A. Strategic Relevance of the Proposed Program

1. Considering its role in the Senegalese economy, the agricultural sector is centrally placed to ensure sustainable and inclusive growth. However, agriculture remains vulnerable to weather shocks, which are likely to intensify with climate change. The agricultural sector grew at an average rate of 3.2 percent between 2000 and 2016, but that average conceals considerable volatility. Despite substantial growth in output since 2015, agricultural growth has been insufficient to diminish poverty, especially in rural areas. The big swings in agricultural growth mainly result from the effects of weather and climatic hazards on pastoralism and rainfed crops such as groundnuts, millet, and other cereals that have traditionally dominated agricultural production. These swings are highly correlated with large changes in overall growth rates, suggesting that for Senegal to maintain the large growth in agricultural output attained since 2015, more effort is needed to protect agriculture from climatic variability and enhance the resilience of rural livelihoods.

2. Senegalese agriculture is vulnerable to climate shocks, with drought being the most important risk in terms of frequency and impacts. A strong correlation exists between changes in agriculture contribution to Gross Domestic Product (GDP) and the meteorological conditions, demonstrating agriculture’s sensitivity to weather-related events. The food crisis resulting from the 2011 drought affected a sizable fraction of the country’s population. Average rainfall has decreased by about 30 percent since 1950 with increasing variability between years, causing severe droughts and flooding episodes, while average annual temperature increased by 1.6°C. Furthermore, while uncertainty remains regarding longer-term climate change projections, short- and medium-term rainfall deficits and variabilities, combined to increased average temperatures, are expected continue to plague Senegal’s agriculture sector. Indeed, the frequency and severity of droughts are estimated to remain the same or increase. Senegal’s Intended Nationally Determined Contribution (INDC, 2015) considers adaptation options as top priority to allow for higher resilience of its rural population to increasingly unpredictable weather patterns. Senegal’s climate change strategy is based on the vision of Climate-Smart Agriculture (CSA) and access to modern energy-saving technology for everyone. It seeks good adaptation practices and techniques that will combine sustainable productivity growth and increased reserve stocks in communities to reduce food insecurity, and permit conservation of natural resources while enhancing carbon sequestration and reducing GHG emissions. The Program will emphasize support to sustainable intensification and diversification by promoting the use of CSA and other sustainable agriculture practices.

3. In recent years under PRACAS and PNDE (the national blueprints for agricultural development), the production of key staples has surged with the expansion of cropped area and increased input use encouraged by public policies. To modernize and develop the agricultural sector, the government has subsidized seed and other inputs, provided financial support, supported agricultural mechanization, and promoted measures to develop farmers’ skills. These policies raised yields and production of the main crops identified as priorities under PRACAS—cereals, horticultural crops, and pulses. For example, between 2013 and 2017 rice production rose 160 percent, onion production by 74 percent, and groundnut production 108 percent. Continued public support for rice over the last two decades, including support for increased investment, reforms in irrigation management, and the expansion of lowland (and rainfed) cropping systems—is paying off with higher rice yields, surpassing the African average and closing the gap with the world average. The private
sector has contributed to the improvement in agriculture productivity owing to the modern processing units developed along the Senegal River Valley.

4. **However, recent improvements in output are linked more to higher input use and area expansion than to fundamental productivity increases, and they have had little impact on job creation.** Labor productivity in agriculture has not improved in the decades, and very little improvement in TFP (such as innovation and skills) has occurred. To achieve the objective of poverty reduction and drive the government’s transformation agenda, TFP and labor productivity must grow significantly through increased employment opportunities for the rural workforce (including off-farm employment) and support for producers to modernize and integrate their value chains more closely with the economy.

5. **While some public policies have helped boost production, concerns about the efficiency and sustainability of those policies highlight the need to focus public spending on productive factors that will support the transformation agenda.** Government policies, including high public spending on agricultural subsidies, have had a less than proportional impact on the added value created in the economy. While three-quarters of the budget allocated to agriculture was spent on crops, only half of the growth in agricultural GDP stemmed from crop production, raising concerns about the efficiency and sustainability of these expenditures. Input subsidies may have boosted agricultural production, but as noted, they have not led to an increase in TFP.

6. **The groundnut sector illustrates many of these concerns.** Government support to groundnut prices through the state-owned oilseed marketing company (SONACOS) has proven ineffective.\(^1\) It has distorted competition among groundnut buyers, delayed the modernization of the groundnut sector, prevented its alignment with international markets, and used scarce government resources that could otherwise have supported the agricultural resilience agenda and/or strengthened social protection programs. Since 2014, reforms undertaken by the GoS to liberalize the groundnut market have started yielding results, increasing groundnut exports and attracting new investments in the value chain (storage, deshelling facilities, with significant potential in term of off-farm employment). At the same time, however, distortionary policies are providing a lifeline for the less profitable oil-processing industry and preventing farmers from capturing the full value of the expanding export market for whole nuts. Given these circumstances, the government should anchor its groundnut policy framework in reorienting the value chain to produce high-quality groundnuts for export and the confectionery industry, including specific protection against large swings in revenue occurring when international prices and domestic production are low. This reorientation will require Senegal to enact reforms that create a level playing field for the private sector to invest and innovate in groundnut processing and marketing.

