

Burkina Faso



Sustainable Agriculture Intensification for Food and Nutrition Security in Burkina Faso (PIDASAN 2018-2021)

Public Sector Window Proposal

for the

Global Agriculture and Food Security Program (GAFSP)

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ABBREVIATIONS AND ACRONYMS

AFD	<i>Agence Française de Développement</i> (French Development Agency)
AgPER	Agricultural Public Expenditure Review
ANE	<i>Acteurs Non Etatiques</i> (Non states stakeholders)
ANVAR	<i>Agence Nationale pour la Valorisation de la Recherche</i> (National Agency for the Promotion of Research results)
CEDEAO	<i>Communauté Economique des Etats de l'Afrique de l'Ouest</i> (Economic Community of West African States)
COP	<i>Comité d'Orientation et de Pilotage</i> (Steering and orientation Committee)
CP	<i>Comité de Pilotage</i> (Steering Committee)
CPF	<i>Confédération Paysanne du Faso</i> (Confederation of Burkina Faso Agricultural Producers)
CPR	<i>Centre de Promotion Rural</i> (Center for Rural Development)
CSO	Civil society organization
CTI	<i>Comité Technique Inter-ministériel</i> (Inter-ministerial Technical Committee)
CNRST	<i>Centre National de la Recherche Scientifique et Technologique</i> (National Center for Scientific and Technological Research)
DGESS	<i>Direction Générale des Etudes Sectorielles et des Statistiques</i> (General Directorate for Sectoral Studies and Statistics)
DGPER	<i>Direction Générale de la Promotion de l'Economie Rurale</i> (General Directorate for the Promotion of Rural Economy)
DGPV	<i>Direction Générale des Productions Végétales</i> (General Directorate for Plant Production)
DRAAH	<i>Direction Régionale de l'Agriculture et des Aménagements Hydrauliques</i> (Regional Directorate for Agriculture and Water Management)
DREA	<i>Direction Régionale de l'eau de l'Assainissement</i> (Regional Directorate For Water and Sanitation)
DREEVCC	<i>Direction Régionale de l'environnement et dl'economie verte du Changement Climatique</i> (Regional Directorate for Environment, Green Economy and Climate Change)
DRRAH	<i>Direction Régionale des Ressources Animales et Halieutiques</i> (Regional Directorate for Livestock and Fisheries)
ECOWAS	Economic Community of West Africa States
ECOWAP	ECOWAS Agricultural Policy
ESIAs	Environmental and Social Impact Assessments
ESMP	Environmental and Social Management Plan
ETN	<i>Equipe Technique Nationale</i> (National technical team)
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FIDA	International Fund for Agricultural Development
FONEPP	<i>Fond National pour les Etudes et la Préparation des Projets</i> National Fund for Study and Preparation of Projects
GAfSP	Global Agricultural and Food Security Program
GDP	Gross Domestic Product
IAP	<i>Instrument Automatisé de Prévision</i> (Automated Forecasting Instrument)
INERA	<i>Institut de l'Environnement et de recherche Agricole</i> (Institute for Environment and Agricultural Research)
INSD	<i>Institut National des Statistiques de la Démographie</i> (National Institute of Statistics and Demography)
LAP	<i>Lycée Agricole Privé</i> (Private Agricultural School)
LORP	Loi d'Orientation sur le Pastoralisme (Law on Pastoralism)
MAAH	<i>Ministère de l'Agriculture et des Aménagements Hydrauliques</i> (Ministry of Agriculture and Hydraulic Development)
MDG	Millennium Development Goals

MEA	<i>Ministère de l'Eau de l'Assainissement</i> (Ministry of Water and Sanitation)
MEEVCC	<i>Ministère de l'environnement de l'economie verte et du Changement climatique</i> (Ministry for Environment, Green Economy and Climate Change)
MESRSI	<i>Ministère des Enseignements Supérieurs de la Recherche Scientifique et de l'Innovation</i> (Ministry for Higher Education, Scientific Research and Innovation)
MFSNF	<i>Ministère de la Femme, de la Solidarité Nationale et de la Famille</i> (Ministry for Women, National Solidarity and Family)
MINEFID	<i>Ministère de l'Economie, des Finances et du Développement</i> (Ministry of economy, finance and development)
MJFIP	<i>Ministère de la Jeunesse, de la Formation et de l'Insertion Professionnelle</i> (Ministry for Youth, Training and Professional insertion)
MRAH	<i>Ministère des Ressources Animales et Halieutiques</i> (Ministry of Livestock and Fisheries)
NGOs	Non-Governmental Organizations
OS	Objectif Spécifique (Specific Objective)
PAFASP	<i>Programme d'Appui Aux Filières Agro-Sylvo-pastorales</i> (Agricultural Diversification and Market Development Program)
PAMESAD	<i>Projet d'Appui à la Maitrise de l'Eau pour une Sécurité Alimentaire Durable</i> (Sustainable Water Management and Food Security Project)
PAPSA	<i>Projet d'Amélioration de la Productivité et de la Sécurité Alimentaire</i> (Agricultural Productivity and Food Security Project)
PASPRU	<i>Projet d'Appui et de promotion du Secteur Privé en Milieu Rural</i> (Rural areas private Sector Support Project)
PAU	<i>Politique Agricole de l'UEMOA</i> (WAEMU Agricultural Policy)
PI	Plateformes d'innovation (Innovation Platforms)
PIDASAN	<i>Projet d'Intensification Durable pour une Sécurité Alimentaire et Nutritionnelle au Burkina Faso</i> (Sustainable Agricultural Intensification Project for Food and Nutrition Security in Burkina Faso)
PNDD	<i>Politique Nationale du Développement Durable</i> (National Policy for Sustainable Development)
PNDDAI	<i>Politique Nationale pour le Développement Durable de l'Agriculture irriguée</i> (National Policy for the Development of Sustainable Irrigated Agriculture)
PNDEL	<i>Politique Nationale de Développement de l'Elevage</i> (National Policy for Sustainable Development of Livestock)
PNDES	<i>Plan National de Développement Economique et Social</i> (National Plan for Economic and Social Development)
PNGT	<i>Programme National de Gestion des Terroirs</i> (Community-Based Rural Development Program)
PNPS	<i>Politique Nationale de protection Sociale</i> (National Policy for social Protection)
PNRST	<i>Politique Nationale de la Recherche Scientifique et Technologique</i> (National Policy for Scientific and Technological Research)
PNSAN	<i>Politique Nationale de Sécurité Alimentaire et Nutritionnelle</i> (National Policy on Food and Nutrition Security)
PNSFMR	<i>Politique Nationale de Sécurisation Foncière en Milieu rural</i> (National Rural Land Security Policy)
PNSR	<i>Programme National du Secteur Rural</i> (National Rural Sector Program)
PRAPS	<i>Projet Régional d'Appui au Pastoralisme dans le Sahel</i> (Regional Project of Agro-Pastoralism in the Sahel)
PROFIL	<i>Projet d'Appui Aux Filières Agricoles</i> (Agricultural Sector Support Project)
PTF	<i>Partenaires Techniques et Financiers</i> (Technical and Financial Partners)
RAF	<i>Réforme Agraire et Foncière</i> (Agrarian and Land Reform)
RAP	Resettlement Action Plan
RGPH	<i>Récensement Général de la Population et de l'Habitat</i> (General Census of Population and Housing)

SDGs	Sustainable Development Goals
SDR	<i>Stratégie du Développement rural</i> (Rural Development Strategy)
SE-CNSA	<i>Secrétariat Exécutif du Conseil National de Sécurité Alimentaire</i> (Executive Secretariat of the National Council for Food Security)
SNSA	<i>Stratégie Nationale de Sécurité Alimentaire</i> (National Strategy for Food Security)
SP/CPSA	<i>Secrétariat Permanent de la Coordination des Politiques Sectorielles Agricoles</i> (Permanent Secretariat for the Coordination of Agricultural Sectoral Policies)
SRI	System of Rice Intensification)
UNGP	<i>Unité Nationale de Gestion du Projet</i> (National Project Management Unit)
VSAT	<i>Village Satellite d'Adoption des Technologies</i> (Satellite Adoption Technology Villages)
WAAPP	West Africa Productivity Program
WAEMU	West Africa Economic Monetary Union

INTRODUCTION

1. The proposed Nutrition Sensitive Agricultural Intensification for Sustainable Food Security support project (PIDASAN by its French acronym) seeks funding from the GAFSP's public window to fill part of the financing gap of the country's agricultural investment program. The proposal emphasizes access to improved agricultural technologies by smallholders' farmers that improve productivity and nutrition in view of a more holistic food security achievement. It meets the requirements for GAFSP's funding for which Burkina Faso is eligible.

2. The proposed project will contribute to consolidate the achievements of the completed first phase of the National Rural Sector Program (PNSR) and cover the financing gap of the second phase of PNSR under formulation. This second phase will implement the new National Plan for Economic and Social Development (PNDES) in the rural sector, adopted on October 2016 and the National Food Security Strategy as part of the Comprehensive Africa Agriculture Development Program (CAADP/ECOWAP). It will contribute to the achievement of the country's Sustainable Development Goals (SDGs).

3. In line with GAFSP country guidelines for the public sector window, this request consists of two parts. The first part summarizes the overall agricultural and food security strategy, and associated rural sector investment plan for Burkina Faso. The second part describes the specific project proposed for GAFSP's financing.

FRIST PART: SUMMARY OF OVERALL AGRICULTURE AND FOOD SECURITY STRATEGY AND ASSOCIATED INVESTMENT PLAN

1.1 OVERALL AGRICULTURE SECTOR STRATEGY AND INVESTMENT PLAN, AND PAST PERFORMANCE

1.1.1 COUNTRY ECONOMIC BACKGROUND AND SECTOR STRATEGIC OBJECTIVES

4. ***Burkina Faso is a small, land-locked located in the Sahel zone in West Africa with rapid demographic expansion.*** It is bordered by six neighboring countries (Cote d'Ivoire to the southwest, Mali to the north, Niger to the East, Togo to the South and Benin to the Southeast and Ghana to the South). With no direct access to ocean, its main corridors are through Côte d'Ivoire, Togo, Benin, and Ghana. The country stretches over 274,400 square kilometers, with a population of nearly 19 million in 2016, and a population growth rate of 3.1 percent. As a result of the rapid demographic expansion, around 67 percent of the population is 25 years old or younger, creating tension on the local labor market that are forecasted to grow over the next decade. Today approximately 2/3 of the labor force is underemployed with low labor income.

