



DYTAEL Fatick



INITIATIVE ON
Agroecology

Integrating agroecology into public policies in Senegal

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Acronyms

| | |
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| ANR | Assisted natural regeneration |
| CILSS | Permanent Inter-State Committee for Drought Control in the Sahel (<i>Comité inter-État de lutte contre la sécheresse au Sahel</i>) |
| CIRAD | French Agricultural Research Centre for International Development (<i>Centre de coopération internationale en recherche agronomique pour le développement</i>) |
| CNCR | National Council for Rural Consultation and Cooperation (<i>Conseil National de Concertation et de Coopération des Ruraux</i>) |
| CNRF | National Land Reform Commission (<i>Commission Nationale de Réforme Foncière</i>) |
| CNSA | National Food Safety Council (<i>Conseil National de Sécurité Alimentaire</i>) |
| CRAFS | Framework for reflection and action on land tenure in Senegal |
| DyTAEL | Dynamics for a Local Agroecological Transition (<i>Dynamique pour une Transition Agroécologique Locale</i>) |
| DyTAES | Dynamics for an Agroecological Transition in Senegal (<i>Dynamique pour une Transition Agroécologique au Sénégal</i>) |
| ECOWAS | Economic Community of West African States |
| FAIR-Sahel | Fostering an Agroecological Intensification to Improve Farmers' Resilience in Sahel |
| FAO | Food and Agriculture Organization |
| FENAB | National Federation of Organic Farming (<i>Fédération Nationale de l'Agriculture Biologique</i>) |
| GDSP | Social and Political Dialogue Group (<i>Groupe de Dialogue Social et Politique</i>) |
| Green PSE | Green Plan Emerging Senegal |
| IFOAM | International Federation of Organic Agriculture Movements |
| ISRA-BAME | Senegalese Agricultural Research Institute, Bureau of Macro-economic Analysis (<i>Institut sénégalais de recherches agricoles, Bureau d'analyses macro-économiques</i>) |
| LOASP | Agro-sylvo-pastoral orientation law (<i>Loi d'orientation agro-sylvo-pastorale</i>) |
| MAER | Ministry of Agriculture and Rural Equipment (<i>Ministère de l'Agriculture et de l'Équipement Rural</i>) |
| NGO | Non-governmental organization |
| PANA | National Adaptation Programme of Action (<i>Programme d'Action National pour l'Adaptation</i>) |
| PASAD | Agricultural Programme for Food Sovereignty and Sustainability (<i>Programme Agricole de Souveraineté Alimentaire et Durable</i>) |
| PATAE | Support Programme to the Agroecological Transition in West Africa (<i>Projet d'appui à la transition agroécologique en Afrique de l'Ouest</i>) |
| PNADT | National Spatial Planning and Development Plan (<i>Plan National d'Aménagement et de Développement Territorial</i>) |
| PNAEB | National Platform for Ecological and Organic Farming (<i>Plateforme Nationale Agriculture Écologique et Biologique</i>) |
| PNIA | National Agricultural Investment Programme (<i>Programme National d'Investissement Agricole</i>) |
| PNIASAN | National Agricultural Investment Programme for Food Security and Nutrition (<i>Programme National d'Investissement Agricole pour la Sécurité Alimentaire et la Nutrition au Sénégal</i>) |
| PRACAS | Programme to Revive and Accelerate Agriculture in Senegal (<i>Programme de relance et d'accélération de la cadence de l'agriculture au Sénégal</i>) |
| PSE | Emerging Senegal Plan (<i>Programme Sénégal Emergent</i>) |
| RNU | National Single Registry (<i>Registre National Unique</i>) |
| SCALA | Scaling up Climate Ambition on Land Use and Agriculture |
| SNPS | National Social Protection Strategy (<i>Stratégie Nationale de Protection Sociale</i>) |
| SNSAR | National Food Security and Resilience Strategy (<i>Stratégie Nationale de Sécurité Alimentaire et de Résilience</i>) |
| TaFAé | Task Force for the Promotion of Agroecology in Senegal (<i>Task force multi-acteurs pour la promotion de l'agroécologie au Sénégal</i>) |
| USAID | US Agency for International Development |

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The Agroecology Initiative (AEI) supports local agroecological transitions through Agroecological Living Landscapes (ALL). In Senegal, this initiative is active in the Fatick department through a local dynamic called DYTAEEL (Dynamique pour une Transition AgroEcologique locale), which began in 2021. IAE WP 4 focuses on the institutional environment that may or may not favor AE transitions.

On the other side, the FAIR Sahel project (Fostering an Agroecological Intensification to improve farmers' Resilience in Sahel) developed in the same region since 2020, is part of the "Development of Smart Innovation through Research in Agriculture" (DeSIRA) initiative funded by the European Union (EU), which aims to accelerate the development of agriculture in developing countries, mainly in Africa, based on research results. It was within the framework of this project that this study, focused on integrating agroecology into public policy in Senegal, was carried out. The IAE financed the translation into English.

This report analyses the emergence of agroecology on the political agenda, it examines agricultural policies and their obstacles to agroecology, describes challenges and prospects for the institutionalization of agroecology, analyzing the stakeholder strategies in this process and the institutional and structural constraints to the deployment of agroecology policies and final considerations draws lessons and prospects on this theme.

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1. INTRODUCTION

For some years now, West Africa has been experiencing political momentum in favour of agroecology (Bendjebbar & Fouilleux, 2022; Boillat *et al.*, 2021; Bottazzi & Boillat, 2021; Tapsoba *et al.*, 2020). The Economic Community of West African States (ECOWAS) has therefore launched a Regional Programme for Agroecology through its Regional Agency for Agriculture and Food. To operationalize this programme, the Support Project to the Agroecological Transition in West Africa (*Projet d'appui à la transition agroécologique en Afrique de l'Ouest*, or PATAE) was initiated in 2017; this is an €8m project to support the agroecological transition in Ivory Coast, Burkina Faso, Mali, Togo and Senegal. Supported mainly by French international cooperation agencies, this initiative promotes the spread of ecologically intensive practices on family farms and encourages the identification of national correspondents, or contact points, within the ministries of agriculture in each country. The initiative was extended in 2019 with the EU-funded €8.2m Project to Support the Dissemination and Implementation of Good Practice in Sustainable Agricultural Intensification (*Projet d'appui à la diffusion et à la mise en œuvre des bonnes pratiques d'intensification agricole durable*). The Food and Agriculture Organization (FAO) is also involved in several similar initiatives focusing on knowledge-exchange platforms.

Equally, the Alliance for Agroecology in West Africa was created in 2018 at a meeting co-organized by the Network of Farmers' and Producers' Organizations and Agricultural Producers in West Africa and by the non-profit International Panel of Experts on Sustainable Food Systems. This coordination platform aims to strengthen international advocacy and raise the profile of agroecological initiatives.

Admittedly, in many cases the approaches being promoted are not new, given previous initiatives to manage natural resources sustainably, promote sustainable agriculture and replace chemical fertilizers with organic ones. In addition, the injunction from international agendas to move towards agroecology, adaptation to climate change, sustainable food systems and the promotion of rural resilience has pushed this up national agendas in the region. The number of projects described as agroecological is increasing, and in the diversity of players involved in these initiatives (Bottazzi & Boillat, 2021). While in several West African countries historical networks supporting agroecology (made up of elected representatives, NGOs, farmers' organizations, etc.) have existed for at least four decades, we are currently seeing a new dynamic, characterized by broader mobilization within civil society, governments and international cooperation agencies.

International funding plays an important role in this new wave (Boillat *et al.*, 2021). However, international policy guidelines are not automatically adopted in all countries, and national trajectories of institutionalization and political mobilization diverge significantly. These guidelines are translated into instruments by multiple and sometimes divergent actors; political leaders, administrative structures, civil society organizations and international agencies all interact in the adoption of international paradigms. In Senegal, it should also be noted that successive Senegalese leaders, since independence, have pursued an active and pragmatic foreign policy and forged close relations with international donors in order to attract funding (Haussaire, 2019). Against this backdrop, President Macky Sall (April 2012 – April 2024) made agroecology one of the key elements of the Emerging Senegal Plan (*Programme Sénégal Emergent*, or PSE), which is now a benchmark for the country's socio-economic policy, along with its policies of self-sufficiency, industrialization and rapid exit from the primary sector. Senegal has been designated by the FAO as one of the pilot countries for the promotion of agroecology in the sub-region.

Although in part driven by the strategic dimension of the country's international positioning, this gradual acceptance of agroecology by public authorities is also linked to advocacy efforts by organized civil

society, and is linked to the degradation of soil and water resources, the intensity and increasing frequency of droughts in rural areas, and the effects of pesticide contamination on human health.

Against this backdrop, this study analyses the process of integrating agroecology into public policy in Senegal and looks at its potential for political change: Is it a breakthrough or, on the contrary, a marginal or even ambiguous inclusion among the state's instruments for natural resource management? This analysis is part of the **FAIR-Sahel project** (Fostering an Agroecological Intensification to Improve Farmers' Resilience in Sahel).¹ Funded by the European Union and the French Development Agency, the project looks at the technical, institutional and political levers for agroecology in Senegal, Mali and Burkina Faso. One of the first stages of the project is to carry out an analysis of agricultural policies at national level for all three countries. This report is focused on Senegal. The **Initiative Agroecology (I-AE)** project is an international initiative, supported by the CGIAR, for the holistic implementation of the 13 principles of agroecology. It is being implemented in several countries, including Senegal, with the aim of producing scientific evidence of the positive impact of agroecology, in order to encourage its large-scale development in local areas. The IAE financed the translation of this report into English.

The study therefore poses the following questions: How and to what extent is agroecology taken into account in national policies? By which players and with what conceptualizations of agroecological transition and intensification? What specific support instruments have been put in place? What social forces are promoting or opposing agroecological transition?

Drawing mainly on the sociology of public action, the focus is on analysing the interplay of national and international players in the promotion of agroecology or, conversely, the rural development approaches that stand in its way. The survey combines consultation of academic studies and official documents with semi-structured interviews with institutional players (i.e. representatives of the Ministries of Agriculture, Environment and Livestock, as well as several members of NGOs, umbrella organizations and international organizations). Between September 2021 and March 2022, 25 interviews were conducted by teams from the French Agricultural Research Centre for International Development (*Centre de coopération internationale en recherche agronomique pour le développement*, or CIRAD) and from the Senegalese Agricultural Research Institute's Bureau of Macro-economic Analysis (*Institut sénégalais de recherches agricoles, Bureau d'analyses macro-économiques*, or ISRA-BAME) with one or more members of the same institution at national level.

The report is divided into three parts. The first part traces the emergence of agroecology at the political level in Senegal: the recent dynamics, the main players and the initiatives in which they are involved. This part focuses on the public-policy objectives related to agroecology as they have been formulated. The second part presents the institutional context of the recent process of promoting agroecology. This section analyses the institutional framework of the agricultural sector and looks at the importance of food self-sufficiency policies, which focus on increasing agricultural production. Finally, the third part discusses the interplay of actors in the process of institutionalizing agroecological approaches in the light of the public-policy literature. It also looks at the political and structural levers and obstacles to this process.

2. THE (RE)EMERGENCE OF AGROECOLOGY ON THE POLITICAL AGENDA

This section looks at how agroecology reached the political agenda in Senegal. First, it reviews the first initiatives promoted by civil society, as well as more recent developments, which show a diversity of

¹ For more information, see www.fair-sahel.org.

approaches and conceptualizations of agroecology. Secondly, the formal inclusion of agroecology in political strategies is analysed. The results show that, despite the increasingly visible integration of this theme into national public policies, there is a superimposition of distinct rural development instruments and a predominance of agricultural modernization objectives.

2.1. Waves of promotion for ecological and organic farming

The promotion of agroecology in West Africa is part of a long history involving national and international players. For more than 40 years, initiatives by the state, civil society and international agencies have led to the development of experiments in agroecological practices, regulatory frameworks, plans and programmes. The work of Pierre Rabhi is often mentioned in this context, as is the scientific conference organized by the International Federation of Organic Agriculture Movements (IFOAM) in Burkina Faso in 1989 (Bellon & Ollivier, 2018). In Senegal, several NGOs at the national-international interface have historically supported producer organizations in this field. For example, the NGO ENDA-Pronat has been involved in pesticide substitution and experimental farming initiatives since the 1980s. Over the same period, the Senegalese Association for the Promotion of Organic and Biodynamic Agriculture (*Association sénégalaise pour la promotion de l'agriculture biologique et biodynamique*) created the BIOSAIN label (based on the French for “organo-healthy”) and organized the direct marketing of organic products in Dakar.

At the end of the 1990s, these organizations created the Senegalese Organic Agriculture Movement. A process of regulating organic farming was then set in motion, and the Senegalese Council for Organic Agriculture (*Conseil Sénégalais d'Agriculture Biologique*) was established. Initiatives multiplied in the 2000s. National and regional NGOs such as Agrinat, AFAFA (from the French *aide aux femmes africaines par la formation à l'agro écologie*, or Support to African women through training in agro-ecology) and Jardins d'Afrique worked to develop organic farming in Senegal. Also, grassroots farmers' organizations such as the Association of Farm Seed Producers (*Association des producteurs de semences paysannes*) came into being. After a certain slowdown, ENDA-Pronat, AGRECOL Afrique, the Senegalese Association for the Promotion of Organic and Biodynamic Agriculture and their partners decided to relaunch the movement with the creation, in 2008, of the National Federation of Organic Agriculture (*Fédération Nationale de l'Agriculture Biologique*, or FENAB). FENAB became the privileged interlocutor of an African Union initiative that created, in 2014, the National Platform for Ecological and Organic Agriculture (*Plateforme Nationale Agriculture Écologique et Biologique*, or PNAEB), which has not often been operational. At the same time, President Sall, elected in 2012, launched the PSE as well as the Programme to Revive and Accelerate Agriculture in Senegal (*Programme de relance et d'accélération de la cadence de l'agriculture au Sénégal*, or PRACAS), the latter of which makes no reference to agroecology.

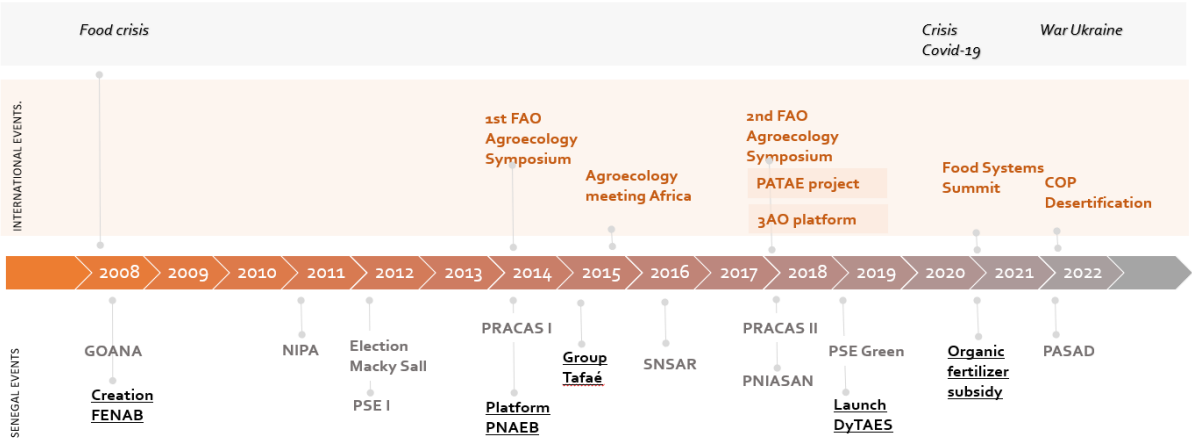
In 2015, taking advantage of the impact of a symposium organized by the FAO (see Textbox 1), another network of civil society players was set up: the Task Force for the Promotion of Agroecology in Senegal (*Task force multi-acteurs pour la promotion de l'agroécologie au Sénégal*, or TaFAé), whose objectives were to share technical experience, conduct research and set up projects to obtain funding. The network's achievements were limited: Only the first objective was pursued, and the working group lacked political legitimacy (Bottazzi & Boillat, 2021). Following the re-election of President Sall in 2019, a reflection on the greening of the PSE was launched with the *PSE Vert*, or Green PSE. At the same time, following this momentum, which was interpreted as favourable to greener development policies, and the dynamics of a second international symposium at the FAO, NGOs, farmers' unions, research bodies and platforms (including TaFAé) created the movement called “Dynamic for an Agroecological Transition in Senegal” (*Dynamique pour la Transition Agroécologique au Sénégal*, or DyTAES) in 2020 with the aim

of strengthening advocacy. This movement has played an important role in putting agroecology on the agenda and incorporating it into policy documents.

