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### ► **To cite this version:**

Frédérique Jankowski, François Bousquet, Astou Diao Camara, Mouhamadou Diol, Bastien Defives, et al.. Making sense of territorial changes: affective and moral dimensions of place attachments and meanings. *Ecology and Society*, 2025, 30 (1), pp.art36. <10.5751/ES-15787-300136>. <hal-05087064>

**HAL Id: hal-05087064**

**<https://hal.science/hal-05087064v1>**

Submitted on 17 Jul 2025

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Research

# Making sense of territorial changes: affective and moral dimensions of place attachments and meanings

Frédérique Jankowski<sup>1</sup> , François Bousquet<sup>1</sup> , Astou Diao Camara<sup>2</sup>, Mouhamadou Diol<sup>3</sup>, Bastien Defives<sup>4</sup>, Amandine Hertzog Adamczewski<sup>5</sup>, Alioune Sane<sup>3</sup> and Samba Mballo<sup>3</sup>

**ABSTRACT.** For the last five decades, several approaches to sense of place have been developed and used to better understand the complex dynamics between multiple coexisting spatial practices and experiences. The relationship between territorial changes (place change) and senses of place is still under investigation. Our research method contributes to the inquiry about sense of place and place attachment by combining concepts and practices from two research communities: environmental psychology and pragmatics of attachment approaches. The study was conducted in a rural community in northern Senegal and used a mixed-methods approach that included questionnaires, interview-photos, and a participatory theater device. The observations revealed a plurality of attachments and meanings associated with both the territory and the places that form it. Above all, they revealed multiple elements implicated in the construction and evaluation of place attachments and meanings. The results showed that, while diverse entities are simultaneously involved in the production and evaluation of sense of place, the acceptance of change by the members of a community as a whole depended on maintaining affective relationships that engage them and respecting the moral values they hold. Based on the results, we used the framework of affective arrangements to characterize the complex set of relationships involved in the attachment dynamics and territorial changes.

**Key Words:** *affective arrangement; attachment; forum theater; interview-photos; pragmatics; sense of place; Senegal*

## INTRODUCTION

Although the research on territorial development has acknowledged questions about participation in the planning process, most studies, specifically in rural areas, still distance their analysis from affective dimensions related to place. For Manzo and Perkins (2006), the specific domain of territorial planning has neglected the exploration of the importance of the sense of place. This term covers a diversity of approaches describing the relationships people have with their environment and includes the attachments (emotional bonds to places at varying scales that form and change overtime; Manzo and Devine-Wright 2013) and meanings (descriptive statements or, in social psychology terms, cognitions) about what a place is, what it is like, and the kinds of images it conveys (Masterson et al. 2017) associated with place. Nevertheless, studies show how the lack of consideration for place attachments partly explains the non-adoption by local actors of territorial governance methods or development projects (Stedman 2003, Devine-Wright 2013). Moreover, for many decades, scholars from different disciplines and domains have contributed significantly to understanding the causes and consequences of sense of place at levels ranging from individuals to communities and nations (Chapin and Knapp 2015). A series of research studies has shown, in a variety of contexts, that sense of place defines both the attitudes (Jorgensen and Stedman 2001) and the sense of what is possible or conceivable for the actors (Masterson et al. 2017) and also the conditions (in terms of social harmony) under which transformations occur. For example, Mannarini et al. (2015) revealed that attachment to place plays a major role in the emergence of conflict situations for the management of spaces, constituting a component of territorial

conflicts. The disruption of the ties uniting individuals or a group to a place, particularly when the identity dimension of this tie is concerned, appears to be an important factor to consider in the emergence of territorial conflicts (Di Masso and Dixon 2015, Cadoret 2017). Considering the multiple dimensions of senses of place in territorial planning appears to be a necessary resource to anticipate reactions to a change of place, but also to understand what mobilizes actors and the feelings that motivate their actions (Sebastien 2020).

