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Retrospective Evaluation of the Interventions in the Irrigation Sector

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This overview of the evaluation as well as the complete report and its annexes can be downloaded from the Internet at:
www.afd.fr/fr/xp81-eval-irrigation-synthese-rousseau

Cover photos
Top right, Meeting between evaluators and users of the Stung Chinit perimeter (Cambodia) © Florence Deram Malerbe
Middle right, Oued Inanouen downstream, tributary of the Oued Sébou, Moyen Sébou project (Morocco) © Gabriel Lambert/Agriate
Bottom right, Harvest on the perimeter of Chork reservoir, project hydro-agricultural sector (Cambodia) © Florence Deram Malerbe
Central photo, left, Basin Water Management Project of the Red River, Ninh Binh province (Vietnam) © François Carlet-Soulages, NOI Pictures/AFD

Summary

A. Evaluation Objectives and Method

Following several decades of intervention in the irrigation sector, the AFD has commissioned this retrospective thematic evaluation, which forms an integral part of the strategic review AFD has carried out in this sector and also falls within the AFD evaluation policy framework.

The overall objective of this formative evaluation is to provide the AFD with recommendations for improving its position and interventions in the irrigation sector. To achieve this, the evaluation was based on the following specific objectives:

- Provide a reasoned and independent assessment of the AFD's intervention in the irrigation sector over a long time period (from 1983 to 2017);
- Draw cross-cutting lessons and participate in building on the experience gained from 34 years of AFD intervention in the irrigation sector;
- Draw conclusions and produce strategic and operational recommendations to help develop AFD approaches and practices.

This evaluation was completed between August 2017 and July 2019 by the Hydroconseil-Agriate Consortium. The AFD's Evaluation and Learning Department (EVA: Evaluation et Apprentissage) was responsible for the overall management of the evaluation. A Reference Group comprising AFD experts and external subject matter experts met on five occasions to guide the process, and provide feedback and suggest improvements to the successive evaluation outputs.

The sample created for this evaluation consisted of 47 interventions, equating to 103 projects implemented through 157 agreements [see the Glossary in the Appendix], in 23 countries representative of the main geographical areas in which the AFD works. This sample corresponds to a net commitment of 1.2 billion euros from the AFD over the 34 year evaluation period.

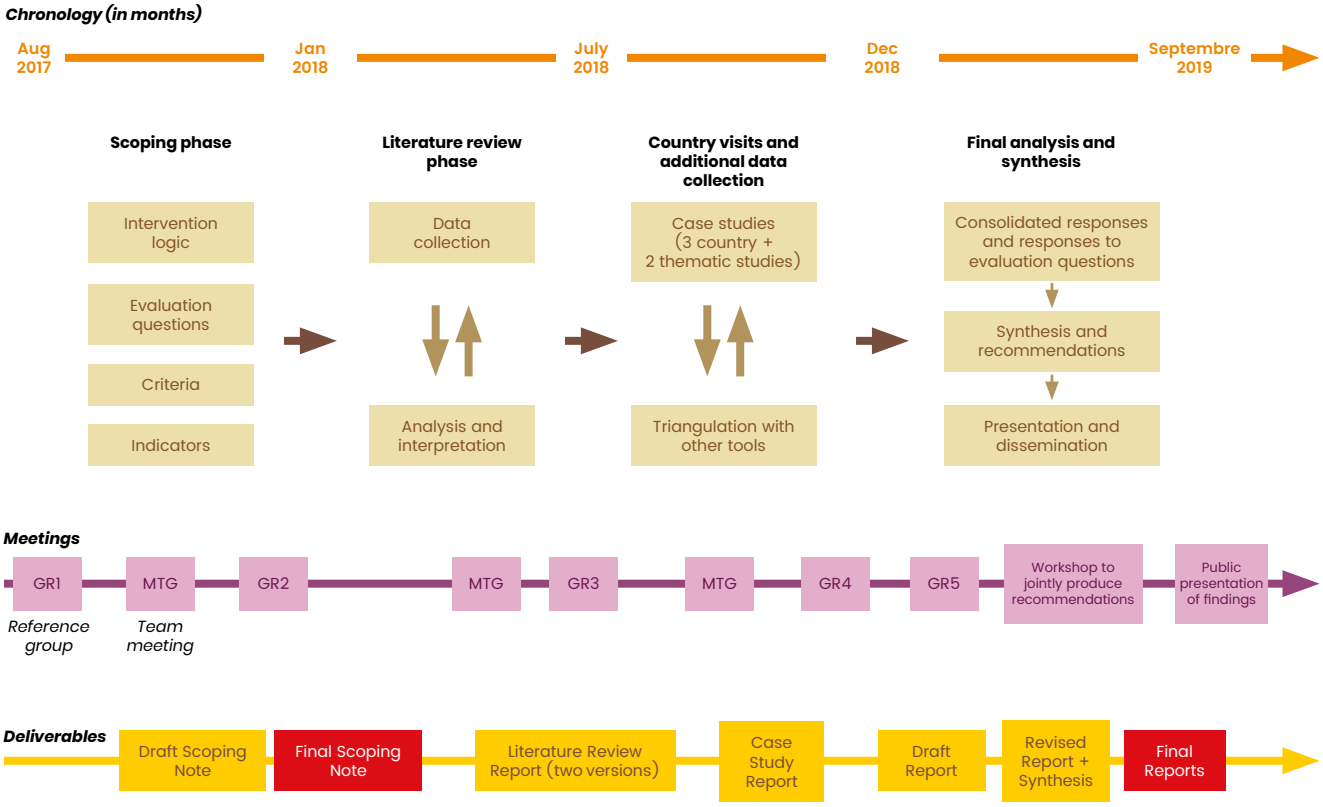
To help construct the responses to the 12 main questions included in the evaluation, a tailored methodological approach was defined and implemented that addressed the specific challenges posed by the length of the period under assessment, the sample size and the shortage of documentation covering the first part of the evaluation period (up to around 2000). The evaluation team used a combination of tools to conduct their assessment:

- A comprehensive literature review that notably included all AFD project cycle documents for the entire sample;
- Around a hundred semi-structured interviews in the countries of intervention and about fifty interviews with the AFD and its partners;
- Three country case studies in Cambodia, Morocco and Senegal; each country was visited between June and September 2018 by a pair of evaluators, who met with the main partners and beneficiaries of the AFD-funded projects and also visited a representative sample of the infrastructure built;
- Two 'cross-cutting' case studies, one on the commons and the other on the AFD projects' impacts on public policy.

Seven documents were produced as part of this evaluation (these can be downloaded from: www.afd.fr/fr/xp81-eval-irrigation-synthese-rousseau):

- A full final evaluation report;
- This evaluation synthesis report;
- Three country case studies (Cambodia, Morocco, Senegal);
- Two cross-cutting case studies (commons and public policy).

Figure 1 – Evaluation Process and Final Timetable



- Collecting and analysing key documents
- Reconstituting the AFD intervention logic and describing the development cooperation context
- Proposing evaluation questions
- Formulating assessment criteria and indicators
- Proposing data collection and analysis methods
- Establishing the AFD projects database
- Incorporating feedback
- Drafting the scoping note (D/F)

- Proposing appropriate data and information analysis methods
- Finalising the indicators and data analysis
- Collecting additional information
- Analysing development cooperation programmes
- Interviews (AFD Paris, Skype…)
- Collating initial responses to evaluation questions, refining evaluability
- Drafting working assumptions for the fieldwork phase (country case studies)
- Identifying interventions/ projects for more in-depth analysis during the fieldwork phase
- Drafting the definitive fieldwork timetable
- Incorporating feedback
- Producing the final literature review report

- Conducting field visits to 3 countries: Morocco, Senegal and Cambodia
- Holding meetings to present findings and initial conclusions (in each country)
- Conducting two thematic case studies: public policy and commons
- Drafting country visit reports + briefing notes on the two cross-cutting case studies

- Conducting in-depth analyses of facts and findings
- Confirming the findings
- Assessing and formulating conclusions
- Writing the draft report
- Writing the revised report
- Drafting the evaluation synthesis
- Producing the presentation (PowerPoint)
- Drafting the recommendations
- Holding a workshop to jointly produce evaluation recommendations
- Incorporating feedback
- Finalising all deliverables (seven in total)
- Holding a public presentation of the evaluation findings

B. Successive Reorientation of AFD's Intervention Logic in the Irrigation Sector

Between 1983 and 2017, the AFD's intervention in the irrigation sector can be divided into four periods[1]. For each of these periods, the AFD irrigation projects form part of the organisation's intervention logic, which is itself linked to the international agriculture development assistance context and the reorientation of French development assistance policy. Reviewing the reorientation of AFD's intervention logic over the long-term makes it possible to determine the context in which the AFD irrigation sector strategy was constructed and respond to some of the evaluation questions.