Nor are these practices new to producers, as one politician notes: "Senegal's agricultural history is a history of agro-ecology".² given that pre-industrial, low-intensity and eco-holistic agricultural practices were widespread in the country until recently, and are still present in the collective memory. Furthermore, in 2018, FENAB set up a participatory guarantee system through the "Bio Sénégal" ("Senegal Organic") label. However, agroecology was not formally recognised by the government until very recently. The explicit mention in the 2014-2023 PSE and the creation of the post of national PATAE correspondent, or contact point, within the Ministry of Agriculture is one of the earliest visible recognitions by the public authorities.³

The key moments in this process, linked to the international events that have shaped it, are summarised in Figure 1 and analysed throughout the report. The figure lists, in a non-exhaustive way, the main public programmes (in grey) and key events (in black) promoting agroecology since the food crisis and the creation of FENAB in 2008. The programmes listed are analysed in the document.

Figure 1: Key programmes and events in the incorporation of agroecology into policy in Senegal, 2008-2022



Source: prepared by the authors.

2.2. A diversity of agroecological initiatives

The work of DyTAES since 2020 has provided an initial overview of agroecological initiatives in Senegal. Without claiming to be exhaustive, the assessment shows that the agroecological transition project is supported by a large number of players (NGOs, social movements, researchers, state organisms, the private sector, etc.) operating in a variety of complementary fields.

- Sustainable natural resource management initiatives:** Some initiatives seek to protect, restore or create the conditions for sustainable management of the natural resources, such as water, soil, forests, or fish, that underpin all food production. Examples include community-based forest management, assisted natural regeneration (ANR), fisheries resource recovery, community-based pastoral resource management and integrated water resource management.

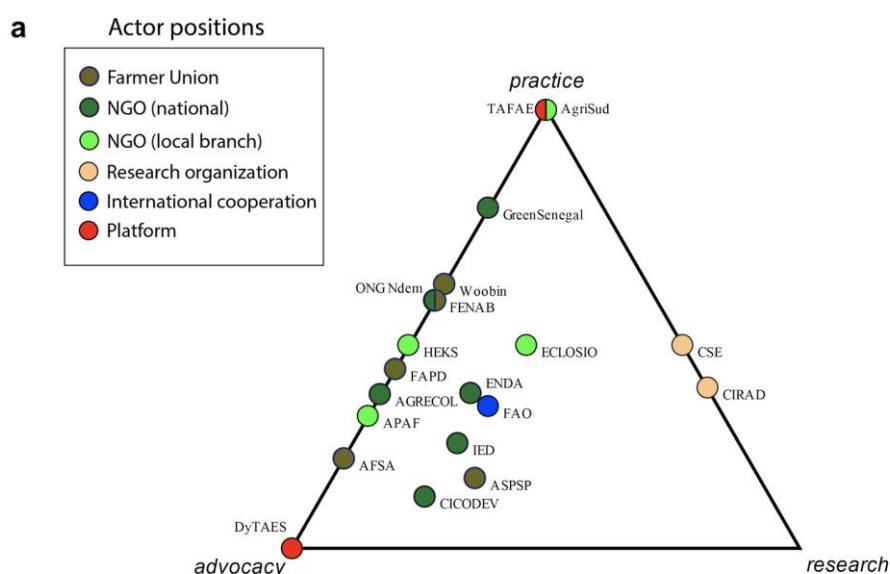
² Interview, central and local government representatives, September 2021.

³ The designated PATAE correspondent within the ministry is the director of plant protection, who also chairs the PNAEB.

- **Initiatives for the ecological intensification of agriculture:** Other initiatives aim to make plant and animal production systems more resilient, more efficient and less dependent on external inputs (e.g. mineral fertilizers or chemical pesticides). Examples include initiatives to support the agroecological transition in market garden areas, the marketing of biopesticides and biofertilizers, the ecological intensification of rice-growing systems, and integrated fruit fly management on mango trees.
- **Agriculture-livestock integration initiatives:** A number of initiatives aim to re-articulate and synergize agricultural and livestock activities, in order to restore coherence and balance to agro-sylvo-pastoral systems. Examples include fodder production and ecological market gardening projects in the Ferlo Desert in the north of the country; and fish farming-agriculture coupling and the integration of agriculture and livestock farming at Sow Ranch, in the south on the banks of the Casamance.
- **Marketing initiatives for agroecological products:** Some initiatives aim to create profitable niche markets for agroecological products. Obtaining an advantageous selling price helps to improve the viability of family farms and secure their transition to agroecology. For example, there are routes to market that cut out middlemen for products from healthy and sustainable agriculture, often coupled with a participatory guarantee system, allowing producers to directly supply farmers' markets or hotels.
- **Training and start-up initiatives:** Several initiatives are focusing on the younger generation by training future farmers and agricultural managers in agroecology. Some farm schools train and set up young people in agroecology (e.g. the Farm de Kaydara, 100km south of Dakar); at the same time, projects are setting up farmer field schools. Several academic courses have been set up to train future managers in agroecology (e.g. the Masters in sustainable management of horticultural agro-ecosystems at Cheikh Anta Diop University in Dakar).
- **Holistic regional projects:** Some initiatives are combining action in complementary areas, such as agriculture, livestock farming, energy, and training, in truly holistic regional agroecological projects. Examples include: the N'Guelakh integrated centre, a few kilometres inland from the coastal city of St Louis on the northern border; the Ndiop commune 140km east of Dakar, the first municipality in the country to formally embark on an agroecology transition; and the ecovillage programme.

Boillat *et al.* (2021) show the main organizations involved in agroecology in Senegal, and their positioning along the three main dimensions of agroecology, namely research, practice and advocacy (Figure 2). The same authors also show that the promoters of agroecology in Senegal have financial links with organizations based in North America and Europe (particularly France, Switzerland, Belgium, the Netherlands, Germany and Italy).

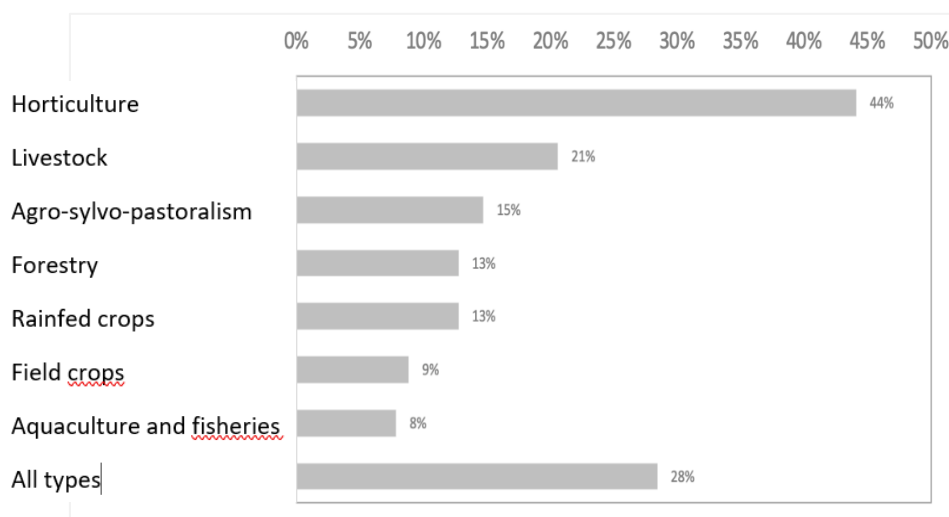
Figure 2: Breakdown of functions performed by different agroecological organizations.



Source: Boillat *et al.*, 2021.

Another study (Grimaud, 2020) identified and characterized 27 stakeholders and 102 agroecological initiatives in Senegal. The results show that the initiatives operate in a wide range of fields (forestry, livestock, rainfed crops, etc.), with a predominance of horticultural initiatives (market gardening and fruit growing) (Figure 3).

Figure 3: Areas of intervention favoured by the agroecological initiatives surveyed.

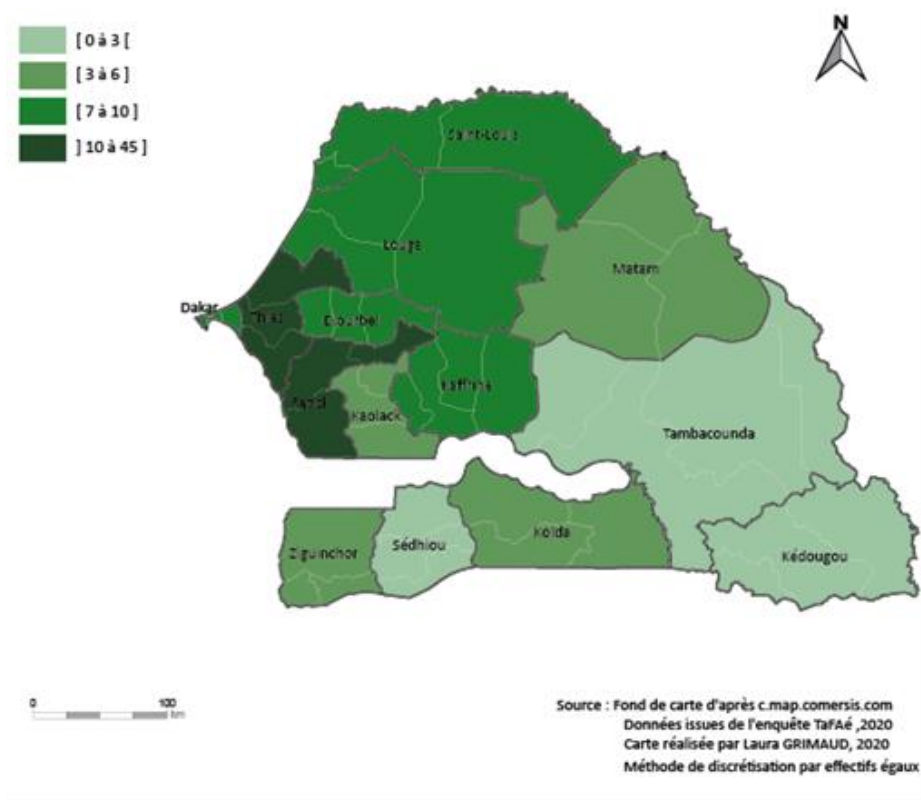


Source: Grimaud, 2020.

Erreur ! Référence non valide pour un signet. shows that initiatives are most numerous in the Thiès and Fatick regions, just inland from the capital Dakar. The farming techniques promoted include soil fertility, water and pest management, promotion of local varieties and breeds, and agroforestry (Figure 5). Following another national consultation, DyTAES (2022) identified 109 agroecological initiatives in various fields:

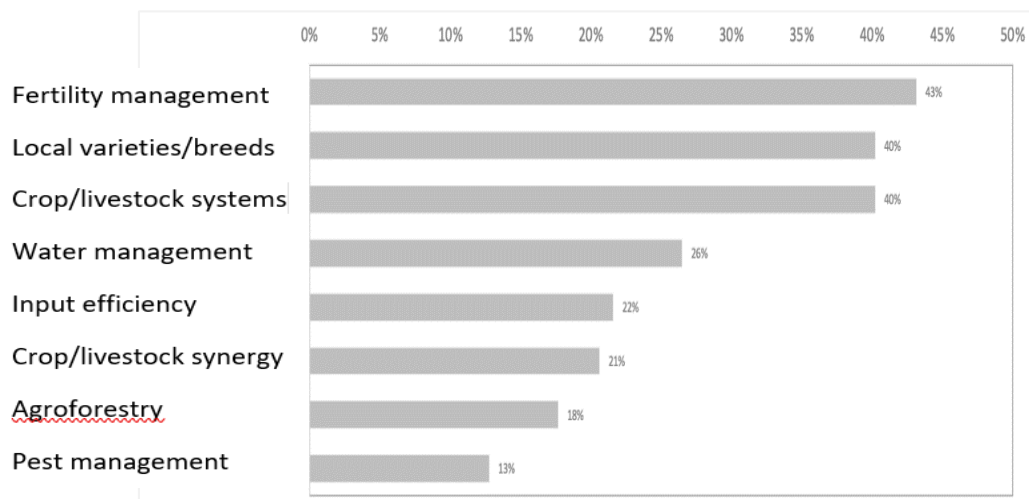
- Sustainable management of natural resources (12)
- Soil preservation and restoration (6)
- Sustainable water management (3)
- Farms, gardens and agroecological practices (36)
- Medicinal plants and farm seeds (5)
- Breeding initiatives (7)
- Pond management and fish farming (3)
- Developing agroecological products (16)
- Participatory research in agroecology (3)
- Agroecology training (13)
- Agricultural services and projects (5)

Figure 4: Distribution of agroecological initiatives by region.



Source: Grimaud, 2020.

Figure 5: Farming techniques promoted by agroecological initiatives



Source: Grimaud, 2020.

2.3. A diversity of agroecology concepts

The current agroecological movement contrasts with the pioneering initiatives at the interface between research, social movements and international NGOs. New actors are finding their way in, including diplomacy, sub-regional organizations and private actors (Bellon & Ollivier, 2018). A growing number of projects can be observed. Identifying agro-ecology-friendly policies is nevertheless a challenge, given that some are only officially labelled as such, while others do in practice promote agroecological practices without claiming to do so. Equally, some initiatives, such as ANR, have a broad focus on sustainable natural resource management, and are appropriately labelled as agroecological among others.

The definition of the scope of agroecology is therefore the subject of conceptual - and, in some cases, political - work by the players involved (see Textbox 1). Variations in conceptualizations are visible in international dialogue forums as well as in national institutionalization trajectories, as they are influenced by the interplay of stakeholders, dominant ideas, and the political and institutional frameworks in place. The perspectives promoted by international projects are most often based on broad conceptualizations of agroecology and food systems. As a result, stakeholders at national and sub-national level have a certain leeway in translating them and defining the approaches to be favoured.

For example, the declaration of the Regional Meeting on Agroecology in Sub-Saharan Africa, held in Dakar in 2015, stated that although the term *agroecology* is not always explicitly used, many actions across Africa are based on agroecological principles that "have been practised by African farmers and pastoralists for millennia" (FAO, 2016a, p. 4). This emphasis on the endogenous nature of agroecology in Africa is often emphasised by political and civil society stakeholders in Senegal. In West Africa, the PATAE is also based on a broad definition of agroecology and proposes to develop "innovative practices mobilizing ecological processes in agricultural production and food and nutritional security," as described on the online agroecology platform www.boost-ae.net. At sub-regional level, agroecology is thus associated with many social and environmental aspects of agricultural production, including food security, adaptation to climate change and decent incomes (Bottazzi & Boillat, 2021; FAO, 2016b; Tiftonell *et al.*, 2012).

In Senegal, Boillat *et al.* (2021) identify stakeholder networks with specific strategies and alliances at the origin of agroecological projects. The country is notable for the presence of a coalition in favour of the agroecological transition; DyTAES is not representative of all Senegalese civil society, but this network has played an important role in dialogue with the government. A diversity of agroecological approaches and practices has been accepted in order to ensure greater political cohesion and strengthen advocacy. A diversity of visions was also put forward by the institutional players we met. More holistic conceptualizations of socio-environmental systems, social transformations and the empowerment of rural populations *vis-à-vis* external dependency coexist with technical notions, evoking organic farming specifications, and international keywords such as "climate-smart agriculture". Figure shows some of these conceptualizations, which are fuelling a debate of ideas around agroecology. These are not always mutually exclusive; indeed, some players can be found in several of them.

