important for achieving the module objective but should have been formulated more precisely and with a view to sustainability criteria, in the evaluators' view. Output 1 and 2 contributed indirectly to the module objective, but were considered to be an important part of the multilevel and capacity-building approach of PASSIP.

This rating is composed of 8 out of 10 points for considering gender issues (especially women), 8 out of 10 points for the nutrition aspects and 9 out of 10 points for issue of adequately addressing the core problems of small-scale irrigation farmers, giving an **over rating of 25 out of 30 points.**

Dimension 3: Adaptation of the project design to the module objective

The design of the module follows a multi-level approach.

- **Outputs 1 and 2** describe two important contributions for achieving the module objective: 'The rural population engaged in small-scale irrigation improves their economic and nutritional situation'.

  Output 1: 'The Direction Nationale du Génie Rural (DNGR) ensures a better coordination for the implementation of the Program National d'Irrigation de Proximité (PNIP) in cooperation with key actors at macro, meso and micro level' is related to the improvement of capacities at national and regional level for the DNGR/DRGR. This is particularly important as governmental structures have been characterised as not very efficient, and a better implementation of PNIP would contribute to raising the productivity of irrigation schemes, if maintenance was well organised. Thus, Output 1 contributed to achieving the module objective, although the causal link from improved services to enhancements of the economic and nutritional situation of the rural population due to small-scale irrigation is quite long. The question, raised by interview partners of other donor agencies in Mali was whether there was real interest on the governmental side to undergo a reform process. And the project was not in a position to exert real influence on that matter.

  Output 2: 'The public and private service providers and multiplicators have the necessary technical, didactic and pedagogical skills for the implementation of the PNIP' had only an indirect likelihood of obtaining results on the module objective, as it referred to competent service providers having received training, not to the scope and quality of the application of this training. Although having competent service providers and multiplicators would be an important step forward, it would have been desirable, in the evaluation team's view, to include the application of acquired capacities *in the field*.

- **Outputs 3 and 4** (The installation of functional irrigation schemes, and the value afforded them by local farmers – *mise en valeur des perimètres irrigués)* cover other aspects of project success, as they give indications on suitability, proof of areas and mechanism of action. Both outputs are financed by the EU and the Government of Canada and are considered as the main or core fields of activity (HFs) of the project with respect to the target groups.

- **Outputs 5 and 6** ('In the Kayes and Gao region sustainable employments opportunities for young people and women have been created') were not indispensable for the achievement of the module objective and had recently been introduced (since 12/2017). Both were related to the creation of job opportunities for young people and women in Gao (Output 6) and Kayes (Output 5), which was a particular target group who should benefit from vegetable cultivation, aquaculture and livestock breeding; it was not directly

aimed at irrigation farmers. The establishment and valorisation of irrigation schemes (Outputs 3 and 4) may be considered as enablers for the creation of employment for young people and women. Nonetheless, the evaluation team considered the alignment of outputs 5 and 6 not clearly reflecting the linkage to the expected outcomes of the project.

In the view of the evaluation team, when planning PASSIP III it would have been desirable to take into account additional approaches and modalities, such as users' contribution to construction, their operation and maintenance of perimeters, and the establishment of joint funds for medium- and long-term financing, empowering them to take over the perimeters. The team also considered that the available technical, organisational and country expertise of the GIZ could have been taken into consideration to a larger extent, along with lessons learnt during the years of prior GIZ activities with small-scale irrigation in the country. (See GTZ, 1996, 2001, 2003; GTZ 2005, 2006.)

The project design reflects well the multi-level approach of GIZ, which is meant to strengthen supportive structures and adequate coordination on all levels (Output 1), build capacity to improve the implementation of PNIP (Output 2), assure functionality of irrigation schemes (Output 3) and enable and empower local farmers to value irrigated areas (Output 4). As outputs 5 and 6 are not well aligned to the others, the overall rating is some points lower at **17 out of 20 points.**

Dimension 4: The conceptual design of the project was adapted to changes in line with requirements and re-adapted where applicable.

During 2017 and 2018, the political crisis and security situation did not improve, making conditions for implementing such projects in remote regions of Mali difficult.

These risks were well known at the time of the revision of the project proposal in June 2016. Although it was evident that the project would not be able to work effectively on irrigation schemes in Timbuktu or Mopti region due to security problems, these regions were explicitly mentioned as target zones of PASSIP III. Assumptions, however, had been realistically set and were considered plausible for work in regions with severe security problems.

In addition, it has to be acknowledged that efforts had been made to mechanise and improve methods of irrigation, e.g. through drip irrigation, and that the cooperation with SEWOH-GIAE ('One world, No hunger' baseline project) served to introduce new agricultural products and practices. However, the evaluation team concluded that it would have been more advantageous for the project design to incorporate the rich GIZ experience and/or fresh ideas to solve irrigation farmers' problems and to introduce innovative techniques (e.g. incentives with own contributions by target groups).

The overall rating of **9 out of 10 points** was based predominantly on the realistic assessment of the political and security framework conditions in Mali.

Lessons learnt

The evaluation team considered it necessary to include an additional evaluation question to better assess the project relevance, namely 'How did the experience from the Mali Nord programme, the previous project of PASSIP III or other good practices by TC in small-scale irrigation influence the project design?

Experience with the Mali Nord programme had been positive, especially when it came to small-scale irrigation farmer support and the organisational issues in relation to operation and maintenance of irrigation systems, agricultural extension and advisory services. In addition, the use of free input provision was strongly conditioned by own contributions from the farmers. It has to be acknowledged that the Mali Nord Programme started working with the Ministry of Environment as a political counterpart institution (GTZ, 2009) before being shifted to the Ministry of Agriculture. The project management stated that lessons learned by the programme had been considered in the current project: PMN had to be organised differently, and individual solutions had to be identified for the various geographical regions. Sustainability remains an issue with or without direct contributions from beneficiaries.

The recommendations in the 2016 evaluation report (GIZ, 2016e) mainly focused on organisational, coordination and administrative issues of PASSIP II and did not consider any changes in project design concerning the interventions and work with target groups. Neither were other regional good practices in small-scale irrigation discussed regarding:

- sustainable operation and maintenance of irrigation schemes,
- good marketing practices, and
- adopted irrigation practices at field level.

Another example is the handbook for irrigation practices in small-scale irrigation (GIZ-PASSIP, 2014), which can be considered as a useful publication for extension workers.

The rating for the four dimensions of relevance was as follows:

Criterion	Assessment dimension	Score & Rating
Relevance	The project fits into the relevant strategic reference frameworks.	*35 out of 40 points*
	Suitability of the conception (on module outcome level) to match core problems/needs of the target group(s).	*25 out of 30 points*
	The design of the project is adequately adapted to the chosen project (module) objective.	*17 out of 20 points*
	The conceptual[24] design of the project was adapted to changes in line with requirements and re-adapted where applicable.	*9 out of 10 points*
Overall score and rating		***86 points out of 100 points Rating = Successful***

4.2 Effectiveness

Evaluation basis and design for assessing effectiveness (including contribution analysis)

The analyses of the achievements of the project and the effectiveness of its individual interventions were made on the basis of:

- Results Matrix (GIZ-PASSIP, 2018a) and Results Model for the project, (outcome, outputs and indicators),
- analytical questions of the Evaluation Matrix, and
- activities reported by the Project Progress Report (GIZ-PASSIP, 2018b).

In order to assess and evaluate the degree of achievement of the project outcome and results, at the beginning of the field mission the evaluation team proposed to discuss and revise the Results Model, which had recently been updated by the project and presented within the Project Progress Report (GIZ-PASSIP, 2018b) to BMZ. The updated Results Model presented by PASSIP shows some alterations, especially the incorporation of the new outputs related to job creation (outputs 5 and 6), which had been integrated into HF (field of activity) 3. Both outputs have the main objective of creating sustainable jobs for young people and women and are linked to irrigation as being related to vegetable cultivation, aquaculture and livestock farming.

A comprehensive data collection by means of standard questionnaires at target-group level was not possible due to time constraints and security reasons in the regions in which the project had implemented activities. Therefore, in two of the project regions, Mopti and Kayes, the local evaluator conducted a rapid assessment at household level, and also interviewed representatives from local administrations, chambers, and associations in order to identify the effectiveness of project interventions. The results of the data collection served to countercheck the information obtained from documents and interviews and for the triangulation process.

The evaluation team endeavoured to apply the methodology of a contribution analysis in order to assess whether the project interventions had achieved the intended results, and which project-related and external factors could have contributed between January 2017 and May 2018. It proved to be difficult to distinguish between these factors in light of the complex environment in which PASSIP is working, and the number of donors and projects influencing the results of activities.

The project had not used the Theory of Change (ToC) approach and the Results Model for planning, as it had not been mandatory at that time. However, it would have helped to jointly define the desired elements of the change process, the people to be involved, the assumptions made, and the action required to make change happen.

A ToC analysis was carried out by the evaluation team in view of the updated Results Model. In addition, the analysis of a complete list of activities (42) reported by PASSIP in the Project Progress Report (GIZ-PASSIP, 2018b) was set up in order to identify additional possible interrelations and result chains that had not been reflected in the Results Model.

Analysis and assessment regarding effectiveness

Reflections on SMART criteria in regard to outcome indicators
In order to assess project effectiveness, the indicators at outcome level needed to be reviewed in more detail. There are three indicators formulated in the Results Matrix:

Outcome Indicator 1: 'The gross margins of the main crops of small-scale irrigation farming by 29,000 small-scale producers (including 20% women) in the regions of Gao, Kayes, Koulikoro, Mopti, Sikasso and Timbuktu has increased by 10%'.

Assessment of quality of the indicator (SMART criteria):

- This indicator has been chosen as it is easier to assess gross margin of certain crops per hectare rather than of farm or household income[25] although it does not necessarily imply an additional gain or rate of return.
- A 10% increase over three years seems acceptable when considering the prevailing subsistence level of a considerable part of the target group.
- The calculation of crop yields, costs and residual gross margins would require a very thorough data collection and assessment at farm level and a reasonably large sample number in order to obtain a reliable value, which is unrealistic to implement and achieve.
- IRRIGAR reflects an almost similar indicator in two selected regions (Sikasso and Koulikoro) with rice production increases, while the same indicator was used to measure results by REAGIR, which may cause problems when assessing cost effectiveness of the outcome.

In general, calculation of crop yields, costs and contribution margins would require a meticulous data mining at farm level, with an adequate sample to provide reliable data which seems quite unrealistic under the given conditions. Furthermore, the evaluation team had substantial doubts as to the quality and correctness of the data delivered by the agricultural advisors, due to missing quality control.

Estimated figures can still be found in the study 'Rapport de l'étude de sondage sur l'évolution des indicateurs du PASSIP III' (COMPUSTAT, 2018), which provides information (estimations) on variable costs per hectare, average yield, production costs per kilo, retail price per kilo, contribution margin by kilo and gross margin per ha for rice, tomato, onions, shallots and potatoes in Sikasso, Mopti and Koulikoro.

Outcome Indicator 2: 'The number of women's or youth organisations or small and micro enterprises run by women or young adults, which operate economic activities in the processing and marketing of small-scale irrigation, fish and livestock products in the Gao, Kayes, Koulikoro, Mopti, Sikasso and Timbuktu regions, increases from 21 to 40'.

Assessment of quality of the indicator (SMART criteria):

- The indicator measures one single number: the increase of organisations from 21 to 40. It does not define quality or functionality of the women's and youth groups working in processing and commercialising. Whether these are functioning, successful, and producing an income in a relevant and competitive manner remains open as there is no monitoring of the qualitative development of the groups after they have been established. Thus, the indicator has to be considered as weak. The growing number of groups is not a sufficient indicator for positive change.

Outcome Indicator 3: 'The percentage of 10,000 households with small irrigation farming, which cover their need for nutritionally valuable food (based on the Score Consommation Alimentaire (SCA) with 12 food groups) from their own food stocks, is increasing from 27.2% to an average of 40%'.

Assessment of quality of the indicator (SMART criteria):

- The indicator is partly SMART. It remains unclear whether all 10,000 households in small-scale irrigation

[25] Gross margins can be used as a predictor model under a range of conditions before the agricultural season starts or to generate 'break even' figures for yields or prices. While using projected figures, they are merely a predictive tool. When the season is over, actual on-farm figures are used, and the seasons's performance is assessed in terms of crops, market prices obtained and total areas cultivated.

farming will be participating. Performance data will be measured by a study to be conducted by end of 2018.

Reflections on SMART criteria in regard to Output Indicators

Output 1: 'The Direction Nationale du Génie Rural (DNGR) ensures a better coordination for the implementation of the Program National d'Irrigation de Proximité (PNIP) in cooperation with key actors at macro, meso and micro level'. Assessment of quality of the indicator (SMART criteria):

- The corresponding indicators – **O1.1**: 'The PNIP serves as a reference system for 80% of all new small-scale irrigation projects of the DNGR and the international donors', **O1.2**: 'All national and regional coordination structures of PNIP (Comité National d'Orientation et de Suivi (CNOS), Comités Techniques Régionaux de Coordination (CTRC); Secrétariat Technique Permanent (STP) perform their functions in accordance with their statutes', and **O1.4**: 'The DRGR and DRA in the regions of Koulikoro, Mopti, Sikasso and Timbuktu each use a mechanism at implementation-level for coordination and joint monitoring of support activities in small irrigation agriculture' – are SMART and realistic, assuming that the achievement period lastS until the end of the project. Relevant data from the PNIP monitoring system (responsible unit CPS/SDR) at national and regional level were not yet generated nor available (see **O1.3**). Therefore, the steering and decision-making of PNIP by the relevant committees (CNOS, CTRC) on small-scale irrigation was done without existing M&E data, and any positive effects on the quality of planning and decision-making processes within the context of PNIP cannot be observed.

Output 2: 'The public and private service providers and multiplicators have the necessary technical, didactic and pedagogical skills for the implementation of the PNIP'. Assessment of quality of the indicator (SMART criteria):

- The output refers to building up competent service providers as part of capacity development within the project. This is appropriate at output level with an indirect contribution to outcome level, although it would have been advisable to include a measurement on application of capacities.
- **O2.1**: 'All training courses offered by the five regional reference centres for small irrigation agriculture, didactic and pedagogical tools for disseminating the learned content are included in the services of the target groups', **O2.2**: '300 newly trained private and public service providers and 300 multipliers are available through the regional reference centres', and **O2.3**: '200 service providers which are trained by the regional reference centres in the planning and application of two broad-based approaches to agricultural advice (e.g. Farmer Field School, FFS, Farmer Business School, FBS; model-builder concept)' are SMART and valid.

Output 3: 'The functionality of the small irrigation systems in selected regions is ensured'. The evaluation team would have preferred the Output 3 to have been phrased thus: 'Irrigation perimeters are self-administered by the community and operation and maintenance costs are covered through own contributions.' Assessment of quality of the indicator (SMART criteria):

- Indicator **O3.1**: 'In the Timbuktu, Mopti, Sikasso and Koulikoro intervention regions, 90% of all supported small irrigation systems are maintained by user committees' is SMART and valid.

Output 4: 'The rural population values the small irrigation areas'. Output 4 has been drafted in a broad sense. The evaluation team would have preferred Output 4 to have been phrased thus: 'In selected irrigation perimeters, agricultural production and productivity and – by processing and marketing of selected crops – farmers' revenue and income have increased'. Assessment of quality of the indicator (SMART criteria):

- Indicator **O4.1**: '20,000 producers of small irrigation and processors of processing and marketing (20%

women) are advised/trained by service providers or multipliers' refers to the number of participants but does not measure the degree of involvement or 'applied learning effects' of the beneficiaries contributing to the output – namely the extent to which participants are making use of their acquired know-how for value addition to the small-scale irrigation areas.

- **O4.2**: 'The average yields on the subsidised small irrigation areas in the Timbuktu, Koulikoro, Mopti, Sikasso intervention regions increase by 10%' can be interpreted alternatively as being related to production, thus being a measurement of productivity, or related to income. The project team explained that O4.2 reflected the productivity of the area as an indication of the quality of production technology and possible requirement for improvements.
- **O4.3**: 'At 31 supported small irrigation sites in the regions of Koulikoro and Sikasso, the product range will be expanded by 2 additional market-relevant crop products' was considered valid.
- **O4.4**: '60% of small-scale irrigation households in the intervention regions Koulikoro, Mopti, Sikasso and Timbuktu have expanded their food with two nutritionally valuable food groups' was an ambitious indicator and difficult to measure.

Output 5 and Output 6: 'In the Kayes and Gao region sustainable employment opportunities for young people and women have been created.'

- **O5.1**:'280 newly created employments in the fish pond management value chain (out of which 20% for women)',
- **O5.2**: '260 newly created employments in the vegetable value chain (out of which 20% for women)',
- **O5.3**: '100 newly established MSMEs, founded by women or young people in the both value chains',
- **O6.1**: '200 newly created employments in the livestock value chain (out of which 50% for women)',
- **O6.2**: '200 newly created employments in the vegetable value chain (out of which 50% for women), and
- **O6.3**: '50 newly established MSMEs, founded by young people (men and women) in the both value chains'.

Assessment of quality of the indicator (SMART criteria):

- The indicators are valid. There will be no interference with REAGIR and IRRIGAR.

The analysis of the indicators reveals some weaknesses in the formulation at all levels, as described above. They are not all suitable for measuring the degree of project progress and achievement of the module objective at the end of the project, and less so for defining the degree of achievement for the time being.

Dimension 1: The project achieves the objective on time in accordance with the project objective indicators agreed upon in the contract.

The main question for this dimension is whether the project achieves the objectives (outputs and outcome) on time in accordance with the project objective indicators agreed upon in the contract. The effectiveness is measured according to the current situation of the TC-module.

Achievement of output indicators

The effectiveness of the different components or fields of activities (HFs) varied. However, progress against the above-mentioned six results (outputs) had to be measured with regard to effectiveness of the fields of activities (HF). The HFs did not correspond one-to-one with the results but required more complicated cost-carrier accounting and cost-effectiveness calculations.