Moreover, the challenge is complexified by the plurality of senses of place and their dynamic interactions. Chapin and Knapp (2015) called for the development of a new discourse that draws on these multiple perspectives, which would facilitate interdisciplinary communication and might create a common framework that incorporates these perspectives. In 2021, in a general context of entanglement between local and global changes, several authors called for a new conceptualization of the sense of place to a more dynamic and relational perspective in order to better grasp the way people experience, (re)evaluate, and engage in their changing environment (Raymond et al. 2021a). They highlighted the underlying analytical, methodological, and ethical issues. They “encourage(d) scholars to rethink *how to theorise and conceptualise changes in senses of place*” and emphasized the need for “a more flexible, reflexive and responsive way of understanding the complex dynamics among multiple coexisting spatial practices and experiences” (Raymond et al. 2021b). According to Manzo and co-authors (2021), this way of understanding also requires “considerable conceptual and methodological developments.” Several authors anticipated this call and paved the way for the inclusion of multiple senses of

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place, in dynamic and constructivist ways (Stedman 2003), to foster stewardship based on sense of place (Chapin and Knapp 2015). Davenport and Anderson (2005), for example, looked at how their results on sense of place have implications for local river planning.

Following and contributing to this scientific trend, this paper looks at the relationship between territorial transformation and the multiple senses of place. We propose an innovative methodology that articulates methods from environmental psychology and pragmatic sociology for empirical research in northern Senegal.

By territorial transformations, we mean any change induced by developments, particularly the establishment of infrastructures in a territory. The territory is defined here as an “arrangement of material and symbolic resources capable of structuring the practical conditions of an individual’s or a social group’s existence and of informing this individual or group about its own identity” (Raffestin 1986). This exploratory study was conducted in the valley of the Senegal river, which is a strategic area of economic development that has been strongly affected by successive spatial and social reconfigurations due to the introduction of irrigated farming and agro-industries. We wished to grasp the plurality of attachments and meanings associated with places and the criteria mobilized by the inhabitants of this territory to (re)evaluate the meaning of places in the context of new developments. It was therefore a matter of defining the priorities of these actors when their living environment was transformed and examining the elements involved or affected during that transformation from their point of view. To do this, we used a methodology that mixes environmental psychology’s notion of sense of place within pragmatics of attachment as developed in sociology from a relational perspective. Although these two schools of thought relate themselves to the disciplines of psychology or sociology, both environmental psychology and pragmatics of attachment are interdisciplinary fields involving, for the former, psychologists, human geographers, anthropologists, sociologists, and economists and, for the latter, mostly sociologists, anthropologists, and philosophers. The methodology for the study included quantitative and qualitative methods: questionnaires, interview-photos, and a theater-based device. The methodology responds to the need, recognized by several authors, to overcome the dichotomy of method—constructivist and phenomenological qualitative approaches versus cognitive-psychological quantitative approaches—mobilized in research on sense of place (Stedman 2016, Masterson et al. 2019). In addition, the interview-photos process and the theater-based device provide methods for individual and/or collective reflexive analyses for all participants. These performative methods from participatory science are intended to articulate scientific knowledge, personal experiences, emotions, and ethical judgments (Heras and Tàbara, 2014).

The use of the selected approaches and methods led to observations that revealed a plurality of attachments and meanings associated with both the territory and the places that form it. Above all, they revealed multiple elements implicated in the construction and evaluation of place attachments and meanings. Two conclusions emerged from this research, one a

lesson on territorial change and sense of place and the other a methodological proposition. The lesson focuses on the relationship between senses of place and territorial transformation: territorial change is evaluated by members of the community with regards to maintaining affective relationships and respecting the moral values they convey. Affective relationships allow a diversity of human and non-human actors to maintain or diminish their power to act, to be, and to make territory. Moral values refer to what is fair, what is appropriate, how people should be treated, what people’s responsibilities are, and what they are entitled to (McCulloch 1990). The methodological proposition is the introduction of the affective arrangements framework to characterize the complex set of relationships involved in attachment dynamics and territorial changes. Affective arrangements are based on the notion of assemblage that Raymond (2021a) and Di Masso (2015) consider as promising approaches for research on senses of place.