Textbox 1: The evolution of the notion of agroecology in international arenas

Agroecology is an evolving concept that is the subject of interpretive struggles, characterized by Giraldo and Rosset (2018) as a "territory of contestation". Initially conceptualized as the science of ecology in relation to agriculture, its scope has broadened to encompass social and political issues (Gliessman, 2016). A growing number of international organizations, governments, NGOs, social movements and businesses are mobilizing this concept to guide changes of various kinds. These orientations vary according to the actors mobilizing it and the underlying institutional frameworks; from a reformist perspective such as the organic consumer movements and the dissemination of technical innovations on large-scale farms, to a more radical approach of land redistribution and anti-capitalist transformation (Boillat *et al.*, 2021; Holt Giménez & Shattuck, 2011; Rosset & Altieri, 1997).

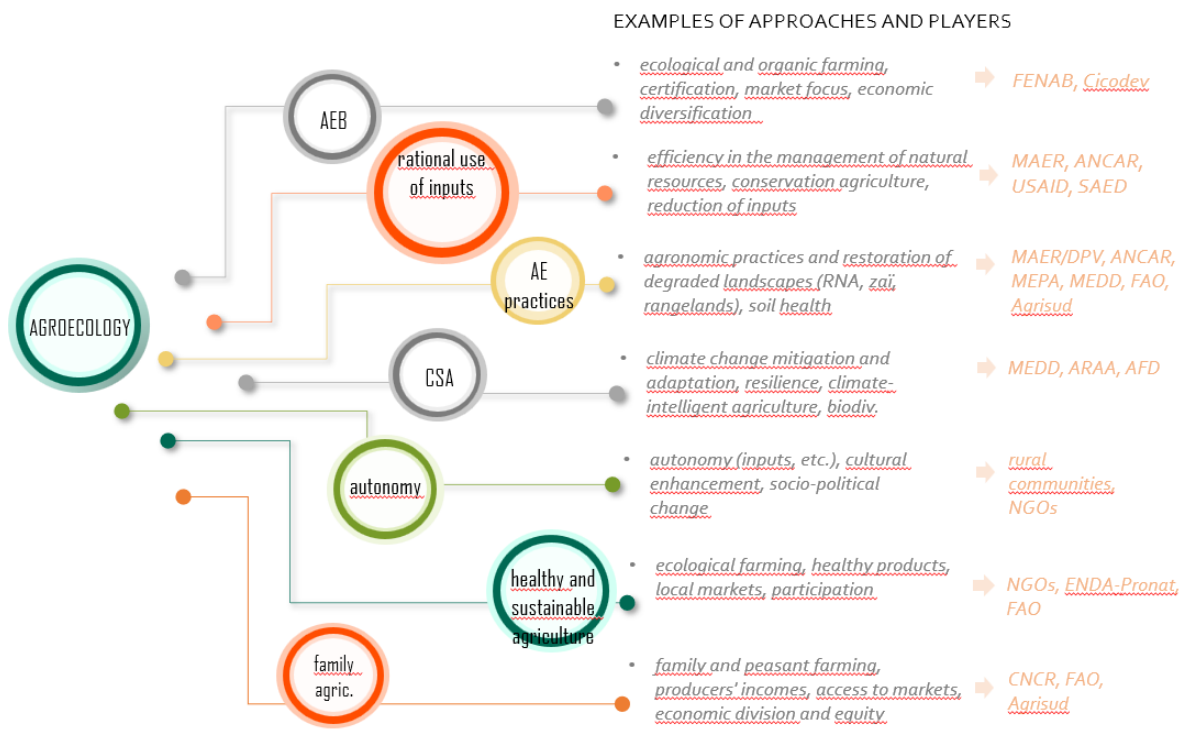
Agroecology has been gradually gaining legitimacy on the international political stage since the 2010s, as demonstrated by the 2010 UN report titled *Agroecology and the Right to Food* (De Schutter, 2010; Ollivier *et al.*, 2019). Its consolidation within the United Nations has been based, in part, on a series of international symposia promoted by the FAO since the early 2010s. A first symposium on agroecology for food security and nutrition was organized in September 2014 in Rome. This symposium was followed by regional meetings in sub-Saharan Africa, Asia and the Pacific, Latin America and the Caribbean. The Multistakeholder Consultation on Agroecology for Sub-Saharan Africa was held in Dakar on 5 and 6 November 2015.

According to Loconto and Fouilleux (2019) the initial framework proposed was inspired by the seminal work of Wezel (2009), which defines agroecology in three dimensions: i) a scientific approach that integrates complex ecological processes into agronomy; ii) a set of ecologically sound agricultural practices; and iii) a social movement opposed to industrial agriculture. Commonly mobilized by agronomists and ecologists, these three components, namely scientific, practical and political, have often been developed separately, overlooking the conflicts inherent within agroecology as a whole. Nevertheless, the principles of social equity have been increasingly taken into account (Bottazzi & Boillat, 2021).

In this context, the definition of agroecology within the FAO, organized around 10 consensual elements, was the result of a political process involving actors with distinct priorities and legitimization strategies (FAO, 2018). Taken separately the elements are relatively uncontroversial, but bringing them together can be considered ambitious in practice. On the one hand, civil society advocacy has led to the recognition of agroecology as a transition process that values traditional knowledge. On the other hand, the organic farming movement led by IFOAM has put forward a definition of agroecology as an agricultural practice, which has been opposed by social movements such as global farmers' organization La Via Campesina. For these social movements, the market-oriented organic approach based on technical standards and certification mechanisms is seen as a co-opted version of agroecology. However, close interaction with the FAO ensured that IFOAM was able to play a special role in its global dialogue. Finally, the pro-agroecology stance of former FAO Director General Graziano da Silva contributed to its institutionalization, whereas the

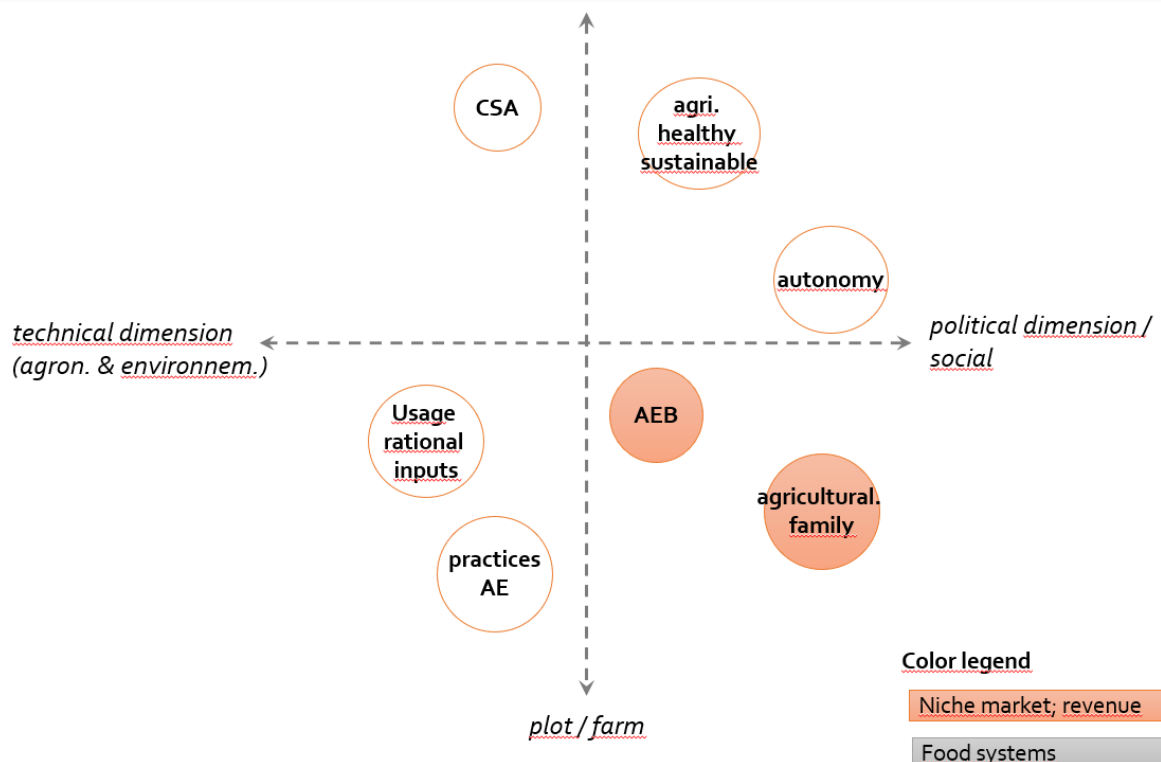
Figure 6 provides an illustrative summary of the principles, approaches, instruments and dimensions taken into account by the players interviewed. Figure 7, inspired by Rodrigues and Piraux (2021) illustrates the diversity of conceptualizations of agroecology along two axes organized according to scale (plot/farm vs. territory) and the dimension of agroecology (technical vs. socio-political). Finally, the colours indicate the approaches of food systems vs. niche market. It should also be noted that in the Wolof language, agroecology is translated by two expressions: "healthy agriculture" or "agriculture without chemical fertilizers"; this translates onto some of the dimensions illustrated in this figure.

Figure 6: Concepts of agroecology in Senegal, by theme



Source: Authors, based on interviews

Figure 7: Concepts of agroecology in Senegal, plotted against conceptual axes



Source: Authors, based on interviews

2.4. Factoring agroecology into political strategies

The diversity or, rather, imprecision of the conceptualizations of agroecology just described has also been observed in national policy strategies. This sub-section therefore analyses the approaches used in institutional documents, in order to understand the following questions: Do strategies and regulatory frameworks explicitly mention agro-ecology? If so, with what arguments and what priorities? Is it a question of social inclusion or change, food and nutritional security, environmental conservation, dissemination of agronomic practices? Are the target audiences mainly family and peasant farming or also entrepreneurial farming?

The Green PSE: Agroecology at the top of the state?

One of the main signs of the Senegalese government's formal support for the greening of its economy was the inclusion in 2019 of these objectives in the "green" section of the PSE. In particular, the Green PSE is committed to enforcing the Forestry Code by reducing illegal logging, promoting reforestation of the national territory, and creating a national forest protection agency. Former minister and prominent environmentalist Haïdar El Ali has been appointed coordinator of the programme; and the mayor of the commune of Ndiop in the Fatick region, Oumar Ba, has been appointed chairman of the Senegalese Agency for Reforestation of the Great Green Wall. In addition, in 2021, the Ministry of Agriculture and Rural Equipment (*Ministère de l'Agriculture et de l'Équipement Rural*, or MAER) planned to allocate 10 percent of fertilizer subsidies specifically to organic fertilizers. This latest decision has been welcomed by civil society players and the government.

In the view of some, these openings confirm that "agroecology is now part of the Senegalese government's agenda".⁴ However, the forestry programme has been limited to reforestation plans, which have lacked transparency and practical implementation on the ground.⁵ To date, initiatives to promote bio-inputs have been *ad hoc* and limited to certain communes, such as Ndiop. The advisory services are involved in training and testing the use of these products, but bio-inputs have not been included in the package proposed by the agricultural advisory services.⁶ Finally, agroecology has not been formally mentioned in the PSE framework document, nor in documents relating to its draft budget.⁷

The PSE is implemented through a priority action plan that is translated into development projects and programmes. For example, the PRACAS has translated the PSE's orientations for the agricultural sector. Introduced in 2014, the PRACAS was seen as a proactive shift in national public policy (Sadibou Fall *et al.*, 2020). The aim of the programme was to promote rapid modernization of agriculture, which was presented as the driving force behind the Senegalese economy, by increasing its productivity and competitiveness. Figure 8 provides a simplified illustration of the political and institutional framework for the agricultural sector in Senegal. The context in which these strategies were formulated, the problems of overlap, and the difficulties in implementing them will be analysed throughout this report.

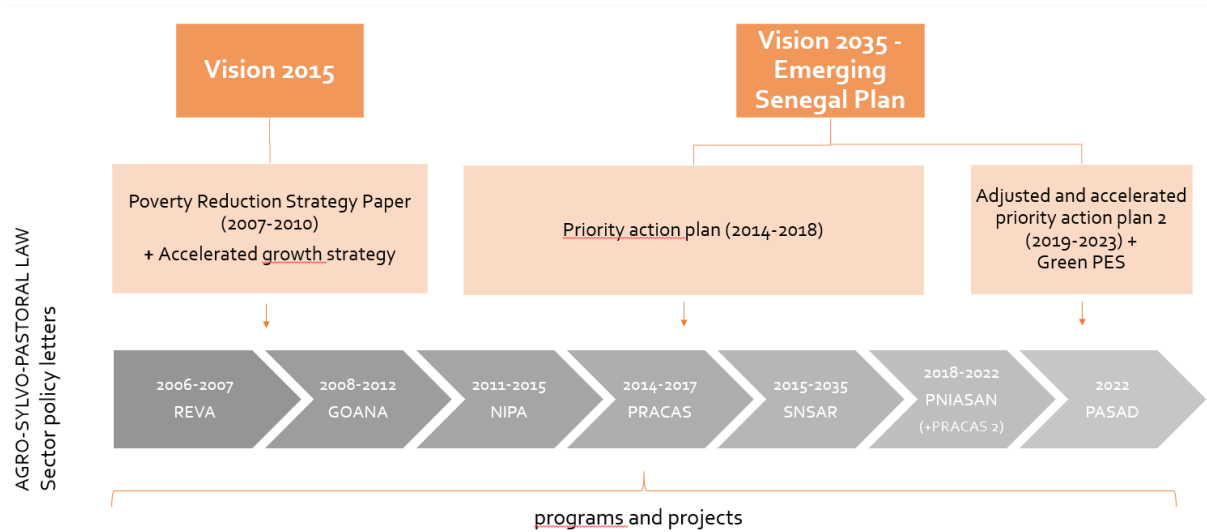
⁴ Interview, NGO representative, November 2021.

⁵ Interview, government representatives, September 2021.

⁶ Interview, farm council representative, September 2021.

⁷ Part 3 of this report discusses in more detail the limits of the practical integration of agroecology into the Green PSE, while the institutional framework of agricultural policy has not really changed.

Figure 8: Overview of the political and institutional framework for the agricultural sector in Senegal



Source: prepared by the authors.

At the end of 2021, the government launched a participatory process to structure and strengthen the Green PSE. The objectives identified for the agricultural sector include reducing the use of chemical inputs by 30 percent and increasing the use of bio-inputs by 2035, covering 30 percent of agricultural land with agroecological practices by 2030, and restoring degraded ecosystems. The plan also proposes a revision of the Agro-sylvo-pastoral orientation law (*Loi d'orientation agro-sylvo-pastorale*, or LOASP), the framework for the development of Senegalese agriculture drawn up for the period 2004-2024, as one of the priority actions. The aim of this reform is to incorporate incentives, the main instrument of which is the agroecological labelling of agricultural products, in order to ensuring adequate remuneration of producers and to better target funding mechanisms such as credit and agricultural insurance (PSE Vert, Republic of Senegal, 2021). If these measures were implemented, their coexistence, and even their consistency, with the PRACAS and now the Agricultural Programme for Food Sovereignty and Sustainability (*Programme Agricole de Souveraineté Alimentaire et Durable*, or PASAD), which are still focused on the development of priority sectors within a logic of productivist modernization, would merit attention.

At the time of writing, the Green PSE had not yet been finalized, but discussions were pointing towards the promotion of agroecology through market mechanisms and the substitution of synthetic fertilizers with organic fertilizers. Whether or not these objectives have been achieved will be the subject of future research.

A concrete expression of long-standing objectives in the environmental sector

The 2021 start of state subsidies for organic fertilizers has finally put into practice a proposal that has been announced in policy documents for almost 20 years. For example, the National Adaptation Programme of Action (*Programme d'Action National pour l'Adaptation*, or PANA) on climate change mentioned this objective in 2006 (PANA, Republic of Senegal 2006). In fact, environmental strategies have long been promoting a series of sustainable production techniques to combat desertification, including agroforestry, crop diversification, the use of salinity-tolerant short-cycle crop varieties, water

harvesting and conservation, bushfire prevention, and soil health (Mbow, 2017; PANA, Republic of Senegal, 2006; PAN/LCD, Republic of Senegal, 1998).