7. **Several additional steps must be implemented to achieve a sustained rise in agricultural production and productivity.** The agricultural sector should be better integrated with other sectors of the economy, starting with the local food transformation industry, which frequently uses imported inputs. Senegal should also improve risk management mechanisms to shield itself against volatile climatic conditions by: (i) improving farmers’ resilience to weather shocks through the development of climate-smart technologies such as high-yielding, drought-tolerant, and early maturing varieties; (ii) developing irrigation systems to better control water and gradually move away from rainfed agriculture; and (iii) developing sufficient infrastructure to support a more productive livestock sector. Stronger cooperation is required between research centers and agricultural advisory services to

\(^1\) Only 82,000 metric tons were collected in 2017 against a total production of 1 million metric tons. The projected purchase of 300,000 metric tons in 2018 was expected to cost about US$120 million or 0.8% of national GDP.
facilitate the transfer of knowledge that can reinforce the technical capacity of small-scale producers to boost productivity. Efforts should be made to improve the reliability of agricultural statistics by using new ICTs such as GPS and drones, along with adequate estimation methodologies and improved weather forecasts. Finally, it is critical to encourage the private sector to play a bigger role in the development of agriculture.

8. **PRACAS (focusing in crops) and PNDE (focusing on livestock) have been reviewed and extended recently to better respond to the foregoing challenges.** Recognizing the initial achievements at the institutional and farm level, the review recommended that the future efforts of PRACAS and PNDE should emphasize value chain development, adding value beyond the farm gate in response to market demand, the diversification of markets, and attracting private sector investments to the agri-food sector. The review also recommended increasing access to investment support to a wider range of stakeholders, particularly agricultural credit, and to address impact and sustainability concerns. The proposed Program will support MAER and MEPA to implement these recommendations, with a view to consolidating and sustaining the achievements of the first phases of PRACAS and PNDE while addressing shortcomings in marketing and adding value to agri-food production.

9. **The design of the Program was informed by recent evaluations and analytical work.** Program design benefitted from the results and the recommendations of internal reviews as well as recent sector work by the WBG and other partners, such as Food and Agriculture Organization of the United Nations (FAO). On that basis, the design of the Program recognizes that improvements are needed in three complementary areas: (i) strengthening the capacity of some entities and agencies created under PRACAS and PNDE, including MAER and MEPA, as well as affiliated government entities and the inter-professions, so that they can fully carry out their mandated activities; (ii) accelerating the implementation of key reforms initiated under PRACAS I (such as subsidy reforms); and (iii) supporting improvements to existing instruments to increase investments by small and medium producers and enterprises in the agri-food sector.

10. **The Program Development Objective** is to enhance productivity and market access of priority commodity value chains and livestock, in the Extended Groundnut basin and Agro-Pastoral Areas.

11. **To achieve its development objective, the Program will focus on three Results Areas (RAs).** The RAs emphasize sustainable intensified productivity and strengthened farmer resilience, increased market access and value chain integration, and improved sector governance. These RAs have strong synergies, as the following discussion will indicate.

**Results Area 1: Improved crop and livestock productivity and resilience**

12. This RA is aligned with LPDSA and LPDE Specific Objectives 1 and 2, respectively. For the crop sector, this RA focuses on improving productivity and strengthening resilience by promoting climate smart agriculture practices and also diversification to mitigate market and climate risks faced by producers in production systems in the target areas. For the livestock sector, this RA will address major obstacles to improved livestock production and productivity (primarily animal diseases and poor feed) and will include genetic improvement for selected production systems and husbandry practices. The PforR interventions in both sectors will emphasize climate co-benefits.

13. **Sub-Results Area 1.1.a: Increased crop productivity.** Results under SRA 1.1.a. will be achieved by the sustainable intensification of major agricultural production systems with an emphasis on groundnuts, in addition to other priority cropping activities, through four main sets of activities:
a) **Adequate production and availability of certified seed.** Better access to certified seed adapted to local agro-climatic conditions and market demand is a prerequisite for sustainably enhancing on-farm productivity, and it implies the establishment of a market-driven national seed system. Such a system needs to be based on a sufficient supply of breeder and foundation seed from ISRA, an efficient and professional network of seed multipliers from the private sector, as well as effective seed production quality control by public institutions. To that end, this SRA 1.1.a. aims to: (i) restore ISRA’s capacity to produce and manage stocks of foundation seed for groundnuts, including through partnerships and contractual agreements with seed enterprises; (ii) develop the professional capacities of seed multiplication cooperatives and private enterprises to respond to market demand (in terms of variety, quality, and quantity) for seed of groundnuts as well as diversification crops; and (iii) strengthen the technical and institutional capacities of the public seed quality control and certification services (DISEM) and other private entities as delegated by the public authorities. Certified seed production will be complemented by phasing out by 2022 the current government seed subsidy; the subsidy program, designed to compensate for the certified seed shortage, subsidizes mostly uncertified and unproductive seed. The Program will also scale up the promotion of suitable varieties, notably the new varieties recently released in Senegal and West Africa under WAAPP;

b) **Access to quality inputs (fertilizer, pesticides, seed, etc.), small agricultural equipment, and technical services.** The Program will support increased use of relevant farm inputs through smart subsidies (targeted, temporary, and degressive) to give producers better access (including access through POs) to technical innovations such as seed, inputs, and tools from the private market. With support from the Senegal Safety Net program, the subsidy program will be reformed to improve targeted access by small, poor producers through systematic use of the Unique National Registry. The current input subsidy program will also be revised to increase its targeting of women; this will allow to address the gender gap in productivity that is partly linked to the fact that women have less access to productive resources, among them inputs. The local agro-dealer network will be strengthened to enhance farmers’ access to adapted labor-saving tools and small equipment for crop and livestock production, via loans or leasing by financial institutions. The Program will also promote integrated land/soil management to address decreasing soil fertility, by: (i) soil mapping by ISRA and other partners to update soil fertility status, including soil carbon and mineral content (especially phosphates), to formulate the required soil fertility amendments; (ii) facilitating access by producers to relevant information for managing and restoring soil fertility, including field testing kits, and (iii) promoting the establishment of an official quality control body for fertilizers and other agro-chemicals;