It should be noted that, until the development assistance reform (2005), French Official Development Assistance (ODA) was split between the Caisse Centrale de Coopération Economique (CCCE)[2] that, through loans and grants[3], funded (predominantly infrastructure) projects in economic sectors including agriculture, and the Ministry of Development Cooperation, which funded, through grants only, projects in the socalled social sectors (health, education, etc.), as well as technical assistance and institutional support programmes in all sectors. The CCCE's area of intervention, initially restricted to former African colonies, started to expand from 1975 onwards, firstly to non-French-speaking African countries and Haiti and then to countries in the Mediterranean and Asia-Pacific regions (1992). Meanwhile, the Ministry of Development Cooperation worked only in the 'core countries'[4] .

Therefore, the two institutions regularly worked in the same countries.

The following analysis focuses on the reorientation of the AFD's intervention logic and not of French ODA as a whole.

B.1 1983-1991: Development of irrigated agriculture: towards the end of a development approach by governments and donors

At the beginning of the 1980s (a period not widely covered by the sample in this evaluation, but well-documented elsewhere), France's post-colonial intervention logic was still very much in use. At this time, CCCE operated mainly in French-speaking African countries[5] and its action involved supporting these countries' production-driven agricultural policies in order to meet grainbased food selfsufficiency (predominantly rice) and/or export crop objectives (cotton, peanuts, sugar, bananas, perennial crops[6]). Irrigation projects followed an infrastructure-based logic where priority was given to investing in infrastructure, which countries were severely lacking, and to continuing to support the large development and operating companies inherited from the colonial era or created in the wake of independence. In the projects evaluated, these companies include the Office du Niger in Mali (ON), the Société d'Aménagement et d'Exploitation du Delta du Fleuve Sénégal et de la Falémé in Senegal (SAED) and the Société Malgache d'Aménagement du Lac Alaotra (SOMALAC) in Madagascar.

This first period corresponded to a fundamental transition stage for development assistance, with the IMF's and World Bank's implementation of the first structural adjustment plans that made aid conditional on reducing public spending and on liberalising the economy, which included privatising the socalled economic public sector (in which the hydro-agricultural development companies were found).

At the same time, the widely accepted acknowledgement of centralised management's limitations and the lack of irrigation infrastructure

[1] The dates of each period correspond to the dates of the projects included in the evaluation sample and serve as a guide only.

[2] Which became the Caisse Française de Développement (CFD) in 1992 and then the AFD in 1998.

[3] Following the La Baule summit in 1990, the CCCE opened a grant unit to provide funding to the Least Developed Countries (LDCs).

[4] These are mainly former French colonies that gained independence in the 1960s.

[5] Although it also worked in English and Portuguese-speaking African countries (Mozambique, Cape Verde, Ghana, Ethiopia, etc.) and in Haiti from 1975 onwards.

[6] During this same period, the CCCE also funded agricultural enhancement assistance projects, including in irrigated areas; however, these projects are not considered to be irrigation projects and thus fall outside the scope of this evaluation.

maintenance led to an indepth review of the role and working methods of public development and operating companies. This period also marked the start of the transition from the centralised and development-based management of irrigated areas to a redistribution of roles between governments and irrigation users. From the mid-1980s to the beginning of the years 2000, this transition took place in all countries, albeit in different forms and at different scales.

The CCCE, while remaining generally aligned to the macro-economic objectives of structural adjustment programmes, nonetheless managed to keep certain development companies afloat (SAED and ON) by helping them to restructure (reducing staff headcount, refocusing the company missions, improving performance, etc.).

B.2 1992-2000: Review of irrigated area management schemes to improve investment security

A number of international conferences, in particular the International Conference on Water and the Environment held in Dublin and the Rio de Janeiro Earth Summit (1992), underlined the scarcity and importance of water and initiated a reassessment of large water resource development projects due to their social and environmental impacts[7]. They also highlighted the need to involve users, planners and decisionmakers in water management and development, confirming and continuing the trend set during the previous period.

Irrigation projects generally moved towards involving irrigation users in managing the irrigated areas in order to improve the sustainability of the infrastructure built and secure the investment. The promotion of water users' associations (WUA) stemmed from recognition of large water resource authorities' limitations, from the structural adjustment plans (reducing public spending, privatising some of the authorities' tasks), and from feedback from the field (users taking over from failing authorities[8]). This shift was also supported by research on social water management (Ostrom, 1992).

In the same vein, from this period up until today, the AFD has been systematically working to empower users to manage water resources and infrastructure, with responsibility handovers that vary in scope depending on the situation. This approach was supported by the experience of the ASA in France. However, the AFD also continued to provide institutional support to the development companies (particularly SAED in Senegal and ON in Mali) that it had helped keep afloat during the previous period. The AFD thus promoted different schemes depending on the setting and geography; however, these schemes all involved roles and responsibilities being shared between the government or public development companies (Senegal and Mali) and irrigation users that had formed a WUA (Madagascar from the start of the 1980s, Haiti, Senegal, Mali, and Cambodia).

The La Baule Summit in June 1990 marked a turning point in France's development assistance policy, with debt relief introduced for certain African countries and the definition of new loan and grant conditions. The CCCE could no longer work in the Least Developed Countries (LDCs) using anything other than grants. As of this date, in a large part of its intervention area, agriculture projects were implemented solely through grants. This decision reduced the volumes of funding that could be secured and restricted opportunities for funding irrigation infrastructure projects; a situation that lasted up to 2000 or 2010 for some countries. This also saw the launch of sector projects that would combine irrigated area rehabilitation or construction, a local approach, resource management and institutional assistance to countries. The focus on infrastructure shrank in proportion to the growing priority afforded to these other CCCE intervention activities.

In 1992, the CCCE became the CFD and, at the request of countries who wished to gain access to loans and no longer just the organisation's grants, its scope of action was expanded to countries in the Maghreb, as well as in South-East Asia (Cambodia, Vietnam). The CFD changed to its current name of AFD at the end of this period, in 1998.

[7] Creation of the World Commission on Dams in 1998.

[8] In some areas, government withdrawal from irrigated area management prompted irrigation users to spontaneously organise and carry out the simple operational and maintenance tasks required to ensure the installations were kept in working order.

B.3 2001-2008: Economic and environmental optimisation of agricultural water: reducing investment and promoting environmentally-friendly irrigated agriculture

The start of the years 2000 saw an overall fall in agricultural projects, as donors considered they were not sufficiently profitable, either for the countries (agriculture was deemed not to deliver sufficient growth) or for themselves, despite the fact that the aim of MDG 1 was to 'eradicate extreme poverty and hunger'. During this period, countries in the global South generally experienced significant urban development, which also needed to be supported. International Financial Institutions (IFI) were frequently called upon to support cities' infrastructure programmes (water supply, transport, health, economic sector support, etc.). Almost everywhere, priority was given to the urban sector as it was deemed essential for the countries supported and provided the donors with better value for money than the rural sector. The creation of the WTO in 1995 also played a role in the shift away from agriculture by advocating for free trade, including the free trade of agricultural products. Furthermore, at the same time as environmental concerns over water resources continued to grow, irrigated agriculture was regularly portrayed as consuming high volumes of water.

At the AFD, this shift was enhanced by a thorough restructuring of its portfolio and by ambitious development objectives for its financial commitments. Achieving the sought-after growth notably required changing the scale of projects. This involved increasing the level of commitment without increasing (or even reducing) the number of projects. This change in scale was more difficult to achieve in agriculture than in other sectors and the farming sector found itself progressively watered down. This was also the case for irrigation projects, despite some having involved major investment. At the same time, the AFD's activities in its target countries were refocused on three priority sectors and focus on the agricultural sector, deemed to be complicated and whose (notably economic) results were more difficult to achieve, tended to disappear from regions where the AFD considered this sector less important (without prejudicing countries' needs).

During this period, in the countries where the AFD continued its irrigation interventions (particularly Cambodia, Vietnam, Morocco and subSaharan Africa), the concepts of Integrated Water Resources Management (IWRM) and Social Water Management (SWM) continued to take hold. These concepts, developed during the 1990s and already included - under different names - in projects implemented during the previous period, became fundamental aspects of irrigated agriculture-related projects.

The AFD continued to support national institutional frameworks in order to introduce sector policies, water and irrigation policies, as well as land use policies to secure irrigation users' access to the land.

