KfW Development Bank

Ex post evaluation
Water catchment areas, Bolivia

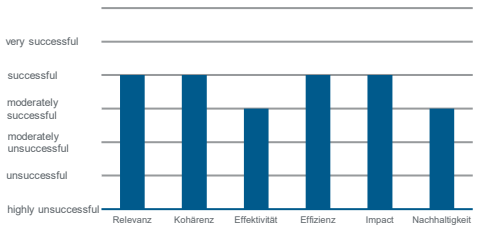
Title	Water catchment area management support programme (PROMAC)		
Sector and CRS code	14015 Water resources conservation		
Project number	2009 65 590		
Commissioned by	Federal Ministry for Economic Cooperation and Development (BMZ)		
Recipient/Project-executing agency	Recipient: Ministerio de Planificación del Desarrollo / project-executing agency: Ministerio de Medio Ambiente y Agua		
Project volume/ Financing instrument	*EUR 10 million (budgetary grant)*		
Project duration	*2011–2018*		
Year of report	2022	**Year of random sample**	2020

Objectives and project outline

The objective at outcome level was to improve the integrated management of the water catchment areas and water resources as well as the sustainable use of the rural production base (especially water, land, and biodiversity). At impact level, the objective was to sustainably secure the livelihoods of the rural population in the water catchment areas and reduce vulnerability to hydrological risks and climate change. The objectives were to be achieved by participating in the international donor basket fund to finance the National Water Resources Plan (PNC).

Important: It should also be briefly described whether unexpected paths were taken and/or the concept was significantly changed.

Overall rating:
successful



Key findings

The objectives at outcome and impact level were achieved with restrictions. Sustainability depends on the further political prioritisation of integrated management of catchment areas and water resources, as well as on the mobilisation of sufficient sources of financing and the strengthening of local capacities. The project has been rated “successful” for the following reasons:

– Due to the successful harmonisation within the donor basket fund, the project was characterised by a high degree of external coherence. In addition, the instruments of German DC interacted well, meaning that irrigation projects in the same project regions were financed in parallel to the evaluated project, among other things.

– The implementation capacities of both, the project executing agency and local governments, were significantly expanded during the implementation period. Nevertheless, only 49% of the funds earmarked for the implementation of PNC II were invested between 2013 and 2016. The coordination of donor activities and the development of strategic topics within the donor group made a significant contribution to increasing efficiency.

– It can be assumed that the project contributed to stabilising the population’s livelihood (impact level) thanks to high target achievement at outcome level. Information is available that the investment measures (e.g. collection, storage and distribution systems) enabled water to be accessed all year round in some communities and thus had a positive effect on food security. Due to a lack of data, a stabilising effect on income from agricultural employment cannot be quantified for the project.

Conclusions

– Decentralised approaches with a participatory component help to raise awareness, strengthen local capacities and increase ownership.

– The success of decentralised approaches is linked to the existence of local organisational structures, clear responsibilities, and financial resources, as well as the provision of technical assistance to increase implementation capacities.

– Strategically embedding cross-cutting issues (e.g., gender) is necessary to secure non-discriminatory access in practice to the outputs created.

Ex post evaluation – rating according to OECD-DAC criteria

General conditions and classification of the project

Bolivia is one of the countries in Latin America with the most urgent need for water and sanitation, and one of the countries most affected by climate change in the world. The disappearance of glaciers in the Andes as a result of global warming is drying out one of Bolivia's most important water sources. **Climate change is also increasing water scarcity in some river basins, impairing the availability of water for drinking water, agriculture, hydropower, mining, industry, and ecosystems.** The adverse effects of these trends on the economy, ecosystem, livelihoods, and well-being of people are already being felt, especially among vulnerable groups such as the poor, women, children, and the elderly. **In 2006, the Plurinational State of Bolivia established a conceptual framework for the integrated management of national water resources and water catchment areas with the National Watershed Plan (PNC).** The PNC aimed to promote investment measures, develop strategic topics and expand institutional capacities. The aim was to implement the individual projects in a decentralised and integrated manner. The operational framework of the PNC was divided into three strategic axes and comprised a total of seven strategic components (see Figure 1).

Figure 1: PNC strategic axes and components

Axes	Components
1) Design, implementation, and supervision of the Integrated Management of Water Resources (GIRH) and Integrated Basin Management (MIC)	1) Strategic Catchment Management and Water Management Plans (PDCs) 2) Implementation of GIRH/MIC projects[1];
2) Transverse[2] consideration of hydrological risks, climate change, and water quality	3) Risk management in the areas of hydrology and climate change; 4) Water quality management;
3) Information, communication, and capacity building	5) Implementation of intercultural, educational concepts ("Cuencas Pedagógicas"); 6) Knowledge and information management; 7) Institutional development and capacity building for GIRH/MIC projects

Source: Dockweiler, M., Alencastre, A. (2017). Evaluación al Plan Nacional de Cuencas Fase II. Informe de Evaluación. AECOM International Development Europe SL (Spain). FC Evaluation Department's own data.

The first axis was characterised in particular by **the implementation of specific individual projects** (e.g., improving water management and investing in local projects for the sustainable management of natural and water resources).

The second axis promoted **local risk and water quality management** through the development of early warning systems, the increase in afforestation areas and the establishment of monitoring systems to measure water quality.

The third axis was primarily intended to **strengthen decentralised implementation structures and institutions as well as communication and information flows** in order to ensure effective, efficient, and transverse implementation of the first and second axes. This included, among other things, the implementation of educational concepts ("Cuencas Pedagógicas") in the form of pilot projects to promote knowledge exchange between actors at different levels (Ministry of Water (MMAyA), academic institutions, public authorities, DC actors, local management committees (OGC)). The regional and local governments acted as intermediaries between the communities

[1] GIRH/MIC projects are characterised by: (1) their relatively small scope, i.e. micro water catchment areas with investments between USD 100,000 and USD 500,000 per project; (2) their short term (≤ 2 years); (3) a financing strategy in which 70% of the funds are provided by the VRHR, 20% by the regional governments, 5% by the communities and 5% by the beneficiaries; (4) their focus on solving the causes of problems in water catchment areas (e.g. erosion, floods, water pollution), especially in the upper reaches; and (5) the strengthening of local organisations and institutions.
[2] In the implementation of the PNC, transverse issues such as poverty alleviation, interculturalism, gender and the management of cross-border catchment areas were relevant.

and entities referred to as “promotional institutions” (e.g. universities). Relevant topics included territory planning, project development, conflict management, capacity building, preservation of traditional practices, environmental education and awareness, exchange of experience, promotion of leadership skills, gender equality and technical studies. The strategic axis also envisaged the implementation of a geodatabase at the PDC level and the strengthening of institutional and individual capacities at national and regional level.

At the time of this evaluation, two phases of the national programme had been completed: PNC I (2006–2012) and PNC II (2013–2017). Based on the Bolivian government’s 2016–2020 development plan, PNC II was extended by the period 2017–2020.

PNC I (2006–2012) focused primarily on contributions to institutional development and major strategic issues without specifying specific individual measures and other operational aspects (e.g., methodological instruments or clear selection criteria for water catchment areas). PNC II (2013–2017), on the other hand, was characterised by a coherent strategic and operational framework. This was an important step in the development of the PNC as public policy, as the strategic framework was closely linked to the programming of measures and results from that point on. This was reflected, among other things, in the fact that components such as the forestry strategy and the climate change strategy under PNC II provided for the implementation of concrete measures (e.g. GIRH/MIC projects) to achieve the defined objectives. Another innovation of PNC II was the proposal and implementation of Basin Master Plans (PDCs) at the level of medium and large water catchment areas. These were used to take stock of the water catchment areas, to analyse natural processes (e.g., impacts of climate change) and to prioritise GIRH/MIC projects, including the provision of corresponding guidelines on their design and implementation by local actors (see Table 1).

Table 1: *Scale and management of water catchment areas (PNC II)*

Level	Reference Area	Management Tool	Management Period	Goal
National	1 mio. km²	National Watershed Plan (PNC)	Cross-sectoral discussion forum	- National policies - Compatibility of institutional framework - Definition of priorities for strategic catchment areas - Management of transnational catchment areas
Strategic Catchment Area	2,000 - 100,000 km²	Water Management Plan (PDC)	Platform for management of water catchment areas	- Investment planning for regional water development and sustainability
Micro Catchment Area	10 - 100 km²	GIRH / MIC Project	Catchment Management Organisation (OGC)	- Investment projects - Local protection measures

Source: Ministerio de Medio Ambiente y Agua / Viceministerio de Recursos Hídricos y Riego (2013). Programa Plurianual de Gestión Integrada de Recursos Hídricos y Manejo Integral de Cuencas 2013–2017. La Paz, Bolivia. FC Evaluation Department’s own data.

A joint financing agreement (2008) between Bolivia and the Netherlands, Denmark, Sweden, Switzerland, and Germany enabled the promotion of PNC I via **basket funding**. In addition, other donors participated in the financing of the PNC, such as the EU. The donor group’s composition was dynamic, with the Netherlands and Denmark leaving in 2012 and Belgium being incorporated two years later. During PNC II, the donor group consisted of the EU, Switzerland, Germany, Belgium, Sweden, the World Bank and France.

One of the innovative concepts of a new policy launched by the Bolivian government in 2006 was the **creation of a Ministry of Water (MMAyA)**. Three Vice-Ministries responsible for various sub-sectors are subordinate to the MMAyA: 1) environment, biodiversity, climate change, forestry and development, 2) drinking water and basic sanitation, and 3) water resources and irrigation. The Vice-Ministry for Water Resources and Irrigation (VRHR) was the project-executing agency of the evaluated project and was responsible for developing and implementing the PNC. The measures were implemented through a decentralised implementation structure (see Coherence). The departamentos were in charge of regional development planning. The main actors at local level were organised user and producer associations, farming communities, indigenous peoples, public and private companies, non-governmental organisations providing technical, social, and promotional assistance, universities, and local public institutions.

Summary of the project

The project consisted of participating in the international donor basket fund to provide financial and operational support to the PNC, specifically by 1) increasing the investment capacities of the PNC, 2) integrating FC into the coordination mechanisms of the donor basket fund and 3) making an FC contribution to strategic topics. In the period 2012–2016, FC funds promoted PNC I with EUR 2 million and PNC II with EUR 8 million. The funds were spent primarily on the investment components of the PNC (axis 1, see Figure 1). The intent was to support integrated management of the prioritised water catchment areas, in particular, through investments in soil protection measures, construction, protection of vegetation cover, betterment of degraded areas and advisory services for the target group. The project-executing agency was the VRHR and the project's target group corresponded to the PNC target group: the upstream and downstream residents in the water catchment areas, a predominantly poor population group in rural areas. There are also government and social institutions, which were involved in the development and operation of the investments as a target group of qualification measures.

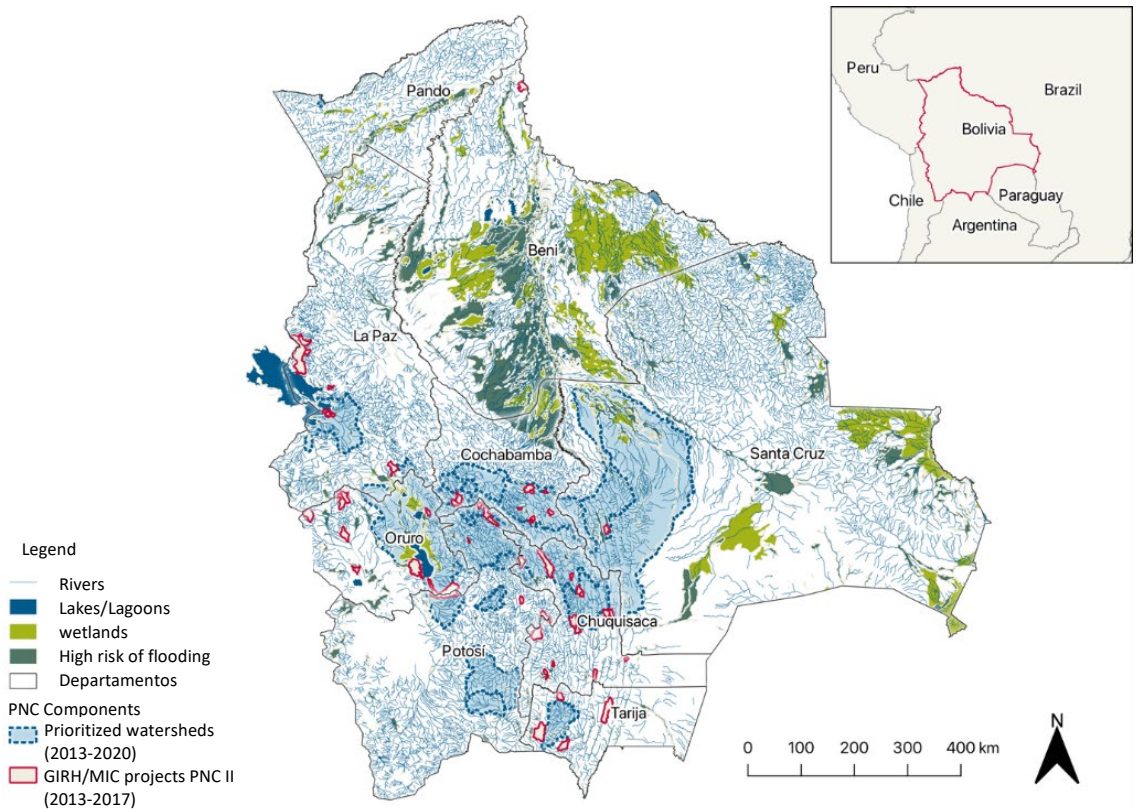
Map of the project country incl. project locations

A geographical overview of the intervention areas of components 1 and 2 can be found in Figure 2. These are the project areas for GIRH/MIC investments and the total of 14 prioritised water catchment areas under PNC II. The prioritised water catchment areas are either particularly affected by degradation or contamination, or have other strategic importance (e.g. a high proportion of the population). Water management plans have been drawn up for these medium and large water catchment areas in order to enable longer-term planning of investments. The map shows that the PNC II project areas are predominantly located in the Bolivian highlands (Altiplano). Relatively low precipitation, high evaporation and soil salinity as well as unregulated mining activities have contributed to water problems (e.g., water scarcity and contamination) that many municipalities of Altiplano are confronted with.[3] The southern and south-western regions of Bolivia are among the areas most at risk of water scarcity.[4]

[3] French, M., Alem, N., Edwards, S.J. et al. (2017). Community exposure and vulnerability to water quality and availability: a case study in the mining-affected Pazña Municipality, Lake Poopó Basin, Bolivian Altiplano. Environmental Management 60, 555–573.

[4] Paucara (2018). Efectos del Cambio Climático sobre la Disponibilidad de Agua y los Recursos Hídricos en Bolivia: Pronóstico para el 2030. Documento de Trabajo IISEC-UCB no. 15/08 October 2018.

Figure 2: PNC intervention areas (from 2013)



Source: GADM (country borders and administrative units). GeoSIARH Bolivia (prioritised water catchment areas with water management plans and GIRH/MIC projects). GeoBolivia (rivers, lakes/lagoons, wetlands, risk of flooding). FC Evaluation Department's own data.

