

PROJECT INFORMATION DOCUMENT (PID) CONCEPT STAGE

Report No.: PIDC35875

Project Name	Sahel Irrigation Initiative Support Project (P154482)
Region	AFRICA
Country	Western Africa
Sector(s)	Irrigation and drainage (70%), Agro-industry, marketing, and trade (10%), Vocational training (10%), General water, sanitation and flood protection sector (10%)
Theme(s)	Rural services and infrastructure (40%), Water resource management (30%), Regional integration (10%), Climate change (10%), Land administration and management (10%)
Lending Instrument	Investment Project Financing
Project ID	P154482
Borrower(s)	The Government of Chad, GOVERNMENT OF BURKINA FASO, Government of Mali, Government of Niger, GOVERNMENT OF MAURITANIA, Government of Senegal
Implementing Agency	CILSS Interstate Committee for Drought Control in the Sahel
Environmental Category	B-Partial Assessment
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Concept Review Decision	Track II - The review did authorize the preparation to continue

I. Introduction and Context

Country Context

1. The Sahel population is exposed to a unique set of climatic and environmental risks. High and sustained rates of population growth are occurring within a region with limited natural resources. Despite a rapid growth of urbanization, sixty four percent of the Sahel population still live in rural areas, relying mainly on rain fed agriculture and on agro-pastoralism for their livelihoods. Precipitation in the region is characterized by high inter-annual variability with irregular and unpredictable short rainy seasons. Land degradation is widespread due to erosion, deforestation and unsustainable agricultural practices resulting in low yields and production

shortages. Rural populations experience food shortages and urban populations increasingly rely on commercial food imports exposing them to food price spikes like in 2008. Rapidly increasing infrastructure and public services needs are not met and there are widening gaps in lagging areas. Consequently, poverty is pervasive especially in rural areas and the Sahel countries rank low on almost all of the human development indicators. Climate change is likely to worsen and intensify the frequency and magnitude of droughts and flood, impacting negatively on efforts to increase agriculture productivity, reduce food insecurity and achieve poverty reduction.

2. Agriculture is an important sector of the Sahel countries' economy, but its performance is extremely volatile, determined largely by the rainfall pattern. Adverse movements in agricultural commodity and input prices, together with production-related shocks (from weather, pests, and diseases), not only impact farmers and firms active in the agricultural sector, but may also put severe strains on a government's fiscal position. Low level of agricultural intensification resulting in low incomes and preventing job creation upstream and downstream the value chain is a major strategic concern for the Sahel countries.

3. The Sahel region has opportunities to develop its agriculture sector, raise overall level of food security and increase rural incomes. First, the long term trends in commercial food import bills suggest there is market potential to substitute imports by local products. Second, low relative humidity and high insolation favor irrigated crops when access to water can be secured. And lastly, at present the pressure on surface and groundwater renewable water resources is limited. For the six countries, renewable water resources generated within each country amount to 117 BCM/yr but taking into account transboundary flows raises the total renewable water resources to approximately 240 BCM/yr. Current agricultural withdrawals are estimated at some 12.5 BCM/yr.

Sectoral and Institutional Context

4. While demographic and economic drivers of demand for irrigated products in the Sahel have been particularly strong, areas suitable for irrigated agriculture are largely under-developed and under-exploited. Of the more than 2 million hectares (ha) potential, only 750,000 ha (or 37 percent) has been equipped for irrigation with large disparities between countries. Besides, only 60 percent of this area or 428,000 ha is actually irrigated. Growth in areas equipped for irrigation has slowed from a peak of almost 2 percent per annum between 1961 and 2000 to a more modest 0.8 percent per annum in the past 15 years. This modest growth rate stems mainly from poor technical and managerial performance of irrigation schemes, low viability and productivity, low willingness to pay by farmers, and low maintenance. This cycle of poor system performance and deferred maintenance has resulted in reduced financial support from donors.