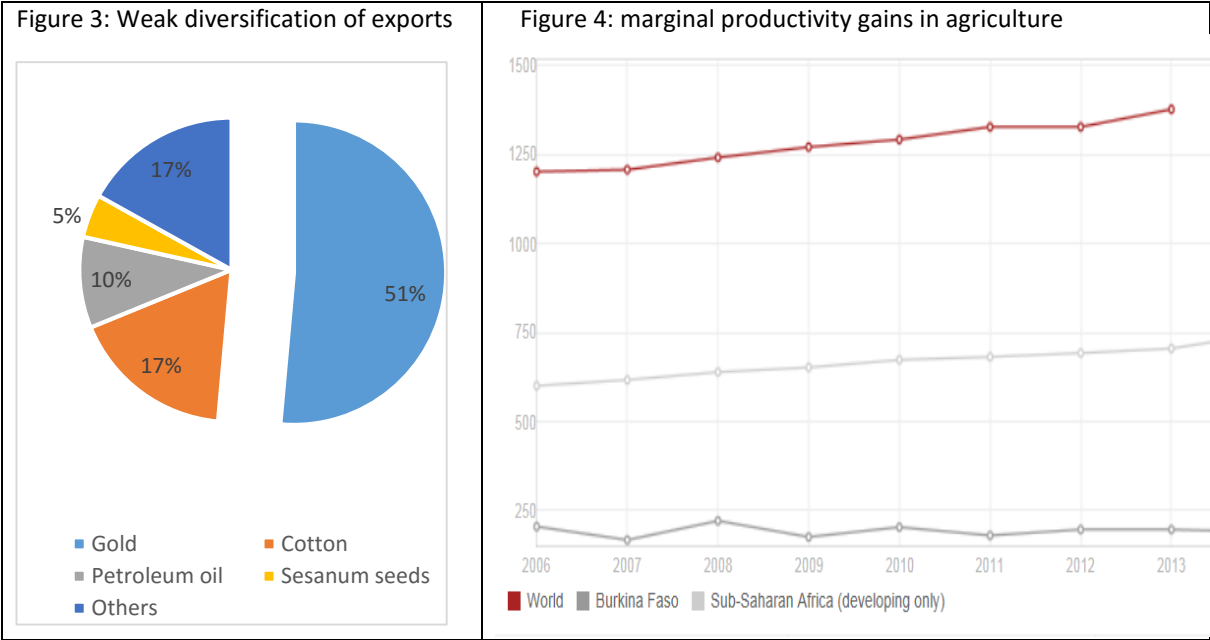
5. ***Climate constraints:*** Dependence on a narrow base of natural resources, coupled with its Sahelian climate and inland location, exposes Burkina Faso to both climatic changes and exogenous shocks. The tropical arid climate is characterized by one long dry season (7-9 months) and a short rainy season (3-5 months). Based on annual average rainfall, which varies from 300 mm in the North to 1200 mm in the South, the country can be divided into three major agro-ecological zones: the Sahel, Sudan-Sahel and the Sudan zones. The agrarian economy is particularly vulnerable to climatic and external shocks with drought-prone environment and susceptible to flooding.

6. ***Poverty:*** Burkina Faso's income per capita has more than double since the early 1990, from only US\$360 to approximately US\$720 in 2013. However, poverty is still prevalent all over the country with an estimated 7.2 millions of people living in poverty or 40 percent of the population as of end 2014. Poverty is a rural phenomenon –90 percent of poor live in rural areas- because the country is marginally urbanized and slower progress in living conditions was observed in rural than in urban areas. The decline in poverty reported between 2003 and 2014 has been mainly the combination of rapid economic growth and reduced inequalities. This decline was however not as big as expected because of population dynamics, especially the rapid demographic expansion and the slow

urbanization process. The typical poor household in Burkina Faso lives in a rural area, is employed in a farm, has no or little formal education, and has more than six children. Household income structure is dominated by crop production (67%), followed by livestock production (31%). Forestry production only accounts for 2% of rural household’s incomes (PNDES, 2016)¹.

7. **Economic growth:** The GDP growth rate from 2000s to 2014 exceeded 6 percent on average during this period -one of the highest among WAEMU countries. This growth rate was also relatively stable, except in 2008 and 2009 following global food, the economic and financial crisis as well as a severe flooding. At the sector level, economic growth was driven by the expansion of secondary and tertiary sectors, while the contribution of the primary sector varied depending on rainfalls and commodity prices (Figure 1 and 2). About 86 percent of the labor force is dependent on agriculture as prime activity. Apart from vast agricultural land and forests (equivalent to 2/3 of the country’s superficies), the country has mineral reserves, especially gold, manganese, copper, phosphates, tine ore, and iron.

8. **Agriculture Productivity and Diversification:** The agricultural sector has failed to generate significant productivity gains. Agriculture accounts for about 28 percent of GDP, while it continues to employ 86 percent of the country’s labor force, indicating that labor productivity is one of the lowest in the world. The agricultural production, essentially undertaken under rain-fed conditions, is highly vulnerable to external shocks such as climate variability, which has been more acutely felt in recent years and will more likely exacerbate with the ever-increasing effects of climate change. Other factors such as poor access to irrigation water, low adoption of improved agricultural technologies, expensive inputs and equipment, localized land insecurity, and limited knowledge and capacity of producers have all negatively affected the agriculture production. In addition, agriculture value chains in Burkina Faso all suffer from weaknesses in output processing, marketing and high input costs and output price volatility. As a result, the productivity gap between the rest of the world has become bigger over time (Figure 4) with limited contribution to sustain food security. Many poor rural households in Burkina Faso failed to move out of poverty because they were unable to diversify their agricultural production or to work off the farm. Over the past 10 years, Burkina Faso has only seen few new crops introduced, and rural households did not diversify toward non-farm activities either.



Source: WTIS

Source: World Development Indicators

¹ PNDES 2016-2020, Transformer le Burkina.

9. **Food insecurity:** As a Sahelian country, Burkina Faso is subject to vulnerability caused by disaster and risks from flood or droughts, deteriorating natural resources, food insecurity and malnutrition, in addition to the pastoralist lifestyle, which involves increasing the competition for water and pasture that sometimes lead to conflict. Food security in Burkina Faso is precarious; insecurity affects over 20 percent of the population (more than 3.5 million people). Periodic droughts lead to food crises, and government uses food reserves to transfer food from surplus to deficit regions. Given the nature and structure of poverty which continues to be essentially a rural phenomenon with subsistence farmers highly represented in the bottom 40 percent of the poorest, accelerating agricultural sector growth will be the most effective way of reducing poverty. It is reported that the main short-term risk to macroeconomic management and economic growth is the deterioration in food security².

10. **Nutrition:** In terms of nutrition, progress has been more muted. Stunting rates did come down from 43 percent in 2003 to 35 percent in 2010, but wasting rates have not improved, i.e., 13 percent in 2003 versus 15 percent in 2010. Anemia in children is omnipresent and hardly changed between 2003 (92 percent) and 2010 (88 percent). Such widespread malnutrition predisposes children to lower school performance and adult lifetime earnings through reduced cognitive and physical development. One in 8 children will die before the age of 5, one of the highest mortality rates in Africa. Early childhood malnutrition irreversibly affects brain and physical development, leading to higher rates of school drop-outs, reduced school performance and lower lifetime earnings. Malnutrition is responsible for over one-third of child deaths in Burkina Faso. The incidence of malnutrition in particular demands a multifaceted approach to raising agricultural productivity and to promote nutrition sensitive agriculture.

1.1.2 AGRICULTURE SECTOR STRATEGIES AND POLICIES

11. **The National Plan for Economic and Social Development (PNDES):** The National Plan for Economic and Social Development for 2016–2020 (*PNDES: Plan National de Développement Economique et Social*) is the new Country strategic development policy framework. It has been adopted on October 3, 2016 by the government of Burkina Faso. The PNDES' overall goal is to achieve the structural transformation of the Burkinabe economy to attain strong, sustainable, resilient and inclusive growth that creates decent jobs and improves social welfare. The plan integrates the main targets of the Sustainable Development Goals (SDGs). To achieve this ambitious goal, the PNDES identified three strategic pillars: (i) Institutional reform and modernization of the public administration, (ii) development of human capital, and (iii) revitalization of sectors with strong economic and employment potential.

12. The total budget of PNDES for the five years is estimated to CFAF 15,395.4 billion where 36.2% represents the financing gap. The PNDES received a strong support from donors and the private sector during its Business meeting held in Paris on December 2016 where financing promises covered 150% of the financing gap in the amount of CFAF 8,000 billion. Post PNDES business meeting challenge will be to formulate pertinent projects and programs in order to mobilize the announced financing commitment. This proposal is part of this initiative to implement food security supported sub-programs.

13. **The Rural Development Strategy (SDR)** is the rural development strategy. Its overall objective is to contribute in a sustainable way to food and nutrition security, strong economic growth, and poverty reduction. The strategy has five pillars: (i) reinforce food and nutritional security; (ii) improve the competitiveness of the agro-sylvo-pastoral, fishery and wildlife sectors; (iii) sustainable development and management of natural resources; (iv) improve access to drinking water and living environment; (v) strengthen governance and partnership. The logical framework of the SDR is indicated in Annex 1.

² World bank, Country Partnership Strategy 2013-2016; PNDES, 2016.

