



INTER COLLECTIVITE DU SOUROU
*Actions intégrées pour le développement durable
 de la vallée du Sourou au Mali*

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Integrated and Sustainable Development Programme for the Sourou in Mali and its Strategic Environmental Assessment (PDIDS/EES) - Summary

The Sourou area in the Mopti region in Mali (Figure 1), the most northern part of the Volta Basin has a considerable potential in terms of water resources, food production, and biodiversity (Ramsar site). The main challenges in the dry and humid parts of the area are security, water and other related natural resources management, poverty and unemployment, food and nutrition insecurity, climate change, population growth, land cover degradation and loss of biodiversity. To a lesser extent, ground and surface water pollution, pollution by various types of waste, and water-borne diseases. In addition, impoverishment of soil fertility is continuing in the dry zone.

The need for equitable sharing of the natural resources of the Sourou River basin, responding to the numerous challenges mentioned above, and valorising sustainably the enormous potential of the area were the reasons for the creation of the Inter Community of the Sourou (ICS). The ICS consists of 26 communes and the Prefectures (“Cercles”) of Bankass, Koro, and Douentza, as formalized by a decree of Mopti’s Governor as part of the decentralization process in Mali.

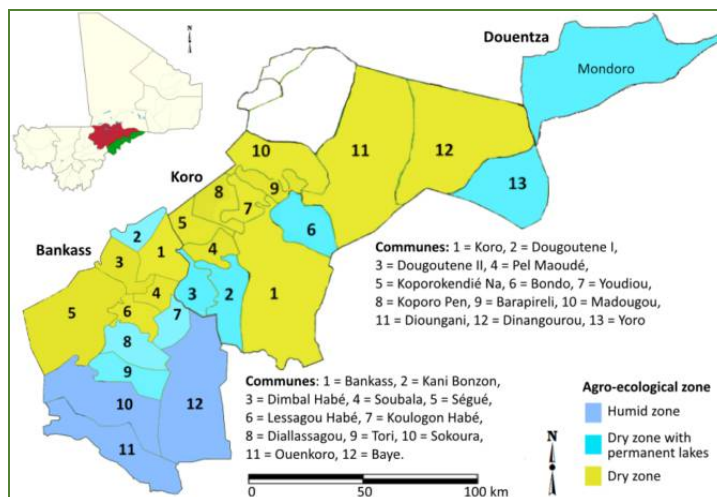


Figure 1. The three prefectures with the 26 communes being the Inter Community of the Sourou, and their agroecological zones. Inlay: location of the Mopti Region in Mali (in red) and the Sourou zone in the Mopti Region (in green).

The ICS decided to prepare a people-owned integrated and sustainable development program for the Sourou through a participatory approach of Integrated Water Resource Management / Natural Resource Management and to ensure its political guidance and implementation. The result is the **Integrated and Sustainable Development Programme for the Sourou with its Strategic Environmental Assessment (SEA)**, abbreviated from its French name to **PDIDS/EES**.



In this way, all sustainable development goals (SDGs) including those promoted by the Malian SEA Decree, are already integrated into the planning process right from the beginning. A unifying program such as PDIDS/EES, where the ICS provides guidance and leadership coupled with the effective participation of the population, and the continued search for synergy and alignment of existing and future projects, are the way forward to overcome the major challenges of the Sourou area. The participatory and transparent planning process meets the requirements of the SEA, as accounted for in Volume 2 of the PDIDS/EES. The validation of a SEA and obtaining the environmental authorization from MEADD (Ministry of Environment) are required before the implementation any program.

The PDIDS/EES is aligned with achieving the objectives and implementation of the signed and ratified international agreements and conventions by Mali, the major strategic documents of West Africa, and the bilateral strategic documents between Mali and the Burkina Faso (concerning the Sourou). The PDIDS/EES also considers the CREDD (that operationalises the SDGs in Mali) and other laws, decrees and strategic documents of Mali (e.g. SRAT and SDAGE). Considering transboundary aspects provides additional opportunities to gain and exchange experiences in the elaboration of an integrated and sustainable development program dovetailed with its SEA.



The **vision of the PDIDS/EES** for 2029 for the Sourou area is: *"Contribute to the well-being of the population and the maintenance of the ecological integrity of Sourou aligned with the goals of the Framework for Economic Recovery and Sustainable Development (CREDD) and the Sustainable Development Goals in general"*.