5. The 2008 spike in food price crisis has reversed the trend and awakened interest of the private sector. Several staple crops have become more attractive and there are now numerous recent examples of successful ventures either by smallholder farmers (the onion in Niger, shallot in Mali etc.) or by large investors (vegetables in Senegal, rice in Mauritania etc.) showing renewed interest on irrigated agriculture. Agricultural producer prices remain relatively high and this translates into increased pressure on land and water particularly following a recent boost of private agribusiness investment. In addition, several irrigation equipment suppliers have expressed interest in developing more integrated services that respond to producers' needs. There is therefore a clear window of opportunity to scale up private investment in irrigation, through innovative public support programs that meet both the requirements of investors and small producers.

6. While the irrigation sector in the Sahel countries is heterogeneous in terms of irrigation systems and ownership and irrigation institutions, they all face similar constraints to expand irrigation infrastructure: (i) high investment cost; (ii) poor maintenance of irrigation system; (iii) lack of professional services; (iv) absence of strong users' organizations to perform irrigation

development and management functions (training, maintenance, advisory etc.); (v) lack of access to markets and agricultural services; (vi) lack of secured water rights and land tenure.

7. Development of public large scale irrigation is mostly constrained by the high cost per hectare and scarcity of public funding and further compounded by governance issues in public irrigation agencies. Unit cost in excess of US\$10,000 per hectare combined with a recurrent need for rehabilitation result in low economic returns and are huge deterrents to accelerating the pace of public irrigation expansion. Alternative models leveraging more private investment are being experimented in some countries (Burkina Faso, Senegal) but their implementation is slow due to the complexity of the underlying land redistribution process. The performance of the irrigation agencies and users' organizations in charge of these large scale schemes in terms of quality of service, asset management and cost recovery varies widely from one country to another. The agencies also face specific governance issues, notably weaknesses in the fiduciary functions. Key issues to work on would be on improved design of alternative irrigation development and delivery models, quality of service, asset management and investment cost, as well as targeted governance issues.

8. Development of small scale irrigation faces constraints mostly related to lack of appropriate financing and lack of professional services to assist in development and management of the schemes. Public investment in small scale irrigation may be channeled through line ministries, decentralized collectivities or NGOs. Numerous projects of various scale are developing irrigation with their own approaches and financing mechanisms, with little attention given at establishing coherent financing mechanisms and at building the necessary network of professional service providers and equipment suppliers that is required to sustain and scale up investments in small irrigation systems and to facilitate the commercialization of agricultural produce. To overcome these issues some countries have produced small-scale irrigation strategies, the operationalization of which is just now starting. Key issues to work on will be to (i) selecting solutions best adapted to their local context and different types of producers using a truly participatory process and (ii) establishing a cadre of professional service providers in support of development and management of irrigation schemes. In doing so it is essential to consider the scale of interventions in order to bring costs down so that services and access to markets are rendered economically viable and can be sustained over time.

9. Private investment is certainly growing at fast speed (although not known for lack of monitoring) but faces several hindrances. Small and medium investors are emerging but may have a hard time finding suitable service providers and equipment suppliers. More importantly they face huge challenges in mobilizing the medium to long term finance that is necessary to invest in irrigation infrastructure. Large scale investors have difficulties in acquiring the land necessary for their investment and in financing all the required infrastructure including road, power line etc. when it is not provided by the State. In Mali's Office du Niger for example, there is a large number of investors who have been allocated land but are not developing it before their temporary lease agreement expires. Large agribusiness investments also pose significant social risks if dwellers and land users are not appropriately consulted and involved in the investment through benefit-sharing mechanism. There is a wide range of issues to work on to foster private investment in irrigation but they can be summarized in the need to study and develop viable and inclusive business models that combine the necessary infrastructure base, to be provided by the State, a financing mechanism including targeted subsidies related to the type of investor and social benefits expected from the investment, including job creation and spill-over effect towards smallholder farmers through contract farming, and a favorable commercial environment including notably market information systems and quality control mechanisms.

