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2021 | Summary of the Evaluation Report

Senegal

Impact assessment of the initiative

“Sector Country Programme - Agriculture and Rural Development in Senegal (2014-2018)”



PAPSEN: AID 9577 - PAIS: AID 10424

This independent evaluation report has been commissioned by Office III of the General Directorate for Development Cooperation - Italian Ministry of Foreign Affairs and International Cooperation. The company STEM-VCR was designated to carry out the evaluation by means of a public award procedure pursuant to art 36 of the Italian Public Procurement Code.

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The opinions expressed herein represent the views of the evaluators, and are not necessarily shared by the commissioning body.

The cover image represents the traditional threshing of rice in the village of Mbalo Kounda, Commune Kiro Yero Goka, Kolda region (photograph by G. Brandolini)

The images on the back cover represent: top left, entrance to an irrigation farm in the municipality of Taiba Niassène, department of Nioro, Region of Kaolack. Above right voltaic system for the irrigation of a banana farm, municipality of Balambi, department of Sédhiou, region of Sédhiou (photographs by G. Brandolini). Photo below: dry grain management committee, construction of the grain warehouse, municipality of Linkiring, department of Vélingara (photograph by M. Sy).

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LIST OF ACRONYMS

AICS	Italian Agency for Development Cooperation
ANIDA	Agence Nationale pour l'Insertion et le Développement Agricole (National Agency for Integration and Agricultural Development)
AfDB	African Development Bank
NRC	National Research Council
CNRA	Centre National de Recherches Agronomiques (National Center for Agronomic Research)
STC	Service and Training Centre
DGCS	Directorate General for Development Cooperation
DRDR	Directions Régionales de Développement Rural (Regional Directorates of Rural Development)
DREFCCS	Direction des Eaux, Forêts, Chasse et de la Conservation des Sols (Department of Water, Forests, Hunting and Soil Conservation)
ADF	Agricultural Development Fund
FAO	Food and Agriculture Organization of the United Nations
EIG	Economic Interest Group
Ha	Hectare
BEI	Bio-Economics Institute
IFAD	International Fund for Agricultural Development
ISRA	Institut National de Recherche Agricole (Senegalese National Research Institute)
MAECI	Ministry of Foreign Affairs and International Cooperation
MAER	Ministry of Agriculture and Rural Equipment
MASHAV	Israeli Agency for International Development Cooperation
T	Metric tonne
SDG	Sustainable Development Goals
PAIS	Programme Agricole Italie-Sénégal (Italy-Senegal Agricultural Program)
PAPSEN	Programme d'Appui au Programme National Agricole (Support Program for the National Agricultural Program)
NAIP	National Agriculture Investment Plan (Programme National d'Investissement Agricole)
PRACAS	Programme d'Accélération de la Cadence de l'Agriculture Sénégalaise (Accelerated Programme for Agriculture in Senegal)
PRIMOCA	Programme de Développement Rural Intégré de la Moyenne Casamance (Integrated Rural Development Program of Middle Casamance)
SDDR	Sous-Direction de Développement Rural (Departmental Rural Development Service)
TIS	Territorial Information System
EU	European Union
PMU	Project Management Unit
UNICEF	United Nations International Children's Emergency Fund
USAID	United States Agency for International Development

1. Context of the initiative evaluated

1.1 Agricultural policy in Senegal

The Senegalese agricultural policies follow a **parallel path to the evolution of national development strategies**. The various and successive iterations of these policies are inspired and supplemented by the PAPSEN and PAIS projects.

The **National Agriculture Investment Plan (PNIA)** covering the **period 2011-2015** complements the efforts made by the Senegalese government over several years to ensure that agriculture played an important role in economic growth, food security and poverty reduction by 2015, and in ensuring a more balanced distribution of agricultural activities among agro-ecological zones, regions and local communities.

1.2 Description of the cooperation initiative under evaluation

The **PAPSEN** programme aimed to increase agricultural production and improve the incomes of rural populations by improving food security and promoting local economic development. This consists of the following elements:

- a. **The development of irrigated horticulture and fruit growing** with the technical collaboration of the Israeli Agency for International Development Cooperation (MASHAV) in the central regions of Thiès, Diourbel and Fatick;
- b. **Support for rice farming, horticulture and fruit growing, agricultural mechanisation** and local economic development in the southern regions of Kolda, Kaolack and Sédhiou.

Similarly, the **PAIS** aimed to improve the food security of populations in the regions of intervention covered by the Italy-Senegal cooperation programme, via an approach based on concerted development at local and sustainable level. This consists of the following elements:

- Support for Senegal 's **food sovereignty** through the sustainable improvement of rain-fed rice production.
- Support **for the sustainable intensification** of agriculture by building capacity among women and young farmers in rain-fed rice farming, horticulture, post-harvest processing and the marketing of agricultural products.
- Strengthening of the **technical skills** of beneficiaries and project stakeholders.
- Support for **institutional governance and** other stakeholders in sustainable agriculture and food security at central and local levels.

The PAPSEN and PAIS programmes are part of the "Agriculture and Food Security" sector of Italian-Senegalese cooperation. They were funded through the **bilateral channel** partly through donations and partly credit, and will be implemented between 2013 and 2021 as part of the Italy-Senegal Country Programme 2014-2016. The two projects support the PNIA and PRACAS with aid credits of €30 million and €15 million respectively.

The two programmes under evaluation include some aid credit components and some grant components, in particular for the funding of an expert fund, an on-site management fund, and for the involvement of the NRC (National Research Council) in cooperation with local entities and with the Israeli research institutions partnered with these. The programmes differ in relation to the promotion of the "service centres for technical assistance" of the PAPSEN project and the creation of "Agricultural Development Funds" to finance the initiatives of women's groups and associations of the PAIS project.

The **Ministry of Agriculture and Rural Equipment (MAER)** is the **supervisory body** for the two projects. It executes them through its departments, specialist agencies and decentralised bodies. The Ministry of Economics is a member of the national project-steering committee, alongside MAER, MAECI, DGCS and the Israeli Agency for International Development Cooperation (MASHAV). A trilateral agreement between DGCS, MASHAV and MAER defines their responsibilities and coordination arrangements.

2. The evaluation

2.1 Objective and purpose of evaluation

The overall objective of the evaluation was to **verify the impact and validity of the** two projects in the rural development sector in Senegal, and to identify good practices to be replicated and lessons learned.