c) **Access to quality agricultural support services (field and digital).** The Program will support the widespread diffusion of proven climate-smart technologies/innovations developed by R&D (including under the WAAPP regional networks). To this end, the Program will support the formulation and implementation of a national agricultural services strategy that will help: (i) disseminate agro-climatic information and climate-smart technologies and energy-efficient innovations; (ii) strengthen the technical and organizational capacities of producers organizations (POs) and processor SMEs; (iii) facilitate the participation of value chain actors in interprofessional innovation platforms; (iv) reinforce the capacity of the National Agricultural Advisory Agency (ANCAR) and technical assistance to POs by establishing auxiliary local advisory services; these services will help disseminate sustainable CSA practices for intensification and diversification, in particular through targeted technical training and Farmer Field Schools (FFSs); and (v) reinforce MAER’s plant protection services, notably as concerns
the use of biopesticides. Efforts will be made to leverage modern Information and Communication Technologies (ICTs) and use digital agricultural applications to scale up best practices; and

d) **Climate-risk management and sustainable use of agricultural resources** (mainly soil, water and biodiversity). The Program will support the use of CSA technologies and practices, integrated natural resource management for sustainable intensification and diversification of rainfed family farming systems, involving crops and livestock, with the view to addressing their resilience and sustainability challenges. Key elements include: (i) greater adoption of CSA technologies for improved water management in rainfed production systems, including conservation tillage and water storage for complementary irrigation, as appropriate; and (ii) enhanced integration of crop and livestock activities and participatory land management, at basin and plot level, to improve soil conservation and integrated management of organic and mineral fertility.

14. **Sub-Results Area 1.1.b.: Increased livestock productivity.** Results under SRA1.1.b. will be achieved by the sustainable intensification of selected livestock production systems, adapted to the increasing climatic variability and change: small to medium scale dairy and small ruminant production. These systems are closely related to crop production systems (especially the targeted groundnuts systems), generate products that are in high demand for domestic consumption, can show a significant margin of production and productivity improvement, and can contribute significantly to poverty reduction and improved food security. The proposed interventions are split into four main sets of activities:

a) **Improved animal health.** The prevalence of animal diseases and constraints on animal health services can severely reduce livestock productivity. The Republic of Senegal has committed to eradicating PPR by 2025–30, in line with the FAO/ World Organization of Animal Health (OIE) global eradication strategy, because this disease has a highly detrimental impact on small ruminant production and thus on poverty reduction. Achieving this target will require investments to be scaled up to roll-out the national strategic plan for PPR eradication, ensure vaccine quality, mark animals, and conduct sero-surveillance, among others. Poultry production continues to be severely impaired by recurrent outbreaks of Newcastle disease and fowlpox, while the vaccination program has not even reached 5 percent of the poultry population. A new strategy is required to significantly increase poultry protection against these diseases and develop national capacity to produce the bivalent thermostable vaccine. Improvement of the national Veterinary Services in line with international (OIE) standards will include the finalization, validation, and submission for approval of the new Animal Health and Veterinary Public Health Code.

In view of these priorities, activities supported by the Program will: (i) ensure an adequate supply of veterinary inputs and equipment (such as vaccines, needles, cold chain equipment, vaccinations pens, and means of transport for health workers); (ii) provide support for operating costs as well as training for the network of animal health professionals; (iii) support communication activities related to animal health; (iv) support ISRA’s capacity to produce the bivalent (Newcastle/fowlpox) thermostable vaccine; and (v) support development of a poultry vaccination strategy and implementation of its pilot phase.

b) **Access to improved forage, fodder, and feed.** Because the supply and quality of forage and feed are other critical aspects of livestock production and productivity, the Program will seek to increase seed forage production and distribution to progressively meet the needs of dairy and fattening units and mobile herds to complement natural rangeland production.
To meet these needs, the Program will support (i) the establishment of an agreement with ISRA for the production of quality foundation seed of a diverse range of forage crops, that will serve to produce certified seeds after multiplication (first and second generations). The seeds will be multiplied through a network of selected private professionals, certified by DISEM, and disseminated. The program will support the distribution of these seeds to ensure the establishment of fodder production plots in the intervention area; (ii) the strengthening of the agro-pastoralists capacities on techniques of valorization of agriculture by-products (composting, chopping, treatment with urea/molasses, etc.) to derive a better profit either in agricultural manure or in animal feed, also supporting them to acquire minimum equipment; and (iii) with relevant stakeholders, a joint strategy on feed will also be developed, and norms and a regulatory framework specifying the conditions for feed production and marketing will be revamped, to ensure the quality of feed products.

c) Access to improved genetic material for resilient dairy production. The program will support the formulation of a National Genetic Improvement Plan, which will develop a comprehensive operational strategy to prioritize and better organize the Government’s interventions in genetic improvement of all species (with dairy in priority), including local breeds (which are best adapted to local conditions).

d) Improved animal housing and herd management. The Program will support the development of detailed guidelines for various categories of production systems, different scales of production (small to medium), and species (all major species produced), reflecting cost-efficient, easily accessible and energy saving equipment, techniques and tools, and results expected in production and productivity from adopting these resilient management practices. In parallel, MEPA will continue to work on mechanisms to facilitate access to credit for livestock producers to implement the related investments.