The **main objective of the PDIDS/EES** is: *"By 2029, the 29 territories of the Sourou Basin have improved their livelihoods through the development of socio-economic and environmental activities in order to strengthen their resilience to climate change"*.

By its PDIDS, the ICS has decided, in dialogue with its population, to invest in a modern and peaceful future for the Sourou area, making the most efficient use of existing natural resources, and taking climate change into consideration. Traditional production systems will gradually be innovated and contribute to value chains at the scale of Mopti region, West Africa, and beyond.

For the duration of the PDIDS (2019-2029), several initial strategic axes have been validated by all stakeholders including those of Burkina Faso, and they address all the sectors of socio-economic and environmental development. According to social, economic and environmental criteria, 9 strategic axes were prioritized for the period 2019-2024, with 6 key transversal axes allowing for cross-cutting actions to improve the quality of the other 9. To consider spatial variability in the Sourou, two agro-ecological zones (wetlands and the dry zone) with and without permanent lakes (figure 1) were distinguished.

The strategic axes are: Peace and security, Improved access, Agriculture, Livestock, Fishing and aquaculture, Environment-NRM & biodiversity, Health, Drinking water, hygiene & sanitation (WASH), and Energy. The cross-cutting axes are: Climate Change, (Transboundary) Water Resources, Gender, Land tenure, and Governance and M&E. Each strategic axe is presented by *a*) its medium-term (2025-2029) and short-term (2019-2024) objectives, *b*) the justification for the choice of actions, based on

the SEA, and c) specific actions in time to achieve its objectives in relation to the outcomes required to achieve the objectives.

For the SEA, the pivotal stages in the evaluation of the potential effects of the actions of the PDIDS were: *a)* considering two agroecological zones (wetlands and dry zone), *b)* the effective participation of the population, the direct beneficiaries of the PDIDS, at all stages and in particular the validation of the selection criteria for the actions per constraint and strategic axis, *c)* the inventory of several actions as a solution to the constraints predefined by the ICS's technical Regional Planning and Evaluation Team (EPER), *d)* the decision-making in selecting the proposed actions, and *e)* the SEA analysis on those actions coupled with their required mitigation measures, if any (volume 2, Chapter 4).

It emerged from the analyses that the **development scenario without the PDIDS** will lead to *i)* the continued overexploitation of resources, *ii)* the deterioration of basic social indicators, and *iii)* the proliferation of inter and intra-community conflicts. The consequence soon will be the collapse of the ecosystem. Failure to implement such a unifying program would impede the achievement of the objectives of the SDGs, the CREDD and other existing development strategies in the Mopti region. Moreover, the creation of the inter-community of 26 communes and 3 Prefectures would become useless, because the mechanism to direct and guide them will not exist. Finally, without the PDIDS, the synergy and alignment necessary for the sustainable development of the area will be difficult to achieve without significant losses of time and financial resources.

The analysis of the **development scenario with the PDIDS**, for which the ICS is the authority and guidance provider, allowed the choice of promising alternative solutions (actions) by sector and strategic axis, integrating as much as possible the innovations for sustainability. Subsequently, the impacts of the actions on the seven environmental components were established, and their positive and negative impacts with the mitigation measures were deduced. Finally, the risks were identified for each strategic axis.



The various analyses of the different strategic axes revealed that the implementation of the selected actions will contribute in achieving the objectives of the PDIDS, CREDD and SDGs through the respect of the sustainable and integrated development standards. This includes, among others, reaching food and nutritional self-sufficiency, job creation for women and youth, income generation, protection and conservation of biodiversity, reduction of inter and intra community conflicts, and the return of peace and security.

The organization of the implementation of the PDIDS/EES will be under the guidance and responsibility of the ICS with a political directorate and a directorate to daily supervise the implementation of the activities. The latter will be the support mechanism (manager-operator type, funded by the Dutch Embassy) that manages the funds, the technical aspects of the activities, and train the ICS in various disciplines. For the monitoring and evaluation of the PDIDS/EES, the ICS will rely on the existing monitoring and evaluation units of the regional offices of the various ministries. These units will report to the ICS on the progress of the projects, the difficulties encountered and the corrective measures to be taken through periodic activity reports, and field visits. Mid-term (5 years) and final (10 years) evaluations of the PDIDS with its EES will be carried out by independent organisations.