Its specific objective was the **verification of the results achieved and the formulation of recommendations** for the main stakeholders of the projects and their development partners in Senegal, in order to guide future strategies and initiatives in the sector, in particular with regard to the joint Strategy and Programming of Italy and the European Union (EU) in Senegal. The evaluation also tested the impact of these interventions on the **economic empowerment** of women.

The evaluation was designed to produce **information and recommendations useful for improving the management of the interventions** themselves, and to enable identification and management of other cooperation interventions in Senegal and the Sahel region associated with the "modernisation of agriculture to combat poverty".

2.2 Some data on the consultation of direct sources

A total of 65 meetings or remote interviews were conducted as follows: 29 Economic Interest Groups (EIG), cooperatives and producer associations involving about 14,000 farmers, of which approximately 51% men and 49% women (of these 29 organisations, 28 participated through focus groups with an average of 8-10 people, a total of 280 people involved); 3 private companies; 5 national state agencies and central institutions of the Senegalese public administration; 9 local authorities (governors, mayors, prefects); 5 decentralised agricultural services (DRDR and SDDR); 4 international organizations and development banks (UNICEF, FAO, BAD, EU); 1 project partner (NRC): 2 meetings with AICS headquarters in Dakar; 7 central and peripheral structures (antennas) of the two projects.

With reference to geographical coverage, the field visits covered the entirety of the 13 departments located in the 6 regions involved in the two projects, as seen in the table below.

Regions and departments involved in the field consultation	
Regions	Departments
Kaolack	Nioro du Rip
	Kaolack
	Guinguinéo
Diourbel	Diourbel
	Bambey
Kolda	Kolda
	Médina Yoro Foula
	Vélingara

Fatik	Fatik
	Gossas
Sédhiou	Boukiling
Thiès	Thiès

3. Evaluation results

3.1 Relevance

TO WHAT EXTENT DID THE INTERVENTIONS FACILITATE ADEQUATE RESPONSES TO ISSUES ASSOCIATED WITH ACHIEVING MILLENNIUM DEVELOPMENT GOAL NO.1, POVERTY REDUCTION?

Italian Cooperation was active in Sédhiou in the Casamance region (southern Senegal), with the Integrated Rural Development Programme for Mid Casamance (PRIMOCA, 1985-2004) followed by the Local Development Fund Programme of Sédhiou (PFDLS, 2007 - 2010) which encouraged local participation to boost agricultural development. The PAPSEN (2012) and later PAIS (2015) projects **continue this action** by strengthening the capacities of farmers and integrating them into fruit, vegetable and rice value chains. The projects contribute to the goals of the National Programme of Investment in Agriculture (PNIA), which aims to achieve MDG no. 1. "*Reduction of poverty*". The choice of aid credit as a funding tool contributes to the participation of Senegalese agricultural institutions in the orientation of the projects' activities. The projects include a directly-managed donation component (expert fund for technical assistance), an on-site fund to support the operation of Programme Management Units (PMUs), and a donation component granted to the NRC to strengthen research, training and technology transfer capacity for farmers.

For the innovation component, the strategic lines of the two projects made use of the contribution of the NRC, which assisted the Institut Sénégalais de Recherche Agricole (ISRA). This component provided expertise to PAPSEN in renewing the infrastructure involved in applied research and dissemination, and to both projects in terms of technology transfer, planning areas of research and carrying out studies aimed at **resolving the production constraints addressed** by the two projects. These activities allowed better identification of constraints on production and the options available to remove them, providing researchers and decentralised Senegalese agricultural authorities and services with the knowledge and the conceptual and operational tools to set up structural interventions.

TO WHAT EXTENT ARE INTERVENTIONS DEFINED IN THE CONTEXT OF THE MILLENNIUM DEVELOPMENT GOALS STILL RELEVANT IN THE CONTEXT OF THE SUSTAINABLE DEVELOPMENT GOALS?

The objectives of the two projects **contribute** to the achievement of the Sustainable Development Goals (SDGs). Applied research and the transfer of innovation to farmers contribute to the achievement of food security and income generation in rural areas, which are the poorest in Senegal. The objectives of the two projects are aimed at increasing agricultural production and farmer income by directly contributing to the achievement of SDG no. 1. "*Defeat poverty: end poverty in all its forms, everywhere*"; and no. 2 "*Defeat hunger: End hunger, achieve food security and improved nutrition, and promote sustainable agriculture*." The hydro-agricultural improvement component for water regulation (rehabilitation of valleys), based on studies by consultancy firms and the NRC, promotes the integrated management of reservoirs, thus contributing to SDG no. 13. "*Combat climate change: take urgent action to combat climate change and its impacts*." Lastly, the projects' inclusive approach and promotion of eco-friendly agricultural technologies indirectly contribute to the achievement of SDG no. 5 "*Gender equality: achieve gender equality and empower all women and girls*".

TO WHAT EXTENT ARE THE TWO INTERVENTIONS COMPATIBLE WITH THE GOALS OF GOVERNMENT RURAL DEVELOPMENT POLICY?

The two projects are **highly compatible with** the aims of government policy on rural development, in terms of both approach and operation. Their strategy provides capacity and material and financial inputs for the execution of the PNIA, as well as the resources needed to link the creation of innovation to its appropriation by farmers, with a view to **strengthening value chains**. They support the **diversification of agricultural production** with the introduction of technological innovations in fruit and vegetable growing systems in all the assisted regions, and the intensification of rice and, marginally, other grain production in the south of the country.

In this context, the design of the credit component of AFDs, which is based on the decision-making autonomy of aid applicants, presents **some critical issues that** affect its implementation. The goal is to dispense credit for land improvement and production costs, on the basis of market demand. Along with other project components, this contributes to the creation or strengthening of market-oriented smallholder farms. These are the rural producers who are **best equipped technically and economically**, i.e. those who are able to take risks because they have reserve capital. As such, this condition introduces an additional variable to the PAIS strategy, namely that food security and poverty-reduction benefits are derived **from the success of entrepreneurs**¹. Such benefits do not directly correspond to the poorest segments of the population, which in this case should be supported through participation in the guidance of the project strategy. In fact, this component is primarily aimed at developing entrepreneurship. The AFD was created partly in order to offer opportunities to the most vulnerable in society, but this is not the main objective, because credit clearly involves risk and offers greater advantages to entrepreneurs with more capacity, whose success indirectly creates employment and therefore benefits the poorest strata of the population.

3.2 Coherence

TO WHAT EXTENT ARE THE TWO INITIATIVES COMPATIBLE WITH THE INTERVENTION OF COOPERATION STAKEHOLDERS INVOLVED IN THE COUNTRY'S AGRICULTURAL DEVELOPMENT?