15. **Sub-Results Area 1.2: Increased agricultural resilience.** Results under SRA 1.2. will include diversifying the agricultural production base and extension of the pilot program of social safety nets initiated by MAER. Results under SRA1.2 will be achieved through two sets of interventions:

a) Reinforcing and diversifying the agricultural production base. This set of activities will help to expand the cropping mix beyond the traditional rainfed array (groundnut, millet, sorghum) to include tree crops (cashew, mango) and horticultural produce. Support to implement diversified production systems will include rehabilitation of degraded land and soils through investments, access to proper seeds, technology and know-how for the new crops tested and by building the capacity of farmers and herders to use water and land management techniques and infrastructure (small catchment weirs, retention basins, anti-salt structures, pasture and woodlot management, windbreaks, etc.). Small-scale water infrastructure will be rehabilitated or developed (where conditions for sustainability so allow) to expand the area under efficient irrigated systems and improve livestock watering points (use of excess flow from boreholes, solar pumping, and so on). Access to CSA inputs (including adapted drought tolerant seed and organic fertilizer), as well as technical and managerial training for production diversification and value addition and building capacity of communities in land management and use, and farmers and herders in integrated soil and water management will be supported. Provisions will be made to facilitate access to land, finance, and technical services by beneficiary farmers, notably youth and women, individually or in organized groups; and

b) Setting up a cash transfer program. Support for agricultural insurance should be complemented by ongoing social protection programs, such as the government assistance program for poor households (Programme National de Bourses Familiales - PNBSF) and the
upcoming World Bank–funded Social Protection Program. These programs can enable the poorest farmers, who lack access to insurance, to recover from climate-related disasters or drastic groundnut price decrease through the provision of emergency relief funds and assets to restart production cycles. The Program will foster strong inter-ministerial coordination to enable the social protection agency to design and adopt robust assistance strategies, leveraging such tools as the National Unique Registry (RNU) and the network of facilitators on the ground, and adapting the payment systems established in the PNBSF to respond to climate shocks and disasters.

**Results Area 2: Improved business environment and market integration**

16. RA2 aims at strengthening the links between agricultural production and other segments of the value-chain, promoting inclusive business alliances, and removing critical capacity and physical impediments to promote the development of private-sector-led services and agro-industries all along the value chains. SRAs 2.1 and 2.2 are aligned with LPDSA Specific Objectives 2 and 3, and SRA 2.3 is aligned with LDPE Specific Objectives 1 and 3.

17. **Sub-Results Area 2.1: Improving the groundnut business environment and market integration.** Results under SRA2.1 will focus on the groundnut value chain and will be achieved through four interventions:

   a) *Lifting distortionary policy and regulatory measures.* Development of the groundnut value chain has been plagued by government regulations and policy interventions that have restricted fair and open competition, promoted rent-seeking behavior, and brought about inefficient and inappropriate allocations of public resources. The Program will support revision of Decree No. 85-178 of 18 February 1985 to remove provisions and regulations that impede free primary marketing, including the regulations for transport, quality control, and competition between operators that collect and process groundnuts. It also supports the review and necessary revision of the system for setting the groundnut producer price (currently based on the world market price for groundnut oil rather than whole nuts) and phasing out of the subsidy to groundnut oil processing companies. Access to CSA inputs (including adapted drought tolerant seed and organic fertilizer), as well as technical and managerial training for production diversification and value addition, building capacity of communities in land management and use, and farmers and herders in integrated soil and water management will be supported. The value chain actors that currently run the producer price setting system will receive technical capacity building to master the new system and update it as needed;

b) *Reorganizing the groundnut inter-profession and establishing an effective PPP.* The CNIA was established to be a key player in the promotion and management of the groundnut value chain, but institutional and organizational weaknesses cause it to be very ineffective. Given the new dynamics in the value chain and the development prospects presented by growing market opportunities, the CNIA must be restructured to become a much stronger institution, both in terms of legitimacy and managerial capacity. A review of the CNIA is currently planned and is expected to provide recommendations for restructuring. The restructuring is expected to include greater representation of key players in the value chain, such as POs, industrialists, off-takers/ exporters, and artisanal processors, among other market actors. In addition, the program will support the evaluation of the current partnership framework agreement between the Government and CNIA and related action plan. Important issues to be effectively addressed by CNIA under the revised PPP framework include: (i) formulation of value chain
development strategies in close consultation with relevant government departments; (ii) an appropriate framework for contractual agreements between POs and buyers; (iii) capacity building for farmer organizations/institutions on climate-smart value chain business development; (iv) the formulation of, and adherence to, export quality standards to ensure a good international reputation for groundnuts originating from Senegal; and (v) management of the (floor) producer price setting mechanism, independently and objectively, taking into account relevant world market parameters;

c) \textit{Reinforcing agri-food product quality control and meeting export quality standards.} Without adequate product quality control, market outlets can quickly close for produce with large development potential such as confectionery groundnuts, maize for animal feed, and mangoes\textsuperscript{2}. Therefore the Program will support: (i) the dissemination of appropriate technologies to control aflatoxin in groundnuts and maize along the value chain (including use of Aflasafe from the International Institute for Tropical Agriculture, which has been successfully tested in Senegal); (ii) DPV in extending the area treated for fruit fly infestation (only 3,000 hectares of mango orchards were treated in 2018, although 25,000 hectares were infested)\textsuperscript{3}; and (iii) strengthen the quality control system for agri-food products infested with aflatoxin and fruit flies; and

