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Working Paper

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Working Paper, No. 158

Provided in Cooperation with:

International Policy Centre for Inclusive Growth (IPC-IG)

Suggested Citation: de Miranda, Rosana Pereira; Thiam, Abdoulaye; Klug, Israel (2017) : Targeting farmers in institutional procurement programmes: Case study of the PAA Africa Programme in Senegal, Working Paper, No. 158, International Policy Centre for Inclusive Growth (IPC-IG), Brasilia

This Version is available at:

<https://hdl.handle.net/10419/200627>

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WORKING PAPER

working paper **number 158**
july, 2017

ISSN 1812-108x

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and the United Nations Development Programme.

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*The International Policy Centre for Inclusive Growth is jointly supported by the
United Nations Development Programme and the Government of Brazil.*

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ISBN: 978-92-5-109800-4 (FAO)
Print ISSN: 1812-108X

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TARGETING FARMERS IN INSTITUTIONAL PROCUREMENT PROGRAMMES: CASE STUDY OF THE PAA AFRICA PROGRAMME IN SENEGAL¹

Rosana Pereira de Miranda,² Abdoulaye Thiam² and Israel Klug²

1 INTRODUCTION

1.1 BACKGROUND TO PAA AFRICA IN SENEGAL

Like other Sahel countries, Senegal experienced a succession of food and nutrition crises in 2005, 2008, 2010 and 2012. In 2012, severe food insecurity affected around 739,000 people, corresponding to 6.2 per cent of the Senegalese population. Nutrition surveys conducted in 2012 showed overall acute malnutrition rates ranging from 10 to 15 per cent, with 16 of the country's 45 *départements* reaching the alert threshold. Moreover, severe acute malnutrition rates ranging from 2 to 4 per cent were recorded in eight *départements* and consequently regarded as a crisis phase (WFP 2011).

Food and nutrition insecurity in Senegal is mainly a rural and a social and political phenomenon, although it is exacerbated by another major constraint—namely, the high level of vulnerability of Senegalese agriculture to climatic hazards. The rainfall deficit of the 2011/2012 cropping season led to a decline in cereal and groundnut production of 36 per cent and 59 per cent, respectively, compared with the previous season, and of 20 per cent and 31 per cent, respectively, compared with the average of the previous five years (WFP 2012).

This drop in production particularly affected the Kédougou region and resulted in a very high prevalence of food insecurity. Indeed, the *Zone à Risque* (ZAR—'areas at risk') survey conducted in 2012 showed a food insecurity prevalence of at least 50 per cent in the Kédougou region,

1. The authors would like to thank their colleagues from the Senegalese government and from the Food and Agriculture Organization of the United Nations (FAO) and the World Food Programme (WFP) teams in Senegal for contributing, sharing information, revising the text and providing suggestions and interviews—namely: Blandine Fanou (WFP Madagascar), Vincent Martin (FAO Senegal), Abdoulaye Touré (Ministry of National Education), Abdoulaye Faye (WFP Senegal), the non-governmental organisation (NGO) GADEC, the Ministry of Agriculture and Rural Infrastructure (Ministère de l'Agriculture et de l'Équipement Rural—MAER), the General Delegation for Social Protection and National Solidarity (Delegation Générale à la Protection Sociale et à la Solidarité Nationale—DGPSN) and the Executive Secretariat of the National Council for Food Security (Secrétariat Exécutif du Conseil National à la Sécurité Alimentaire—SECNSA).

2. Food and Agriculture Organization of the United Nations.

which is the most food-insecure in the country, apart from the regions of the Casamance area (Ziguinchor, Kolda and Sédhiou), with rates ranging from 71.4 per cent to 87.5 per cent (ibid.).

As a reaction to these various issues, the Kédougou region was identified to host the Senegal component of the Purchase from Africans for Africa (PAA Africa) programme during the 2012/2013 season. Through local purchases of cereals, this programme implemented by the Food and Agriculture Organization of the United Nations (FAO) and the World Food Programme (WFP) pursues three objectives: i) supporting local agricultural production; ii) improving small-scale family farmers' incomes and food security; and iii) strengthening the school feeding programme.

The PAA Africa programme is being operated by FAO and the WFP in collaboration with the decentralised services of the Ministry of Agriculture and Rural Infrastructure (Ministère de l'Agriculture et de l'Équipement Rural—MAER) and the Ministry of National Education. Its implementation started in 2012 and went through a pilot phase (2012–2014) and a consolidation phase (since 2014). This study focuses on the pilot phase. The programme targets five unions that bring together 30 producer organisations through which 1000 farmers have been engaged. With the support of various technical partners, it has provided production support and secured demand for part of the farmers' production. FAO and its partners have been responsible for supporting input access and rice crop management training, as rice production was selected to be supported by the programme. The WFP has implemented local purchases from producer organisations, supported rice processing and contributed to building marketing capacities among the organisations. During the pilot phase, 200 tons of rice were purchased to be used in 180 schools in the Kédougou region as part of the school feeding programme.

Considering the tremendous needs in terms of geographical coverage and food insecurity, on the one hand, and the limited resources available, on the other, it proved necessary to target the PAA beneficiaries in Kédougou, to restrict the allocation of the PAA resources to the various economic interest groupings (EIGs) brought together within the five unions of rice producers. In other words, after the drop in agricultural production following the 2010/2011 wintering season, the interventions focused on the villages located in the most food-insecure areas, in line with the programme's objectives.

1.2 RELEVANCE OF TARGETING FARMERS THROUGH INSTITUTIONAL PROCUREMENT PROGRAMMES

Institutional procurement programmes (IPPs)³ are spreading through Africa, as they offer an opportunity for economic inclusion in rural areas by enhancing market access. By generating a sustainable demand, these programmes can bridge critical gaps all along the food production chain in the most vulnerable regions. They can also further contribute to increasing income levels, strengthening households' investments and improving food and nutrition security, in line with the human right to adequate food (De Schutter 2014). Nevertheless, the lack of evidence on their livelihood impacts is hindering their potential expansion and development into public policies.

Some of these programmes were launched to address the infrastructure weaknesses that hinder smallholder farmers' access to markets and to provide information on such markets. To that end, the adoption of coping mechanisms and risk management strategies was fostered to facilitate the dissemination of technologies, deal with international and

local market volatility, support the expansion of local markets and strengthen possible integration into other markets (CFS 2015).

To meet the growing interest in linking agricultural interventions with social protection initiatives in Africa, it is necessary to focus on the tools that are used in these various types of initiatives. In some countries, the Purchase for Progress (P4P) programme strove to expand smallholder farmers' market opportunities and included home-grown school feeding in wider social protection strategies.