Recent strategies emphasise the notion of *resilience to climate shocks* and often return to the need to promote the use of compost and organic matter, the intensification of rice-growing systems, assisted natural replanting, the use of appropriate crop varieties, and more generally the sustainability of food systems,(FAO & UNDP, 2022; LPSEDD, 2016; MAER, 2021; SNDD, Republic of Senegal, 2015).

Concrete initiatives include the Scaling up Climate Ambition on Land Use and Agriculture (SCALA) programme, funded by the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety and implemented jointly by the FAO and the UNDP. The programme was launched in 2021 by the Ministries of Agriculture and the Environment, with the aim of achieving an agroecological transition in millet and groundnut crops, and in market gardening systems (FAO & UNDP, 2022). Agroecology is broadly defined by these initiatives, which promote agroforestry and water management in response to climate variability⁸. At the same time, the Great Green Wall Agency is coordinating reforestation, land-use planning, forest and bushfire management initiatives. Finally, since 2015, Senegal has had a national instrument called the National Climate Fund, with a view to mobilizing the international financing opportunities offered by the Green Climate Fund (LPSEDD, 2016; Mbow, 2017).

Despite a certain perception of continuity in the strategies of the environmental sector, the effective subsidy of bio-inputs by the state budget, the taking into account of this agenda by the agricultural sector, and the mention of agroecology by President Sall in his speech to the nation, have shaped a new phase for agroecology in Senegal. For the agroecology movement, the Green PSE attests to a “new awareness”⁹ and the international context is seen as favourable: agroecology is a way for part of the political elite to legitimize itself by bringing itself into line with international and societal issues, and this opportunity is being seized by supporters of this approach.

Events such as the UN World Summit on Food Systems, held in September 2021, have also been key to raising the government's awareness.¹⁰ According to one political representative, "Senegal is becoming more and more visible on the world stage, so everything is in place for agroecology to be considered as a system to be taken into account in food systems."¹¹ The government's roadmap for the summit proposed, for example, tax breaks for supplying agroecological production systems with renewable energy, inputs and equipment (MAER, 2021).

The environment as a constraint, agroecology as an efficiency factor

However, the recognition of agroecology as an essential component of sustainable food systems is not yet a reality in public policy documents. The main focus is on environmental issues, which are seen as a constraint on agricultural development. The PSE mentions, for example, soil degradation, the effects of climate change on reduced rainfall, seasonal changes, and coastal erosion, as determining factors in Senegal's low agricultural productivity (PSE, Republic of Senegal, 2018). Loss of soil fertility and poor water management are mentioned in framework policies as sources of vulnerability for the economic production base (LPSDA, Republic of Senegal, 2018).

The National Spatial Planning and Development Plan (*Plan National d'Aménagement et de Développement Territorial*, or PNADT, Republic of Senegal, 2020) approved by President Sall in 2020 and

⁸ Interview, government representative, September 2021.

⁹ Interview, civil society representative, September 2021.

¹⁰ Interview, civil society representative, September 2021.

¹¹ Interview, international organization representative, October 2021.

considered to be the basic reference for "harmonious and sustainable development of the national territory", points out the decline in agricultural productivity despite the use of high-priced synthetic inputs, which do not produce the expected yields and endanger human health and the environment. Organic farming and agroecological techniques are proposed in the PNADT as part of the objective of modernizing the production system. The techniques combine natural and social factors to guarantee sufficient production in terms of quality and sustainability.

Sustainable land management is therefore the main thrust of a number of agricultural programmes, which are based on increasing efficiency in the use of natural resources. This objective is achieved by controlling water use, rebuilding seed capital, managing degraded land and rationalizing the use of inputs. In particular, it involves developing farming practices that are relatively well known from a technological point of view.

This perspective is shared by several political players. For a senior official in the agricultural sector, agroecology concerns all practices that seek to manage cropland sustainably and protect it from environmental risks: namely, soil degradation in the groundnut basin, the invasion of market gardening areas by dunes in Niayes, along the coast north of Dakar, or the depletion of water resources in certain regions of the Senegal River delta.¹² Representatives of the environmental sector have a similar perception:

"If we want to lift farmers out of poverty, we have to move up a gear, we have to modernize our practices. (...) We don't have much more land for farming. (...) So we really need to find new formulas based on ecological agriculture. They [the farmers] have no choice... what is allowed in Casamance - to practice fallow land - is not possible in the groundnut basin."¹³

This view contrasts with that identified in water sector documents, which present environmental issues as administrative constraints. The sector's policy letter mentions, for example, the "excessive slowness" of the procedures for validating environmental studies, reviewing environmental clauses included in tender documents for works, or issuing discharges (LPSDEA, Republic of Senegal, 2016).

More ambitious social strategies with little connection to agricultural policies

The National Agricultural Investment Programme for Food Security and Nutrition (*Programme National d'Investissement Agricole pour la Sécurité Alimentaire et la Nutrition au Sénégal*, or PNIASAN) follows the same logic described above, but goes further by specifically promoting agroecology and agro-sylvo-pastoral integration (PNIASAN, 2018). The programme also mentions improving natural rangelands in order to secure the mobility of livestock, a key issue for the livestock and environment sectors. This action is based on strengthening pastoral infrastructure and equipment, on the one hand, and on improving farmers' access to animal health care and pastoralists, on the other. Launched in 2018, PNIASAN was formulated during a participatory process that included several sectoral bodies with the support of the US Agency for International Development (USAID), the EU, the FAO and ECOWAS. This programme is connected to the social programmes and strategies developed since the early 2010s, which refer to agroecology more as a means of increasing people's resilience to climate shocks than as part of an overall transformation of agricultural systems (Ndiaye, 2017; SNPS, 2016; SNSAR, 2015).

The National Social Protection Strategy (*Stratégie Nationale de Protection Sociale*, or SNPS) document considers actions to improve soils and ecosystems as factors for increasing income and employment as

¹² Interview, government representative, September 2021.

¹³ Interview, government representative, December 2021.

well as prerequisites for the structural transformation of the economy (SNPS, Republic of Senegal, 2016). According to this logic, land degradation, the use of pesticides and chemical fertilizers, declining soil fertility, and coastal erosion affect production systems and reflect structural vulnerabilities in agriculture (Ndiaye, 2017).

This approach “links macro-economic development objectives to the promotion of profitable sectors through measures to protect the livelihoods of vulnerable populations with induced effects on access to health, education and food” (SNSAR, Republic of Senegal, 2015, p. 9). Thus, the National strategic review for the eradication of hunger in Senegal (*Revue stratégique nationale pour l'éradication de la faim au Sénégal*) presents agroecology as “a genuine societal project driven by an ethical dimension and likely to offer a holistic response to the global crisis” (Ndiaye, 2017, p. 60). The document also mentions the links between land issues, water, environmental degradation and food security.

These prospects seem, however, to have little connection with the predominant institutional framework of the agricultural sector and the policy of food self-sufficiency. (This discrepancy is discussed in more detail in part 3.) Furthermore, despite their more global development ambitions, these strategies, which have developed rapidly in West Africa since the 2010s, in practice boil down to social safety-net programmes that are poorly implemented (Thoreux & Bichard, 2021).

New prospects with PASAD?

Since 2022, the Ministry of Agriculture has been engaged in a process of formulating the Agricultural Programme for Food Sovereignty and Sustainability, as a new PSE lever for sectoral policy. This programme has been formulated in a context influenced by the effects of international crises, notably the Covid-19 pandemic and the war in Ukraine, which have led to increased inflation in the prices of chemical inputs and foodstuffs. The draft version of this document shows continuity with the PRACAS, particularly with regards to the objectives of: i) supporting the production base through water management, sustainable land management and the creation of hydro-agricultural infrastructure; ii) increasing cereal and horticultural production; and iii) strengthening agricultural mechanization. On the other hand, sustainable land management is playing a more prominent role in sectoral policy, with a greater number of detailed initiatives and a larger share of the budget.

PASAD explicitly mentions agroecology as a means of strengthening the resilience of production systems to climatic shocks, through the use of bio-organic fertilizers and family composting units, the large-scale dissemination of combined biological and sanitary pest control methods, the training of small-scale producers and the use of new techniques. This programme, which has yet to be put into practice, seems to reproduce a techno-centric approach to agroecology, materialized by the dissemination of more sustainable agricultural practices and the subsidy of bio-inputs.

To sum up, the multiplication of instruments reflects the overlapping of objectives

The techno-centric vision of agroecology characterizes most political strategies in the agricultural sector, and is part of a historical process of conservative modernization of agriculture that is still present. The scale of intervention is limited to farms, and socio-political aspects are relegated to the background.

For several of the people we spoke to, this approach runs the risk of reproducing exclusionary socio-technical and economic structures similar to those of the Green Revolution. As one NGO member pointed out, “the same people who distribute mineral fertilizers also distribute organic fertilizers, which

keeps things vague.”¹⁴ In this scenario, substituting organic inputs for synthetic ones does not diminish producers' dependence on companies, most of which are foreign.¹⁵ Preliminary surveys carried out in the departments of Fatick and nearby Tivaouane in 2022 identified an informal framework for the distribution of organic fertilizers, dependent on the discretionary power of representatives of the decentralized agricultural services. This framework is not based on an implementation strategy, formal targeting or a monitoring system. At this stage, it is creating tensions between the municipalities and the players involved in agroecology at local level. For the majority of those interviewed, if the initiative were to be extended, a number of changes would be necessary to improve its implementation.

Finally, some authors believe that the recognition of agroecology by Senegalese public policies is ambiguous: On the one hand, the state ideologically supports environmental causes at international level; on the other, it plays an implementing role for various projects that sometimes support agroecology but sometimes do not (Bottazzi & Boillat, 2021). The adoption in June 2022 of the biosafety bill (no. 08/2022) validating the use of genetically modified organisms further fuels these criticisms. Rather than ambiguity, we are seeing a multiplication of distinct rural and agricultural development objectives and instruments in the many sectoral strategies, which will be detailed in the next section.

Figure 9 summarises these orientations: It illustrates the main objectives and instruments presented in the documents for the agriculture, environment, social protection, water and sanitation sectors. Around 35 documents were analysed and coded using Nvivo and Gephi software. For each policy strategy (coloured nodes), the main objectives and instruments were identified (grey nodes). The arrows indicate the connections between the strategies and the objectives/instruments, and are coloured according to the sector of the strategy. The size of the circles marking the nodes illustrates the relative importance of each objective/instrument (the degree of centrality, based on the number of mentions of each objective/instrument in the documents).

The results show that the issues of food self-sufficiency and increasing/modernizing production are central to the policy documents consulted. Instruments to promote the integration of agriculture and livestock farming, subsidise bio-inputs and support agroecological practices are present, but not very visible. It is through sustainable land management that agroecology is most widely promoted. Finally, issues of nutrition, support for family farming and income transfers are better represented in social sector documents than in the documents from other sectors. There are interfaces between the sectors, particularly the issues of food and nutritional security, resilience, land security, employment and sustainable land management. However, distinct approaches and objectives tend to be promoted by the strategies of each sector.

¹⁴ Interview, civil society representative, October 2021.

¹⁵ Interview, civil society representative, September 2021.

productive and competitive while being sustainable, because there are still production requirements to be met.”¹⁷ This perspective is one of the main obstacles to the promotion of agroecology through agricultural policies, and part of a complex political context detailed in this section.

West African governments, constantly lacking the means to promote social protection for their populations, have historically sought to supply cities with cheap cereals (Mendez del Villar & Bauer, 2013). Since the 1960s, revenue from groundnut exports has enabled the Senegalese government to allow imports of rice and other foodstuffs (Diop, 2002).

At the end of the 2000s, Senegal was hit hard by the rise in food prices; international rice prices doubled in 2008, leading to a 30-percent drop in imports (Sadibou Fall *et al.*, 2020). Several measures were introduced: the temporary suspension of customs duties on imports; a ceiling on the price of imported rice; and the introduction of a consumer subsidy. At the same time, the government launched the Great Agricultural Offensive for Food and Abundance (*Grande offensive agricole pour la nourriture et l'abondance*) with the aim of ensuring food self-sufficiency, notably through massive investment in the development of irrigated areas and subsidies for production inputs (Baborska, 2021; Mbow, 2017) (see Textbox 2).

Textbox 2: Sub-regional agricultural policies after the 2008 crisis

Several West African countries have set ambitious food self-sufficiency targets, with increased public support for agricultural production (Fouilleux *et al.*, 2017). The 2008 crisis had an accelerating effect on the Economic Community of West Africa Agricultural Policy and the Comprehensive Africa Agriculture Development Programme. It prompted public authorities to invest in agriculture and influenced the establishment of National Agricultural Investment Plans, with a focus on increasing commodity production in the short term (Hathie, 2018). At the same time, the Alliance for a Green Revolution in Africa, supported mainly by the Bill and Melinda Gates Foundation and the Rockefeller Foundation, campaigned for - and broadly obtained - the strengthening of input subsidy programmes, in particular hybrid seeds and synthetic fertilizers.

However, unlike other countries in the region (such as Ghana and Ivory Coast) that went ahead with their respective sectoral programmes, Senegal did not initially vigorously implement its own National Agricultural Investment Programme (*Programme National d'Investissement Agricole*, or PNIA) due to a certain tension between regional policy objectives and national policy guidelines following the election of Macky Sall. As a result, the Senegalese government drew up the PRACAS, which partially contradicts the earlier PNIA in its proposed breakdown of expenditure by commodity. Rice, which accounts for 73 percent of the estimated figures in the PRACAS, appeared only marginally in the PNIA, while maize, the priority commodity in the PNIA (with a sum of CFAF 116 billion, or USD 190 million, over five years), disappears from the PRACAS (Gabas *et al.*, 2015). Against this backdrop, the first-generation PNIA has not really been put into operation, given that the dedicated structures are not functioning, with the exception of the Social and Political Dialogue Group (*Groupe de Dialogue Social et Politique*, or GDSP) (PNIASAN, Republic of Senegal, 2018).

3.2. PRACAS gives priority to modernizing the rice and groundnut sectors

The PRACAS is structured around four priority sectors for which it sets quantified production targets, namely rice, onions, groundnuts, and off-season fruit and vegetables. Its main objectives are: i) the creation of cereal corridors aimed at intensifying irrigated agricultural basins in order to reduce the

¹⁷ Interview, government representative, September 2021.

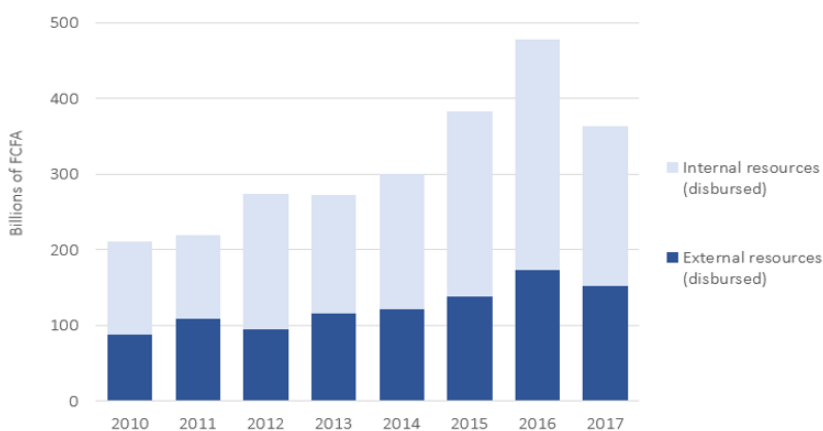
deficit in the balance of trade in cereal crops (particularly rice); ii) increasing production by facilitating access to agricultural inputs and equipment, developing seed farms, expanding hydro-agricultural facilities and supporting the private sector; iii) promoting large-scale investment to set up agri-food processing hubs for fruit and vegetables, oils, dairy products, cereals and poultry; iv) organizing family farms around agri-business operators through contractualization mechanisms; and v) boosting national groundnut production to promote consumption of locally produced oil (Mbow, 2017; PRACAS, Republic of Senegal, 2014; Sadibou Fall *et al.*, 2020).