Breakdown of total costs

		Inv. (planned)	Inv. (actual)
Investment costs (total)*	**EUR million**	**84.7**	**43.1**
Counterpart contribution EUR million		24.0	4.2
Co-financing	EUR million	50.7	28.9
Financing	EUR million	10.0	10.0
Of which BMZ funds	EUR million	10.0	10.0

*Total volume of the PNC in the period 2013 to 2016 (planned amount and funds actually invested). Exchange rate March 2011.

Rating according to OECD-DAC criteria

Relevance

Policy and priority focus

In light of increasing hydrological risks and the effects of climate change, the partner country initiated a comprehensive revision of its water policy in 2006, with the development and implementation of the PNC being one of the results. **The PNC is in line with Bolivia's national development plans** (e.g. National Economic and Social Development Plan 2021–2025). The sustainable management and use of water resources targeted by the PNC also plays an important role in the partner country's Nationally Determined Contributions (NDC) to achieve the United Nations 2030 Agenda. In this sense, the evaluated project directly supported the political priorities of the

partner country through the financial and strategic contributions to PNC I and II. In addition, the project was **in line with the German Federal Ministry for Economic Cooperation and Development (BMZ) strategy** for the promotion of sustainable agriculture and the BMZ water strategy. The effects of two hydrological crises in Bolivia between 2016 and 2018 as well as the ecological collapse of Cohana Bay in Lake Titicaca and the 98% drop in the water level of Lake Poopó between 2013 and 2015 underline the still high (ecological) relevance of the topic.

Focus on needs and capacities of participants and stakeholders

The **core problem** was correctly identified as the **degradation of natural resources** (water, soil, and biodiversity). This is reflected in the reduced water storage capacity of the catchment areas and reduced feeding of aquifers, degradation of the natural vegetation cover, increased soil erosion and sedimentation of rivers and dams, increased landslides, floods and droughts. The adverse effects on agricultural production pose a risk to the target group's food security. The main reasons for degradation include unsustainable deforestation, excessive use of water and soil, unsustainable production methods, increasing settlement and agricultural activities on unsuitable land, and water pollution from agriculture and mining.

The projects implemented as part of PNC I and II directly responded to the needs arising from these problems: they were intended to enhance the protection and sustainable use of natural resources in the project areas, enhance the target group's resilience to the effects of climate change and reduce their income risks due to adverse environmental influences. Common individual measures included: (living) terraces, terracing with stone walls, hedge planting and soil planting, sowing of wild vegetation and cultivation crops (e.g. types of grain), installation of infiltration and drainage ditches, fencing, construction of dry walls, installation of gabions and hydraulic works. Measures to support local organisational structures (e.g. exchange of experience and knowledge management) promoted efforts to raise awareness and empower the target group. For the upstream areas, the measures were intended primarily to secure their livelihoods and thus stabilise their incomes; downstream areas were to profit from secured or increased water availability and thus stabilised or potentially increased income (e.g. through improved irrigation options). The promotion of local structures was intended to enhance the target group's opportunities for conflict resolution and participation.

Through several activities, the project ensured that the selection and implementation of the concrete measures was also geared towards the needs and capacities of the target group. It worked by 1) strengthening the importance of transverse issues such as alleviating poverty, interculturalism and gender, particularly within the framework of PNC II in guidelines and manuals on GIRH/MIC projects, 2) developing educational concepts with an intercultural component, 3) ensuring the representation of the target group's interests when the management committees at municipal level (OGC) selected investments, 4) supporting applicants from the municipal and regional administrations in the preparation of project applications by local consultants in order to strengthen their capacities, which were insufficient to some extent. This approach also seems appropriate from today's perspective in order to both ensure decentralised planning and implementation of the diverse individual projects in an appropriate quality and to strengthen the ownership of the target group.

At the time of the project appraisal, the project-executing agency's (VRHR) capacities were not yet sufficient to fulfil an institutional leadership role in the Bolivian water sector. The financing of additional TC measures in the area of capacity building was therefore planned. The selection of the project-executing agency was appropriate, especially as it was expected that its administrative capacity would be expanded during the implementation of the project.

Appropriateness of design

From the perspective at the time and today, **the project design was generally suitable for addressing the core problem comprehensively and at different levels.** The Theory of Change (ToC, Figure 3) reconstructed as part of the EPE represents the lines of impact. The project design promoted the reorientation of policy in the partner country's water sector and thus also raised awareness among local and institutional actors of the importance of sustainable management and the management of water resources. However, due to its pilot nature and the complexity of the core problem, it is obvious that the PNC did not directly address all the main reasons for the degradation of natural resources.

Through the PNC, the project primarily addressed the excessive use of water and soil as well as unsustainable production methods using corresponding individual measures. However, other reasons for soil degradation, such as water pollution from mining, were not addressed directly. In principle, the ecological aspects of the core

problem (e.g., soil erosion and sedimentation) can only be successfully addressed by the long-term implementation of successive measures that go beyond the implementation of PNC I and II.

The design was poverty-reduction-oriented insofar as the management of water resources (outcome/project objective) was intended to contribute to improved water access (intermediate impact step) as well as to stabilisation and, where appropriate the expansion of agricultural production (impact). Nevertheless, it must be noted critically that a more targeted expansion of agricultural activities and concrete measures for food security would have already been necessary in the design in order to improve the living conditions of the target group in these areas in the long-term.

Overall, the ToC clarifies the conceptually plausible impact assumptions, but also a broad definition and formulation of objectives for the project, which partly results from the structure of the PNC as an open concept with an application procedure.

Response to changes/adaptability

There were no unforeseen adjustments to the measures due to changed framework conditions (risks or potentials) during the course of the project. Among other things, there was little need for adjustments, as learning experiences from PNC I were to be used from the outset to further develop the programme components of PNC II; this gave scope for adjustments as part of the regular programme – when switching from PNC I to PNC II.

Summary of the rating:

Taking into account the existing capacities, the project promoted the partner country's own efforts to implement integrated water resource management in the context of hydrological risks and climate change. The core problem was addressed as part of decentralised implementation, taking the needs of the target group into account. Due to the open project concept, the design is broad but coherent. The relevance is rated as successful.

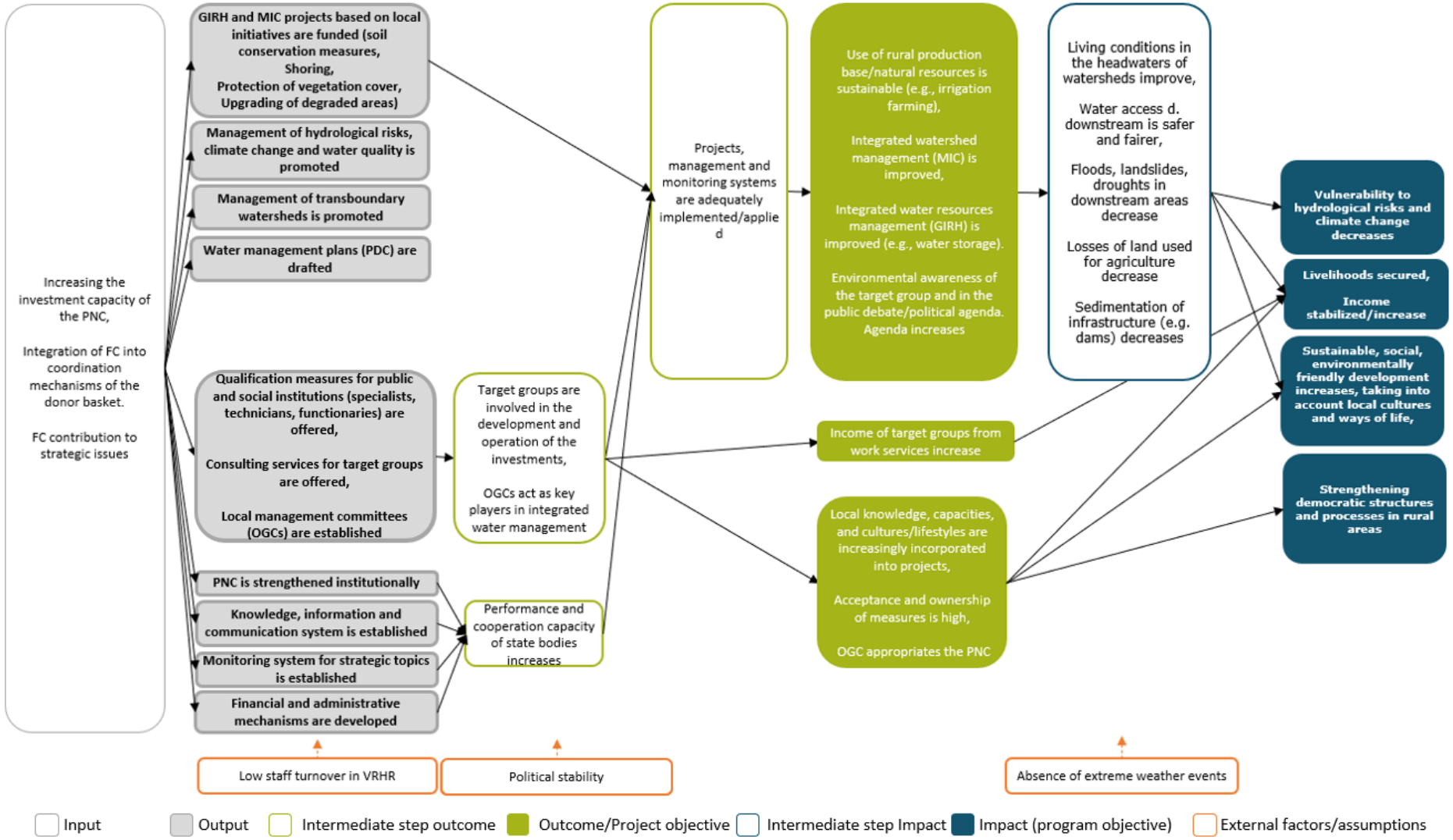
Relevance: 2

Coherence

Internal coherence

The project was **sensibly embedded in the overarching DC programme** "Sustainable Agricultural Development" and is therefore in line with the content of Germany's DC country strategy for Bolivia. This aims to sustainably use natural resources and strengthen the resilience of the target group in times of climate change through an integrated approach. The intended result is to lay the foundations for alleviating poverty and ensure food safety in rural areas. The **division of labour of Germany's DC instruments was sensibly based on the country strategy and illustrates the close networking of the water, energy and food security sectors.** During the implementation period, FC projects were implemented to expand agricultural irrigation areas (SIRIC I & II and PACC I & II) and to secure the water supply and promote food production (Ravelo), among other things. In the area of TC, cooperation with the PROAGRO project, which supported the development of PNC II and provided advice for all PNC components, is particularly noteworthy.

Figure 3: Theory of Change (ToC) of the evaluated project



In addition, further TC projects promoted the expansion of irrigated agriculture and integrated water resource management (PROCUENCA) as well as sustainable forest management (PROBOSQUE).

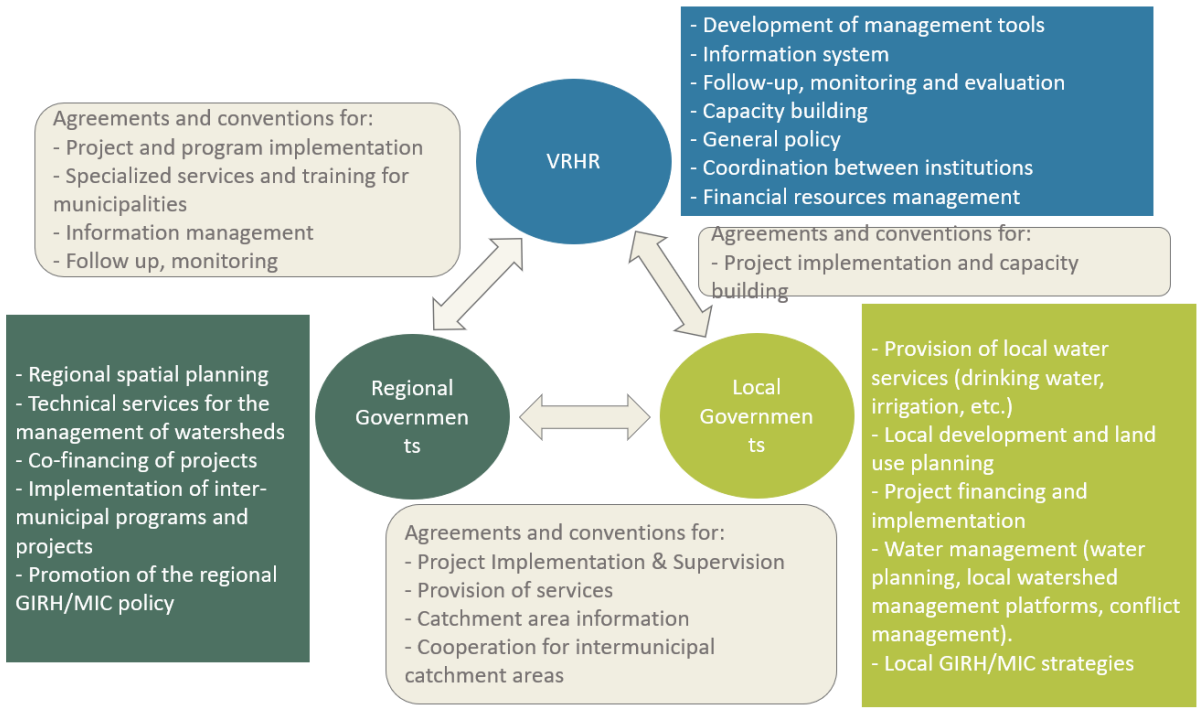
External coherence

Donor harmonisation was carried out under the leadership of the VRHR as part of the "Grupo Cuencas" coordination mechanism with the involvement of international donors. KfW took over the leadership of the coordination mechanism between 2012 and 2017 and drove forward the development of strategic issues in this role. As part of the donor group, the project-executing agency organised visits to several project sites every two years, thus enabling the exchange of information between local actors and donors. In addition, the relevant topics in the area of technical assistance were coordinated in a specialised subgroup consisting of representatives of GIZ, the World Bank, the Japanese Office for International Cooperation, and the Directorate for Development and Cooperation/Helvetas (Switzerland).

Particularly during PNC I, the donor group played a crucial role in developing a cross-sectoral approach and strategic programme orientation. Nevertheless, the participation of new donors over time was partly accompanied by the fact that they saw the PNC increasingly linked to the implementation of their own predefined programmes and – despite a constant willingness to engage in dialogue and coordination within the donor group – sometimes pursued different support modalities.

A common monitoring system (MED) under the PNC was set up on the EU's recommendation and further developed for each new phase of the programme. The progress of the PNC was presented on the basis of the common programme indicators defined therein. In this sense, the MED not only provided a strategic planning tool, but also a tool to facilitate harmonisation and policy dialogue in the donor group.

Figure 4: Decentralised implementation structure and tasks of the PNC



Source: Ministerio de Medio Ambiente y Agua / Viceministerio de Recursos Hídricos y Riego (2013). Programa Plurianual de Gestión Integrada de Recursos Hídricos y Manejo Integral de Cuencas 2013–2017. La Paz, Bolivia. FC Evaluation Department's own data.