Indeed, the Malabo Declaration adopted by the African Union in 2014 chose to include measures aimed at increasing agricultural productivity through social protection initiatives as a means to eradicate hunger by 2025. To do so, the Declaration recommends to "encourage and facilitate increased consumption of locally produced food items, including the promotion of innovative school feeding programs that use food items sourced from the local farming community" (African Union 2014). Indeed, linking social protection instruments such as school feeding with agriculture and rural development initiatives makes such programmes more sustainable. For this purpose, it is important to start by identifying the potential of the vulnerable households to benefit from improved institutional market access.

Targeting can be broadly defined as the selection of a group of people or households meant to maximise the impact of an assistance programme or policy with limited resources (Lavallée et al. 2009). Targeting beneficiaries is an important step in any social protection programme or agricultural intervention. Well-designed and operational targeting systems can be a solid basis for poverty reduction strategies, social protection programmes and agricultural development interventions. In local purchase programmes, targeting should be part of an ongoing learning, revision and improvement process to address implementation challenges and possible failures.

1.3 OBJECTIVES OF THE CASE STUDY

In general terms, this case study aims to analyse the system used by the PAA Africa programme in Senegal to target family farms producing rice in the Kédougou region. More specifically, it aims to highlight the way the targeting process influenced the results and constraints observed during the programme's pilot phase. It also aims to discuss challenges and opportunities to focus on poor and vulnerable farmers in the context of local food purchase programmes.

PAA Africa has two objectives: i) supporting small-scale family farmers by opening up new and reliable markets for their products; and ii) improving children's nutritional status and school attendance through school feeding programmes. However, this article only focuses on the first—i.e. targeting farmers to be engaged in the programme. This choice is driven both by a lack of evidence about the impacts on children and the desire to further explore the implications of engaging the most vulnerable farmers in local procurement programmes.

This study also aims to inform the broad discussion about IPPs by documenting some of the local innovations performed in Senegal. To this end, it will highlight some of the targeting knowledge gaps that could be addressed to strengthen the impact of these interventions. Considering the pilot nature of the programme and its limited reach, this case study does not intend to provide conclusive data on the subject but, rather, to raise relevant questions based on the country's experience.

2 THE DESIGN PROCESS OF THE TARGETING SYSTEM IN PAA AFRICA IN SENEGAL

2.1 THE DESIGN OF THE TARGETING SYSTEM AND THE OBJECTIVES OF THE PROGRAMME DESIGN

In social protection initiatives and agricultural interventions, targeting is closely linked to defining policy and programme objectives. In fact, setting goals and objectives that are not compatible with the expected outcomes is one reason for the failure of targeting strategies and unsatisfactory overall results (Tirivayi, Knowles, and Davis 2013).

The objective of IPPs is essentially to ensure stable demand, particularly for the farmers who are the most affected by market failures and distortions. They can improve smallholder farmers' access to market and, consequently, their agricultural incomes, as well as increase communities' access to food when purchases are underpinned by food assistance initiatives.

Even if these two objectives are clearly linked to vulnerability and, consequently, consist in targeting both family farmers and people at risk of food insecurity—two groups that tend to overlap in most developing countries—they can result in targeting systems that favour some types of family farmer profiles and some poverty and vulnerability levels.

The PAA Africa programme design and implementation is based on its general objective of “contributing to the progressive implementation of the right to adequate food by reducing the social and nutritional vulnerability of poor smallholder farmers and school children” (PAA Africa 2013). At the same time, the specific objective of the programme of “promoting school children’s food security and farmers’ access to institutional markets by implementing local food purchases for food assistance [...]” sets local purchases as the main tool to achieve this general objective.

Hence, in the case of Senegal, targeting the most vulnerable inhabitants mainly and directly responded to the programme’s objective of promoting the food and nutrition security of the most vulnerable farming households. Other criteria were naturally included to ensure the sustainability of the intervention, but, as we will see, the targeted farmers have very low means of subsistence and were among the most affected by the droughts and food insecurity that prevailed during the year preceding the launch of the project.

2.2 TARGETING WITHIN PAA AFRICA: PROCESS, STAKEHOLDERS AND METHODOLOGIES

The PAA Africa programme has been supported by a broad partnership approach, including FAO and the WFP as implementation agencies, on the one hand, and, on the other hand, the decentralised services of the Ministry of Agriculture and Rural Infrastructure, the Ministry of National Education, the main stakeholders operating in the field of food security in the Kédougou region, the local administrative authorities, the partner operational non-governmental organisation (NGO) and the producer organisations engaged in the project.

FAO and the WFP initiated a consultation process with all these stakeholders. They organised information and exchange meetings to explore synergies, as well as information sessions with the targeted communities to share the project objectives, approach and results,

and the targeting criteria. Considering the limited funding available, the partners suggested setting a ceiling of 1000 farmers who would receive support and adequate inputs to grow rice on a one-hectare plot—a figure which is compatible with small-scale family farmers.

The targeting system adopted can be considered as a combination of geographical, categorical and community-based targeting, as follows:

- Geographic targeting: selecting the intervention area based on: i) an evaluation of the areas disproportionately affected by the successive food and nutrition crises; ii) their rice production potential; iii) the presence of FAO and the WFP.
- Selecting all farmer organisations (unions of farmer associations) in the Kédougou region and selecting basic associations (EIGs) within the unions based on the prevalence of food insecurity in their respective villages (Bandafassi, Dar Salam, Bembou).
- Selecting beneficiary farmers.

On various levels, criteria related to these three methodologies were used to define the beneficiary farmers' groups.

The geographical targeting was conducted from the regional level—between all 14 administrative regions of Senegal—down to the *arrondissements* (districts) and villages, mainly based on the criteria of vulnerability, rice production potential and the presence of FAO and the WFP, especially the WFP's school feeding programme. The Kédougou region was selected after conducting the ZAR⁴—surveys meant to identify the areas where vulnerable households' livelihoods were most impacted by the drop in cereal production caused by the rainfall deficit of the 2010/2011 wintering season. According to these surveys, Kédougou had the second highest rate of food insecurity, after the Casamance area.

Kédougou has an average of 1100 mm of rainfall per year, making it one of the rainiest areas in the country. Its rainfalls vary greatly across the months and throughout the year. Kédougou also has a huge potential in terms of lowland swamps, which are suitable for rain-fed rice. This region also had the advantage of a strong FAO and WFP presence, as it is highly vulnerable to shocks resulting from food crises. As far as school feeding is concerned, the WFP supports 180 schools in the region, providing food supplies to 23,000 school children. All these schools were targeted to receive rice purchased from farmers engaged in PAA Africa.⁵ In 2010/2011, FAO launched activities to promote lowland rice-growing for the most vulnerable households of the Kédougou and Tambacounda regions.