This programme has helped to increase public spending in the agricultural sector (Figure 10). However, the originality of PRACAS lay in the integration of the entire value chain - from the supply of inputs to the marketing of end products. However, this approach has not been put into practice. Downstream expenditure, such as storage and marketing, is severely under-represented, and productivity and added value have not been sufficiently taken into account.

In the Senegal River Valley region, the PRACAS has supported public and private investment in irrigated perimeters, the promotion of agribusiness, the establishment of marketing and production contracts with family farmers, and the provision of campaign credit and fertilizer subsidies (Soullier *et al.*, 2018). Subsidies are targeted primarily at seeds, fertilizers and agricultural equipment. Several international agencies have contributed to this effort. For example, the Feed the Future Initiative supported by USAID has supported the integration of small-scale producers into the rice, maize and millet value chains, as well as the definition of edge-of-field quality standards, and improved access to credit and climate insurance. At the same time, the Inclusive and Sustainable Agribusiness Development Project (*Projet de développement inclusive et durable de l'agribusiness au Sénégal*), financed by the World Bank, has supported investment in infrastructure (namely irrigation and storage) in the country's Delta region.

Figure 10: Public spending on agriculture and food in Senegal

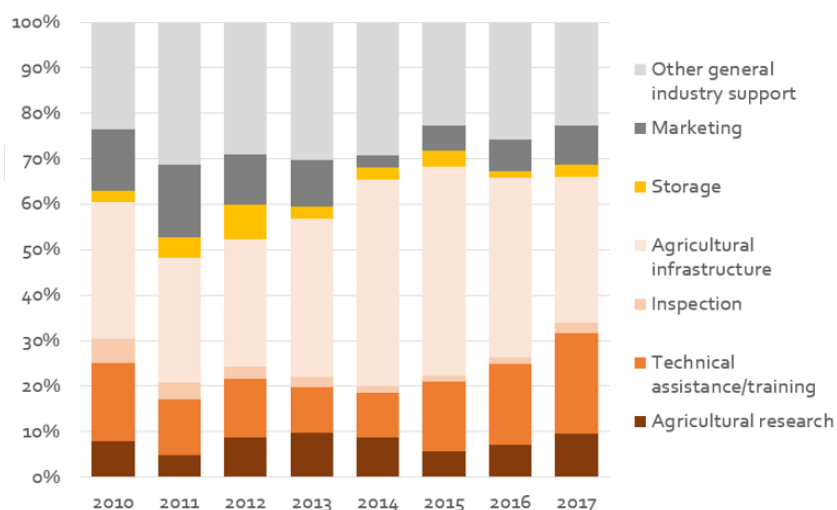
Spending on agriculture and food by source of funding



Amounts disbursed amount to 300 billion of FCFA/year on average from 2010 (with an increase in 2015, with the launch of the PRACAS flagship projects, i.e. cereal corridor).

An increase in the proportion of internal resources

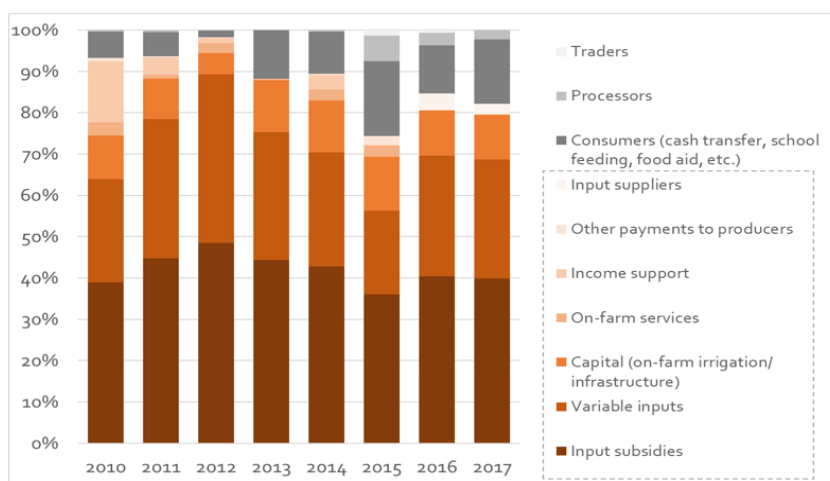
Relative composition of expenditure in support of the agricultural sector



Focus on agricultural infrastructure and technical assistance

Little support for agricultural research, for marketing and storage...

Relative composition of expenditure in support of agricultural sector agents (Producers, consumers, processors, traders)

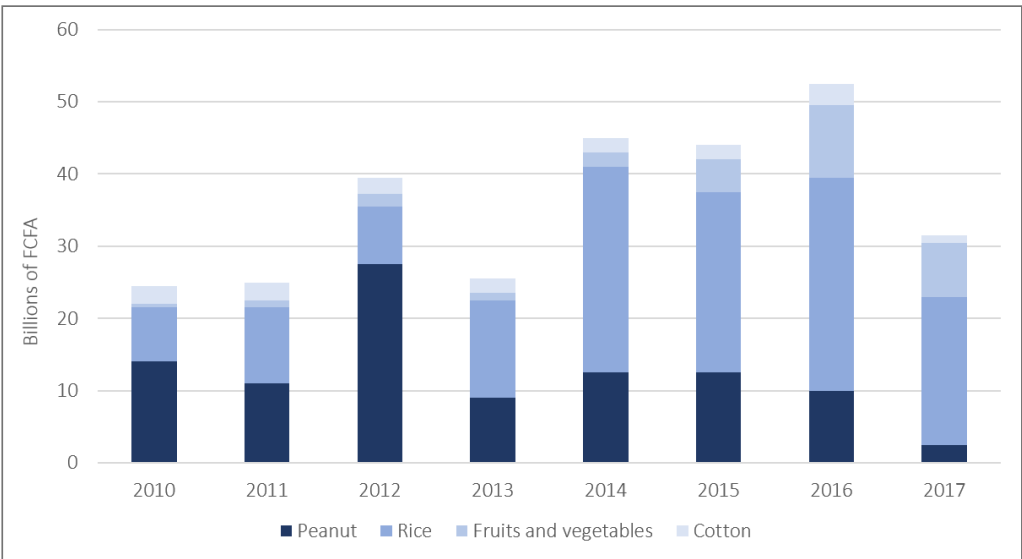


Central support for production, particularly subsidized inputs

Source: FAOStat 2022.

The groundnut sector remains the main beneficiary of input subsidies, even though expenditure on this crop has declined in recent years (Figure 11). The PRACAS has focused on rebuilding seed capital, agricultural mechanization and technical assistance. This seems to reflect the government's desire to rationalize the subsidy system to make it more efficient (Baborska, 2021).¹⁸ Finally, combined with market protection laws, public spending targeting fruits and vegetables products has increased since 2015 with the aim of achieving self-sufficiency (e.g. onions) or developing exports to Europe or the sub-region (e.g. mangoes, green beans). Despite this desire to diversify the priority sectors for agricultural spending, the budgets allocated remain well below those for rice and groundnuts.

Figure 11: Public expenditure by product



Source: Baborska, 2021; FAO, 2020.

A second phase of the PRACAS was planned for the period 2018-2022. However, its adoption came up against the onset of the COVID-19 pandemic. As indicated above, PASAD is currently being formulated to reflect the new directions taken by the government in the post-pandemic national economic recovery plan.

¹⁸ Groundnuts are the country's leading crop, ahead of rice in terms of net production value, and are the second most important agricultural export, behind fisheries products. The crop also plays a major role in household diets in the form of groundnut oil, groundnut paste and groundnuts for human consumption. Against this backdrop, the Livestock and Agriculture Competitiveness Programme (*Programme de Compétitivité de l'Agriculture et de l'Élevage*) aims to improve agricultural productivity in the groundnut basin, and in livestock farming nationwide. The initiative consists of a USD 150 million loan from the World Bank, and reveals the growing importance attached to this sector.

3.3. The limits of food self-sufficiency policies centred on production

An increase in production that is still insufficient to achieve self-sufficiency in cereals

The 2008 crisis put food security and nutrition back on the international agenda. However, despite a growing understanding of its multifactorial nature, this issue has largely been addressed from a Malthusian and agricultural perspective (Bricas & Alpha, 2018), whereas the level of production and dependence on the international market are not the only factors contributing to food insecurity in Senegal (Mendez del Villar & Lançon, 2015).

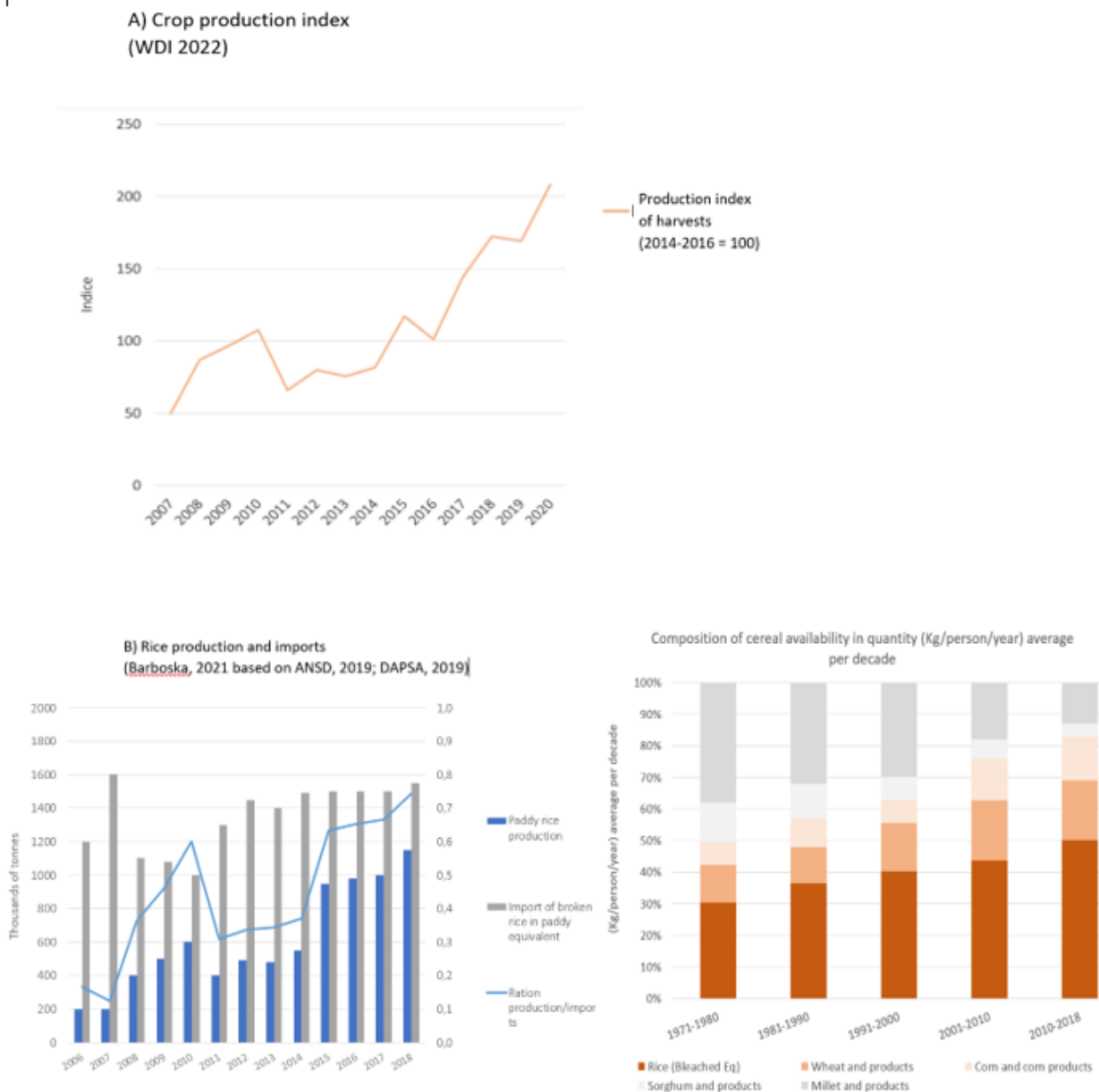
The public programmes that followed the crisis led to a considerable increase in agricultural production, as shown by the rise in the crop production index¹⁹ (Figure 12-A). However, the significant increase in rice production - from 469,649 tonnes in 2012 to 1,349,723 tonnes in 2020 - has not prevented a steady rise in imports of cheap Asian rice, to the detriment of other local cereals such as millet and sorghum (FAO, EU, CIRAD 2021) (Figure 12-B and C). While millet, maize and sorghum accounted for almost 70% of calorie intake from cereals in the 1970s, they represent only 30% in 2010-2018.

Current trends in rice production suggest that it will be very difficult to achieve the goal of self-sufficiency in the face of population growth, urbanization and rising per capita rice consumption (Sadibou Fall *et al.*, 2020; FFAO, EU, CIRAD 2021). Demographic growth is sustained (3.1%) and will generate an additional requirement of 342,000 tonnes of rice by 2030. Rainfed rice, which currently provides 70% of national production (EAA 2020-2021), is highly vulnerable to climate change, with yields forecast to fall by 100% by 2100 (Gérardeaux *et al.*, 2021). Finally, rising incomes, particularly in urban areas, could be accompanied by an increase in demand for cereals, with households in the highest wealth quintile consuming 1.5 times more cereals than those in the lowest quintile (Marivoet *et al.*, 2021)..

The situation is similar for onions. The increase in production has not been accompanied by a decrease in imports, mainly due to policies focused on the objective of self-sufficiency (quantity), which only marginally address the issue of the quality of local onions and their lack of competitiveness compared with imported onions (Baborska, 2021).

¹⁹ The crop production index shows agricultural production for each year in relation to the base period from 2014 to 2016. This index covers all crops except fodder crops. The regional and income groupings of the FAO production indices are calculated from the underlying values in international dollars and normalized to the base period.

Figure 12: Cereal production and import indicators

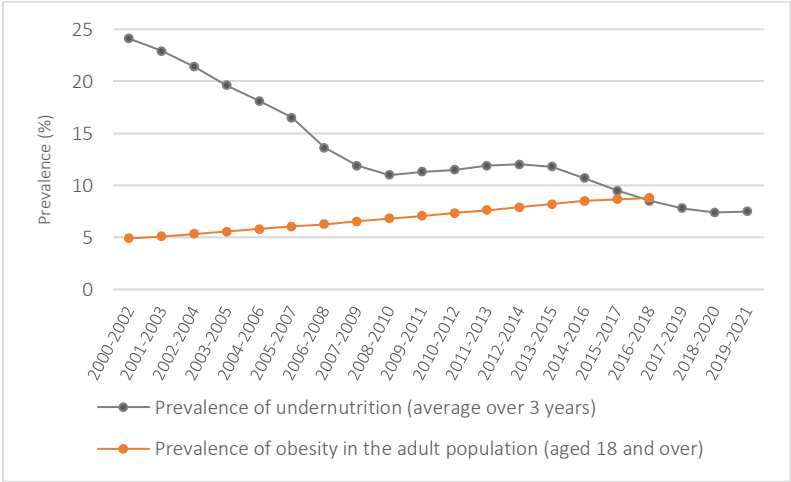


Persistence of food and nutrition insecurity indicators

Although the sustained increase in the production of rice and certain horticultural products means that dependence on imports is not worsening, it is not enough to ensure food and nutritional security for the population, which is above all a question of social, economic and territorial inequalities. While food security indicators based on per capita calorie availability are improving (Figure 13), indicators of access to sufficient, nutritious food remain precarious and vary widely across the country (Figure 14). Around

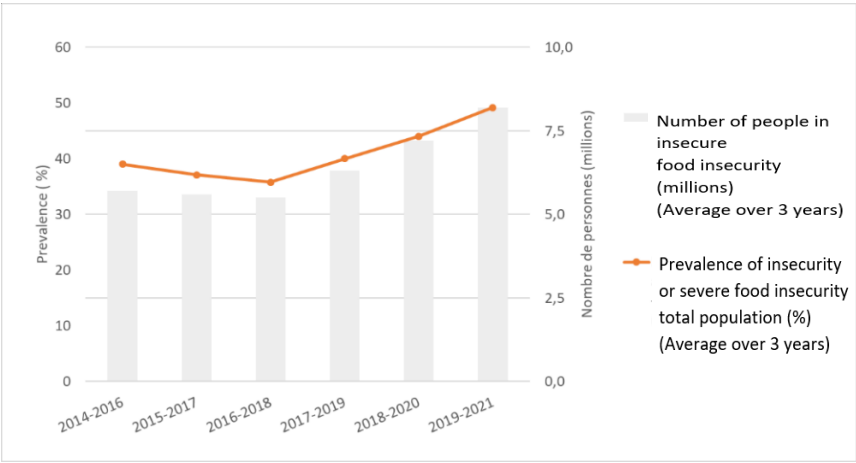
36.2% of households in Senegal were affected by moderate or severe food insecurity in 2018/2019²⁰, particularly in rural areas where 47% of the population was affected.