The evaluation was hampered by the fact that for some of the output indicators the database and figures were not yet available, with some studies being under preparation, and the quality criteria or timelines not

being sufficiently defined to measure achievement over time. This holds true for **Output Indicator 1.3**; **Output Indicator 3.1** and **Output Indicator 4.4** (GIZ-PASSIP, 2016).

PASSIP acknowledged that there were qualitative deficits regarding data captured and provided by agricultural consultants as they had not received training in methods of yield measurement. Measurement tools were also unavailable at the level of perimeters. A definition of values for the indicators therefore did not yet represent measurable progress or a proven result. Furthermore, the period of active implementation (since January 2017) had been rather too short to achieve the results, and most of the existing results were from previous periods of PASSIP (2008–2016). Due to the short time frame of project implementation (01/2017–05/2018), measuring progress on output and outcome level was only possible to a limited extent.

The evaluation team worked intensively with the impact-oriented monitoring unit of the project in order to assess the effects and results achieved and documented since January 2017. The basis for the joint assessment was the Results Matrix (GIZ-PASSIP, 2018A) and the Project Progress Report (GIZ-PASSIP, 2018b). Inconsistencies between the data available at the impact-oriented monitoring unit and the PPR were identified, and most of the figures report the number of participants at training events or give percentages without confirmation of the source of information at impact-level (GIZ-PASSIP, 2018c). No survey to measure the household income of small-scale irrigation farmers had been conducted in the different regions where PASSIP had been active since 2013/2014.

The achievement of the outcome and output indicators was difficult to measure as indicators in the vertical and horizontal logical structure of the Results Matrix lacked quality assessment criteria to show an improvement of services.

For **Output 1** ‘The Direction Nationale du Génie Rural (DNGR) ensures a better coordination for the implementation of the Program National d’Irrigation de Proximité (PNIP) in cooperation with key actors at macro, meso and micro level’, the first indicator was almost achieved at 94%, the second indicator was achieved half (50%) and indicators 3 and 4 had still not been measured. For approaching an assessment, a proxy indicator could be used, referring to interviews conducted with the DRGR and DRA in the context of the survey study on the of PASSIP III indicators. According to these interviews, PASSIP had provided trainers and supported the showcasing of hydro-agricultural development and the valorisation of products from small-scale irrigation (COMPUSTAT, 2018: 60).

The formally attained Output Indicator 1.2, referring to all national and regional coordination structures of PNIP (Comité National d’Orientation et de Suivi (CNOS); Comités Techniques Régionaux de Coordination (CTRC); Secrétariat Technique Permanent (STP)) performing as established in their bylaws, could be taken as an example of some deficiencies in indicator definition. It did not have a direct link to the improvement of the economic situation of irrigation farmers, and there was no qualitative measurement of the achieved result. The ‘analysis of protocols of respective meetings and participants’, comments, M&E of DNGR / BSSE’ could depict potential improvements to a limited extent only.

In the case of **Output 2** ‘The public and private service providers and multiplicators have the necessary technical, didactic and pedagogical skills for the implementation of the PNIP’, the four indicators were achieved at 60% (2.1), 59% (2.2), 66% (2,3) and 62 % (2.4).

The achievement of the only indicator for **Output 3** ‘The functionality of the small irrigation systems in selected regions is ensured’, was 60%. According to the Project Progress Report (GIZ-PASSIP, 2018b), 96%

of 79 irrigation schemes were managed by user committees. Available monitoring data were poor and no details of progress information for each of the irrigation schemes were available (GIZ-PASSIP, 2018c; GIZ-PASSIP, 2018d). Field inspections to review exactness and credibility of data collected by the external consultant teams was hardly possible due to security reasons. It seemed that user committees were facing considerable financial constraints. Many committees were not in a position to cover organisation and management costs with their membership fees. Additional organisational problems were related to lack of a bank account, low levels of literacy of members, little commitment to take over responsibilities for the committee or other economic priorities. An external evaluation on this issue would be helpful and could provide valuable information on how to deal with and overcome these constraints.

This said, data from the 2018 study on PASSIP III indicators point to similar levels of irrigation schemes managed by user's committees. In the three regions covered (Sikasso, Koulikoro and Mopti), 33 out of 40 of the user's committees were deemed functional by the surveyed farmers, and about 74% of the farmers think the irrigation schemes were adequately maintained (COMPUSTAT, 2018: 24).

Output 4 'The rural population adds value to the small irrigation areas' was successfully achieved, with overachievement in indicator 4.2 (101%) and 4.3 (150%).

Indicator 4.1 was attained at 43%; Indicator 4.4 was to be measured at the end to the current term.

For **Outputs 5 and 6**, no measurement of indicators was yet available.

In total, out of 13 indicators, two had been overachieved, one was almost achieved, three had not yet been measured, and the remaining seven show a completion rate between 43% and 66%.

Overall, interpretation of results had to be done quite carefully, as quality of quantitative data provided to measure output achievement by external consultants did not seem to be very reliable. It had not been possible for PASSIP to conduct quality control or valuation of data and information captured, which limited the provability, usability and explanatory power of data and information regarding the achievement of outputs. Therefore, the evaluation team seriously questioned the reported progress in achieving the outputs defined.

In particular, doubts arose regarding the achievability of the expected number of irrigation schemes sustainably managed by water user committees by mid-2019.

Module Objective and achievement of outcome indicators

The **Module Objective** for the project was changed twice, and broadened, incorporating additional activities and results (outputs) and also modifying the outcome indicators,[26] putting new challenges to project implementation (GIZ, 2017c). [27]

According to progress reports and the efficiency tool, two indicators at the outcome level had already been formally achieved (**Outcome indicators 1 and 2**). The indicator concerning the establishment of groups (women and youth) was formally over accomplished, with 49 groups instead of the 40 stated as the indicator target value.

However, the evaluation team pointed out that there were no statements, ratings or studies taking into consideration functionality, competitiveness, qualitative improvements of services and other criteria to

[26] e.g. Outcome indicator 1: the number of beneficiaries was raised from 19,000 to 29,000.
[27] GIZ PASSIP (2017) Change Offer (16.2036.8, Date: 5 December 2017)

measure the sustainability of these groups, and PASSIP had not conducted related field surveys. Nor was the quality and added value of the PNIP as reference system for new small-scale irrigation schemes sufficiently considered.

Outcome indicator 3, which is related to the nutrition aspects, and financed by the EU, could be measured and assessed only at the end of 2018, after the planned impact study had been conducted.

The local authorities interviewed for the study on PASSIP III indicators highlighted their satisfaction with the PASSIP intervention, as they claimed it had enhanced production and nutritional quality and, to a certain extent, increased well-being in the local communities. This could not be used as full evidence that Outcome Indicator 3 would be reached, but provided a hint that progress was likely to be made in the right direction, whether the objective was met or not (COMPUSTAT, 2018).

In summary, the project would not fully attain the defined Module Objective and the proposed indicators in quality and time; at outcome level, in particular, the envisaged results would most likely be achieved only to a certain degree.

In discussion with the evaluation team, the project management argued that all results and effects would be attained by the project before the project end. It should be noted that, at the time of the evaluation, PASSIP III still had a one-year period for implementation, with a full growing season, which could still produce effects. However, when considering the Project Progress Report (GIZ-PASSIP, 2018b), little was reported about the intermediate results achieved by the project. Only a few of the 42 activities reported under the Project Progress Report of May 2018 had led to measurable intermediate results but would represent a major breakthrough in achieving the project's objective.

Qualitative data of the COMPUSTAT (2018) study also pointed to gradual improvements in the consistency of production due to be better management and maintenance of irrigation schemes despite ongoing challenges. Although measurable results were lacking at the time of the evaluation, one could be optimistic about a significantly improved situation contributed by PASSIP.

All in all, the rating of the achievement of results was **30 out of 40 points**.

Dimension 2: The services implemented by the project successfully contribute to the achievement of the project objective.

This dimension measures whether the implementation strategy and the services implemented by the project have successfully contributed to the achievement of the project objective.

The project had not elaborated and developed a comprehensive capacity development strategy for its implementation and interventions at all levels based on a SWOT- analysis that related to the interrelated HFs (fields of activity) of the TC-module (interviews with GIZ staff, additional documents received on 30.05.2018).

As interrelation between the different fields of activity (HFs) had been mentioned in the Evaluation Report on PASSIP II (GIZ, 2016e) as weak, action had been taken to interlink and complement the project's fields of activity. HF 3 integrated training modules developed in HF 2, which were being implemented by consultants previously trained in HF 2.

With regard to **HF 1** (**Output 1**: The Direction Nationale du Génie Rural (DNGR) ensures a better coordination for the implementation of the Program National d'Irrigation de Proximité (PNIP) in cooperation with key actors at macro, meso and micro level), the evaluation team wishes to point out that number of projects varied with every new project that started. For the PASSIP III, a 75% adoption rate (from 18 projects) was reported.

Interview partners considered efforts underway to adapt and revise sector intervention strategies within the framework of PNIP as being insufficient to improve the quality of approaches and instruments within the whole project cycle for small-scale irrigation schemes (identification, participatory planning, construction guidelines, supervision of construction sites, accompanying measures for the organisation of user committees, operation and maintenance of irrigation systems, etc.) (interviews with partners, GIZ and KfW staff).

The main result envisaged under field of activity **HF 2** (**Output 2**: The public and private service providers and multiplicators have the necessary technical, didactic and pedagogical skills for the implementation of the PNIP), was the training of public- and private-sector providers.

The selection of approaches used, such as farmer business schools (FBSs) and farmer field schools (FFSs), as well as synergies with the SEWOH -Green Innovation Centre project and the SEWOH-Food Security and Resilience project, in general terms generated knowledge and contributed to a large number of persons trained by PASSIP under HF 2 (PASSIP monitoring data, interviews GIZ staff and partners).

For all training events PASSIP was financing the trainees, the instructors, the training institutions used and all services related to these training activities. No contribution or co-financing was made from any of the counterpart institutions related to these activities, neither from the Ministry of Agriculture nor from the agricultural training institutes in the five regions (interviews with GIZ staff, partners and stakeholders; field visits). However, for the follow-up phase, viable models for financing would be developed and partner contributions requested.

HF 2 was only contributing indirectly to the project outcome. In order to assess the effectiveness of training and capacity building, a survey would be required to investigate whether trainees or service providers would indeed spread their acquired knowledge to the target groups (field visit; interviews with partners and stakeholders). Interview partners in intervention areas stressed the improvement of training, but a more systematic approach would be required to measure this output.

This said, the COMPUSTAT study on PASSIP III indicators shows that farmers were largely satisfied with the FFS scheme and were largely using the acquired knowledge. Most would even invest their own resources into the scheme. In addition, training and capacity building for maintenance and management of irrigation schemes were reported as very helpful in contributing to less dependency on external contractors, and a more consistent production (COMPUSTAT, 2018, section 2.5).

The selection criteria used by PASSIP for trainees (at all levels) in order to assure and contribute to project effectiveness was not defined, and no documentation was available for this process (interviews with GIZ staff). It was mentioned by GIZ staff that HF 3 and HF 4 had to identify and select the trainees for the so-called multiplicators. As far as the evaluation team was able to understand this process, for the training of multiplicators, HF 3 and HF 4 had to pay the full costs to HF 2 (and the training institutes) from EU and Canada co-financing funds. Tracking and monitoring of trained persons was lacking, hence it was difficult to

determine if there was application of training and whether it had contributed to some positive results in the field. The effectiveness of training for a large number of people seems to suffer from insufficient follow-up. Whether and where those trained persons used the training received was not monitored (field visit; interviews with partners and stakeholders).

Increasingly, training was also realised by PASSIP as 'service provider' for the different SEWOH projects, while the demand for PASSIP itself was declining (interviews with GIZ staff).

It can be concluded that, until the time of the evaluation, the training of public and private service providers did not assure a measurable effect for knowledge transfer to the farmers at the local level, although the implementation of the system of rice intensification (SRI) gave some positive indications. On the other hand, the strategy of training model farmers and installing demonstration plots did not give any guarantee of the dissemination of innovations to the rest of irrigation farmers.

HF 3 and 4 were considered as the core areas of PASSIP at the local level, and were financed by the two delegated cooperation agreements. Both agreements had quite different objectives. Results from IRRIGAR (EU co-financing), with its focus on nutrition, would be available at the end of the 2018. The evaluation team wanted to raise the concern that effects at the target group level would likely be difficult to achieve as changes in behaviour as regards nutrition, especially in rural areas (interviews with GIZ staff and NGOs).

The intervention strategy for the valorisation at the level of the irrigation scheme defined by PASSIP did not indicate whether farmers were increasingly adopting the proposed innovations without continuous free-of-charge assistance from PASSIP or by government institutions. A definition for the level of self-administration for small irrigation systems to strive for until the end of the project, such as defined under the PNIP (Ministère de l´Agriculture, 2010), had not been developed by PASSIP together with the Ministry of Agriculture (DNGR/DNA). Therefore, the project could not demonstrate whether this approach would be effective or not.

According to interviews with donors, other stakeholders and GIZ staff, the official agricultural extension service was very ineffective. A reform process was cancelled by the government some years ago. Consequently, PASSIP had decided to select farmers to assume the extension work at the local level, by incorporating them as so-called 'multiplicators' (*paysan multiplicateur*). The selected farmers were trained and equipped by the project. Demonstration plots *(champs école paysans*) were established by the project, and multiplicators received intensive training and provision of inputs free of charge. Assuming the role of advisory services, the multiplicators were expected to transfer the acquired knowhow, techniques and innovations to the rest of community members within their respective irrigation scheme. None of the trained individuals in the communities had any contractual relationship with or obligation to the project for implementing this type of advisory services within their respective irrigation schemes (interviews with GIZ staff).

The lack of documentation of changes adopted by other farmers or women prevents tracing the degree of progress. NGOs subcontracted by PASSIP were in charge of the follow up, together with the official agricultural extension service. The evaluation team considered this approach (free-of-charge kits for demonstration famers as multiplicators on demonstration plots, etc.) as problematic. Handing out free inputs (fertilizer, seeds, and small machinery) as kit to the multiplicators, could lead to the understanding that other community members might expect also to receive inputs free of charge before adopting the proposed innovation changes, although there is no evidence yet.

The PASSIP project had increasingly assumed and substituted the role and responsibilities of state structures and institutions. It was reported that it would be changed in the follow-on measure to raise ownership and responsibility. Through the organisation, funding and implementation by NGOs and other service providers, all measures and services for irrigation systems that had been supported by the project since 2014 were almost no longer implemented by the official extension service; NGOs and other service providers hired by projects and paid by donors were substituting more and more official services, somehow trying to fill a void left by public services (interviews with GIZ staff, observations by evaluators during field visits).

The COMPUSTAT study on PASSIP III indicators showed that irrigation schemes, combined with capacity building (FFSs) had led to an increase in productivity and yields. The improved maintenance had also shown positive effects, as discussed above. The surveyed farmers might not be entirely satisfied with the interventions, but most were satisfied with the support to management and maintenance of irrigation schemes, protection of land and irrigation schemes, and support and counselling for production (COMPUSTAT, 2018: 25, 26).

Making use of reliable monitoring data as a management tool could have further supported strategic decisions and their adaptation.

Programme coordination

Although the division of tasks between FC-module and TC-module seems to be clearly defined, coordination between both programme modules and, in particular, handover processes from FC to TC interventions, is a challenge in many projects as approaches and priorities do not necessarily coincide. In this particular case, concepts for appropriate continuation of operation, the required training and accompanying activities for proper handling of perimeters, seemed to be different and had not been aligned, as stated by interview partners from KfW. This is less a matter of system boundaries but of coordination and cooperation during project implementation.

As stated in the PASSIP II Evaluation Report (GIZ, 2016e), the relationship between KfW and GIZ was not always very cooperative in the past. During the field visit in Mali, the evaluation mission observed that joint criteria were missing for the cooperation process and for the project cycle of small-scale irrigation schemes between both institutions. There was no formal technical coordination structure between TC- and FC-modules for analysing, discussing and solving operational problems, although in HFs 3 and 4 consultations took place according to the project. Officially, ‘handing over’ was taking place between DNGR, DNA and regional authorities, and coordination should have been agreed between Comité National d’Orientation et de Suivi (CNOS), Comités Techniques Régionaux de Coordination (CTRC); Secrétariat Technique Permanent (STP) at a national level. Interviews revealed that cooperation between DNGR and DNA did not work adequately, the scope of responsibilities for small-scale irrigation had not been clearly defined, and technical and procedural mechanism were lacking. Therefore, the process did not really take place, affecting the effectiveness of the joint programme proposal (PV), although it was beyond the influence of PASSIP. In interviews with donors, disappointment was expressed regarding the non-functioning of the cooperation between TC and FC.

Selected hypotheses

It was agreed before the field mission to formulate a series of hypotheses addressing the effectiveness of the project. The hypotheses were generally verifiable/falsifiable, making use of qualitative approaches and tools.

Regarding the criterion effectiveness, the evaluation team formulated the following four hypotheses:

Hypothesis 1: ’PASSIP advisory activities at all three levels (local, regional, national) are contributing to

improve effectiveness (by improvement of institutional capacities) of small-scale irrigation schemes under PNIP'.

This hypothesis was chosen because of the multi-level approach adopted by PASSIP, which contributed through capacity development measures to an effective implementation of PNIP for small-scale irrigation projects.

By supporting the National and Regional Directorates of Rural Infrastructure (DNGR and DRGR), HF 1 aimed to bring about the sustainable implementation and continuous acceptance of PNIP as reference frame for small-scale irrigation projects and programmes in Mali. PASSIP's advisory services at regional and national level were concentrated on staff members of the DNGR and DRGR. This had been done since PASSIP started in 2008.

Various interview partners in Mopti and Kayes emphasised the usefulness of the PASSIP strategy to further develop the agricultural sector with innovations and value chains, to equip agricultural producers in order to foster a professional approach and to enable them to process food. They also pointed to the growing participation of DNGR in activities. Training had contributed to better address the widespread requirements of beneficiaries at the local level, and curricula development had broadened the scope of topics to be dealt with, such as maintenance of solar pumps and aggregates. These were just snapshots, and the evaluation team was not in a position to speculate whether this was also true for other intervention regions.