In 2003, the AFD became authorised to work in certain developing countries. This was initially on an experimental basis in China and Turkey, then (in 2007) in Brazil, India, Indonesia and Pakistan. In 2009, Latin America became a fully-fledged intervention area. During this period, the AFD prioritised its entry into countries that provided it with greater funding opportunities in sectors other than agriculture and irrigation.

In 2005, the reform of French development assistance totally changed the division of roles between the Ministry of Cooperation and the AFD. The AFD thus took on responsibility for technical assistance programmes (including those in the agriculture sector) and also started to work in the education and health sectors.

B.4 2009-2017: (Re)introduction of competitive irrigated agriculture that targets food security and is adapted to climate change

The end of the years 2000 saw all the major donors return to the agriculture and, predominantly, irrigation sectors. This was a consequence of the food crises that affected countries around the globe in 2008 and which resulted in food security[9] being reinserted into the development agenda by linking it to climate change adaptation. The renewed focus on feeding a rapidly growing global population marked a return to agricultural policies; water

[9] As illustrated by the numerous publications, seminars and conferences on 'Agricultural Water and Food Security' since 2010 and the time allocated to debating the need to improve water management to ensure world food security in national and international political arenas (such as GISA, CFE, World Water Week, G20, COP 21, etc.).

became an integral part of efforts to increase agricultural production and agriculture became vital for driving economic development in rural areas.

The idea of forging links and synergies between water, energy and food security (the 'nexus' approach) was developed and, in the wake of climate change, gave a renewed sense and legitimacy to developing hydraulic infrastructure, including large dams. Against this backdrop, governments put forward their infrastructure needs, for instance during the High Level Forum on Irrigation in the Sahel (2013) that set six countries in the Sahel the target of increasing the surface area of their irrigated land from 400,000 to 1,000,000 hectares by 2020.

The need to develop irrigated land continued to be hampered by issues around the funding, use, management and profitability of such irrigation developments. To address this, the World Bank advocated for greater private sector participation, both for raising new funding and for improving the efficiency and profitability of the irrigated systems. Public-Private Partnerships (PPP), already in common use in other sectors such as water supply, energy or transport, started to be set up for irrigation[10].

At the same time as resuming its funding of large infrastructure projects, the AFD began focusing on constructing public policies that prioritise family farms and bucked the PPP trend by encouraging strong private investor participation in developing both irrigated land and agriculture. Thus, the AFD's intervention in Morocco focused on the rural development of outlying areas (based on the terminology used in Plan Maroc Vert), unlike the Grande Hydraulique projects where the Moroccan government prioritised PPP[11].

At the same time as improving the visibility of the priority it afforded to family farms (2014), the AFD explored different methods of supporting efforts to modernise agriculture and, notably, to develop entrepreneurial family smallholdings on larger areas of irrigated land so as to help improve the profitability of rice farming, in particular (the 3PRD project in Senegal). The AFD also supported the introduction of a type of 'farmerinvestor' capable of investing in and modernising their production processes (the PADON project in Mali). However, it is still too soon to evaluate the success of these projects.

Generally speaking, over this period, the AFD's irrigation approach became more inclusive. It involved supporting irrigated agriculture while working to integrate it into the local area and markets, as well as seeking local context-specific systems that are more costeffective, use less water, are more resilient to climate change and have a smaller impact on the environment (small irrigation projects, smallscale development of low-lying areas, etc.). It is to this end, and to foster the sharing of experiences, that, in 2013, the AFD funded the creation of COSTEA, a multistakeholder discussion platform that brings together irrigation professionals from France and the global South and which focuses on these different topics.

In the last few years, the AFD, notably through COSTEA, has successfully reintroduced the role of development companies[12] into the Initiative Irrigation Sahel (2IS-PARIIS) strategy being led by the World Bank, who had not initially included them, preferring mainly to rely instead on the rise of the private sector.

In 2016, the AFD's action was enhanced by the French government, which set the AFD the ambitious target of increasing its annual commitments by 4 billion euros by 2020, thus providing all sectors, including irrigation, with the opportunity to implement larger projects using loans.

[10] Emerging Public-Private Partnerships in Irrigation Development and Management – Water sector board discussion paper series – World Bank 2007.

[11] However, it is important to note that the AFD was involved in the development of the very first PPP project in Morocco (El Guerdane).

[12] These have been substantially transformed since the reforms initiated in the 1980s.

C.
Evaluative Analysis

C.1 Relevance and Consistency

Overall, the AFD's interventions are relevant and consistent with the target countries' strategic decisions. The added value and principles upheld by the AFD are recognised and appreciated; however, the relevance of the design decisions is sometimes undermined by the operational decisions and implementation. Shortcomings in internal lesson-learning are hampering project improvements.

C.1.1 – AFD's strategic orientations are consistent with those of other donors

The AFD's role is to implement France's international solidarity and development policy in order to address the key challenges of food security, poverty reduction and climate change resilience[13]. As a result, the AFD does not define its own strategy; nevertheless, its experience and the projects it implements does influence French ODA policy.

At both international and local levels, the strategic orientations of French ODA and the AFD are aligned to those of international donors and generally follow the main trends that have shaped irrigation interventions since the 1960s, as illustrated by the reconstitution of the successive intervention logics used during the evaluation period. Thus, the AFD's strategic orientations are consistent with those of other international financial institutions (IFI), as reflected in the AFD's frequent collaborations with these institutions.

[13] Some of the key focus areas for international aid may have changed over time, but food security and poverty reduction remain constant challenges. The inclusion of climate change is, however, more recent (within the last ten years).

C.1.2 – The strategic decisions are relevant to countries' needs and adapt to these needs within the means that the AFD is willing and able to utilise

In this overall framework, the AFD's strategic and operational decisions are made in line with the expectations of the countries of intervention and with internal AFD objectives. These objectives can be of different types: political (as the implementer of French ODA policy), financial (as a financial institution) and technical (as an organisation that has specialist knowledge and extensive experience of development). In some cases, these objectives can contradict each other and create constraints that results in having to compromise on some of the AFD's operational decisions *(cf. infra)*.

For AFD interventions that are implemented only at the request of the countries in which it works, the AFD's strategic decisions must necessarily be aligned to national irrigation policies and strategies. Overall, they are therefore relevant to countries' needs. It is important to the institution to support the development of local public policy through continuous dialogue. The AFD also seeks to introduce certain specific features into its approach, predominantly in the countries in which it has been working for many years (all of sub-Saharan Africa, Madagascar, and Haiti) and in those where it holds a special position, such as in Cambodia (where it was one of the first donors to work on irrigation once the situation in the country had returned to normal). The main aspects that are specific to the AFD are: the priority afforded to family farming and the support provided to large development companies in the Sahel region of Africa as part of a joint management approach with irrigation users.

In countries in which it has been working for many years, the AFD has developed consistent long-term interventions that centre on the selected major principles it promotes while adapting its activities to the changes seen in each country. This is the case in Senegal where its intervention is aligned to local strategies (rice production) while building on new experiences (e.g. the 3PRD project to modernise agriculture by developing rural family-based entrepreneurship). In Cambodia, the AFD has progressively developed an intervention that is relevant to the country's needs, gradually adapting the

scale and type of its interventions to expectations and to changing local socio-politics, so far as available funding tools allow. Under this same approach, the AFD does not launch an intervention if local irrigation-related expectations are not aligned to its own strategy (e.g. in Morocco where, for a time, AFD focused on local development interventions rather than on Grande Hydraulique projects).

When designing and implementing projects, this consistency in terms of principles is regularly limited by local contexts and the resources that the AFD is willing and able to utilise. The intervention strategy and decisions, whether strategic, technical or operational, are thus determined by the financial resources made available. For a long time, the AFD had only limited resources and found its intervention methods restricted, particularly from the 1990s onwards when its interventions in the Least Developed Countries could only be carried out using grants. Despite the increase in its targets in terms of financial commitments, the AFD is still currently encountering problems with securing grants in particular. As these grants are limited, they are allocated by taking financial, strategic and political[14] considerations into account and not only the needs of the projects developed by the technical departments and agencies.

In some cases, therefore, the grant packages are defined prior to, and thus have no direct link with, the projects. In irrigation, where the supporting components, which are nearly all financed through grants, are vital for the success of the projects, this poses a major issue. Within this restricted financial framework, it is important to note that the AFD does have a certain flexibility, and that its staff from the ARB (Agriculture, Rural Development and Biodiversity) department are closely involved in finding solutions, securing funds from various sources[15] and building projects that are consistent with countries' expectations.