d) \textit{Facilitating product marketing.} The Program will support the promotion of contract-farming systems, including multi-year contracting arrangements that could reduce uncertainty for value chain participants, foster professionalization of producers, and promote traceability of the produce. Contracting should help: (i) procure farm inputs for producers, thereby eliminating the need for government intervention; (ii) secure market outlets for producers; (iii) facilitate access to financing; and (iv) reduce uncertainty for industry and exporters in procuring harvested groundnuts. The program will also support dissemination and sharing of market information (price, quantity, and quality). Finally, while large-scale infrastructure (such as roads, power plants, and manufacturing or industrial processing facilities) are excluded from PforR financing, the Program will support the construction and rehabilitation of small-scale rural infrastructure such as feeder and connector roads, as well as aggregation/storage and processing parks in and/or around selected economic poles. The Program will ensure that such investments are climate resilient.

18. \textbf{Sub-Results Area 2.2: Increased livestock market access.} Results under SRA 2.2 will be achieved through the following interventions designed to reduce food losses and increase revenues and jobs along the dairy value chain. The Program will help POs and SMSEs connect with and meet the requirements of the main companies for processing and marketing dairy products (located and selling mainly in urban areas), to increase their procurement of locally produced milk; and provide targeted support to milk producers and value chain actors (milk collection, cold storage, processing and sale) to improve value addition to milk produced in less connected areas, yet important dairy producing areas. The Program will focus on three intervention areas:

a) \textit{Establishing conditions to create linkages between producers and other value chain actors.} The Program will support the integration of production and industrial segments by facilitating contractual arrangements of milk producers with processors. This will be based on the establishment of platforms in the main dairy producing areas, allowing to identify

\textsuperscript{2} For example, Senegal received 24 alerts from the EU in 2017 on fruit flies on mango.

opportunities for market development, producer-processor linkages, leading to the development of business plans and investments;

b) **Facilitating access to finance:** The Program will facilitate access to finance through FONSTAB to selected beneficiary (individuals or groups of producers) to meet requirements (quality and quantity). The Program will therefore support the establishment and rehabilitation of milk collection and processing centers. Technical and managerial capacities of professionals in the value chains will be also be strengthened; and

c) **Supporting POs and SMEs.** The Program will support existing POs to increase their representation and efficiency to serve as both providers of advice and services for members producing and marketing animals and animal products (disseminating techniques and innovative CSA technologies, respecting standards, promoting new products adapted to demand, branding and certifications, business and marketing skills) and interface with the Government to develop and implement programs. It will also strengthen the capacity of SMEs to scale up and/or upgrade production. To address the gender gap in income, that is partly linked to women fewer access to markets, specific training and capacity building will be provided to women and women groups in order to foster their participation in business alliances.

19. **Sub-Results Area 2.3: Increased access to financial services.** Results under SRA2.2 will be achieved through two interventions:

a) **Improving agricultural insurance.** Agricultural insurance has been gaining significant traction in Senegal over the past few years; around 200,000 farmers and herders were covered during the 2018 crop season and more than 269,000 in 2019. To meet the objective of covering an additional 131,000 by 2024, the Program must address the key issues of affordability, data availability, and the lack of awareness of the benefits of insurance. The Program will therefore support the reimbursement of arrears owed to CNAAS and the premium subsidy envelope that the Government commits on an annual basis; the subsidy rate for small-scale farmers will be 50 percent in 2020, and an exit strategy is expected by 2024. The Program will also provide support for the Government to conduct mass awareness-raising campaigns on the benefits of agricultural insurance and will build government capacity to collect and disseminate the climate data required to design appropriate products and claim settlement processes; and

b) **Promoting the WRS.** WRS is in its development phase in Senegal, which has started with IFC’s support to the Ministry of Commerce and Small and Medium Enterprises in 2014. The WRS is expected to be used as collateral to receiving loans from financial institutions. Further to the adoption of the WRS Law in 2017 and the implementing regulation in 2019, the Program will support its promotion in the extended groundnut basin.

**Results Area 3: Improved sector governance, coordination, and program management**

20. RA3 is aligned with Specific Objective 4 in both the LPDSA and LPDE. It addresses the policy and market failures that prevent efficient private sector development in the agri-food sector, focusing on the groundnut value chain. It also strengthens the organizational and institutional environment to facilitate the development of diversified and resilient agri-food value-chains, to improve the coordination, planning, and implementation of government programs in agriculture and livestock sector, while meeting its climate adaptation and mitigation challenges, and to monitor, assess, and report on progress. RA3 encompasses the following intervention areas:

a) **Strengthening the policy dialogue on agriculture.** The Agro-Silvo-Pastoral Orientation Law (LOASP, June 2004) forms the basis of Senegal’s rural development policy and creates a Higher
Council for Agro-Silvo-Pastoral Orientation (CSOASP) and Regional Agro-Silvo-Pastoral Committees (CRASPs). The Program will support both CSOASP and CRASPs to: (i) conduct their operations, in particular the organization of their periodic steering and programming meetings, (ii) execute their missions to implement LOASP, in particular to ensure that coherent actions, projects, and programs support proper implementation through balanced development of the territory and subsectors and the promotion of an enabling environment in rural areas. The Program will also support finalization of the decree establishing and setting the operating rules for the National Agro-Silvo-Pastoral Advisory Body (SNCASP), including operation of its advisory services for promoting agricultural innovation;