The COMPUSTAT study tended to support the hypothesis for Koulikoro and Sikasso too. The study especially hinted at positive effects and effective support at local level.

However, ownership by Malian institutions for defining, conducting and implementing the necessary services for small-scale irrigation schemes under PNIP had been described as limited (interviews with GIZ staff, donors and stakeholders), as the main services for the irrigation schemes were provided by NGOs and other service providers subcontracted by PASSIP. The GIS-unit, integrated into the Bureau de Statistique et Suivi et Evaluation (BSSE), was still subsidised. Two technicians had been fully paid by PASSIP for some years in order to assure basic services, and ownership of the unit was still missing, according to interviews conducted. The coordinator position for this unit had not been filled by the Ministry since late 2017. The contribution of the Government of Mali (GoM) for the PNIP was estimated at EUR 1 million for the forthcoming fiscal year.

As the indicators for this field of activity were formulated without quality aspects, the evaluation team had noticed that they were formally fulfilled. However, it is a matter of concern that PASSIP was assuming compensation for expenses, even for regular coordination meetings of government institutions, such as the DNGR, with their regional offices in the regions (e.g. by assuming travel costs and per diem).

A clear-cut conclusion on whether hypothesis 1 holds true was somewhat difficult to formulate. There were both positive and more negative findings when assessing the hypothesis. In general, elements available would suggest that the effectiveness was improved at local level. It is more doubtful at regional level, and evidence would suggest that it holds to a limited extent at national level, at least with high concerns regarding sustainability.

Hypothesis 2: 'Small-scale irrigation systems supported and advised by PASSIP are being operated effectively and sustained by their water user organisations (comité de gestión) in self-administration'.

The project had adopted the following approach:

- support and assistance for the formal establishment of user committees (comité de gestíon),
- training for selected members of the user committee in different subjects (e.g. accounting), and
- material support for maintenance (kits, cement, tools, all free of charge).

PASSIP assisted in the definition of responsibilities between users and municipalities for the repair and maintenance cost for extreme damages, if they occur, especially for larger infrastructures. Bricklayers had been trained to conduct repair work in all irrigation systems; they supported the committees with respect to maintenance of infrastructure. Rehabilitation had to be taken over by the respective DRGR, as the project management reported.

Many of the user committees did not have sufficient financial resources for the regular maintenance, as they had not built up sufficient savings. In consequence, the process to reach self-administration of irrigation schemes would take more time (GIZ PASSIP (2016) 'Rapport annuel PASSIP-BMZ-UE-Canada' (date: 31.5.2016). The accompanying PASSIP support was carried out without clear criteria concerning the level of self-administration that should be reached in order to diminish or leave the respective irrigation scheme to the user committee. Numerous schemes still received assistance and benefits from PASSIP.

Consequently, the hypothesis was not fulfilled, although there were early signs in the Compustat study of a potential for this hypothesis to materialise in the future and pending further support. The majority of respondents to the study claimed not to be satisfied with the water management, but a little over 50% were satisfied with the ground preservation and with the management committees of the watering facilities. Complementary qualitative data in the study highlighted that local communities were slowly taking ownership of the water equipment and its maintenance, especially of the dams. The study results thus supported the claim of early signs for future effectiveness (COMPUSTAT, 2018: 25–28).

Hypothesis 3: 'As result of the PASSIP intervention strategy for the small-scale irrigation sector, the PNIP defines suitable measures to effectively increase production and productivity in the irrigation schemes (IRRIGAR/ REAGIR) transferred by the financial cooperation (FC-module).'

The hypothesis has been chosen so as to consider the support of the project to PNIP (e.g. through capacity-development measures at DNGR/DNA) and the desired increase in production and productivity (HFs 3 and 4) intended to be achieved at 149 perimeters as a result of the joint FC/TC programme, together with the two co-financings. The project reported that DNA had recently taken over responsibility for increases in production due to intervention of PASSIP. The evaluation team took the view that this entailed a modification of the intervention strategy and activities implemented by PASSIP, with the main partner at Ministry level now being the DNGR for PNIP and therefore for PASSIP, and advice in the field at the perimeters being conducted by NGOs as subcontractors.

The evaluation team had not found evidence that the DNGR, responsible for PNIP, in coordination with the DNA, had defined effective measures for the increase of production and productivity in the small-scale irrigation schemes in the context of the agricultural policy and investment plans for the sector. The basis document for PNIP (December 2012) and its intervention strategy only refer to institutional, financial and physical implementation aspects. The issue of investment support and valorisation was defined by PNIP as: 'funding support will take into account the promotion and development of activities through the cooperation of certain technical support services' (Ministère de l´Agriculture, 2010).

The observed increase of the national budget for the agricultural sector (15%) was mainly due to the subsidy policy for fertilizer and seeds – an issue closely observed and criticised by the international donor community because of lack of transparency in commercial transactions (corruption) (interviews with other donors). The Plan National d'Investissement dans le Secteur Agricole (PNISA) defined some objectives and five

programmes for the agricultural sector in terms of increase of production, especially for food security, nutrition and poverty reduction. Absolute production increases were defined until 2025 for several crops without discrimination (MDR, 2014). Additionally, and already mentioned, coordination problems had been reported between DNGR and DNA.

Consequently hypothesis 3 was considered not valid.

Hypothesis 4: 'The small irrigation perimeters supported and advised by PASSIP are producing higher-quality foods, thereby improving food supply and changing the eating habits of smallholder families and thus contributing to the module outcome.'

With regard to hypotheses 4, it can be concluded that some activities realised by the project on irrigation schemes were promoting additional crops and diversification, mainly for vegetables. Some minor effects date back from PASSIP II (GIZ, 2016e). As the planned impact study was only going to be conducted by end of 2018, it was not possible to verify improvements of food supply and changes related to eating habits of smallholder families.

This hypothesis would only be verifiable after the end of 2018. Nonetheless, there was evidence from the beneficiaries' side, and the project reiterated that production was already being diversified with higher-value food, and this food stuff was increasingly consumed by households. This was also supported by the results of the COMPUSTAT study. For most of the agriculture products, producers indicated their satisfaction with the quality of the products. For instance, for rice, close to 70% of producers were satisfied or very satisfied with the quality of the rice. For tomatoes, 72% of producers were satisfied or very satisfied with the quality. It was worth noting that PASSIP had introduced a new variety of tomato of higher quality. For onions, more than 75% of the interviewed producers were satisfied with the quality and close to 75% were satisfied with the quality of the shallots.

One element had to be stressed though. Contrary to the view of the producers, consumers of rice and tomatoes sometimes preferred a lower quality as the price–quality relation seem to be more advantageous. Despite the quality being high, the marketability of the product was thus quite limited (COMPUSTAT, 2018: 31–38).

Consideration of the 'do no harm' approach

By promoting irrigation projects, and due to the limited availability of water resources and of land, certain populations or target group members were excluded from benefits. By applying the 'do no harm' approach, the risk of conflicts regarding exclusion and limited resource management can be minimised. PASSIP did not take the decision where to establish the perimeters for small-scale irrigation. The project tried to lower or avoid conflict by establishing and training management committees who were the ones to decided on a fair distribution of water and land.

A study of integrated water resource management (Ministère de l´Agriculture/DNGR/GIZ, 2017), financed by PASSIP, had not yet been validated by DNGR and other decision-makers involved after six months, and the efforts and the support for the regulation of the land law had shown little progress (interviews with GIZ staff). Several studies had been conducted relating to different issues, such as environmental impacts. These had been used to set up an erosion control programme on irrigation schemes. Furthermore, inventory studies were conducted by PASSIP for a great number of irrigation systems being used for defining the measures and assistance for this irrigation schemes. These measures did not always follow the assistance strategy already applied for two years by the FC-module (interviews with GIZ staff).

Monitoring data collection

Entrusting the Malian government structures (official agriculture extension workers to whom per diem and fuel is paid by the project) with the collection of monitoring data did not liberate PASSIP from gathering project performance data related to target groups, or at least cross-checking the data. This general requisite was admittedly limited by the adverse security situation, which did not allow regular inspection visits by the project team. According to the project management, the project was collecting data in Timbuktu and would, in the near future, collect it in Gao as well. All field units were assigned to M&E assistants. Additional data were provided by subcontracted NGOs and local partners. The evaluation team would like to emphasise that the monitoring unit did not verify the quality of the data and its suitability with respect to the indicators. Thus, available information did not necessarily prove realistic progress at field level. Hence, the current quality control was considered as not being very effective. There was no documentation available on possible support and advice by PASSIP to improve the M&E system at Ministry of Agriculture, nor on the training of consultants working in the field that could have made a difference in data mining.

Summary

The contribution of the project regarding the achievement of results was hampered by the project design and the adopted intervention strategy for implementing the design. In order to achieve the objective of the project the main focus was on HF 3 and HF 4, with co-financing from the two delegated co-financing agreements. During the evaluation mission, it could not be proved that farmers were increasingly adopting the proposed innovations. However, the COMPUSTAT study indicated that at least one-third of the farmers were adopting innovations and knowledge transferred in FFSs (COMPUSTAT, 2018: 49).[28]

The evaluation team saw the risk that free-of-charge assistance (particularly giving free inputs such as feeds, fertilizer and small machinery as kit) create 'take-away effects'. Although the various incentives did produce short-term results, they may also have created continuous dependence on PASSIP. The COMPUSTAT study provided evidence that learning from the FFS had been significantly applied by farmers who benefitted from this support. Challenges remain regarding the marketability of some of the outputs. Tomatoes were a good example, as they were costly to produce, despite a high retail value, but they had a high proportion of waste and a limited market. They were mostly used for subsistence, and some farmers questioned the viability of the value chain.

No monitoring data or other proof of adoption of innovation had been provided. Therefore, the evaluation team had doubts about the achievement of the planned and intended results by the end of the project.

The intervention strategy chosen by the project without a clear definition regarding the self-administration of the irrigation schemes and thus with a limited perspective was not convincing, especially as weak state-structures for extension services for the target groups were successively replaced.

The rating for this dimension was **20 out of 30 points**.

Dimension 3: The occurrence of additional (not formally agreed) positive results has been monitored and additional opportunities for further positive results have been seized. No project-related negative results have occurred – and if any negative results occurred the project responded adequately.

It was reported during field visits in Mopti and Kayes that conservation and processing of agricultural goods served to empower women and their position as producers and money-earners, taking a more active position

[28] Adoption rates were estimated as 35% (Mopti) and approximately 93% (Sikasso).

when holding discussions in committees with men. The new approach of strengthening cooperatives benefitted both men and women. And there were positive synergy effects ascribed to improved nutrition, especially in children, as rural radio stations broadcast programmes about healthy child nutrition (interviews with stakeholders).

Both the producers and the extension agents mentioned learning new ways of constructing dams or delivering water as additional positive effects.

Due to institutional weakness of DNGR/DNA, and especially the Agricultural Extension Service, the project was obliged to substitute official services by subcontracted NGOs and consultants. This might constitute a limitation to sustainability.

Neither positive nor negative additional results were documented by the project, and adequate responses and/or uptake for improving the project performance were thus not supported. The rating was **25 out of 30 points**.

Criterion	Assessment dimension	Score & Rating
Effectiveness	The project achieves the objective on time in accordance with the project objective indicators agreed upon in the contract.	*30 out of 40 points*
	The services implemented by the project successfully contribute to the achievement of the project objective.	*20 out of 30 points*
	The occurrence of additional (not formally agreed) positive results has been monitored and additional opportunities for further positive results have been seized. No project-related negative results have occurred – and if any negative results occurred the project responded adequately.	*25 out of 30 points*
Overall score and rating		***75 out of 100 points*** ***Rating = Rather Successful***

4.3 Impact

Evaluation basis and design for assessing impact

According to the DAC definition, impact is understood as the set of all positive and negative changes regarding overarching development objectives induced by the project intervention, directly or indirectly,

intended or unintended. The evaluation considers all results, intended and unintended and also the positive and negative impacts of external factors.

The analysis and discussion of the objective of the joint programme proposal (PV) and its indicators was considered the first step of the impact evaluation.

Reflections on SMART criteria in regard to programme objective and its indicators
The joint programme objective was changed according to the Project Progress Report (PPR) of May 2018 (GIZ-PASSIP, 2018b) to 'The rural population of Mali makes use of the economic potential of irrigation for sustainable, viable agriculture and increased food security.' The former version of the PV used by the project (GIZ, 2016d) contributed to a more general objective, but pointed in the same direction: 'The economic and nutritional situation of the rural population engaged in irrigation have been improved'.

The corresponding three indicators related to the objective of the joint programme also changed in the GIZ Progress Report of May 2018 (GIZ-PASSIP, 2018b). The following observations regarding the programme indicators have been made:

Indicator 1: 'The proportion of the chronically malnourished population of 29.1% is reduced to 25% (this corresponds to a reduction of malnutrition among 650,000 people'.

Assessment of the quality of the indicator (SMART criteria): The indicator did not define any target group in relation to the joint programme and its contribution to the objective defined in the programme proposal (PV) in the context of small-scale irrigation remained unclear.

Indicator 2: 'German Development Cooperation contributes to the objective of the National Programme for small scale irrigation (PNIP) with the valorisation of 15,000 ha additional irrigation area'.

Assessment of the quality of the indicator (SMART criteria): There was no definition on the number of farmers, households or irrigation schemes as the target for the 15,000 ha of new small-scale irrigation areas. No definition was given regarding the intervention areas or regions.

Indicator 3: 'From the newly developed areas of the programme of approx. 15,000 ha in small irrigation and 4,000 ha in greater irrigation systems at least 80% are used /cultivated, with yields averaging of 5.0 t/ha rice with controlled irrigation (large-scale irrigation and village perimeters) and 20 t/ha onions or tomatoes for small dams'.

Assessment of the quality of the indicator (SMART criteria): The indicator combines small-scale irrigation with greater irrigation schemes as the benefitting farmers are in both cases smallholders with average operating areas of 2 ha (interview with GIZ staff). No requirement relating to gross margins is given as an indicator, contrary to what is defined in the TC-module.

Analyses and assessment regarding impact

Dimension 1: The intended overarching development results have occurred or are foreseen.

The implementation of all proposed measures in the four fields of action implied that the project should reach impacts at the political, national, regional and local level. As we know, a multitude of factors influenced the hypotheses of impacts, and the project had no total control over these factors.

Evaluation of possible project impacts was based on the information gathered in the Project Progress Report (GIZ-PASSIP, 2018c), information from field visits, and the data provided by the project monitoring (GIZ-PASSIP, 2018c).

A contribution analysis was applied, as it allowed an assessment of the reasons why certain/specific results had or had not been attained and how the project or external factors had contributed. Related questions were:

- Has the project influenced the observed result?
- How much of a difference has the project made?
- What would have happened without the project intervention?

A necessary precondition for achieving project impact would be the achievement of the module objective. Otherwise impacts could at best only be partial, especially in view of the impacts provided by the KfW-financed infrastructure intervention, which were perceived as much stronger than the ones expected from PASSIP technical assistance because of the already constructed infrastructure and advisory services provided over a two-year period by the FC-module before PASSIP took over the irrigation schemes for its support services (interviews with GIZ staff and KfW staff).

The overarching development goals to which PASSIP contributed were defined by the joint programme proposal of KfW and GIZ (PV): 'The rural population of Mali makes use of the economic potential of irrigation for sustainable, viable agriculture and increased food security'. Under the joint programme proposal (PV), PASSIP, together with the KfW FC-module, defined long-term results to be achieved through the joint support of small-scale irrigation under the PNIP, as well as large-scale irrigation under the Office du Niger. By establishing irrigation infrastructure, increasing production, productivity and organising users for operation, maintenance and administration of their schemes, the economic (and nutritional) situation should improve (KfW, 2017).

Quite a number of irrigation schemes were considered as 'ready' for transfer to DNGR/DNA after two years of assistance by the FC-module. However, a number of schemes were actually still waiting for assistance from PASSIP, possibly due to still inefficient structures and procedures at the level of this partner organisation. In order to achieve the number of 149 irrigation schemes defined as the target (Output Indicator 3.1) over the following 12 months, the project had to attend and support additional 70 irrigation schemes. This did not seem to be realistic, but no strategy changes were observed for responding to this challenge.

Both co-financing agencies pointed out that they were still expecting PASSIP to achieve the results in terms of the economic improvement for the rural population and self-administration by user committees among the total number of 149 irrigation schemes defined under the agreements signed (interviews with donors). Based on former experiences and results achieved up to 2019, PASSIP supported the National Directorate for Rural Infrastructure (DNGR) in improving the coordination for a better implementation of the national small-scale irrigation program 'Programme National d'Irrigation de Proximité' (PNIP) in cooperation with key actors at macro-, meso- and micro level (Output 1/HF 1). The project expected impacts from that measure, although not within its lifetime.