[14] In the sense of official public assistance policy and France's relationship with the countries receiving aid.

[15] Financing feasibility studies using the balance remaining from previous projects, purchase order contracts, securing finance from the study and capacity-building fund, Fonds d'Etudes et de Renforcement des Capacités (FERC), and using certain NGO funds (such as FISONG) to finance pilot projects, etc.

C.1.3 – The generally relevant design decisions are regularly undermined by poorly anticipated implementation issues and sometimes unsuitable operational decisions

The design decisions for AFD irrigation projects are broadly relevant when assessed in relation to the general principles of each intervention period. They always seek to meet countries' demands and adapt to the local context. However, the projects are regularly undermined by an insufficiently analysed reality on the ground, by implementation issues that are difficult to anticipate and, in particular, by a lack of (human, financial, technical or timerelated) resources for project implementation. Thus, implementation shortcomings can make apparently relevant concepts unsuitable (e.g. empowering users to undertake tasks for which they do not have the resources to carry out) or insufficient (e.g. requiring local authorities to implement supporting components when they lack the appropriate resources and not providing them with adequate support). This issue is not specific to the AFD and can be seen in the majority of irrigation projects that, due to their complex nature, require other components to be implemented at the same time to ensure their success, including components on infrastructure and infrastructure management, agricultural production and subsectors, etc.

Generally speaking, the AFD seeks to develop an increasingly comprehensive approach that incorporates all aspects of irrigated agriculture. This results in projects (or groups of projects) that appear more consistent, but which are also more complex. The typical length of an AFD project (5 years) is generally too short for this type of approach, the success of which is dependent on major changes being made to local production and marketing systems. The development of farming systems usually requires more time, especially if ownership of irrigation infrastructure and new crop management sequences is to be ensured.

The role of the AFD teams is currently more geared to setting up projects than to making operational and, notably, technical decisions. However, project team leaders seek to remain involved in the operational aspects, even if their involvement varies depending on the activity being implemented. Thus, for example, the teams tend not to be very involved in infrastructure-related technical decisions and rarely question their relevance. Greater emphasis is given to

supporting actions at the project design stage[16]. The opposite is often the case when it comes to technical studies and project implementation: efforts mainly focus on infrastructure meaning that not enough resources are allocated to the institutional, social and economic components. As a general rule, the construction work receives the budgeted resources, and sometimes more, whereas resources allocated to the supporting activities are often insufficient. This highly frequent mismatch between construction work and supporting activities is, however, not specific to AFD projects.

The observed project limitations are therefore more commonly due to operational decisions than to design decisions. The most frequently encountered implementation issues include:

- Delays that accumulate from the project appraisal stage through to its implementation, and among all stakeholders, which means that some activities cannot be carried out or are rushed. It is the support to farmers that is usually most affected by these delays.

This raises questions about the relevance of the project durations[17] and the organisation of the implementation timetables of the different components.

- The frequently underestimated budgets allocated to the supporting components despite sector teams being fully aware of their importance. These budgets are underestimated for reasons of: complexity (initial studies struggle to define them correctly and rarely make use of past experience); the target country's strategy and perception (preference for construction work with more easily quantifiable results and scepticism about support activities); funding instruments (few countries are willing to take on debts for this type of intervention and few grants are available); and sometimes for internal financial reasons (e.g. seeking a leverage effect to maximise lending against a given grant amount).

This raises questions about lesson-learning, the suitability of the financing instruments used, the projects' duration and about AFD's public policy dialogue with governments to improve the supporting components.

- Shortcomings in the implementation of supporting activities due to the lack of resources provided to local and international operators (studies, construction work, technical assistance, etc.) or due to a lack of suitable skills and/or capacities.

This raises questions about the operational decisions made with regard to the types of operator used, such as the methods used to select these operators and the resources or support provided to them. It must, however, be noted that these decisions are not always made by the AFD but by the local contracting authorities; it is, therefore, through discussions with these contracting authorities that AFD can influence decision-making.

- Inadequate project monitoring when the teams in charge of this monitoring (usually part of the local authority) have limited resources.

This raises questions about the way the project management system is designed as there is no dedicated project team. This is notably due to the fact that the AFD is eager not to take over from the local contracting authority but to develop their capacities. However, this system, which in principle is highly relevant, is not always aligned with a relevant operational decision once the time comes to implement the project.

- The low level of AFD involvement in monitoring project implementation, which is often limited to one visit per year by the project team leader, whereas other donors conduct more frequent visits and implement more robust monitoring by local teams.

This raises questions about the resources that the AFD allocates to project monitoring or to ensuring that monitoring is carried out by the contracting authorities.

[16] Without always going into detail with regard to their implementation.

[17] Which are determined by financial obligations (notably the maximum waiting period in the loan repayment schedule).

C.1.4 – The quality of the project appraisal and feasibility assessment processes[18] varies and depends more on individual preferences and experiences than on a systematic approach

The project appraisal process, while requiring relatively standard documents to be produced, provides the project teams with great autonomy; however, this autonomy is exercised within a highly restrictive framework when it comes to deadlines and financial resources, and thus the technical resources available. The autonomy given to the teams can be an advantage as it encourages them to work to the best of their ability with limited resources; however, it also poses a risk as many of the decisions rest solely with the leaders of the project team.

The increasingly ambitious objectives given to the AFD over the last few years do not seem to have been accompanied by a corresponding increase in the staff and resources allocated to appraising each project. This is also the case for irrigation projects, which, as highlighted above, are particularly complex.

When resources are available, more and more of the study work is outsourced. This makes it possible to meet the increasingly tight project appraisal deadlines and make use of greater technical expertise; however, these studies are also sometimes carried out with resources that are ill-suited to the issues and complexity of the topic at hand. In this situation, the project's feasibility may be inadequately assessed. This is particularly true of major sector projects that contain a large number of components. The feasibility study assesses the overall feasibility of the project, but does not accurately assess the implementation conditions of each component. This part of the assessment is conducted during the project, once the implementation method and resources have already been defined.

Despite outsourcing certain tasks, the project team remains responsible for the quality of the appraisal process and its outcome. However, while, during the project design phase, external contractors can provide the targeted technical expertise that is perhaps lacking internally, if the project team does not have the time to assimilate the proposals made, there is no guarantee that the project will be accurately defined.

In all instances, the quality of the project design primarily hinges on the project team and team manager, as well as on their knowledge of the country, the local relationships that have been forged, the support received from and the skills of local office staff, and the experiences and preferences of each manager and team member. The project appraisal steps and deadlines leave little time for technical analysis. Furthermore, over the last 10 to 15 years, ARB department staff profiles have been more generalist and administrative than technical, although the ARB department has sought to staff its teams with people with technical skills in recent years, particularly with regard to irrigation.

The constraints encountered by the AFD teams at the appraisal stage *(cf. supra)* and when formatting the project appraisal documents generally results in general justifications that, although coherent, do not sufficiently develop the project stages and causal relationships. The intermediate outcomes, in particular, are insufficiently or not at all developed, notably in the logical frameworks, and this can lead to the different activities and stages being poorly designed. This is also linked to the lack of lesson learning *(cf. infra)*.

More specifically, an economic analysis is no longer systematically required during the project appraisal. It is rarely carried out for irrigation projects, despite the economic and financial implications involved. In removing the economic analysis, the AFD is depriving itself of a useful irrigation project design and structuring tool. The economic analysis is used, not to justify going ahead with a project, but to more fully describe the project's feasibility conditions and thus to review its design in terms of the resources that have been allocated. By highlighting the gaps between objectives, activities and resources, this type of analysis helps to design projects that fit better into the available budgets.

C.1.5 – The lack of lesson learning mechanisms risks making it difficult for the AFD to maintain a good level of internal expertise and the ability to innovate

There are few internal lesson learning processes in place within the ARB department. For irrigation, knowledge production, often using old information from outside the AFD, is restricted to a

[18] This paragraph covers the appraisal process and feasibility studies carried out to define the project. It does not include the technical studies conducted during the project.

few representative countries. On certain projects, specific funding has been allocated to carrying out highly targeted lesson learning exercises (particularly in Cambodia on the Prey Nup and Stung Chinit projects, as well as a cross-sharing of experiences in Mali, Cambodia and Haiti for the ASIRRI project).

The number of (internal and external) project evaluations carried out has been increasing sharply over the last few years[19]. However, it is important to note that, in the majority of cases, evaluations are conducted shortly after the end of the project, which makes it difficult to properly assess the project impacts (some of which will only become apparent after several years); nor is it long enough to be able to properly review the project implementation methods.