14. ***The National Rural Sector Program (PNSR):*** The PNSR is the strategic and operational framework for implementing the Country strategic development policy framework (PNDES) for rural development and the SDR. It is the national agriculture investment program aligned with the Comprehensive Africa Agriculture Development Program (CAADP), the Agricultural Policy of the Economic Community of West African States (ECOWAP / ECOWAS) and the Agricultural Policy (PAU) of the West Africa Economic and Monetary Union (WAEMU/ UEMOA. The first phase of this program (2011-2015) overall goal was to contribute, in a sustainable way, to food and nutrition security, high economic growth and poverty reduction, with a focus on supporting efficient family farms and agribusinesses. One of the PNSR goals was to improve the country's food and nutrition insecurity status in a sustainable way. The expected PNSR goals that was to be achieved by 2015 were: (a) ensuring a better coverage of the food needs of the population by increasing the cereal self-sufficiency ratio from 119% to 130%; (b) reducing malnutrition rate from 25% to 23% through reducing the share of the population below the minimum caloric intake, and the number of cases of underweight individuals among children under 5 years; and (c) ensuring sustainable access of rural and urban populations to drinking water (from 56% to 76% in rural areas, and 75% to 87% in urban areas) and to sanitation (from 10% to 54% in rural areas, and 22% to 57% in urban areas).

15. The PNSR consisted of the following five pillars: (i) Pillar 1 - 'Improving food security and sovereignty'; (ii) Pillar 2 - 'Increased rural populations income'; (iii) Pillar 3 - 'Sustainable development of natural resources'; (iv) Pillar 4 - 'Improved access to drinking water and living environment'; and (v) Pillar 5 - 'Development of partnerships between rural stakeholders'.

16. PNSR total estimated investment was about CFAF 1,377 billion over the 2011-2015 period. This represents an annual average of 16% of the country's budget. The five most important areas supported under the Program are the sub-programs on (i) 'Improving access to drinking water and living conditions' (Sub-program 4.1, 21 percent of total budget); (ii) 'Sustainable development of agricultural hydraulics' (Sub-program 1.4, 18 percent); (iii) 'Sustainable development and natural resources management' (Sub-program 3.3, 11.5 percent); (iv) 'Sustainable development of agricultural production' (Sub-program 1.1, 12 percent), and (v) 'Improvement of animal production' (Sub-program 1.2, 8 percent).

17. At international level, PNSR was expected to give Burkina Faso leverage to achieve the Millennium Development Goals 1 (MDG 1), namely the eradication of extreme poverty and hunger, by 2015 as originally agreed, or at least with a reasonable time lag. PNSR was further designed to be implemented as efficiently and effectively as possible in the spirit of the Paris Declaration on development aid effectiveness.

18. ***Summary of the PNSR implementation performance:*** The impact assessment of the first phase of PNSR showed that on average CFAF 170 billion has been annually mobilized during the 2011-2013 period representing 70 percent of the total budget, compared with CFAF 125 billion mobilized from 2005 to 2010. Public resources represent 52 percent against 35 percent from 2005 to 2010. The assessment showed that many progress has been made in the area of food and nutrition security and poverty reduction. Indeed, cereal needs coverage rate from 2011-2014 reached 127 percent compared to the baseline coverage rate of 119 % (2010). The percentage of food imports covered by food crop production was covered by 73% except for rice where the results were far below the target. The proportion of population below the minimum level of caloric intake at national level has been also improved. Moreover, the implementation of PNSR impacted positively the competitiveness of livestock sector with an increase of its contribution to national GDP from CFAF3,463 billion in 2009 to CFAF5,756 billion in 2015 indicating a mean annual increase of 10%. The agricultural diversification index was also improved and met 83% of the target. Excellent results were also noticed in the increase of developed lowlands area and developed area under cropping. The assessment showed also improved results on the proportion of vulnerable people assisted with an achievement rate of 131%. Other improvements included the level of food security stocks, the good performance in the access to drinkable water. However, the report indicated that important efforts are still needed to improve yield performance, irrigation infrastructure, smallholders' access to market and

to credit and environmental governance. The increase of agricultural GDP was also 29% below the target although Maputo allocation target was met (at least 10% of the national budget to Agriculture). The PNSR consultations process was found inclusive and has involved key rural sector stakeholders. However, institutional arrangements especially the ownership of the PNSR implementation at regional level was assessed weak and should be considered as lesson learned for the PNSR second phase. The assessment recommended that the M&E system of the PNSR should be improved in order to provide reliable data to inform the policy decision making.

19. ***The Country road map overall strategy to prepare the second phase of PNSR:*** To prepare the second phase of PNSR, Burkina Faso has produced a road map to guide the process and to ensure timely preparation and validation through the different national and CAADP reviews. PNSR is the implementation of the PNDES in rural sector. Therefore, the overall strategy was inspired from PNDES pillars and Strategic Objectives (OS) that are targeting food and nutrition security and the long term orientation of the SDR as well as from other sectoral strategies in place.

20. The PNDES put strong emphasis on rural sector performance improvement. Food and nutrition security is mainly supported by Pillar 2 OS 2.1: promote public health and accelerate demographic transition, 2.3: promote research and innovation to serve of structural transformation of the economy, 2.4: promote decent employment and social protection for all, particularly for young people and women, and 2.5: improve life quality, access to water, sanitation and quality energy services; and Pillar 3 sub-programs 3.1: sustainably develop agro-sylvo-pastoral, wildlife and fishery sector which is productive, resilient and market-oriented, 3.2: develop a competitive industrial and handicraft sector, with strong added value and creative of decent employment, 3.5: reverse trends of environmental degradation and ensure sustainable management of natural and environmental resources.

1.2 KEY ELEMENTS OF THE POLICY ENVIRONMENT

21. PNSR is the strategic and operational framework for implementing the PNDES vision for rural development. The design of the second phase will integrate all relevant strategies, policies and plans for food security and nutrition into an updated and more coherent approach, based particularly on the strategies and programs developed under the (i) National Strategy for Food Security –SNSA, 2001, revised in 2003; (ii) National Policy for Food Security– PNSAN, 2013 with the objective to achieve sustainable food and nutrition security by 2025; (iii) National Policy for Nutrition, 2007 ; (iv) National Gender policy, (v) National Policy for social Protection-PNPS, 2012; (vi) National Policy for Rural Land Tenure (PNSFMR) in 2007, the law No. 034-2009/AN of June 16, 2009 on Rural Land Tenure, and Act No. 034-2012/AN of 2 July 2012 concerning Agrarian and Land Reform (RAF); (vii) National Policy for the Development of Sustainable Irrigated Agriculture-PNDDAI, 2003, revised in 2004 defines the State's role and rationalize investments in the water sector, (viii) National policy for sustainable development-PNDD; (ix) National Policy for Sustainable Livestock Development – PNDEL.

22. Other regulatory framework in the rural sector includes among others, forestry, environment and public health Codes; mining Code; Procedures of conducting Environmental and Social Impact Assessments (ESIAs), Resettlement Action Plan (RAPs), Environmental and Social Management Plans (ESMPs) and Strategic Environmental Assessments while taking in account the World Bank Group environmental and social safeguards policies (Decree 2015-1187 of October 2015); the law on water management; the law on pastoralism (LORP); the parafiscal law on financial contribution to water use; the agro-sylvo-pastoral, fisheries and wildlife orientation law; the law on seeds, genetic materials and fertilizers; the Code of animal health; the general Code for municipalities; the Sustainable Development orientation law; international agreements and conventions ratified by the country.

1.3 GOVERNMENT COMMITMENT TO AGRICULTURE AND FOOD SECURITY GOALS

23. The government has put in place the necessary regulatory framework and policies that govern rural sector including agriculture, livestock and environment. The National Strategy for Food Security –SNSA, 2001, revised in 2003 was instrumental in creating the Government-Donors General Cooperation Framework for Food Security and the National Council for Food Security with its Executive Secretariat –SE-CNSA. Moreover, since 2003, Burkina Faso has met Maputo agenda renewed in Malabo in 2014 with a sustained allocation of at least 10% of its national budget to Agricultural sector^{3,4}. The new adopted National Plan for Economic and Social Development (PNDES) identified Agriculture as the key sector that can significantly contribute to the structural transformation of the economy, solve recurrent food insecurity issues and a potential area for decent job creation⁵.

24. The support from the Government and its partners to the rural sector and to implement the road map and the design of the PNSR second phase is provided through the five line ministries directly in charge of the sector: (i) Ministry of Agriculture and Hydraulic Development (MAAH), (ii) Ministry of Livestock and Fish Resources (MRAH), (iii) Ministry of Water and Sanitation (MEA), (iv) Ministry of Environment, Green Economy and Climate Change (MEEVCC) and (v) Ministry of Scientific Research and Innovation (MRSI). These ministries have central directorates with specific mandates. The central directorates are linked to sub-directorates at levels of region (13), provinces (45) and districts (over 300). Important efforts are developed to organize rural sector stakeholders in nationwide and commodity-based groups, including farmers' unions and marketing cooperatives. Most of these groups are members of the National Farmers' Association (*Confédération paysanne du Faso - CPF*). The private sector is increasingly called upon to contribute to the development of the agricultural sector, especially through promotion of agribusiness initiatives. A Permanent Secretariat to coordinate sectoral policies (SP/CPSA) implemented by the line ministries was also in place and provides the sector with an operational and stable institutional framework.

25. The African Union Commission/ NEPAD Independent Technical Review revealed that about half (47.4%)⁶ of the PNSR first phase budget has been allocated to improve food security and sovereignty showing the high level commitment of Burkina Faso policy decision makers to develop the Agricultural sector to enhance food and nutrition security. Following the recommendations from external review process of the PNSR as well as the conclusions of the PNSR Business Meeting held on March 26, 2012, the Government responded positively by revising the program cost from CFAF 1,230 billion to CFAF 1,377 billion, mainly to compensate the initial under- investment in livestock production and agricultural research. The review also recognized the real commitment of the Government for the inclusive consultation process that took into account all stakeholders including public services, private sector, civil society organizations, farmers' organizations, youth and women organizations.