10. Several recent and on-going projects financed by the World Bank face implementation issues that result in slow disbursement and delayed outcomes. Issues stem from (i) insufficient level

of preparation (design studies not available at project approval); (ii) cumbersome bureaucratic hurdles and lack of incentives to resolve them, notably in dealing with the procurement process; and, importantly, (iii) the complexity of the issues faced by project implementation teams in linking soil and water management technologies, agronomic practices, value chain development, infrastructure investment, institutional strengthening, social capital building, and environmental management. These issues need to be addressed at the outset, in order to design and implement irrigation operations that are economically viable, socially beneficial, and environmentally sustainable. Overall the countries irrigation investment portfolio rates poorly and there is significant room for improvement using an upfront and systemic approach towards institutional strengthening and quality enhancement.

11. These issues are further compounded by the erosion of competencies. Due to disinvestment from governments and donors over the past decades, the irrigation sector has become less attractive for students and private companies often struggle to hire skilled labor. International consultancy firms have largely left the sector while their regional peers still need capacity strengthening in order to fully address the intricacies of irrigation development. Smallholder farmers and their organizations generally lack the necessary level of professionalism to be in a capacity to manage their irrigation systems. Government services and operators lack the broad range of skills necessary to implement the type of social engineering work that is required to support irrigation development. Finally, there is a need to promote entrepreneurial behavior among the young.

12. A systemic approach based on a typology of farming models is required to understand the conditions under which irrigation can be successfully adopted and developed within the farm. This represents a paradigm shift from the usual approach which considers the plot as the unit of analysis, and the crop budget as the main object of the viability assessment. The producer has to be put at the center stage of the economic and social scene when making investment decisions that will affect his livelihood. Linkages between the producer and the various value chains need to be considered within this broader farm context, taking into account opportunities and risks in the definition of the farmers' strategy.

13. Institutional reforms are needed for improved management of public irrigation schemes and to develop PPPs, with land governance and secure water rights being the most substantial issues. Land tenure management need to consider the two complementary dimensions of security and of flexibility for the producers to be able to recover the value of the improvements they made to the land if they need to exit the business temporarily or permanently. Customary and formal water use rights need to be established to protect livelihoods and cope with competition for water under conditions of scarcity. This is to be based on a sound water distribution system with appropriate flow measurement. Water user organizations shall play a key role in the allocation and distribution of water and need to be properly empowered for that. Overall, the situation on land and water rights varies widely from one country to another and there is much to gain from regional sharing of knowledge. Some targeted regulatory improvements would be required in all countries but most work would be done at the operational level based on sound practices.

14. Informed and participatory investment planning shall help optimize the use of public resources along harmonized implementation strategies. Although the countries already have established policies and strategies weaknesses appear at implementation stage when duplicated and uncoordinated efforts result in waste of time and money and sometime in crowding out private investment. The Agriculture Public Expenditure Review studies already completed in Burkina Faso, Chad and Senegal will help inform the project design on such matters. An enhanced planning process would consider natural resources potential and market characteristics and size at local, national and regional levels and develop within these boundaries a set of flexible investment options accessible to various groups of producers. The planning process needs also to consider the capacity

building requirements related to irrigation development and management. Finally, attention has to be given to the existing irrigation systems while they are functional to identify performance improvement needs and to support their continued modernization, instead of waiting for them to be listed on rehabilitation programs. The planning process has an inherent regional dimension due to the shared nature of the water resources and of the markets for the irrigated produce.

15. At regional level, there is a large reservoir of good practices and lessons learnt that can be used to inform the design and dissemination of innovative, holistic solutions for irrigation development and management on the basis of which the change process would be structured. These solutions would combine, for each type of irrigation system, (i) an institutional model for the development and management of the system; (ii) a financing mechanism using an appropriate mix of equity, in-kind contributions, smart subsidies, credit and guarantees; (iii) a sound selection of adapted technologies and related infrastructures, and (iv) skilled and empowered stakeholders that are directly or indirectly involved in development or management of agricultural water management or in the environment that influences it. Suitable solutions would have to be promoted across all types of irrigation systems found in Sahel and adjusted to best fit the local context. There is also room for innovation in terms of technological improvements and different approaches, financial instruments etc. that are well fitted to specific irrigation systems.