The realization of PDIDS/EES requires an investment of about M € 292.3 (equivalent to 190 milliards F CFA). The population is ready to contribute to this investment. In addition to the contribution from existing and planned development projects, private investments are being planned.

The main expected impacts (outcomes) are: *a)* an increased number of jobs (28 000 permanent jobs and around 179 850 temporary), *b)* capacity building in different professional sectors to obtain jobs and to produce more efficiently, sustainably and of higher quality, and *c)* to consider and respect the various laws and regulations to better own and live the basic principles of environmental protection (biodiversity) and sustainability.

In conclusion: Implementing the PDIDS/EES will equally benefit current and future generations of all communities of the basin without drastically overturning traditional ways of life. Ecological and cultural values will be preserved as economic assets and for their own sake.

The ICS firmly believes that, with the support of the international water management authorities, the national government, and technical and financial partners (TFP), it will be able to create a platform to direct the activities and accelerate the operationalisation of its vision while reducing causes of social tension and conflict in the short term. The ICS invites investors (state, TFP and private) who recognizes themselves in the PDIDS, to use the PDIDS as a framework to endorse their investment proposals. To that end, the ICS will update the PDIDS together with an update of the SEA as circumstances require and will ask for Environmental Impact Assessments (EIAs) at project level that are now part and parcel of the planning process in Mali.

The ICS with their permanent office in Bankass has taken its authority and leading role to manage this process. It will remain in permanent contact with all stakeholders for a better and more secure future of the people in the Sourou.

The PDIDS/EES is published in four parts

1. Volume 1 (PDIDS) presents the program as such with the following content: *a)* the challenges of the area (baseline), *b)* the justifications of the program (the decisions taken and the "why" of the Strategic Axes), *c)* preliminary actions for the second phase (2025-2029) and *d)* detailed actions for the first phase (2019-2024). The latter were defined in close collaboration with the population and civil organizations under guidance and leadership of the Inter community of the Sourou (ICS) while using the results of the SEA (Volume 2). This will allow the ICS to make its first decisions through the PDIDS version 1.0 including 'no-regrets actions' that has also been formulated;
2. Volume 2 (SEA) presents the explanations and justifications of the actions proposed in the PDIDS based on the environmental assessment process, the validation of the actions with the populations, and their finetuning through describing the mitigation measures to avoid the adverse effects of the proposed actions. This volume represents the environmental impact report required by the SEA-decree issued by the Malian government.
3. Volume 3 (Diagnosis) presents the data (mainly based on own field surveys among the population and historic statistical data), the detailed analyses for determining the required actions for the different agroecological zones, and the detailed budget and planning by EPER. The presented data are results of updates after the validation workshops held with the population and civil societies.
4. Volume 4 (Synergy & Alignment) presents an overview of four types of development programmes and projects of third parties in relation to the strategic axes of the PDIDS: *a)* in the Malian part of the Sourou, *b)* in the part of Burkina Faso, *c)* as cross-border project, and *d)* outside the Sourou area, with the potential that their results can contribute to the implementation of the PDIDS. This progress report provides preliminary options for a better collaboration between programs and projects to boost their collective impact. Projects not yet included in this volume are invited to send their project information sheet (available via the website www.souroumali.org) to ICS.



Summary of the specifics of the Strategic Axes

SA1. Peace and Security

Very short-term goal: Within a year, social cohesion is restored and improved, and the resulting peaceful situation provides the possibility of implementing the PDIDS/EES.

Investment – Outcomes Review

- Investment cost: 3.6 M € (2,320 M FCFA);
- Affected population: 1,050,000 persons (equivalent to 100% of the total area plus 25% of the total from outside the area);
- Job creation: 600 permanent jobs (100% women and youth);
- Capacity Building / Awareness: 501 700 persons directly and 167 200 indirectly (60 and 20% of the total, respectively);
- Sustainability aspects: peace and security are essential for the implementation of the PDIDS and demands the efforts of the entire population on an ongoing basis;
- Remaining risks (beyond mitigation measures): persistent terrorist attacks.