Figure 13: Prevalence of undernourishment (%) (average over 3 years) calculated from national calorie availability and population data.



Source: FAOStat, 2022.

Figure 14: Trends in moderate and severe food insecurity calculated using the FAO’s Food Insecurity Experience Scale



Source: FAOStat, 2022.

In terms of nutrition, almost one in five children under the age of 5 suffers from stunted growth, and anaemia still affects 50 percent of women of childbearing age. While this is not the only cause, the high prevalence of anaemia among the Senegalese population raises questions about the place of rice in the diet. Indeed, anaemia is caused in particular by deficiencies in iron, a micronutrient mainly provided by

²⁰ This corresponds to people living in households where at least one person was very likely to have been forced, at some time during the year, to reduce the quality/variety of their diet due to a lack of money or other resources, and had at least a fifty per cent probability of also having reduced the quantity of food consumed.

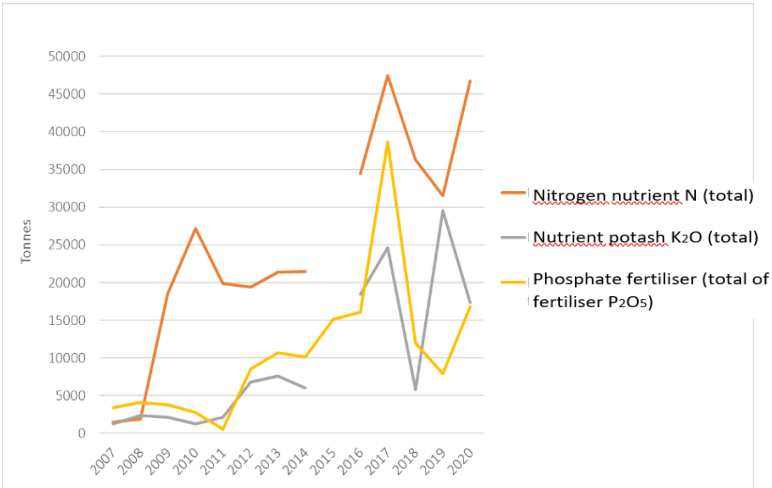
the consumption of millet. It has been shown that households in rural areas with higher millet production and consumption have a lower iron deficiency than those in other parts of the country (Marivoet *et al.*, 2021).. In addition to anaemia, Senegalese diets still suffer from a lack of diversity and intake of certain micronutrients (e.g. calcium, vitamin B12, vitamin A), with 60% of children, for example, not receiving an "acceptable minimum diet". This may explain the prevalence of malnutrition among children (ENSANR 2019). Finally, in addition to malnutrition due to deficiencies, Senegal is also faced with malnutrition due to excesses, with rapidly rising rates of obesity and food-borne non-communicable diseases.

Ineffective input subsidy policy

The increase in cereal production mentioned above is also the result of an increase in fertilizer use (Figure 15), itself driven by subsidy policies. While these policies are proving effective in terms of input use, they are strongly criticized for their lack of targeting and monitoring, their high costs, their lack of transparency, their political influence, their supply of inputs to neighbouring countries, and so on (Bodian, 2022; Bottazzi & Boillat, 2021). Today, there is a desire to reduce subsidies, but this is also a budgetary concern, as indicated in the PNIASAN document:

“A new policy on access to inputs is urgently needed to correct current shortcomings and lay the foundations for a sustained increase in the consumption of quality inputs. As part of this new policy, a reform of agricultural subsidies is essential. They are absorbing a growing share of the agricultural sector's budget and exposing ministries, particularly the Ministry of Agriculture and Rural Equipment, to an undesirable cycle of indebtedness to private input distributors. The system of agricultural subsidies must be radically reformed, its objectives redefined, and waste eliminated. It must encourage the emergence of private producers and distributors of agricultural inputs working directly with the professional organizations representing rural producers.” (PNIASAN, Republic of Senegal, 2018, p. 2)

Figure 15: Trends in fertilizer use by nutrient element



Source: FAOStat, 2022

In addition, some authors point to the broader logic of the productivist model. They criticize the fact that **territories are seen as receptacles for** the speculation and media coverage imposed by agricultural policies (El Hadji, 2018). Several interviewees criticized the "yield logic" of agricultural policies: "*We think less about the means used than about the end result. We can have a million tonnes of cereals, but how much have we paid and lost to achieve that?*"²¹. What's more, "*the government's rationale is to increase production: we need to produce x tonnes of rice a year, and we're rushing to get that yield, whatever the price, and that's what inputs are*"²².

In the Middle Senegal River Valley region, the concentrated land tenure structure combined with the system of subsidies excluded many producers from the potential production of marketable surpluses. Only the largest producers were able to repay campaign loans and take advantage of public purchasing initiatives. Subsidised cereal sales led to price distortions that bore no relation to international trends (Mendez del Villar & Bauer, 2013; Mendez del Villar & Lançon, 2015). In the groundnut basin, in the central region of Sine Saloum, the World Bank-supported Livestock and Agriculture Competitiveness Programme (*Programme de Compétitivité de l'Agriculture et de l'Élevage*) recognises the risks associated with the increased use of water, fertilizers and chemical pesticides resulting from the intensification of targeted value chains. There are also risks linked to possible conflicts between farmers and livestock breeders following the extension of arable agricultural land development (PCAÉ, Republic of Senegal, 2020).

The impact of productivist thinking on the degradation of natural resources is often emphasised by interviewees, including government representatives:

"Rice growers discharge drainage water directly into bodies of water, to the detriment of conservation. (...) The political change, the paradigm shift [of the Green Revolution] must necessarily take place. (...) If we continue to apply the old formulas, the old farming methods, we will continue to lose the quality and quantity of our natural resources."²³

For civil society players, the policy of food self-sufficiency, in particular through input subsidies, is seen as "a real brake on the agroecological dynamic in the country."²⁴ According to a senior political representative, "There is no political understanding of agroecology as an approach to tackling food insecurity issues, solving nutrition problems, getting people to eat healthy, nutritious food."²⁵

So, without minimizing the capacity of the agricultural sector to produce food and make it available on a regular basis, it is important to identify the limits of existing food self-sufficiency policies focused on increasing production. It is also important to recognise the different dimensions of food security, such as the need to create jobs and income and the importance of maintaining the quality of the sector's productive base, namely soil and water, as well as the nutritional quality of diets (Bricas & Daviron, 2008). This debate has become a structuring factor in the promotion of agroecology, as well as a major factor in stagnation because of the emphasis on increasing production, there is little room for reviewing food self-sufficiency policies based on subsidising inputs and production infrastructure. At the same time, the current global crises are driving up input prices in Senegal. This pressure, which is likely to reduce the use of mineral inputs,²⁶ could open up new prospects for redirecting policies, but the

²¹ Interview, local councillor, September 2021.

²² Interview, government representative, September 2021.

²³ Interview, government representative, December 2021.

²⁴ Interview, civil society representative, September 2021.

²⁵ Interview, political representative, September 2021.

²⁶ For example, the price of urea has been increased by 1.7 in 2022 compared with the average for previous years.

obstacles (as an increasing production rules out discussion of subsidising production infrastructure) are still very much in place and alternative proposals are timid.

3.4. Marginalization of more global approaches to food security

As an alternative to agricultural programmes, the PSE has promoted social strategies that take a more comprehensive approach to food security (see section 2.4). In these strategies, social protection is promoted as a lever for reducing poverty and inequality, satisfying internal demand and structurally transforming the economy (SNPS, Republic of Senegal, 2016). Strategies have been structured around the notion of household resilience, moving from an emergency aid approach to a more regular system of protection and promotion of food security. Seen from this angle, the link between food security and resilience "calls into question the paradigm on which public policies on food security have been based until now, i.e. the belief that agricultural productivity alone is the bulwark against the risks of food insecurity." (SNSAR, Republic of Senegal, 2015, p. 22), but "however, the question of income and productive capacity raises the issue of food security in terms of accessibility, particularly for vulnerable populations, a large proportion of whom live in rural areas and derive their income from farming." (ibid)

These initiatives include the SNPS (2015-2035), the National Food Security and Resilience Strategy (*Stratégie Nationale de Sécurité Alimentaire et de Résilience*, or SNSAR) (2015-2035), the National Family Security Scholarship Programme (*Programme National de Bourses de Sécurité Familiale*), and the combined actions of the Executive Secretariat of the National Food Security Council (*Conseil National de Sécurité Alimentaire*, or CNSA), a coordinating body under the authority of the prime minister. These initiatives have been consolidated in collaboration with the Permanent Inter-State Committee for Drought Control in the Sahel (*Comité inter-État de lutte contre la sécheresse au Sahel*, or CILSS) and partners such as the World Food Programme. The instruments put forward include risk reduction strategies (e.g., community asset building, index-based agricultural insurance, savings and credit), school canteens,²⁷ conditional income transfers, and the National Single Registry (*Registre National Unique*, or RNU), which serves as a basis for targeting vulnerable populations and coordinating social safety-net projects. A study by the Ministry of Planning recognises the importance of these strategies in promoting macro-economic stability while stimulating economic activity (Diagne *et al.*, 2018).

However, this strategic framework provides only weak budgetary guidelines for its implementation, with funding remaining heavily dependent on international partners (Ndiaye, 2017; SNSAR, Republic of Senegal, 2015). In addition, the institutional structure is characterized by significant dispersion and fragmentation of interventions, and the RNU is slow to become operational (SNPS, Republic of Senegal, 2016). Moreover, as mentioned above, these concepts seem to be disconnected from those underpinning the main strategies for the agricultural sector. Ultimately, there is no political or budgetary impetus for these strategies, and the capacity of the CNSA to coordinate sectoral actions remains weak. The objective of revitalizing this body is mentioned in several relatively old policy documents (SNSAR, Republic of Senegal, 2015).

Approaches based on diet diversification are mentioned in the programming documents. However, they appear to be marginal when it comes to operationalization. Despite the inclusion of fruits and vegetables sectors in the PRACAS, dedicated expenditure remains limited and focused on certain flagship products (such as onions) and mainly on the production chains. On the other hand, support for nutrient-dense products for national consumption remains limited.

²⁷ With the support of the UN World Food Programme, the Ministry of Education is coordinating the operation of canteens in the 12 regions.

An analysis of policy documents shows that the objectives of promoting food self-sufficiency and food and nutritional security have been institutionalized from two sometimes distinct perspectives. On the one hand, the dominant programmes in the agricultural sector, such as PRACAS - to which the state allocates large budgets - present rice self-sufficiency as the main objective to be achieved through massive investment in production infrastructure and facilitating access to agricultural inputs. On the other hand, social protection and resilience strategies promote a multi-sectoral approach to food security and poverty, based on a broader perspective of the structural vulnerabilities at the root of hunger and poverty. These strategies are poorly operationalized, and responsibility for funding them is entrusted to international donors.²⁸ In theory, these objectives could be articulated and prove complementary, but what we observe instead is an overlap.

According to a senior political representative, “When we look at the food systems in Senegal, we are in a situation where we can consider that agroecology has an important place, even if the state is modernizing, introducing genetic material and distributing seeds for certain crops, particularly for cash crops.”²⁹

PNIASAN, mentioned above, seems to crystallize these two visions. Established in response to the failure of the earlier National Agricultural Investment Programme (*Programme National d’Investissement Agricole*, or PNIA) to become operational, this programme is considered unique to Senegal compared with other West African countries. In this sense, it promotes both: i) improving and securing the productive base, increasing agricultural production and productivity, and developing value chains (as presented in the PRACAS); and ii) strengthening food security, nutritional status, resilience and the social protection of vulnerable populations (as presented in the SNSAR). The asymmetry of priorities is nonetheless clear, as 86 percent of the programme’s provisional budget has been allocated to the former set of objectives, while 11 percent has been allocated to the latter (PNIASAN, Republic of Senegal, 2018).

4. CHALLENGES AND PROSPECTS FOR THE INSTITUTIONALIZATION OF AGRO-ECOLOGY

This section looks at the possibilities for strengthening the institutionalization of agroecology in the political and institutional context presented. First, the strategy of the players is analysed, followed by a summary of the institutional and structural constraints to this process.

4.1. Stakeholder strategies in the institutionalization process

A recurring issue of politicization and depoliticization

The literature is somewhat ambiguous on the best strategies for institutionalizing agroecology. Case studies highlight different translation processes in which a tension between politicization and depoliticization leads to different results depending on the strategies of the players and the institutional contexts. Politicization can be conceived as: i) a process by which an area of interest is defined as a

²⁸ By way of example, it is estimated that external resources account for 88% of the sources of funding for expenditure to combat malnutrition.

²⁹ Interview, political representative, September 2021.

public and political matter and is the subject of intense public and/or political debate; ii) a strategy, i.e. deliberate efforts by political actors over a long period of time to define an area of interest as a public matter governed by political modes of decision-making, intervention and accountability; or iii) an outcome, i.e. the different degrees to which an area of interest has been established as an area of public policy (Feindt *et al.*, 2020). By definition, depoliticization strategies will attempt to eliminate open controversy and, more generally, public deliberation.

According to Bottazzi and Boillat (2021a), the tendency to avoid issues of inequality and social injustice leads to agroecology being presented as a compromise between economic productivity and ecological benefits. This economic-ecological trade-off is often at the heart of the debate on agroecology in sub-Saharan Africa, and limits agroecology to demonstrating its technical and economic viability at plot or farm level, without questioning the wider economic and political issues that hinder its further development.

Some authors consider that the institutionalization of agroecology runs the risk of co-opting social movements and weakening their transformative project. Based on Latin American case studies, Giraldo and McCune (2019) discuss the prospects and limits of this process. Social movements may be led to adhere to the established rules of the game, having to evolve within the limits of a system that exists to preserve the *status quo*. For these authors, different fronts of action are needed: disputing the content of public policies to create conditions for the expansion of agroecology, while decentralizing public action to avoid dependency links or the disappearance of the process when governments change (Giraldo & McCune, 2019).

In this context, numerous examples illustrate the importance of public policy instruments for the development of agroecology (e.g., agroecology training schools, territorial base markets, public purchasing of agroecological products, support for traditional seed protection systems, research development) (Domené-Painenao & Herrera, 2019; Ferguson *et al.*, 2019; García López *et al.*, 2019; Guéneau *et al.*, 2019; Rosset & Altieri, 2017; Sabourin *et al.*, 2017). But Giraldo and McCune (2019) point out that this process is slow and long-term, which would be radically different from the logic of projects that stem from state and/or international funding cycles.

At the same time, Bendjebbar and Fouilleux (2022) defend the importance of a more politicized public debate to institutionalize organic farming. On the basis of a comparative study, these authors show how Uganda established a national organic farming policy in 2019, whereas the subject has been little institutionalized in Benin. In the latter country, the extensive use of pesticides followed by a dominant discourse in favour of modernization have become obstacles to the development of organic farming, despite active efforts by international agencies. In a more entrenched vision of the Green Revolution, civil society organizations in this country - characterized by strong competition - have chosen to use more neutral terms such as "sustainable agriculture" in order to avoid rejection on the ground and at government level.