16. Prioritization of less complex solutions is key to accelerating investments and improving the viability of the irrigation systems. Such solutions do exist and generally rely on smaller, more manageable systems making best use of local materials and skills. For example, it is often more efficient and viable to establish several small schemes each managed by one group of socially cohesive farmers, rather than one larger scheme that requires much stronger social engineering. On large scale schemes, experience shows that the operation and maintenance works best when the scheme is divided into small units hydraulically independent from one another. Choosing this kind of approaches will often require significant changes in the role played by public authorities and in the way development planning is done, with a much stronger focus on demand driven processes. The regional project would allow such innovative designs to be promoted and tested at demonstrative scale before being adapted and adopted in the six countries.

17. On large scale schemes a regional benchmarking approach can help solve the specific governance issues faced by public irrigation agencies. These agencies were established in the 60s and 70s for most of them with a broad mandate to develop and manage the agricultural production on large irrigated areas. They all ran into financial trouble in the 80s as they were still heavily relying on Government subsidies which were cut as part of the structural adjustment policies. They have since then refocused on the delivery of bulk water service and the management of the assets, while all the agricultural production functions were privatized and the terminal infrastructure was transferred to water user organizations (WUOs). The expansion of irrigated areas has then come to a halt or continued at a reduced pace, until recent years. The public agencies have however had slightly divergent trajectories since the 90s with some being more successful than others at building a sustainable relationship with the WUOs and attracting private sector investment. There will thus be value in supporting an institutional benchmarking exercise among these agencies. The World Bank is also directly supporting institutional modernization through IPF or DPO for four out of the sixteen existing agencies in the six countries. The project would help complement and operationalize these reforms.

18. Overall, improving development and management of irrigation will clearly require some paradigm shifts. Constraints faced by stakeholders are very similar from one Sahelian country to another and are mostly related to the “how-to”. Addressing them requires first political momentum for reform to allow the necessary institutional changes to take place, and second, the capacity for scaling up interventions to improve economic efficiency across the value chains. The “Dakar

Declaration” adopted by the six Sahel countries that gathered at the High Level Forum (HLF) on Irrigation in the Sahel, recognizes the need to address both aspects and calls for a renewed effort to scale up irrigation development and improve irrigation sector performance in the six Sahel countries to contribute to regional food security within natural resource limits. It sets a target of one million hectares irrigated in the Sahel by 2020.

19. The Sahel Irrigation Initiative, to which the proposed project would contribute, stems from the “Dakar Declaration”. It was agreed in Dakar that an international coalition would be formed to support the Sahel countries and their people in addressing irrigation challenges, galvanizing political commitment, and ensuring acceptable returns to investments. A Task Force of regional and national stakeholders was established and received technical assistance from the World Bank to develop a comprehensive operational program for implementing the Dakar Declaration, including a Strategic Framework and an Action Plan, scheduled to be delivered by the end of 2015. The six countries have expressed their willingness to implement this operational program so as part of their upcoming or ongoing operational frameworks within the agriculture sector at national (i.e., National Agriculture Investments Programs-NAIPs) and regional (country Resilience Priorities-AGIR/PRP, etc.) levels.

20. CILSS has been mandated by its member countries to coordinate all funding related to resilience in Sahel under the AGIR framework and will therefore coordinate the overall Initiative and this proposed project. The Initiative is also placed under the auspices of higher level regional initiatives such as CAADP, the African partnership for Agricultural water (AgWA) and the Global Coalition on Water in Sahel.