Rice is among the main staples in Senegal—even though around 80 per cent of all rice consumed is imported—and it is particularly important in Kédougou, where it has always been grown within lowland production systems. However, after the withdrawal of the Société de développement et des fibres textiles (SODEFITEX)⁶ from the supervision and promotion of the rice industry and the resulting empowerment phase, the rice industry declined, whereas the millet and sorghum industry grew (Ndaw 2012). In late 2006, the Small-scale Irrigation Support Project (*Projet d'Appui à la Petite Irrigation*—PAPIL)⁷ took over the rice production support in the region, yielding substantial economic, environmental and social results at its various intervention sites thanks to lowland hydro-agricultural infrastructure developed in close collaboration with the relevant rural communities (ibid.).

During the pilot phase, the Kédougou project intervention covered districts located in three *départements*: Bandafassi, Dar Salam and Bembou. Within these districts, rural communities were selected based on ZAR surveys; within these rural communities, the villages (or EIGs) were selected by the unions based on collectively defined social stratification criteria (community-based targeting).

The five rice producer unions in Kédougou were all chosen to participate in the pilot phase. These farmer organisations consist of several EIGs of rice producers, which in turn bring together households or small producers from the same village.

The beneficiary EIGs were targeted because they belonged to the most food-insecure villages, according to the ZAR surveys, as discussed above, and based on additional criteria. This identification process was conducted by the unions themselves according to a set of criteria collectively defined with the populations. These criteria were: i) the EIGs are union members and accept the conditions of accession (membership fee and statutory texts); ii) the EIGs have lowlands suitable for growing rice; and iii) the EIGs have not engaged in other rice-growing promotion programmes or projects (FAO and WFP 2014).

Based on these criteria, 30 groupings considered vulnerable were selected and grouped within five unions that signed contracts with the WFP. All the producers of these 30 groupings were *de facto* targeted by the projects, regardless of their number of members. These lists of beneficiary EIGs, with a total of 1000 farmers, were then approved by the technical services and validated by the administrative authorities.

It is important to note that all the members of the selected EIGs were engaged in PAA Africa. Due to the legal status of the EIGs, whose members all have the same rights and duties, the stakeholders did not consider it appropriate to introduce a categorical targeting of the households. This decision to respect the internal dynamics of these organisations naturally brought about vulnerability disparities among the project beneficiaries.

BOX 1

Gender issues and targeting within the PAA programme

As it was decided not to apply categorical targeting within the EIGs, gender-sensitive targeting could not be performed either, even though other partner organisations had set objectives related to women's increased participation in the projects. Nevertheless, women accounted for 51 per cent of the PAA beneficiaries during the pilot phase. This high proportion is mainly due to the socio-cultural context of the rice industry in the region, as lowland rice production is mainly performed by women among the Mandingo people, who make up a large proportion of the population in the Kédougou region.

One of the EIGs participating in the pilot phase was exclusively composed of women. However, apart from this exception, power and decision-making disparities persist within EIGs. Purchasing rice-processing equipment significantly helped to alleviate women's work in the rice chain. The role of beneficiary women should be more strategically harnessed, considering their relevance in the region's rice production. The strategy to ensure the sustainability of local rice purchases must pay particular attention to challenges related to production factors (workforce, access to inputs).

More specifically, the EIGs could include large-scale producers who were not affected by food insecurity—i.e. whose cereal needs are adequately covered: 100 per cent of their needs covered over one year. They would account for less than 24 per cent⁸ of the union members, suggesting a significant level of inclusion errors that must be replaced in the wider context

of these groupings' social dynamics. As local procurement programmes rely on a strong commitment from the farmers and their organisations, the impact of inclusion errors might be less harmful to the project than the impact of a possible community withdrawal caused by the differentiating effect of targeting. Besides, there is no evidence showing an impact of these errors on the project's performance. This highlights the need to pay attention to social cohesion, as well as community awareness and engagement, which are key factors to ensure the sustainability of these initiatives. Using technical criteria for targeting aims to achieve the programme's objectives and to maximise its impact by accurately identifying the participants, but understanding the social context can also ensure greater participation.

2.3 CHARACTERISATION OF THE TARGET GROUPS

In general terms, the unions and EIGs engaged in PAA Africa are characterised by a very simple structure, limited community involvement and a very low level of education. In short, these farmer organisations merely seize the opportunities that may arise from projects or programmes implemented by the State or development partners (Ndaw 2012). Apart from one union, these organisations are mainly composed of men. According to available data, these organisations did not have the means to process rice and were not actively engaged in the rice market before the PAA Africa intervention.

In addition, data show a high level of vulnerability among rural populations in Senegal. The farmers' conditions require special attention, as they are characterised by the production of low-added-value food, low levels of productivity and agricultural investment, a lack of access to markets and financial services and, consequently, a low level of income. In the specific case of the rice market, this vicious circle is aggravated by the disintegration of the supply chain, due to trade liberalisation, which resulted in structural adjustment programmes (WFP 2008).

In the specific case of Kédougou, the members of the producer organisations are essentially food-insecure farm households⁹ living in poverty or extreme poverty.¹⁰ They usually lack the necessary assets to meet their cereal needs or generate savings. The very poor farmers have access to land for subsistence crops and cash crops, but they have no cattle or agricultural equipment. Some of the main characteristics of the households living in the PAA Africa intervention area, according to the 2012 survey, are shown in Table 1.¹¹

TABLE 1
Baseline situation survey (PAA Africa): household characteristics

	BAMTAARE survey	Country
Female-headed households (%)	14	9.1
Male-headed households (%)	86	90.9
Average age of the household head (years)	44	40–44
Households headed by a member with no education (%)	33	72.4
Households where less than 50 per cent of the cereal needs are covered (%)	55	n/a

Source: BAMTAARE (2012); Ministry of Agriculture (1999).

The data shown in Table 2 provide relevant information about the productive conditions of this group.

TABLE 2

Baseline situation survey (PAA Africa): characterisation of production factors

	BAMTAARE survey	Country
Labour force on each farm (average number of persons)	6.03	n/a
Farming labour force on each farm (average number of persons)	4.79	n/a
Proportion of households purchasing their own seeds (through savings or microcredit) (%)	13	14.37
Average cultivated area per year (ha/household)	2.65	4.32
Household dedicated to rice production (%)	69	2.54 ¹²
Average yields (kg/ha of rice crops)	838.44	n/a
Average agricultural income per household per year (USD)	406	n/a
Share of the agricultural income in the total income of the households (%)	78	n/a

Source: BAMTAARE (2012); Ministry of Agriculture (1999).