As stated in the "Three-year Planning and Steering Document 2017-2019", Senegal is a priority country for Italian Cooperation, which has significantly increased its activities in the country in recent years. This special focus was reaffirmed by coordination work within the EU, which led to the "Joint European Strategy Document for Senegal 2018-2023".

MAER coordinates the actions of international cooperation agencies in the sphere of agricultural development and food security. In this context, the PAPSEN project was conceived as part of a **three-party collaboration** which also included MASHAV, the Israeli international cooperation agency, and was formalised by a three-year protocol signed on 12/10/2012. The work of the PAPSEN/NRC component began in 2013, but ended up taking place bilaterally, due to the difficulties that hindered collaboration with MASHAV, namely the establishment of preferential relations by both organisations with their counterparts within the ISRA; this was very soon compounded by the withdrawal of Israeli cooperation from Senegal for reasons unrelated to the project. In fact, both organisations established **direct relations** with their Senegalese counterparts but failed to develop a joint action plan, despite the initial participation of both in the identification

¹ The annual interest rate for short term credits is 6.5%, that at mid and long term is 5.5% per year.

of demonstration horticultural farms². Thanks to the NRC, PAPSEN therefore began strengthening the ISRA in 2013, improving its laboratories and the CNRA pilot farm, and helping to create the Service and Training Centre (STC). The next phase began in the central region in 2016, with the collaboration of the EIGs of the pilot and demonstration companies. Since then, these companies have catalysed the collaboration of several technical aid and training projects from USAID, FIDA, FAO, World Vision, Caritas and the Red Cross. On the other hand, the work of the two projects became part of the operation of the Senegalese agricultural services with collaboration agreements with the country's agricultural agencies.

In the southern region, collaborations with other international cooperation initiatives have also been propitiated by EIGs. **The guidance exercised by MAER** in the distribution of resources, with the assignment of specific goals and beneficiaries to each project, limits convergence between the different components of the two projects.

In tal modo i due progetti hanno focalizzato la propria attenzione su obiettivi tecnici **senza coordinarsi** direttamente con altre iniziative, dato che il MAER assicura la loro compatibilità e ne integra i contributi nei propri piani d'azione. In this way, the two projects focused on technical objectives without coordinating directly with other initiatives, since the MAER ensures their compatibility and includes their contributions in its own action plans.

3.3 Efficiency

TO WHAT EXTENT HAVE RESOURCES BEEN USED IN A WAY THAT PROMOTES THE EFFECTIVENESS OF THE ACTION OVER TIME AND IN THE MANNER INTENDED?

The PAPSEN activities that registered the **highest expenditure** are sections 1.1 *Increase and diversification of vegetable and fruit production (90%)* in the centre, and 2.1 *.2 Intensification of technical cultivation routes (32%)* in the south, while the other production support activities registered variable rates around 20%, for a total value of 17% of the total project budget. The lowest expenditure figures were recorded in activities supporting supply chains and economic development in the south of the country, accounting for slightly above 3% of the available budget. Overall, with the exception of the donation component from the NRC (100% budget execution), PAPSEN had a budget execution rate of **33%** and a credit component of **13%**.

The PAIS activities with *the highest budget execution rate* are those outlined in sections 3.4 *Technical assistance and training in agricultural development (64%)* and 3.3 *Research and development in women and agriculture, upland rice, post-harvest processing (ISRA) (17%)*, followed by sections 3.2 *Seeds and fertilisers (9%)* and 1.1 *Support for rain-fed rice cultivation in the Kolda region (4%)*.

The PAPSEN/NRC component spent some €2.2 million between 2013 and 2016, i.e. the **entirety** of the available financial resources, of which 70% was borne by the MFA and 30% by the NRC (see Table 5 in Appendix 5). This expenditure corresponds to studies carried out by the NRC in collaboration with the ISRA and the strengthening of that institution's programmes and infrastructure.

The greatest delays, and consequently the **lowest rates of execution of the available budget**, are found in the allocation of AFDs and the execution of infrastructure work. In both cases, the

² Collaboration with MASHAV could mobilise specialist expertise in the formulation of technical packages for drip irrigation, small-scale rural mechanisation, and improved horticultural seed production, complementary to the NRC's expertise in land analysis, seed multiplication and agricultural expansion.

laborious Senegalese procedures of credit allocation and tendering, and the approval of the annual ex-ante and ex-post audit reports of the tenders by Italian Cooperation, took more than a year. In fact, most of these activities were concentrated during the two-year period 2019-2020 and are still ongoing.

TO WHAT EXTENT HAVE THE PLANNED MODES OF INTERVENTION (AID CREDIT AND GIFT) PROVEN TO BE ADEQUATE WITH REGARD TO ACHIEVING THE OBJECTIVES AND EXPECTED RESULTS?

The efficient combination of aid credit and donations depends primarily on the project **management capabilities**. In fact, these modes are **complementary** and fit into the value chain approach taken to encourage fruit and vegetable and grain production. The promotion of market access mechanisms for cash as well as other inputs is in line with the priorities of the PNIA and meets the **enfranchisement needs of farmers**, whose dependence on public subsidies is among the causes of their limited **level of innovation**. On the other hand, the two projects are integrated with the work of the agricultural services and share their centralistic methods of intervention and administrative inflexibility, aimed at preventing arbitrary decisions. The organisation of a national project unit and two centres linked to regional antennas achieves this approach in a structural manner. The same is true of the mechanism for granting credit, which is integrated with the decision-making processes of local authorities and depends on the technical expertise of decentralised agricultural services.

The monitoring and evaluation missions focused on the progress of work and provided guidance on how to resolve the bottlenecks that hamper its execution. The monitoring plan developed at the beginning of PAPSEN was revised in 2020, and the monitoring team is implementing changes to improve its execution. On the other hand, these missions do not have a strategic frame of reference that systematises their results for the purpose of analysis and presentation of the project as a whole, much less for broader decision-making, i.e. the **reorientation of the strategy** and activities of the two projects beyond the resolution of their contingent problems, the execution of specific activities or, at most, coordination with the actions of decentralised agricultural services. Therefore, even when they have noted the existence of structural constraints, this has not affected the strategy of the projects, which is ultimately to intervene to support the work of the MAER and decentralised agricultural services. This **weakness of the management system** - the lack of an organic relationship with monitoring activities - is evident from reading the yearly reports and the annual work plans and budgets, formally combined in a single document, but which present the activities in very different ways that limit understanding of the links between activities carried out and those yet to be implemented.