21. Without coordinated investments, the Sahel countries risk investing very scarce resources within the same topic areas and producing similar knowledge, competing for the same markets, and more importantly, leaving persistent gaps in critical skills, knowledge and technology application. A regional approach towards irrigation development will: (i) allow coordinated investment planning taking into account regional market capacity and transboundary natural resources potential; and (ii) provide a forum for stakeholders to address common issues related to irrigation service delivery, foster knowledge exchange, establish best practices, standardization and quality control services, and develop critical building blocks to support irrigation institutional reforms and irrigation policy development. It will help sustain the necessary momentum for the adoption of policy reforms. Finally, a broad monitoring, evaluation and communication effort to be supported under the proposed project would help countries demonstrate the viability of the solutions developed by the countries and mobilize funding for their further expansion. One important recommendation of the Task Force is to pursue this agenda through a combination of soft and hard investments in order to give the project a concrete demonstrative effect. Investments to be partly or fully financed by the project will therefore be selected on the basis of their potential leverage effect through knowledge generation, testing of innovative financing mechanisms, and contribution to the capacity building effort. All investments financed by the project will thus contribute to the irrigation sector’s regional integration.

22. Within this regional approach, the combination of soft and hard investments supported by the project will be adjusted to each country’s specific context and irrigation development objectives. Diverse types of small scale irrigation development will be funded at scale in targeted areas where all necessary services will also be established in a viable way to ensure sustainability of the schemes. The project will notably strengthen the water users associations’ ability to deliver effective and efficient irrigation services and foster linkages between irrigation development and agriculture support services. Large scale irrigation schemes expansion would be pursued under this project by financing master plan-type studies. The project would also support large scale schemes’ modernization effort provided there is political will to move ahead with the required institutional

reforms. The project will focus on clarifying the relationship between the State, the irrigation agencies and the water users through performance-based agreements and result-based financing. It would also pilot the development of pilot models of more flexible water service delivery and promote inclusive models of public-private partnerships.

Relationship to CAS

23. The proposed project contributes to the overarching goals of the Sahel Irrigation Initiative of improving performance of irrigation systems and mobilizing public and private investments for irrigated area expansion. By doing so, the project will increase Sahel agriculture sector's resilience to climatic shocks, improve food security, and support growth and job creation in rural areas. The project will have a direct impact in the selected intervention areas and have a broader leverage impact on the viability, performance and environmental sustainability of existing and future irrigation systems and related agricultural development.

24. At regional level, the project contributes to the goals and strategic activities of the World Bank's Sahel Initiative which was announced during the historic trip from World Bank President and UN Secretary General to Sahel in November 2013. At the country level, the proposed project is fully consistent with the Country Partnership Strategy for each of the six countries involved (see Table 1).

Table 1: Alignment of Sahel Irrigation Project (SIIP) with Country Partnership Strategies
Country Alignment of SIP with CPS

Burkina Faso The recently approved CPS (FY2013–16) reflects the government's Medium Term Vision, articulated in the Strategy for Accelerated Growth and Sustainable Development (2011–15). SIP is aligned with the three main strategic objectives of the CPS: accelerate inclusive and sustained growth; enhance governance for delivering social services more efficiently; and reduce social, economic, and environmental vulnerabilities.

Chad SIP is consistent with the World Bank's Interim Strategy Note and forthcoming CPF (2015), which supports re-engagement in agriculture to increase productivity in the sector. SIP is also aligned with the National Development Plan (PND 2013-15) and with the government's main framework for promoting growth, poverty reduction, and food security, which underpins the current National Food Security Program 2014–21 (Programme National de Sécurité Alimentaire, PNSA).

Mali SIP is consistent with the World Bank's current re-engagement in Mali; it is aligned with the goals in the CPF (2015), NAIP, the government's legal framework for agriculture (Loi d'Orientation Agricole, LOA 2006), and current Agricultural Development Policy (PDA 2013).

Mauritania SIP supports the five pillars of the CPS for FY14–16, which is aligned with the Country Poverty Reduction Strategy (CSLP III) and the agricultural investment program for 2014–19 contained in the Rural Development Strategy. The new legal framework for agriculture (LOA) also plans for the development of irrigation.