Specifics: Very difficult security context in the area.

SA2. Improved Access

Short-term goal: By 2024, the two priority roads: Koro-Douentza 130 km long and Bankass-Baye-Border with Burkina Faso (BF) 118 km long are made, as well as two hybrid ferry crossing on the river are operational.

Investment – Outcomes Review

- Investment cost of the dirt road (phase 1): 23.4 M € (15,180 M FCFA);
- Investment cost of the two ferries + access roads: 1.640 M FCFA (M € 2,5);
- Affected population: 55 000 persons (especially the communes of Sokoura, Ouenkoro, and Baye);
- Job creation: 52 permanent and 1670 temporary jobs.

Specifics

- Easy collection and transport agricultural produce and other products to major consumption areas;
- Evacuation of patients at lower cost and on time;
- Increased income and time savings;
- Road safety (reducing risks of accidents);
- Ease of crossing the river by people with their belongings as well as vehicles.

Innovative aspects: Introduction of hybrid (thermal and solar) ferry boat.

SA3. Agriculture

Agriculture in the wetlands

Short-term goal: By 2024, at least 10 800 households (corresponding to 64 800 persons) will have reached food and nutritional self-sufficiency through the development of 1200 ha (15% of the potential) and 10 Small Village Irrigated Perimeters (PIIV) of 30 ha in the flooded zone and the development of value chains with high added value but less water-consuming crops.



Investment – Outcomes Review

- Investment cost: 19.1 M € (12,445 M FCFA);
 - Affected population: at least 32 850 persons directly;
 - Job creation: 6200 permanent (30% women) and 2710 (60% women) temporary jobs;
 - Capacity building: around 6000 persons directly and 60 000 persons indirectly;
 - Sustainability aspect: the Planning and Water Management Scheme (SAGE), being developed, will provide more information on the potential amount of water for irrigation. Therefore, the area of planned irrigation schemes is kept limited for this first phase;
 - Remaining risks (beyond mitigation measures): *a*) availability of water for irrigation (dependency of water management through the sluice at Léry in Burkina Faso), *b*) the variability of rainfall over time and space in terms of quantity and intensity, and *c*) conflicts of interest within organizations.
- Remaining risks (beyond mitigation measures):

Specifics: Development of the SAGE and an agreement with Burkina Faso are essential to achieve the long-term goal.

Innovative aspects

- Archimedean screw equipped with solar or wind energy (based on experiences in Burkina Faso);
- Compliance with irrigation standards according to the crop (efficient use of water).

Agriculture in the dry zone

Short-term goal: By 2024, at least 4600 women plus 1150 producers (corresponding to around 71 700 household beneficiaries) have reached food and nutrition auto sufficiency.

Investment – Outcomes Review

- Investment cost: 11.2 M € (7,262 M FCFA);
- Job creation: 10 735 permanent and 3310 temporary jobs;
- Capacity building: 5850 persons directly and 57 750 persons indirectly;
- Affected population: around 77 650 persons (directly and indirectly);
- Sustainability aspect: With the professionalization of the value chains, the expected increase in revenues and the application of agroforestry systems, male and female producers will produce more sustainable products, and of higher quality. Capacity building among those producers themselves is a key factor for the transfer of technical skills (expertise) adapted to climate change;
- Remaining risks (beyond mitigation measures): *a*) the non-acceptance of landowners for the expropriation of their land, *b*) the marginalization of women in the distribution of the various benefits associated with this intensification, *c*) the variability of rainfall over time and space in terms of quantity and intensity, and *d*) conflicts of interest within organizations (e.g. a continuation of projects by NGOs and other international organizations operating in silos).

Specifics: Revitalization of land rights committees (COFOS).

Innovative Aspects

- Compensatory reforestation using the PLASA (planting trees in a deep hole without watering) technique;
- Large scale transformation of local agricultural produce.



SA4. Livestock

Short-term goal: By 2024, at least 9100 households (corresponding to 54 600 people) have reached food and nutrition auto sufficiency, and generate an income through a productive, sound and sustainable rearing of livestock.