1.4 PROCESS BY WHICH THE STRATEGY AND INVESTMENT PLAN WERE DEVELOPED AND WHERE RELEVANT UPDATED

26. The formulation of the second phase of the PNSR in coherence with the road map will be carried out under the coordination and leadership of the Permanent Secretary for the Coordination of Agricultural Sectoral Policies (SP/CPSA). The formulation process will follow the inclusive process used under the formulation of the first phase. Key rural sector stakeholders at national level will be consulted. The road map describes the different steps of the process and includes six important steps: (i) Creation of enabling conditions including, (a) stimulate engagement of line ministries and supporting ministries, (b) mobilize financial resources to implement the road map, (c) set-up the technical team, (d) mobilize experts' team for facilitation and quality insurance reviews; (ii) improve

³ Revue des dépenses publiques dans le secteur rural, The World bank, 2012

⁴ Revue Post-Compact du PDDAA, Rapport Pays, Burkina Faso, Janvier 2012

⁵ PNDES 2016-2020, octobre 2016

⁶ Revue Post-Compact du PDDAA, Rapport Pays, Burkina Faso, Janvier 2012

the dialogue and participation of stakeholders to the PNSR formulation process. The technical team will create conditions that facilitate the contribution of all stakeholders to the formulation of the action plan through specific workshops and separate consultations.; (iii) Identification of the investment plan pillars, programs and subprograms, (iv) regional mapping of the investment plan activities; (v) Drafting the investment plan (vi) drafting the M&E systems and program indicators; (vii) quality insurance reviews, (viii) restitution, validation by the PNSR steering committee and adoption by the cabinet, (ix) organization of the PNSR second phase business meeting.

27. This technical team will consist of public service representatives of rural sector line ministries; representatives of Ministry of economy, finance and development (MINEFID), Women (MPF), Youth and employment (MJE); Farmers' Organizations; Civil society organizations (CSOs); Rural Private Sector.

28. It is projected that the process will be supported by quality insurance review from the AUC/NEPAD and FAO. The light AgPER results will also be used to inform the formulation of the investment plan.

1.5 IMPLEMENTATION ARRANGEMENTS AND CAPACITY TO IMPLEMENT

29. The government will continue to play its role of regulation and creation of enabling conditions to facilitate the implementation of the investment plan. The technical and administrative implementing agencies will be the line ministries of rural sector (agriculture and hydraulic development; animal resources and fisheries; environment, green economy and climate change; water and sanitation). Each PNSR sub-programs within sectoral ministries will be under the responsibility of a Program leader. The financial implementing agency will be the ministry of economy, finance and development.

30. At national level, the PNSR will be govern by a steering committee as a decision and orientation entity. The Permanent Secretariat for the Coordination of Agricultural Sectoral Policies (SP / CPSA) will be the Rapporteur and will have in charge the preparation of the steering committee sessions. An inter-ministerial technical committee will be set-up with the mandate to prepare recommendations and suggestions to be submitted to the steering committee. The members of the committee include the general secretaries and technicians of the four lines rural sector ministries, representatives of the ministry of scientific research and innovation, farmers' organizations, private sector, CSOs, regional chambers of agriculture, municipalities, financial sector and donors' representatives.

31. At the regional level, technical coordination of the various sub-programs is carried out by the rural sector technical regional directorates (DRAAH, DREEVCC, DRRAH, DREA) in accordance with their respective missions. The regional directorates including extension services will be empowered to monitor the implementation of the investment plan at regional level. A regional consultation framework of all stakeholders will be responsible for orientation, supervision monitoring and assessment of the program implementation at regional level.

32. The overall coordination, monitoring and evaluation of the investment plan will under the Permanent Secretariat for the Coordination of Agricultural Sectoral Policies (SP / CPSA). Monitoring and evaluation will be carried out in close collaboration with the general directorates for statistics and sectoral studies of each line rural sector ministries.

33. The PNSR second phase will be implemented, as much as possible, based on outsourcing principles, particularly as part of public-private partnerships and delegated-management contracts. Quality control will be ensured by the local communities and the Regional Chambers of Agriculture (CRAs) at local level under the technical supervision of the Regional Rural Sector Directorates.

34. Local communities including farmers' organizations, municipalities, regional chambers of agriculture will contribute in co-financing activities implemented and will be strongly involved in the consultations, monitoring and evaluation mechanisms. Private sector including small, medium and large private enterprises will contribute as service providers for production, processing, and marketing

of agricultural products. Civil Society Organizations (CSOs) will play a key in the monitoring of the investment plan implementation and in the consultations process for the program orientation and adjustment. Donors' community will participate to policy dialogue with the Government and will provide technical assistance and share lessons learned from similar investment programs. They will also participate to the monitoring and evaluation of the program. Donors contribution will be also crucial for the mobilization of financial resources to fill the financing gap.

1.6 PAST IMPLEMENTATION PERFORMANCE AND THE IMPACT OF ACTIVITIES FROM PREVIOUS GAFSP PROJECTS.

35. The Burkina Faso Agricultural productivity and food security project (PAPSA) received the GAFSP financial support in 2014 to implement the sustainable water management and food security project. This financing was used as additional financing to the ongoing PAPSA parent project. The Project's Development objective (PDO) was to improve the capacity of poor producers to increase food production and to ensure improved availability of food products in rural markets with three components: Component 1: Improving food production aims to secure and increase crop production, as well as facilitate access to fishery resources and promote livestock production. Component 2: Improving the availability of food products aims at strengthening the capacities of stakeholders to manage the variability of food supplies at local and national levels; Component 3: Institutional development and capacity building PCU aims at reinforcing capacities of institutions directly involved in the project implementation as well as project coordination, M&E, procurement and financial management. The total project financing is US\$73.05 million including GAFSP financing of US\$37.1 million. The closing date of the project is June 30, 2018.

36. The project progress toward its Development Objective is rated Satisfactory⁷. Project direct beneficiaries reached 446,532 persons that represents 60% of the final target in which 37% were women. The increase in food crops production met 2016 target (43%). As of September 30, 2016, 10,766 ha of lowlands have been developed and secured under the project against 9,623 ha expected at the end of the project in which 56 percent of developed land have been distributed to women. In 2016, the paddy rice produced on these developed lowlands was 31,000 tons and represent 10% of the national paddy rice production. The increase in quantity of products stored in the warehouse receipt system in the project targeted zones was 6,675 tons against 10,000 tons expected at the end of the project but represents 133% of 2016 target.

37. As of September 30, 2016, the amount of credit mobilized through the Warehouse receipt system was CFAF330 million and has substantially improved smallholder farmers' access to rural credit for revenues generating activities. More than 3 million liters of milk have been collected in the milk processing units monitored against 2,700,000 liters expected in 2016. The target on the area under sustainable land management practices was fully met (22,000 ha against 13,000 ha expected at the end of the project) with additional areas developed by project beneficiaries with their own resources. The results showed an increase in revenues generated by communities adjacent to the seven protected areas (CFAF 378million) and this represents 76% of the final target. In the area of animal fattening, 535 micro-projects have been selected and production will start in 2017. About 200 environment impact assessment notices have been carried-out to ensure the environmental sustainability of project activities.

38. Challenges identified that need to be closely monitored are (i) the increase in fish production in the targeted regions, (ii) the acceleration of irrigation studies and irrigation infrastructure constructions, (iii) the tied follow-up of the registration of farmers on the market information platform (iv) the deployment of the artificial insemination registration platform in all regions, and (v) the improvement of the quality of public technical service providers to project beneficiaries.

⁷ Agricultural productivity and Food Security project (PAPSA) ISR, Sequence 12, December 2016

PART TWO: SPECIFIC PROPOSAL FOR THE GAFSP FINANCING

39. **Project goal.** The proposed Sustainable Agricultural Intensification for Food and Nutrition Security project (PIDASAN by its French acronym) will contribute to the country's goal of increasing agricultural production through an "Integrated Approach" to food and nutrition security. The project will improve the food and nutritional security status of vulnerable groups through dissemination of selected high performing agricultural technology and value chains with a potential to address productivity and nutrition gaps that promotes decent job creation in rural areas. By doing so, the project will contribute to the implementation of the PNDES Pillar 3 subprogram 3.1 "to sustainably develop productive, resilient and market oriented agro-sylvo-pastoral, wildlife and fishery sector with expected results to increase the primary sector contribution to food security, decent employment, supply of national agricultural processing industry.

2.1 SPECIFIC OBJECTIVES, EXPECTED RESULTS AND TARGET BENEFICIARIES

40. **The project Development objective (PDO)** is "to increase agricultural productivity and promote nutrition-sensitive agro-sylvo-pastoral value chains with potential to create jobs for sustainable food and nutrition security in the targeted rural areas in Burkina Faso.

41. **Specific objectives include** (i) scale-up the adoption of selected proven productive agricultural technologies; (ii) improve access to nutrient rich-food in the targeted rural areas; (iii) increase selected value chains added value (iv) improve knowledge on nutrition-sensitive value chains; (v) build stakeholders' capacity on improved agricultural technologies, (vi) facilitate farmers' linkage to markets in the targeted rural areas, (vii) improve food and nutrition security through cereals, legumes, fishery, fruit and vegetable production.

42. **Project results and outputs:** The results and outputs expected as part of project activities figure in the Results Framework ([Annex 2](#)). The increase in agricultural production expected in the targeted areas is 10% in an annual basis. The "Integrated Approach" to food and nutrition security is the guiding principle of project activities. In that regard, it is expected that the scale-up of the adoption of proven productive agriculture technologies will cover 100,000 ha. The agricultural research system will be supported to ensure adaptive research on selected value chains especially for nutrition-sensitive value chains. They will also support the capacity building process for the adoption of disseminated technologies. The project will support the creation 6,000 household gardens equipped with drip irrigation scheme for supplemental irrigation in an area of 500 square meters. It will also support the processing of nutrition-sensitive products and quality control. It is expected that 5,200 direct jobs will be created under the project. The project will also support post-harvest activities including conservation and storage facilities.

43. **Link with the overall sector strategy and investment plan:** The project activities are aligned with the Sustainable Development Goals (SDGs) namely Goal 2: *End hunger, achieve food security and improved nutrition and promote sustainable agriculture*, and Goal 8: *Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all*. As stated above, the project activities are fully aligned with the PNDES which is the new development referential of Burkina Faso. Project activities are in line with the Pillar 2 Strategic Objective (OS) 2.1: promote public health and accelerate demographic transition, OS 2.3: promote research and innovation to serve of structural transformation of the economy, OS 2.4: promote decent employment and social protection for all, particularly for young people and women, and OS 2.5: improve life quality, access to water, sanitation and quality energy services; and Pillar 3 OS 3.1: sustainably develop agro-sylvo-pastoral, wildlife and fishery sector which is productive, resilient and market-oriented, OS 3.2: develop a competitive industrial and handicraft sector, with strong added value and creative of decent employment, and OS 3.5: reverse trends of environmental degradation and ensure sustainable management of natural and environmental resources. The project activities will contribute to achieve the objectives of the second phase of the PNSR under formulation and are aligned with the SDR pillar

1: Food and nutritional security and pillar 2 : improvement of the competitiveness of the agro-sylvo-pastoral fisheries and Wildlife value chains.