### A MIXED THEORETICAL APPROACH

Williams and Miller (2020) looked at place attachment conceptualizations over last decades. They identified six moments of conceptualization of place attachment, which produced six alternative metatheories. In our research, we used an approach that articulates two of the metatheories they identified. The first is framed by what they named “the experiential metatheory”: it aims at capturing psychological and social processes of place attachment and place meaning, and understanding how these processes influence well-being, satisfaction, and action of the individuals. The second one is framed by the “performative metatheory.” It has its origins in the actor-network theory, thus looking at actions and practices of humans and non-humans and events. It aims at understanding the emergence of place attachments and meanings.

#### Experiential framing: sense of place

Sense of place is a term that covers a diversity of approaches describing the relationships people have with their environment (Lewicka 2011, Masterson et al. 2017, Raymond et al. 2021a). Scannel and Giffort (2010) underlined the diversity of conceptualizations of sense of place mainly in human geography and environmental psychology. Regardless of the conceptual framework chosen, the concept of sense of place simultaneously assembles cognitive, affective, symbolic, and identity dimensions that reflect the concepts of place attachment, dependence, identity, and meaning. It is important to distinguish several modalities for a full understanding of how individuals or groups are tied to places. We followed the perspective of Stedman (2016) and Masterson et al. (2017), who considered the attachments and meanings associated with place as two sub-concepts of the sense of place. According to their perspective, place attachment is multidimensional, incorporating the identity (place identity) and dependence (place dependence) dimensions of the relationships with a place.

The concept of attachment, based on the theory of Bowlby (1969), relates to the attachment between infants and their caretakers. This theory is centered on an infant’s desire to stay close to attachment figures and on this relationship’s impact on the well-being of the individual. Attachment and the confidence it raises are necessary to foster exploration and to adapt to

transformations. Place attachment is described by Altmann and Low (1992) as an emotional link, generally positive, between individuals or groups and their environment.

Place identity is more specific. It refers to the ways that physical and symbolic attributes of certain locations contribute to an individual's identity or sense of self (Proshansky et al. 1983). This has often been described as a cognitive process or structure that is influenced by social and cultural processes, and many studies have addressed the role of the physical environment in shaping this self-conception (Fresque-Baxter and Armitage 2012).

Place dependence is related to the functional relationships between a person and a place. As a functional attachment, place dependence reflects the importance of a place in providing features and conditions that support specific goals or desired activities (Williams and Vaske 2003). Jorgensen and Stedman (2001) defined it as the extent to which a place facilitates the achievement of important behavioral goals.

The meaning of a place relates to descriptive elements that characterize it as a place (e.g., a home, a vacation spot, a cultural place). It can have positive or negative connotations (Brehm et al. 2013). In addition, Masterson et al. (2019) identified two other levels of meaning: (1) a symbolic level that reflects places with a particular signification, such as historical, patriotic, violent, or well-being and (2) a level that corresponds to the character of a place, such as an agricultural landscape, a touristic place, or a wilderness region. Like Masterson et al. (2019), we consider the concepts of place attachment and place meaning to be intimately linked: the attachment is based on the meanings associated with the place.

### **Performative framing: pragmatics of attachment**

The second theoretical framing that has influenced our research is the sociology of attachment, developed from an approach inspired by French pragmatic sociology. In the 1990s, French sociologists used the notion of attachment through what was called pragmatic research, developed by members of the Centre de Sociologie de l'Innovation (Latour 2000, Callon 2007, Hennion 2017). Responding to certain limitations in actor-network theory (ANT; Law and Hassard 1999), the notion of attachment appeared as they transitioned from theories based on action to theories based on agency (of actants) across a multitude of bonds. A wide diversity of actants develop among these connections, independent from the binary opposition between subjects and objects or between humans and non-humans. The notion of reciprocity is at the center of these studies: "what distinguishes a subject from a subject, a subject from an object, or an object from an object is their mutual relation rather than their substance" (Schaab 2013). The term attachment is used to identify and characterize a way of being and of being made and measured by the relationships and the objects that bring actants together. Things are seen as the temporary results of a heterogeneous web of attachments that are constantly tried and tested, forever in the "process of making" (James 1909). The attachments are thus considered to be symmetric, situational, and uncertain (Hennion 2017). In difficult situations, faced with destabilizing problems, the attachments are continually reevaluated along with the entities in which they are implicated. Pragmatic sociology sees these tests as important elements in the characterization of what individuals' value and the associated evaluation process.