Bellon and Ollivier (2018) show in contrast that the institutionalization of agroecology in French public policy was supported by a reforming and depoliticizing effort on the part of Minister for Agriculture Stéphane Le Foll (in office 2012-2017), which fostered the commitment of a wider set of political players. According to these authors, the government's initial choice to promote "ecologically intensive agriculture" came in for criticism at a time when the notion of agroecology was gaining in international visibility and appeared to be more consensual. Based on a communication strategy designed to reduce political controversy, a vague, all-encompassing definition of agroecology was favoured.

In Burkina Faso, the government decided to begin the process of drawing up its National Agroecology Strategy in 2021 by formulating a definition that was intended to be consensual and guiding. This

decision led to a high degree of politicization of the subject, resulting in conflicts of legitimacy between the political players and a slowdown in the process. In the end, the conceptual debate centred on disagreements over the "reasoned" or "zero" use of inputs. Thus, the ideological and pragmatic positions of a dispersed and divided civil society have, to some extent, slowed down the consolidation of this strategy,³⁰ even though Burkina Faso was one of the first countries in the region to propose a public policy dedicated to agroecology.

In the case of Senegal, DyTAES chose not to impose a definition of agroecology in order to encourage more unified advocacy, structured around the main principles of the FAO's internationally validated definition (FAO, 2018) and trust between its members. Despite differences within civil society, this political choice has borne fruit insofar as Senegal stands out for the presence of a pro-agroecology movement with the ambition of influencing government decisions (Boillat *et al.*, 2021).. This is discussed in more detail below.

A coalition in favour of agroecology

The creation of DyTAES was based on the observation that the players involved in agroecology were dispersed and lacked greater cohesion to influence political decisions.³¹ The network seized a political opportunity marked by the president's commitment to agroecology. At the same time, a consultation process was carried out across the country to draw up a reference document for the construction of national public policies. The document stresses that Senegalese agriculture is affected by a structural imbalance: Rural populations are increasingly dependent on external inputs and are facing widespread degradation of natural resources, in particular water, soil and forests. In addition, the document argues that scaling up the agroecological transition requires state intervention in the form of a holistic, multi-sectoral policy (DyTAES, 2020).

In order to facilitate policy dialogue, the main orientations proposed have been organized in a similar way to the four axes identified in the PNIASAN: i) improving and securing the production base through access to and sustainable management of natural resources; ii) increasing the productivity of agro-sylvo-pastoral and fisheries systems through access to organic inputs, equipment and appropriate advice; iii) the promotion of agroecology in value chains and the development of markets dedicated to agroecological products; and iv) the governance and financing of the agroecological transition in order to ensure better application of existing policies and the creation of consultation arenas responsible for co-designing future policies (DyTAES, 2020). These recommendations were presented to the Senegalese authorities at the Agroecology Days (*Journées de l'Agroécologie*) in February 2020, the third edition of the forum held in Dakar by a consortium of NGOs, academics, farmers' organizations, consumer organizations and government officials.

Agroecology is thus gaining in importance in the actions of most of Senegal's civil society organizations. It should be noted, however, that the leadership of DyTAES is the subject of debate. Representatives of farmers' organizations feel that a number of the principles and the mobilization strategy are more the responsibility of NGOs (e.g., ENDA-Pronat, AgriSud, GRET, etc.) and research institutes (e.g., ISRA, CIRAD, or the French National Research Institute for Sustainable Development), whereas the agroecology movement would benefit from what one interviewee referred to as "farmers' leadership."³² For members of the National Council for Rural Consultation and Cooperation (*Conseil national de*

³⁰ This division is fuelled by a competitive positioning game to capture the benefits - including the financial benefits - of developing organic or agroecological practices, in the knowledge that these benefits will initially be limited.

³¹ Interview, civil society representative, September 2021.

³² Interview, civil society representative, September 2021.

concertation et de coopération des ruraux, or CNCR), the most natural interlocutor for agroecology would be the FENAB, and the preferred platform for dialogue would be the PNAEB. This platform is thus emerging as a competitor to DyTAES in terms of political dialogue. On the other hand, some members

Textbox 3: Mobilizing civil society around land reform

Significant waves of civil society mobilization have already been seen on other issues in Senegal, notably land reform (decree no. 1419/2012). Since the promulgation of the National Estate Act (law no. 64-46/1964), just after independence, the country has had overlapping and weakly enforced systems of land regulation, ranging from formalized rights aligned with official land policy to socially legitimate but informal customary rights. These systems coexist in a context of population growth, urban expansion and increased land commodification (Bourgoin et al., 2019, 2020). After an initial mobilization phase in the 2000s, spearheaded by the CNCR, civil society created the Discussion and Action Group on Land Use and Ownership in Senegal (*Cadre de réflexion et d'action sur le foncier au Sénégal*, or CRAFS) in 2012, which has invited itself into the political debate.

The CNCR is one of the main representative bodies of smallholder farmers' organizations in Senegal, having played an important role in the ten years of negotiations with the government that culminated in the ratification of LOASP in 2004 (Pesche, 2009). The academic literature also shows that recourse to external aid has been an integral part of the Senegalese farmers' movement, insofar as it has developed in a multi-level political arena in which the government and external donors play a decisive role. However, this movement is also the product of its own dynamics, and has adjusted its strategies in line with the national and international political environment (Hrabanski, 2010).

In 2016, the National Land Reform Commission (*Commission Nationale de Réforme Foncière*, or CNRF) finalized a land policy proposal submitted to the President of the Republic, before being dissolved in 2017 (Decree No. 998/2017). The land reform is now awaiting legislation. The government is proposing to pursue these reforms, in particular through the introduction of a universal land registry, the granting of title deeds and the dematerialization of the electronic land registry (PSE, Republic of Senegal, 2018). For Lavigne Delville (2022) the law on special economic zones (No. 2017-06) was the 'real reform' supported by the government, and the demobilization of CRAFS could represent the end of a cycle of mobilization, explained by the discouragement of stakeholders in the face of the failure of CNRF and the advent of new themes such as agroecology and new funding programmes. However, according to this author, this demobilization occurred too early and reflects the virtual absence of civil society on the still important fronts of the fight against land dispossession. The risk of demobilization was also raised by Boillat et al (2021) for agroecology in Senegal.

of the DyTAES criticize the PNAEB for: i) its dependence on a short-term project funded by the African Union; and ii) its top-down approach to policy dialogue, which is not considered to be very inclusive of rural populations.

Furthermore, while the substitution of carbon-based inputs with bio-inputs is widely accepted by DyTAES members, there are internal divergences concerning the degree of substitution and the pace of the agroecological transition. For example, the notion of transition is put forward by some organizations to justify the fact that the reduction in chemical inputs will take place over the long term. In this sense, for some organizations the emphasis is more on producers' income (e.g., AgriSud) or on the development of family farming (e.g., CNCR). Finally, the interviews showed that, despite these differences, the diversity of agroecological approaches has been welcomed within DyTAES, which has become the government's preferred contact network for agroecology.

The movement is also represented in a number of international arenas, including the One Planet Summit, the Africa France Summit, the International Horticultural Congress, the Sustainable Intensification Conference and COP26. However, these advances in terms of political dialogue and

international visibility have not yet been enough to ensure recognition of the DyTAES within the sectoral ministries. Both senior civil servants and technicians have expressed only limited awareness of its mission. It should also be remembered that other waves of civil society mobilization have already been seen in Senegal on other issues such as land tenure, with ultimately limited concrete results (see Textbox 3).

Finally, spaces for more effective dialogue with the government have yet to be created; at the same time, strategies for territorializing the movement are gradually being implemented. Various approaches have been put forward to help raise awareness among stakeholders. However, as of the time of the interviews, there was no clear vision of the modes of action and scales to be favoured (e.g., commune, department, or network of communes). DyTAES has recently embarked on a drive to set up local consultation frameworks under the name Dynamics for a Local Agroecological Transition (*Dynamique pour une Transition Agroécologique Locale*, or DyTAEL). These platforms have been designed as forums for political dialogue, planning, experimentation and synergy between the agroecological initiatives in a given area. This process began in 2021 with the construction of DyTAELs in four departments: Tambacounda, Podor, Bignona and Fatick. In 2022, a caravan toured 14 regions with the aim of increasing the mobilization of stakeholders at local level. Attempts to strengthen agroecology through an alliance of stakeholders at territorial level seem promising, but face major challenges. This process is still in its infancy and will be analysed in future research.

The role of government departments in agroecology

Within the Senegalese government, it is the Plant Protection Directorate within the MAER that coordinates actions to promote agroecology (see part 2). The agroecology focal points are seen by the PATAE/ECOWAS programme as decision facilitators and programme managers at country level. “The national correspondent produces the technical arguments and provides operational support to take the agenda to government level. (...) Their role is primarily technical (...) but they can also play a political role.”³³

ECOWAS thus recognises the importance of national public policies to promote agroecology. In practice, the focal point leads consultation on the implementation of the PATAE project and ensures that agroecological initiatives are identified. As mentioned above, the funding of a large part of the actions of public ministries, particularly in the field of agroecology, takes the form of development projects. These initiatives are dispersed and implemented by NGOs, international organizations and government departments. In this context, funding figures for the agroecological transition are not available. To date, no specific mention of agroecology has been found in the sectoral budget plans, which raises the question of the weak resources earmarked by the state for the implementation of these initiatives.

In addition to the dispersion of non-state stakeholders, an additional difficulty in this accounting lies in defining the scope of agroecology. For the national correspondent of AE, “agroforestry, the maintenance of biodiversity, fodder crops, pesticide management, the preservation of rangelands, solar energy, biogas... all this is agroecology.”³⁴

The identification of a national focal point reflects the beginning of an awareness of a public issue; it could evolve into one or more *ad hoc* structures within the government. However, without a political mandate or a defined budget, the focal point does not have enough power to influence sectoral agendas or even the agenda of his or her own ministry. The players interviewed highlighted these institutional

³³ Interview, ECOWAS representative, November 2021.

³⁴ Interview, September 2021.

difficulties as major challenges for the integration of agroecology into public policies, which remain personalized and raise the recurring question of their coordination and sustainability:

"The government needs an agroecology body with a budget to carry out this work on a day-to-day basis, to promote synergy between projects. We are dependent on projects and programmes. But there is no sustainability. (...) The government has budget lines for inputs, statistics, the agricultural campaign... but not for agroecology."³⁵

The administrative routines of the sectoral ministries are largely absorbed by the activities of subsidising and distributing inputs, producing agricultural statistics, fighting bush fires, preparing the agricultural and reforestation campaigns, and above all monitoring international projects. In this institutional context, government officials play a practical role in the implementation of agroecology, mainly through initiatives to subsidise bio-inputs, the management of classified forests, participation in multi-stakeholder consultation forums, and the monitoring of development projects (e.g., advice on the dissemination of agroecological practices, the development of integrated farms, soil restoration and the regeneration of degraded landscapes).

The preceding lines, and this study in general, show that the place of agroecology in political strategies remains largely confined to a techno-centric approach. The solutions proposed by public services are often based on the dissemination of new agricultural practices at farm level - and this through formalized and linear methods, such as standardized production sheets, leaving little room for experimentation. In this context, while on the one hand government representatives recognise the role of research and innovation in scaling up agroecology, noting that it's not a return to the past, on the other hand this contributes to depoliticizing the debate to the detriment of a more transformative social project.

The role of scientific players in the political process

Agroecology was conceived as an applied science, based on the paradigm of systems (Gliessman, 2018). Links with research have therefore been strong in the evolution of this paradigm. However, in practice, agronomic research is presented by institutional players as a prerequisite for the agroecological transition, or at least as a preliminary stage in political decision-making, and ultimately as a justification for inaction. The roadmap prepared for the UN Summit on Food Systems, for example, points out that the agro-sylvo-pastoral research, development and advisory system is very much needed for the purposes of sustainable land management, maintaining biodiversity, climate information, and promoting agroecology and organic farming (MAER, 2021).

Some players in ministries, umbrella organizations and funding agencies stress the inadequacy of research into agroecology at the current stage, as well as the role of science in validating and stabilizing agroecological practices, and in raising awareness among public authorities:

"We don't need advocacy, the government is sensitive to the issue [of agro-ecology]. What we need is to show what needs to be done to maintain [agricultural] yields. Yields need to be improved through innovation and research. (...) The state cannot take on something that is not concrete. If the government wants to subsidise fertilizers, it has to know how much fertilizer to use, and it has to have enough fertilizer. What about other innovations other than fertilizers? They need to be validated! We don't have any scientific evidence. (...) We need to prove and

³⁵ Interview, government representative, September 2021.

demonstrate the application of the practices with a clear technical sheet, a guide so that the state can make a decision."³⁶.

“Accelerating the agroecological transition means first of all stabilizing agroecological technologies so that the players, farmers and others, are convinced and take ownership of the technologies. Until now, these technologies have not been widely used. Farmers need to be convinced.”

These views are partly shared by certain DyTAES member organizations, for whom the lack of “sufficiently substantiated evidence, with comparative performance tests and a genuine objective assessment” remains an issue.³⁷ But the way in which these processes are conducted remains a source of controversy. Some people, including many in government departments and national and international research institutions, advocate adherence to the classic methods developed by academic research. Others, who make up a large proportion of the stakeholders to be found within civil society organizations, and a minority within research bodies, advocate a more committed and farmer-based research approach, based on experimentation and co-design between farmers and research institutes,³⁸ without, of course, abandoning scientific rigour. For several groups of researchers, agroecology is above all a principle that guides the design and experimentation of more intelligent and resilient agri-food systems and territories. From this point of view, we must do more than simply assess what already exists, since what is described as 'agroecological today will be different tomorrow.

But beyond agronomic research, research in the humanities and social sciences certainly has a role to play in providing a better understanding of the stakeholder system and the power relationships between them, so that we can devise appropriate levers to support the agroecological transition. Research in human geography can also help to place agroecology in the context of local dynamics, and to consider changes not just in techniques at plot level, but in the food system as a whole.

On this question of the role of research in transitions, the methods of dialogue between science, farmers and politicians are therefore central in the field of agroecology, whether to justify a certain political inertia, or to reinforce sector-based - strictly technical - strategies, or to propose changes at different scales in the way agroecology is constructed in the regions.

4.2. Institutional and structural constraints on the deployment of agroecology policies

Significant fragmentation of public action ...

The previous section showed that one of the observed effects of the materialization of public policies through development projects is the depoliticization of certain major public issues that require political negotiation, such as land. A further effect is the fragmentation of public action and the formation of complex networks of actors involved in these projects with specific, sometimes divergent, strategies and alliances. The gradual weakening of the planning function in favour of the finance function has contributed to this fragmentation and to the strengthening of networks of administrative players, particularly those in the Ministry of Finance, leading to a reconfiguration of powers within the state (Haussaire, 2019). This phenomenon is not specific to Senegal and is the subject of a wider body of

³⁶ Interview, government representative, September 2021.

³⁷ Interview, civil society representative, September 2021.

³⁸ Interviews, civil society representatives, September 2021; October 2021.

literature that highlights the idea of fragmented public action (Lascoumes, 1996, p. 334; Soriat, 2018) shared between state and non-state actors and shaped by the accumulation of development projects (Darbon & Provini, 2018; Thoenig, 2019)..

Another recurring effect is the compartmentalization of public management. Interviewees mentioned competition between sectoral ministries (e.g., agriculture, environment, livestock, water and sanitation, or local authorities) on many issues: priorities of the PSE, allocation of international funds and the state budget, leadership on certain themes or events,³⁹ etc. While this competition reflects a lack of coordination and sectoral compartmentalization, it also reflects deeper divergences in the definition of land use priorities. This last point will be discussed below.

So, on the one hand, each department or project team operates in its own reserved area, with many well-known difficulties: high transaction costs for projects; overlapping initiatives; short-term planning; regional inequalities in the allocation and receipt of funding; delays in making funds available; discrepancies between centralized management and action on the ground; and so on. On the other hand, project steering committees are the ideal forum for intersectoral coordination in certain areas. Collaboration between sectoral ministries or between directorates is weak, so major projects, such as the SCALA project, create opportunities for interaction between public officials. However, these spaces are *ad hoc*.