44. **Beneficiaries.** Project target beneficiaries are smallholder farmers' including women and youth as well as farmers' organizations. The intervention area will be located in a radius of 100 km around the three regional agricultural research center i.e Farakoba, Saria and Kamboinsé and cover parts of nine over the 13 regions including the Cascades, Hauts Bassins, Boucle du Mouhoun, Central Plateau, Centre, Center-North, Center-South, Center-West and North regions. The total population of the intervention area is estimated to 3.2 million. Project investments will be concentrated in 125 communes (map1). The project direct beneficiaries are estimated to 300,000 persons in which 40% will be women. Research centers in this areas are instrumental in facilitating agricultural research technology transfers. Moreover, areas identified have high agricultural potentialities and a relative favorable climatic conditions.

Map 1: Intervention areas (VSAT 100 Km around 3 agricultural research centers)



2.2 JUSTIFICATION FOR THE OVERALL APPROACH

45. **Description of the overall approach:** According to the 2015 Millennium Development Goals report, about 795 million people are undernourished worldwide⁸. In developing countries this challenge is amplified by the demographic expansion and the impacts of climate change. In the coming decades, more food needs to be produced using less resources (land, water and energy), in a global economic context of volatile commodity prices, high food and energy prices, as well as rising unemployment. In Burkina Faso more than 3.5 million people are under food and nutrition insecurity. Under these conditions, achieving food and nutrition security in all its facets requires approaches that are specifically designed to tackle complex interlinked problems and that go beyond local agriculture

⁸ UN (2015) *Millennium Development Goals report 2015*. United Nations, New York.

and food sectors. This justifies why for this project, the global approach adopted by the project is an “Integrated Approach” to address food and nutrition insecurity in rural areas of Burkina Faso. This need for integration is also reflected in the concept of food security itself. According to the Food and Agriculture Organization of the United Nations (FAO)⁹ food and nutrition security “*exists when all people, at all times, have physical and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life*”. This definition encompasses production-related aspects of availability, but also the economic, political and environmental aspects of access, utilization and stability, etc.

46. Therefore, the project implementation will be inclusive (*all people*), gender sensitive and will take into account other vulnerable groups in the project intervention area. Activities will integrate food availability (*sufficient*) issue by scaling-up the dissemination of improved agricultural technologies that have demonstrated high productivity potential especially under the WAAPP project in order to increase their adoption by smallholder farmers and increase crop production. Promoting post-harvest technologies will reduce considerably food losses and allow better availability of food at right time. *Dietary needs* will be taken into account in the promotion of nutrition-sensitive value chain including cereals, legumes, fish and horticulture products. The *economic and the stability (all times)* components are taking into account in this project through an emphasis to job creation (employment) and revenue generating activities based on the adoption of improved agricultural technologies.

47. The overall approach will be also participatory with a large consultation of the rural sector stakeholders and project beneficiaries to ensure that project activities and investments are relevant to respond to the beneficiaries needs and fit within the social, political and economic environment. Lessons learned and experiences from the implementation of similar projects and programs in Burkina Faso and other countries will be instrumental to reduced failures and risks.

48. For technologies dissemination, the *multi-actors’ innovation platforms* tested and adjusted during the first phase WAAPP will be scale-up. The Innovation Platform has emerged as an alternative promising framework to guide agricultural technology generation and dissemination. The concept defines operating principles and guidelines for stakeholders with diverse interests to come together to analyze the problem and develop solutions. This approach when adopted lead to promote technologies that are relevant to local conditions and are acceptable to local communities. It comprises of a set of individuals and organizations stakeholders (from research, extension, policy, traders, and markets) working together around a developmental challenge with due consideration to end user concerns, requirements and capacities. Their close integration in the inter-profession organizations will be supported under the project. The use of ICT (e-extension) will be integrated in the technology and meteorological information dissemination.

49. The PIDASAN environmental sustainability stems fundamentally from the project-supported efforts to protect soils and water resources in compliance with the conventions that Burkina Faso has ratified with regard to environmental protection, and to improve the national governance of natural resources. In this regard, the project environmental sustainability is predicated on a number of principles that will govern project implementation. These include: (i) characteristics of the project focal areas based on land and water availability with potential for agricultural intensification, and identification of priority value chains; (ii) sustainability of interventions, including mechanisms for the conservation and protection of water, land and other natural resources; (iii) stakeholder ownership of project implementation; and (iv) project administration by the permanent institutions of the State, such as the central and decentralized directorates of line ministries and the local institutions.

50. The project will work in synergy with the other ongoing projects. Potential projects under implementation with which the project will be able to establish partnerships are: (i) the West Africa

⁹ FAO (2008) *Food security information for action: practical guides. An introduction to the basic concepts of food security*. Rome: European Commission, Food and Agriculture Organization of the United Nations, Food Security Program.

Agricultural Productivity program, on agricultural technology generation and dissemination; (ii) the agricultural productivity and food security project (PAPSA) on community works, market information system, access to rural credit through warehouse receipt system. This project that already received GAFSP reached 446,532 beneficiaries in which 37% were women. Development of degraded lands with a secured land tenure process supported by the project has improved women access to land. As stated above, as of September 30, 2016, 10,766 ha of degraded lowlands have been developed and secured under the project in which 56 percent of developed land have been distributed to women. This is a best practice that addresses environmental sustainability and social development. Rice production in the developed lowlands reached also 31,000 tons and represents a substantial contribution to the national rice production. This performance can be scale-up with the introduction of System of Rice Intensification (SRI) technology already piloted in the project under lowlands production system. The warehouse receipt system implemented under the project can also contributed to rural credit mobilization. The implementation of this project also revealed the underexploited potential of non-timber forest products that can be better valued under this present project; (iv) the Neer-Tamba project for beneficiaries' organization and networking around targeted value chains.

2.3 ACTIVITIES TO BE FINANCED AND THEIR JUSTIFICATION

51. Project activities will support PNSR second phase implementation through increased agriculture production, enhanced producer revenues, create jobs and achievement of food and nutrition security. As indicated earlier, Project activities are in line with the Pillar 2 Strategic Objective (OS) 2.1: promote public health and accelerate demographic transition, OS 2.3: promote research and innovation to serve of structural transformation of the economy, OS 2.4: promote decent employment and social protection for all, particularly for young people and women, and OS 2.5: improve life quality, access to water, sanitation and quality energy services; and Pillar 3 OS 3.1: sustainably develop agro-sylvo-pastoral, wildlife and fishery sector which is productive, resilient and market-oriented, OS 3.2: develop a competitive industrial and handicraft sector, with strong added value and creative of decent employment, and OS 3.5: reverse trends of environmental degradation and ensure sustainable management of natural and environmental resources. The project activities are also aligned with the SDR pillar 1: Food and nutritional security and pillar 2: improvement of the competitiveness of the agro-sylvo-pastoral fisheries and Wildlife value chains.

52. Project activities fall under four components: (i) increase agricultural productivity; (ii) increase access to nutrient rich food; (iii) increase decent agricultural job creation, and (iv) capacity building, project coordination, management and monitoring-evaluation. These components are presented below. The detailed activities, together with the targeting mechanisms (selection criteria, quotas, etc.) will be specified in the Project Implementation Manual. Project activities will be implemented by the Project Management Unit (PMU) of the WAAPP project, in close liaison with the technical directorates of the line ministries involved and agricultural research institutions. At regional and provincial level, the various partners will be associated to project execution, particularly the decentralized units of the line ministries, farmers' organizations, Regional Chambers of Agriculture, agricultural research stations involved under the leadership of CNRST. Selection and approval committees will be set up to vet investment activities.

Component 1: Increase agricultural productivity (US\$ 9.135 million):

53. The aim of this component will be to accelerate the adoption of improved agricultural technologies with a potential to significantly improve agricultural productivity through sustainable intensification by stallholders' farmers. Under the first phase of West Africa Agricultural Productivity Program, many technologies avec been tested in the thirteen participating countries. Many of those technologies have been assessed and showed evidence of their efficacy and efficiency to improve the productivity of targeted value chains ([Annex 3](#)).

54. For cereals (Maize, rice, sorghum, millet) the project will support the dissemination of performing drought and pest resistant seed varieties. For rice emphasis will be put on NERICA-FKR62N, Orilylux and SRI technologies will be scale-up in the developed lowlands production systems in collaboration with the National Research System and Africa Rice. Soil fertility management including composting and erosion control techniques (soil and water conservation measures) and adequate fertilization that reduced pollution will be systematically integrated in the production systems.

55. Livestock and poultry feeding technologies will be disseminated including the multifunctional shredders that have the potential to increase feeds production from crop residues and wild legumes and to improve the formulation of animal diets. Intensive forage production systems will be promoted.

56. For horticulture value chains, the project will support the dissemination of new released onion varieties (FBO1 and FBO5) and tomatoes (FBT1, FBT2, FBT3) that have the potential to increase yield from 25 to 40 tons per ha and from 20 to 30/40 tons respectively in all seasons. The local horticulture seed production system will be supported to ensure the availability of improved horticulture seeds for smallholder farmers.

57. As stated earlier, for technologies dissemination, the *multi-actors' innovation platforms* approach tested and adjusted during the first phase WAAPP will be scale-up. The Innovation Platform has emerged as an alternative promising framework to guide agricultural technology generation and dissemination. Moreover, sensitization, trainings and the e-extension tools with top-up the dissemination mechanism.

Component 2: Improve access to nutrient-rich food (US\$ 5.18 million)

58. The objective of this component is to support the adoption and dissemination of nutrient-rich crop that can significantly improve the nutrition situation of the targeted areas population. The project will support the adoption of legumes' production to increase the availability proteins of plant origin. It will scale-up the dissemination of K VX cowpea varieties and triple bagging technologies for efficient conservation and storage (post-harvest losses less than five percent) and will promote the production of soya bean. Research systems will be supported through adaptive research grants to improve the production, storage and small scale processing systems.