Chain of effects

In order to better understand how the project would contribute to the programme objective, an analysis of the necessary project activities had been carried out by the evaluation team. It was understood that the

'multiplicators' or 'model farmers' played a key role in spreading out effects and for knowhow transfer, as outlined in Figure 4:

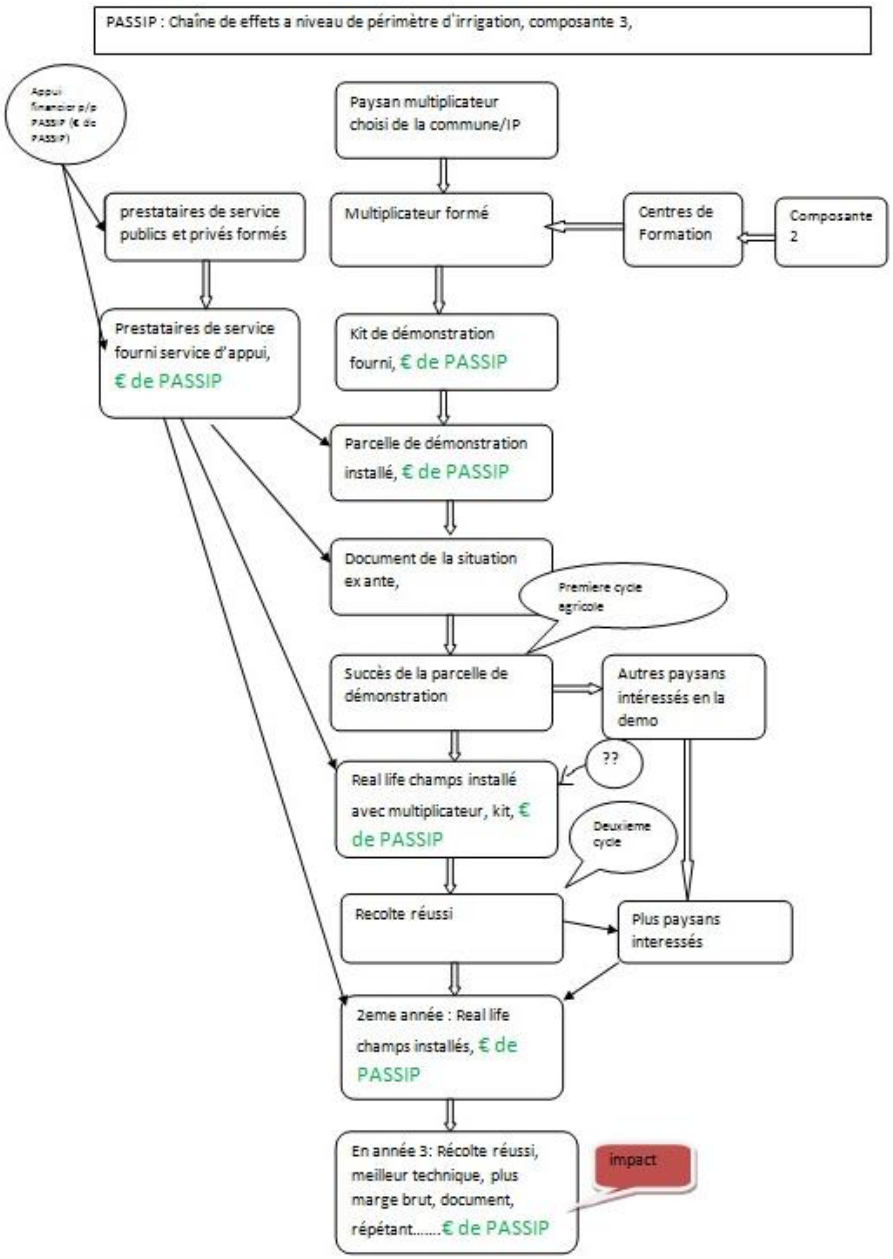

Figure 4: Effects chain at the irrigation-perimeter level

The diagram clearly shows that:

- The minimum time to measure effects on the module objective would be three years. The first potential effects would only occur years after the project ended, and would require several more years to broadly spread out the innovation.
- A considerable financial support from PASSIP was necessary in order to keep the whole process running, with the volume increasing in proportion to the number of farmers adapting the new techniques.

It has to be concluded that it will hardly be possible to stimulate impacts during the lifetime of PASSIP III, especially as the majority of irrigation infrastructure had not yet been completed by the KfW FC-module and as part of the two co-financing agreements from Canada and the EU (GIZ, 2014a; GIZ, 2014b). However, it was possible to assess the probability of the impact materialising at the end of the second cycle, based on the increase in productivity and contribution margin. The gradual increase in interested farmers could also be understood as an indicator of potential impact.

The 'leave no one behind' principle

This paragraph analyses the degree to which marginalised groups were reached ('leave no one behind') by the project. As elaborated above, the project had envisaged women being 20% of the target group. The decision as to which of the small-scale irrigation households could participate as beneficiaries in a new irrigation scheme had already been taken during the planning phase (pre- and feasibility studies) and decided on the basis of technical and other criteria (such as water, land, infrastructure investment cost per hectare) by external consultants under contract by the FC-module under PNIP (interviews with KfW staff). PASSIP did not participate in this process. It was explained that agreement had to be reached between farmers' organisations, local authorities, DRGR and the FC-consultant. At the end of the day, the responsibility for deciding who would participate lay with local authorities and farmers' organisations. No alternative proposals for the decision-making process and how to deal with marginalised households and those excluded from irrigation schemes had been developed by the project in the context of PNIP.

Actually, it was reported that PNIP (DNGR, DNA, municipalities and regional offices) had around 1,800 demands from communities asking to receive support for small-scale irrigation schemes. Each demand had to follow an official bureaucratic process before a decision was taken whether the demand was accepted or not (interviews with partner organisations). Several demands had already waited for years without an official answer and this situation was leading to increasing discontent at the local level (field visits by local evaluator). From the field visits conducted and interviews with KfW staff and other donors, it was found out that the community leaders were defining within their social governance structure how to address internally the issue of households excluded when a new scheme was constructed and implemented.

Summary

In summary, there was a time gap between the FC-module and the TC-module, making it difficult to generate the expected impacts in the commissioned phase by BMZ, as the majority of irrigation infrastructure had not yet been completed by the KfW FC-module. Time dimensions and a better synchronisation of fields of activity should be taken into consideration when planning the follow-on measures.

In addition, bureaucratic and long-lasting procedures had limited a more rapid involvement of communities soliciting support to introduce new small irrigation schemes.

And, finally, the minimum time to measure effects on the module objective would be at least three years. The first potential effects will only occur years after the project ended in June 2019, and would require several more years to broadly spread out the innovation. As the project introduced new products/varieties and agricultural techniques, forecasts on yields were difficult to establish.

The rating was **25 points out of 40 points**.

Dimension 2: The project contributed to the intended overarching development results.

The following hypotheses regarding impacts had been formulated by the evaluation team and assessed in order to analyse potential impact contributions of the project within the given time frame.

Hypothesis 1: 'The combined FC and TC measures contributed to the improvement of the agricultural production of the small irrigation farmers (infrastructure plus 2 years assistance within the framework of the joint program commissioned by the BMZ)'.

According to data extracted from project monitoring, only 13 new irrigation schemes under the joint programme with the KfW FC-module had been assisted since late 2014/2015 by PASSIP,[29] whereas 66 irrigation schemes (constructed under the Programme National des Petits Barrages et Bas-Fonds (PNPBBF)) had been supported by PASSIP since 2015.[30]

In the defined working procedure between the FC-module and TC-module, and in agreement with both co-financing agencies, the FC-module was to identify, plan, construct and assist the irrigation schemes over a two-year period before handing over to the TC-module.[31] This related to all schemes that were ready for handing over by Projets d'Irrigation de Proximité (IPRO) or Initiative de Renforcement de la Résilience par l'Irrigation et la Gestion Appropriée des Ressources (IPRODI) to the TC-module.

Agricultural production has increased in Mali, according to FAO-data, but, as already pointed out, data for small-scale irrigation provided by the agricultural extension service was of questionable quality and without any proof by PASSIP of its quality. There was no clear evidence in the form of hard data, surveys and studies to demonstrate the improvement of the economic situation of households in the supported irrigation schemes (increase of income at target group/household level). However, interviews during field visits by the evaluation team in the regions of Mopti and Kayes reported an increase in yields. Rice farmers reported a considerable boost due to the fast-growing variety that had been introduced. Steaming of rice – introduced as a new processing method – raised selling opportunities. Fish ponds and vegetable production offered new employment. Possibly not all changes would be long-lasting, but there were prospects for durable adaptations that added value to farmland in irrigated areas.

Also the COMPUSTAT study on PASSIP III Indicators concluded that there were encouraging signs of improvement regarding production of the value chains supported by PASSIP, and signs of improvement of the living conditions of the supported farmers. It was not a direct indicator of economic situation improvement, but it could be inferred that improved living conditions were a viable proxy measurement (COMPUSTAT, 2018: 61).

Consequently, the hypothesis was considered as valid.

Hypothesis 2: 'Positive changes within the traditional roles/gender roles in small irrigation agriculture can be observed by insisting on and supporting women participation'.

Emphasis was made by PASSIP to promote women's participation in production, processing and commercialisation of different products and crops, especially from vegetable farming on irrigation schemes.

[29] Assistance includes, in particular, establishment/consolidation of farmers' organisations and user committees to ensure the sustainable management of irrigation infrastructure and capacity building for improvement of cultivation techniques processing and marketing (GIZ-PASSIP, 2018b.
[30] 31 are inherited 'old perimeters' from the PNPBBF (GIZ-PASSIP, 2016) and 13 are 'new perimeters' (funded by IRRIGAR / REAGIR) since 2014/15.
[31] Assistance to the irrigation schemes by the FC-module includes, in particular, advice on the management of the irrigation fields and establishment of appropriate management structures (water user committees).

The issue of access to land on irrigation schemes for women was crucial, and support was being provided by the project through subcontracted NGOs, which were also working to push forward the implementation of regulations for the recently approved land law. The decision on whether women (also widows) would have access to land was made within the context of the existing traditional social governance structures at community level. Women were also increasingly assuming positions in the decision-making process and occupying key positions in the irrigation committees (interviews with GIZ staff and NGOs, interviews during field visits).

Training and supporting women for more diversification of their vegetable production in order to generate increasing income was underway, and women were reporting that they now had a small amount of money available for their own purposes and without major interference from husbands (interviews during field visits).

Measurable results or impact studies on a larger scale that might confirm the possible impacts on women, in particular whether the 20% rate mentioned in the indicator[32] had been reached, were not yet available.[33]

This said, the COMPUSTAT study on PASSIP III indicators showed that women's associations were quite widespread in the surveyed regions. The study also hinted at a lower access to land for women, with 8% of surveyed women mentioning that they did not have access to land to improve their production (against 4% of men). The study finally noted that women were also largely engaged in transformation and commercialisation activities.

Consequently, the hypothesis was considered as valid.

Hypotheses 3: 'Economic impacts aimed at target group level are achieved by using the intended upscaling activities (multiplicators at the perimeter level, installation of demonstration fields, field days, and free distribution of kits) within the time frame of the project.'

Short-term results were already to be observed, concerning yield increases, enhancement of job opportunities through enlarging of economic activities, nutritional effects, better involvement of women, and the like. The introduction of SRI had enabled farmers to double or treble their yields. These effects were somehow influenced by the fact that the project was organising and financing all training activities, inputs and materials involved. It cannot be verified whether or not these positive effects were taking place in all intervention areas, benefitting a target group of 10,000 households.

It was also reported that demonstration fields and field days had an encouraging effect on farmers (interviews with GIZ staff and NGOs).

The evaluation mission observed a set of activities implemented by subcontracted NGOs and financed mainly under the EU delegated cooperation agreement (IRRIGAR) for improving nutrition issues (interviews with GIZ staff and NGOs).

Another result may be expected considering the total of 886 people (including 772 women) supported by cooking demonstrations at 32 locations, for which the corresponding materials (food, cooking equipment, etc.) were provided free of charge by PASSIP, as local nutrition agents (supported by PASSIP) were directly assisting and advising women in the respective communities (interviews with GIZ staff and NGOs).

[32] 'The gross margins of the main crops of small-scale irrigation farming by 29,000 small-scale producers (including 20% women) in the regions of Gao, Kayes, Koulikoro, Mopti, Sikasso and Timbuktu has increased by 10%'
[33] It was reported by the project that in Sikasso region 80% of rice-producing farmers are women.

The hypothesis should be considered as valid.

Hypotheses 4: ‘PASSIP provides a significant contribution to SDG 1: ‘Ending poverty in all its forms everywhere’ and SDG 2: ‘Ending hunger, achieving food security and improving nutrition and promoting sustainable agriculture’’.

It was mentioned in several documents, such as the TC-module Offer (GIZ, 2016e), that the project would provide a significant contribution to SDG 1 and SDG 2. In general terms, this could be observed, as the joint FC and TC programme approach up until 2019 was defined as a contribution to both SDG goals. Whether poverty of the rural population was reduced as result of the TC-module could not yet be fully identified as only a limited number of surveys or studies provided an indication in regard to the poverty-reduction issue. However, in general and in international discussion, it was recognised that irrigation under certain framework conditions could contribute significantly to poverty reduction and reduce vulnerability in terms of access to food. As previously mentioned, a study carried out for 2017 (COMPUSTAT, 2018) pointed to improved living conditions and encouraging signs for a longer-term impact, with all the prudence necessary in relation to the context factors affecting potential long-term impacts.

In terms of achieving food security, all achieved impacts up to the time of the evaluation had to be attributed to former phases of PASSIP under the joint FC and TC programme because the support to the first ‘new’ irrigation schemes had started only in 2015/2016. No specific project indicator for food security had been defined in the planning for the project; only the nutrition aspect had been considered, which was quite different. This said, the study for 2017 pointed to a generally increased quality of food, and better yields and productivity, which could be seen as encouraging signs that PASSIP could contribute to reducing food insecurity, principally for supported communities and farmers.

The hypothesis would probably be verified by early 2019 with respect to specific effects on nutrition.

However, in general, the evaluation team recognised the limitations of the project’s impact in terms of contributing to SDGs 1 and 2 for vulnerable groups beyond the actual project target group. The vulnerability of small-scale irrigation farmers was considered much lower than, for example, the vulnerability of the near-urban population in poverty areas without access to land. Contributions to SDGs 1 and 2 would most likely not have effects for vulnerable groups other than the target group.

The hypothesis was considered valid, with the limitation of its validity to the target group of the project.

Summary
In summary, by addressing the small-scale irrigation sector, the project, in general terms, contributed to long-term results and impacts, but due to the short evaluation period, most of the envisaged goals were not yet measurable, visible and documented, although some early signs of potential impacts could be observed in some studies available for 2017 that needed to be confirmed over time. As already stated, predictions were difficult to elaborate, as geographical conditions vary in fields of intervention and there were no reliable data available on yields of the newly introduced farm products.

The rating for the dimension was **25 points out of 30 points.**

Dimension 3: The occurrence of additional (not formally agreed) positive results at impact level has been monitored and additional opportunities for further positive results have been seized. No project-related negative results at impact level have occurred – and if any negative results occurred the project responded adequately.

Considering the complexity of the strategic approach between the FC-module and the TC-module for the joint programme, the two delegated co-financing agreements and the given timeframe to reach the goals and indicators formulated in the Results Matrix, no additional positive results had been observed that are monitored by the project.

For the impact of additional training, conducted not only within PASSIP but increasingly for other projects (SEWOH, Green Innovation Center/Resilience), and which could potentially contribute to additional indirect long-term results (e.g. if trainees use the acquired knowledge at the local level) no related monitoring data were available. Therefore, no additional positive results could be considered by this evaluation (interviews with representatives of training institutions).

During the field mission, the evaluation team did not find indications of project-related negative results at the impact level. Risk monitoring was established within the German Development Cooperation, GIZ and the project management team. Regular progress monitoring in each intervention area (regions) was discussed together with the project management and staff (interviews with GIZ staff). Political pressure towards opening liaison offices in risky areas (e.g. Timbuktu) had to be assessed for its appropriateness under the political and security crisis in Mali (interviews with GIZ staff, donors and).

The rating for this dimension was **30 points**.

Criterion	Assessment dimension	Score& Rating
Impact	The intended overarching development results have occurred or are foreseen (should be plausibly explained).	*25 out of 40 points*
	The project contributed to the intended overarching development results.	*25 out of 30 points*
	The occurrence of additional (not formally agreed) positive results at impact level has been monitored and additional opportunities for further positive results have been seized. No project-related negative results at impact level have occurred – and if any negative results occurred the project responded adequately.	*30 out of 30 points*
Overall score and rating		***80 out of 100 points*** ***Rating = Rather Successful***

4.4 Efficiency

Evaluation basis and design for assessing efficiency

Efficiency measures the outputs – in a qualitative and quantitative way – in relation to the inputs. It is an economic term which signifies that the aid uses the least costly resources possible in order to achieve the desired results. It also requires that every resource is optimally allocated to serve each entity in the best way while minimising inefficiency. The efficiency principle lays the theoretical groundwork for cost–benefit analysis, which is how most decisions regarding the allocation of resources are made.

Measuring efficiency generally requires comparing alternative approaches for achieving the same outputs and outcomes, to see whether the most efficient process has been adopted. When evaluating the efficiency of a programme or a project, it is useful to consider the following questions:

- Were activities cost-efficient?
- Were objectives achieved on time?
- Was the project implemented in the most efficient way compared to alternatives? (OECD, 2000)

The main question concerns the appropriateness of the use of resources by the project regarding the outputs and outcome achieved ('follow the money' approach).

The main tool for analysing project efficiency is the efficiency tool, an Excel sheet provided by the Evaluation Unit of GIZ as standard and obligatory for this evaluation. The model combines accounting data with monitoring data, especially those that deal with achievement of indicators at output and outcome level.

The corresponding data have been filled in by the project administrative staff (based on the 'Kostenträger-Obligo-Bericht'). 'Achievement' of indicators was discussed extensively and on a 'one-to-one basis' with members from the PASSIP monitoring unit. There were some difficulties in valorising the degree of achievement, especially when indicators were poorly formulated.[34] But in most cases the interpretation of the monitoring-unit data was taken as input for the Excel worksheet of the efficiency tool.

As indicated in section 4.2, these figures provide a biased idea of the degree of accomplishment of the corresponding outputs. The values shown in the Excel tool seemed to be calculated on the basis of indicator achievement, without considering the quality dimension of the achieved results, and do not therefore represent the degree of achievement of the result in a realistic way.

Analysis and assessment regarding efficiency

Dimension 1: The project's use of resources is appropriate with regard to the outputs achieved. [Production efficiency]

This dimension evaluates whether the project's use of resources is appropriate with regard to the outputs achieved.