Figure 4 shows the **decentralised implementation structure** of the PNC. The role of VRHR in the PNC was to manage and support the implementation of the PNC and apply the lessons learned to the further development of the components. The regional administrations, communities and local management committees were intended to act as intermediaries for the application to the GIRH/MIC projects and their implementation. Specifically, funding was requested from the VRHR by the local authorities or regional governments. The project application was prepared by local consultants on behalf of the applicants and contained relevant information on the problems and objectives as well as on the planned activities in the catchment area, the financing, the operation of the individual

measures and the target group. One prerequisite for approving project applications was the operational and financial capacity of the project-executing institutions. As part of a content review, the VRHR completed the applications if necessary and prepared the enrolment of the committed funds in its operative annual planning. The binding financing commitment was made on the basis of financing agreements between VRHR and the local partners. The funds required were then passed on to the implementing institutions as a grant and disbursed according to the progress of the project. The awarding of contracts for the construction work was based on the laws of the country in question. The decentralised cooperation and implementation model is rated as very positive.

Summary of the rating:

The project is characterised by a high level of internal and external coherence, as successful coordination and meaningful division of labour not only existed within German DC, but a suitable mechanism for donor harmonisation was also ensured within the framework of the PNC. The coherence is rated as successful.

Coherence: 2

Effectiveness

Achievement of (intended) targets

The outcome-level objective adjusted as part of the EPE was to improve the integrated management of water catchment areas and water resources as well as the sustainable use of the rural production base (especially water, land, and biodiversity).

The achievement of the objective at outcome level along the original indicators as well as those defined/modified within the scope of the EPE can be summarised as follows:[5]

Indicator	Status PA (2011)	Target value PA/EPE	Actual value at final inspection (2018)	Actual value at EPE (2022)
(1) The local management committees are established and perform their duties over the long term (sustainability index*)	/	The sustainability index target value for 2016 (0.45) is achieved	Sustainability index: 0.49 (2016)	**Partially achieved** (see body text). According to the final review, the last methodologically comparable actual value of the sustainability index was 0.60 (2017).
(2) The established early warning systems and systems for measuring water quality are used and expanded	/	Achieved.	2016: The installed FEWS-Bolivia early warning system works in 44 municipalities. There are 254 stations in 18 bodies of water for regular surveys of water quality in rivers.	**Partially achieved** (see body text). The installed FEWS-Bolivia early warning system works in 49 municipalities. There are 368 stations in 25 bodies of water for regular surveying of water quality in rivers and five laboratories for water analysis. The expansion of the monitoring network will be continuously updated (2017).
(3) Permanent continued existence of afforestation areas in the project area	NDVI values between 0.321	The average NDVI value of the afforested areas remains constant after	NDVI values between 0.332 and 0.530 (2018)	**Achieved** (see body text). NDVI values between 0.350 and 0.541 (2021)

[5] It must be kept in mind that the values extend across various PNC phases and there are some methodological differences between the MED indicators 2013–2017 and 2017–2020. Therefore, it is only possible to compare the values between the two time periods to a limited extent.

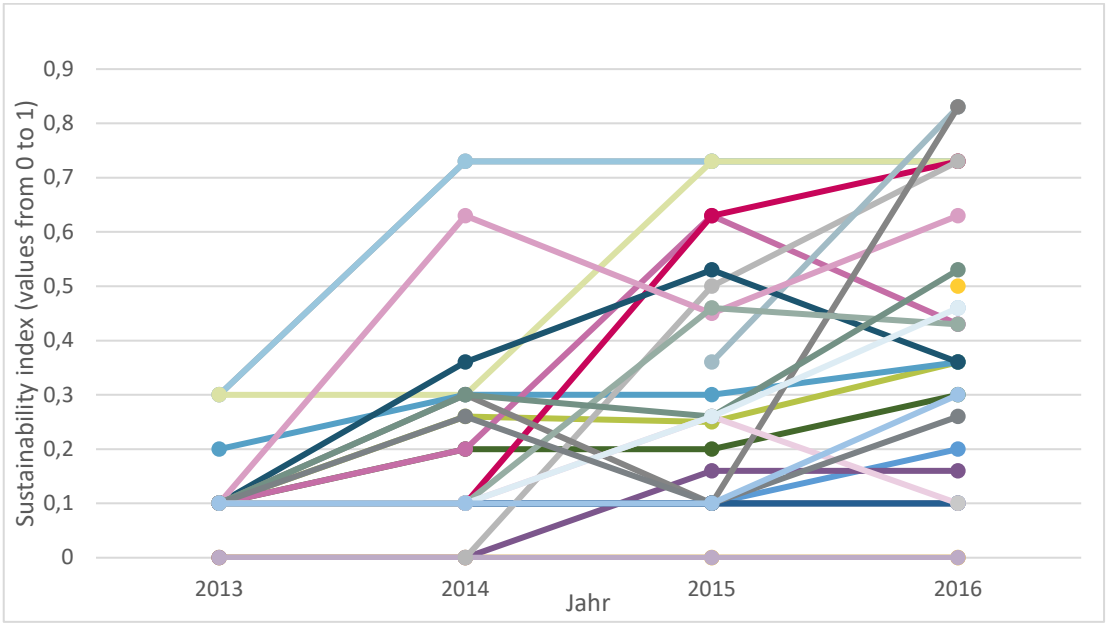
(NDVI value**)	and 0.506 (2011)	the end of the FC promotion: NDVI values between 0.330 and 0.512 (2016)		

*The sustainability index includes scores between 0 (worst score) and 1 (best score). It consists of several indicators collected under the MED: (1) The local management committees' existence and degree of formalisation; (2) the local management committees' functionality and continued existence, e.g. through regular meetings, administrative activities, territorial planning, etc.; (3) continuity of GIRH/MIC activities, e.g. through operation, maintenance and the replication of approaches and pilot projects. Equal weighting of components in PNC II (2013–2017). Source: Informe del Monitoreo PNC 2016.

** The Normalised Difference Vegetation Index (NDVI) is one of the most commonly used vegetation indices and allows differentiation between covered and uncovered areas on the earth's surface. In addition, conclusions can be drawn about the photosynthetic activity, vitality and density of the vegetation cover. The NDVI values range from -1 to +1. Clear water has a negative NDVI close to -1. An NDVI of 0 means that there is no vegetation. The denser and more vital the vegetation, the higher the NDVI values. Values around +1 represent healthy and very dense vegetation.

The creation of the local management committees was intended to guarantee the continuity of GIRH/MIC projects and to take into account community interests in individual projects and thus their sustainability. The **sustainability index for GIRH/MIC projects** of 0.49 implies that the fulfilment of tasks and their continuity through the local management committees is in the middle of the possible range; this slightly exceeds the original target formulation of the project. The indicator is the average of 29 local management committees that had been established by the end of 2016. Figure 5 shows that 1) most local management committees had a low degree of formalisation and organisation in 2013, 2) the values fluctuate during the observation period, and 3) the sustainability index of most local management committees improved by 2016.

Figure 5: Sustainability index of the existing local management committees from 2013–2016



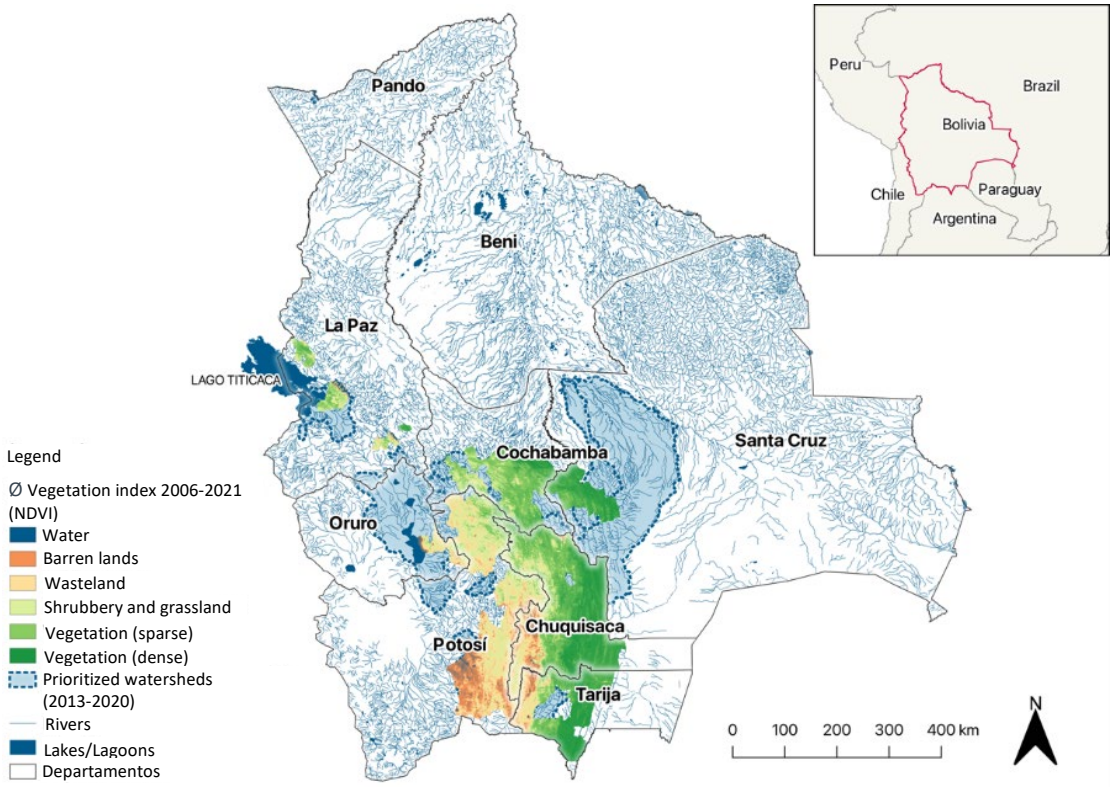
Source: FC E's own research, based on data from the MED (Informe del Monitoreo PNC 2016).

Progress in the Sustainability Index is mainly limited by the fact that local management committees primarily act as implementing organisations for local projects, but often do not assume any long-term responsibility for the integrated management of micro-catchment areas. From today's perspective, based on data from the MED (Figure 5) as well as discussions with two successful local management committee leaders, it seems that the local management committees are well organised in very different ways. According to interviews, local management committees have so far mainly represented the interests of some community groups and local sectors and, due to their membership structures, tended to represent the interests of upstream rather than downstream residents.

The established hydrological early warning systems and systems for measuring water quality are used and regularly expanded. However, most of the early warning systems at municipal level only meet the minimum technical requirements, and few systems are in good condition. Furthermore, earlier findings from the use of the two systems are not yet sufficiently leading to a) the design and implementation of necessary preventive

measures for risk mitigation and b) the development of solution measures in areas with acute water contamination. The weaknesses mentioned are mainly due to the still expandable, cross-sectoral coordination capacities as well as the limited financial resources and the priorities of the local authorities themselves.

Figure 6: Presentation of areas with reforestation projects in the period 2013–2016 and their vegetation index

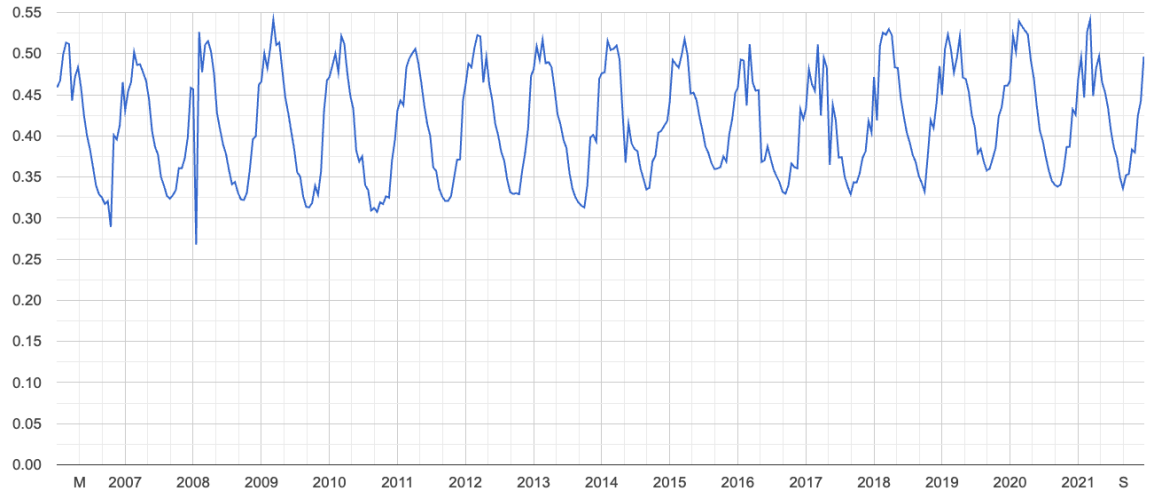


Source: GADM (country borders and administrative units). GeoSIARH Bolivia (prioritised water catchment areas with water management plans and GIRH/MIC projects). GeoBolivia (rivers, lakes/lagoons). VRHR (reforested areas according to 2016 monitoring report, "Informe del Monitoreo del Plan Nacional de Cuencas 2016"). Didan, K. (2015). MOD13Q1 MODIS/Terra Vegetation Indices 16-Day L3 Global 250m SIN Grid V006 [Data set]. NASA EOSDIS Land Processes DAAC. Accessed 2022-09-12 from https://doi.org/10.5067/MODIS/MOD13Q1.006. FC Evaluation Department's own data.

Close-to-nature forests in particular improve soil infiltration capacity and reduce flooding. In addition, they contribute to long-term erosion control on steeply sloping terrain. This prevents landslides and reduces the loss of agricultural soil. One critical observation with regard to the **afforestation area conservation target** is that the monitoring of the implemented afforestation was only quantitative (total of 4,674 ha by the end of 2016), but does not reveal the spatial connection of the afforested areas, their qualitative status or their development over time. Figure 6 graphically locates the afforestation projects and shows their average NDVI in the period 2006–2021. A time series analysis of the NDVI conducted as part of the EPE for the same period suggests that the vitality of the vegetation in the afforested areas remained constant and has even increased marginally on average since 2018 (see Figure 7). Restrictions in the informative value of the analysis result from their aggregation at the municipal level.[6]

[6] All municipalities in which reforestation projects were carried out as part of the PNC between 2013 and 2016 were examined. At the time of the evaluation, information was only available about the municipalities in which the afforestation projects took place. No geodata with the exact locations and the extent of the afforestation areas was provided by the project-executing agency. This limits the informative value of the NDVI analysis, as areas in which no afforestation was implemented are also included in the calculation.

Figure 7: Development of the Normalised Difference Vegetation Index (NDVI) in the period 2006–2021 for areas with afforestation projects in the period 2013–2016



Source: Didan, K. (2015). MOD13Q1 MODIS/Terra Vegetation Indices 16-Day L3 Global 250m SIN Grid V006 [Data set]. NASA EOSDIS Land Processes DAAC. Accessed 2022-09-12 from https://doi.org/10.5067/MODIS/MOD13Q1.006. FC Evaluation Department's own data.

Contribution to achieving targets

The planned increase in the investment capacity of PNC I and II by a total of EUR 10 million and the integration of FC into the coordination mechanism of the donor basket fund were carried out as planned (inputs). The financed GIRH/MIC projects covered all nine departamentos (departments) – with a particular focus on Chuquisaca, Cochabamba, and La Paz.