Investment – Outcomes Review

- Investment cost: 79.1 M € (51,417 M FCFA);
- Job creation: 4040 permanent (99% women and youth) and 350 temporary jobs;
- Capacity building: 4200 persons directly and 42 000 persons indirectly;
- Affected population: 50 590 persons directly and indirectly;
- Sustainability aspect: Livestock numbers are monitored to avoid overgrazing and action will be taken. The animal parks, the transhumance trail and the necessary facilities will be reassured in the PDESCs (community development plans);
- Remaining risks (beyond mitigation measures): 1) non-acceptance of landowners for the expropriation of their land; 2) the marginalization of women in the distribution of the different benefits of this intensification and 3) conflicts of interest within organizations (e.g. a continuation of projects by NGOs and other international organizations operating in silos) .

Specifics: Professionalisation of the value chains of milk, eggs, and hides and skins.

Innovative aspects

- Artificial insemination;
- Construction of a milk processing unit;
- Sustainable processing of hides and skins;
- Destocking of livestock.

SA5. Fishing and fish breeding

Fishing and fish breeding in the wet zone

Short-term goal: By 2024, at least 500 households of fishermen and women and fish breeders have improved their food and nutrition and have generated additional incomes through sustainable fishing and innovative fish breeding.

Investment – Outcomes Review

- Investment cost: 5.2 M € (3,355 M FCFA);
- Job creation: 185 permanent and 830 temporary jobs;
- Capacity building: 70 persons directly and 700 indirectly;
- Affected population: 1885 persons directly and indirectly;
- Sustainability aspect: respecting the loopholes of the nets regulated by law, and protected areas are the bases to avoid overexploitation of fish and promote a natural regeneration;
- Remaining risks (beyond mitigation measures): a) Introduction of fish species that destroy the local species; b) Conflicts of interest between organizations (cooperatives - processing unit) and c) for ponds the dependency on underground water (competing with drinking water and animal watering).

Specifics

- Revitalization of existing and creation of new local fish councils;
- Dissemination of fishing regulations translated in local languages.



Innovative aspects

- Introduction of endangered species;
- Creation of fish breeding reserves;
- Creation of a nursery unit;
- Creation of fish-feed production unit;
- Construction of a modern fish market;
- Introduction of floating fish cages in the area.

Fishing and fish breeding in the dry zone

Short-term goal: By 2024, at least 30% of fishermen households have improved their protein diet and nutrition and have generated additional incomes through sustainable fishing and innovative fish breeding.

Investment – Outcomes Review

- Investment cost: 1.4 M € (922 M FCFA);
- Job creation: 325 permanent and 2650 temporary jobs;
- Capacity building: 220 persons directly and 2200 persons indirectly;
- Affected population: 5395 persons directly and indirectly;
- Sustainability aspect: Water availability for the fishing ponds is a function of water use by others. The SAGE should propose an equitable division of the water;
- Remaining risks (beyond mitigation measures): Remaining risks (beyond mitigation measures):
a) Introduction of fish species that destroy the local species; *b)* Conflicts of interest between organizations (cooperatives - processing unit) and *c)* for ponds the dependency on underground water (competing with drinking water and animal watering).

Specifics: Revitalization of local fish committees.

Innovative aspects: creation of a nursery unit and fish-feed production unit.

SA6. Environment-NRM & Biodiversity

Short-term goal: By 2024, the status of biodiversity is restored and improved, the sustainable management of natural resources is ensured and positively impact the livelihoods of the entire population of Sourou.

Investment – Outcomes Review

- Investment cost: 3.7 M € (2,431 M FCFA);
- Job creation: 2105 permanent and 158 640 temporary jobs;
- Capacity building: 112 700 persons directly; 723 400 persons indirectly;
- Affected population: 836 100 persons and indirect;
- Sustainability aspect: due to capacity building, the population has become aware of the importance of biodiversity and the sustainable exploitation of natural resources. The inclusion of these aspects in the PDESC coupled with a control system is a way of the sustainable exploitation of natural resources by the users;
- Remaining risks (beyond mitigation measures): *1)* the variability of rainfall water over time and space in terms of quantity and intensity and *2)* the conflicts of interest between organizations (protection versus users).

Specifics

- Scaling up natural resource management technologies including assisted natural regeneration (RNA);



- New protected sites for endangered species;
- Revitalisation of forest surveillance brigades;
- Establishment of school arboretums.