The evaluation team, with tremendous support from the PASSIP team, applied the tool in order to evaluate whether the resource allocation was realised efficiently and according to the above-mentioned principles. The version of the efficiency tool used showed some limitations for cases like the PASSIP project, especially in

[34] E.g. indicators 1.1 and 1.2 have both been assessed as largely or fully met. However, it was difficult to assess the quality of the output or its contribution to the achievement of the module objective.

relation to the numerous project staff and the retrospective data mining. More importantly, there was a gap between progress reported through measurement of indicators and the reality, with the various constraints and problems described throughout this report. In addition, due to the complexity and project size of PASSIP, results of the efficiency assessment were influenced by co-financing agreements and the fields of activity, which were largely defined by these agreements. This held particularly true for HF 3.

The cockpit view of the efficiency tool showed that the majority of funds were allocated for staff (more than 60% for international and local staff). The other costs were allocated for grants and financial agreements, running costs, workshops, consultants, NGO subcontracting and the purchase of materials and equipment.

The allocation of funds for the different outputs of the project seemed to be reasonable and in accordance with the existing commitments. The two delegated co-financing agreements were mainly used for Output 3. Output 1 was also supposed to receive funds from the co-financing agreement with the Government of Canada but that was still pending at the time of the evaluation.

However, the quality of assessment results by applying the efficiency tool in the context of PASSIP was limited. This conclusion was based on the following findings: in quantitative terms there might be positive findings with respect to progress or success. As discussed in Section 4.2 Effectiveness, the data provided by the project could not be considered reliable, as there was no quality control on the means of data gathering, and the persons conducting data mining had not been trained for that type of work. Interviews held during the evaluation mission evinced a different reality in the field at the level of the irrigation schemes. This had to be considered when relating the resources used to the outputs achieved.

Furthermore, no data was available for the costs of kits the project was distributing free of charge, and for the service provided per perimeter (by project as well as NGOs), family or per hectare. Nor had administrative expenses and overheads been integrated. The whole value of the consultancy contract with the consortium AFC-ECO had been allocated to HF 2, resulting in scheduled cost of 0, although services had to be rendered until mid-2019.

A serious detailed assessment of efficiency could therefore not be carried out with that information missing. The same conclusion could be applied for several of the output indicators.

The Project Progress Report (GIZ-PASSIP, 2018b), which covered the entire set of activities implemented since the beginning of the project in 2017, and which was also the source and basis for accessing efficiency, showed some 42 entries of which the following did represent considerable efforts involving major inputs and activities of technical PASSIP staff:

- agreement between DNGR and DNA,
- ProKayes / ProGao: contacts with authorities for planning issues,
- organisation of conferences, trainings and forums,
- preparation of curricula (by consultant),
- conventions with municipalities and other local stakeholders, and
- Planning, monitoring and reporting related activities.

The remaining activities of PASSIP comprised the following types:

Training was carried out by the consulting company subcontracted by GIZ and local subcontractors. Approximately 30% of the PASSIP III personnel were support staff and drivers, and 20% administrative staff, accounting together for 50% of the whole project staff. Technical experts made up the other 50% of the staff; 40% were local experts and 10% international experts. According to the efficiency tool, most costs and

expenses were related to staff costs, distributed between project staff (classification 1.1. and 1.2) and external staff (1.3). The latter comprised almost 41% of total personnel cost, as the project was subcontracting most of the services to be implemented in the field to NGOs and consultants. More concretely, about 80% of the activities presented in the Project Progress Report (GIZ- PASSIP, 2018b), with the exception of outputs 5 and 6, did not include a major contribution of PASSIP own staff but were implemented by subcontractors, especially for training; PASSIP project staff's role was limited to the approval of deliverables from consultants or other subcontracted services providers. The quality control by PASSIP for services subcontracted to NGOs and other service providers was conducted by the technical and administrative staff. Because of the security situation in several regions, control checks in the field could only be conducted occasionally and not on all irrigation schemes involved. Consequently, the quality control function could not be performed on a regular basis, and PASSIP had to rely on the reporting of the subcontracted service providers still able to reach the communities involved (interviews with subcontracted NGOs/consultancies by PASSIP and GIZ staff).

In that light, the number of project staff seemed high, even considering the specific circumstances of fragility and difficult conditions under which the project was operating. When viewing the PASSIP staff figures in relation to the complexity and time requirements of the above-mentioned activities, concerns arose regarding the efficiency of the project in organising the advisory services (capacity development, training, technical support to irrigation schemes, etc.) within the multilevel approach. The existence of two delegated co-financing agreements might be one of the main reasons of the existence of the numerous administrative staff.

The existence of the KfW infrastructure FC-module and PASSIP´s TC-module's dependence on the FC-module in this context had not been properly considered in the GIZ project offer to BMZ (GIZ, 2016d). Little attention had been paid at the planning stage to fostering interactions/linkages or even synergies between PASSIP (TC) and the FC-module implemented by KfW. The existence of the FC-module had not even been mentioned within the results framework. It had been reported that GIZ had problems at the planning stage justifying the need and relevance of a TC-module attached to the KfW infrastructure FC-module.

Interactions or synergies with projects of other donors in the sector (other than the KfW FC-module) had not been considered relevant and had consequently not been dealt with at planning stage. According to the project, this was an area to be dealt with in preparation for a follow-up measure. Experience in other instances had shown that effective cooperation between TC and FC only worked in practice if there was willingness to complement each other's efforts beyond contractual stipulations. During implementation, PASSIP III was making use of the donors' coordination group (GT EAR, SGT Irrigation) for exchange.
In summary, based on the above-mentioned findings, the following had been taken into account for the evaluation of the production efficiency:

- The allocation of funds for the different outputs of the project seemed to be reasonable and in accordance with the existing commitments.
- The number of project staff seemed high, even under the specific circumstances of fragility and difficult conditions in which the project was operating.
- Although the reported quantitative data showed positive developments towards the expected outputs, there seemed to be a gap between data provided and output-level results reported during interviews in the field and at the level of perimeters. Regular quality control of output monitoring reported from the field was missing. As such, it was difficult for the project management to assess whether or how outputs could be increased by potential adjustment of activities and/or resource use.
- As data were missing on the costs of inputs and costs of service provided per perimeter/family/hectare, it

would be hard to identify hidden cost drivers and/or potentials for quality improvement.
- Linkages and synergies with other projects or programmes, including the FC-module of PASSIP, were being considered only to a limited extent in the planning documents.

The rating for the production efficiency was **47 points out of 70 points.**

Dimension 2: The project's use of resources is appropriate with regard to achieving the projects objective (outcome). [Allocation efficiency]

Half of the project cost was allocated to Output 4 (The rural population adds value to the small irrigation areas.) with funds mainly from co-financing. 20% of cost allocation was assigned to Output 3 (assuring functionality of small-scale irrigation schemes), 16% to Output 1 (coordination by DNGR), 8% to Output 2 (improved competence of service providers and multiplicators), 5% to Output 5 (sustainable employment opportunities in Kayes region) and 1% to Output 6 (sustainable employment opportunities in Gao region), the last two being the 'attached' one.[35] The distribution seemed appropriate, as Output 4 was the most important output in terms of contribution to the project outcome. It might be a matter of discussion whether or not service agreements to train local farmers and committees were the right way to build capacities, but it was convincingly explained by the project that there were no alternatives.

No deviation of funds had been observed between the identified and projected costs of the project. The existing operational restrictions because of the security situation in several regions did not allow alternative resource allocation which could have led to a maximisation of outcomes either in terms of quantity or quality. In addition, the possibilities for a reallocation of resources was limited by the fact that funds from the two co-financing delegated cooperation agreements were earmarked for defined goals and purposes. This also applied to the other directly commissioned funds from BMZ (employment generation in Kayes and Gao) still available for the remaining term until the end of the project by mid-2019. The evaluation team saw the overall possibilities for reallocation of resources as rather limited in the context of PASSIP III. The project had commitments until mid-2019 amounting to EUR 5.6 million, of which EUR 4.68 million (83%) were for staff and consultancy costs, including costs for the subcontracted consultancy company (HF2). Thus, an alternative use of these funds was not possible. As the co-financing agreements defined, in general terms, the focus of project implementation activities under the existing implementation strategy, funds were already allocated.

Overall, the analysis of allocation efficiency revealed strong limitations in the project's flexibility in using available funds. In particular, the high personnel costs already fixed hindered a different and possibly more efficient allocation of funds before the end of the project.

The evaluation team therefore rated the allocation efficiency as limited, comparing the outflow of funds with the measurable results achieved so far.

The allocation efficiency was rated at **20 out of 30 points.**

[35] Data extracted from effficiency tool – Cockpit table.

Criterion	Assessment dimension	Score&Rating
Efficiency	The project's use of resources is appropriate with regard to the outputs achieved. [Production efficiency]	*47 out of 70 points*
	The project's use of resources is appropriate with regard to achieving the projects objective (outcome). [Allocation efficiency]	*20 out of 30 points*
Overall score and rating		***67 out of 100 points*** ***Rating: Rather successful***

4.5 Sustainability

Evaluation basis and design for assessing sustainability

Sustainability issues of the project were assessed by reviewing the degree of sustainability of results and impacts produced by the current project phase and the predecessor projects PASSIP I and II. The evaluation team identified those results and investigated which of them might be considered as sustained.

Realistic potentials and possibilities for sustainability of project interventions were assessed regarding the following aspects:

- the likelihood that government institutions that had been assisted and supported by PASSIP over several years, and which had responsibility for implementing the PNIP, would deliver the improved services for the sector, especially in small scale irrigation, and
- the likelihood that small-scale irrigation farmers were adopting the proposed innovations and would continue to apply the required knowledge and disseminate them to other farmers from received training.

An evaluation by GIZ, which took place mid-2016, gave PASSIP 12 out of 16 points (see also GIZ–PASSIP, 2016c: section 2.2) regarding sustainability. However, ratings were based only on the team´s overall assessment of future risks without specifying which of the PASSIP results would be sustained and which would probably not.

Also, the reflection of an exit strategy or a change of project objectives focusing more on other political objectives such as, for example, avoiding migration and creating employment opportunities, especially for young people and women in rural areas, was part of the assessment.

Analysis and assessment regarding sustainability

Dimension 1: Prerequisite for ensuring the long-term success of the project: results are anchored in (partner) structures.

PASSIP I and II were designed to develop the competences of partner structures in such a way that, without further assistance, the Malian partners would be able to independently continue their tasks and responsibilities on all three levels of intervention (multi-level-approach) after completion of the project. It had to be acknowledged that the first years had been affected by the crisis, and between 2012 and 2014 no institutional capacity building could be conducted, as the project reported. Up to the time of the evaluation, BMZ had refrained from requesting substantial partner contributions, although this policy was meant to change in the follow-on measure (interview with GIZ staff).

Thus, the aspiration could not be fulfilled, presenting challenges to project achievements and sustainability. This could not be confirmed by the evaluation mission, as continuous support was ongoing, and the chronic weakness of the partners' administration for service provision was a fact recognised within the donor community in Mali (GIZ-PASSIP, 2014b; GIZ-PASSIP, 2016b; interviews with GIZ staff, other donors and stakeholders)

On the other hand, the economic impacts on the target groups[36] could not be guaranteed as sustainable by an external aid programme alone. The evaluation team tried to analyse the degree of appropriation and ownership by the users of their irrigation systems: the level of organisation for assuming operation and maintenance by the target groups. This could also not be observed and confirmed, as none of the schemes had yet been 'released' from assistance.

The study by COMPUSTAT also hinted at appropriation of the maintenance of irrigation schemes and land protection where these trainings had been conducted. This alone was not an indication of sustainability but it provided encouraging signs that the farmer organisations and the communities internalised the issue of maintenance and mitigation measures regarding irrigation and land protection. In addition, the transfer of new knowledge from FFS seemed to be appropriated too.

The degree to which advisory services, approaches, methods and concepts of the project were already anchored and institutionalised in the partner system and at target group level could be answered as follows.

For the time-being, there were no sustainable impacts to be observed deriving from the previous PASSIP interventions with regard to consulting services, approaches, methods and concepts already being anchored and institutionalised within partner institutions and at the target-group level.

Institutionally, the situation at the Ministry of Agriculture (DNGR) has created an unsustainable situation in terms of capacity development: DGNR (and DNA) staff were only assuming their obligations towards the PNIP and the project where compensation was being provided by PASSIP (interviews with GIZ staff, other donors and stakeholders).

Regarding target groups, since 2014/2015, PASSIP III had assumed some 66 'old' irrigation schemes which apparently had not been successful and which were still facing functional problems (bad construction quality). These irrigation schemes were still receiving further support by PASSIP III, with related challenges in terms of resource allocation. There was no defined time frame yet within which these 'old' irrigation schemes would be

[36] The target group was defined in GIZ's last change offer (GIZ, 2017c), with 29,000 (previously 19,000) rural households working in irrigated agriculture. Further details or characteristics and 'need assessments' to these households in the now six regions (Sikasso, Koulikoro, Mopti, Timbuktu, Kayes and Gao) were not available to the evaluation team.

‘independent’ and reaching an economically and self-administered sustainable status (M&E data; interview with GIZ staff, other donors and stakeholders; field visits and semi-structured interviews with user groups in the two visited ‘old’ perimeters (Guérékélé, Tabakoro)).

Anecdotal evidence from field visits revealed an increase in rice production due to the introduction of a rice-cultivation method with higher yields (SRI), new processing methods with better hygiene standards, and improvement in nutrition due to food with better nutritional value. The challenge was to turn this into an ongoing process of change after the initial incentives were terminated.

Sustainable positive nutrition effects in terms of improved access to food had been reported as maybe more likely to be achieved as irrigation farmers were increasingly looking to diversify production, especially by introducing and adopting additional vegetables in their farming system (interviews with target group (irrigation farmers) in Guérékélé, Tabakoro, and with agricultural extension workers).

The increase and diversification of production in the medium and long term should contribute to better access to food by small irrigation households; changes in nutrition habits take time and obviously depend on individual decisions and behaviour.

PASSIP has handed out free inputs like seeds and fertilizers to demonstration farmers cooperating with the project in order to stimulate subsistence food production. The evaluation team did not have the opportunity to study in detail possible negative impacts of such a policy on the irrigation schemes. But, based on experiences from other projects, there were concerns that negative effects could occur. Even if not intended by the PASSIP III project team, farmers might gradually understand the provision of inputs as a just payment for cooperation with PASSIP. Whatever impacts the project would try to achieve in the future, if such understanding were not actively counteracted, new farmers might ask for the same treatment[37] as their predecessors.

However, as mentioned in Section 4.2 Effectiveness, the COMPUSTAT study shows that farmers adopted new techniques, seeds and attitudes towards land protection and irrigation and seemed willing to invest in the new approaches and technologies as they regarded it as relevant. The application of new methods was more limited for the cultivation of rice, but was largely applied for vegetable production (COMPUSTAT, 2018: section 2.5). The fact that farmers seemed ready to invest their resources into the FFSs can be seen as a sign that their involvement was not related to incentives, but rather to a potentially sustainable change of practice. The same could be concluded regarding the ownership of the irrigation schemes, as qualitative information from the study point to the willingness of the farmer organisations to appropriate the competencies and skills to properly maintain the irrigation schemes.

In terms of anchoring and institutionalising advisory services, approaches, methods and concepts of the project in the partner system and at the target-group level, at local level there is much appreciation of the project’s achievements. The evaluation team however has some doubts about the institutionalisation of PNIP as a strategic programme at the national level at the Ministry of Agriculture (DNGR). It was reported that, up to now, involvement of DGNR and DNA depended much on compensation by PASSIP, but no forecast could be made on future behaviour. And as services were provided by NGOs, it could not be predicted if and how this would work in future. The received support from PASSIP in terms of improving service provision to the sector could only be proved in singular cases in the field, but not with hard facts for the whole target group.

[37] There have been reports from ACDI-VOCA in another West African country pointing out that farmers were even blackmailing projects to increase the value of the supply. Otherwise they would not cooperate any more. They wanted to be treated as project employees. See also: Lavagnon, 2012.

One inhibitor for sustainability, as identified by the Compustat study, was the marketability of the productions. Two examples were quite illustrative, as tomatoes that had a good retail value were difficult to store, leading to a large amount of waste as their market outcomes were still limited. On the other hand, shallots had a better market potential due to the relative ease with which they could be stored for long periods waiting for prices to rise. From a purely production point of view, tomatoes would be a better bet despite higher production costs and the contribution margin being higher, but when market outcomes were factored in some farmers even questioned whether it was a viable product at all. A full score cannot be given here due to the limitations described above. The rating for this dimension was **25 out of 40 points.**

Dimension 2: Forecast of durability: results of the project are permanent, stable and long-term resilient.

Taking the joint programme into consideration, including the KfW FC-module, there was a good chance that a large number of the dams and schemes would continue to serve as a sustainable economic basis for many small-scale irrigation farmers in the future. Thus, one important result would most probably be long-lasting. Apparently, there were signs of better income and improved nutrition. But it remained a challenge under the given conditions of fragile environment to maintain achievements. A number of assumptions would have to prove well-founded to accomplish the results chain. A perpetual application of introduced innovations on the farmers' side would raise their productivity, leading to better income. Farmers would use part of the surplus to maintain the small-scale schemes and for reinvestment. Another assumption refers to the effectiveness of established committees. The project's contributions had been important in terms of making the long-term development towards improved economic situation and better nutrition happen through a combination of interventions.

Regarding institutional sustainability, since 2008 and – as reported by the project management – effective since 2015 with interruptions, PASSIP made extensive and financially important efforts to develop better capacities at the DNGR level in the Ministry of Agriculture. These also concerned the regional structures by supporting the staff of DRGR and DRA through training, equipment, materials, workshops, and subsidising regular meetings with the national level (DNGR and DNA). These meetings were regular and periodic coordination meetings of the DNGR/DNA with their respective regional offices, taking place either in the regions or in Bamako. By strengthening the capacities of the DNGR at the macro level and improving the capacities for better coordination at regional level (DRGR), better services should be arranged for the target groups at local level. In addition to that, the project had quite generously provided allowances, per diems, travel costs and other benefits to DGNR (DNA) staff at national and regional level.

It had been reported that over the last years, the Malian Government had received important amounts of funds provided by donors and other financial institutions. As the absorption capacity of government structures was rather limited and donors would like to spend their funds in defined time frames, this had contributed to the substitution of more and more basic services in recent years, which would normally be provided by the government. As a result of massive external funding, the quality of services and general performance of the public sector in providing adequate services to the Malian population has even decreased. This was a general observation stated by interview partners during field visits of the evaluation team.