Various outputs (see Table 2) aimed to contribute to achieving the above-mentioned outcomes. **Overall, it was possible to quantitatively achieve the rendered outputs. In principle, this contributed to the achievement of the outcome objective, which is, however, reduced by qualitative shortcomings.**

The implementation of GIRH/MIC projects in micro-catchment areas has been instrumental in imparting new natural resource management practices in places where this knowledge was not previously available. This made a plausible contribution to the sustainable use of the rural production base (outcome). The investment projects implemented were often based on the claims of population groups whose livelihoods were particularly affected by river floods or land losses. Accordingly, the projects were implemented in a target group-oriented manner, affecting both vulnerable (poor) groups and women. Nevertheless, the selected investment projects at micro-catchment level were often not in line with the priorities identified under the PDCs at the level of medium and large water catchment areas.[7] This means that the individual measures did not systematically address the central processes that most facilitated the degradation of the water catchment areas. Consequently, the individual measures did not always reflect a holistic view of the dynamics of the water catchment area.

Table 2: PNC components and outputs delivered in 2013–2017

PNC-Component	Objective of Component	Goal 2013-2017	Status 2017
1) Support and design of water management plans	Improvement of water management in strategic water catchment areas	5 PDC consolidated, new ones under construction	5 PDC consolidated, new ones under construction
2) Implementation of GIRH/MIC projects	Investments in local projects that foster a sustainable management and use of natural and water resources as well as local capacities	55 GIRH/MIC projects	61 GIRH/MIC projects

[7] This relates to the implementation period from 2013, as the development of water management plans took place only in the course of PNC II.

3) Management of hydrological risks and climate change	Design of early warning systems and increase of afforestation areas in water catchment areas	49 municipalities with early warning systems and 7,500 ha afforested	49 municipalities with early warning systems and 8,187.60 ha afforested
4) Management of water quality	Prevention and reduction of water pollution	20 water bodies with monitoring system for water quality	25 water bodies with monitoring system for water quality
5) Implementation of "Cuencas Pedagógicas" (pedagogical concepts)	Design and dissemination of positive examples of sustainable resource management	9 agreements, 18 research topics, 12 pedagogical materials, 10 systemised experiences, 4 publications	11 agreements, 18 research topics, 17 pedagogical materials, 12 systemised experiences, 4 publications
6) Knowledge and information management	Consolidation of information systems for water resources and water catchment areas	Geodatabase in 8 strategic water catchment areas	Geodatabase in 10 strategic water catchment areas
7) Institutional development and strengthening of capacities for GIRH/MIC	Strengthening of institutional and individual capacities on national and regional level	50 municipalities with capacities for implementation of GIRH/MIV of PNC	50 municipalities with capacities for implementation of GIRH/MIV of PNC

Source: MED, FC E's own data.

The contribution of afforestation to improving soil water storage capacity and reducing erosion cannot be quantified at the time of the evaluation, as this would require complex data analysis over a longer observation period. However, the results of the time series analysis indicate at least the continued existence of vital vegetation areas since the implementation period of the FC-supported measures. The increased vegetation density since 2018 may indicate increased water retention in the soil and at the same time have a positive impact on it. However, it should be noted that a previous evaluation of PNC II[8] found that afforestation had partly taken place in unsuitable places, e.g. on already unstable slopes, and had a low density in some locations. In addition, afforestation was partly carried out with tree species that can be used by the population for long-term income generation, but which, from an ecological perspective, favour further dehydration of the soil rather than reversing the trend (e.g., eucalyptus).

An external factor that contributed positively to achieving the intended project objectives was the implementation of investments to reduce risk (e.g., protective barriers and river enclosures to prevent flooding) by the regional governments outside the PNC.

Quality of implementation

The project design and subsequently also project guidance focused **on taking transverse issues into account (e.g., gender, interculturality, intergenerationality), taking local interests into account and exchanging ideas between stakeholders.**

The implementation of educational concepts ("Cuencas Pedagógicas") promoted knowledge exchange between actors at different levels and thus ensured a high degree of coordination and coherence in project management and implementation (see Coherence). The educational concepts took place at the level of the micro-catchment areas as pilot projects within the framework of cooperation between the MMAyA, academic institutions, public bodies, DC actors and local management committees. **The educational concepts contributed to the replicability of individual projects that had already been successfully completed by exchanging learning experiences at local level and strengthened local management committees' planning and implementation capacities.** An intercultural education programme was used to process and systematise local experiences with the management of water catchment areas, from which the target group also benefited directly (e.g., teaching soil conservation practices).

The project-executing agency made great progress in the course of implementing the PNC **in consolidating its leadership role in the water sector and advanced the legitimisation and institutionalisation of integrated water catchment area management at subnational level.** In the regional governments, this was reflected in the establishment of divisions or directorates with the task of integrated management of water resources and water catchment areas, as well as in the development of regional management strategies in some cases. The municipalities played a key role in setting priorities and planning investments, as well as implementing the projects.

[8] Dockweiler, M., Alencastre, A. (2017). Evaluación al Plan Nacional de Cuencas Fase II. Informe de Evaluación. AECOM International Development Europe SL (Spain).

In the municipalities, several functions of water catchment area management are often the responsibility of a single division or directorate. The scope of the tasks often exceeded the capacities of the municipalities, as they hardly have the necessary resources to recruit specialised staff. Although the municipalities' competences in formulating projects improved by the end of PNC II implementation, there are still technical and financial bottlenecks at local level. Although this reduced the quality of the implementation and the efficiency of the PNC, it cannot be attributed to the FC project under evaluation. The FC project clearly contributed to strengthening the partner country's expandable implementation capacities.

At the time of the evaluation, it is not possible to conclusively assess the extent to which non-discriminatory access to the supported individual measures was ensured. Although the project areas were characterised by a high proportion of women and older people[9] and the guidelines for developing GIRH/MIC projects contained recommendations for inclusive project implementation,[10] women and older people were still underrepresented in the leadership positions of the local management committees until the end of the FC promotion, and the guidelines were only implemented in isolated individual projects by the end of 2017. The reasons for this were a) the executing agency's lack of familiarity with corresponding participatory processes, b) a lack of willingness to spend additional resources on their development and application, and c) insufficient skills among those responsible for applying guidelines in project planning. The resulting inadequate **consideration of gender, interculturality and intergenerationality** was addressed as part of the extension of PNC II (2017–2020). The plan was to carry out ten gender analyses and six microprojects with a gender focus. However, these outputs were neither quantitatively nor qualitatively delivered, meaning that there was also no systematisation of the results here to develop a long-term strategy on the cross-cutting issue of gender.

Unintended consequences (positive or negative)

In principle, the PNC had the potential to strengthen democratic structures and processes in the rural regions of Bolivia; these potential unintended positive impacts were not included in the project's formulation of objectives. In practice, these can be detected to a limited extent; however, potential went unexploited, particularly due to the insufficient consideration of gender aspects and interculturality in the implementation of the components.

Furthermore, the evaluation did not identify any unintended impacts of the project. This does not exclude the possibility of further unintended (positive or negative) impacts; however, it is difficult to identify these as part of the EPE due to the structure of the project as a contribution to a donor basket fund, its open and broad-based project portfolio and the substantial strategic component.

Summary of the rating:

Overall, significant progress has been made in improving the integrated management of water catchment areas and water resources as well as the sustainable use of the rural production base (especially water, land, and biodiversity); one indicator has been achieved and two indicators have been partially achieved. Even though the outputs were delivered quantitatively as planned, qualitative constraints were identified during the evaluation. The quality of management and implementation by the project-executing agency and the other actors involved at subnational level improved over the course of implementation due to the general expansion of capacities under the PNC, although transverse issues were still not sufficiently taken into account in practice. The effectiveness is therefore rated as moderately successful.

Effectiveness: 3

Efficiency

Production efficiency

An overall investment volume of **USD 107.8 million was planned** for the implementation of PNC I**, but only USD 54.0 million was invested due to the weak implementation capacities**. PNC II estimated USD 115.8

[9] This is mainly due to the cyclical migration of young men from the communities for agricultural reasons.
[10] The guidelines for GIRH/MIC projects mention the following aspects: 1) providing sufficient information for women and men; 2) taking into account different claims of women and men; 3) analysing the situation of women and men to determine their responsibilities as part of the project; 4) analysing the different family types and the situation of women in describing the beneficiary community; 5) creating spaces for coordination (participatory workshops, focus workshops, exchange trips) in agreement with all stakeholders.

million, but only USD 55.0 million was invested by the end of 2016. The financing agreement with the donors participating in PNC II was then extended until 2023 in order to invest the residual funds of PNC II. The high counterpart contribution (approx. 30%) plausibly ensures that the measures were need-based and relevant for the target group.

The FC funds were disbursed as planned by the end of 2016. FC financed around USD 9.7 million, around 18% of the total investment, making it the **second largest donor** after the EU for PNC II (2013–2016). A similarly high contribution was provided by Belgian FC, which enabled the financing of further investment measures amounting to USD 6.6 million in the period 2013–2016. During the same period, USD 12.4 million was invested from EU funds.[11] **It is not possible to assign outcomes and impacts directly to FC funds – and to assess efficiency on this basis – due to the basket-finance nature**; the findings of this EPE must be understood against this background.

Four out of seven components were earmarked for both investment measures and capacity-boosting measures; in total, the PNC provided for the **expenditure of 85% of the available funds for investment measures (e.g., GIRH/MIC projects) and 15% for capacity-boosting and strategy development**. According to the available data,[12] approx. BOB 90 million (approx. USD 13 million) were spent on investment measures in 2016 and approx. BOB 11 million (approx. USD 1.6 million) on capacity expansion. Accordingly, around 89% of the funds were used to implement investment measures and around 11% to strengthen local capacity to implement the PNC. This roughly corresponds to the planned division, although the financing volume implemented here was also significantly lower than in the planned financing according to the five-year plan (around USD 28.6 million in 2016).

At the time of the project appraisal, the calculated unit costs for the financed individual measures were comparable to those of similar projects. At the time of the evaluation, there is no information on whether the actual costs deviated significantly from this.

The decentralised implementation structure of the PNC (see Coherence), the coordination of donor activities and the discussion of progress and audit reports in the “Grupo Cuencas” contributed to making administrative processes efficient. The donor group met at least twice a year during the implementation period and made a significant contribution to the continuity of the PNC through close cooperation with VRHR. **The donor pooling is thus a prime example of efficiency improvements.** This is considerable, especially since long-term cooperation in large teams (especially when involving multinational and different levels) often also triggers high (capacity-related) costs and efficiency losses – contrary to the original objective.

The most important implementation modality was the transfer of funds to a sub-national executing agency, in most cases to the local authorities. In this way, investment measures have been taken from the outset in a **subsidiarity-based approach.** From today’s perspective, the process from application to implementation of GIRH/MIC projects is also rated as efficient, not least due to the support of applicants by local consultants.

The implementation period encompassed up to two years per GIRH/MIC project as planned and, from today’s perspective, seems too short to not only trigger but also to sufficiently deepen the management of micro-catchment areas, including the necessary social learning processes. During the implementation of PNC II, there were delays in the implementation of GIRH/MIC projects due to political changes caused by the regional elections in 2015.

Allocation efficiency

From today’s perspective, promotion of the PNC within the framework of the international donor basket fund was still **appropriate in order to achieve the desired impacts in the most cost-effective manner possible**. Furthermore, there were no alternative implementation options, as other promotion in the area of water catchment area management was not politically desired.

Allocation efficiency under PNC I was limited due to the ratio between the limited funds (approx. USD 500,000 per individual project) and the relatively large intervention area (up to 500km^2 per catchment area) of the GIRH/MIC projects. The individual measures were often spatially isolated from each other and widely dispersed within the catchment area. In order to avoid dispersion effects, the area for GIRH/MIC projects was limited to a

[11] MMAyA – VRHR – Informe de Avance MED 2016
[12] Ministerio de Medio Ambiente y Agua / Viceministerio de Recursos Hídricos y Riego (2017). Informe Progreso de la Política Sectorial. Gestión 2016. La Paz, Bolivia.

maximum of 100km^2 during the development of PNC II. It is therefore assumed that the dispersion effects have been reduced over time.

The selection of intervention areas has been based on the PDC since the beginning of PNC II and is considered appropriate from today's perspective to contribute to the protection of water catchment areas and water resources. The water management plans have been developed for medium and large catchment areas where particularly complex water management problems are concentrated, especially in catchment areas with high population density, high economic importance and/or high pressure on natural resources. From an evaluation perspective, it is therefore assumed that the intended impacts at outcome and impact level could not have been improved by selecting other project areas (allocation efficiency).

Summary of the rating:

The coordination of donor activities and the development of strategic topics in the "Grupo Cuencas" had a particularly positive impact on the cost and time efficiency of the FC project and promoted the continuity of the PNC. Since slightly less than half of the total planned funds were actually invested under the PNC, production efficiency is below expectations from an evaluation perspective, but the positive results dominate. The production efficiency is therefore rated as moderately successful. Allocation efficiency is only reduced due to diversification effects, but is still rated as successful. Overall efficiency is rated as successful.

Efficiency: 2

Overarching developmental impact

Overarching developmental changes (intended)

The project objective, which was adjusted as part of the EPE, was: The livelihoods of the rural population in the water catchment areas are sustainably secured and the vulnerability to hydrological risks and climate change is diminished.

The achievement of the objective at impact level along the original indicators and the target indicators formulated as part of the EPE can be summarised as follows:

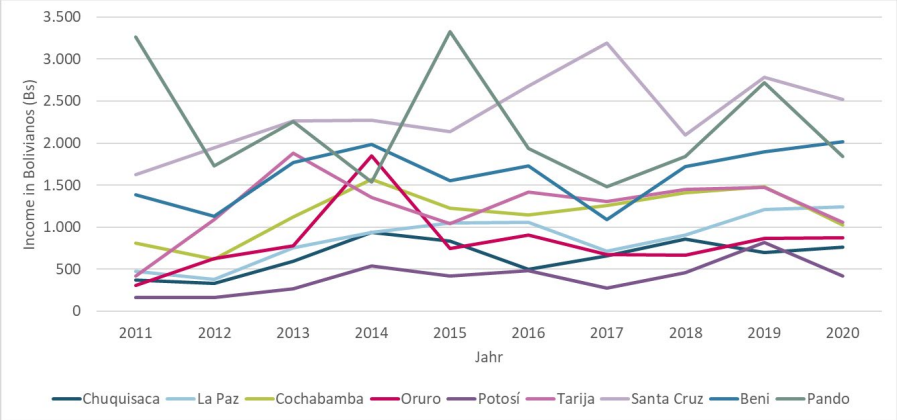
Indicator*	Status PA (2011)	Target value at EPE	Actual value at final inspection (2018)	Actual value at EPE (2022)
(1) Stabilisation of income** from agricultural employment at national level	BOB 528 (2011) (Women: BOB 144) (Men: BOB 885)	The average monthly income from the agricultural activity of the population in rural areas is higher than at the time of the PA	BOB 1,042 (2018) (Women: BOB 637) (Men: BOB 1,170)	**Achieved.** BOB 1,157 (2020) (Women: BOB 648) (Men: BOB 1,333)
(2) Improvement in security of food supply in rural areas at national level	38.6% of children ≤ 5 years of age in rural areas are chronically malnourished (2008) (17.2% in urban areas)	The proportion of chronically malnourished children ≤ 5 years of age in rural areas is lower than at the time of the PA	23.7 % of children ≤ 5 years of age in rural areas are chronically malnourished (2016) (12.2 % in urban areas)	**Achieved.** No new value available since 2016.

*Sources: Bolivian National Statistics Institute – Instituto Nacional de Estadística (2020). These are national values with the distinction "rural/urban".