However, these activities (lesson learning exercises and evaluations) do not appear to be integrated into a formal internal knowledge development and sharing process, although the ARB department has introduced initiatives to foster knowledge sharing and dissemination, including ensuring people work in pairs on certain projects, as well as mentoring and setting up COSTEA in 2013.

With regard to internal feedback, the only document that the evaluation team identified as bing systematically produced is the project completion report (PCR), the technical aspects of which are poor. The PCR performs an administrative function, whereas one would expect it to contain a concise description of the project results and the main difficulties/obstacles encountered. The documents that contain the most project-related information are the checklists, but they are difficult to make use of.

The lack of lesson learning within the AFD risks making it difficult for the AFD to maintain a good level of internal expertise and the ability to innovate.

C.1.6 – Partners clearly identify and recognise the added value of the AFD

The added value of the AFD is clearly identified and recognised by its institutional technical (operational) and financial partners. This added value comes notably from the quality of the dialogue that the AFD maintains with its partners in terms of conceptual breadth, openness and availability. The high quality of this dialogue is enhanced by the fact that there is continuity in the AFD's interventions within each country (presence, themes and key contacts). Even in countries of intervention where the AFD is less or not continually active, the AFD staff are generally considered to be attentive and interested in learning about the country context. The AFD's flexibility and adaptability when using the various financial tools it has available (loans and grants) are also recognised as being of value, particularly for keeping pace with socio-economic developments in each country.

[19] This goal was set out in the new 'Research, Innovation and Knowledge 2019-2022' strategy that states that 50% of AFD projects should be evaluated by 2020 (75% for projects in the Sahel region).

C.2 Effectiveness

Overall, the anticipated results have been achieved, yet their effectiveness varies depending on whether they relate to infrastructure or supporting measures. The description of the anticipated results is often too general, but this is improving as time goes on.

C.2.1 – A sometimes overly general description of results to be achieved, but which is improving as time goes on

The description of the results to be achieved is often too general and vaguely defined. There are descriptions contained in AFD documents produced by external service providers (in feasibility studies, for example), but these are not systematically incorporated into the other appraisal documents. Projects suffer from shortcomings in their monitoring and evaluation systems, which should make it possible to assess both the progress made in achieving the results and project effectiveness (particularly in the case of project 'clusters'). That being said, as a result of the greater focus on evaluations since 2007 and with interventions being carried out in clusters, the description and monitoring of the anticipated results are improving, but have not yet reached the level required.

C.2.2 – Achievements and results that differ in accordance with the components of each project

Facilities built

The AFD's interventions that involve constructing water harnessing and conveyance facilities are generally effective as the installations built are consistent with those initially planned and enable the goal of expanding irrigated land areas to be met, albeit in varying proportions and timescales. However, difficulties can be encountered on certain projects. These primarily relate to relatively frequent delays in facilities construction, but can also involve shortcomings in technical studies and the age of certain feasibility assessments. Although the AFD cannot be held solely responsible for these difficulties, these are issues that can hamper the achievement of the anticipated results.

Institutional aspects

The institutional aspects of the AFD's interventions are less effective. Management structures are created but contain certain operational weaknesses. Water service provision does not always achieve the level of effectiveness initially planned. However, this level depends on a wide range of factors. The low involvement of irrigation users in the institutional aspects of the associations, the low levels of fee recovery and poor internal technical skills weaken the irrigation users' associations, which creates a vicious circle from which they cannot escape. This is partly due to the time lag between completion of the facilities construction phase and the start-up of the irrigation users' associations and, to a lesser extent, to the quality of the support provided by the operators, as well as to the lack of attention and resources sometimes allocated by governments, who sometimes see these associations as competing with them for control of the resource.

Nevertheless, despite these issues, it is to be noted that irrigation users (via the associations) have developed the ability to adapt and find local (albeit suboptimal) solutions for conducting the maintenance required to ensure continuity of service.

Supporting measures

The lack of synchronisation between the construction work (irrigation facilities) and irrigation users' association support activities leads to weak management (of some) irrigated areas by the users. The support provided is theoretical and insufficiently focused on practices. The irrigation users' associations warrant support that can be extended once the irrigation facilities are up and running. Although the AFD specifically focuses on this during the appraisal phase, the reality observed on the ground contrasts sharply with the stated aim. This is the case on the PMSIA 2 project in Morocco, for instance, where the irrigated area management model is still far from being clearly defined despite there being just a few months remaining before the facilities are commissioned and the project comes to an end. Nevertheless, it is important to bear in mind that the results relating to the supporting measures are those for which the effectiveness

of the intervention is more difficult to assess, even several years after the end of the project, such is the time it takes to put the social and institutional structures in place and the inertia of the public management bodies to adapt to the anticipated changes.

Agricultural development and socio-economic conditions

The results of interventions to develop agriculture and improve farmers' socio-economic conditions are mixed, and vary in accordance with the country and region. Even if the objectives are not always met at the end of the project, the construction of irrigation facilities remains a key production factor for developing agriculture, and farmers benefit from this by developing irrigated areas themselves, including after the end of the project. In contrast, the components to support this agricultural development (cultivation techniques, crop diversification, etc.) are rarely effective and do not enable farmers to produce the desired crop yields; yields which formed the basis of the project feasibility studies. Finally, the down-stream farming sectors are generally overlooked and offer few prospects to farmers. This component appears to form part of parallel projects that were not fully covered by the scope of this evaluation.

C.3 Efficiency

The efficiency of the AFD's projects is deemed to be generally satisfactory and relatively stable over time; however, there is a structural imbalance in the budgets that is to the detriment of the supporting measures.

Generally speaking, assessment of project efficiency is poorly documented, including in project evaluations, and remains poorly understood by stakeholders, who focus more on the relevance, effectiveness and impact criteria.

C.3.1 – Unit costs are generally consistent with the standard unit costs of developers and other donors

The comparative analysis of unit costs is instructive, even if its findings need to be treated with caution. Due to the heterogeneous nature of the projects, both in terms of type (gravity-fed irrigation, pressurised irrigation) and geographic and socio-economic context, it is not always clear whether the costs cover the same elements. Broadly speaking, it appears that the AFD unit costs are generally aligned to the costs assigned by the other donors and by the development companies. However, cost overruns were recorded in several cases, some of which were large. These could be due to both internal factors (oversized design, poor understanding of the complexity of the work involved) and external factors (price inflation, currency devaluation).

C.3.2 – AFD projects are managed efficiently, with variations that depend on the type of intervention

The efficiency of AFD project management is often satisfactory, despite sometimes long delays regularly being recorded during project implementation. These delays are most often due to procurement procedures that are considered cumbersome, vague and sometimes too centralised, as well as to unsuitable planning or to poorly-qualified contracting authorities. Nevertheless, in most cases, the AFD's flexibility, capacity to adapt and responsiveness have helped ensure that any delays remain within acceptable limits and have minimised the impact of any negative developments. The continuity of the partnerships established by the AFD has helped increase efficiency.

It is also clear that efficiency varies for the different types of activity. While the efficiency of development work implementation activities is generally satisfactory, it is less so for the supporting activities and can even be considered unsatisfactory for the institutional components given that the poor results obtained are not commensurate with the efforts made and the length of the activities concerned.

C.3.3 – An imbalance in the structure of the budgets that favours infrastructure over supporting measures

The recurrent imbalance in the structure of AFD project costs that favours infrastructure investment over supporting measures does not always guarantee that this infrastructure will be optimally and efficiently used. This imbalance has particularly caused issues on projects whose objective was to support participatory irrigation management methods that required substantial supporting measures. This under-funding of supporting measures seems to be predominantly linked to the financial tools used as support is often financed through grants. It is to be noted that the AFD is a development bank that first and foremost provides loans. In addition, governments are loathe to finance supporting measures through bank loans.

C.3.4 – An efficiency that is not or only slightly improving over time

Lastly, it was not possible to clearly identify a positive improvement in efficiency over time, whether in regard to unit cost reductions, cost structure or project management. Interventions are not always comparable as their components and implementation methods are not the same. The 'cluster effect', namely improved efficiency on certain projects in certain countries due to the assimilation of feedback and lessons learned from previous projects, was not apparent in the sample assessed for this evaluation.

C.4 Impact

Impacts that are difficult to assess and quantify, but which can be seen in irrigation users' socio-economic conditions and in public policy.

C.4.1 – Impacts remain insufficiently assessed

AFD project designs and evaluations still fail to take impact sufficiently into account. The impact monitoring indicators are often generic and focus on development work rather than on assessing improvements to farmers' socio-economic conditions or 'soft' project aspects.