59. The project will also scale-up the steamed-rice technology to improve the nutritional quality of rice (increase in vitamins B1 and B2 content) and will provide assistance for marketing. Fifty (50) women groups will be supported to scale-up improved steamed-rice production. The dissemination of the *Orange sweet potato* production will be supported for its naturally high content in vitamin A in 6,000 household gardens. The *Moringa oleifera* planting and processing technology will be also promoted in the targeted areas to improve breast feeding women and children nutrient deficiency and health. Overall the creation of 10 processing units of Moringa will be supported under the project. The young leaves, flowers, pods, oil are more and more present in Burkina Faso diet. All parts of this plant are renewable sources of tocopherols (γ and α), phenolic compounds, β -carotene, vitamin A, C and total proteins, including the essential sulfur amino acids, methionine and cysteine and anti-oxidants substances.

60. The project will also promote household gardens (6,000) with drip irrigation scheme to facilitate vegetable production of high nutritious value that can contribute to diversify poor household daily diets and increase incomes.

Component 3: Increase decent agricultural job creation (US\$ 6.58 million)

61. This component will provide matching grants and promote public-private partnership for the implementation of targeted activities.

62. Past project experiences¹⁰ showed that crop residues shredder equipment was instrumental in reducing livestock and poultry feeds expenditures by 50% and improved diets and create jobs. Fifty (50) young farmers from the CPRs (Rural Development Centers) will be empowered to use the technology and for the formulation of diets for local animal production stakeholders. Ten (10) small scale cereals and legumes' processing units for biscuit, porridges and rich-infant flours will be promoted through technology transfers, equipment and marketing. Collaboration with the Burkina Faso Enterprises House will be necessary to provide advisory services for performing SMEs. Research systems will be strengthened to improve processing technology. Promotion of processing units for horticulture products and *Moringa* have a potential to create decent agricultural jobs. Steamed-rice production by rural women organizations will be supported to increase the quantity of steamed-rice produced and for packaging. The dissemination of the one hundred (100) *Quali gril* charcoal oven will contribute to improve the quality of grilled, smoked chicken production and create job for young people. Improved Mango breeds nurseries' units will be also promoted. The project will also support the creation of 20 onion powder processing units for 20 women groups. Matching grants scheme will be used for these activities.

63. A public-private partnership will be established with relevant stakeholders to create more jobs through the dissemination of south Africa tunnel dryer for Mango processing and a creation of mango vinegar production units where relevant technologies have been tested and released under the implementation of the first phase of WAAPP.

64. The project will ensure that effective marketing instrument is in place to ensure strong connection of stakeholders with inputs and outputs markets.

Component 4: Capacity building, project management, Monitoring and evaluation (US\$ 5.64 million)

Sub-component 4.1: Capacity building

65. Capacity building will involve public and private project stakeholders. This sub-component will provide the required knowledge support for the implementation of project activities. It will contribute to build capacity, including training for, SMEs, processors, farmers' organizations and individual producers as well as local technical extension service staff. It will involve (i) training of trainers (private, NGO, CPR, LAP, POs) on Innovation Platforms and various themes (mechanization, Nutrition, soil fertility, post-harvest, processing, climate change, etc.); (ii) organizing exchange visits in the ECOWAS zone.

66. National research system will be supported with necessary Lab equipment, training of research technicians, young researchers, students and to conduct field and Lab research on subjects relevant to the project.

Subcomponent 4.2: Project coordination, management and M&E

67. In order to ensure an efficient technical support to the project and also to build on achievements and experiences of similar World Bank-supported projects, PIDASAN will be institutionally anchored with WAAPP. This project is an example of successful agricultural research technology generation and dissemination and coordination of actions with the view to improving agricultural research impact on food security among vulnerable populations.

68. PIDASAN Steering Committee will be the same as WAAPP committee, with membership representing all ministries concerned with rural development, research, Economy, Finance and Development (MAAH, MRAH, MEA, MEEVCC, State Secretariat for Research and Innovation, MINEFID). In terms of day-to-day coordination will be done by the respective specialized directorates

¹⁰ (World bank, 2015), Emergency livestock feeds access process ICR.

of these ministries. These directorates will provide technical support and monitoring of field activities, including due consideration of environmental and climate change aspects. The PIDASAN team will be embedded with the WAAPP Project Management Unit (PMU), under the authority of the WAAPP Coordinator serving as de facto Project Coordinator.

69. WAAPP PMU staff will be strengthened by the addition of the following staff: (i) an agricultural products marketing specialist; (ii) nutrition specialist; (iii) private sector specialist, (iv) ICT specialist, (v) environmental and social safeguard specialist, (vi) internal auditor; (vii) innovation platform specialist; (viii) the respective sections in charge of capacity building, Monitoring & Evaluation, and administrative and financial matters of the WAAPP Coordination Unit will also be reinforced with additional staff and adequate incremental operating means.

70. PIDASAN will fund the additional staff posted with the WAAPP Management Unit, as well as all incremental equipment and operating expenditures for the PIDASAN team, including vehicles, office space, office equipment, office supplies and other operating expenditures including utilities.

2.4. IMPLEMENTATION ARRANGEMENTS

71. **Implementing Agencies:** The Ministries of Agriculture and Hydraulics Development and the Permanent State Secretariat for Research will be the technical implementation agencies. The financial implementation agency will be the Ministry of Research of Economy, Finance and Development.

72. **Steering Committee:** The project steering committee will be chaired by the General Secretariat of the MAAH. Members will also include representatives all ministries concerned with rural development and research (MAAH, MRAH, MEA MEEVCC, State Secretariat for Research and Innovation) and the respective directorates and units of all ministries at central and regional level. The steering committee membership will also include the representatives of the local elected organizations, Farmers' umbrella organizations (*Confédération Paysanne du Faso-CPF*), the Regional Chambers of Agriculture (CRAs) and the producers' organizations involved in project implementation in the targeted regions. The Steering Committee will provide policy guidance and will meet at least twice each Fiscal Year to undertake, *inter alia*, the review and approval of the draft Annual Work Program and Budget (AWP&B), the approval of the annual report to be prepared by the Project Coordinator, and review of implementation progress.

73. **Implementation arrangements.** Implementation will take place at the national and the regional levels. At national level a strong technical team (PMU) will be responsible for the technical, fiduciary and monitoring-evaluation management of the project. At regional level, the three selected research stations (Farako-Bâ, Kamboinsé and Saria) under INERA and IRSAT and the regional directorates of line ministries will be responsible for the implementation of project activities. The activities will be carried out through Memorandum of Understanding (MoU) with public technical services providers and contracts with private services providers.

2.5 AMOUNT OF FINANCING REQUESTED AND TIME FRAME FOR IMPLEMENTATION

74. The consolidated budget amounts US\$ 26.53 million of which US\$ 24.00 million are requested from GAFSP. The difference corresponds to contributions from the State and beneficiaries (the breakdown is shown in [Table 1](#) below).

75. The activities will be carried out for four (4) years (2018-2021). The program will aim at increasing agricultural productivity and nutrition through an integrated approach to nutrient and food security. The project will contribute to improve poor household's resilience to external shocks including climate variability and change of an increasing population - especially women and children - in the project-targeted areas.

Table 1: Consolidated PIDASAN costs

Components / subcomponents	GAFSP Funding (x 1,000 US\$)	Government Contribution (x 1,000 US\$)	Beneficiaries contribution (x 1,000 US\$)	Total cost (US\$)
Component 1: Improve agricultural productivity	8,400	420	315	9,135
1.1: Investment	6,300	-	315	6,615
1.2: Support technology dissemination and adoption	2,100	420	-	2,520
Component 2: Improve access to nutrient rich-food	4,800	235	144	5,179
2.1: Support adoption of nutrient-rich crop production technology	1,920	120	-	2,040
2.2: Support household gardens	2,880	115	144	3,139
Component 3: Increase decent agricultural job creation	6,000	-	576	6,576
3.1: Matching grants	3,600	-	288	3,888
3.2: Public-Private Partnership	2,400	-	288	2,688
Component 4: Project coordination and management	4,800	840	-	5,640
4.1: Capacity Building	1,440	-	-	1,440
4.2: Project Coordination, M&E	3,360	840	-	4,200
Total	24,000	1,495	1,035	26,530

2.6 PREFERRED SUPERVISING AGENCY

76. The World Bank will be the supervising agency for PIDASAN GAFSP financing. The Bank already oversees the implementation of WAAPP with which this project is integrated. In addition, several of the strategies underlying the targeted interventions under PIDASAN are based on successful experiences from the World Bank, in partnership with other development partners. The government team consists of the WAAPP management team which will be strengthened under PIDASAN to accommodate the incremental needs of the project. It also consists of the regional rural sector directorates and research centers which will play a central role in overseeing project implementation on the ground.

2.7 POST PROJECT SUSTAINABILITY AND EXIT STRATEGIES

77. Land tenure is one of the major threats to the sustainability of agricultural projects. The mandatory establishment of official records for land cession as part of the application of the law on rural lands will be a prerequisite for any intervention. Similarly, environmental issues will be duly taken into consideration. All investment requiring land development works will be preceded by the preparation of an Environmental and Social Impact Assessment (ESIA).

78. Severe drought can compromise household gardens' production if any irrigation scheme is not available for supplemental irrigation. The project will support beneficiaries with adapted scheme in place that do not require substantial maintenance. Market failure for small SMEs promoted under the project can also affect the sustainability of project achievements. Therefore, the project will ensure that advisory services and support to elaborate business plans for all SMEs' are provided in collaboration of the Enterprise House of Burkina Faso. Moreover, the project will provide marketing support to ensure strong access to inputs and outputs markets before project closing. Project beneficiaries will contribute for 25 percent and 50 percent of marketing services in the third and fourth year of project implementation respectively to prepare them to takeover these costs before project closing.

79. Sustainability and maintenance of investments in local communes is sometime dependent on continuous funding from government budget and may lead to a lack of ownership by local communities of the project activities. However, rural infrastructure has proved to be managed far more efficiently under participatory mechanisms than directly by State companies or technical services. Project implementation arrangements, therefore will allow for oversight and control by beneficiaries. The management of small schemes will be entrusted directly to the communities and producer groups. The project will build their capacities in that area. It will provide them with models of documents, pre-specified parametric costs, technical and economic referential of technologies promoted under the project.