These data provide a better understanding of the PAA Africa farmers' vulnerability to food insecurity. They typically work on a one-hectare plot, are poorly or not equipped, severely lack access to inputs and do not produce enough cereals to meet their annual needs. Hence, the targeting process met the programme's objectives, as it succeeded in engaging the small-scale farmers who were disproportionately affected by recent food crises.

3 TARGETING WITHIN PAA AFRICA: IMPLICATIONS FOR THE IMPLEMENTATION PROCESS

Considering the characteristics mentioned above, ensuring the engagement of the PAA Africa farmers in the IPPs without further compromising their livelihoods involves making specific arrangements in the programme design and implementation. As far as targeting is concerned, this points to the need to reach a balance between considerations related to production and contracts and considerations related to procurement procedures. In the case of PAA Africa in Senegal, this need drove the stakeholders to select rice as the main crop to be supported, to define the type of production support and to determine the production share to be purchased by the programme.

3.1 THE TOOLS ADOPTED BY PAA AFRICA AND THEIR CONSISTENCY WITH THE TARGETING SYSTEM

Overall, the project activities were mainly structured around: i) factors affecting access to production; ii) capacity-building (production and marketing); and iii) supporting rice processing and marketing, including purchases.

Production support: During the pilot phase, the production support essentially consisted of distributing inputs to beneficiary households, providing them with kits including 20 kg of certified rice seeds, 50 kg of urea and 25 kg of NPK fertilisers to develop and cultivate 0.25 ha of lowlands. In addition, nine rice hullers and one thresher were distributed to the five unions to help them process the rice.

The kit size was defined based on previous experiences conducted by FAO and other stakeholders in the region. Indeed, considering the obsolescence and low level of the agricultural equipment and the heavy soils of the lowlands, which are hard to plough,

it would be hard for the farmers to grow rice on a bigger plot. It was noted in the field that a bigger kit could exclude vulnerable households with a very limited workforce.

This approach is based on the use of synthetic fertilisers and pesticides. The huge obstacles to reducing the food deficit in the region must be acknowledged, but it would also be necessary to conduct more thorough evaluations of the technical, environmental and socio-economic implications of this kind of approach. Besides, although the lack of access to inputs is one of the main obstacles faced by vulnerable farmers, it is important to compare this approach to alternative and more sustainable ways to access inputs in the medium term. Including integrated pest management approaches and soil fertility management practices based on organic matter, green manure and less soluble fertilisers should also be considered. In the light of these considerations, FAO was chosen to develop a pilot project of community seed multiplication during the consolidation phase of the PAA Africa programme.

Productive capacity-building: This component was implemented by FAO through operational partners (the NGO GADEC and BAMTAARE, a SODEFITEX support and research service) in collaboration with the decentralised structures of the Ministry of Agriculture and Rural Infrastructure in the Kédougou region.

The support and advice package introduced by GADEC consisted of three agricultural extension agents (one per union, based at the community level) and one supervision agent.

This package assisted the unions in implementing practical training on Integrated Production and Pest Management (IPPM),¹³ following the Farmer Field School (FFS) approach for the extension of rice crop management. For the purpose of this approach, the selected multipliers were trained at the union level and in turn ensured a leveraging process through FFSs. As a result, during the pilot phase of the project, a two-day training session for trainers was provided to 33 farmers, facilitators and technicians—all men. This session was followed by a leveraging phase aimed at training 26 EIGs, corresponding to 635 producers, among which 273 women.

Even though the capacity-building sessions were based on a community leveraging system adapted to small-scale farmers, the question of their accessibility was raised. The farmers' ability to attend capacity-building activities proved to be very variable—especially during the first training phase—mainly because of high illiteracy levels among the participants (SODEFITEX/BAMTAARE 2012.) This support led to a substantial increase in the farmers' productivity at the end of the pilot phase; nevertheless, the amount of training activities should be increased, and their methods should be better adapted, to ensure the continuing success of the programme.

Processing and marketing: As far as purchases are concerned, the WFP supported capacity-building on equipment management, financial management, the structuring/formalisation of farmer organisations, procurement procedures, stocks and warehouse management. Thanks to an arrangement with the Agency for the Development and Supervision of Small and Medium-sized Enterprises (Agence de Développement et d'Encadrement des Petites et Moyennes Entreprises—ADEPME), organisation and management capacity-building modules were offered to the 30 EIGs involved in the project. After noticing that the rice hullers purchased were not adapted to commercial needs, a contract was signed with a private service provider, which performed the rice hulling on the harvesting site. The WFP also entered into long-term procurement contracts with the five EIG unions to purchase 200 tons of white—50 per cent broken—rice at an advantageous price. The volumes to be purchased were defined according to the households' needs in terms of self-consumption and the ability to sell part of their production on other markets.

During the pilot phase, the challenges in terms of rice processing and hulling as well as contract and payment delays encouraged the emergence of side-selling practices. Indeed, in the specific case of the pilot phase, an external NGO emerged at the end of the agricultural cycle and offered the farmer organisations prices above the market level, leading to the withdrawal of some of the farmers who had received productive support from FAO. The external stakeholders who offered direct payments and higher prices for non-hulled rice bought the yield of two beneficiary unions, causing serious repercussions for the quantities available for sale and stressing the need to refine the contract procedures as much as possible. In other PAA Africa countries, decentralising the funds enabled local governments and/or schools to purchase directly from producers, making it possible for them to adjust the contracts signed with farmer organisations to reach a greater flexibility in terms of quantities, prices and payment deadlines. As a result, processes were made much easier, and school meals were largely diversified. In Senegal, this approach was not tested due to the pilot nature of the intervention and to the absence of other local procurement initiatives implemented by the government or the WFP.

3.2 THE PERFORMANCE OF PAA AFRICA AND THE IMPLICATIONS OF TARGETING

The limited coverage of the PAA Africa programme is an obstacle to measuring its performance and evaluating its impact. In this specific context, even though it is not possible to isolate the effects of the targeting process on the overall outcomes of the programme, a clear implication was identified.