TO WHAT EXTENT HAS THE INTEGRATION OF RESEARCH WORK AND COOPERATION WITH THIRD-COUNTRY BODIES TO SUPPORT LOCAL STAKEHOLDERS BEEN ABLE TO INFLUENCE THE RELEVANCE AND EFFECTIVENESS OF ACTIONS?

Collaboration between applied research programmes in agriculture and aid projects for rural development is the **most salient aspect** of the Italian Cooperation intervention to support Senegalese agriculture. Strengthening the ISRA, establishing pilot and demonstration farms and conducting studies to set up training and assistance schemes for farmers create knowledge useful to decision-making processes and innovation (as in the case of improved seed), which ultimately improve farming systems. This approach is extremely important in terms of strengthening the fruit, vegetable and cereal value chains, since the capacities of the Senegalese agricultural services are **purely executive** and therefore insufficient to guide farmers' decisions in the field of modern and innovative technologies.

3.4 Effectiveness

TO WHAT EXTENT WERE THE PLANNED PROJECT ACTIVITIES IMPLEMENTED?

Project activities **took longer to implement than anticipated**, so many activities involving land management are currently in the execution phase. Field visits and available annual reports allow us to specify the following achievements.

A. NRC/PAPSEN

The activities of the NRC formally concluded at the end of 2016. However, the institute continued collaborating with the ISRA and the two projects thanks to subsequent funding from AICS, through PAIS and PAIS PLUS, and later with a dedicated project: the PPATRD (with funding of 1.5 million euros; resolution no. 47 of 16/07/2018). The results of the first project were remarkable in that the scientific studies and events produced knowledge and conceptual tools which make it possible to address the constraints - environmental, technical, economic, operational, etc - that hinder the two value chains, fruit and vegetables and cereal and rice, at the root, in a systematic way. This is the case with the agro-climatic and socio-economic studies, which were framed in a territorial approach suitable for **agricultural development planning**. Finally, the selection of sites and beneficiaries can be based on objective data, meaning that assistance can be targeted directly towards the farmers who need it.

The strengthening of the ISRA in applied research, such as the improvement, conservation and multiplication of seeds and in-vitro plants obtained by improved micro-propagation of fruit, vegetables and rice, also has **broader significance** because it enables the cultivation of varietal selections or cultivars which are tolerant to biotic and abiotic stresses, and adds value to other production inputs with high technological content.

At the same time, the assistance provided to PAPSEN in establishing pilot farms and demonstration plots **reinforces** the mechanisms for technology transfer from the ISRA - along with assistance in planning research to support PAPSEN in the central regions - to agencies that assist farmers. These activities are related to the support provided by the NRC for the orientation and execution of the activities of the PAPSEN project, i.e. the design of interventions, both in terms of identifying beneficiaries, and deciding the technical content of such actions.

In addition, the NRC provided expertise for the strengthening of the ISRA's research and outreach infrastructure and programmes, contributing to the (re)enabling of test plots and the creation of the Service and Training Centre, which plays an important role in this sphere. In effect, **it strengthened the value chain** of technology transfer from research to the farmer's field by boosting the information content and interaction between stakeholders.

The NRC provided scientific and technical consultancy to support the planning activities of the AICS and the PMU, **enhancing** the results of its studies and carrying out field surveys and monitoring missions that formed the basis of their subsequent activities. Support for local development projects included several studies on the water regime of the Casamance River basin and land occupancy dynamics, analyses of land use and land cover, water dynamics of the Casamance River,³ and participation in discussion events, as well as the development of the Territorial Information System (TIS) which would serve to strengthen the GIS unit of the Direction *des Eaux et Forêts, Chasse et de la Conservation des Sols (DREFCCS)* of the MAER.

³ "Eaux et sociétés face au changement climatique dans le bassin de la Casamance" and 25 land use maps of the assisted valleys.

B. PAPSEN

PAPSEN intervened in 5 regions with activities that contribute to the creation of value chains for fruit and vegetables and cereal and rice. The creation of the PMU and its organisation at local level reinforced the MAER's training and technical assistance initiatives, and agreements with agricultural agencies allowed it to strengthen its role in monitoring farmers. On the other hand, activities in the central regions focused on the introduction of varietal innovation and production techniques in the **fruit and vegetable** sector in the regions of Thiès, Diourbel and Fatick.

Specifically, only some of the knowledge created by the preliminary studies was transferred to producers, resulting in suboptimal technical choices (see the next section on project impact). The sites established for these activities were also used for training events involving several thousand farmers, about two-thirds of whom were women. In fact, the irrigated horticultural farms refurbished or created so far **are significantly fewer than planned**, i.e. 18 (15+3) compared to 73 (70+3) whose (re)development is still in progress, and even in the former, the work is not complete. Training and technical assistance objectives were also only partially met, despite the STC's enablement. Strengthening seed production focused on strengthening multipliers and on linking pre-basic improved seed production and the post-multiplication phases with their supply to the most capable horticulturists on the pilot farms.

In the south, the PAPSEN project began the hydro-agricultural upgrading for water regulation on farms in the rice lowlands with water regulation works that facilitate the transfer of innovative technology and the valorisation of distributed inputs from the agricultural services (Sédhiou). The choice of the rice farming value chain **implicitly endorses the autonomy of women**, who are the main growers of this crop. Furthermore, the project expanded its interventions to the post-harvesting stage, with the construction of 7 cereal warehouses out of 10 planned (work on the others is underway) and the design and construction of 100 km of tracks - whose construction is nearing completion - for market access by the most remote producers in the Sédhiou region.

Collaboration with the ISRA enabled training in and promotion of environmentally friendly technologies. Lastly, PAPSEN carried out initiatives to **strengthen producers' associations** from a management angle, and their partners from a technical angle. This action included assistance to 21 municipalities of the Department of Sédhiou in the drafting of Local Development Plans (LDP) in order to create a favorable environment for the subsequent implementation of hydro-agricultural work for water regulation in the valleys and the construction of infrastructure. These interventions added value to the studies conducted by the BEI. In both the centre and the south of the country, PAPSEN funded the distribution of production inputs, especially seed and fertilisers, in line with MAER agricultural policy and as a **complement** to technical assistance activities for the transfer of technology.