To our knowledge, few studies have used the sociology of attachment as an analytical framework to examine territorial transformations (Cheyns 2014, Centemeri 2015a). In addition, these studies have interpreted actors' attachments to their environment through the notion of a regime of engagement, essentially defined as a mode of affective engagement with the world (Thévenot 2006).

Our research was framed by an articulation of the two perspectives. Through the first perspective we got a picture of the plurality of place attachments and meanings at a given moment. The second perspective recontextualized this diversity of senses of place in a dynamic trajectory of definition and redefinition of meanings and attachments. The combination of these two perspectives should provide a dynamic approach to the plural senses of place that contribute to question "not only our current ways of being in the world (ontology) but also the forms and ways in which we build knowledge (epistemology) and the normative-political considerations we make in applying such knowledge (axiology)" (Manzo et al. 2021:335-336).

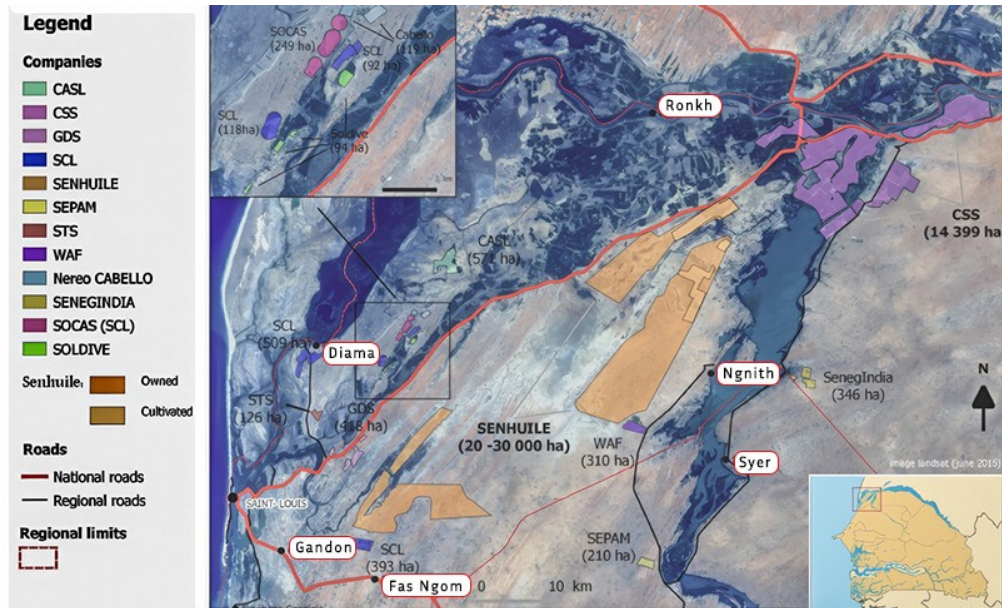
## **CASE STUDY AND METHODS**

### **Case study**

The research was conducted in the area of Lake Guiers in northern Senegal. This region has strong potential for hydro-agriculture and is the target for large agricultural projects initiated by the government, which hopes to create a center for agro-industrial development (Fig. 1). In 2008, this strategy led to the establishment of the West Africa Farm (WAF), an agro-industry located in the village of Yamane. Then, in 2012, the government declassified the Ndiael nature preserve (including 43% of the communities' publicly owned land) in order to assign 20,000 ha to the Senhuile company. The establishment of these agro-industries involves new social and spatial reconfigurations: pasture and pathways for livestock have been significantly reduced, constraining the extensive livestock practices that dominate the area. In the case of the WAF, compensation for the resulting territorial transformations has been the subject of negotiations between the agro-industry and the village authorities in order to limit tensions with and within the local population. This, however, has not been the case for the Senhuile company, where the communities and the local population have strongly criticized the process of the company's installation as completely opaque. In this context, the inhabitants of a dozen villages in the region came together to form a collective dedicated to the defense of the Ndiael territory (Collectif de Défense des Terres du Ndiael).