Broadly speaking, when looking at the entire project cycle, project impact appears to be a top priority for the AFD but the tools required to rigorously assess the impacts of a sufficient number of projects are not in place (there is notably a lack of baselines).

None of the AFD's irrigation sector projects have undergone a real impact assessment using counterfactual methods, despite the fact that this type of approach would provide the AFD with extremely robust arguments for implementing irrigation projects (impact on the end beneficiaries' socio-economic conditions) and the strategy orientations required for promoting family farming.

C.4.2 – Impact on farmers' living conditions and socio-economic conditions

There is a consistent body of evidence that suggests that AFD-funded projects have a positive impact on farmers' living conditions (and those of the rural communities targeted). To supplement supporting measures or irrigated area rehabilitation work, the AFD has developed a range of more cross-cutting activities on some projects (social and road infrastructure, in particular) that have helped to heighten the impact that irrigation projects have had on living conditions in rural areas.

Unfortunately, it is difficult to establish a clear link between AFD-funded projects and changes in the living conditions of the rural communities targeted as the beneficiaries' socio-economic baseline was poorly defined at the start of the projects and the monitoring and evaluation mechanism is too limited. A (slight) positive change can be seen, notably for the project clusters.

C.4.3 – Impact on land use and water resources

The impacts of AFD interventions at the national level essentially involve influencing security of land tenure[20] and water allocation policies. Certain flagship projects have had a strong influence on security of land tenure policy

[20] Notably through the CTFD whose work was extended through COSTEA.

in their countries of implementation: introduction of land tenure offices around Lake Alaotra (Madagascar), securitisation in the Office du Niger area (Mali), Senegal, etc. The interventions' influence over water allocation policies is more diluted, stemming from the success of pilot projects, for example, rather than from deliberately planned activities.

C.4.4 – Impact on the commons[21]

The commons theoretical framework was developed quite recently (2015) within the AFD. The term 'commons' is missing from the operational vocabulary of irrigation projects, even in the most recent projects developed. The concept consequently does not seem to be particularly used in project design and implementation. As a result, the project documents, feasibility assessments and technical studies reviewed for this evaluation do not identify the commons as a separate topic.

However, for the 'irrigation commons', i.e. in relation to managing hydro-agricultural installations and for managing water in irrigated areas, in the vast majority of cases, it would be fair to say that there were no commons in the Ostromian sense of the term prior to the AFD interventions[22].

A review of the management of the infrastructure developed through the interventions, commonly referred to as the 'social management of water', reveals that, apart from a few specific cases, results for this aspect have been mixed, as they have been for other donors. Despite the priority afforded by the AFD to this aspect, the supporting programmes are often not sufficient to enable the desired results to be achieved or sustained. Projects to provide management support are made all the more difficult to implement by the fact that, in many countries, local public policies are still centralist and built on a vision of irrigation that is more technical than social.

Consequently, the challenge for the AFD with regard to irrigation is not so much to identify or recognise the commons that exist in its areas of intervention, but rather to determine, for each context, how to make use of the concepts and experience of the commons to develop intervention methods that will culminate in sustainable and efficient irrigation facilities management models being put in place. This task is yet to be carried out as discussions are still ongoing within the AFD. The work conducted by the CTFD since 2014 on land commons could be used as a starting point[23].

A substantial documentation, analysis and lesson learning exercise needs to be carried out on the management models (principles, working methods, results) set up by irrigation projects funded not only by the AFD but also by other stakeholders before the AFD can both develop a commons-based dialogue with the governments receiving aid, and provide the technical teams with guides (or operational tools) and the (technical, human and financial) resources required to implement them throughout the project implementation period.

C.4.5 – Impact on public policy[24]

The AFD has contributed to developing public irrigation and agricultural water policy in certain countries through longterm interventions and a flexible approach based on dialogue and promoting coherent principles.

On irrigation projects, the AFD mainly works to support a family farming model, which is at odds with the position adopted by many other donors and (in some cases) governments. Nevertheless, the AFD's capacity to change farming models directly through irrigation projects varies widely and depends mainly on land tenure in each country of intervention.

The widely held opinion that countries highly dependent on international development assistance apply only the principles promoted by international financial institutions in their public policies has been called into question by recent research on development anthropology. In the countries reviewed for this evaluation, the situation is very different as the AFD's influence can take a wide range of paths to affect or change irrigation-related public policy.

[21] This aspect was covered as a specific case study that is available online.

[22] Irrigation commons have been documented over the last 20 years (for example, in Bolivia or in Haouz de Marrakech in Morocco) but none of them are located in the area covered by AFD projects.

[23] Land & Development Technical Committee, 2017, Opportunités et défis d'une approche par les communs de la terre et des ressources qu'elle porte, Paris, Ministry of Europe and Foreign Affairs (MEAE), Agence française de développement (AFD), 86 p

[24] This aspect was addressed as part of a specific case study that is available online.

The AFD's involvement in irrigation public policy has varied considerably over time and by geographic region. The AFD's influence on public policy in some countries has come about more through activities developed progressively as the opportunity has arisen, or been created, rather than as a result of any clear willingness or predefined strategy.

The AFD is better able to influence public policy in countries in which it has been working continuously, for a long time, and with a coherent set of projects that are aligned to the same themes and principles. Such an influence also requires relationships of trust to be built with high-ranking focal points. The quality of the dialogue and wide range of funding methods also play a key role.

C.5 Sustainability

The sustainability of AFD-funded projects has been enhanced, assisted by the AFD's capacity to plan for the longterm in certain regions; however, there is still too little attention being paid to the social and environmental aspects of sustainability.

Sustainability is a key principle of AFD interventions in the irrigation sector, being introduced progressively between 1992 and 2008 and then systematically from 2009 onwards (period 3 of the intervention logic). The technical and institutional aspects of sustainability receive most coverage in the project sheets, PCR and evaluations, followed in descending order by economic, social and environmental sustainability.

C.5.1 – Sustainability is being increasingly better addressed by the AFD, and this from the project design stage onwards

Technical sustainability of the hydro-agricultural infrastructure has been either maintained or improved through the AFD-funded interventions due to improvements in the way technical models have been adapted to the different contexts. Through a combination of experience and longterm collaborations, the AFD has been able to participate in setting the main irrigation system design trends (irrigation networks, types of water pumping and energy sources, etc.) to foster the development of more sustainable technical options. At the same time, the AFD has achieved this without taking over the national contracting authorities' role of validating the detailed technical options proposed by consultancy firms. Despite the importance of technical sustainability, the evaluation has revealed that there are no specific indicators for monitoring and evaluating this aspect. Thus, in the absence of anything more specific, technical sustainability is assessed by reviewing the functionality of the facilities several years after the end of the project. However, this approach is not entirely satisfactory as the fact that the facilities work does not necessarily mean that their technical sustainability is assured, particularly if technically suboptimal adaptations have been made to keep them in working order (whether technical modifications or water management arrangements).

C.5.2 – Constant efforts being made to improve the technical sustainability of AFD interventions

The level of usage of the irrigated areas is generally good several years after the projects and sometimes exceed the levels of usage recorded at the end of the projects due either to the cultivated area being expanded or to the introduction of several crop cycles per year. In instances where the irrigated areas (or parts of certain irrigated areas) are under-utilised, this is predominantly due to shortcomings in their design, development and maintenance (anthropogenic causes) or to exceptional flooding (natural causes). As far as the design and development shortcomings are concerned, it is important to bear in mind that, in reality, the AFD has only limited oversight of the work carried out under the national contracting authority, and this only in cases where the AFD (head or local office) has the time and technical skills required to conduct monitoring in each country.

C.5.3 – Mechanisms for funding operating and maintenance costs, a sustainable aspect that is a feature of AFD interventions

Establishing mechanisms to fund the operation and maintenance of the infrastructure built is a key sustainability factor and is a feature of the interventions included in the Social Water Management approach prioritised by the AFD. To facilitate the introduction of these fee-based mechanisms, the AFD has often drawn on the experience of French regional development companies (SAR: Sociétés d'Aménagement Régionales) to inform its dialogue with the SAGI and to serve as a template for management partners. The fee recovery rates vary widely. They are higher within administrative, industrial and commercial public entities, but lower when infrastructure is managed by collective organisations such as water users' associations or economic interest groups as they do not all have the same resources and are unable to exert the same pressure on irrigation users. Despite the action undertaken by the AFD, government support remains insufficient, particularly with regard to setting up maintenance funds. These commonly encountered situations reduce the sustainability of the interventions. Yet, they also raise questions about what level of recovery is acceptable for AFD-funded projects (which means defining an 'acceptable' level of infrastructure degradation). Meanwhile, the infrastructure renewal costs (notion of replicability in AFD strategic documentation) cannot be covered by farming. This need for recurrent re-investment has been recognised, but needs to be revisited as there is still high demand for complex hydro-agricultural infrastructure within the partner countries (importance of the water supply – energy – food security nexus).