Predictably, national, regional and local structures such as the Comité National d'Orientation et de Suivi du PNIP (CNOS) and Comités Techniques Régionaux de Coordination (CTRC) would hardly be sustainable without external funding and they would not be able to implement demanding and important activities for the irrigation sector independently (interviews with GIZ staff; GIZ, 2016e). The new project budget earmarked

considerable financial contributions, but obviously nothing can be said about its efficient use.

Therefore, prospects for sustainability remained restricted for any of the achievements envisaged by PASSIP in the context of these two institutions (DNGR, DNA), which did not cooperate well with each other, as was reported throughout the interviews held with GIZ, other donors and stakeholders.

Taking into account the improved physical infrastructure financed under the FC-module of the joint programme, the forecast of durability was relatively high, as the irrigation farmers most likely would have a continued interest in using and profiting from irrigation. This was definitely an achievement, as experience in the past had been different. Looking to durability of results from PASSIP project, any forecast in terms of past and present institutional support was doubtful. Other donors and stakeholders stated the lack of ownership and lack of cooperation, making effective management difficult. As the donor community had been willing to substitute the role and responsibilities of government institutions with funds and personnel over the last years – possibly due to the particular political situation Mali was facing – service provision and coverage of rural areas by responsible public agencies and institutions had not developed as desired, and project management had to come to terms with it. PNIP and DNGR seemed to be just examples, not taking on the supervisory function required of them.

Small-scale irrigation schemes would most likely continue in the long run and there were improved training capacities in the field. Empowered management groups and cooperatives would continue working, and with diversified production the probability of improvements in farm income was good.

Due to the described constraints, the rating for this dimension was **23 points out of 30 points**.

Dimension 3: Are the results of the project ecologically, socially and economically balanced?

Regarding the economic dimension, the project, by promoting small-scale irrigation at community level, may have contributed in the long run to more stable production and increased productivity. The irrigation sector in Mali had the potential for economic growth in the different regions, but was considerably hampered by the security situation in regions like Timbuktu.

The establishment of self-administered small-scale irrigation systems seemed to be a challenge, since most of the user committees were dependent on external support over a long period. Considering the social aspect of the project, it could be observed that the main activities at the level of the irrigation scheme were implemented through NGOs and other local service providers. As there was common understanding in development cooperation that ownership of beneficiaries was crucial and best achieved through involvement and own contributions by beneficiaries, more efforts would be needed to achieve consolidated organisational structures.

Small-scale irrigation systems had little negative environmental impact. First of all, each of the irrigation schemes needed to be approved for construction by an environmental impact study, signed by the Minister of Environment. However, the Ministry had very limited institutional capacity and looked also for outside funding to realise the normal duties, like the follow-up control visits for mitigation measures in the field.

Negative impacts on the Niger river were not likely, as the quantity of water derived and used by irrigation schemes was minimal, compared to the total volume. Furthermore, the risk of polluting drainage water with agro-chemicals was negligible, for the time being, as the use of chemicals in small-scale irrigation was very

limited. Considering the amount of sewage waters of a city like Bamako (with over 2 million inhabitants), which was not being treated at all before being drained into the river, the environmental impact from small-scale irrigation schemes were not even comparable. A study from 2010 assessing the environmental issues related to small-scale irrigation for the PNIP was available but needed to be updated (AMEIE, 2010). A key statement of the study was that no research and adaptation to 'climate proofing' takes place in the planning of irrigation schemes. The study indicated various possible environmental impacts of irrigation (contamination of water and soil through increased use of herbicides, pesticides, fertilisers and other chemical products). It contained a number of recommendations and priority actions. An implementation of these measures could not be determined by the experts either in the Ministry of Agriculture or in the Ministry of the Environment. The environmental study had not been updated since 2010.

Moreover, PASSIP was implementing and financing erosion control measures in selected irrigation schemes without any official institutional support. The continuity of those measures thus depended on the degree of organisational strength of the involved water-user committees.

The balance of the social, economic and environmental dimension of sustainability was rated as **25 out of 30 points.**

Criterion	Assessment dimension	Score and Rating
Sustainability	Prerequisite for ensuring the long-term success of the project: Results are anchored in (partner) structures.	*25 out of 40 points*
	Forecast of durability: Results of the project are permanent, stable and long-term resilient.	*23 out of 30 points*
	Are the results of the project ecologically, socially and economically balanced?	*25 out of 30 points*
Overall score and rating		***73 out of 100 points*** ***Rating = Rather successful***

4.6 Long-term Results of Predecessor(s)

Evaluation basis and design for assessing long-term results of the predecessor(s)

While this evaluation relates exclusively to the current programme phase (2017–2019), for the assessment of long-term results of predecessors, the previous phases of PASSIP were considered – especially as little attention was given to 'lessons learnt' within the project design of the current phase (see Section 4.1 Relevance). The PASSIP III project built directly on the results the previous phases since 2008 (PN 2007.2147.2 and PN 2013.2246.0). Because of the military coup in 2012, development cooperation with Mali

was interrupted. In 2013, the technical cooperation restarted its activities and PASSIP was reactivated.

In this context, PASSIP II was considered within the framework of the evaluation in order to assess possible results in terms of long-term impacts and sustainability under the joint programme with the FC.

Methodologically, documents relating to PASSIP II – the Project Progress Reports (GIZ-PASSIP, 2015, 2016, 2017a), the Final Report (GIZ-PASSIP, 2017c) and the Evaluation Report (GIZ, 2016e) were used by the evaluation team for the analysis. Information of the Mali Nord Programme available from KfW and GTZ Report No. 29 on the Mali Nord Programme (GTZ, 2009) were used as additional available documentation.

Analysis and assessment regarding long-term results of the predecessor(s)

The GIZ interventions in small-scale irrigation under the predecessor phase PASSIP II implemented activities addressing almost identical beneficiaries and outcomes as PASSIP III. Due to the continuity and cumulative effect of the PASSIP intervention strategy since 2013, it was not possible to differentiate the impact and sustainability of PASSIP III from those of the previous phases.

The Mali Nord programme (TC/FC) has been implemented for over almost 16 and a half years (seven phases from September 1993 to March 2010), with only EUR 38 million for TC. This included additional TC funds (food aid and counter-terrorism measures) from previous years. The total amount for Mali-Nord, including FC, was EUR 68 million. The project reported that the programme had continued until the end of 2016. According to the current project management, experience from this predecessor programme had been used for PASSIP activities in Timbuktu region.

While the current project management considered the predecessor(s) as not having managed to achieve sustainability, the evaluation team, by contrast believed that sustainability had been attained through the creation of strong local social structures and without permanent external assistance. (See also Papendieck & Rocksloh-Papendieck, 2010). To them it seemed that the social structures for self-administering irrigation schemes in the northern part of Mali had resisted the crisis much better. It was recognised that most of the irrigation schemes constructed and assisted since 1993 under the Mali Nord Programme were still functional today and had been used even under severe political and security crises. Some users had to abandon several schemes which were now subject to rehabilitation. It was recognised that the local social and organisational structures built over the period of the Mali Nord Programme continued in place for these irrigation schemes.

4.7 Key Results and Overall Rating

Key results regarding selected hypotheses

The key results regarding the selected hypotheses for OECD-DAC criteria Effectiveness and Impact were verified and the results presented above. While hypotheses on Effectiveness were either considered not to hold true or data were missing to verify them, the majority of the selected hypotheses on Impact turned out to be valid.[38]

[38] Hypothesis 1-3 are considered to be correct; Hypothesis 4 is considered not to hold true.

Criterion	Score	Rating
Relevance	*86 points*	*Successful*
Effectiveness	*75 points*	*Rather successful*
Impact	*80 points*	*Rather successful*
Efficiency	*67 points*	*Rather successful*
Sustainability	*73 points*	*Rather successful*
Overall score and rating for all criteria	*Average score for all criteria out of 100 (sum divided by 5)* ***76.2 points***	***Rather successful***

100-point-scale (Score)	6-level-scale (Rating)
92–100	Level 1 = very successful
81–91	Level 2 = successful
67–80	Level 3 = rather successful
50–66	Level 4 = rather unsatisfactory
30–49	Level 5 = unsatisfactory
0–29	Level 6 = very unsatisfactory

5 Conclusions and Recommendations

5.1 Factors of Success or Failure

The PASSIP project as TC-module and as part of the German Development Cooperation confronted a real dilemma. On the one hand, as a TC project, PASSIP was trying to improve service delivery for the small-scale irrigation sector through capacity development measures for public and private service providers. On the other hand, it needed to meet the agreed and defined results from the contracts of the two co-financing agreements, including KfW and the FC-module, on schedule and to the agreed quality. This produced different time frames between the involved institutions and actors, high expectations by the co-financing agencies for the promised results, and different understandings by KfW and GIZ, due to interfaces not being clearly defined, as was expressed in interviews.

The understanding of priorities by both agencies (KfW and GIZ) was not always congruent. The design of the programme seemed to be a mixture of both understandings, influenced and conditioned by the additional funds from the co-financing agreements from the EU and Canada since 2014.

Limited ownership and institutional weakness of the Malian Government, in particular DNGR and DNA, posed significant challenges to the project implementation. Consequently, PASSIP had assumed for quite some time the role of an executing agency, substituting the inefficient official services (‘Service Technique Agricole’) for agricultural extension to the communities. On the other hand, PASSIP was continually supporting the DNGR/DNA at the national and regional level, as well as using, by paying subventions, the official extension service to collect monitoring data in the field.

The outcome of the intervention strategy of the project, with some limitations concerning capacity development of partner institutions, was unconvincing. Activities did not necessarily follow structured and logically defined priorities related to the outcome, but seemed rather erratic and fragmented.

With regard to the local level (irrigation schemes), emphasis should be placed on measures to achieve the module and programme objectives. The observed weak implementation strategy of the project called for an internal review of PASSIP’s strategic approach. The current approach involved some risks to the delivery within schedule and to the agreed quality of the expected results for both co-financing agencies.

Under the political goal of stabilising the country, the funds available for financial and technical cooperation, bilateral and multilateral, had increased over the recent years. The Malian government, with its limitation to develop the absorption capacity of public institutions, was substituting functions, tasks, institutional services and even running costs for their institutional setup with external financing. This severely pushed back ownership of public institutions, offering opportunities for NGOs to benefit from the available financial sources, especially in regions where official projects could not work for security reasons.

5.2 Conclusions and Recommendations

Conclusions

The sustainable use of the potential for small-scale irrigation in Mali remains an important area for international cooperation and support in order to improve food security and the economic situation of thousands of households living in these areas. The Ministry of Agriculture and cooperating partners had made considerable efforts in the past to expand irrigation schemes in the Niger Delta in Koulikoro, Sikasso and Kayes, as well as to improve production and productivity of irrigation agriculture. Over recent years, the PNIP has been established as a framework for interventions in this context. However, the development of sustainable concepts and interventions to be applied to small-scale irrigation agriculture with related services could have been more effective.

The evaluation of PASSIP according to the five OECD-DAC criteria can be summarised as follows.

Relevance
The project fitted well with SDG goals 1 and 2, and with the BMZ country and rural development strategy, focal areas for bilateral cooperation and Malian development strategy for rural and agricultural development and for the irrigation sector in Mali. The multi-layer design and approach allowed for interventions in various fields to increase economic incomes and improve the nutritional situation of beneficiaries, although there might be some limitations in reaching the whole of the target group. The existence of two delegated cooperation agreements, as well as the need to subsequently incorporate additional results regarding job creation (GIZ Change Offers from 2017), posed challenges to the project in terms of project design and realistic intervention strategy.

Effectiveness
Overall project effectiveness was difficult to assess due to the various interventions that are partly linked to other projects, the copious target group, and lack of hard data. There was evidence of improvements in different aspects, such as considerable improvements in yields and diversification of production, but not comprising all indicators.

PASSIP was to commence its TC activities at farm level once the irrigation scheme had been installed through the interlinked financial cooperation (FC) intervention (KfW) as outlined in the (Joint) Programme Offer to BMZ (KfW-GIZ, 2013). Consequently, subsequent effects of the TC-module were projected to take several years to occur, implying that PASSIP would be unable to achieve widespread results on those KfW financed irrigation schemes within its three-year lifespan. Contributions of PASSIP III have been delivered, but it had to be accepted that only a fraction of the schemes established within the framework of the FC-module co-financed by the EU and Canada would be successfully 'valorised' by the end of the project. Even those irrigation farmers who did receive support from previous PASSIP phases[39] were still being attended by PASSIP III, indicating that the time-frame had been unrealistic, and that the project intervention strategy was not very effective. Factors such as a high rate of illiteracy, low funding capacities, difficult market access, etc. do slow down development processes.

The awareness of the need to reach the planned results and the project outcome by the end of the present phase was neither firmly anchored within project staff nor at the counterpart authority (DNGR). Work with

[39] In particular, PASSIP II since 2014/2015.

target groups was mainly conducted by subcontractors (NGOs)[40] and partly by government extension workers. There were no detailed monitoring records for each of the 79 supported irrigation schemes (total target 149) and households to indicate the individually planned activities at each scheme or the envisaged and achieved results. To transfer learning experience to intermediaries and farmers directly, the project had developed a series of learning modules.

Different planning and implementation periods of other related projects, in particular the attached SEWOH projects, posed challenges for cooperation and leverage of synergies. The PASSIP management was making additional efforts, however, to allow for an appropriate coordination of these projects with PASSIP and shared learning effects.

Impact

The combination of project interventions, incentives for introducing new agricultural products, production and processing methods, and capacity-building measures on different levels was meant to contribute to improving the economic situation of farmers, to stabilising long-term production capacities of small-scale irrigation schemes, and to improving the target group's nutritional bases (availability and quality of food, food health) in the long run. However, although inputs were being provided by the project to demonstration farmers for demonstration purposes, the evaluation team was concerned that farmers might gradually understand the provision of inputs provided as a just payment for cooperation with PASSIP. Whatever impacts the project would attempt to achieve in the future, new farmers might expect to receive the same treatment. In terms of which advisory services, approaches, methods and concepts of the project were already anchored or institutionalised in the partner system, there was much appreciation of the project's achievements at target group and local level. The evaluation team, however, had some doubts about the institutionalisation of the National Small-Scale Irrigation Programme / Programme National d'Irrigation de Proximité (PNIP) as a strategic framework at national level.

The PASSIP III project, in general terms, contributed to long-term results and impacts, but due to the short evaluation period, most of the envisaged impact goals were not yet measurable, visible or documented. The Joint Programme had not appropriately planned and designed the time dimension between the FC-module and the TC-module in order to generate the promised impacts during the present BMZ-commissioned phase.

Efficiency

In general terms, fund distribution to the different outputs seemed to be in accordance with the needs identified in the operational planning and commitments of the project, especially by the EU and the government of Canada within the context of both delegated co-financing agreements. The distribution of costs in relation to output seemed appropriate, as the output with the most funds allocated made the most important contribution to the project outcome. It might be a matter of discussion whether or not service agreements to train local farmers and committees were the right way to build capacity, but it was convincingly explained that there were no alternatives.

The number of project staff seemed high, even under the specific circumstances of fragility and difficult conditions under which the project was operating.

Little attention had been paid at the planning stage to possible interactions or even synergies between PASSIP (TC) and the FC-module implemented by KfW. Interactions or synergies with projects of other donors in the sector (other than the KfW FC-module) had not been considered sufficiently at the planning

[40] The so-called 'faire-faire' is an approach that compensates for the heavily reduced government extension services (due to the World Bank induced structural reform process and privatisation of government services).

stage of PASSIP III. During implementation, PASSIP III exploited the donors' coordination group (Groupe Thématique Economie Agricole et Rural (GT EAR) and Sous-Groupe Thématique (SGT) Irrigation) for exchange about sector-relevant interventions, for information sharing and for harmonisation of efforts.

The evaluation team rated the allocation efficiency as limited, comparing the outflow of funds with the measurable results achieved so far. Overall, the efficiency tool (the version at that time) had some limitations regarding applicability to complex projects with co-financing, therefore the results should not be overvalued.

Sustainability
According to interviews and field visits conducted, there was no immediate relation between PASSIP staff and services and the irrigation schemes in various project regions at household level. There were indications from estimated figures that farmers were aware of yield increases generated on their irrigation plots as a result of the project. The provision of farm inputs and fertilizers – although also promoted by the government – contributed to dependence of farmers on PASSIP service providers and could be seen as a risk factor to be taken into account in terms of sustainable development of the irrigation sector. The infrastructure financed under the FC-module would most likely continue, in spite of some necessary rehabilitation works; qualitative data provided hints that small-scale irrigation farmers were internalising maintenance works for irrigation schemes as well as protection of soil resources. Institutional sustainability was considered rather critical as services and obligations of the Direction Nationale de l'Agriculture (DNA) and DNGR staff were financed by PASSIP in the form of allowances, per diems, travel cost, etc, which diminished prospects for institutional sustainability of the extension service under the responsibility of the Ministry of Agriculture.

Recommendations

Ongoing phase
PASSIP needed to consider the following specific recommendations during the third implementation phase:

- Contractual obligations, deriving from both delegated cooperation agreements, needed to be taken into account as a priority. It was highly recommended that the project management revise their work and operational plans accordingly in order to give priority to activities and to achieve the results related to REAGIR and IRRIGAR.
- A permanent technical coordination structure between KfW and GIZ needed to be established, in order to avoid misunderstandings and improve cooperation with the FC-module and the German consultant companies involved, especially for IPRO and IPRODI irrigation schemes.
- This coordination structure needed rapidly to define a common strategy for how both agencies would fulfill their commitments towards the EU and Canada by mid-2019 and achieve the expected results for both co-financing arrangements in coordination with the DNGR and within the framework of PNIP.
- There was a need to realise, under the envisaged portfolio assessment by BMZ, a realistic and comprehensive risk analysis for the German Development Cooperation in Mali.
- Working under conditions of fragility is a particular challenge and it was questioned whether it made sense to apply all the given criteria, standards and instruments for designing and implementing an international cooperation project in this context.
- A detailed intervention strategy for the support of small-scale irrigation schemes had to be discussed and defined at the Comité de suivi (steering committee) for PASSIP in order to provide for operating in a more autonomous manner as TC-module and project until the end of this phase.
- Any support to official institutions should have real and detectable counterpart funding, and any subvention for regular functions of state institutions should be stopped as soon as possible. Before the next bilateral negotiations of the German Development Cooperation, a defined position was needed,

which should have been coordinated with other multilateral agencies in Mali.