Niger SIP strongly coincides with the strategic objectives of the CPS (2013–16), which are to assist Niger to achieve resilient growth, reduce vulnerability, and strengthen capacity for service delivery. The CPS is fully aligned with the 2012 Government Plan for Social and Economic Development (PDES) and World Bank's Africa Strategy.

Senegal SIP is consistent with the Emerging Senegal Plan (PSE), which aims to increase the production, productivity, and competitiveness of the livestock sub-sector. SIIP is aligned with the CPS (2013–17), especially Pillar 1 (accelerating inclusive growth and creating employment). SIIP will support the regional agenda of the CPS to deepen integration, leverage additional funding, and build knowledge across the region.

25. Furthermore, the proposed project is fully coordinated by a dedicated Joint Implementation Plan (JIP) between the World Bank and IFC. The JIP lays out the portfolio of active IFC and World Bank projects, their planned activities including their sequence and proposed timeline, specific roles of various teams as well as key milestones and outcomes to monitor progress, essentially in the areas of infrastructure, trade and competitiveness, irrigation technologies and value chains, each institution contributing on the basis of its own mandate. The proposed project would notably benefit from IFC's on-going involvement in microcredit, leasing, and output-based financing in the six countries. Project's outputs would in turn strengthen IFC's client base in the irrigation sector.

II. Proposed Development Objective(s)

Proposed Development Objective(s) (From PCN)

26. The Project Development Objective is to improve stakeholders' planning, investment and management capacity for irrigation service and increase irrigated areas in selected areas in the six countries across the Sahel.

27. Project beneficiaries will include smallholder producers who will benefit directly from selected investments funded under the project and indirectly from the increased capacity of public and private providers to deliver enhanced irrigation service. Other beneficiaries include line ministries and their decentralized services, training and research institutes and their students, public and private operators involved in irrigation development and management, consultancy and construction firms, agribusiness investors, irrigation equipment suppliers and retailers, and producers' organizations. The number of beneficiaries under each category will be determined during preparation. Specific attention will be given to gender balance in all project activities.

Key Results (From PCN)

28. The following PDO indicators will be considered and refined during project preparation.

- a. Direct project beneficiaries (number), of which female (percentage).
- b. Participative irrigation investment plans based on an operational monitoring and evaluation system established (number).
- c. Area provided with new or improved irrigation and drainage services (hectares) (core).
- d. Amount of public and private investment in irrigation leveraged through the specific instruments supported by the project (USD). [including (i) amounts mobilized based on preparation studies financed by the project and (ii) beneficiaries' contributions to investments supported by the project].
- e. Annual crop intensity on areas equipped by the project (percentage).

29. These indicators will be achieved on targeted intervention areas to be selected based on their potential for viable irrigation development scale up using one or more types of irrigation systems. Typology of interventions will be coordinated at regional level to have the maximum spillover effect between various intervention areas and regionally.

III. Preliminary Description

Concept Description

30. The proposed project will be implemented over a period of six year and will have the following three interrelated components.

31. Component A: Modernizing the institutional framework (US\$19 million). This component will help improve the enabling environment for irrigation development and management through the following interventions. It will provide the “foundations” on which the countries can build their broader investment program.

a. Strengthen the ministerial department or agency in charge of irrigation in each country in its planning and oversight role. Multi-country technical assistance will be provided by the regional level to strengthen the national planning processes through (i) sectoral public expenditure review and fiscal impact analysis with a view to enhance the dialogue with the ministries of finance, (ii) stakeholders consultative process to inform the public investment planning process, (iii) harmonization of implementation policies and procedures using guidelines and technical manuals, and (iv) identification of new investments and innovative lines of business to be incorporated in the investment plans. This TA will be complemented with specific studies aiming at filling gaps identified in regulatory frameworks on land and irrigation management . The planning and harmonization activities will take into account the regional dimension of the agenda e.g. market access and shared water resources.