**Information in Bolivianos (BOB)

The project implemented GIRH/MIC projects in all departamentos (Table 3), but most in the departments of La Paz, Chuquisaca and Cochabamba. Since the project used only national figures to measure its target achievement, the evaluation used additional data at the level of the departmentos, but due to data limitations there is no distinction between rural and urban areas. Table 3 shows that the population in the Chuquisaca, La Paz, Cochabamba, Oruro, and Potosí departmentos in particular generated very low monthly income from agricultural work, and this hardly improved during the course of the project.[13] Likewise, chronic malnutrition in children ≤ 5 years tends to be highest in these departamentos, with a significant improvement in the situation since 2008 (see Table 4); this improvement occurs in particular in the departamentos with project measures.[14]

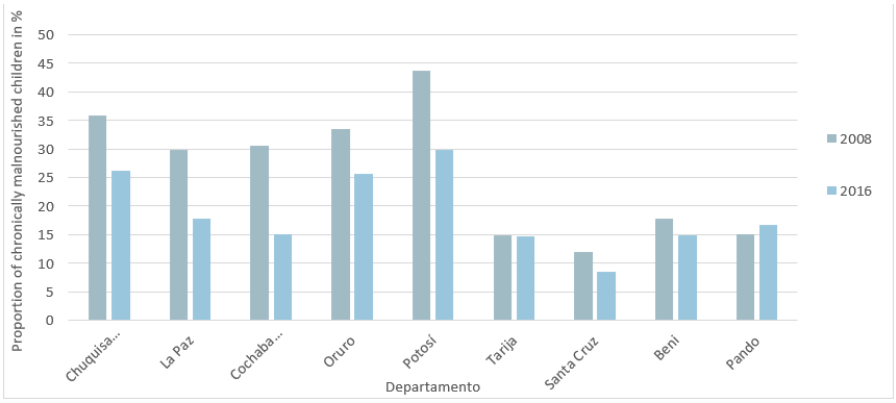
Table 3: Development of monthly income from agricultural activity (total population)



Source: Bolivian National Statistics Institute (INE), Encuesta de Hogares (EH), FC E's own data

At this point, it should be taken into account that the socio-demographic data at the level of the departamentos also do not enable a precise assessment of the impacts at the level of the beneficiary communities. Throughout the country, as part of PNC I and II a total of around 125,000 families benefited from the implemented GIRH/MIC projects. Since only part of the population (i.e., the target group) benefited directly from the measures within the departamentos, successes at community level may not be reflected in the data at the departamento level.

Table 4: Development of the prevalence of chronically malnourished children ≤ 5 years of age (total population)



Source: Bolivian National Statistics Institute (INE), Encuesta de Demografía y Salud (EDSA), FC E's own data

Contribution to overarching developmental changes (intended)

Currently, around 32% of the population of Bolivia receives their regular income from agricultural activity.[15] **From today's perspective, the project made a conceptually plausible contribution to improving agricultural**

[13] The percentage of the population living in rural areas in these departamentos in 2021 was 43% (Potosí), 52% (Chuquisaca), 67% (Oruro), 68% (La Paz) and 71% (Cochabamba). In Bolivia, around 71% of the total population in rural areas (source: National Statistics Institute Bolivia (INE) 2022). The data in Table 3 include both rural and urban populations.
[14] It should be noted that the data show a change between 2008 and 2016, while the project lasted from 2011 to 2018; this further complicates the assignment of the project to observable change.
[15] Bolivian National Statistics Institute (INE) (2020).

income and the security of food supply for the population: 1) more than a thousand kilometres of dams were built as part of the PNC to protect agricultural land, social and productive infrastructure. Given that flooding is likely to cause significant economic losses, the existence of these structures is likely to stabilise the target group's living conditions; 2) the imparted soil conservation techniques contributed to the expansion of farmland; 3) the construction of collection, storage and distribution systems ensured year-round access to water in some communities, so that, among other things, farmland can be irrigated without interruptions.[16] In addition, as part of PNC I and II, most GIRH/MIC projects were carried out in the La Paz, Chuquisaca, and Cochabamba departmentos, i.e. where the beneficiaries had very high needs and accordingly where the highest positive impacts can be achieved purely conceptually at impact level.

From the population's perspective, however, general poverty alleviation potential only resulted from direct employment income generated directly from the measures; the target group accepted the implementation of the projects if they were accompanied by a short- or medium-term economic advantage. Projects for the conservation or restoration of soils for agricultural crops provide earlier benefits than afforestation, which is expected to be used for sustainable timber production years later. Clear project cost-benefit calculations were not prepared by either the local authorities or the project.[17]

Both project indicators indicate that, since the project appraisal, income and food security in rural areas have developed positively at national level. Alternative data at departmentos level confirm this for undernutrition, but not for income developments. **It should be emphasised here that the achievement of the two impact indicators cannot be causally attributed to the implementation of the PNC**. The main reasons for this are: 1) other programmes in Bolivia were concurrently implemented in a targeted manner to promote agriculture and improve food security, 2) both food security and income depend on a variety of external factors, 3) the indicators only allow conclusions to be drawn about rural living conditions at national or regional level, but not at the level of the beneficiary communities, and 4) different data result in different conclusions to some extent (i.e. data on national vs. departamento level, see above).

Beyond the two indicators, the formulation of the project's objectives at impact level specifies the objective of reducing vulnerability to hydrological risks and climate change. The *Conservation International* index of vulnerability to climate change (2015)[18] measured the vulnerability of the population to significant changes in the water inventory (e.g. floods and droughts) in 2015. Taking into account the aspects of 1) vulnerability, 2) sensitivity and 3) adaptability, medium to high vulnerability was found in almost half of all Bolivian communities. Particularly high values were assigned to the communities in Altiplano (West Bolivia), where the PNC implemented numerous GIRH/MIC projects. Since neither current index values nor values before the start of the project are available and no comparison can be made between supported and non-supported communities due to a lack of data, **empirical statements about the project impacts on vulnerability are not possible.** Conceptually, it can be assumed that the implementation of the FC-supported pilot projects and emergency aid projects under PNC I and II prevented a further increase in vulnerability in the communities.

As already explained, the cross-cutting issues of gender and interculturality received too little attention in the implementation of the PNC. The MED did not contain any gender indicators until 2017, so it is unclear to what extent women benefited from the FC-supported (training and awareness-raising) measures and their impacts.

Contribution to impact (unintended)

The evaluation did not identify any unintended development policy changes.

Summary of the rating:

Since no income effects were measured as part of the PNC, the causal effects on the target group's economic situation cannot be quantified. However, the available information indicates a positive contribution to securing the livelihoods of the target group. The FC project promoted needs-based infrastructure and practices to reduce economic risks (due to flooding and soil degradation, among other things) at the level of the beneficiary communities. There is information that access to water as a resource has significantly improved in some communities as a

[16] Dockweiler, M., Alencastre, A. (2017). Evaluación al Plan Nacional de Cuencas Fase II. Informe de Evaluación. AECOM International Development Europe SL (Spain).
[17] Interviews with the target group as part of the previous evaluation of PNC II (2013–2017) showed that community members did not know how high future income from timber production would be compared to the effort required for maintaining and caring for the planted trees. The cost-benefit ratio for the communities was not estimated ex ante for any of the projects.
[18] https://atlas.sdsnbolivia.org/#/SDG/13

result of the supported measures under PNC I and II. Without the FC project, the population's vulnerability to the consequences of advancing climate change would probably be even higher. The impact is therefore rated as successful.

Impact: 2

Sustainability

Capacities of participants and stakeholders

Overall, the PNC is heavily **dependent on external sources of financing** and has not yet had a sustainable financing mechanism. In addition to donor funds and technical support from bilateral and multilateral cooperation, financing from international environmental and climate financing mechanisms (e.g. the International Climate Initiative or the Green Climate Fund) and closer cooperation with the private sector should be sought in future.

The municipalities and beneficiaries are permanently responsible for the operation and maintenance of the individual measures, including the care and irrigation of afforestation and planting as well as the annual maintenance and repair of dry-stone walls. Although the technical capacities are generally available, the local authorities have only limited financial resources and are heavily dependent on the grants from VRHR. **There is therefore a risk, particularly for the sustainability of projects that result in high maintenance costs.** The network of local actors with whom VRHR works is an important prerequisite for the sustainability of the PNC components. **However, the level of ownership of local actors is limited and there is a lack of clear sustainability strategies for the individual measures implemented.**

Regional governments have varying degrees of – but often significant– weaknesses in their understanding and ability to sustain interinstitutional agreements and sectoral policies such as the PNC. To this day, that makes it more difficult to institutionalise the management of water resources and water catchment areas. **The regional governments very sporadically provide technical support to the municipalities in exercising their expertise at local level.**

For their part, the municipalities have not yet sufficiently institutionalised water catchment area and water management in their functional structure. To this day, this makes it difficult to support and accompany local management committees and to develop local water management plans in the prioritised micro-catchment areas.

Contribution to supporting sustainable capacities

The project promoted the capacities of the project-executing agency and local actors as part of PNC I and II. Despite positive capacity developments, further measures will be required in the future to strengthen the institutions involved, particularly in light of the targeted decentralisation of integrated water catchment area management.

In addition, local management committees have not yet established themselves as key players in integrated management at the local level. In this context, the component of social support is not yet sufficiently developed and there is no clear structure that promotes a deepening of the leadership role of local management committees in the diagnosis and management of water conflicts as well as the development of productive projects.

Durability of impacts over time

One risk to the longevity of the effects is the increasing frequency of extreme weather events in Bolivia. These can have a negative impact on the previously supported components, for example, as a result of drought periods with forest fires, there may be a loss of areas that have already been reforested and the associated long-term effects. In order for the impacts achieved to be sustainable at outcome and impact level, **successful pilot projects must therefore be replicated and the intervention areas expanded.** This is also a basic prerequisite for long-term stabilisation of the target group's livelihoods. In order for projects to be replicated, sufficient financing is required, but this is not always guaranteed, especially at the level of the municipalities.

In addition, the **future prioritisation of the PNC components at political level** also plays an important role in the sustainability of the impacts. The implementation of PNC I and II promoted awareness and knowledge among institutional actors regarding the management of water catchment areas and water management. This increased

the awareness of the stakeholders involved at all levels of the social, ecological and economic importance of the sustainable use of natural (water) resources. The PNC is to be subsequently continued with an adapted conceptual and strategic framework as “Plan Plurinacional de Recursos Hídricos 2021–2025” (PPRH) in the partner country. According to the project-executing agency, the five-year plan aims to prioritise 51 medium and large water catchment areas. This also includes the 14 strategic catchment areas that were already prioritised under PNC II, **so that the planned measures are very likely to build on the successes already achieved.** This could have a positive effect on the sustainability of the effects over time. Nevertheless, a critical note should be made here that the intended geographical coverage appears rather ambitious at local level in view of the capacity that can still be expanded. The PPRH was approved in mid-2022 and has already been submitted to the international donor community. According to the executing agency, both the EU and Sweden (current lead in the “Grupo Cuencas”) are interested in further promotion. Further financing is planned by the Inter-American Development Bank and the World Bank.

Summary of the rating:

The project’s sustainability is limited by the lack of a sustainable financing strategy and capacity that can continue to be expanded at institutional and local level. The sustainability of the impacts depends on the future political prioritisation of the PNC components and their further development. Sustainability is therefore rated as moderately successful.

Sustainability: 3

Overall rating: 2

Overall, the project’s rating is successful.

Contributions to the 2030 Agenda

As part of the Paris Agreement, Bolivia has set itself concrete goals in its NDCs to combat climate change and adapt to climate change. These include four sub-areas in the water sector: 1) improving the population’s supply of drinking water, clean water and basic sanitation; 2) improving environmental functions by preserving wetlands; 3) promoting integrated water resource management in water catchment areas through social water management, restoring ecosystems, designing and improving integrated water resource management; and 4) improving climate change adaptation by increasing irrigated farmland and using water more efficiently for production. The project primarily contributed to the achievement of the objectives of the third sub-area, which is, however, closely interwoven with the other sub-areas and whose effects can have a positive impact on the other sub-areas.

In addition, the project was intended to make a direct contribution to achieving the United Nations Sustainable Development Goals, in particular SDG 6 (Ensure access to water and sanitation for all), SDG 13 (Take urgent action to combat climate change and its impacts) and SDG 15 (Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss). In addition, the financed measures contributed to SDG 1 (End poverty in all its forms everywhere) and SDG 2 (end hunger, achieve food security and better nutrition and promote sustainable agriculture) due to interfaces with other sectors. According to the latest World Report on Sustainable Development, Bolivia ranks 79th out of 166 countries in achieving the 2030 Agenda targets, slightly above the global average.[19]

Project-specific strengths and weaknesses as well as cross-project conclusions and lessons learned

The project had the following strengths and weaknesses in particular[20]:

- Cooperation within the donor basket fund contributed to harmonising donor activities in the area of water catchment area management and to increasing efficiency during implementation. The coordination of

[19] Sachs, J., Schmidt-Traub, G., Kroll, C., Lafortune, G., Fuller, G., Woelm, F. (2020). The Sustainable Development Goals and COVID-19. Sustainable Development Report 2020. Cambridge: Cambridge University Press.

the activities of the international donors took place within the framework of a joint working party with the project-executing agency and ensured the prioritisation of the project at the highest political level.
- The decentralised implementation of the PNC encouraged independent planning and implementation of integrated water management measures by the autonomous regional and municipal governments. This brought the issue into the consciousness of the sub-national institutions and into the focus of their political priorities.
- The autonomous regional and municipal governments were involved in important learning processes that contributed to capacity building by directly participating in the financing, design, and implementation of the investment measures. Nevertheless, the decentralised implementation of the PNC and the extent of the investments actually made were rather unsuccessful due to the weak local capacities.
- The strategic perspective on (micro) water catchment areas as a spatial unit for implementing measures reduced dispersion effects and contributed to an appropriate ratio between the costs of the investment measures and the expected impacts.
- Despite the declared focus on the cross-cutting issues of gender, interculturality and intergenerationality, the PNC did not provide for a specific approach to systematically take these into account in the implementation of the GIRH/MIC projects.

Conclusions and lessons learned:

- The implementation of a comprehensive monitoring system that also takes into account relevant cross-cutting issues (e.g. gender) in the provision of outputs and the achievement of overarching impacts enables measurement from the outset. A comprehensive monitoring system includes not only the achievement of outputs in general, but also takes into account relevant cross-cutting issues (e.g., gender) and impacts at higher levels.
- The establishment of a coordination mechanism focusing on strategic themes contributes to increasing coherence and efficiency in the promotion of a national sector strategy by various international donors.
- The implementation of decentralised approaches with a strong participatory component contributes to raising awareness and strengthening the capacities and ownership of the actors involved.
- The success of decentralised approaches is strongly linked to the existence of appropriate regional and municipal organisational structures as well as clear responsibilities and financial resources. The provision of technical assistance plays a crucial role in strengthening implementation capacities.
- The analysis and definition of territorial units for certain investment measures helps to create an appropriate cost-benefit ratio and reduce dispersion effects when managing water catchment areas.
- The consideration of intercultural aspects and gender in the design and implementation of water management measures is necessary to secure non-discriminatory access to water as a resource. A medium- or long-term strategy is needed to include the topic in all activities (i.e., investing measures, follow-up, and budget).