C. PAIS

The work of PAIS, which intervenes in three regions (one in the centre and two in the south) makes use of the resources of the PAPSEN PMU, except in the central region of Kaolack and Kolda in the south. PAPSEN is not active in these areas, and PAIS has therefore created its own antenna. Consequently, these activities also draw on the results of initial studies conducted by the PAPSEN project and on joint training and technical assistance capabilities. Similarly, the fruit and vegetable and cereal-rice supply chains are addressed **structurally**, from knowledge creation to technology transfer and the provision of production and post-harvest inputs. On the other hand, a substantial portion of PAIS investment is made at the request of beneficiaries, making ADF credits available to enable them to carry out work and purchase materials and services.

The hydro-agricultural upgrading of water regulation in the valley lowlands (Kolda) is the **entry point** for production intensification, and in particular the improvement of the water economy.

Funding micro- and meso-projects was extremely complex. Securing agreements with lender banks, setting up and training members of the 9 departmental pre-selection committees, awareness raising, and launching calls to tender considerably delayed this work, which by the end of 2020 had approved 177 projects out of the 375 forwarded to banks. However, according to PAIS coordinators in Kolda and Kaolack, there were **significantly fewer** projects in progress than were approved at the time of the evaluation (11 and 19, respectively), when 68 projects were funded in both 2019 and 2020. Because ADF funds were disbursed between 2019 and 2020, often lagging behind the needs of farmers, most activities - and particularly building work - were still in progress at the time of the evaluation survey. We note that the fruit and vegetable beneficiaries of the Naatangué farm (Kaolack) visited have given up on the installation of the drip irrigation system and have not yet completed the construction of poultry houses, a sector in which the project does not have its own expertise⁴. This indicates the importance of providing training and technical assistance to beneficiaries in advance, in order to avoid issues and risks (especially if farmers' choices depend on agricultural policy priorities in whose formulation they had no say) that **hinder the success of** these actions.

At the same time, PAIS provided training and technical assistance to farmers by distributing seed, machinery, and fertilisers. One component of the project also supported multiplication from pre-basic rice seed of the improved short-cycle (less drought-sensitive) and lowland-adapted Nerica variety. Training has facilitated technology transfer, especially in the case of water economics (with the introduction of raised plot borders and seedling transplant techniques) and rice seed multiplication (on behalf of the ISRA by farmers or for distribution among EIG members by farmers).

Lastly, PAIS implemented activities to **strengthen** farmers' associations, carried out institutional diagnosis of farmer associations in Kolda, trained the 24 members of departmental unions in Kaolack in gender equality and development, and created 4 local gender equality committees and 2 departmental networks for the Nioro and Guinguiné (Sédhiou) EIGs. In addition, PAIS strengthened 10 farmers' associations by furnishing them with the corresponding Naatangué (Kaolack) family farms supported by ANIDA⁵.

TO WHAT EXTENT DID THE MANAGEMENT AND STEERING BODIES ENSURE THAT THE ACTIVITIES OF THE TWO PROJECTS PROCEEDED SMOOTHLY?

Given the variable capacity of available experts (among other things, PAPSEN has one agent or animator per region - i.e. one per department - against three for PAIS), the two projects are **heavily dependent on** local technical services and agricultural agencies. This situation makes **alignment of the two projects with national and local agricultural policy priorities inevitable**. The project's contribution to their strengthening was limited - apart from the case of the ISRA and the STC - to training technicians and members of ADF pre-selection committees directly involved in project activities. Therefore, PAPSEN and PAIS **did not affect** the decision-making and operational mechanisms of the assisted agricultural administrations, which follow their own criteria and regulations in their collaboration with the two projects. This approach is in line with the strategy of

⁴ Naatangué is a model farm established by ANIDA which includes a well, chicken coops, an irrigation system, fencing etc.

⁵ The Naatangué family farms have a size of 1 - 2 ha, which is divided between horticulture, arboriculture, poultry, fish etc. and are equipped with wells with solar-powered pumps and storage tanks.

the two Senegalese agricultural policy assistance projects, but its automatic execution reduces the innovative value of international cooperation initiatives.

At the micro level, this approach tends to endorse **uniform solutions** which are not always appropriate for the context (mechanisation, drip irrigation, seed multiplication for the ISRA, Naatangué farms etc), with initiatives that are redundant or not dimensional to producers' needs. Many assisted farmers and ADF beneficiaries pointed out that the contributions made by the projects (in concrete terms, the extension of fencing for farms, seed multiplication, the size of warehouses) are **very different** from the objectives of their production plans. The planning of project activities ends up incorporating such technologies, because they allow the technical expertise of farms to be mobilised and thus strengthen their use on the ground, rather than on the needs verified in the direct relationships established with farmers during the process of identifying their needs. Decision-making autonomy and the promotion of an approach specific to the projects is most evident in initiatives to strengthen producers' associations, particularly those that support the autonomy of women farmers.

In general, the execution of the two projects was in line with Senegal's agricultural policies, which is consistent with its conception, but **it was unable** to guide decisions on the basis of a vision and innovative technical inputs of its own design. In fact, initiatives aimed at strengthening fruit and vegetable and rice value chains promote **technologies which were already mentioned in the action plans of the decentralised agricultural services**. The added value of these initiatives lies above all in the valorisation of knowledge created thanks to collaboration with the NRC, and in the strengthening of producers' associations. These inputs produced **limited effects** because the institutional partners of the two projects played a decisive role in guiding the production choices of the beneficiaries. This is evident in the pace of implementation of work to create horticultural farms in the central regions, and in the selection of ADF beneficiaries in the south, which were both subject to administrative vicissitudes that the adoption of a results-based mode of intervention - appropriate for a project - would have avoided.

3.5 Impact

WHAT ECONOMIC, SOCIAL, ENVIRONMENTAL AND POLITICAL EFFECTS HAVE THE INITIATIVES PRODUCED IN THE SHORT TERM, AND WHAT TRANSFORMATIVE PROCESSES HAVE BEEN INITIATED?

Technology transfer and capacity building of producer organisations and fruit and vegetable and rice supply chains have produced **numerous positive impacts in** terms of productivity and income generation. These results are **still limited**, due to the fact that most of the production activities started or re-started in 2019⁶. On the other hand, combining different actions on the same farms produced **cumulative results**. This is the case of the rice-growing perimeters of Casamance, which have benefited or are benefiting from hydro-agricultural work for water regulation on rice farms in the valleys, with improved water regimentation and the introduction of the transplant technique, and at the same time from access to improved seed, fertilisers and in some cases agricultural machinery. The **combination** of these factors increased productivity from 1-1.5 t/ha to 2-4 t/ha, to the point that farmers in these EIGs achieved surpluses that allowed them to move from self-consumption to market supply.