b. Strengthen the relationships between the Government, the implementing entities (public agencies for large scale irrigation and various operators for small scale irrigation) and the water user organizations (WUOs). Regional technical assistance will be provided to design a series of performance-based agreements linking, for each type of irrigation, the three parties involved in irrigation development and management and to facilitate the adoption of this approach. These agreements will clarify the roles and responsibilities of each parties and specify how public funds would be disbursed based on certain performance indicators related to governance, asset management, cost recovery, and service delivery. A specific emphasis will be given at maintenance and renewal financing to ensure the long term viability of the irrigation systems. For the public agencies managing large scale schemes this will build on already existing agreements (lettre de mission for Senegal’s SAED, contrat plan for Mali’s Office du Niger etc.).

32. Component B: Financing irrigation investment solutions (US\$117 million). This component will be a key element in the overall capacity building strategy by allowing direct application of the knowledge and institutional strengthening supported under the Components A and C. Component B will also directly contribute to the expansion of irrigated areas through targeted financing for irrigation systems with high potential for scaling up but not yet widely disseminated. Investments will be selected with a view to demonstrate the relevance of the proposed solution i.e. a combination of services, technology and infrastructure, and financing mechanism. The component will produce the “bricks” that will be used by the countries to build their irrigation investment portfolio and to improve the performance of existing systems. All investment financed under this component shall be of regional interest in terms of their development potential and will contribute to building the knowledge base and “know-how” at regional level. This component will include the following interventions.

a. Updating existing studies and financing new studies for irrigation systems development covering about 50,000 hectares. The studies will be selected based on their strategic relevance in supporting the implementation of the various lines of business following the irrigation typology. Studies would include Strategic Environmental and Social Assessments (SESA), where relevant, i.e. when there are environmental and social risks associated with scaling up irrigation development. Groundwater potential maps will also be produced for areas where unsustainable use is a risk.

b. Modernizing existing, functional irrigation systems by e.g. using flow measurement

devices, replacing open canals with low pressure pipe systems, developing solar pumping etc. and by providing improved services for operation and maintenance of the schemes. These services may also include agriculture support to beneficiaries of irrigation infrastructure to improve agricultural and commercialization practices as well as water resources management. Modernization solutions will contribute to improve water efficiency and energy efficiency. Implementation will be phased within each country according to institutional readiness and progress made under Component A.

c. Financing development of new small to medium scale irrigation systems with proven scale up potential using harmonized approaches allowing replicability for widespread dissemination. The subprojects to be financed would cover the range of small to medium scale AWM systems including (i) improved rainwater harvesting in lowland areas; (ii) individual smallholder irrigation using adapted technologies; (iii) small- and medium-size irrigation managed by producers' groups and communities. Countries will have the flexibility to adjust their investment plans to their specific context (strengths and weaknesses) and in line with the Component A outputs. It is expected that 20 to 30,000 hectares could be developed in total providing benefits to 10 to 15,000 farmers. Exact numbers will result from the investment choices to be made by the countries during project preparation. The project aims at implementing improved solutions at a scale sufficient to demonstrate their competitiveness and their expansion potential but remaining within limits set to avoid any substantial environmental impacts. The scale shall however allow to establish a wide enough client base to ensure the viability of various professional services (for maintenance etc.) that will be established and strengthened to operate the schemes. These considerations will be incorporated in the local development planning process to be implemented prior to any investment.