- As discussed in Section 4, for all necessary advisory services at the irrigation-scheme level a selection process for specialised and qualified local consultancy companies and/or NGOs should be initiated in order to allow PASSIP management to identify suitable service providers for the different purposes and regions.
- Alternative monitoring data-collection models (e.g. by external subcontracting) should be analysed to provide sound and reliable data if, for security reasons in certain regions, PASSIP could not realise data-quality control in the field.
- More strategic, technical and collegial advice from GIZ headquarters was required for the project management team in order to analyse, discuss and define suitable approaches and implementation procedures for the project and interlinkages to the GIZ portfolio in Mali.
- It was understandable that administrative and financial processes and checks have importance for the transparent use of public funds, especially when it comes to co-financing. It was recommended that quality control by the different stakeholders involved be improved, so that designing, implementing and reporting processes followed standard procedures and met quality requirements. It was also recommended that local staff be trained and encouraged to apply these in practice. In this context the use of Capacity Works instruments developed for the different purposes of project management and implementation should be applied, which would also require that local staff be trained.

The most important issue in this context was the improvement of the coordination between KfW and GIZ, especially in regard to the joint obligations derived from the delegated cooperation agreements.

Extension

PASSIP needed to take the following recommendations into account for the next planning exercise (reorientation mission), planned for October 2018:

- More than 1,800 written demands from communities were currently on the table of municipalities, regional offices of DRGR and the national office of DNGR for analysis, approval or rejection with no defined strategy for implementation by the government (interviews during field visit, interviews with partner organisations). Therefore, it was recommended to revise the entire project cycle of PNIP and assist the DNGR/DNA in developing an improved comprehensive intervention strategy for small-scale irrigation systems in Mali, defining criteria for financing new and supporting existing irrigation schemes.
- In a follow-up phase, a more prominent role for the partner institution with considerable financial contributions by the partner organisations should be made mandatory.
- The evaluation team was aware that a BMZ portfolio analysis was currently underway. For October 2018, a reorientation mission was envisaged, also including a joint planning workshop laying the foundations of a future GIZ offer in order to extend PASSIP. Most likely, peacebuilding or security measures would certainly imply different priorities and approaches. There was no intention to expect those missions to come to the same results as this evaluation exercise, which was to base findings on the application of the five OECD-DAC criteria, and which did not necessarily cover all issues to be considered when planning a TC project. Consequently, it was suggested that the ToR of the project evaluation mission would also include an in-depth discussion of the findings of this mid-term evaluation in order to avoid mistakes regarding the intervention logic.
- It was recommended that GIZ field the next appraisal mission with a qualified planning specialist in order to work out a concise Results Matrix, Results Model and planning framework. Moreover, it should consider having a senior irrigation expert on the team if the project extension is to focus on an irrigation-related objective. The irrigation expert may be able to contribute an outline intervention strategy. A rural

development expert may also be helpful in the team if alternative approaches were discussed.

- PASSIP experience with DNGR and DNA and their reticence in assuming project-related activities and ownership without compensation suggested modifying modalities of cooperation in future. Disbursement of funds should be more linked to the achievement of agreed activities and based on a strategic plan with defined responsibilities for both the German and the Malian sides.
- Regarding necessary emergency measures, which may become relevant for the Mopti and Timbuktu regions, as perhaps in other regions (Gao, Kayes), the establishment of specific emergency projects and funds is recommended, corresponding to the 'Emergency and Transitional Assistance' concept of the German government. It could be a suitable instrument (see concept by the German Federal Government 'Emergency and Transitional Assistance') to address the specific requirements in these most affected regions and to complement PASSIP.
- In view of the challenges with the Malian partners, 'output-based aid (OBA)' might be considered in order to valorise small-scale irrigation schemes. OBA refers to development-aid strategies that link the delivery of public services in developing countries to targeted performance-related subsidies. OBA generally works through a private firm or another third party acting as the service provider. The service provider is responsible for the initial financing of the project and, only after results have been verified, the service provider will receive subsidies from a donor. In such schemes, it is the provider who bears the risk of loss, rather than the aid donor. Integrating the private sector into aid schemes is common with OBA, since they often provide the initial financing. The World Bank sees OBA as a way to improve aid effectiveness (World Bank, 2014).

Annex

Annex 1: Evaluation Matrix

	Evaluation Dimension	Evaluation questions (pilot-phase, work in progress)	Evaluation indicator	Available data sources	Additio-nal data collection	Evaluation strategy (evaluation design, method, procedure)	Expected evidence strength (narrative)
Relevance	**RELEVANCE**						
	The project fits into the relevant strategic reference frameworks.	Which framework conditions or guidelines exist for the project?	not necessary	TC Module Proposal (# GIZ 07.2016; # GIZ Change offers, 03.2017 and 12.2017); Project Reports (# PFB 1/2017-03/2018), # PASSIP II Evaluation Report (2016)) Cooperation Agreements: (# GIZ REAGIR (2014, # GIZ IRRIGAR (2014), # KfW (2013) Financial Coooperation)	none	# analysis of GIZ offer, analysis of progress re-ports, evaluation reports of previous phases and cooperation agreements	strong
		To what extent does the project contribute to the implementation of the underlying strategies (if available, especially the strategies of the partner countries)?	project well embedded into PNIP 2010	National policy Documents: (# Government of Mali (2005), # MDR-PNISA (2014), # MDA PNIP (2010) TC Module Proposal (# GIZ 07.2016; # GIZ Change offers, 03.2017 and 12.2017); German developmenet strategies (# BMZ (2010), # BMZ (2013), # BMZ (2017))	other do-nor com-ments through interviews	# analysis of policy and strategy and progress re-ports combined with inter-views with PASSIP man-agement and other stakeholders (donors and organisations)	strong
		To what extent does the project fit into the pro-gramme and the BMZ country strategy (if ade-quate)?	all levels, objectives and design of result matrix in line with BMZ coun-try strategy	Project Offers: (# GIZ (07.2016): TC Module Proposal; # GIZ (03.2017 and 12.2017): PASSIP Change Offers; # GTZ (1996, 2001, 2003): Programme Offers Mali-Nord; # GTZ (2005, 2006): Pro-gramme Change Offers Mali-Nord), Previous evaluations and project reports (# GTZ Mali Nord (2009); # GIZ PASSIP II Evaluation Report (06.2016); # GIZ PASSIP II Final report (07.2017), # GIZ PAS-SIP I Final Report (2014) Joint Programme Proposal (# Part A - KfW, 2013; # Part B - GIZ, 2013); German development strategies: (# BMZ (2010), # BMZ (2013), # BMZ (2017))	none	# no further information required	strong
		How was the country's implementation and ac-countability for Agenda 2030 set up and what support needs were defined?	narrative	Other documents related to Agenda 2030 (# EU-GoM (2015), # EC (2015) Factsheet, # Sahel Alliance (2018), # FAO (2016): Factsheet)	other do-nor com-ments	# analysis of Agenda 2030 documents and na-tionaly polcy documents combined with interviews with other stakeholders (donors and organisa-tions)	medium
		Is there a prioritization of the objectives of Agenda 2030 within a country context? To which SDGs does the project contribute? To what extent is the contribution of the interven-tion to the national/global SDGs reflected in the Theory of Change (ToC)?	degree of compatibility of the differ-ent priorities	none	none	# comparison of Agenda 2030 agenda, SDG 1 und 2	strong

		Cross-sectoral change strategies: Where has work been carried out on a supra-sectoral basis and where have such approaches been used to reinforce results/avoid negative results?	Unprecise formulation with little insight. What means "work" in that context? Examples to be given	Project Progress Report (# PFB 1/2017-03/2018)		# available result matrix, interviews with PASSIP management team	low
		To what extent are the interactions (synergies/trade-offs) of the intervention with other sectors reflected in conception and ToC – also regarding the sustainability dimensions (ecological, economic and social)?	examples to be identified in due course	Joint Project Proposal (# Part A - KfW, 2013; # Part B - GIZ, 2013)		# lessons learnt chapters in GIZ offer, analysis of progress reports and final and evaluation reports of previous phase.	strong
	Suitability of the the project concept to match core problems/needs of the target group(s).	To what extent was the concept designed to reach particularly disadvantaged groups (LNOB principle)? Which prerequisites were addressed for the concept and used as a basis?	specific activities geared to women/young people, small scale irrigation (farmers being target) are not grouped according to specific standards, further examples to be given	Joint Programme Proposal (# Part A - KfW, 2013; # Part B - GIZ, 2013) Project proposal (# GIZ (07.2016): TC Module Proposal; # GIZ (03.2017 and 12.2017): PASSIP Change Offers); former GIZ proposal (# GIZ-PASSIP (2013) -module offer) Project Progress Report (# PFB 1/2017-03/2018) Other Documents (# GIZ. PASSIP - Stratégie de Genre)	Impact survey (# COMPUSTAT 2018)	# document analysis, interviews with project planning team	strong
		How are the different perspectives, needs and concerns of women and men and disadvantaged groups represented in the change process and how are the objectives represented (Safeguard & Gender)?	degree of specification and focus found in the results model regarding the needs of differences	OP-Planning documents (# Planification Opérationelle de la phase III du PASSIP 2017-2019, # Planification opérationelle du PASSIP 2014-2017; # Strategie de mise en oeuvre de la OP du PASSIP 2015-2019)		# analysis of baseline data, interviews with project team	medium
		To what extent is the chosen project' objective geared to the core problems/needs of the target group?	compatibility between project/programme objective and core problem stated	Project Progress Report (# PFB 1/2017-03/2018) Other documents # DNGR-GIZ (2015): Etude de bases sur la situation nutritionnelle des populations des sites d'amenagements hydro agricoles (AHA) du PASSIP.	Impact survey (# COMPUSTAT 2018)	# analysis of related project documents and result matrices	strong
	The design of the project is adequately adapted to the chosen project objective.	Results logic as a basis for monitoring and evaluability (Theory of Change) o Are the hypotheses plausible? o Are the risks presented plausibly?	Major risks and assumptions have been presented plausibly. Not all security risks have not been properly reflected in project design. Real risks due to "remote control" have not been addressed in the GIZ offer.	Project Offers: (# GIZ (07.2016): TC Module Proposal); GIZ Project Change and Repeated Offers (# 03.2017; # 04.2017; # 12.2017); Agreements on delegated cooperation (# DFATD Canada/GIZ, 09.2014; # EU/GIZ, 03.2014)	monitoring data	# Interview with Program Management regarding ToC	strong
		Is the strategic reference framework well anchored in the concept?	not necessary	Project Offers: (# GIZ (07.2016): TC Module Proposal); Programme Change and Repeated Offers # GIZ (03.2017; 04.2017 and 12.2017); Agreements on delegated cooperation (# DFATD Canada/GIZ, 09.2014; # EU/GIZ, 03.2014)			good
		To what extent does the strategic orientation of the project address changes in its framework conditions?	which framework conditions have been addressed	Project Offers: (# GIZ (07.2016): TC Module Proposal); Programme Change and Repeated Offers # GIZ (03.2017; 04.2017 and 12.2017)		# revision of strategic documents	medium

		How is/was the complexity of the framework conditions and guidelines handled?	at different levels (objective, results and activities)	Project Offers: (# GIZ (07.2016): TC Module Proposal); Programme Change and Repeated Offers # GIZ (03.2017; 04.2017 and 12.2017)		# analysis of planning documents	low
		How is/was any possible overloading dealt with and strategically focused?	existence of sever security problems was addressed but risk for overload was not an issue	Project Offers: (# GIZ (07.2016): TC Module Proposal); Programme Change and Repeated Offers # GIZ (03.2017; 04.2017 and 12.2017)		# semi-structured Interviews	medium
	The conceptual design of the project was adapted to changes in line with requirements and re-adapted where applicable.	What changes have occurred?	quality of the changes incurred by the "attached" CIV (Green Inno-Center) and other SEWOH projects as well as a of different change offers, importance to be verified , adaptations have been made within OP and PCA Matrix	PASSIP III Change Offers (# 03.2017 and # 12.2017)		# analysis of GIZ offers, conceptual design has been considered as project design,	negative evidence expected
		Ops and PCA matrix show a clear focus on changes in line with requirements (ex: assignment of personnel, institutional consequences, etc.) show a high degree of awareness and as the limits of a TC projects to counteract or avoid negative external factors)conflicts)	volume of revision required in result matrix.	OP-Planning documents (# Planification Opérationelle de la phase III du PASSIP 2017-2019, # Planification opérationelle du PASSIP 2014-2017; # Strategie de mise en oeuvre de la OP du PASSIP 2015-2019); PCA Results Matrix (# PCA-Ergebnismatrix, 01.2018; # PCA Ergebnismatrix, 03.2016; # Ergebnisse der vertieften UKP, 06.2017)		# analysis of different GIZ offers and OP-planning documents	negative outcome expected

	Evaluation Dimension	**Evaluation questions (pilot-phase, work in progress)**	**Evaluation indicator**	**Available data sources**	**Additional data collection**	**Evaluation strategy (evaluation design, method, procedure)**	**Expected evidence strength (narrative)**
	EFFECTIVENESS						
	The project achieves the objective on time in accordance with the project objective indicators agreed upon in the contract.	To what extent has the agreed project objective already been achieved at the time of evaluation, measured against the objective indicators? Are additional indicators needed to reflect the project objective adequately?	PI 1-3 of result matrix,	TC Module Proposal (07.2016); PASSIP Change Offers (# 03.2017 and # 12.2017); Results Matrix (version 26.11.2016, in French), Results Model (version 07.06.2016 and 10.05.2018, french), Progress Report (PFB 1/2017-03/2018); Baseline surveys	Monitoring documents (# PASSIP III Tableau annuel suivi indicateurs, 05.2018); Efficiency Tool; Impact survey (COMPUSTAT 2018)	revision of documents to get a reference framework	high
		To what extent is it foreseeable that unachieved aspects of the project objective will be achieved during the current project term?	PI 1-3 of result matrix,	Progress Report (# PFB 1/2017-03/2018); Rapports annuel PASSIP-BMZ-UE-Canada (# N°1 date: 06.2015; # N°2 date: 05.2016; # N° 3: 05.2017)	Impact survey (COMPUSTAT 2018), comments from interviews with project staff and national stakeholders	structured interviews with project staff and national stakeholders	no indication yet
	The services implemented by the project successfully contribute to the achievement of the project objective. (Modulziel "outcome" according to Giza offer))	What concrete contribution does the project make to the achievement of the agreed project objective?	degree completion of Outputs A-E, using corresponding indicators	Operational planning documents (# Planification Opérationelle de la phase III du PASSIP 2017-2019, # Planification opérationelle du PASSIP 2014-2017; # Strategie de mise en oeuvre de la OP du PASSIP 2015-2019); Baseline surveys; Progress reports (# PFB 1/2017-3/2018, # PFB 08.2013); Previous evaluation and final reports (# PASSIP II Evaluation Report 06.2016, # PASSIP II Final report 07.2017, # PASSIP I Final Report 2014)	Result Monitoring documents (# PASSIP III - Tableau annuel suivi indicateurs, 05.2018); Impact survey (COMPUSTAT 2018), comments from interviews with project staff partners and other stakeholders	interviews with staff responsible for A-E, interviews with donors and stakeholders	Evidence of the question is low as deficient formulation of the module outcome and lack of control group and unavailable intermediate results do not allow a firm statement

		What other/alternative reasons contributed to the fact that the objective was achieved or not achieved?	Reasons (except incurred risks) given by Progress Reports	Progress reports (# PFB 1/2017-3/2018, # PFB 08.2013)	Result Monitoring documents (# PASSIP III - Tableau annuel suivi indicateurs, 05.2018); Comments from interviews with project staff, partners and other stakeholders, Impact Survey (COMPUSTAT 2018)	Assess information provided by external sources	no indication yet
		Which factors in the implementation contribute successfully to or hinder the achievement of the project objective? (e.g. external factors, managerial factors, cooperation factors)	analyze possible coord. problems or highlights within PASSIP PASSIP with PNIP, DGNR, IPRODI at HQ level, technical and local level	Analysis of Mali context (# PÖK Mali: GIGA 2016 and GIGA 2017); Findings from previous evaluations (# PASSIP II, 06.2016)	Specific studies regarding organizational issues (# ECDPD-DP-115: Approaches-Experiences, German Development Cooperation Mali, 2011); Impact Survey (COMPUSTAT 2018); comments from interviews with project staff	semi-structured Interviews with responsible staff at different levels	strong
		Are core, support and management processes designed in such a way that they contribute to the achievement of the objective?	Output A positively reflects coordination, but not detailed	not available yet	Comments from interviews with project staff and other donors	Interviews with management and other donors	no indication yet
		To what extent have risks (see also Safeguards & Gender) and assumptions of the theory of change been addressed in the implementation and steering of the project?	risks addressed and considered, weighing probability and sereneness	PCA Results Matrix (# PCA-Ergebnismatrix, 01.2018; # PCA Ergebnismatrix, 03.2016; # Ergebnisse der vertieften UKP, 06.2017)		Revision with program staff	medium / good
	The occurrence of additional (not formally agreed) positive results has been monitored and additional opportunities for further positive results have been seized. No project-related negative results have occurred – and if any negative results occurred the project responded adequately.	Which positive or negative unintended results (economic, social, ecological, others) does the project produce at outcome level?	incidence of specific events/ results	Progress reports (# PFB 1/2017-3/2018, # PFB 08.2013)	Result Monitoring documents (# PASSIP III - Tableau annuel suivi indicateurs, 05.2018); Comments from interviews with stakeholders and beneficiaries	structured interviews with stakeholders (survey by local consultant)	no indication yet
		To what extent were risks of unintended results at the outcome level assessed in the monitoring system (e.g. compass)? Were risks already known during conception? Was there a corresponding risk assessment in the project proposal? How was the ability to influence these risks originally assessed?	incidence of specific events/ results and occurrence of unforeseen risks.	PCA Results Matrix (# PCA-Ergebnismatrix, 01.2018; # PCA Ergebnismatrix, 03.2016)	own observations within the project area,	semi-structured Interviews with responsible staff &partners at different levels	no indication yet
		What measures have been taken by the project to counteract the risks/negative results?	Two major issues (assignment of plots and, selection of beneficiaries) have been addressed as possibly unwanted effects, measures to be identified	PCA Results Matrix (# PCA-Ergebnismatrix, 01.2018; # PCA Ergebnismatrix, 03.2016)	Comments from interviews with project staff	assessment of information regarding severeness	no indication yet
		To what extent have the framework conditions for the negative results played a role? How did the project react to this?	very strong incidence as described in offer and PC result matrix, revision in Operational Plans has been taken place	not available yet	Comments from interviews with project staff and other donors	Interviews with management & others (Embassy, EU, Canada)	negative results in affected regions is expected, no clear indication yet
		To what extent were potential unintended positive results at outcome level monitored and exploited?	Two major issues (assignment of plots/land and selection of beneficiaries) have been addressed as possibly unwanted effects	Progress reports (# PFB 1/2017-3/2018, # PFB 08.2013)	Comments from interviews with project staff and local stakeholders	interview with program management and with local stakeholders (local authorities and beneficiaries)	medium / good