3.2.1 Achievements in terms of production

The pilot phase of the PAA Africa programme targeted 1000 small-scale family farmers living in particularly vulnerable areas of the Kédougou region. With the support of FAO and the WFP, these farmers could grow 250 hectares of rice during the first agricultural cycle, which started in 2012. The farmers' productivity increased by 300 per cent (from 800 kg/ha in the baseline situation to 2.5 t/ha in 2012/2013), generating an overall production of 625 tons of paddy rice. This significant increase can be attributed to the productive support provided by the programme—and more specifically to the use of inputs—but mostly to the baseline productivity levels, which were much below the national averages.¹⁴ According to local technicians, a good 2012/2013 rainy season also contributed to these positive results.

In terms of capacity-building, the most striking results in the context of targeting vulnerable farmers are the increases in rice production, productivity and total production. According to the survey conducted with the PAA Africa beneficiaries at the end of the pilot phase, the rice crop area increased by 4 percentage points on average over the 2011/2012 season, from 17 per cent to 21 per cent (SODEFITEX 2012), suggesting that the farmers decided to increase the production potential of their plots due to the support provided by FAO and the local agricultural services.

These investments led to an increase in productivity, which grew more than threefold between the baseline situation and 2013, reaching 3 t/ha during the 2014 season. The support provided by FAO and its partners remained stable throughout the cycles, except for seed multiplication. The results that were achieved are only slightly below regional and national averages (FAO 2011; SODEFITEX 2012), suggesting that even vulnerable farmers can improve their productivity and reach satisfactory levels with continuing and appropriate support. Considering the low level of the baseline situation, it is possible to achieve proportionally more significant results with vulnerable farmers than with less vulnerable ones, even with small-scale interventions.

However, a decrease in productivity was observed during the 2014/2015 campaign because of a rainfall deficit, showing that vulnerable farmers remain very exposed to the variations of rain-fed production, even when yields are good. High levels of investments should thus be made to maintain the upward production trend. It should also be noted that households' production remains below their annual cereal needs, even with such a growth in productivity. It is thus necessary to provide them with ongoing support to ensure their food security and the sustainability of their participation in PAA Africa.

3.2.2 The procurement process and its results

The PAA Africa programme entered into long-term procurement contracts with the five EIG unions to purchase 200 tons of white—50 per cent broken—rice at an advantageous price to cover the cereal needs of 159 primary schools (21,605 children) and 19 pre-school canteens (1394 children) in the Kédougou region. As the farmers were not equipped to hull the rice and meet the demand, the contracts had to be adjusted to allow for the purchase of paddy rice and the use of external rice-hulling services. In the end, 100 tons of paddy rice were purchased from the producers, including 51 tons of hulled rice—i.e. 25 per cent of what was agreed in the contract.

As far as markets are concerned, the WFP and its partners faced processing and contracting challenges. As already mentioned, the procurement contracts were signed directly with the unions, without involving the beneficiary households. However, a competing local association offering paddy rice prices above the market level for hulled rice and shorter payment deadlines partly undermined the WFP's capacity to purchase a proportion of the farmers' production surplus.

Price fluctuations can be a major constraint for local procurement programmes going through their consolidation phase, let alone for programmes targeting the most vulnerable populations. Such programmes can involve high opportunity costs for these farmers, in particular when the contracts and payment procedures are not adapted to their own liquidity constraints. In some cases, their costs can be too high for the farmers, to the extent that medium-term benefits are not perceived as profitable, increasing the frequency of side-selling practices.

At the end of the pilot phase, the two unions that did not meet their commitments were excluded from the programme, and a new targeting process was conducted to fill the vacancies, introducing contract compliance and joint signature. To increase the volumes of hulled rice to be marketed, the midway solution adopted by the WFP was to use the services of an entity that would help farmers with rice hulling. These adjustments made it possible for the programme to purchase the whole marketable surpluses intended for PAA Africa during the 2014 agricultural season, with 250 tons of paddy rice for more than USD270/ton, resulting in a contract with the unions of more than USD70,000. For the 2013/2014 agricultural cycle, the WFP and FAO bought very effective rice-processing machines that will probably strengthen the farmers' marketing capacities.

3.2.3 Yield-related results

Although it is not possible to calculate the share of the beneficiaries' incomes generated by the PAA Africa programme, it is still possible to estimate their earnings through the amounts agreed in the procurement contracts. According to the baseline survey, the Kédougou sample households reported an overall income of FCFA248,000 (USD450) for 2012, 78 per cent of which was generated by agricultural activities (USD351). During the pilot phase, around

FCFA15.5 million (USD28,181) was paid to the five unions (around FCFA15,000 or USD27 per producer). During that period, the purchases had a limited effect on the farmers' income, mainly because the procurement objective was only partially fulfilled, as mentioned above.

During the consolidation phase, however, the WFP signed contracts whose value was twice the size of those during the previous phase, generating a significant increase in the households' agricultural incomes: around FCFA37,500 (USD68) per producer. The increase in rice production also improved the households' food security, as most of the production surplus was used for self-consumption.

4 TARGETING FARMERS FOR IPPS: ELEMENTS FOR DISCUSSION

4.1 LIMITS AND OPPORTUNITIES FOR TARGETING VULNERABLE FARMERS

The activities described above were adapted to and influenced by the characteristics of the target groups. The PAA Africa experience in Senegal suggests some challenges in terms of the development of IPPs in very vulnerable contexts, as well as opportunities related to targeting.

4.1.1 Limits

To some extent, the implementation challenges faced in Senegal are common to PAA Africa countries and to other developing countries with similar programmes.¹⁵ In the widespread poverty context of Kédougou, however, the programme had to be reviewed to achieve the targets set, because such challenges had disruptive effects: i) lack of access to quality inputs and improved techniques among vulnerable farmers; ii) low community involvement in the region; iii) low income and limited liquidity among farmers; and iv) low surplus production and low diversification potential (to meet the needs in terms of school meals and improve food and nutrition security related to self-consumption).

As stated previously, very poor knowledge of rice production techniques and a lack of access to quality inputs among farmers were observed. Input availability also proved to be an issue, as data show a weak or non-existent input market in the region (Ndaw 2012). The combination of these two elements led to the distribution of semi-intensive seed and fertiliser kits to the farmers.

At the same time, the farmer organisations' lack of capacity severely limited PAA Africa's results during the pilot phase. Even though most of the economic activities in Senegal heavily rely on cooperative modalities, the EIGs have virtually no association or aggregation capacities in many rural areas, particularly in the most vulnerable ones. The organisations had virtually no post-harvest processing and storage capacity, making it necessary to deploy additional efforts to purchase equipment, thus increasing the intervention costs.

Moreover, many project stakeholders pointed out a lack of previous marketing experience—other than a marginal participation in local markets—among most PAA Africa farmer organisations, which impeded the contract implementation during the pilot phase. The stakeholders consulted considered that one of the main challenges faced during the

pilot phase was the lack of trust among farmer organisations, suggesting the insufficiently representative nature of these organisations.