2.8 RISK NATURE AND MANAGEMENT

80. Overall PIDASAN is a moderate risk project. The potential risks associated with the project implementation and corresponding risk mitigation measures are presented in [Table 2](#) below. The Government is giving very high priority and great importance to food security. Hence it is expected that it will be very actively looking for solutions for those aspects that have a moderate risk rating, particularly those related to the coordination amongst stakeholders.

Table 2: Project risks and management

Risk	Rating	Mitigation measures
1. Project Stakeholder Risks	Rating	Moderate
Description: <ul style="list-style-type: none"> Weak ownership of project implementation procedures by project stakeholders; Tension among project beneficiaries field level in the selection of matching grant projects to be financed. 	Risk Management: <ul style="list-style-type: none"> The Project coordination team will organize information workshop for all project stakeholders; The project will ensure consultation with stakeholders and define clear criteria and selection process. 	
2. Capacity	Rating:	Low
Description: <ul style="list-style-type: none"> Low capacity for project management Poor technical knowledge of agricultural technologies to be implemented at field level; Low capacity for M&E in the project targeted regions 	Risk Management: <ul style="list-style-type: none"> Management Unit that will be strengthened with incremental staff specifically assigned to PIDASAN Beneficiaries' capacity building will be ensured by the project; Specific technical training will be provided MAAH and research centers decentralized unit will receive support for M&E at the regional level. 	
3. Project Risks		
3.1. Design	Rating:	Low
Description: <ul style="list-style-type: none"> Non-adaptation of dissemination tools; 	Risk Management: <ul style="list-style-type: none"> The lessons from other projects (PAPSA, PASPRU, PROFIL, Neer-Tamba) on extension tools will be taken into account; 	
3.2. Environmental	Rating:	Moderate
Description: <ul style="list-style-type: none"> Ecological: Floods, drought, locust invasion, epizootics can compromise the implementation of project activities 	Risk Management: <ul style="list-style-type: none"> drought-tolerant and disease-resistant varieties; Early warning system will be closely follow-up; 	
3.3. Social and Economic	Rating	Low
Description: <ul style="list-style-type: none"> Inexistence of adapted financial products for project stakeholders; Slow access to input and output market may be disincentive; Difficulties in mobilizing matching grant counterpart financing from stakeholders; Land issues may be of constraint 	Risk Management: <ul style="list-style-type: none"> Memorandum of understanding with financial institutions and close collaboration; Elaboration of business plan and marketing support activities; Application of the land law and active monitoring and prevention of land conflicts will be ensured Beneficiaries financial counterpart will be carefully estimated after extensive consultations; Land cession documents and environmental impact assessment will be carried out before project investment; 	
3.4. Project management	Rating:	Low
Description:	Risk Management :	

Risk	Rating	Mitigation measures
<ul style="list-style-type: none"> Slow procurement processing; Coordination of project activities among five line ministries may prove difficult and may slow project implementation Possible failure of service providers 		<ul style="list-style-type: none"> Procurement process will be closely monitored and anticipated actions will be taken to accelerate the process. WAAPP project has good track record in fiduciary compliance, including financial management and procurement. Periodical meetings with all line ministries will be organized; Additional capacity building to be provided on need basis

2.9 CONSULTATIONS WITH LOCAL STAKEHOLDERS AND DEVELOPMENT PARTNERS

81. The project preparation benefited from an extensive consultations with project stakeholders including farmer's organization umbrella (*Confederation Paysanne du Faso*) and the regional Chambers of Agriculture. All line ministries and rural sector projects as well as the ministry of finance and development have actively participated to the project formulation. The project received a strong support from donors' communities and rural sector projects funded by other partners than the World bank financed projects including IFAD and European Union.

3.0 PLAN FOR DETAILED PREPARATION

82. **List of full time government team members:** The preparation of the project will be carried out by a multidisciplinary team coordinated by the General Directorate for studies and sectoral statistics (DGESS) of the MAAH. The team will include line ministries representatives, the ministry of finance and development, private sector, Civil Society including youth and women organizations, farmers' organization representatives, local authorities. Other donors' funded projects team members will be also involved. The list of full time government team members who will prepare and finalize the project with the supervising entity is presented in Table 2.

Table 3: List of full time government team members

Ministry	Structure	Name & Surname	Title	Phone & e-mail
MINEFID	DGCOOP	KEBRE W. Jean Marie	Head of Multilateral Cooperation Department	70 24 32 16 / jkebre@gmail.com
	DGEP	TAPSOBA Bruno	Policy Officer / Directorate of Public Investments Coordination and Evaluation	70 64 70 28 / brunotapsoba@yahoo.fr
MAAH	DGESS	TOURE Adama	Director Policy Formulation (DFP)	70 13 08 62 / adatoure18@yahoo.fr
		SAVADOGO Boureima	DFP Officer	78 42 41 20 / savadogob332@yahoo.fr
		KAM Ollé Arnaud	DFP Officer	71 22 32 03 / arnaudkam@ymail.com
	SP/CPSA	SIDIBE Amadou	Permanent Secretary for Agricultural Sectorial Policy Coordination	a.sidibe@spcpsa.bf
	PPAAO	SAWADOGO/KABORE Séraphine	Deputy Project Coordinator	70 20 00 42 / phinekabore@yahoo.fr
		OUATTARA Adama	Monitoring and Evaluation officer	70 44 24 47 / kemeadam@yahoo.fr
		SAWADOGO Adama	Administration and Finance officer	70 78 47 03 / sawadogoadama1@yahoo.fr
	PAPSA	OUATTARA A. Nathalie	PAMESAD /GAFSP Project Monitoring and Evaluation specialist (PAPSA)	7103 85 87 / aminathalie@yahoo.fr
SE/RSI	CNRST	SANOGO Oumar	CNRST Scientific Director	70 84 64 04 / sanogo_oumar@hotmail.com

Ministry	Structure	Name & Surname	Title	Phone & e-mail
	INERA	NEYA B. Samuel	Head of projects and studies Department	70 74 60 39 / samuelneya@yahoo.fr
	IRSAT	BATIONO Fabrice	Nutritionist Researcher	70 70 06 35 / fabationo@gmail.com
MRAH	DGESS	OUEDRAOGO Charles Auguste	Director of policy Formulation	70 24 02 18 / charleoued@yahoo.fr
MEEVCC	DGESS	BAZIE Yéboula	Director of Monitoring, Evaluation and Capitalization Department	70 58 13 21 / yeboula@yahoo.fr

83. ***Expected project preparation time:*** The preparation of the project will cover a period of four (4) months during the year 2017.

84. ***Sources of funding necessary for project preparation:*** The government of Burkina Faso already made a provision from the National Projects Study and Preparation Fund (FONEPP) for the project preparation if approved. The cost of project preparation is estimated to CFAF 300 million (Annex 4).

ANNEX1: LOGICAL FRAMEWORK OF THE SDR BY 2025

Global Objectives (GO) and Specific Objectives (SO)	Performance Indicators	Sources of verification	Critical conditions	Observations
GO : Contribute in a sustainable way to food and nutrition security, economic growth and improved living conditions	▪ Reduce the incidence of poverty in rural areas by 25% by 2025	INSD household survey reports (EMC, EICVM, etc.)	Political, institutional and security stability	NONE
	▪ Annual growth rate of agricultural GDP: 8% per year	Data from the National Accounts of INSD or IPA	Effective engagement of the various partners (Government, development partners, professional agricultural organizations, NGOs, private operators, etc.) in the implementation of the SDR	
	▪ Increase in the coverage of cereal needs by national production: 10% per year	Annual cereal balance sheets from the EPES survey of the DGESS	Favorable rainfall	
	▪ Reduction rate of underweight prevalence among children aged 0-5 years (M / F): 30%	Reports of household surveys of the INSD (EMC, EICVM, etc.) or the DGESS agriculture (EPA).		
Pillar 1 : Food security, nutrition, and resilience of vulnerable populations				
SO 1: Sustainable increase in agro-sylvo-pastoral, fisheries and wildlife production and productivity	▪ Growth rate of cereal production: 5% per year; ▪ Growth rate of cereal productivity (yield per ha): 10% per year ▪ Rate of increase in cotton productivity (yield per ha): 5% per year ▪ Rate of increase in oilseed productivity (yield per hectare): 7% per year	▪ Annual cereal balance sheets ▪ Annual Reports of the Ministry in charge of Agriculture	Political, institutional and security stability Effective engagement and collaboration of stakeholders	These indicators are sufficient to account for increased production and productivity!
	▪ Productivity of livestock (cattle, goats, sheep, pigs, poultry): 15% (for each species) ▪ Increase in controlled meat production: 5% per year ▪ Increase in milk production: 15% per year;	▪ National survey of livestock numbers ▪ Annual Reports of the Ministry of Animal Resources		
	▪ Increase in NWFP production: 10% per year ▪ Increase in wild population numbers in wildlife areas: 2% per year. ▪ Increase in aquaculture production: 20% per year	▪ Annual performance reports ▪ Annual reports of the Ministry in charge of the environment		
SO 2 : Sustainable contribution to meeting the water needs of users and aquatic ecosystems	▪ Increase in storage capacity of surface water: 20% ▪ Increase in area under total control of water: 50% ▪ Increase in area of developed lands: 20% per year	▪ SP PAGIRE Reports ▪ Annual Reports of the Ministry in charge of Agriculture	Good capacity of national enterprises in carrying out the work	