b) *Reinforcing the technical support services of MAER and MEPA.* The Program will help to build capacity focusing on agricultural research, agricultural extension and training, and animal health services, with a focus on modernizing family farms and addressing the key production constraints of small-scale producers. It will also support the development and approval of an upgraded regulatory framework for agricultural extension and training;

c) *Reinforcing capacity at MAER and MEPA for program planning, statistics, and M&E.* The Program will support key capacity-building efforts to: (i) strengthen the ability of MAER, MEPA, and their regional departments to plan and coordinate the different stakeholders and projects involved in implementing PRACAS II and PNDE; and (ii) strengthen national institutions in charge of data collection, processing, and analysis to improve their operations to better inform policies and monitor program implementation. Support will focus particularly on updating capacity at MAER and MEPA to run efficient MIS and M&E systems, which should better equip them to collect, process, and produce the data required to assess the performance and implementation of PRACAS II and PNDE;

d) *Conducting other capacity-building activities.* The Program will also provide other support to strengthen capacity, i.e., adequate means and facilities, including computer and transport equipment, for MAER and MEPA agents to perform their respective tasks and implement priority surveys; and

e) *Technical coordination.* The Program will support two TCTs for the crop and livestock subprograms, respectively, including payment of salaries and other operating expenses as needed.

21. **Program activities will generate climate adaptation and mitigation co-benefits.** Under Result Area 1, several activities will be specially geared towards increasing climate change co-benefits as they relate to the promotion of CSA practices as well as more efficient productive crop and livestock production systems that minimize energy and natural resource use, and specialized activities regarding weather forecasts or early warning systems. This will include, for example, facilitating the diffusion of agrometeorological information to farmers—thus increasing their ability to adapt to climate change, or promoting the use of renewable energy in tillage, storage and agri-food processing units. Improved animal health (reduced incidence and prevalence of contagious diseases), more efficient herd management and nutrition (through forage and fodder production in particular) will contribute to reducing efficiency gaps by avoiding losses and increasing the productivity of animals, as well as reducing the need for synthetic fertilizers and contributing to Carbon sequestration in soils, thereby adapting to and mitigating climate impacts. Climate change adaptation and mitigation co-benefits will arise also from the diffusion of a range of CSA technology options and innovations adapted to selected value chains in the targeted agro-ecological zones. Under Result Area 2, facilitating access to markets will bring about adaptation and mitigation co-benefits: improved market information will boost farmers’ ability to adapt to climate
variability, notably by helping them better time their harvests and thus decrease post-harvest losses. Support for quality certification programs with provisions that help producers adopt practices and varieties that increase resilience to climate change and climate variability will multiply the mitigation potential of CSA and energy-saving practices. Improved market access will lead to more efficient herd management in the livestock subsector, as farmers will react more to market signals. These schemes will also help further tap the mitigation potential that can arise from improved CSA and energy saving practices. Under Result Area 3, the integration of climate change issues in participatory sector planning, program implementation and evaluation at all levels will directly contribute to climate change adaptation for resilience but also mitigation of its impacts.

Table 3.1: Key Program CSA actions with co-benefits on climate adaptation and mitigation in the targeted area