Innovative aspects: Production of wild fruits juices and deepening of 4 caiman lakes

SA7. Health

Short-term goal: By 2024, the provision of basic social services, particularly the health and reproductive health of the entire population, is considerably improved.

Investment – Outcomes Review

- Investment cost: 4.8 M € (3,126 M FCFA);
- Job creation: 30 permanent and 187 temporary jobs;
- Capacity building: 20 persons directly;
- Affected population: 237 persons direct;

Innovative aspects: The transformation of the existing Health Centres (CSREF) and Community Health Centres (CSCOM) into transboundary health centres.

SA9. Drinking water, hygiene & sanitation (WASH)

Short-term goal: By 2024, the living environment of the population is improved through an increase in equitable access to drinking water and sustainable sanitation.

Investment – Outcomes Review

- Investment cost: 35.2 M € (22,880 M FCFA);
- Job creation: 46 permanent and 2380 temporary jobs;
- Capacity building: 1200 persons directly and 12 000 persons indirectly;
- Affected population: 15 625 directly and indirectly;
- Sustainability aspect: awareness and training of target groups are essential. A maintenance system for modern water points paid for by municipalities should be developed as soon as possible;
- Remaining risks (beyond mitigation measures): 1) Investment in several non-productive boreholes, and 2) Difficult change in the behaviour of beneficiaries.

Specifics

- Equipment installed by new maintenance technicians (under guidance);
- Improvement of people's living environment (health).

SA10. Energy

Short-term goal: By 2024, 50% of households use less firewood and coal and 10% have access to new and renewable sources of energy.

Investment – Outcomes Review

- Investment cost: 7.4 M € (4,800 M FCFA);
- Job creation: 3530 permanent and 7100 temporary jobs;
- Capacity building: 3550 persons directly and 24 000 persons indirectly;
- Affected population: 38 230 persons directly and indirectly;
- Sustainability aspect: the development of the renewable energy value chain (deliveries and maintenance of equipment) is the basis for autonomous and sustainable access;



- Remaining risks (beyond mitigation measures): 1) Difficulty of appropriation of new technologies by beneficiaries and 2) High cost of initial investments.

Innovative aspect: Youth participation in the creation of solar energy companies to drive energy as a value chain to create jobs.

SA13. (Transboundary) Water Resources

Short-term goal: By 2024, the water resources of the Sourou Basin are managed efficiently in Mali, but also between Mali and Burkina Faso considering the needs of the users and the various sectors (agriculture, livestock farming, fisheries, ecosystems, etc.) as well quantified in the SAGE.

Investment – Outcomes Review

- Investment cost: 7.4 M € (5,000 M FCFA);
- Job creation: 100 directs;
- Capacity building: 150 persons directly;
- Affected population: 250 persons directly and 836 100 persons indirectly;
- Sustainability aspect: in the future, funding mechanisms (e.g. working capital) for data collection and equipment maintenance should be developed to ensure the related activities;
- Remaining risks (beyond mitigation measures): Interannual and intra-annual variability in rainfall and flows that determine the availability of water resources.

Specifics

- Improved equitable sharing of resources between users and sectors, and between Mali and Burkina Faso;
- Increased knowledge about ground and surface water resources (quantity and quality).

Innovative aspects: Creation of automatic reading devices of the water course of the basin (water level recorders) next to the existing hydrometric stations.

SA17. Governance and M&E

Short-term goal: By 2024, the ICS has all the expertise, and in collaboration with partner institutions and support, guide the effective implementation and monitoring-evaluation of PDIDS and its SEA for the benefit of the people and the environment.

Investment – Outcomes Review

- Investment cost: 2.6 M (€1,663 M FCFA);
- Affected population: 500 persons direct and 835 600 indirect;
- Job creation: 12 permanent and 6 temporary jobs;
- Capacity building: 25-30 persons directly;
- Remaining risks (beyond mitigation measures): State organizations at the regional level do not yet perceive the importance of inter community in the process of decentralization.

Specifics: A highly motivated team of 4 women and 9 men to work together and contribute to the development of the whole area.

Innovative aspects

- The inter-community (ICS) is in charge for the development of the PDIDS/EES and its implementation;
- Synergy and alignment of projects by NGOs and other organizations to avoid overlap and drive a collective impact.