Global Objectives (GO) and Specific Objectives (SO)	Performance Indicators	Sources of verification	Critical conditions	Observations
Pillar 2 : Competitiveness of agro-sylvo-pastoral, fisheries and wildlife sectors				
OS 3 : Improving the competitiveness of the agro-sylvo-pastoral, fisheries and wildlife sectors and the access of products to the market with a view to ensuring the sustainability of actors income	<ul style="list-style-type: none"> Rate of increase of processed ASPHF products in total production: 60% for each sub-sector Rate of marketing of agro-sylvo-pastoral, fisheries and wildlife products (A / S / P / H / F): 40% Increase in the number of products marketed according to standards: 50% Rate of increase in domestic consumption of processed domestic products: 30% 	<ul style="list-style-type: none"> Annual reports of the Ministries in charge of the rural sector Annual Reports of the Ministry of Economy and Finance 	Effective engagement and collaboration of stakeholders	
Pillars 1, 2 et 3				
SO 4 : Facilitating the development and transfer of technologies in the field of agro-sylvo-pastoral fisheries and wildlife	<ul style="list-style-type: none"> Number of new technologies for production and processing of ASPHF products made available to stakeholders Rate of increase of the adoption of the results generated (technologies and knowledge) by the research structures and innovation by the actors: 40% 	Annual reports of the Ministries in charge of the rural sector		
Pillar 3 : Environmental Governance, Sustainable Management of Natural Resources and Mitigation of the Effects of Climate Change				
SO 5: Significantly reversing the trend towards environmental degradation and the adverse effects of climate change	<ul style="list-style-type: none"> Increase in the area of degraded land recovered: 30% Increase in the number of pastoral areas managed and secured functional: 75% Increase in area of managed forests: 60% Rate of increase in the total number of wildlife herds (herbivores): 80% 	Annual reports of the Ministries in charge of the rural sector	Lack of consensus on pastoral sites to be developed	
SO 6: Strengthen the resilience of vulnerable populations to the adverse effects of climate change and economic shocks	<ul style="list-style-type: none"> Coverage rate of livestock water requirements in the dry season: 80% Percentage of population in vulnerable areas affected by adaptation projects implemented: 80% 	<ul style="list-style-type: none"> Annual Reports of the Ministry of Animal Resources Annual reports of the Ministry in charge of the environment 		
Pillar 4 : Drinking water sanitation and living environment				
SO 7: Ensure sustainable access to drinking water and sanitation for people	<ul style="list-style-type: none"> Increase in access to drinking water in rural areas: 40% Increase in access to sanitation in rural areas: 50% per year Increase in access to drinking water in urban areas: 20% Increase in access to sanitation in urban areas: 30% per year 	<ul style="list-style-type: none"> PN-WSS reports and data ONEA reports and data 		We have only selected indicators specific to drinking water or sanitation! Indicators relating to the Pillar (living environment) are eliminated. It would have

Global Objectives (GO) and Specific Objectives (SO)	Performance Indicators	Sources of verification	Critical conditions	Observations
				required a specific objective relating to the living environment.
Pillar 5 : Governance and partnership				
SO 8: Ensuring the effectiveness and efficiency of public intervention in the rural sector	<ul style="list-style-type: none"> ▪ Rate of implementation of public procurement plans: 80% ▪ Rate of absorption of internal and external financing: 80% ▪ Rate of implementation of operational programs (physical and financial): 90% ▪ Level of functionality of the monitoring and evaluation system: 100% 	Annual reports of the Ministries in charge of the rural sector	Effective engagement and collaboration of stakeholders	

ANNEX 1: PIDASAN RESULT FRAMEWORK

Indicators	Units	Base year (2017)	Targets			
			2018	2019	2020	2021
Indicators of the development objective: to contribute to food and nutritional security improvement by increasing the agro-sylvo-pastoral productivity while ensuring the link between production and market						
IOD 1: Number of direct project beneficiaries of which 40% female and 10% youth	Number	0	50 000	120 000	170 000	300 000
IOD.2: Increased production by 30% in each targeted sectors	Percent	0	5%	10%	20%	30%
IOD.3 : Number of direct jobs created			900	1 900	4 000	5 200
IOD.4: Areas covered by technologies	Ha	0	10 000	40 000	80 000	115 000
Intermediate Results Indicators						
Component 1: Improve agricultural productivity						
IR1. 01: Number of producers / processors using best bet technologies	Number	0	42 750	128 250	187 250	256 500
IR1.02: Number of technical, economic manual/ guides disseminated	Number		10	15	19	19
IR2.03: Number of functional IPs	Number	7	7	17	17	17
IR1.04: % of raw products put into market	kg	0	15%	22%	28%	35%
IR1.05: Quantity of processed products put into market	ton	0	1 000	4 000	8 000	11 500
Component 2: Improving access to nutrient-rich food						
IR2.01: Number of farmers with household gardens with at least Moringa trees or sweet potatoes gardens	Number	0	500	1 500	3 500	6 000
IR2.02: Number of persons with knowledge on optimal nutrition practices	Number	0	2 500	7 500	17 500	31 000
IR2.03: Number of villages with Moringa trees / sweet potatoes	Number	0	100	300	500	625
IR2.04: Quantity of fortified sorghum and millet flours with Moringa or fish powder produced	Kg	0	5 000	20 000	40 000	57 500
Component 3 : Support to job creation						
IR3.01: number of private extension companies/ services created	Number	-	5	10	10	10

IR3.02: number of production /processing companies created	Number	-	15	30	44	44
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Component 4 : Project coordination and management

IR4.01: number of training clients days (all actors)	Number	-	500	2 500	4 500	7 500
IR4.02: Fiduciary management performs well	yes/no	-	yes	yes	yes	yes
IR4.03: M & E system is efficient	yes/no	-	yes	yes	yes	yes

ANNEX 3: IMPROVED TECHNOLOGIES RELEASED FOR DISSEMINATION

Filières	Technologies	Performances
Mango	Integrated fruit flies control (sanitation + timaye + GF-120 / yeast)	<ul style="list-style-type: none"> Orchards flies infestation reduction : 80-100% <i>B. dorsalis</i> male population reduction (Timaye).
	Dried mango	<ul style="list-style-type: none"> Shelf-stable Reduction of post-harvest losses Export (entry of foreign currency) high potential for Job creation
Tomato	Rainy season tomato varieties : FBT1 - FTB2 & FBT3	<ul style="list-style-type: none"> Cycle: 85 days - 75 days. & 70 days; Yield : 25 - 28 & 32 t / ha Good Resistance to Fruit bursts. Increase in income : from 204% to 315% / ha Yields : 25 to 40 t/ ha
Onion	High yield onion varieties : FBO1&FBO5	<ul style="list-style-type: none"> 25 – 40 t/ha
	Onion Powder	<ul style="list-style-type: none"> Reduction of post-harvest losses Good conservation / shelf-stable Easy transportation High market potential
	Solar Cooling Room	<ul style="list-style-type: none"> Capacity : 6 Tons Preservation of fruits and vegetables (tomato, onion, potato ...) up to 0°C
Rice	High Yield varieties: NERICA -FKR62N, Orilylux	Yield potential: 5-10 tons/ha
	Parboiled Rice	<ul style="list-style-type: none"> Soaking duration : 2.5 to 3 h of compare to 15 h Steaming temperature : 55 - 60 ° C Machining efficiency : 75% against 52- 62% for non-parboiled rice Reduced breaking rate from 32 to 17% Nutritional values preservation : 80% of vitamins and minerals Good cooking ability Longer storage life
	SRI	<ul style="list-style-type: none"> Cycle: 85 days; Yield : 9 - 10 t / ha Economy in seeds (15kg / ha against 40 kg/ha) Reduction of water requirements (less than 40%)

Cowpea	Climate smart varieties : Komkalé et Tiligré	<ul style="list-style-type: none"> • Adapted to rainy season production • Good resistance to sunburn. • Good resistance to fruit bursts. • Cycle: 60 days and 70 days. • Yield at farmers level : 750 and 850 kg/ha • Potential yield : 1.8 and 2t/ha
	Storage Bags : PICS	<ul style="list-style-type: none"> • Long shelf life • Post-harvest loss reduction of 95% or more
Cattle / Meat	Multifunctional Fodder Shredder : <i>Broyeur Kato</i> Broyeur du Niger	<ul style="list-style-type: none"> • Low energy consumption: 3.5 liters of gas oil per 5 T of feed; • Food Production capacity: 10 T per day • Potential Revenue Generation : 600,000 to 700,000 FCFA / month
Poultry	Multifunctional/ Multiuse Oven : <i>Qualigrill</i>	<ul style="list-style-type: none"> • Capacity : 25-40 poultry heads • Uniform cooking time (2-2h30) • 60-70% saving of charcoal compared to traditional ovens • Thermal insulation with no risk as combustion chamber uses insulating bricks
Millet Sorghum & Moringa	Climate smart Varieties : Sorghum : Sariaso 11 & Kalpelga, Millet : IKMV8201, SOSAT C88	<ul style="list-style-type: none"> • Sorghum Potential yields : 3,2t/ha & 4,7 t/ha, • Millet Potential yield : 2 t/ha • On farm yield : 800-900 kg/ha
	Processed products: sorghum and millet lumps, fortified with Moringa or fish powder for child nutrition Cookies	<ul style="list-style-type: none"> • High content in proteins, lipids and fibers and Micro nutrients: Phosphorus (200 to 240 mg / 100 g DM), Calcium (30 to 60 mg / 100 g MS); Magnesium (90-130 mg / 100 g MS); Iron (3 to 4 mg / 100g MS)
	Moringa (green fresh or dried leaves, powder)	<ul style="list-style-type: none"> • High essential amino acids, beneficial fatty acids and omega oils content. ; • Rich in oligo elements (calcium, iron, vital minerals, vitamins, antioxidants and anti-inflammatories)
Sweetpotatoes	Orange fleshed sweet potatoes	<ul style="list-style-type: none"> • Source of vitamins A, B (2, 5 & 6) and C to address malnutrition and certain diseases • Sources of Beta carotene • Rich in potassium, magnesium, iodine, zinc and iron • 20 – 25 t/ha

ANNEX 4 : PROJECT PREPARATION COST

Wording	Amount in francs CFA
Workshops	95 000 000
Preparatory Workshop	10 000 000
Validation workshops on thematic studies	20 000 000
Drafting workshops for the detailed version of the project document	20 000 000
National Workshop to Validate the Draft Project taking into account comments and suggestions	20 000 000
Workshop for the finalization of the project document	10 000 000
Coordination of the preparation by the Technical Committee	15 000 000
Consulting services	205 000 000
Thematic Studies	130 000 000
Project manuals	75 000 000
Total	300 000 000