Evaluation approach and methods

Methodology of the ex post evaluation

The ex post evaluation follows the methodology of a rapid appraisal, which is a data-supported qualitative contribution analysis and constitutes an expert judgement. This approach ascribes impacts to the project through plausibility considerations which are based on a careful analysis of documents, data, facts and impressions. This also includes – when possible – the use of digital data sources and the use of modern technologies (e.g. satellite data, online surveys, geocoding). The reasons for any contradicting information are investigated and attempts are made to clarify such issues and base the evaluation on statements that can be confirmed by several sources of information wherever possible (triangulation).

Documents:
Project documentation for the evaluated project and project documentation for related projects (i.e. PA, BE final review); previous PNC evaluations, evaluations of other projects focusing on water catchment area management; BMZ strategy papers. Literature includes:

- CTB/Enabel (2019). Sincronías La experiencia boliviana de la política pública de cuencas.
- Dockweiler, M., Alencastre, A. (2017). Evaluación al Plan Nacional de Cuencas Fase II. Informe de Evaluación. AECOM International Development Europe SL (Spain).
- Ede, M., Quiroga, M., Delgado, R., Villaroel, E., Gómez Rozo, M.A., Gutiérrez, Z. (2021). Evaluación Crítica y Prospectiva del Programa Plurianual del Plan Nacional de Cuencas 2017–2020. Land and Water Bolivia para MMAyA y Helvetas.
- French, M., Alem, N., Edwards, S.J. *et al.* (2017). Community exposure and vulnerability to water quality and availability: a case study in the mining-affected Pazña Municipality, Lake Poopó Basin, Bolivian Altiplano. *Environmental Management* **60**, 555–573.
- Global Water Partnership Sudamérica (2021). Recomendaciones para fortalecer la implementación de la GIRH en el Programa Plurianual del Plan Nacional de Cuencas (PP PNC 2021–2025). La Paz, Bolivia.
- Halkyer, R.O., Ortuño Yáñez C. R., Cosme Huanca, A., Marka Saravia, L., (2009). Plan Nacional de Cuencas. Programación Plurianual 2008–2012. Ministerio de Medio Ambiente y Agua. Viceministerio de Recursos Hídricos y Riego. La Paz, Bolivia.
- Llavona, A. (2020). “Lecciones del Estado Plurinacional de Bolivia para la adopción del enfoque del Nexo: análisis del Plan Nacional de Cuencas, el Sistema Múltiple Misicuni y las políticas de riego”, serie Recursos Naturales y Desarrollo, N° 203 (LC/TS.2020/168), Santiago, Comisión Económica para América Latina y el Caribe (CEPAL).
- Ministerio de Medio Ambiente y Agua (2014). Guía para la Elaboración de Proyectos de Gestión Integrada de Recursos Hídricos y Manejo Integral de Cuencas (GIRH/MIC). Estudio Técnico, Económico, Social y Ambiental – TESA. La Paz, Bolivia.
- Ministerio de Medio Ambiente y Agua / Viceministerio de Recursos Hídricos y Riego (2013). Programa Plurianual de Gestión Integrada de Recursos Hídricos y Manejo Integral de Cuencas 2013–2017. La Paz, Bolivia.
- Ministerio de Medio Ambiente y Agua / Viceministerio de Recursos Hídricos y Riego (2013). Programa Intercultural Cuencas Pedagógicas. Documento Resumen. La Paz, Bolivia.
- Ministerio de Medio Ambiente y Agua / Viceministerio de Recursos Hídricos y Riego (2017). Informe Progreso de la Política Sectorial. Gestión 2016. La Paz, Bolivia.
- Ministerio de Medio Ambiente y Agua / Viceministerio de Recursos Hídricos y Riego (2017). Programa Plurianual de Gestión Integrada de Recursos Hídricos y Manejo Integral de Cuencas 2017-2020. La Paz, Bolivia.
- Ministerio de Medio Ambiente y Agua / Viceministerio de Recursos Hídricos y Riego (2022). Plan Plurinacional de Recursos Hídricos 2021–2025. La Paz, Bolivia.
- Ministerio de Planificación del Desarrollo (2021). Plan de Desarrollo Económico y Social 2021–2025. La Paz, Bolivia.
- Paucara (2018). Efectos del Cambio Climático sobre la Disponibilidad de Agua y los Recursos Hídricos en Bolivia: Pronóstico para el 2030. *Documento de Trabajo IISEC-UCB no. 15/08 October 2018.*

- Saavedra, C. (2021). Análisis sobre el Plan Nacional de Cuencas (PNC: 2006–2020) y recomendaciones para la formulación del Plan GIRH (2021–2030) y los Programas Plurianuales de Cuencas, Recursos Hídricos y Riego (2021–2025). Ministerio de Medio Ambiente y Agua / Viceministerio de Recursos Hídricos y Riego. La Paz, Bolivia.
- Sachs, J., Schmidt-Traub, G., Kroll, C., Lafortune, G., Fuller, G., Woelm, F. (2020). The Sustainable Development Goals and COVID-19. Sustainable Development Report 2020. Cambridge: Cambridge University Press.
- Vuurmans, J., de Vries, P., Gutiérrez, R. (2013). Evaluación Final Plan Nacional de Cuencas 2006–2012. La Paz, Bolivia.

Data sources and analysis tools:

- https://atlas.sdsnbolivia.org/#/SDG/13
- Instituto Nacional de Estadística (INE).
- Didan, K. (2015). MOD13Q1 MODIS/Terra Vegetation Indices 16-Day L3 Global 250m SIN Grid V006 [Data set]. NASA EOSDIS Land Processes DAAC. Accessed 2022-09-12 from https://doi.org/10.5067/MODIS/MOD13Q1.006.

Interview partners:
Project-executing agency, KfW Operational Department, other donors, target group, university

The analysis of impacts is based on assumed causal relationships, documented in the results matrix developed during the project appraisal and, if necessary, updated during the ex post evaluation. The evaluation report sets out arguments as to why the influencing factors in question were identified for the experienced effects and why the project under investigation was likely to make the contribution that it did (contribution analysis). The context of the development measure and its influence on results is taken into account. The conclusions are reported in relation to the availability and quality of the data. An evaluation concept is the frame of reference for the evaluation.

On average, the methods offer a balanced cost-benefit ratio for project evaluations that maintains a balance between the knowledge gained and the evaluation costs, and allows an assessment of the effectiveness of FC projects across all project evaluations. The individual ex post evaluation therefore does not meet the requirements of a scientific assessment in line with a clear causal analysis.

The following aspects limit the evaluation:
The basket-finance character limited the evaluation of the FC contribution to the outcome and impact objectives. This is due to the fact that it is not possible to clearly allocate FC funds to the financed individual measures. Furthermore, at the time of the evaluation, there was no financing overview that would have enabled a target/actual comparison of the planned and actual costs, divided according to the individual PNC components. With regard to the mapping of the supported PNC components, it must be mentioned with reservation that the evaluation team only had geodata for PNC II, but not for PNC I.

Methods used to evaluate project success

A six-point scale is used to evaluate the project according to OECD DAC criteria. The scale is as follows:

Level 1 very successful: result that clearly exceeds expectations

Level 2 successful: fully in line with expectations and without any significant shortcomings

Level 3 moderately successful: project falls short of expectations but the positive results dominate

Level 4 moderately unsuccessful: significantly below expectations, with negative results dominating despite discernible positive results

Level 5 unsuccessful: despite some positive partial results, the negative results clearly dominate

Level 6 highly unsuccessful: the project has no impact or the situation has actually deteriorated

The overall rating on the six-point scale is compiled from a weighting of all six individual criteria as appropriate to the project in question. Rating levels 1-3 of the overall rating denote a "successful" project while rating levels 4-6 denote an "unsuccessful" project. It should be noted that a project can generally be considered developmentally “successful” only if the achievement of the project objective (“effectiveness”), the impact on the overall objective (“impact”) and the sustainability are rated at least “moderately successful” (level 3).

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List of annexes:

Target system and indicators annex

Risk analysis annex

Project measures and results annex

Recommendations for operation annex

Evaluation questions in line with OECD DAC criteria/ex post evaluation matrix annex

Target system and indicators annex

Project objective at outcome level	Rating of appropriateness (former and current view)
During project appraisal: The management of water catchment areas is improved by participating in basket funding to implement the PNC.	From the perspective at the time and today, the project purpose at outcome level is appropriate in terms of content, but will be further specified for the EPE.
During EPE (if target modified): To improve the integrated management of the water catchment areas and water resources as well as the sustainable use of the rural production base (especially water, land and biodiversity).	

Indicator	Rating of appropriateness (for example, regarding impact level, accuracy of fit, target level, smart criteria)	PA target level Optional: EPE target level	PA status (year)	Status at final inspection (year)	Optional: EPE status (year)
Indicator 1 (PA): Number of projects being implemented or completed → Not used as outcome indicator in the EPE	Content is appropriate if the indicator relates to projects that promote sustainable management of natural and water resources and local capacities. However, the indicator is located at output level and is accordingly presented in the project completion report, separate from the tabulated discussion of outcome indicators.	PA: ≥70 integrated projects completed by end of 2016	33 projects for the integrated design of water catchment areas (“Projectos MIC/GIRH”)	104 investment projects	/
Indicator 2 (PA): Number of Planes Directores in progress or to be completed → Not used as outcome indicator in the EPE	Appropriate in terms of content, as the indicator maps the improvement in water management in strategic water catchment areas, but only in quantity, not in quality. In addition, the indicator is located at output level and is accordingly presented in the project completion report, separate from the tabulated discussion of outcome indicators.	PA: ≥ 10 Planes Directores implemented or being implemented by 2016	One plan started and three more in preparation	14 (five are complete and nine in progress)	/
Indicator 3 (PA): number of local management committees (OGC) → Not used as outcome indicator in the EPE	Appropriate in terms of content, but only reflects the presence of the local management committee in quantity, not quality. In addition, the indicator is located at output level and is therefore not used in the EPE.	PA: ≥35 functioning local management committees by 2016	14 local management committees	40 (29 functional and another 11 under construction)	/
NEW – Indicator 4:	The indicator serves as a proxy for the “use of the capacities created” (outcome) in relation to the established local	The sustainability index target value	No values, as the sustainability index	Sustainability index: 0.49 (2016)	Partially achieved (see body text).

The local management committees (OGC) are established and carry out their tasks in the long term → Sustainability Index (Índice de Sostenibilidad, ISpnc) for the GIRH/MIC projects	management committees. It provides information on how good the organisation of the current local management committees is and the extent to which they are able to perform their tasks (values between 0 and 1). Based on the sustainability index, assumptions can be made about the extent to which the integrated management of water resources is improved.	for 2016 (0.45) is achieved	has only been recorded since 2013.		The target value of the sustainability index was achieved.
NEW – Indicator 5: The established early warning systems and systems for measuring water quality are used and expanded	The indicator serves as a proxy for the "use of the capacities created" (outcome) with regard to the established early warning and monitoring systems. This is a qualitative indicator.	Achieved	/	The installed FEWS-Bolivia early warning system works in 49 municipalities. There are 368 stations in 25 bodies of water for regular surveying of water quality in rivers and five laboratories for water analysis. The expansion of the monitoring network will be continuously updated.	Partially achieved (see body text).
NEW – Indicator 6: Permanent continued existence of afforestation areas in the project area	The indicator measures the long-term continued existence of afforested land and serves as a proxy for improved long-term management of water catchment areas and water resources.	The average NDVI value of the afforested areas remains constant after the end of the FC promotion	/	/	Achieved.

Project objective at impact level	Rating of appropriateness (former and current view)
During project appraisal: Sustainable use of the production base (especially water, land and biodiversity) for food security and increased income for the poor, rural, majority indigenous population.	The project objectives at impact level and DC programme objective are based on the outcome level in terms of content. The impact objective is therefore adjusted for the EPE. Furthermore, there is no valuation of impact indicators and therefore no indicator-based assessment of impacts. As two impact indicators will only be collected by MED from 2018, it is difficult to determine an impact indicator ex post for the period 2012–2017.

→ DC programme objective: The actors in the respective catchment areas manage the water resource in an integrated manner on the basis of current legal, institutional and technical standards.	No systematic data are collected on erosion in the water catchment areas. There is data on the water inventory in Bolivia (1981–2015), which could be included to have a descriptive function in the EPE under "Impact" in order to present the development of water availability over time.
During EPE (if target modified): The livelihoods of the rural population in the water catchment areas are sustainably secured and the vulnerability to hydrological risks and climate change is diminished.	

Indicator	**Rating of appropriateness** (for example, regarding impact level, accuracy of fit, target level, smart criteria)	**Target level PA / EPE (new)**	**PA status (year)**	**Status at final inspection (year)**	**EPE status (year)**
Indicator 1 (PA): Population's access to water as a resource → Not used as an impact indicator in the EPE	Content appropriate (impact level, high relevance), but inappropriate in the assignment. This indicator was to be operationalised and assigned during project implementation, and another indicator was to be defined and specified at the level of the DC programme objective by 2012. Unfortunately, there was no specification during implementation.	/	/	/	/
NEW – Indicator 3: Stabilisation of	The indicator serves as a proxy for securing the target group's	EPE target level: The average monthly income from the	BOB 617 (2011) (Women: BOB 178)	BOB 1,128 (2018) (Women: BOB 705)	Achieved. BOB 1,253 (2020)

income from agricultural employment	livelihoods. The long-term stabilisation of farm incomes in the project context can be anticipated due to the successful rotation and diversification of crops and the introduction of agroforestry systems. These measures are also part of adapting to climate change.	agricultural activity of the population in rural areas is higher than at the time of the PA	(Men: BOB 1,009)	(Men: BOB 1,262)	(Women: BOB 683) (Men: 1,442)
NEW – Indicator 4: Improvement in security of food supply in rural areas	The indicator serves as a proxy for securing the population's livelihoods (impact). These are data on the prevalence of chronic malnutrition in children under the age of five (there is no data for the adult population in this regard).	EPE target level: The proportion of chronically malnourished children in rural areas is lower than at the time of the PA	38.6% of children in rural areas are chronically malnourished (2008)	23.7% of children in rural areas are chronically malnourished (2016)	Achieved. Current value is available for 2016 (see actual value at final inspection).

Risk analysis annex

All risks should be included in the following table as described above:

Risk	Relevant OECD-DAC criterion
Performance and cooperation capacity of the government bodies involved	Effectiveness/efficiency/sustainability NB: Although performance and cooperation capacity increased during the implementation period, implementation capacities are still capable of development, particularly at the level of local actors. From an evaluation perspective, the risk has therefore partially materialised.
Loss of experience and skills due to staff turnover at the project-executing agency	Effectiveness/efficiency/sustainability NB: Until the end of the FC promotion, the low staff turnover at the project-executing agency made a positive contribution to preserving experience and skills. Up to the time of the evaluation, there was high staff turnover (due to the change of government in 2020, among other things). The integrated management of water catchment areas will continue to be prioritised at political level and further developed on the basis of PNC I and II. Nevertheless, it must be assumed that at least some of the VRHR experience is no longer available. From an evaluation perspective, the risk has partially materialised.
Environmental risks, e.g. periods of drought with forest fires, which result in a reduction in afforested land or tree nurseries, or floods that lead to the loss of the target group's cultivation crops.	Sustainability (to be raised as part of the EPE) NB: As no comprehensive information is available on all of the project locations, it is not possible to conclusively assess the extent to which the sustainability of the financed individual measures was actually adversely affected by environmental risks. Against the background of advancing climate change and its effects, as well as due to past ecological crises in Bolivia (see "Relevance" in the main section), at least partial occurrence of the risk is likely. From an evaluation perspective, the risk is still rated medium to high depending on the project region.