<table>
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<th>Results area</th>
<th>Adaptation co-benefit</th>
<th>Mitigation co-benefits</th>
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| RA 1: Improved crop and livestock productivity and resilience | • Agro-climatic information/ early warning system  
• Research focused on increasing climate-resilience  
• Quality agriculture advisory services to promote adapted varieties & CSA practices for resilient productivity and adaptation in groundnut-based systems  
• Multiplication/dissemination of drought tolerant varieties/ seeds and related CSA inputs (+ subsidy reform)  
• Climate-risk management and sustainable use of agricultural resources (land, water, biodiversity)  
• Promote CSA technologies & energy-efficient innovations  
• Integrated watershed, soil & water management, agroforestry and CSA practices for adaptation and resilience in groundnut-based systems  
• Innovation stakeholder platforms to promote use of adapted CSA practices (incl technical assistance)  
• Capacity strengthening of producer & their organizations (PO) for integrated resource management adapted to CC/CV at basin and farm level  
• Scale up ICT for digital agricultural information-dissemination systems, support decision-making | • Optimize sustainable use of natural resources (water soils biodiversity)  
• Integrated land/soil management and water use (with protected/buffer zones, agroforestry)  
• Reduced ecosystem degradation/ deforestation, ‘bush’ fire management  
• Capacity building and access to quality agricultural services, climate risk management and sustainable NRM  
• Reduced GHG emissions, use of compost, organic manure, bio digesters  
• Increased Carbon storage/pools in soils and vegetation (reduced tillage, OM management soil coverage, composting OM)  
• Energy-saving technologies (tillage, transformation, value addition)  
• Enhanced capacity/training producers and institutions on integrated and participative agric. resource management  
• ICT to support decision-making for GHG emission reduction |
| RA 1a: Improved crop productivity | • Improved animal health services (reduced incidence and prevalence of contagious diseases linked to CC impact)  
• Invest in food safety measures for livestock if food and water security is threatened by CC/CV  
• Climate-smart pasture management, new forage crops species and varieties better adapted to climate impacts.  
• Fodder production (varieties/species adapted to CC), harvest and storage for productivity resilience  
• Strengthening of farmers’/herders’ organizations for common management CSA practices at basin/farm levels  
• Support farmers and institutions to adapt to climate change impacts on the livestock sector through training, capacity building, and information dissemination | • Reduced livestock methane/ GHG emissions through manure management and feeding practices (incl. nutrition efficiency, efficient herd management)  
• Improved carbon pools (rangeland management, increased carbon content of soil, rehabilitation of degraded lands, etc.)  
• Reducing methane or other GHG emissions (e.g. manure management with bio-digesters, improved breeding practices, improved animal health services, nutrition efficiency, etc.)  
• Support farmers and institutions to adopt climate-smart practices through |
<p>| RA 1b: Increased Livestock productivity | | |</p>
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| RA 1: Improved crop and livestock productivity and resilience | • Promotion/funding for research on climate resilient practices/development  
• Invest in climate smart livestock infrastructure/equipment.  
• Crop/livestock integration (integrated climate risk management of natural resources for sustainable and resilient use of agricultural resources) | capacity building, and information dissemination  
• Bush fire reduction/ sustainable community land management and use |
| Sub-Results Area 1.2: Increased agricultural resilience | • Protect against climate-induced water scarcity, invest in efficient rain-water harvest & irrigation/drainage systems  
• Rehabilitation of degraded lands/soils, climate resilient land management and infrastructures (irrigation & drainage)  
• Rehabilitation/development of sustainable permanent and supplemental small-scale irrigation infrastructure for off-season horticulture production (issue linked to CC/CV).  
• Diversification/use of drought tolerant spp./vars  
• Organic fertilization and soil OM management  
• Crop diversification and multi-cropping (pulses, vegetable production perimeters, seed multiplication, etc.)  
• Diversify livelihoods vulnerable to CC impacts | • Investments in rehabilitation and recovery of degraded land & water control facilities  
• Adapted surface/underground water management – water saving technologies (drip irrigation, water efficient irrigation schemes)  
• Enhanced capacity and train farmers trained in participative optimal NRM management and energy conservation,  
• Promoted soil OM storage (C pool)  
• Efficient energy saving (tillage, solar pumping systems, etc.)  
• Reduced methane emission (lowland drainage) |
| Cross-cutting support | • Scale-up use of ICT systems for digital agriculture applications, including use of CSA practices  
• Develop and implement policy actions to scale-up CSA adoption  
• Capacity building of extension and POs in CSA practices for integrated crop & livestock production systems | |
| RA 2.1: Improved groundnuts business environment | • Implement aflatoxins, fruit flies, etc. control plan  
• Facilities (warehouses, markets, access roads) to reduce commodity exposure to extreme weather conditions  
• Assist with formulation of climate-informed business plans  
• Market information system adapted to CV to void losses  
• Capacity building for farmer organizations/institutions on climate-smart value chain developments  
• Value addition to groundnut production by improved storage, contract farming, value-addition (household income resilience) | • Certification/quality schemes containing provisions to incentivize farmers to adopt new practices/techniques and varieties designed to increase their resilience and contribute to climate mitigation by CSA practices  
• Capacity building and awareness raising on climate change mitigation/sustainable energy use in all investment projects  
• Investments in measures in existing agricultural supply chains dedicated to improvements in energy efficiency or resource efficiency upstream or downstream, leading to reduction in GHG emissions |
| RA 2.2: Increased livestock market access. | • Dissemination of innovative CSA technologies, improving the capacity of producers, POs and SMEs for certification schemes that would incentivize farmers to adopt new CSA practices  
• Integration of climate considerations in the construction and rehabilitation of market facilities  
• Energy saving storage facilities/systems avoiding product losses (e.g. cold storage for milk) | • Energy saving /reduced GHG emissions  
• Reduced losses and efficient use of natural and agricultural resources  
• Efficient herd management (surpluses are commercialized) |
<p>| RA 2.3: Increased access to financial services. | • Expanding the Warehouse Receipt System (WRS) financing (use of production as collateral to secure loans) | • Weather/climate indexed assurance to de-risk climate variability and change impact on investments |</p>
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| RA 1: Improved crop and livestock productivity and resilience                | • Strengthening the financial and institutional capacities of the national partial credit guarantee scheme (FONGIP), in order to de-risk and crowd in private credit to rural areas,  
• Climate indexed agricultural insurance linked to improved agroclimatic and weather forecasting services  
• Extension of agricultural insurance linked to use of improved inputs to promote CSA and contract farming | • Increased investment/livelihood resilience  
• Increased capacity for agrometeorological information services |
| RA 3: Improved sector governance, coordination, and program management         | • Integration of climate adaptation for resilience in participatory sector planning, implementation and evaluation at all levels will directly contribute to climate change adaptation  
• Support to MAER/MEPA, and other relevant agencies to improve sector preparedness to climate variability and change related risks | • Integration of climate mitigation in sector planning, implementation and evaluation  
• Support agriculture policy dialogue including operationalization of the National Agro-Sylvo-Pastoral Council (optimal natural resource use)  
• Monitoring GHG emissions in agric. sector  
• Capacity Building to MAER and MEPA on knowledge management and information services on agriculture and Climate Change/Variability |