These challenges of institutional fragmentation and compartmentalization are mentioned in most of the policy documents and expert reports that were analysed. For example, the deficiencies of the institutional framework of the PNIA have been cited as the reasons for the failure of its implementation (PNIASAN, Republic of Senegal, 2018). The poor coordination of social protection programmes has also been highlighted as the source of inconsistencies in the sector (Ndiaye, 2017).

...followed by a superimposition of coordination frameworks

In the above context, the recommended reforms systematically tend towards a single solution: the creation of new coordination frameworks. In this case, the SNSAR has proposed setting up consultation structures and multi-stakeholder dialogue forums to promote cross-sectoral synergies (SNSAR, Republic of Senegal, 2015). In fact, each major project creates its own structure in addition to the existing programme coordination frameworks. These multiply and are superimposed on ostensibly participatory platforms. The result is a profusion of coordination spaces that drain human and financial resources, lack organicity and struggle to mobilize members, sustain their activities or even just to coordinate.⁴⁰ This process was summed up by one political representative as follows:

"The problem with these federating frameworks is that they have to be made to work. We have managed to institutionalize consultation, for example, under the LOASP. (...) But so many institutions have been created that things are going in all directions. We now need to ensure that these mechanisms can function. And that's where we're stuck."

Rural governance in Senegal is made up of numerous committees, councils, dialogue groups and commissions. Here are just a few examples:

- The **National Committee on Climate Change**, set up in 2003 to coordinate the various activities identified as part of the implementation of the United Nations Framework Convention on Climate Change, remained inoperative until 2011. Placed under the authority of the Ministry of the

³⁹ Interviews, government and civil society representatives, September 2021.

⁴⁰ Interviews, civil society and government representatives, September 2021.

Environment, this committee is made up of representatives from several sectoral ministries (Decree 2011/n°1689). It is still experiencing difficulties in its operation, given the frequent changes in membership and the lack of continuity.⁴¹

- The **CNSA** was initially set up within the Prime Minister's Office with a mandate to coordinate food security actions within the government. However, as of 2019, the body has been positioned in the Government Secretariat General, thus losing political space. Its coordination capacity has remained limited, insofar as the council meets very rarely and the political priorities are defined by each sectoral strategy.⁴²
- The Social and Political Dialogue Group (*Groupe de Dialogue Social et Politique*, or **GDSP**) is a forum for dialogue between civil society and political decision-makers. Created in 2014, this group was revitalized from 2017 by the CNCR as part of the formulation of the PNIASAN. Despite its operational difficulties and lack of representativeness, the GDSP is for several civil society actors the preferred framework for dialogue with the government in the rural sector.
- Other mechanisms include the National Council for Sustainable Land Management, the CILSS National Committee and the National Commission for Sustainable Development, among others.

For some players, this is partly due to the logic of project-based public funding: “The organization that funds you says you need to create a platform, so you're going to create a platform. You're not going to tell them that there are already existing platforms (...) and that makes for a diversification of platforms, given that we are dependent on this funding. (...) This multiplicity of platforms is not justified.”⁴³ On the one hand, this effort reflects a recognition of the multisectoral nature of development issues, the importance of greater participation by society in public affairs, and the need for the state to coordinate dispersed initiatives; on the other hand, it creates inertia through the superimposition of institutional structures.

This phenomenon has been analysed in the literature through the notion of policy accumulation, which is characterized by a piling up of instruments and objectives over time. This increase in the density of instruments is likely to compromise the ability of institutional actors to: i) implement, monitor and enforce public policies; and ii) sustain political debates in the public arena. In other words, it may have effects on the loss of efficiency and legitimacy of public policies (Adam *et al.*, 2019; Knill *et al.*, 2020). This is an almost universal phenomenon in modern democracies occurring across a wide range of policy areas; however, it contributes to the growing disconnect between experts, politicians and the general public on the issues at stake (Knill *et al.*, 2020).

In the case of Senegal, this accumulation is taking place against a backdrop of limited financial and human resources for policy implementation. The coordination frameworks that aim to give greater coherence to public action, characterized by dispersed and sectorally compartmentalized projects, end up increasing institutional complexity without necessarily improving the effectiveness or legitimacy of policies. This process also seems to contribute to a dynamic of initiating reforms that end up being incomplete.

However, in the face of scepticism about these - often artificial - spaces for coordination, there is nonetheless recognition of cross-sectoral integration at territorial level. For example, pastoral

⁴¹ Interview, government representative, September 2021.

⁴² Interview, government representative, October 2021.

⁴³ Interview, political representative, September 2021.

committees encourage interaction between local authorities and the livestock, agriculture and water and forestry departments at local level, and appear to facilitate conflict management.⁴⁴

Challenges of implementation and decentralization

The gap between the design and implementation of public policies, also referred to as “between rhetoric and practice,”⁴⁵ is an additional challenge. The factors behind this gap are not new: the multiplicity of actors (state and non-state) involved in implementation, the fluctuating sources of funding, the weak presence of state services at local level, the selective application of legal provisions by the state, among others. This is a recurring theme in the literature on public policy, which considers not only the lack of implementation, but also the gap between the decisions taken and the results obtained, as well as the effects of translation, diffraction or blocking of action (Darbon & Provini, 2018; Hassenteufel & Zeigermann, 2021; Lipsky, 2010; Milhorance, 2018).

This problem is also associated with the partial process of administrative decentralization in Senegal - efforts have been made for decades but have remained limited (Piveteau, 2005). The PSE has led to a reorganization of territorial governance. In this context, *Act III of the 2013 decentralization reform* (law no. 2013-10) is mentioned in most of the policy documents consulted (PSE, PRACAS, PNIASAN, PNA, LPSDEA, LPSEDD, SPNAB, PCAE, PNDD, SNSAR, PNDE, etc.). The PSE document mentions, for example, the progress observed since 2014: the increase in financial transfers to municipalities, the implementation of territorial development projects (PROMOVILLE, PUDC, etc.) and the existence of a national training strategy (PSE, Republic of Senegal, 2018).

However, the concrete results of this reform have been mixed (OECD, 2017). To date, local authorities lack the technical, financial and human resources needed to implement public policies. In addition, there has been no transfer of powers in the agricultural sector, and in other sectors this formal transfer has not been accompanied by appropriate information and training strategies, leaving local authorities dependent on external support programmes (PNIASAN, Republic of Senegal, 2018). In some areas, such as natural resource management, decentralization is achieved through co-management between state structures and local authorities.⁴⁶

In addition to the administrative dimension of decentralization, territorial governance is taken into account from the perspective of increasing the attractiveness of territories for the private sector. The PSE focuses on improving the local tax system, increasing the number of special economic zones, agropolises, and securing land tenure (PSE, Republic of Senegal, 2018). However, a limited number of local authorities have benefited from enhanced land management (registration of use rights, regularization, registration of subsequent transactions and updating of the communal land database (Bourgoin *et al.*, 2020; PCAE, Republic of Senegal, 2020)

Finally, decentralization is a complex issue that is part of a historical process marked by often-conflicting relations between the French colonial state, the Senegalese central state and the decentralized authorities (Touré, 2012). This process is not detailed in this report.

⁴⁴ Interview, government representative, September 2021.

⁴⁵ Interview, representative of an international agency, September 2021.

⁴⁶ Interview, government representative, December 2021.

Conflicts over land use management

Institutional deficits are not the only source of sectoral compartmentalization. Competition between public administrations also reflects deeper divergences in the definition of land use priorities, which coexist with an intensification of conflicts over the management of natural resources at territorial level. The dynamics of urbanization, the advance of the agricultural border and deforestation, the extension of irrigation infrastructures, the growth of the extractive industries, and the loss of pastoral land are generating conflicts linked in particular to the management of productive water and access to land. The PSE identifies mining and construction materials as key drivers of economic growth (PSE, Republic of Senegal, 2018) This positioning is perceived as risky for agriculture, particularly family farms.⁴⁷

Several interviews highlight the following issues:

“Almost every year, part of the classified forests is declassified. The demand for land for agriculture or other activities [mining, urbanization] is the real problem we face today. The demand is too great and our forest resources are under a lot of pressure because there is no more space, there is no more farmland.”⁴⁸

“Agriculture is nibbling away at the land used for livestock farming. (...) There is a high concentration of livestock, with a reduction in biodiversity and poor animal feed. Faced with this issue, we are trying to restore the areas. We don't have any solutions to slow the advance of the agricultural front. (...) And there may be conflicts between livestock farmers and farmers.”⁴⁹

“We talk about integrated management of water resources, but the major problem is land use planning, which takes no account of environmental components, wildlife or even livestock. How are livestock farmers reacting? The solution is to send all the battalions to the protected areas to avoid conflicts. (...) The overall land use planning zones should be well defined - what is reserved for agriculture, livestock farming, forests.”⁵⁰

Security conflicts and international timber and pesticide trafficking networks were also highlighted. In the Upper Casamance region, the clearing of forests to meet agricultural and energy wood needs, population growth and the increase in bush fires are all putting considerable pressure on natural landscapes. In addition, public-private networks for cross-border timber trafficking are intensifying conflicts at regional level (Solly *et al.*, 2020). For the stakeholders consulted, the issue of illegal logging is complex. An in-depth analysis of this issue is beyond the scope of this report. Nevertheless, there is a shared perception of the relationship between this dynamic and development issues:

“There is a major divide between the cities and the countryside (...) and as long as there is no policy to reduce this divide, the pressure on natural resources will continue because these are the resources that are the most accessible, the easiest for these communities to exploit and make the most of, even if it means that they will use all their strength and all their strategies to defy the public authorities.”⁵¹

The aim is to identify measures to promote agroecology as part of an overall framework to reduce inequalities and food insecurity in a region severely affected by poverty and the degradation of natural

⁴⁷ Interview, civil society representative, September 2021.

⁴⁸ Interview, government representative, December 2021.

⁴⁹ Interview, government representative, September 2021.

⁵⁰ Interview, government representative, December 2021.

⁵¹ Interview, government representative, December 2021.

resources, where demographic pressure has led to such a reduction in pastoral areas that the possibilities of intensification through the optimization of local biomass flows alone are limited (DyTAES, 2020).

5. FINAL CONSIDERATIONS

Agroecology is not a new phenomenon in Senegal. The first initiatives focused on supporting producers and creating specialized markets. Since the 2010s, this movement has entered a new phase in a favourable international context, with agroecology receiving increasing support from development agencies. A wider range of players is now involved in this dynamic, including not only NGOs and research, but also government, diplomacy, sub-regional organizations and private players. Agroecology has been formally recognised by the public authorities, and the country must now build the tools to implement these approaches and keep them on the political agenda.

This movement, and this latest decision in particular, is part of a pragmatic diplomacy that enables political elites to attract funding and legitimize themselves by bringing themselves into line with international and societal issues. Beyond this strategic dimension, the increasing degradation of soil and water resources in a context of land pressure is a real concern for many political players. The same applies to public health problems caused by the overuse of pesticides.

International watchwords are not adopted by some mechanical, clinical process; they are often broad and imprecise, and are translated into concrete instruments by a wide range of players with sometimes divergent positions. Politicians, administrative structures, civil society organizations and international agencies interact to adopt international paradigms. Against this backdrop, the study looked at the process of integrating agroecology into national policies in Senegal, with the aim of shedding light on the preferred concepts, the players involved, the connection between this agenda and the existing institutional framework, and the potential for political change. The considerations formulated are summarized below:

An incremental policy change is under way, based on a superimposition of objectives and instruments.

The analysis shows that recent actions to promote agroecology are generating a process of incremental change, in which the new instruments are superimposed on an institutional framework for agricultural development that often runs counter to agroecology. The subsidy of bio-fertilizers and the mention of agroecology in the Green PSE attest to a more visible commitment by the government, particularly in the agricultural sector. However, this recognition is taking place in a complex institutional environment, where numerous strategies with distinct approaches to food security and natural resource management coexist. There is a risk of reproducing dynamics that have been seen elsewhere, such as the piling up of unfinished reforms or the formulation of strategic documents that are poorly implemented.

Agroecology has many different concepts, but the Senegalese government has taken it on board from a technical and commercial perspective.

The definition of agroecology is the subject of conceptual work by the players involved. The Green PSE has not specified its conceptualization of agroecology, and DyTAES has chosen not to impose a single definition on its members, to avoid weakening collaborative advocacy. A diversity of approaches can therefore be observed, ranging from holistic concepts aimed at transforming food systems to more technical ones. State actions are mainly based on disseminating agricultural practices at plot level, formulating technical data sheets, rationalizing the use of inputs and natural resources, and subsidising

bio-inputs. This approach tends to reproduce existing socio-technical systems and justify government inaction.

In addition, the development of agroecological markets is seen by some players, such as FENAB, as one of the main ways of increasing producers' incomes. Agroecological products are seldom differentiated on the market and, when they are, they are not financially accessible. However, this solution reinforces the perception of agroecology as a niche market and raises questions about the labelling process and the integration of rural populations into the wider transition process. For agroecological products whose production costs are higher than those of conventional agriculture, the development of specific markets would require a willingness to pay more for these agroecological products.

The agroecological movement is active but within a constrained institutional environment.

Senegal is notable for the presence of a major agroecological movement that has played a role in putting this issue on the political agenda. Through DyTAES, this movement has seized opportunities for dialogue with the government and has become stronger internationally. Nevertheless, DyTAES still faces challenges in rolling out its agenda and sustaining its achievements, in a context of low awareness and recognition by ministry representatives, some internal differences and debates about representativeness.

The institutionalization of agroecology is seen as a crucial step; however, the study raised aspects that could make this process insufficient to establish agroecology in the long term. Previous experience has shown that the degree to which agroecology is politicized can have distinct effects on its institutionalization. Furthermore, formalizing consultation frameworks can be counter-productive in a context of highly fragmented public action, especially if it is not supported by a process of institutional learning, consolidation of stakeholder networks, and allocation of human and financial resources. Moreover, cross-sectoral coordination is not just an administrative issue, it is also a political one, reflecting differing priorities in terms of land use and agricultural trajectories. Thus, temporary waves of mobilization have already been observed on other issues such as land tenure, with ultimately limited concrete results.

Alternative visions of rural development are being delegitimized in the face of food self-sufficiency objectives.

Often presented as incompatible with agroecology, food self-sufficiency in Senegal is one of the main sources of political legitimacy for the state and is the dominant paradigm for agricultural policies. In a complex context of recurring food crises, state action over the last 10 years has aimed to gain independence from international cereal markets, and has focused on a well-defined package of instruments, notably input subsidies and investment in productive infrastructure. Without questioning the centrality of these debates, numerous limitations to these policies have been identified and documented. It is essential to recognise the different dimensions of food security, in particular the nutritional and health quality of diets, incomes, and the quality of soil and water resources.

Agency and sustainability could also be considered as structuring dimensions of food security (Clapp *et al.*, 2022). Agency refers to the ability of individuals and communities to have some control over their decisions and actions to improve their food security (self-determination), while sustainability refers to the need to maintain environmental and social conditions conducive to food production and security in the long term. These two dimensions echo the principles of agroecology.

Major challenges in terms of assessment and support must be addressed.

The issues involved in evaluating and supporting agroecology are fundamental. Gathered around the concept of co-design and co-construction of knowledge, we believe that it is useful to understand the

system of players and the power relationships between them in order to devise relevant levers to support the agroecological transition, as is the case with the FAIR-Sahel project. We also believe that careful, documented examination of the possible conditions favourable to agroecology deserves attention, and that research has a contribution to make in this area. Finally, we believe that research can help to place agroecology in the context of local dynamics, and in this way to think about the transformation not just of techniques, but of the entire food system.

There are conflicts and alternatives at regional level.

Alongside national mobilization, the agroecology movement is moving towards a regional-level organization, based on experimentation and research. This process is still in its infancy, but it opens up a whole range of possibilities: New conceptualizations of agroecology can emerge from practical experience, and territorial networks can be consolidated and play a part in translating public policy instruments into a truly agroecological approach. However, a number of challenges have already been identified: the competition for political leadership and funding; the need to build the capacity of the decentralized structures of the Ministries of Agriculture and the Environment; decentralization to give more power to local structures; the resolution of conflicts over the management of natural resources, in particular access to productive water and land; high levels of poverty; and the increase in security conflicts in rural areas.

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