C.5.4 – Organisational and institutional support is seen as a prerequisite for the sustainability of interventions

The implementation of successive or concurrent projects ('cluster' concept) has improved the sustainability of interventions as long-term organisational and institutional support has been provided. The four pillars of success of AFD's support to irrigation users are: (i) supporting irrigation users organisations/associations (legal formalisation, good management, accounting, etc.); (ii) developing back-up support institution networks; (iii) supporting managers to help make institutional changes that foster irrigation users' involvement in water management; (iv) supporting changes to legislative/regulatory frameworks to enable types of collective organisation. The AFD has conducted interventions that have been successful (e.g. in West Africa: Senegal and Mali; and in South-East Asia: Cambodia – even if the AFD's contribution in some regions needs to be viewed in relation to other partners), as well as interventions where the AFD has not been able to effect the changes required (e.g. in Morocco), which highlights the importance of taking context-specific features into account.

The majority of irrigation users' organisations (groups, associations, umbrella organisations) supported by the AFD are still active many years after the projects have ended but have operational weaknesses. To evaluate sustainability, it is essential to be able to assess how well the organisations function. However, the lack of specific indicators in the AFD monitoring and evaluation system means that this assessment can only ever be subjective. In the stance adopted by the AFD to promote social water management, the objective of having fully functional collective organisations is not always realistic as the intervention period may not be long enough to enable effective learning. In order to evaluate sustainability, achievements to be reached by the end of the project should be defined to ensure that, even if they not fully functional, organisations are on the right development path. Thus, insufficient effectiveness at the end of the project does not necessarily mean that organisations cannot be successful in longer-term, provided that the arrangements in place continue to help them improve.

C.5.5 – Too little consideration of social and environmental sustainability issues?

The evaluation of the AFD's interventions in the irrigation sector reveals that, instead of being directly taken into account, the social and environmental aspects of sustainability are considered only indirectly or in a diffuse way. For instance, social sustainability is addressed through approaches to formalise land use in irrigated areas, or through regional development activities that are designed to be more inclusive. Environmental sustainability has been identified as being a key issue in AFD interventions, but this has also not been effectively translated into tangible action. Within the irrigated areas, the impacts of the development work on plant cover are generally not offset by reforestation. The AFD's efforts to improve the environmental sustainability of its interventions are conducted

at a larger scale, for example through its involvement in the concerted management of large rivers in both Africa (Senegal, Niger, Congo) and Asia (Red River). In addition, the AFD promotes the development of environment-related jobs and activities among its national contracting authority partners, encouraging the recruitment of environmentalists, the completion of preliminary environmental assessments and, more recently, the delivery of environmental management training.

D. Recommendations

D.1 Cross-Cutting Recommendations

The evaluation has revealed a number of key points for improving project quality, relevance and effectiveness. These can be grouped together into four categories:

- Project duration: the evaluation has shown that irrigation project results tend to be more effective and stronger over a long intervention period. This also helps improve the sustainability of the infrastructure and related facilities. This 'minimum period' of between 8 and 10 years has practical implications for both the approaches and financial tools used.

- Prior analysis: the evaluation has revealed the need for the AFD to improve the depth and relevance of its preliminary studies, and also to create a local and multidimensional (political, historical, social and economic) knowledge-base to enhance the AFD's local knowledge of the regions in which it regularly works. The aim is to progressively switch from using intuitive and relatively informal knowledge of the intervention contexts, an approach that relies heavily on the investment of the ARB teams and country office, towards building a more formal, better structured and regularly updated knowledge-base.

- Public policy dialogue and stakeholder capacity-building: the evaluation has confirmed the importance of holding public policy dialogue throughout the project cycle and intervention. This dialogue has enabled the AFD to jointly build action frameworks with the national contracting authorities that take certain AFD-supported approaches into account, such as an irrigation development model that respects family farming. The AFD's influence on public policy has often been achieved by taking up opportunities as they arise, rather than as a result of any predefined strategy.

- Assessment of effects and impacts: one of the evaluation's findings is that the effects and impacts of irrigation projects develop over the longterm. The evaluation has also found

that the AFD currently struggles to document, monitor and correctly assess these effects and impacts. Improving both the project cycle's monitoring and evaluation framework and lesson-learning processes should provide the AFD with solid arguments for implementing irrigation projects (as these would be based on the rigorous assessment of the impacts, particularly socio-economic impacts).

Recommendation 1 : Conduct irrigation sector-related economic, political, and socio-logical analyses in the countries of intervention.

Recommendation 2 : Adapt project planning, approaches and resource utilisation to the long project implementation periods.

• **Prioritise longer project cycles,** particularly by enabling the development of successive projects (some of which overlap).

• **Separate the technical and institutional component implementation periods to ensure that the institutional support components** (support to irrigation users, Social Management of Water, support to agricultural sectors, etc.) are implemented when required and are still operational for a minimum of 3 years after the infrastructure is commissioned.

Recommendation 3 : Establish and contribute or align projects to public policy dialogue.

Recommendation 4 : Better anticipate, assess and monitor the socio-economic and agricultural effects of projects.

• **Introduce a systematic project results, effects and impacts monitoring and evaluation framework that particularly focuses on the socio-economic and agricultural effects (income, production, yields, access to social services),** which remains in place over the long-term (beyond the length of the projects) and which is set up through the AFD's contracting authority partners.

• **Ensure project evaluations and mid-term evaluations on project funding** (particularly for long project cycles) are systematically carried out.

• **Improve the use of lessons learned from the projects.**

D.2 Strategic Recommendations

The evaluation has shown that irrigation, a 'sector' that bridges a number of key themes (agriculture, water, the environment, rural development) has never had its own separate strategy within the AFD. This has undoubtedly provided the AFD with a certain amount of flexibility that has enabled it to adapt its interventions in response to the context of each country.

The evaluation has also revealed that the AFD has built a strong identity through the way in which it designs and implements irrigation projects and, as a result, there is a need to formalise, not a separate strategy, but rather policy elements that ensure consistency between the AFD's intervention principles. The findings of this evaluation, as well as the work conducted by COSTEA, could be used to form the basis of these policy elements, and this activity could also provide an internal lesson learning exercise for the AFD.

Recommendation 5 : Produce a technical note that defines the AFD's key intervention principles.

This technical note would have three main objectives:

- To clarify the intervention principles applied by the AFD to facilitate dialogue with French stakeholders and with partners in the countries of intervention;
- To make use of the AFD's experience, its long history of working in the irrigation sector and its flagship interventions, and build on its knowledge and skills;
- To ensure consistency with the principles contained in the AFD's Strategic Orientation Plan: climate, biodiversity, social ties, local development, and gender.

This technical note will enable the AFD to define, affirm, assert and align the AFD irrigation sector intervention principles.

D.3 Operational Recommendations

The recommendations listed in this section are drawn from the evaluation findings and, notably, from the cross-cutting case studies. These recommendations cover four key areas of irrigation project components for which capacity-building and improvements to the approaches are required:

- The technical aspects, such as they are;
- Social engineering and especially its funding methods;
- Capacities to engage in public policy dialogue;
- Identifying and supporting the commons.

Recommendation 6 : Improve the integration of projects' technical, institutional, socio-economic and legal aspects in the AFD's project appraisal studies.

Recommendation 7 : Ensure end-users of the facilities and services are consulted and involved as much as possible from the feasibility study and project design phase onwards, including on aspects that will influence technological decisions, the type of infrastructure to be built and the technical, economic and financial conditions of their operation and maintenance.

Recommendation 8 : Reinstate the project economic analysis and consider this an evolving tool to be used at various stages of project development.

Recommendation 9 : Adapt the infrastructure to the context.

Recommendation 10 : Increase and secure funding for all project components, and notably for the institutional and social supporting measures.

Recommendation 11 : Define and support the commons during irrigation projects.

Glossary

A **project** conducted by the AFD is identified by a specific grant and intervention logic that covers a given implementation period. A project can be composed of several agreements, i.e. several legal financing agreements (an agreement is created per beneficiary and/or per financial instrument, regardless of whether this relates to a loan or a grant).

An **intervention** is a succession of projects within the same area and that have the same aim. Interventions are not formalised or recognised in AFD procedures. They have been reconstituted for the purposes of the evaluation. An intervention can include several projects.