Other major obstacles to the implementation of the programme were the farmers' low income levels and lack of liquidity. To promote these farmers' means of production and achieve the programme's objectives, this dimension should be carefully taken into account by the IPPs that claim to target them.

As far as the potential for diversification is concerned, the baseline survey shows that 50 per cent of the PAA Africa farmers' plots were used to produce corn and cotton; the rest of the overall production includes rice, sorghum, groundnut and fonio. These figures reflect a limited potential for PAA Africa farmers' production to diversify the food basket, particularly in terms of fresh produce. In this context, crop diversification would also generate additional investments in vegetable production in the region, possibly improving households' food and nutrition security or stressing the need to identify and support other potential providers. Besides, the households' capacity to provide supplies to the programme was adjusted according to their self-consumption level. Hence, school feeding programmes can adopt different procurement and purchasing modalities, particularly during the first phases, to reach the farmers whose production capacity is still limited, while meeting all the schools' needs. It would be possible to achieve better results through the creation of a multiple targeting system designed to protect vulnerable farmers and other potential providers in the region from food insecurity—for example, by introducing procurement quotas—and through the adoption of multiple procurement templates.

4.1.2 Opportunities

Targeting vulnerable farmers can have positive effects as a result of reducing market distortions, increasing family incomes—even in the case of small purchases—and, more importantly, improving inclusion in formal markets.

The IPPs implemented in highly vulnerable regions can have a positive impact on market dynamics. In the case of Kédougou, the literature and figures stress the landlocked nature of this region, whose markets are functioning poorly, particularly in the rice industry, despite previous interventions (SODEFITEX 2012). In the region, market development is hindered by challenges related to infrastructure, communication and access to services. The size of the cereal deficit of most farmers in the region also confirms this observation. The Kédougou farmers' participation in weekly markets—selling low quantities of cereals to cover other household expenditures—is generally marginal. Hence, institutional procurement can be used to protect farmers from price fluctuations, especially because these farmers have very limited relationships with formal markets.

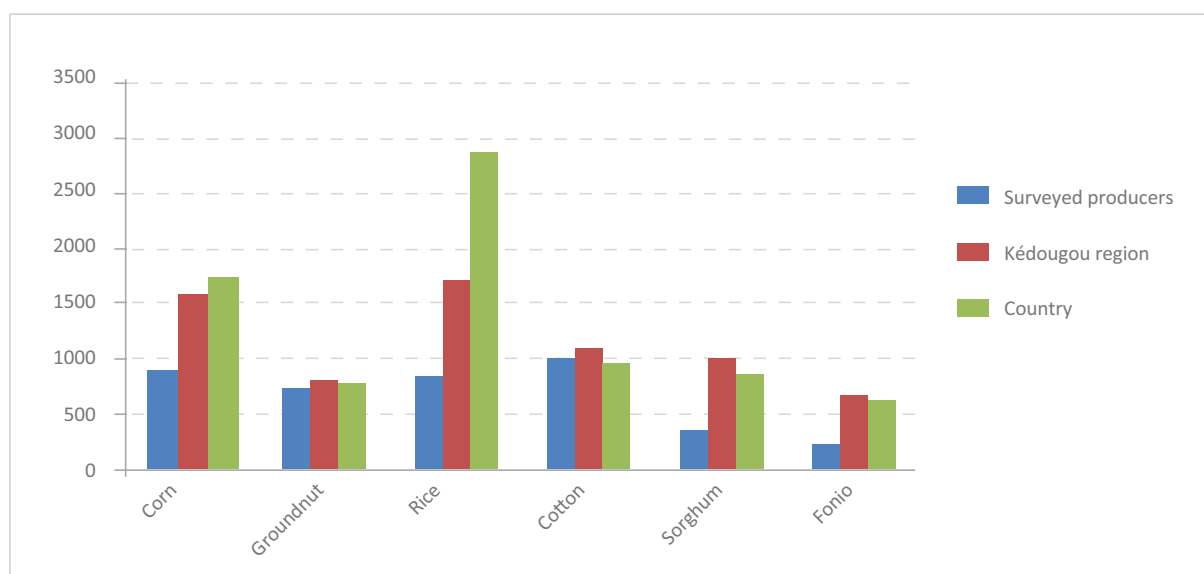
Given the production potential and marketing constraints in Kédougou, IPPs offer important opportunities at the regional level. During the pilot phase, it is important to stress that PAA Africa farmers' productivity increased from 800 kg/ha to 2.5 t/ha, slightly below the regional averages, as shown in Figure 1, which illustrates the baseline yields (2012) before the launch of the PAA Africa programme in Senegal.

During the consolidation phase, yields increased to 3 t/ha, exceeding the regional averages. Naturally, the PAA Africa intervention has not yet reached a sufficient scale to change the market dynamics, but the progressive increase in production and marketing throughout

the cycles may encourage the farmers to invest more in rice production.¹⁶ This evolution could gradually strengthen food security and lead households to sell their rice on other markets. Despite the potential of institutional procurement to improve small-scale producers' access to markets, experience points to a great difference between diversifying farmers' marketing options and boosting markets.

FIGURE 1

Average yields at the level of the region, country and PAA Africa producers surveyed in the baseline study



Source: BAMTAARE (2012), based on DAPS/SODEFITEX.

During the first stages, small-scale farmers interested in IPPs can be discouraged by high transaction costs, especially when these programmes are not adapted to their constraints, such as liquidity constraints (Gálvez-Nogales and Fonseca 2014). The opportunity costs to enter these interventions can also deter the best-equipped farmers, who can easily access other markets and other sources of stable income. During the PAA Africa pilot phase, purchases in Senegal were small: around 100 tons of paddy rice. However, according to estimates, the revenues generated by these purchases resulted in an increase in agricultural revenues among farmers participating in the programme. During the following cycle, purchases increased, leading to higher agricultural revenues among these producers.

4.2 ELEMENTS FOR A DISCUSSION ON TARGETING VULNERABLE FARMERS WITHIN LOCAL PROCUREMENT PROGRAMMES

The PAA Africa experience in Senegal highlights many challenges faced by IPPs targeting vulnerable farmers. The promising results of the pilot phase suggest that targeting farmers potentially results in improved food and nutrition security and access to markets among small-scale farmers. They also indicate that the sustainability of the farmers' engagement depends on a series of conditions and on an ongoing learning project aimed at reaching a greater balance between the various criteria—vulnerability, on the one hand, and productive potential, on the other hand.