C. PROGRAM GOVERNANCE STRUCTURE AND INSTITUTIONAL ARRANGEMENTS

22. **Basic implementation principles.** The Program has a three-tiered governance structure with a Steering Committee (SC), two Technical Committees (TCs) and two Technical Coordination Teams (TCTs). MFB will be responsible for overall steering of the Program through the SC with a twin critical role: (i) ensure the engagement and coordination of ministries and other entities involved in implementing the Program, especially those external to the agricultural sector (such as the Ministry of Commerce and SMEs and the inter-professions), and (ii) mitigate the risks associated with inter-ministerial coordination. MAER will be responsible for overseeing the crop subprogram, and MEPA will oversee the livestock subprogram with the SGs serving as Sub-Program Coordinators (SPCs). At ministerial level, the Program will adhere to PRACAS II and PNDE implementation arrangements, which have their own governance structure. MAER’s and MEPA’s will provide support through their Budget Programs (BPs) for technical follow-up, and FM and procurement through the DAGEs, with other resources provided for environmental and social safeguards, and M&E through the TCTs (see below). Detailed operational guidelines will be spelled out in the Program Operational Manual (POM). Both MAER and MEPA have experience with large donor-financed programs, including Bank-financed operations. Specific information and training efforts will be required at the Program’s inception to ensure that key staff involved at that level are well informed about the details of the Program activities and modalities (as per the Program Operations Manual) and adjustments to existing instruments introduced with support from the Program. Figure 3.1 illustrates the Program implementation arrangements.

23. **Steering Committee (SC).** As the highest Program oversight body, the SC will meet twice each year to review Program planning, discuss Program results and challenges, and take the required operational decisions. The Committee will be chaired by the MFB SG and co-chaired by MAER’s and MEPA’s SGs. It will be composed of key MFB, MAER, and MEPA staff, as well as focal points from all
other ministries and entities, including private sector entities involved in the Program. The SC will validate all official Program reports.

24. **Technical Committees (TCs).** The two TCs will provide technical advice to the SC, as well as to MAER’s and MEPA’s SGs in their role as Sub-Program Coordinators (SPCs) for the crop and livestock subprograms respectively. They will have a consultative role. Their advice will be sought for all aspects of Program implementation that will require technical decisions on the part of the SPCs. Each TC will be composed of about ten experts chosen by the SPCs, based on their expertise as relevant for Program implementation. The TCs will meet at least every quarter, or at shorter intervals whenever necessary, following the request of the SPCs.

25. **Technical Coordination Teams (TCTs).** MAER’s and MEPA’s SGs will be *de facto* Sub-Program Coordinators (SPCs) for the crop and livestock subprograms, respectively. Each ministry will be assisted by its DAGE for financial, administrative, and procurement responsibilities related to the PforR and will rely on its technical departments for responsibilities related to specialized technical matters. The technical assessment conducted for the Program has identified the need to strengthen capacity at MAER and MEPA to perform their Program coordination, management, M&E, and technical responsibilities, due to staffing and training constraints. For that reason, MAER’s and MEPA’s SGs will each be assisted by a small PforR TCT headed by a Sector Specialist and composed of a an Administrative Officer, an Environmental Safeguards Specialist, a Social Safeguards Specialist, and a Monitoring and Evaluation (M&E) Officer. These staff will be civil servants selected from within the staff of MAER, MEPA, or affiliated entities, or independent consultants purposely recruited from outside MAER and MEPA under specific ToRs matching their responsibilities.

26. **The TCTs will liaise closely with all entities involved in the Program with regard to their related work programs.** The TCTs will work closely with a selected number of national services or agencies from MAER, MEPA, or outside entities, depending on their missions as they relate to the implementation of the Program activities, RF and DLIs. The technical supervision of PforR activities will rest with the TCTs. They will vet Program activities and determine whether DLIs have been adhered to and disbursement can be authorized. They will consolidate the PforR progress reports to be sent to MFB through the SGs for submission to the SC, which will take final decisions on implementation progress and related disbursements. Program implementation and adherence to DLIs will require close collaboration among staff of all entities mobilized for implementation as well as compliance with procedures for verifying the results of the interventions. The TCTs will commission periodic quality audits to support verification.

27. **All entities involved in the Program will designate technical focal points; this network of focal points will be a counterpart to the TCTs.** The focal points will contribute to M&E activities with respect to their own Program responsibilities. They will receive the required training covering (among other things) the DLIs, data collection and reporting procedures, verification of data quality and accuracy, report formats, and the M&E work plan. The network of Program-related focal points is an important entity because of its role in ensuring that the Program will be implemented using agreed procedures and that results are adequately documented.
Figure 3.1: Program institutional arrangements

**PfoR Steering Committee (ST)** (Chaired by MFB)
- Verification Unit (MFB)
- Program Audit (MFB)

**Crop-Subprogram Coordinator (STC)** (MAER SG)
  - Technical Committee
  - Technical Coordination Team (TCT)
    - DAGE/DAPSA
    - Other entities

**Livestock Subprogram Coordinator (STC)** (MEPA SG)
  - Technical Committee
  - Technical Coordination Team (TCT)
    - DAGE/CEP
    - Other entities

**DRDRs**
**SREs**

**Legend:**
- BP: Budget Program
- DAGE: Administrative and Equipment Directorate
- DAFSA/CEP: Directorate/Cell of Planning and Statistics
- DRDR: Regional Directorate of Rural Development
- SRE: Regional Service of Livestock

**Steering Committee (ST)**
1. Strategic oversight and orientation
2. Reviews overall progress
3. Ensures mobilization of stakeholders

**Technical Committee (TC)**
1. Technical advice and orientation
2. Consultative role upon request of ST, SPC and/or TCT
3. Supports verification of DLVs/DLMs
4. Ensures SC secretariat

**Technical Coordination Team (TCT)**
1. Coordinates management of Program with implementing bodies
2. Ensures Program M&E and social and environmental aspects

1. 2. 3. 4.