Nel Centro, la situazione dei produttori è **più incerta** in quanto l'economia dell'acqua presenta problemi maggiori. L'azienda orticola di Touba Tul, ha registrato produttività della cipolla assai variabili, a secondo dell'annata agricola (da MT/Ha 25 nel 2014/2015 a MT/Ha 7 nel 2016/2017 e a

⁶ Rice production in the south of the country began in the early years of PAPSEN implementation.

MT/Ha 14 nel 2018/2019), così come anche la produzione di arachide ha registrato produzioni alterne, variabili tra MT/Ha 2 e MT/Ha 4, di anno in anno nello stesso periodo. Il pomodoro ha registrato i risultati più soddisfacenti, mantenendo una resa di MT/Ha 37 nelle campagne agricole 2017/2018 e 2018/2019. L'azienda di Farou Danaye Diop ha prodotto MT/Ha 3 di cipolle nel 2015/2016 e niente l'anno successivo a causa della mancata disponibilità di sementi e di input agricoli. Infatti, la contrattazione dei fornitori nella fase di installazione e le variazioni del clima hanno influito negativamente sulla costruzione dei pozzi e sul funzionamento dei sistemi goccia a goccia. Il PAPSEN nel Centro assiste 807 agricoltori, di cui 287 uomini e 520 donne. Questi agricoltori sono distribuiti su 18 aziende (3 aziende prioritarie e 15 dimostrative) per un totale di Ha 90 di superficie. Ogni produttore dispone in media di m² 500 e le donne m² 250. La produzione si concentra sulle cipolle, i pomodori e la lattuga, per esempio nelle aziende di Talagne, di Mbassis e di Darou Fanaye. Le produttività maggiori si registrano nelle aziende di Touba Toul, di Mbassis e di Sambé.

In the central regions, the situation for producers is **more uncertain**, as the water economy presents greater problems. The horticultural farm of Touba Tul, recorded highly variable onion productivity, depending on the agricultural year (from 25 t/ha in 2014/2015 to 7 t/ha in 2016/2017 and 14 t/ha in 2018/2019); peanut production also recorded alternating results, varying between 2 and 4 t/ha from year to year in the same period. Tomato recorded the most satisfactory results, maintaining a yield of 37 t/ha in 2017/2018 and 2018/2019. Farou Danaye Diop farm produced 3 t/ha of onions in 2015/2016 and nothing the following year, due to the non-availability of seeds and agricultural inputs. In fact, supplier contracting during the installation phase and climate variation adversely affected well construction and operation of drip systems. In the centre, PAPSEN assists 807 farmers, of which 287 are men and 520 women. These farmers are distributed on 18 farms (3 priority farms and 15 demonstration farms) with a total area of 90 ha. Each male farmer has an average of 500 m² and female farmers 250 m². Production focuses on onions, tomatoes and lettuce, as, for example, on the farms of Talagne, Mbassis and Darou Fanaye. The highest productivity is recorded in the farms of Touba Toul, Mbassis and Sambé

We note the **extreme variability** in productivity by year and farm. This situation confirms that the technology introduced is unable to control the environmental factors (drought) and organisational issues (operation of pumping systems and access to agricultural inputs) that affect crop growth. These problems were felt less in the south, where farmers interviewed report fairly homogeneous productivity gains - solely dependent on the amount of technical assistance received - but also experience problems of access to inputs and crop marketing, depending on the distance from urban markets.

The mechanisation of agricultural work is the sector in which **inadequacies** in planning and methods of intervention had the greatest impact

3.6 Sustainability

TO WHAT EXTENT HAVE THE EXPECTED RESULTS BEEN ACHIEVED IN A SUSTAINABLE MANNER?

The use of knowledge and innovation resulting from the collaboration between the NRC and the ISRA, and the continuation of the results obtained by PAPSEN and PAIS, are hampered by the **failure to resolve some strategic issues of Senegalese agricultural policy** and the consequent suboptimal collaboration between the two projects and the MAER's agricultural services. These problems are highlighted by the fact that after the partners left, some demonstration farms in the centre reduced their operations, and the infrastructure that had been installed began to deteriorate. The situation is better in the south, where the actions of DRDRs and SDDR are more flexible and open to input from beneficiaries.

Increased yields have allowed many farmers to reinvest in the purchase of production inputs. Deficiencies in mechanisms for input delivery, training and technical assistance are **barriers to the sustainability of** such investments. The cumbersome nature of agricultural credit and insufficient local technical capacity increase the risks faced by producers and **discourage investment and the expansion of successful farming systems**. The two projects duly worked to address these issues, but in **too limited** a way to achieve structural results that remove constraints limiting the sustainability of new technologies. Certain evident technical and organisational obstacles exist, particularly in the central regions, which, although identified by the NRC studies, were then **underestimated** and inadequately addressed during the execution of the activities.

3.7 Visibility

TO WHAT EXTENT WAS THE INITIATIVE ACCOMPANIED BY AN EFFECTIVE COMMUNICATION CAMPAIGN TO PROMOTE THE AIMS OF THE PROJECT?

The NRC created two websites: www.papsen.org, www.papsenpais.org, and <http://www.cnrweb.tv> for videos, which publicise the results of studies carried out and provide thematic maps of the sites proposed for implementation of the projects. The same institute also organised and took part in conferences in which the results of the studies were discussed. The NRC BEI therefore plays an **auxiliary role** in the dissemination of PAPSEN's past activities, even after its initial contribution has ended. This support also applies to ongoing collaborative work between the NRC and the two projects, and thus has **limited validity** with regard to their subsequent initiatives as a whole.

3.8 Cross cutting criteria: gender equality

Women are highly active in producer associations in the south, where they often hold the positions of president and treasurer of EIGs. They play a **central role** in the management of land resources, thanks to the hydro-agricultural upgrading of water regulation for rice farms in the valleys and irrigated perimeters. Women and young people are also well-represented in EIGs in the centre (although their presence at the decision-making level is often symbolic, due to socio-economic dynamics). The introduction of mechanisation and water economy systems reduces their workloads, and production surpluses allow them to generate income and thus have a greater influence on family and production decisions through their investments. However, delays in the implementation of the two projects' activities **disincentivised** women's participation in the management of horticultural farms in Darou Fanaye Diop and Bambey Sérère. Obviously, these results are a reflection of PAPSEN's **inadequate efforts** to strengthen producer associations and the dispersion of resources in various actions without having created the conditions that would allow them to be efficiently employed.