Project measures and their results annex

As part of the project, the following components of the PNC were supported by the contribution to the international donor basket fund:

Component 1: Promotion and drafting of water management plans ("Planes Directores de Cuenca" (PDC)

- Development of PDCs in five strategically important water catchment areas (Lago Poopó, Katari, Grande, Guadalquivir and Rocha) and preparation of nine further PDCs (Mizque, Azero, Arque/Tapacari, Cachimayu, Yapacanl, Cotagaita, Tupiza, Pampa Huari and Arroyo Bahía). The 14 prioritised PDCs comprise 140 municipalities and approx. 16.5% of the country's area.

Component 2: Implementation of GIRH/MIC projects

- Implementation of 31 feasibility studies and 45 investment projects by the end of 2012 (PNC I)
- Realisation of 34 feasibility studies and 61 investment projects by the end of 2017 (PNC II).

Table 1: Overview of GIRH/MIC projects financed under PNC I and II

Departament	Projekten GIRH/MIC						Insgesamt	%	Begünstigte Familien
	PNC I (2007-2012)			PNC II (2013-2017)					
	Vorstudien	Investitionen	Insgesamt	Vorstudien	Investitionen	Insgesamt			
Chuquisaca	3	9	12	13	16	29	41	24,0%	13.235
Cochabamba	1	9	10	4	9	13	23	13,5%	19.342
La Paz	12	12	24	4	11	15	39	22,8%	39.811
Oruro	7	2	9	6	8	14	23	13,5%	6.816
Potosi	2	8	10	3	8	11	21	12,3%	35.239
Santa Cruz	1	4	5	1	5	6	11	6,4%	5.502
Tarija	3	1	4	2	4	6	10	5,8%	2.673
Beni	1	0	1	1	0	1	2	1,2%	2.168
Pando	1	0	1			0	1	0,6%	
Insgesamt	31	45	76	34	61	95	171	100%	124.786

Quelle: MMAyA –VRHR – Informe de Avance MED PNC 2017

Component 3: Managing hydrological risk and climate change

- Installation of an early warning system (FEWS-Bolivia®) based on data collection from 100 meteorological and 52 hydrological stations. This system operates almost nationwide, in 49 municipalities, and is managed by SENAMHI, the national meteorological and hydrological service.
- Specific early warning systems and measures for the Lago Poopó, Guadalquivir, Mamoré and Beni river basins.
- Implementation of various hydrological studies on flood and landslide potential in selected water catchment areas, national water inventory, etc.
- The implementation of 92 projects with afforestation measures contributed to increasing the afforestation areas in water catchment areas to approx. 8,200ha by the end of 2017.

Component 4: Water quality management

- By the end of 2017, there were 368 stations in 25 bodies of water for regular surveys of water quality in rivers. These were networked with five laboratories for water analysis.

Component 5: Implementation of "Cuencas Pedagógicas" (educational concepts)

- Initiation of projects in 11 water catchment areas, three of which in water catchment areas with FC irrigation projects (Quyoj Kocha, Comarapa, Escaleras) by the end of 2017.

Component 6: Knowledge and information management

- Development of the GEOSIRH digital information platform, which also includes the modules of a planning and monitoring system for the "Planes Directores de Cuencas" and "Cuencas Pedagógicas" (SISMO), "Forest Monitoring" (SIMOF), "Management and Monitoring of Water Quality" (SGMCA) and "Early Warning System in the Middle-Section of the Mamoré River Water Catchment Area" (SATH).

Component 7: Institutional development and capacity building for GIRH/MIC

- Strengthening the capacities of technicians and officials working in the integrated management of water catchment areas (e.g. VRHR technicians, regional governments and municipalities) through specialisation services.

Transverse components: gender, interculturality and cross-border water catchment areas

- Treatment of the topics in corresponding guidelines and manuals for GIRH/MIC projects.

The following table shows the main differences between PNC I and II (strategic alignment and components):

Table 2: Overview of the components of PNC I and II[1]

Component PNC 2	Component PNC 1	Explanatory notes
1. Promotion and development of the PDCs		Development of the PDCs has been included as a new compo-nent.
2. Implementation of GIRH/MIC projects	1. Implementation of GIRH/MIC	
3. Managing hydrological risks and climate change impacts	5. Follow-up on strategic topics	The topics of hydrological risks, water quality, conflict resolution, etc. were summarised in PNC I in “strategic topics”.
4. Water quality management	5. Follow-up on strategic topics	
	7. Management of cross-border water catchment areas	Treated as a transverse component in PNC II.
5. Implementation of “Cuencas Pedagógicas”		Was part of the capacity expansion component in PNC I.
6. Knowledge and information man-agement	3. Information, knowledge and communication via GIRH/MIC	
7. Institutional strengthening and promotion of capacity	2. Institutional strengthening for the implementation and development of the PNC 4. Expanding the capacities of technicians, officials and water managers	
	6. Development of administrative and financial mechanisms	Has less significance in PNC II, as this component was already com-pleted in PNC I.

Source: Ministerio de Medio Ambiente y Agua / Viceministerio de Recursos Hídricos y Riego (2013). Programa Plurianual de Gestión Integrada de Recursos Hídricos y Manejo Integral de Cuencas 2013–2017. La Paz, Bolivia. FC Evaluation Department’s own data.

[1] The figures in the table serve to list the different components of the PNC and should clarify how these differ from one another be-tween PNC I and II (e.g. merging components 2 and 4 of PNC I to component 7 in PNC II).

Recommendations for operation annex

Various technical and general recommendations for the further course of the PNC were made as part of the project completion report:

I. Stronger decentralisation of PNC components to autonomous regional governments through the development of further local capacities. It was also recommended to prioritise GIRH/MIC measures that were identified as particularly relevant within the PDC.

II. Establishment of a department at the project-executing agency responsible for the expansion of central, regional and local capacities. In addition, it recommended a diagnosis of capacity deficits among the various actors and the development/implementation of a plan for institutional and technical capacity development.

III. Development of a long-term financing strategy that identifies and secures both available international cooperation funds and own budget funds.

IV. Stronger promotion of social, institutional and normative processes among local actors (local management committees, municipalities, etc.) to ensure the sustainability of catchment area management at local level.

V. Further development of hydrological early warning systems and further training of regional authorities in these systems.

VI. Strategic cooperation with other institutional actors in order to be able to solve the critical problems in various water catchment areas in the medium term (e.g. authorities responsible for securing and controlling environmental quality and public health, as well as ministries for energy and mining, etc.).

VII. Develop local financial strategies in the context of management plans developed by the local management committees with the support of the “Cuencas Pedagógicas”.

VIII. Development of a strategy for improved development and implementation of information and communication systems (including a more user-friendly design of the GeoSIRH geoinformation platform).

The extent to which these aspects were addressed by the project-executing agency at the time of the evaluation can be found in the annex “Project-executing agency and operation”.

Relevance

Evaluation question	Specification of the question for the present project	Data source (or rationale if the question is not relevant/applicable)	Rating	Weighting (- / o / +)	Reason for weighting
Evaluation dimension: Policy and priority focus			2	o	
Are the objectives of the programme aligned with the (global, regional and country-specific) policies and priorities, in particular those of the (development policy) partners involved and affected and the BMZ?	What political priorities of the partner country did the project support by contributing to the donor basket fund? Did the design of the project correspond to the executing agency's priorities or were there hidden agendas? To what extent did the project correspond to the Federal Ministry for Economic Cooperation and Development's (BMZ) development policy priorities?	Federal Ministry for Economic Cooperation and Development (BMZ) strategy papers; project documentation (PP) and project focus area reporting; Internet research on Bolivia's sector policy, Interview with executing agency			
Do the objectives of the programme take into account the relevant political and institutional framework conditions (e.g. legislation, administrative capacity, actual power structures (including those related to ethnicity, gender, etc.))?	Were the institutional framework conditions met to ensure the planned implementation of the PNC? Were the project-executing agency's capacities sufficient?	Project documentation (PP) and evaluation of PNC I			
Evaluation dimension: Focus on needs and capacities of participants and stakeholders			2	o	
Are the programme objectives focused on the developmental needs and capacities of the target group?	Were the capacities of the target group sufficient to participate in submitting applications for the individual projects?	Project documentation (PP), interview with executing agency and PM			

Was the core problem identified correctly?	Core problems: Low agricultural productivity due to degradation of natural resources (water, soil and biodiversity) was identified as a core problem. Low agricultural productivity is considered to be a major cause of rural poverty. → Was the core problem identified correctly? Has it been fully identified (and addressed)?				
Were the needs and capacities of particularly disadvantaged or vulnerable parts of the target group taken into account (possible differentiation according to age, income, gender, ethnicity, etc.)? How was the target group selected?	Who (gender, socio-economic groups, ethnicity) is most affected by the core problem within the country and, accordingly, its alleviation? Was the promotion of measures with a particular connection to poverty planned (e.g. implementation of workshops, particularly with the poorest households in the project areas)? Was there a specific promotion of women or an intercultural component within the PNC?	Project documentation (PP & project completion report); interviews with the project-executing agency and the operating department; evaluations of PNC I and PNC II			
Would the programme (from an ex post perspective) have had other significant gender impact potentials if the concept had been designed differently? (FC-E-specific question)					
Evaluation dimension: Appropriateness of design			2	o	
Was the design of the programme appropriate and realistic (technically, organisationally and financially) and in principle suitable for	To what extent did the promotion of the PNC by the donor basket fund make sense in order to contribute to solving the core problem?	Project documentation (PP) and evaluation of PNC I; interviews with the operative department			

contributing to solving the core problem?	How successful was PNC I before promotion from FC funds and to what extent was it anticipated that the plan could be further optimised by FC participation in the donor basket fund (FC contribution to coordination and the development of strategic issues in the Grupo de Cuencas)? To what extent is it comprehensible from the perspective at the time and today that around 20% of FC funds for PNC I and around 80% for the PNC II were to be distributed? Do PNC I and PNC build on each other sensibly and have learning experiences been used? How do the two phases differ?	
Is the programme design sufficiently precise and plausible (transparency and verifiability of the target system and the underlying impact assumptions)?	Is the ToC (see elaboration of graphic ToC in the EPE) also comprehensible from today's perspective?	Project documentation (PP & project completion report)
Please describe the results chain, incl. complementary measures, if necessary in the form of a graphical representation. Is this plausible? As well as specifying the original and, if necessary, adjusted target system, taking into account the impact levels (outcome and impact). The (adjusted) target system can also be displayed graphically. (FC-E-specific question)	See a question above. Were all relevant internal and external factors taken into account at the time of the PP, or were there missing aspects that were decisive for the success of the project? Are there gaps in the ToC?	Project documentation (PP & project completion report)

To what extent is the design of the programme based on a holistic approach to sustainable development (interplay of the social, environmental and economic dimensions of sustainability)?	What role did the interplay of the social, ecological and economic dimensions of sustainability play in the PNC?	Project documentation (PP & project completion report); evaluations of PNC I and PNC II			
For projects within the scope of DC programmes: is the programme, based on its design, suitable for achieving the objectives of the DC programme? To what extent is the impact level of the FC module meaningfully linked to the DC programme (e.g. outcome impact or output outcome)? (FC-E-specific question)	Was the promotion of the PNC generally suitable for ensuring support for the integrated management of water as a resource in the catchment areas (DC programme objective)?	Project documentation (PP & project completion report); plausibility considerations; results chain			
Evaluation dimension: Response to changes/adaptability			2	o	
Has the programme been adapted in the course of its implementation due to changed framework conditions (risks and potential)?	To what extent was the PNC flexibly designed to adapt to new risks that might arise in the course of implementation? Was there an adjustment to PNC I or PNC II due to changed framework conditions during implementation?	Project documentation (PP & project completion report); evaluations of PNC I and PNC II, interviews with executing agency and PM			

Coherence

Evaluation question	Specification of the question for the present project	Data source (or rationale if the question is not relevant/applicable)	Rating	Weighting (- / o / +)	Reason for weighting
Evaluation dimension: Internal coherence (division of tasks and synergies within German development cooperation):			2	o	
To what extent is the programme designed in a complementary and collaborative manner within the German development cooperation (e.g. integration into DC programme, country/sector strategy)?	Did the project correspond to German DC's country strategy? To what extent did the project supplement other FC/TC projects in Bolivia? Were there synergies?	Project documentation (PP, project completion report, focus-related reporting); Internet research on related projects.			
Do the instruments of the German development cooperation dovetail in a conceptually meaningful way, and are synergies put to use?	/	The content of the question is already covered one line above.			
Is the programme consistent with international norms and standards to which the German development cooperation is committed (e.g. human rights, Paris Climate Agreement, etc.)?	To what extent did the project contribute to achieving the United Nations Sustainable Development Goals (SDGs)? To what extent was the project consistent with the key objective of the Paris Climate Agreement?	Internet research; plausibility considerations; project documentation (focus-related reporting)			
Evaluation dimension: External coherence (complementarity and coordination with actors external to German DC):			2	+	External coherence is particularly important due to the participation in the international donor basket fund.

To what extent does the programme complement and support the partner's own efforts (subsidiarity principle)?	To what extent did the PNC donor basket fund supplement other measures with a focus on water catchment areas at national level?	Internet research; project documentation (focus-related reporting), interview with executing agency
Is the design of the programme and its implementation coordinated with the activities of other donors?	Which other donors participated in the PNC donor basket fund during the implementation period? How was the coordination between the actors involved in the donor basket fund carried out? What strengths or weaknesses arose from participating in the donor basket fund? Were there similar activities of other donors that were implemented outside basket funding? If yes, were they complementary to it, or were there duplicates (geographical overlaps and the same individual measures)?	FC was represented in the "grupo de cuencas" by the local KfW office: interviews with the operational department (Carmiña Antezana) Project documentation (PP & project completion report); Internet research on parallel activities of other donors
Was the programme designed to use the existing systems and structures (of partners/other donors/international organisations) for the implementation of its activities and to what extent are these used?	To what extent were the necessary systems and structures for implementing the PNC within the context of the donor basket fund already in place at the time of project planning? Was the development of new structures planned for implementation? Which existing local systems and structures in the project regions should be used in the implementation of GIRH/MIC projects?	Project documentation (PP); Internet research; interviews
Are common systems (of partners/other donors/international organisations) used for monitoring/evaluation, learning and accountability?	Which joint systems for monitoring/evaluation, learning and accountability were used within the PNC? To what extent did the use of these systems contribute to the conceptual	Interviews with the operational department

	improvement or further development of the PNC (or related programmes)?	