	Evaluation Dimension	Evaluation questions (pilot-phase, work in progress)	Evaluation indicator	Available data sources	Additional data collection	Evaluation strategy (evaluation design, method, procedure)	Expected evidence strength (narrative)
	IMPACT						
Impact	The intended overarching development results have occurred or are foreseen (should be plausibly explained).	To which overarching development results (ODR) is the project supposed to contribute (cf. module and programme proposal, if no individual measure; indicators, identifiers, link to national strategy for implementing 2030 Agenda, link to SDGs)? Which of these intended results at the level of overarching results can be observed?	1) compatibility of program objective with SDG 1 and 2 and Agenda 2030. 2) compare project output formulation with ODR	Joint Project Proposal (# Part A - KfW, 2013; # Part B - GIZ, 2013); TC Module Proposal (# GIZ 07.2016; # GIZ Change offers, 03.2017 and 12.2017); Agreements on delegated cooperation (# DFATD Canada/GIZ, 09.2014; # EU/GIZ, 03.2014); Progress Reports (# PFB 1/2017-3/2018, # PFB 08.2013); Rapports annuel PASSIP-BMZ-UE-Canada (# N°1 date: 06.2015; # N°2 date: 05.2016; # N° 3: 05.2017)	M&E data (# Tableau annuel suivi indicateurs PASSIP III, GIZ, 05.2018)	Analyses of documents	high
		Target group and 'Leave No One Behind': Is there evidence of the results achieved at target group level? To what extent have targeted marginalized groups (such as women, children, young people, the elderly, people with disabilities, indigenous peoples, refugees, IDPs and migrants, people living with HIV/AIDS and the poorest of the poor) been reached?	1) evidence to be documented at level of 29.000 beneficiaries 2)percentage of marginalized groups within beneficiaries addressed by outcome using Indicator 1	Progress Reports (# PFB 1/2017-3/2018, # PFB 08.2013); Rapports annuel PASSIP-BMZ-UE-Canada (# N°1 date: 06.2015; # N°2 date: 05.2016; # N° 3: 05.2017); Baseline surveys	M&E data (# Tableau annuel suivi indicateurs PASSIP III, GIZ, 05.2018); Comments from interviews with project staff, partner organiation and stakeholders	Interviews with GIZ staff , partner organisations and stakeholders	medium to high
	The project contributed to the intended overarching development results.	To what extent is it plausible that the results of the project on the output level and outcome level (project objective) contribute to the overarching results? (contribution-analysis approach)	degree of consistency of the result matrix	Results Matrix (version 26.11.2016, in French), Results Model (version 07.06.2016 and 10.05.2018, french)		Contribution analysis	high
		What are the alternative explanations/reasons for the results observed? (e.g. the activities of other stakeholders)	incidences of other projects	REAGIR, IRRIGAR and FC documents, FAO Data, GIZ-change offers (# 03.2017; # 12.2017)	Impact Survey (COMPUSTAT, 2018)	Comparison of documents	highly evident that other projects had a considerable share
		To what extent do changes in the framework conditions influence overarching development results?	external factors incidence	Risk analysis		contribution analysis	strong
		To what extent is the effectiveness of the project positively or negatively influenced by other policy areas, strategies or interests (German ministries, bilateral and multilateral development partners)? What are the consequences of the project?	role of KfW, EU, Canada and contribution /type of obstacle created	Joint Project Proposal (# Part A - KfW, 2013; # Part B - GIZ, 2013); TC Module Proposal (# GIZ 07.2016; # GIZ Change offers, 03.2017 and 12.2017); Agreements on delegated cooperation (# DFATD Canada/GIZ, 09.2014; # EU/GIZ, 03.2014)	# reporting set up, clarifications given by programme managers (interviews)	# analyses of documents	high
		To what extent has the project made an active and systematic contribution to widespread impact? (4 dimensions: relevance, quality, quantity, sustainability; scaling-up approaches: vertical, horizontal, functional or combined)? If not, could there have been potential? Why was the potential not exploited?	examples for impact to be identified	Progress Reports (# PFB 1/2017-3/2018, # PFB 08.2013); Rapports annuel PASSIP-BMZ-UE-Canada (# N°1 date: 06.2015; # N°2 date: 05.2016; # N° 3: 05.2017)	M&E data; Comments from interviews with HF-coordinators		relatively low as no indicators have been foreseen

	The occurrence of additional (not formally agreed) positive results at impact level has been monitored and additional opportunities for further positive results have been seized. No project-related negative results at impact level have occurred – and if any negative results occurred the project responded adequately.	Which positive or negative unintended results at the level of overarching results can be observed (e.g. three sustainability dimensions: economic, social, ecological, cross-cutting issues)? o Economically: Impairment of competitiveness, employability, etc. o Socially: How should the impact be assessed in terms of distributive results, non-discrimination and universal access to social services and social security systems? To what extent can particularly dis-advantaged population groups benefit from the results or have negative results for particularly dis-advantaged population groups been created? o Ecologically: What are the positive or negative environmental impacts of the project?	question only no rating	PCA Results Matrix (# PCA-Ergebnismatrix, 01.2018; # PCA Ergebnismatrix, 03.2016; # Ergebnisse der vertieften UKP, 06.2017) and Joint Project Proposal (# Part A - KfW, 2013; # Part B - GIZ, 2013),	# socio economic studies, water & environmental impact assessment, gender strategy; # Other project sudies (SEWOH, Green Innovation Center/Resilience)	# analysis of documents, semi-structured interviews with GIZ staff	relatively low, as no indicators have been foreseen
		To what extent were risks of unintended results at the impact level assessed in the monitoring system (e.g. compass)? Were risks already known during conception? Was there a corresponding risk assessment in the project proposal? How was the ability to influence these risks originally assessed?	Does risk monitoring constitute an integral part of the M&E system	M&E documents;	Comments from interviews with project staff	# Interview with GIZ staff WoM-unit, donors and stakeholders	high
		What measures have been taken by the project to counteract the risks/negative results?	measures taken		Comments from interviews with project staff	# Interview with WoM-unit	high
		To what extent have the framework conditions for the negative results played a role? How did the project react to this?	Are there other measures except decentralized mgmt.		Comments from interviews with project staff	# Interview with WoM-unit	unclear, medium
		To what extend were potential unintended positive results monitored and exploited?	examples for unwanted results	Progress reports (# PFB 1/2017-3/2018, # PFB 08.2013)	Comments from interviews with project staff	# Interview with WoM-unit	unclear, medium

	Evaluation Dimension	**Evaluation questions (pilot-phase, work in progress)**	**Evaluation indicator**	**Available data sources**	**Additional data collection**	**Evaluation strategy (evaluation design, method, procedure)**	**Expected evidence strength (narrative)**
	EFFICIENCY						
Efficiency	The project's use of resources is appropriate with regard to the outputs achieved. [Production efficiency: Resources/Outputs]	To what extent are there deviations between the identified costs and the projected costs? What are the reasons for the identified deviation(s)?	see separate sheet in the excel-document on evaluation indicators for production efficiency (pilot phase)	Progress Reports (# PFB 1/2017-3/2018, # PFB 08.2013), Result Monitoring documents (# PASSIP III - Tableau annuel suivi indicateurs)	# Efficiency tool	# Analysis of documents	
		To what extent could the outputs have been maximized with the same amount of resources and under the same framework conditions and with the same or better quality (maximum principle)?		Progress Reports (# PFB 1/2017-3/2018, # PFB 08.2013), Result Monitoring documents (# PASSIP III - Tableau annuel suivi indicateurs)	# Efficiency tool	# Analysis of documents	
		To what extent could outputs have been maximized by reallocating resources between the outputs?		Progress Reports (# PFB 1/2017-3/2018, # PFB 08.2013), Result Monitoring documents (# PASSIP III - Tableau annuel suivi indicateurs)	# Efficiency tool	# Analysis of documents	
		Were the output/resource ratio and alternatives carefully considered during the design and implementation process – and if so, how?		# no work in progress data available yet			
		For interim evaluations based on the analysis to date: To what extent are further planned expenditures meaningfully distributed among the targeted outputs?		# no work in progress data available yet			

	The project's use of resources is appropriate with regard to achieving the projects objective (outcome). [Allocation efficiency: Resources/Outcome]	To what extent could the outcome have been maximized with the same amount of resources and the same or better quality (maximum principle)?		Progress Reports (# PFB 1/2017-3/2018, # PFB 08.2013), Result Monitoring documents (# PASSIP III - Tableau annuel suivi indicateurs)	# Efficiency tool	# Analysis of documents	
		Were the outcome-resources ratio and alternatives carefully considered during the conception and implementation process – and if so, how? Were any scaling-up options considered?		Progress Reports (# PFB 1/2017-3/2018, # PFB 08.2013), Result Monitoring documents (# PASSIP III - Tableau annuel suivi indicateurs)	# Efficiency tool	# Analysis of documents	
		To what extent there more results achieved through synergies and/or leverage of more resources, with the help of other bilateral and multilateral donors and organizations (e.g. Kofi)? If so, was the relationship between costs and results appropriate?		Progress Reports (# PFB 1/2017-3/2018, # PFB 08.2013), Result Monitoring documents (# PASSIP III - Tableau annuel suivi indicateurs)	# Efficiency tool	# Analysis of documents	

	Evaluation Dimension	Evaluation questions (pilot-phase, work in progress)	Evaluation indicator	Available data sources	Additional data collection	Evaluation strategy (evaluation design, method, procedure)	Expected evidence strength (narrative)
	SUSTAINABLILITY						
Sustainability	Prerequisite for ensuring the long-term success of the project: Results are anchored in (partner) structures	What has the project done to ensure that the intended effect can be achieved in the medium to long term by the partners themselves (working aid review)?	awareness ok, but incidences to be listed	Project end report # GIZ PASSIP (6.2008-3.2014) Project Evaluation Report (# 08/2016);	# listing government actual priorities, as observed by other donors # Impact Survey (COMPUSTAT, 2018)	# semi-structured interviews with GIZ staff , other donors and counterpart institutions	medium
		Which advisory contents, approaches, methods and concepts of the project are anchored/institutionalized in the (partner) system? Nothing envisaged regarding the nutrition aspects.	description of advisory content, methods, and concept being anchored	Progress Reports (# PFB 1/2017-3/2018, # PFB 08.2013),	# documents from partner organizations	# document analysis, # interviews with GIZ staff, other donors and stakeholders	medium
		To what extent are they continuously used and/or further developed by the target group and/or implementing partners?	incidences to be given	Progress Reports (# PFB 1/2017-3/2018, # PFB 08.2013), Project Evaluation Reports (# 08/ 2016), Result Monitoring documents (# PASSIP III - Tableau annuel suivi indicateurs,	# documents from partner organizations # Impact Survey (COMPUSTAT, 2018)	# document analysis, # interview with GIZ staff, other donors and stakeholders; # field visits and semi-structured interviews with user groups	medium
		To what extent are (organizational, personnel, financial, economic) resources and capacities in the partner country (longer-term) available to ensure the continuation of the results achieved?	corresponding indicator availability related to Output B	Progress Reports (# PFB 1/2017-3/2018, # PFB 08.2013), Project Evaluation Reports (# 08/ 2016), Result Monitoring documents (# PASSIP III - Tableau annuel suivi indicateurs,	# Efficiency Tool # Impact Survey (COMPUSTAT, 2018)	document analysis	medium /fair
		To what extent are national structures and national accountability mechanisms in place to support the results achieved (e.g. for the implementation and review of Agenda 2030 and other strategies)?	own government initiatives with respect to sustainability and accountability		# check whether outside the reach and covered by GIZ offer	# assess whether project has a responsibility to have national structures and mechanisms in place to " for the implementation and review of Agenda 2030 and other strategies", interviews	low

		What is the project's exit strategy? How are lessons learnt prepared and documented?	Does an exit strategy exist? Is it approved?		Comments from interviews with project staff	interviews with project staff	question only narrative
	Forecast of durability: Results of the project are permanent, stable and long-term resilient	To what extent are the results of the project durable, stable and resilient in the long-term under the given conditions?	check each result and also achievement (durable, stable and resilient)	Progress Reports (# PFB 1/2017-3/2018, # PFB 08.2013), Result Monitoring documents (# PASSIP III - Tableau annuel suivi indicateurs,		# rate only those results with high probability of achievement, interviews with GIZ staff	medium
		1) What risks and potentials are emerging for the durability of the results and how likely are these factors to occur? 2) What has the project done to reduce these risks and exploit potential? (Example: Adaptability of target groups and institutions regarding economic dynamism & climate change; particularly disadvantaged groups are able to represent themselves in the long term and their individual countries have the capacity for their participation; changes in behavior, attitudes and awareness among target groups and institutions that support the sustainability of the project's results, etc.?)	1)Documents indicate some high risks and positive project reaction, 2) Did the project omit any necessary measures ? 3) highly speculative as there are no indicators to measure or even describe	Progress Reports (# PFB 1/2017-3/2018, # PFB 08.2013),		# Analysis of documents and activities regarding their likelihood of being negatively affected by occurrence of risks, semi-structured interviews	low
	Are the results of the project ecologically, socially and economically balanced?	Based on the analysis of intended and unintended results in the effectiveness (outcome level) and impact assessment: Are there negative trade-offs between the ecological, economic and social dimensions? Were positive synergies between the three dimensions exploited?	negative trade offs or positive synergies to be identified	Progress Reports (# PFB 1/2017-3/2018, # PFB 08.2013), sector studies AMEIE PNIP (2010)	# information gathered from resource persons	# Analysis of documents, semi-structured interviews	low
		If negative interactions have been avoided and synergies exploited, how was this ensured? What measures were taken?	Activities by PASSIP	Progress Reports (# PFB 1/2017-3/2018, # PFB 08.2013),		# semi-structured interviews	medium
	How are prospects for sustainability of results at farm household level	which measures has the project taken in order to avoid free riding mentality and dependencies on behalf of the beneficiaries.	analysis of lessons learnt from predecessor projects and other rural development projects in Africa				

Annex 2: List of resources

AMEIE (2010): Evaluation Environnementale Stratégique du PNIP, Final Report.

BMZ (2010): Konzept: Entwicklung ländlicher Räume und ihr Beitrag zur Ernährungssicherung.

BMZ (2013): Förderung einer nachhaltigen Landwirtschaft, Entwicklungspolitisches Konzept.

BMZ (2017): Country Strategy for Bilateral Development Cooperation with Mali.

COMPUSTAT (2018): Rapport de l'etude de sondage sue l'évolution des indicateurs du PASSIP III, 1ère année: 2017.

DNGR-GIZ (2015): Etude de bases sur la situation nutritionnelle des populations des sites d'amenagements hydro agricoles (AHA) du PASSIP.

EC (2015): Factsheet: EU Emergency Trust Fund For Africa. European Commission.

EU-GoM (2015): Programme Indicatif National 2014–2020. European Union – Government of Mali. [online] https://ec.europa.eu/europeaid/sites/devco/files/pin-mali-fed11-2014_fr.pdf

Falkenberg, Claus-Michael and N'Djim, Hamady (2015): Plan de renforcement des capacités de la DNGR et de ses démembrements dans le cadre de la coordination du PNIP actualisé 2015, DNGR/MDR/PASSIP.

FAO (2016): Factsheet: La FAO et le Mali, [online] http://www.fao.org/3/a-au902f.pdf

FAO (2018): Adapting irrigation to climate change (AICA), [online] http://www.fao.org/in-action/aicca/country-activities/mali/background/en/

GIZ (2013a): Technical Cooperation – Programme Proposal Mali Agriculture – Part B.

GIZ (2013b) PASSIP II (PN 2013.2246.0) TC-module Offer.

GIZ (2014a): PASSIP III (PN 2016.2036.8) Agreement on Delegated Cooperation: Canada–GIZ (REAGIR.

GIZ (2014b): PASSIP III (PN 2016.2036.8) Convention de Délégation entre la Commission Européenne et la GIZ (IRRIGAR).

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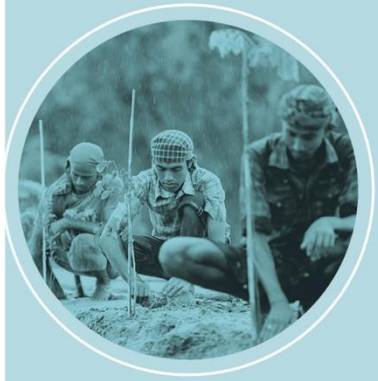

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