4. Conclusions, lessons learned and best practices

4.1 Conclusions

4.1.1 Relevance

As stated in the "Three-year Planning and Steering Document 2017-2019", Senegal is a priority country for Italian Cooperation, which has significantly increased its activities in the country in recent years. This special focus was reaffirmed by coordination work within the EU, which led to the "Joint European Strategy Document for Senegal 2018-2023". The sector strategy for agriculture and rural development defined by Senegal and supported by the coordination of European member

states identified an overall objective for this sector aimed at improving the food security of the population.

The strategy of the two projects is complementary in both geographical and operational terms. The projects collaborate with the decentralised agricultural agencies and services of the Ministry of Agriculture and Rural Equipment (MAER), which they involve in the planning and implementation of field activities, and with farmers' associations, which enable the mobilisation of beneficiaries. The project activities focus on strengthening and transferring technology to producers, while contributing to a limited extent to building the capacity of agricultural institutions and support services. This strategy is flawed in that the limited capacities and resources of local agricultural services force the two projects to adapt their activities to the contingent priorities of MAER and the assisted decentralised agricultural services, limiting the use of knowledge and technologies resulting from studies and research carried out in collaboration with the NRC.

4.1.2 Coherence

The two projects are consistent and integrated with Senegal's agricultural policy and with the priorities of Italian Cooperation in the country, as well as with the 2019-2021 three-year planning document and the Guidelines for the Development of Rural Agriculture and Food Security (2012) of the DGCS (Directorate General for Development Cooperation). The Italian Agency for Development Cooperation (AICS) participated in joint planning by the EU, undoubtedly after the elaboration of the two projects, but in any case is a point of reference for implementation and coordination with the other member states. Participation in (and coordination of, since 2019) the relevant donor group (rural development) also enables coordination with other non-European countries and multilateral agencies.

4.1.3 Efficiency

The resources available for field activities are very limited, especially in departments in the central regions assisted solely by PAPSEN. Collaboration with Senegalese agricultural agencies and MAER regional and departmental offices mobilises additional professional resources for setting up and monitoring activities, but ultimately further fragments the projects' interventions to cater for the contingent priorities of these bodies, and therefore limits their joint impact on the fruit, vegetable and rice value chains. The Senegalese procedures for awarding contracts and the Italian Cooperation processes for approving the various phases of tenders created delays in the execution of the two projects; this was further affected by the COVID-19 pandemic in 2020. The most serious delays concern the building of infrastructure, which is subject to laborious bidding and monitoring procedures, and the allocation of credits to producers (Agricultural Development Funds or ADF), which is also subject to laborious pre-selection work carried out by departmental committees set up by the PAIS. This process is prior to the economic and financial evaluation of applications by the lender banks, which in turn is slowed by their own internal procedures. This situation confirms the lack of independence of the two projects, which end up acting as operational components of the Senegalese agricultural administration. The result of this was that PAPSEN had spent 18% of its available budget at the end of 2019, PAIS 9%, and PAPSEN/NRC 100% of available funds, while the ADFs, which began in 2018, had distributed approximately €0.4 million in credits by the end of 2020.

The projects allocate the AICS an expert fund and an on-site direct management fund to provide technical assistance for initiatives. The PAPSEN project employed an expert from Italian Cooperation from the outset. The PAIS project has been more uneven. The PAIS expert fund was not used, and in 2019 it was converted to a fund for direct on-site management, following an AICS resolution not to use missions but local contracts in the various locations. Since 2018, the experts have been managed by the single on-site fund for technical assistance at the AICS headquarters in

Dakar. Directly managed on-site funds were used to contract Italian and Senegalese experts for technical and administrative work, and other expenses related to initial PAPSEN/NRC activities, funding agreements, logistics and office costs.

The planning and monitoring of the two projects focuses on the awarding and execution of contracts rather than the results of their activities. So, the information collected and the indicators calculated are not used for the decision making and orientation of the projects. This situation has prevented the results obtained so far being used to formulate content for communication campaigns and to publicise the innovations and good practices produced.

4.1.4 Effectiveness

PAPSEN/NRC. Research conducted by the NRC in collaboration with the ISRA produced approximately 50 agro-environmental and socio-economic studies and mission reports and some forty thematic maps for the territorial planning of the two projects' interventions. The NRC advised PAPSEN (in the central regions) on the strengthening of the ISRA's capacities.

PAPSEN. The PAPSEN project improved equipment in the central laboratories (e.g. the refrigerated chamber), refurbished the experimental farm of the *Centre National de Recherches Agronomiques* (CNRA), created the Service and Training Centre (STC), and contributed to the creation of the Sédhiou and Kolda laboratories, with assistance from the NRC. The project established 3 pilot farms, selected 70 sites for the creation of demonstration irrigated horticultural farms, of which 15 are functioning, trained 1,054 farmers and assisted 807 farmers. Refurbishment work is largely underway or is yet to begin. The 3 pilot farms in Mbassis, Touba Toul and Darou Fanaye Diop do not yet have photovoltaic systems to drive the submersible pumps in the boreholes. The other 55 demonstration farms are not yet operating due to the delay in procurement of the photovoltaic systems that drive the submersible pumps. In some cases, the facilities constructed are inadequate, particularly in terms of irrigation infrastructure and storage facilities. The project contributed to the elaboration of Local Development Plans in 21 municipalities and built 7 cereal warehouses of the 10 planned; it has also planned and is completing the construction of 100 km of tracks to link the production areas to the market in the south of the country.

PAIS. The PAIS project has created local gender equality committees, strengthened producers' associations, particularly women's groups, through training events, and supported agricultural officials in a number of processes instrumental to the execution of project activities. It identified 16 valleys and began work on the development and rehabilitation of lowland soils (hydro-agricultural upgrading of water regulation in rice fields). The project set up departmental committees for pre-selection of ADF projects, of which 136 were approved (404,009 euros), supporting both infrastructure creation and production.