Acronyms and Abbreviations

2IS	Initiative Irrigation Sahel, a World Bank-funded programme
3PRD	Projet de Promotion de Partenariats Rizicoles dans le Delta (Senegal)
ABN	Agence de Bassin du Niger
ADB	Asian Development Bank
AES	AFD's Environment and Social Support, Sustainable Development Division
AFD	Agence Française de Développement (French Agency for Development)
AfDB	African Development Bank
AFEID	Association Française pour l'Eau, l'Irrigation et le Drainage
AI	Associations d'Irrigants (Irrigation Users' Association)
AIDEP	Appui à l'Agriculture Irriguée et au Développement Economique de Podor Project (Senegal)
AIPA	Association des Irrigants de la Plaine de l'Arcahaie (Haiti)
APEFAM	Projet d'Appui à la Promotion des Exploitations Familiales dans la région de Matam (2 phases) (Senegal)
ARB	AFD's Agriculture, Rural Development and Biodiversity Division
ASA	Association Syndicale Autorisée (France)
ASAMM	Amélioration de la Sécurité alimentaire et Appui à la Mise en Marché Project (Matam, Senegal)
ASIRRI	Projet d'Appui aux Irrigants et aux Services aux Irrigants (funded by FISONG)
AUEA	Association d'Usagers de l'Eau Agricole (Morocco)
AVSF	Agronomes et Vétérinaires sans Frontières, international development NGO
BNDA	Banque Nationale du Développement Agricole
CACG	Compagnie d'Aménagement des Côteaux de Gascogne
CASL	Compagnie Agricole de Saint Louis (Senegal)
CCCE	Caisse Centrale de Coopération Economique – former name of AFD from 1958 to 1992
CCFOM	Caisse centrale de la France d'Outre-Mer – former name of AFD from 1944 to 1958
CDI	Charte du Domaine Irrigué (Senegal)
CFD	Caisse Française de Développement – former name of AFD from 1992 to 1998
CFMA	Centre de Formation au Machinisme Agricole (currently under development) (Senegal)
CGER	Centre de Gestion et d'Economie Rurale (Senegal)

CIFA	Centre Interprofessionnel pour la Formation aux métiers de l'Agriculture (Senegal)
CILSS	Comité Permanent Inter-États de Lutte contre la Sécheresse au Sahel
CIRAD	Centre de Coopération Internationale en Recherche Agronomique pour le Développement
CIRIZ	Centre Interprofessionnel du Riz (Senegal)
CISIS	Cambodian Information System on Irrigation Schemes (Cambodia)
CNCAS	Caisse Nationale de Crédit Agricole du Sénégal (Senegal)
COPIL	Comité de Pilotage / Steering Committee
COSTEA	COmité Scientifique et Technique Eau Agricole
CPS	Centres de Prestations de Services (Mali)
CST	COSTEA Scientific and Technical Committee
CUP	Communauté des Polders de Prey Nup (Cambodia)
DAC	Development Assistance Committee (OECD)
DE	Decentralised Evaluation
DIAEA	Direction de l'Irrigation et de l'Aménagement de l'Espace Agricole (Ministry of Agriculture) (Morocco)
DPA	Directions Provinciales de l'Agriculture (Morocco)
DRA	Directions Régionales de l'Agriculture (Morocco)
EEA	AFD's Water and Sanitation Division
EU	European Union
EVA	AFD's Evaluation and Learning Department
FAI	Fonds d'Appui aux Intercommunalités (Senegal)
FAUEA	Fédération d'Associations d'Usagers de l'Eau Agricole (Morocco)
FEPP	Fonds d'Etudes et Préparation de Projets
FERC	Fonds d'Etudes et de Renforcement de Capacités
FFEM	Fonds Français pour l'Environnement Mondial
FISONG	Facilité d'Innovation Sectorielle pour les ONG
FNDASP	Fonds National de Développement Agro Sylvo Pastoral (Senegal)
FWN	Farmers Water Network (Cambodia)
FWUC	Farmer Water User Committee/Community (Cambodia)
GCF	Global Climate Fund
GH	Grande Hydraulique: generic name for large public irrigated areas managed by the ORMVA (Morocco)
GIS	Geographic Information System
GOANA	Grande Offensive Agricole pour la Nourriture et l'Abondance (Senegal)

GPI-PIM	Gestion Participative de l'Irrigation – Participatory Irrigation Management
GRDR	Groupe de Recherches et de Réalisations pour le Développement Rural dans le Tiers Monde
GRET	Groupe de Recherche et d'Etudes, international solidarity and development NGO
IDB	Inter-American Development Bank
IFI	International Financial Institutions
IPAR	Initiative de Prospective Agricole et Rurale
IRAM	Institut de Recherches et d'Applications des Méthodes de développement, a non-profit consultancy firm
IRD	Institut de Recherche pour le Développement
ISC	Irrigation Service Center (Cambodia)
IsDB	Islamic Development Bank
ISRA	Institut Sénégalais de Recherche Agronomique (Senegal)
IWRM	Integrated Water Resources Management
JICA	Japanese International Cooperation Agency
LDC	Least Developed Country
MAE	Ministère des Affaires Etrangères / Ministry of Foreign Affairs (France)
MoAFF	Ministry of Agriculture, Forestry and Fisheries (Cambodia)
MCA	Millennium Challenge Account
MCC	Millennium Challenge Corporation
MDG	Millennium Development Goal
MEAE	Ministère de l'Europe et des Affaires Etrangères / Ministry of Europe and Foreign Affairs
MoWRAM	Ministry of Water Resources and Meteorology (Cambodia)
NAT	AFD's Natural Resources and Ecological Transition Department
NGO	Non-Governmental Organisation
NWISP	Northwest Irrigation Sector Project (co-funded by ADB-AFD) (Cambodia)
OECD	Organisation for Economic Cooperation and Development
ODA	Official Development Assistance
OERT	Organisation d'Entretien du Réseau Tertiaire (Niger Office, Mali)
OMVS	Organisation pour la Mise en Valeur du fleuve Sénégal
ON	Niger Office (Mali)
ONAHA	Office National des Aménagements Hydro-Agricoles (Niger)
ORMVA	Offices Régionaux de Mise en Valeur, gestionnaires des grands périmètres publics (GH) (Morocco)
ORMVAG	ORMVA du Gharb (Morocco)

ORSTOM	Office de Recherche Scientifique et Technique d'Outre-Mer (now known as IRD)
PACR	Projet d'Appui aux Communautés Rurales (Senegal)
PCR	Project Completion Report
PDMAS	Programme de Développement des Marchés Agricoles du Sénégal
PIDAM	Programme Intérimaire de Développement Agricole de Matam (Senegal)
PMH	Petite et moyenne hydraulique, areas under the responsibility of the DRA (Morocco)
PNAR	Programme National d'Autosuffisance en Riz (Senegal)
PPP	Public-Private Partnerships
PRACAS	Programme d'Accélération de la Cadence de l'Agriculture Sénégalaise (Senegal)
PSEA	Projet Sectoriel Eau et Agriculture (Cambodia)
PSP	Private Sector Participation
SAED	Société d'Aménagement et d'Exploitation des terres du Delta du fleuve Sénégal et des vallées du fleuve Sénégal et de la Falémé (Senegal)
SAGI	Société d'Aménagement et de Gestion de l'Irrigation (Senegal)
SAR	Société d'Aménagement Régionale française / Regional French Development Company (CACG, SCP, BRL)
SCAC	Service de Coopération et d'Action Culturelle (French Embassy)
SCP	Société du Canal de Provence
SDG	Sustainable Development Goal
SIF	Strategic Intervention Framework
SODAGRI	Société de Développement Agricole et Industriel (Senegal)
SOGED	Société de Gestion et d'Exploitation du barrage de Diama (Senegal)
SOMALAC	Société d'Aménagement du Lac Alaotra (Madagascar)
SPC	AFD's Strategy, Partnerships and Communication Department
SRBMA	Senegal River Basin Monitoring Activity (Senegal)
SWM	Social Water Management
TA	Technical Assistant(ce)
UFAUEA	Union des Fédérations d'Associations d'Usagers de l'Eau Agricole (Morocco)
UGB	Université Gaston Berger (Saint Louis, Senegal)
VFS	Vallée du Fleuve Sénégal
WUA	Water Users' Association

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The Agence Française de Développement (AFD) Group is a public entity which finances, supports and expedites transitions toward a more just and sustainable world. As a French overseas aid platform for sustainable development and investment, we and our partners create shared solutions, with and for the people of the global South.

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