Some elements related to programme design, crop management sequences and local dynamics should be taken into account in IPPs targeting the most vulnerable populations. All of them are about adjusting tools and expectations during the targeting process and about small-scale farming initiatives.

Preparing, raising awareness and monitoring: In a sense, most of the failures in the pilot phase resulted from underlying risks that may not have been carefully evaluated at the start of the programme. The first cycle can be considered a learning phase, as it brought about many improvements that helped to strengthen the programme's results: purchasing more adequate equipment, introducing a pilot seed multiplication system, retargeting and adapting the contract requirements. To identify these constraints in a timely manner, ongoing monitoring must be ensured, suggesting the importance of good management at the decentralised level.

It is also crucial for the implementation stakeholders to be continuously coordinated, as the various PAA Africa components depend on different stakeholders. Unclear roles could undermine the implementation timing and efficiency, unnecessarily duplicate efforts and generate fatigue among participants. A clearer definition of the various partners' mandates and responsibilities—including FAO and the WFP—could make the process more efficient, particularly in contexts where there are no previous experiences in the field of local procurement. This is what happened with the issue of rice processing: with better dialogue, it would have been possible to avoid purchasing machines that were incompatible with the commercial needs of the pilot phase, which resulted in using external services and delayed the whole process.

Similarly, it is essential to inform communities and small-scale farmers about the programme and its objectives, to ensure the sustainability of the IPPs that target small-scale farmers with very limited income who are vulnerable and exposed to food insecurity and live in regions that are potentially saturated with development interventions. Participating in IPPs involves medium-term efforts; it is thus important to create public awareness and ensure the population's acceptance and commitment.

Adapting capacity-building: The issue of the accessibility of training sessions was raised, even though capacity-building was performed at the community level based on a leveraging system adapted to small-scale farmers. Indeed, there was a great disparity in the farmers' ability to attend capacity-building activities, mainly due to the participants' high illiteracy levels, especially during the first training phase. Even though the support that was provided did lead to a significant increase in farmers' productivity at the end of the pilot phase, it is important to offer more training activities and better adapt their methodology to maintain the success of the programme.

Strengthening cooperatives and associations: Vulnerable small-scale farmers face major performance challenges. A solid associative culture and confidence in the institutions can offer farmers sustainable medium-term solutions in terms of access to financial services, training, storage and marketing. Given the difficulty of ensuring the continuous participation of the unions and the farmers, the issue of appropriate targeting entry points for IPPs was raised. At the same time, the sustainability of these initiatives can be undermined by the cost of purchasing directly from farmers at the local level. In the context of IPPs, the best way to achieve good results may be to include various tools aimed at ensuring households' participation and strengthening farmer organisations.

Simplified procurement processes: Adapting the procurement models to small-scale family farms, diversifying purchases, adopting market prices and offering the right

payment modalities are all essential to strengthen the mechanisms that will help vulnerable farmers react positively to the commercial challenges they face. In the case of the PAA Africa programme, the failure of some groups to comply with the purchase contracts led to the exclusion of two unions and a retargeting of beneficiaries. This solution contributed to improving the purchase performance during the subsequent phase, although it is not necessarily the most appropriate strategy for a long-term vision of the programme. Matching the contract calendar to the agricultural seasons to ensure that farmers are paid quickly after the harvest, strengthening the farmer organisations' capacities and clarifying the contract provisions and implications could be important steps in that direction. IPPs targeting vulnerable farmers should endeavour to reduce the transaction costs to encourage their participation, particularly in contexts of more dynamic markets.

Synergies with other interventions: Despite the relevant support received by the beneficiary farmers to increase their production and sell their surplus, the programme was affected by challenges related to processing, liquidity, poor functioning of the markets and the lack of a cooperative environment. All these barriers could be mitigated through the introduction of financial services (or cash transfers) for the farmers, community radio services and community cohesion activities such as listening clubs. In short, it is important to note that productive inclusion in rural areas requires a comprehensive package of interventions to achieve lasting effects.

Costs: The PAA Africa programme in Senegal does not provide enough evidence to claim that IPPs targeting the most vulnerable households entail higher financial and human costs than working with other groups receiving other forms of support. A more detailed report could point out such cost differences—including time/staff costs—but data are still lacking. However, long-term investments—in programme design rather than targeting—are necessary to ensure the sustainability of local procurement.

This experience suggests that targeting of vulnerable farmers in IPPs can be sustainable even in adverse conditions—for example, in situations where farmers' vulnerability is coupled with a total lack of production factors (lack of a labour force, limited access to land and water etc.). However, it seems not possible to implement an IPP in such conditions without previous investment efforts. In the case of Senegal, previous interventions that invested in lowland rice production structures in Kédougou proved critical for the sustainability of the project.

In a general sense, the experience of Senegal confirms that IPPs targeting vulnerable farmers can be sustainable if a set of criteria and a continuous learning process are followed. Their success will be proportional to the available investment capacity. Overall, the engagement of farmers exposed to food insecurity largely depends on the resources available and the support provided. This case study suggests the need to further explore the potential of local purchases, as they could fulfil social protection functions for the farmers.

5 FINAL CONSIDERATIONS

This case study aimed to describe the experience developed in Senegal as part of the PAA Africa programme in relation to the process of targeting beneficiary farmers. The programme targeted 1000 farmers belonging to 30 cooperatives (EIGs) gathered in five unions in Kédougou, one of the most vulnerable regions in Senegal, which was disproportionately affected by the 2010/2011 drought. Here is a summary of the main aspects of this experience and some of its conclusions:

- The targeting system was shaped by and addressed the programme's objectives. In the case of Senegal, it mainly and directly responded to the objective of promoting small-scale family farmers' food and nutrition security. The goal was thus to reach the most vulnerable households.
- The targeting system adopted can be considered a mix of geographical, categorical and community-based targeting. On different levels, criteria related to these three methodologies were used to define the beneficiary groups. The criteria were developed on the basis of communities' vulnerability to food and nutrition security, rice production potential and the absence of overlaps with other interventions. All the Kédougou unions were involved in the project and were responsible for performing the targeting at the EIG level, in collaboration with partners and communities.
- In Senegal, the communities targeted by the PAA Africa programme can be considered poor or extremely poor. The farmer organisations related to rice production in the region typically have low association and aggregation capacities. Their members are essentially agricultural households affected by food insecurity. They usually lack the necessary assets to meet their cereal needs or generate savings. The farmers considered very poor have access to land for subsistence crops and cash crops, but they have no cattle or agricultural equipment.
- The support provided to the farmers was quite compatible with the work of vulnerable farmers. FAO adopted an input distribution approach (seeds and fertilisers) and provided capacity-building based on a 'cascade training' methodology (leveraging). FAO supported rice processing and capacity-building in marketing skills. The contracts were implemented at the union level, and a joint responsibility approach was subsequently introduced to discourage farmers from withdrawing from the programme.
- For the last two years, PAA Africa has generated a significant increase in farmers' production and yields, greater marketing capacity and, consequently, income growth. It has also improved households' food security by strengthening their capacity to meet their own cereal needs. During the pilot phase, productivity rose from 800 kg/ha to 2.5 t/ha, and finally to 3 t/ha during the consolidation phase, bridging the gap with regional and national levels. The WFP was able to buy 100 tons of paddy rice during the pilot phase and 250 tons during the following cycle.
- The limits that emerged from the targeting of vulnerable farmers within the PAA Africa programme in Senegal are mainly related to: i) a lack of access to quality inputs and improved techniques among vulnerable farmers; ii) a low level of community involvement in the region; iii) a low income and limited liquidity among farmers; and iv) a low surplus production and low diversification potential.
- Opportunities were also identified, as targeting vulnerable farmers can have positive effects as a result of reducing market distortions, increasing family incomes—even in the case of small purchases—and, more importantly, improving inclusion in formal markets.

The PAA Africa experience in Senegal highlights many challenges faced by IPPs targeting vulnerable farmers. The promising results of the pilot phase suggest that targeting can be performed in a way that closely achieves the programme's objectives and successfully promotes food and nutrition security as well as market access.

In a general sense, the experience of Senegal confirms that IPPs targeting vulnerable farmers can be sustainable if a set of criteria and a continuous learning process are followed. Their success will be proportional to the available investment capacity. Overall, it shows that engaging farmers in social protection or productive inclusion programmes depends as much on programme design and the funds available as on the real capacities of the farmers.

In this sense, some elements have been identified, but some knowledge gaps still have to be filled to inform the analysis of the targeting of vulnerable farmers within IPPs. Further studies on how to create synergies between social protection and agricultural interventions through targeting are necessary to provide improved analytical frameworks. A number of issues remain unexplored, such as the sustainability of the farmers' inclusion in markets and a more structured gender approach for institutional market programmes. In addition, more detailed regional data on farmers' livelihoods and market dynamics could help to better assess the results and impacts of IPPs in very vulnerable regions.

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NOTES

3. IPPs are initiatives where State institutions or other kinds of institutional purchasers (international organisations, NGOs etc.) use their purchasing power to ensure a stable demand to certain groups, usually by purchasing food from family farming. IPPs are also known as 'local purchase' or 'institutional markets' initiatives and refer to the implementation of programmes specifically aimed at using institutional demand to boost local food markets.
4. As far as the ZAR survey methodology is concerned, the members of its working group (WFP, Oxfam, World Vision and the Government of Senegal) and the food security stakeholders in the region meet every two years to update the 'areas at risk' (*zones à risque*—ZAR). The field approach only covers the areas at risk and combines qualitative and quantitative data collection techniques. In each ZAR, a sample of five or six households was randomly selected in the locality where the focus group gathered to submit the food security monitoring questionnaire to the households, which addresses the following indicators: i) households' socio-demographic characteristics; ii) households' food stock levels; iii) households' income sources; and iv) households' food consumption scores.
5. The WFP in Senegal targets the regions of Kédougou, Kaolack, Tambacounda, Kaffrine, Thies, Matam, Diourbel and Louga, where at least 15 per cent of the rural households are affected by food insecurity, where overall acute malnutrition and stunting prevalence is the highest in the country, and where primary school attendance is low. The school feeding programme covers 1012 schools and pre-schools in the country, corresponding to over 1 million children. It targets public primary schools and pre-schools located in rural and peri-urban areas with 50 to 600 children.
6. The Textile Fibre Development Society (Société de développement et des fibres textiles—SODEFITEX) is a semi-public company created in 1974 to develop the cotton agroindustry in Senegal. More recently, it has focused on diversifying production and created the agricultural and rural advice component of the rice production support programme in Senegal.
7. The PAPIL is an initiative of the Senegalese government to foster small-scale irrigation at the local level through rural communities and farmer groupings. This project covers eight départements in the Fatick, Kolda, Tambacounda and Kédougou regions. It aims to develop small runoff water control installations, rehabilitate degraded land and improve the access of rural populations and communities to water.
8. At the end of the pilot phase, FAO commissioned a baseline situation survey to better understand the PAA farmers' conditions. This survey was conducted by the agricultural service SODEFITEX. It collected socio-economic data from a representative sample of the PAA Africa beneficiaries. Its main evidence will be used in this study to inform the characterisation of the target groups.
9. A farm household is a "family group where agricultural production and meal preparation and consumption are divided among its members".
10. 'Poverty' and 'extreme poverty' are two concepts that are often used by the United Nations to describe the situation of people living on less than USD2 and USD1 per day, respectively.
11. The baseline situation survey was commissioned by FAO and conducted by Base d'Appui aux Méthodes et Techniques pour l'Agriculture, les autres Activités Rurales et l'Environnement (BAMTAARE), a reference partner in the field of rural development support. Its objective was to provide the project with a baseline situation that would be used for the impact evaluation. The stratification criteria were the rural communities and the villages. The participatory search methodology consisted in surveying nine villages that were selected based on their representativeness of the region. The institutional diagnosis of the EIGs and unions was also conducted in these villages. The formal surveys were carried out in all villages and covered all beneficiary households, reaching all 1000 beneficiary producers.
12. This figure does not refer to the proportion of households working in rice production, but to the total area dedicated to rice crops at the national level. It is important to note that rice is the only crop mainly cultivated by women, according to the Senegalese agricultural census.
13. The IPPM is a participatory training approach developed by FAO and implemented through the Farmer Field Schools (FFS). The FFS training focuses on soil fertility management, pest management (weeds, insects, diseases etc.), respecting the crop management sequence (ground preparation, densities, etc.) and the reduction of producers' dependence on chemical inputs, particularly pesticides. This approach increases agricultural productivity while preserving the environment.
14. According to the baseline survey conducted with PAA farmers, the national average rice yield is 2.9 t/ha (BAMTAARE 2012) or 3.6 t/ha according to the government's official data (FAO 2011).
15. For more information, see World Food Programme (2015) and Chmielewska and Souza (2010).
16. These investments were mainly made thanks to the inputs provided by the project.



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ISBN 978-92-5-109800-4



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I7441EN/1/06.17