Effectiveness

Evaluation question	Specification of the question for the present project	Data source (or rationale if the question is not relevant/applicable)	Rating	Weighting (- / o / +)	Reason for weighting
Evaluation dimension: Achievement of (intended) targets			2	o	
Were the (if necessary, adjusted) objectives of the programme (incl. capacity development measures) achieved? Table of indicators: Comparison of actual/target	--				
Evaluation dimension: Contribution to achieving objectives:			3	o	
To what extent were the outputs of the programme delivered as planned (or adapted to new developments)? *(Learning/help question)*	To what extent were the agreed services provided by FC? Were outputs delivered in an appropriate quality? How was this ensured? → Outputs: Raising awareness and empowerment of the target group, erosion and soil protection measures, protection of the vegetation cover, revaluation of degraded areas, construction (hydraulic works).	Project documentation (project completion report); evaluations of PNC I and II, interview with executing agency and PM			
Are the outputs provided and the capacities created used?	What was the role and impact of the counterpart contribution of 30% of the investment projects, in particular with regard to the use of outputs?	Interviews with the project executing agency; evaluations of PNC I and PNC II			

	To what extent has the target group's use of the water catchment areas changed since the PNC was implemented? What influence do the local management committees have on the management of water resources and water catchment areas in the long term? How often do the local management committees come together? Have the local management committees created during the project period continued to be active since the end of the FC promotion? → Its main task is to submit applications for relevant MIC projects.	
To what extent is equal access to the outputs provided and the capacities created guaranteed (e.g. non-discriminatory, physically accessible, financially affordable, qualitatively, socially and culturally acceptable)?	Do women have equal access to the outputs created? To what extent were intercultural programmes promoted in order to enable indigenous communities to access the outputs created in a non-discriminatory manner?	Evaluations of PNC I and PNC II
To what extent did the programme contribute to achieving the objectives?	Were the target values of the indicators achieved at outcome level and to what extent can this be used to derive the achievement of the outcome objective?	MED indicators; plausibility considerations, secondary data
To what extent did the programme contribute to achieving the objectives at the level of the intended beneficiaries?	To what extent did the main target group (mainly population groups living in extreme poverty in the upper reaches of the water catchment areas) benefit from the individual measures? Was it possible to measure an improvement in agricultural productivity or similar?	Interviews with the project-executing agency, secondary data

	To what extent did other target groups (especially the water users in the lower reaches and public/social institutions) benefit from the individual measures?	
Did the programme contribute to the achievement of objectives at the level of the particularly disadvantaged or vulnerable groups involved and affected (potential differentiation according to age, income, gender, ethnicity, etc.)?	/	The content of the question is already covered one line above.
Were there measures that specifically addressed gender impact potential (e.g. through the involvement of women in project committees, water committees, use of social workers for women, etc.)? (FC-E-specific question)		
Which project-internal factors (technical, organisational or financial) were decisive for the achievement or non-achievement of the intended objectives of the programme? *(Learning/help question)*	Was there a further development of PNC II based on the learning experiences from PNC I? To what extent did this contribute to achieving the module objective?	Evaluation of PNC II, interviews with executing agency, PM and consultant
Which external factors were decisive for the achievement or non-achievement of the intended objectives of the programme (also taking into account the risks anticipated beforehand)? *(Learning/help question)*	To what extent have external projects with the same outcome objective contributed to improving the management of water catchment areas in Bolivia?	Project documentation (project completion report); Internet research on parallel projects of other donors, interviews with executing agency, PM and consultants

Evaluation dimension: Quality of implementation			3	o	
How is the quality of the management and implementation of the programme (e.g. project-executing agency, consultant, taking into account ethnicity and gender in decision-making committees) evaluated with regard to the achievement of objectives?	To what extent did the (too low) implementation capacities influence the disbursement volume of the donor basket fund and the counterpart contribution?	Project documentation (PP & project completion report); evaluations of PNC I and PNC II; if necessary, progress reports of the executing agency; interviews with the project executing agency and operational department			
How is the quality of the management, implementation and participation in the programme by the partners/sponsors evaluated?	Were the VRHR's financial and human resource capacities sufficient during the implementation period to implement PNC I & II as planned and to monitor aspects such as gender and interculturality?	Project documentation (PP & project completion report); evaluations of PNC I and PNC II, interview with PM and consultant			
Were gender results and relevant risks in/through the project (gender-based violence, e.g. in the context of infrastructure or empowerment projects) regularly monitored or otherwise taken into account during implementation? Have corresponding measures (e.g. as part of a CM) been implemented in a timely manner? (FC-E-specific question)					
Evaluation dimension: Unintended consequences (positive or negative)			2	o	
Can unintended positive/negative direct impacts (social, economic, ecological and, where applicable, those affecting vulnerable groups) be seen (or are they foreseeable)?	To what extent can unintended positive and negative impacts in terms of the political and social organisation in the project regions theoretically be expected and identifiable in practice?	Project documentation (project completion report); evaluation of PNC II; plausibility considerations			

What potential/risks arise from the positive/negative unintended effects and how should they be evaluated?	/	The content of the question is already covered one line above.
How did the programme respond to the potential/risks of the positive/negative unintended effects?	/	The content of the question is already covered two lines above.

Efficiency

Evaluation question	Specification of the question for the present project	Data source (or rationale if the question is not relevant/applicable)	Rating	Weighting (- / o / +)	Reason for weighting
Evaluation dimension: Production efficiency			3	o	
How are the inputs (financial and material resources) of the programme distributed (e.g. by instruments, sectors, sub-measures, also taking into account the cost contributions of the partners/executing agency/other participants and affected parties, etc.)? (Learning and help question)					
To what extent were the inputs of the programme used sparingly in relation to the outputs produced (products, capital goods and services) (if possible in a comparison with data from other evaluations of a region, sector, etc.)? For example, comparison of specific costs.	Did the unit costs calculated at the time of the PP for the individual measures correspond to the actual costs during implementation? Was there compliance with the planned cost allocation for the various focus areas of the PNC within the framework of implementation?	Project documentation (PP & project completion report); evaluations of PNC I and PNC II			

	How high was the FC contribution in relation to the total financing volume of the PNC donor basket fund?	
If necessary, as a complementary perspective: To what extent could the outputs of the programme have been increased by an alternative use of inputs (if possible in a comparison with data from other evaluations of a region, sector, etc.)?	To what extent could the alternative use of inputs have led to broader regional coverage of the PNC or could the target group's participation in integrated water catchment area management have been further improved?	Ex post evaluations of similar projects with a focus on water catchment area management
Were the outputs produced on time and within the planned period?	Were the projects for the integrated design of water catchment areas (MIC/GIRH) able to be implemented within the intended timeframe? Was it possible to adhere to the PNC time schedule in general? Why was PNC II extended until 2020? Was the disbursement procedure from the donor basket fund carried out as planned?	Project documentation (PP & project completion report); evaluation of PNC II
Were the coordination and management costs reasonable (e.g. implementation consultant's cost component)? (FC-E-specific question)	From today's perspective, is the process from the application to the awarding of the construction work the most cost- and time-efficient way to implement the MIC/GIRH projects? What were the challenges? Was coordination within the framework of the donor basket fund time-efficient? What role did KfW play in the donor basket fund and to what extent did KfW make a contribution to keeping coordination and management costs at an appropriate level?	Interviews with the project-executing agency and the operational department; PNC II evaluation

Evaluation dimension: Allocation efficiency			2	o	
In what other ways and at what costs could the effects achieved (outcome/impact) have been attained? *(Learning/help question)*	What alternatives were there to promote the improved management of water catchment areas (outcome) and the sustainable use of the production base in rural areas of Bolivia (impact) with FC funds? → Alternatives to participation in the donor basket fund and supporting the PNC	Project documentation (PP & project completion report); if necessary, comparison with similar FC projects			
To what extent could the effects achieved have been attained in a more cost-effective manner, compared with an alternatively designed programme?	How are the funds distributed across various (sub-)activities? Are some (sub)activities particularly effective compared to others? Was the division of funds for the individual focus areas of the PNC useful or were there components that were not adequately promoted?	Evaluation of PNC II, interviews with project-executing agency			
If necessary, as a complementary perspective: To what extent could the positive effects have been increased with the resources available, compared to an alternatively designed programme?					

Impact

Evaluation question	Specification of the question for the present project	Data source (or rationale if the question is not relevant/applicable)	Rating	Weighting (- / o / +)	Reason for weighting
Evaluation dimension: Overarching developmental changes (intended)			2	o	
Is it possible to identify overarching developmental changes to which the programme should contribute? (Or if foreseeable, please be as specific as possible in terms of time).	Was there a reduction in floods, landslides and droughts in the water catchment areas? Was there a reduction in the loss of agricultural soil? To what extent have the main factors for the loss of this soil changed (e.g. the role of erosion)? To what extent has the availability of water changed in the water catchment areas? To what extent has a reduction in the population's vulnerability to hydrological risks and climate change occurred? Were democratic structures and processes strengthened in rural areas?	Internet research			
Is it possible to identify overarching developmental changes (social, economic, environmental and their interactions) at the level of the intended beneficiaries? (Or if foreseeable, please be as specific as possible in terms of time).	To what extent has access to water and the use of the agricultural production base changed for the target group between 2012 and 2017? Was there an improvement in the target group's living conditions, e.g. in the form of income increases or improved food security?	Project documentation (project completion report); Internet research; evaluation of PNC II; interviews with project-executing agency			
To what extent can overarching developmental changes be identified at the level of particularly disadvantaged or vulnerable parts of the target group to which the programme should contribute (Or, if	How has access to water changed between 2012 and 2017 for women and indigenous people?	Evaluation of PNC II			

foreseeable, please be as specific as possible in terms of time).					
Evaluation dimension: Contribution to overarching developmental changes (intended)			2	o	
To what extent did the programme actually contribute to the identified or foreseeable overarching developmental changes (also taking into account the political stability) to which the programme should contribute?	To what extent can the reduction of floods, landslides and droughts in the Bolivian water catchment areas be attributed to the PNC? To what extent did the PNC contribute to reducing losses of agricultural soil? Which factors of the PNC contributed to making water access fairer for the population and to improving the living conditions of the population? To what extent did the PNC contribute to reducing the population's vulnerability to hydrological risks and climate change? To what extent was the PNC able to contribute to strengthening the democratic participation of the target group?	Evaluations of PNC I and PNC II			
To what extent did the programme achieve its intended (possibly adjusted) developmental objectives? In other words, are the project impacts sufficiently tangible not only at outcome level, but also at impact level? (E.g. drinking water supply/health effects).	/	The question is already covered one line further up or further down in terms of content.			
Did the programme contribute to achieving its (possibly adjusted) developmental objectives at the level of the intended beneficiaries?	To what extent can an improvement in the living conditions of the target group, e.g. in the form of income increases or improved food security, be causally attributed to the PNC?	Evaluations of PNC I and PNC II			

Has the programme contributed to overarching developmental changes or changes in life situations at the level of particularly disadvantaged or vulnerable parts of the target group (potential differentiation according to age, income, gender, ethnicity, etc.) to which the programme was intended to contribute?	To what extent can an improvement in the living conditions of women, e.g. in the form of income increases or improved food security, be causally attributed to the PNC?	Evaluations of PNC I and PNC II
Which project-internal factors (technical, organisational or financial) were decisive for the achievement or non-achievement of the intended developmental objectives of the programme? *(Learning/help question)*	To what extent did the projects of "cuencas pedagógicas" contribute to the sustainable use of the production base within the framework of the PNC?	Project documentation (project completion report); evaluation of PNC II
Which external factors were decisive for the achievement or non-achievement of the intended developmental objectives of the programme? *(Learning/help question)*	What political and climatic factors were essential for achieving the intended developmental objective of the project?	Plausibility considerations; impressions from interviews with the project-executing agency and the operational department
Does the project have a broad-based impact? - To what extent has the programme led to structural or institutional changes (e.g.in organisations, systems and regulations)? (Structure formation) - Was the programme exemplary and/or broadly effective and is it reproducible? (Model character)	To what extent did the project influence the structure and organisation of the political institutions involved in implementing the PNC? To what extent did the PNC donor basket fund serve as a successful model for further sector financing?	Project documentation (project completion report)

How would the development have gone without the programme? (Learning and help question)	How would the development have gone without the PNC?	Plausibility considerations			
Evaluation dimension: Contribution to (unintended) overarching developmental changes			-	o	
To what extent can unintended overarching developmental changes (also taking into account political stability) be identified (or, if foreseeable, please be as specific as possible in terms of time)?	/	No unintended effects can currently be identified.			
Did the programme noticeably or foreseeably contribute to unintended (positive and/or negative) overarching developmental impacts?	/	No unintended effects can currently be identified.			
Did the programme noticeably (or foreseeably) contribute to unintended (positive or negative) overarching developmental changes at the level of particularly disadvantaged or vulnerable groups (within or outside the target group) (do no harm, e.g. no strengthening of inequality (gender/ethnicity))?	/	No unintended effects can currently be identified.			
Evaluation question	Specification of the question for the present project	Data source (or rationale if the question is not relevant/applicable)	Rating	Weighting (- / o / +)	Reason for weighting
Evaluation dimension: Capacities of participants and stakeholders			3	o	

Sustainability

Are the target group, executing agencies and partners institutionally, personally and financially able and willing (ownership) to maintain the positive effects of the programme over time (after the end of the promotion)?	Do the beneficiaries have the capacities required to ensure the long-term continued existence of the financed individual measures? To what extent can it be anticipated that the target group will enjoy a high level of ownership in the long term?	Project documentation (PP & project completion report); interviews with the project executing agency			
To what extent do the target group, executing agencies and partners demonstrate resilience to future risks that could jeopardise the impact of the programme?	To what extent does the project-executing agency or partner country prevent the risk of a lack of financing for future projects in the area of the conservation of water resources? Is there an exit strategy based on dependence on external financing sources?	Interviews with the project-executing agency and the operational department			
Evaluation dimension: Contribution to supporting sustainable capacities:			3	o	
Did the programme contribute to the target group, executing agencies and partners being institutionally, personally and financially able and willing (ownership) to maintain the positive effects of the programme over time and, where necessary, to curb negative effects?	To what extent did the project contribute to ensuring the long-term and participatory management of water catchment areas by creating local structures (especially local management committees)? Do the local management committees perform their tasks? To what extent was it ensured within the scope of the project that the local management committees represented the interests of all sectors of the catchment area?	Project documentation (PP & project completion report); evaluations of PNC I and PNC II; interviews with the project executing agency			
Did the programme contribute to strengthening the resilience of the target group, executing agencies and partners to risks that could	To what extent was the project able to sustainably strengthen the institutional capacities of the applicant institutions?	Project documentation (PP & project completion report); evaluations of PNC I and PNC II			

jeopardise the effects of the programme?					
Did the programme contribute to strengthening the resilience of particularly disadvantaged groups to risks that could jeopardise the effects of the programme?	To what extent are the interests of women and indigenous groups represented in the existing local management committees?	Project documentation (PP & project completion report); evaluations of PNC I and PNC II			
Evaluation dimension: Durability of impacts over time			3	o	
How stable is the context of the programme (e.g. social justice, economic performance, political stability, environmental balance)? (*Learning/help question*)	Is it foreseeable that the management of water catchment areas will continue to be prioritised at political level in the future? How stable are the institutional structures and systems created under the PNC? To what extent are the promoted measures influenced by ecological factors (positive/negative)?	Project documentation (PP & project completion report); evaluations of PNC I and PNC II; Internet research on the political sector and German DC with Bolivia			
To what extent is the durability of the positive effects of the programme influenced by the context? *(Learning/help question)*	/	The content of the question is already covered one line above.			
To what extent are the positive and, where applicable, the negative effects of the programme likely to be long-lasting?	To what extent can it be assumed that the integrated management of water catchment areas will continue in the long term? To what extent can it be assumed that the livelihoods of the rural population are secured in the long term?	Plausibility considerations			