4.1.5 Impact

The combination of different actions, such as the hydro-agricultural upgrading of water regulation on farms, training and the supply of seed, machinery and fertilisers, as well as the establishment of a sub-chain for rice seed, increased horticultural yields and doubled - and in some cases tripled - rice yields. This growth shows considerable annual variation across the central regions, due to incomplete or inadequate water systems and farmers' dependence on regular supplies of subsidised inputs. The most significant results were achieved in the south, where increased rice production by assisted women farmers not only met their own consumption needs but, for the first time, provided a surplus crop whose sale generated monetary income. The greatest difficulties encountered in adopting innovative production techniques are access to water, which many farmers in the central regions consider too expensive, and inadequate maintenance and repair of farm equipment. This situation indicates that the transfer of these technologies has been set up in a simplistic, or rather

top-down, manner, lacking adequate trialling or at least comparative field demonstrations that would provide farmers with the knowledge they need in order to choose the options most appropriate to their abilities and needs. Delays in the granting of ADF credits have often forced recipients to limit crop advances and consequently expansion. The allocation of funds without adequate accompanying measures, such as training and technical assistance, has limited the efficient use of inputs purchased with these funds. Lastly, the scattered nature of activities across the territory, coupled with the delays affecting activities, impacts the projects' ability to work together to integrate value chains and remove the constraints that limit agricultural productivity.

4.1.6 Sustainability

Assistance to the MAER focused on building a certain amount of technical capacity to support the implementation of agricultural policy. In effect, this policy guides the choices of stakeholders in the value chains supported by the projects by limiting their capacity for self-regulation. This situation also influences the transfer of technology from the ISRA to farmers by encouraging the dissemination of innovations whose viability has not been proven on the ground. The sustainability of project-related agricultural innovation therefore depends on redirecting agricultural policy towards greater self-regulation of value chains.

4.1.7 Communication and visibility

The PAPSEN/NRC component has been the most active in the area of communication. The NRC publicised the results of research and studies conducted with the ISRA. The websites created by the NRC remain active and provide access to the studies and cartography created in the early years of PAPSEN and PAIS, as well as the NRC's recent contribution to technical assistance in the south of the country.

4.1.8 Gender equality

PAIS, and to a lesser extent PAPSEN, encouraged the empowerment of women, who are the main stakeholders in Senegalese agriculture. The work of the two projects had a positive impact on women's participation in the management of agricultural production, following the formulation of a gender-equality strategy and subsequent detailed action plan (2017) by a female Senegalese expert. This work involved the organisation of local committees and the execution of systematic activities in this area, with notable results in the training and empowerment of members of women's EIGs, particularly in the south, where farmers have begun the transition from self-consumption to commercial production.

4.2 Best practices

The activities carried out under the two projects highlighted the following best practices.

Technology transfer value chain. Integration between applied research or experimentation and field demonstrations facilitates the sustainable adoption of innovation, as long as there is no attempt to impose predetermined technology packages. To reap the benefits of this approach, comparative testing of various technologies, including traditional techniques, should be carried out, so as to take into account the varying capacities and starting points of individual farmers.

Territorial planning. Carrying out territorial studies (agro-ecological and socio-economic) allows the constraints and conditions that determine the success of technology transfer to be identified. The validation and dissemination of such studies is an integral part of territorial planning, as it valorises the contribution of beneficiaries in defining objectives and methods of intervention.

Empowerment of women. The organisation of women farmers valorises the role they play in this sector, raising them from providers of family labour to protagonists in crop choices. Strengthening them must therefore include building technical capacity, but also building the management capabilities of women's associations.

4.3 Lessons learned

In terms of lessons learned, the evaluation team believes that, for the continuation of the two projects or for future interventions to be planned in the same area, it is useful to consider the aspects described below.

Strategic setup. An approach not exclusively based on alignment with national agricultural policy, but rather on the development by project managers of its own strategic vision, facilitates the transfer of innovative technology - the added value of international cooperation - to farmers.

Strengthening of and participation in producer associations. Strengthening the management capacities of beneficiaries' associations increases their weight in directing and implementing project activities geared to technology transfer. It encourages the involvement of vulnerable groups who are often excluded from such initiatives due to their difficulties in dialogue with technical services and their propensity for risk.

5. Recommendations

In conclusion, the evaluation team makes the following general recommendations.

AICS, PMU. Results-based project management. Review the logical frameworks of projects so that their indicators (no more than ten *core indicators* for use in strategic planning and communication) measure progress toward achieving outcomes and objectives, i.e. project-induced changes in beneficiaries' activities, conditions and context. Develop specifications for each indicator with the baseline data collection plan, and train staff to collect data.

AICS, PMU. Link monitoring and communication. Use *key indicator* values for institutional (annual reports) and external (circulation among partners and beneficiaries) communication. Use indicator values in communication campaigns to ensure they are shared with all stakeholders (upstream and downstream accountability of projects).

AICS. Fruit and vegetable and rice value chains. Discussion with other donors involved in funding Senegal's food security regarding the requirements for the self-regulation of agricultural value chains, in a participatory approach to *governance* which reduces the influence of subsidies in guiding farmers' choices. The results of such discussions should contribute to the formulation of a common position in discussions with the MAER on the role played by subsidies in directing agricultural production.

PMU. Strengthening the technology transfer chain. Carry out demonstrations of technologies and production innovations which allow comparison between proposed technologies. Support field demonstrations with success stories and exchange and discussion between farmers. Systematically include the elements that determine the success of technology transfer (capitalisation of best practices, comparative trials, results-oriented training) in technical assistance actions.

MAER, PMU in collaboration with banks. Systematise the experience of farmers' credits and develop sector studies, or rather, *business plans*, for reference when calculating the risks of activities to be financed.

PMU. Training aimed at ownership of knowledge by beneficiaries. Establish criteria to which training activities must adhere. These should include: (a) the development of a trainer's manual and concise documentation (posters, operational guides) for use in teacher training and field demonstrations, and (b) a requirement that beneficiaries formulate an agenda or plan for using the skills and knowledge acquired. In this way, it will be possible to target training to concrete objectives, plan assistance to the beneficiaries and measure the level of their learning.

PMU. Expert mobilisation plan. Develop a training and technical assistance plan that outlines the skills required to implement the technologies promoted by the two projects. This plan should define the skills of experts contracted directly by the projects and those required of the staff of partner agricultural agencies. Include these specifications in memoranda of understanding with the agencies mentioned.

AICS, MAER. Building capacity for the repair of agricultural machinery and equipment. Create a network of mechanics who can repair farm machinery and distributors of parts located close to users, as an alternative to the mere distribution of machinery. In the event that a training programme for mechanics cannot be implemented, strengthen or create mechanisation services. The density of the mechanisation network should be based on thematic studies and mapping and therefore benefit from the reactivation of the Geographic Information System developed by the NRC at the start of the PAPSEN project.

AICS, PMU, MAER. Organisational strengthening and gender equality. Develop or implement (in collaboration with other initiatives) training modules on results-oriented management, targeting EIG leaders and particularly female leaders.