33. Component C: Training, knowledge management and coordination (US\$37 million). This component will provide training and knowledge management services specifically related to the tools and approaches developed under Component A and applied to the solutions implemented under Component B for the development and management of irrigation systems. It will also cover the project coordination and communication needs and monitoring and evaluation systems as described below. The regional tools and services supporting the activities described in this component will be designed with a view to ensure their sustainability post-project through appropriate financing mechanisms.

a. Technical assistance for the identification of training needs of various categories of stakeholders, and working with selected institutes with appropriate capacities to develop the required training sessions. The training program will be related to the specific skills and services that will be necessary to deliver the irrigation investment solutions under Component B. Close coordination with on-going education projects in the target countries will be sought to establish complementarity.

b. Financing stakeholders' capacity enhancement needs using a demand driven approach. Operators, investors and producers involved in agricultural water management will be incentivized and enabled to improve their skills in order to meet minimum quality standards in key functions to guarantee irrigation performance. These standards will be established at regional level and cross-fertilization between countries will be sought in the implementation of this training program i.e. stakeholders from one country would be trained in another country on a specific solution that the latter country has developed.

c. Establishment of a regional Knowledge Management (KM) platform including ICT tools, discussion forums, regional workshops, benchmarking activities, and resources for capitalization and dissemination of good practices and for research to development linkages. The use of innovative ICT tools will help ensure a trickle-down effect towards end beneficiaries. Selected research dissemination activities would also be financed following regional call for proposals. A specific focus will be given to improving the performance of public irrigation authorities managing

large-scale schemes in the six countries through benchmarking activities.

d. Provision of quality enhancement services to support the above interventions and ensure quality of design and sustainability. This would be done using roster of experts, quality review panels, peer review system and specific tools like water resources mapping and hydrological databases.

e. Improve the commercial environment for the delivery of adapted and competitive irrigation technologies and associated services (including financial services like leasing for example) for producers and field operators through a mix of market information systems, technology standards and quality assurance, and market development support. These activities will be driven at regional level to obtain economies of scale.

f. Monitoring and Evaluation at regional and national level. An integrated M&E system will be developed linking the national systems to the regional one. This system will also be linked to the KM platform in order to benefit from the qualitative information generated through the latter. Remote sensing will be used for the monitoring of irrigated areas.

g. Project coordination and communication at regional and national level, including fiduciary matters, communication, planning, and the monitoring of safeguards mitigation measures. In addition, it will include fund raising activities for the irrigation sector and steer the policy dialogue and advocacy work for improved enabling environment at regional level. Finally, the regional coordination will manage the partnerships with regional and international partners to gather continued support to and alignment with the Sahel Irrigation Initiative. This will require a strong communication effort.

34. All activities under the project shall be of regional interest. This means that they shall (i) address an irrigation-related issue that is common to several countries; and/or (ii) contribute - within and beyond the boundaries of the project – to enhance investment programs and projects of more than one country; and/or (iii) contribute to enabling the environment and/or enhancing capacity in more than one country. Therefore, all activities will be implemented following regionally harmonized approaches framing their implementation with a view to increase their impact and to ensure their replicability from one country to another. These harmonized approaches will also aim at ensuring sustainability of the tools, methodologies, institutions or investments that will be used to implement the project.

35. All three components will be implemented in parallel. However the design of the project will remain flexible so that the first outputs of the component B can inform the planning and institutional improvement processes under Component A and help establish the training priorities under Component C. The investment program under Component B will be established during project preparation for the first 18 months of the project.

IV. Safeguard Policies that might apply

Safeguard Policies Triggered by the Project	Yes	No	TBD
Environmental Assessment OP/BP 4.01	✗		
Natural Habitats OP/BP 4.04	✗		
Forests OP/BP 4.36		✗	
Pest Management OP 4.09	✗		
Physical Cultural Resources OP/BP 4.11	✗		
Indigenous Peoples OP/BP 4.10		✗	
Involuntary Resettlement OP/BP 4.12	✗		

Safety of Dams OP/BP 4.37		x	
Projects on International Waterways OP/BP 7.50	x		
Projects in Disputed Areas OP/BP 7.60		x	

V. Financing (in USD Million)

Total Project Cost:	173.00	Total Bank Financing:	173.00
Financing Gap:	0.00		
Financing Source			Amount
BORROWER/RECIPIENT			0.00
International Development Association (IDA)			173.00
Total			173.00

VI. Contact point

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