We have focused on Ngnith, a rural community (RC) in the center of this area and specifically on three of its villages: Yamane, Nder, and Ngnith. There are three dominant ethnic groups in this RC: the Wolof, the Fula, and the Mauri. Most of the inhabitants work in the primary occupational sector, which is organized around agriculture, livestock, and fishing. Additionally, there is some artisanal work and tourism. Since the mid-1990s, this RC has seen the increasing development of irrigated agriculture in a progression from north to south. After agriculture, livestock farming is the population's next most common occupation. Livestock farming is found in all the villages in the RC and involves approximately 67% of households (Organisation des Nations Unies pour l'alimentation et l'agriculture (FAO) and Ministère de l'Agriculture du Sénégal 1999). The RC has several historic sites

**Fig. 1.** Territory map with agro-industries (source: J. Bourgoïn). CASL is Compagnie Agricole de Saint Louis, CSS is Compagnie Sucrière du Sénégal, GDS is Grand Domaines du Sénégal, SCL is Société de Cultures Légumières, SEPAM is Société d'Exploitation des Produits Agricoles du Maroc, STS is Société de Tomates Séchées, WAF is West African Farms, SOCAS is de Société Conserves Alimentaires au Sénégal, SOLDIVE is Société de la Légumerie de la Vallée.



related to the ancient Walo kingdom and the history of the Linger from the village of Nder. The area is thus marked by an ensemble of territorial transformations associated with the fairly recent establishment of diverse infrastructures (irrigated zones, agro-industries).

### Methods

Several methods are available to capture sense of place, both quantitative and qualitative, with origins in psychology or sociology (Trentelman 2009). For our project, we tailored a combination of methods to capture both the perception of place (questionnaires) and the experience of place (photo-interviews) of individuals as well as the negotiation among diverse community members' senses of place (forum theater). The last two methods were chosen more specifically for their ability to provide a framework for individual and collective reflexivity. Forum theater provides a method for collective elicitation and analysis of the diversity of attachments and meanings associated with places.

We conducted field research with residents of the area, asking them about their relations to place at two scales. The first and broader scale was the territory that includes the set of villages depicted in Fig. 1. The second more specific scale corresponded to places that the interviewees mentioned, such as a house, pond, or plot.

#### *Capturing sense of place: the questionnaire*

The questionnaire focused on place meaning, place dependence, and place identity at the territorial scale (called "the area" in the questionnaire) and at the level of specific areas. We administered the questionnaire to 160 people in the villages of Yamane, Ngnith,

and Nder. Some interviewees (few) were members of an activist group challenging the land grabbing. Others were selected at random in the villages. The composition of the questionnaire was discussed in detail with Senegalese colleagues to insure the best contextualization and translation possible. For the place meaning, we asked each participant to suggest three words about their area. The participants were also asked to name specific places on which they depend (place dependence) and places they identify with (place identity).

In addition, 15 participants were selected for interviews with photos (interview-photos). Each participant belonged to one of the following groups: (1) farmers and breeders who had formed a collective in defense of the territory, (2) farmers and breeders who were not members of this collective, and (3) individuals who played an intermediary role by facilitating interactions between agribusiness and rural communities. The participants were asked to indicate three other types of places: (1) places important to the collective, (2) places that have changed, and (3) places representing tension or conflict. We added these three types of places to the traditional types (dependence and identity) because, whereas place dependence and place identity are indicators of individuals' connections to a place, the latter three are indicators of the connections between a place and a collective. They inform on the collective awareness of the transformations related to a place and how the individual feels about those transformations.

#### *Relationships dynamic with specific places: interview-photos*

We accompanied each of 15 individuals to the place that they had indicated as an example of the types noted above. Once there, the participant was invited to tell a story about the place. At the end

of the story, the participant took a photograph that would represent, as much as possible, the elements of the place's story. The photographic shooting invites the participant to adopt a reflexive posture toward the place history and the elements that compose it.

The interview-photos method was based on practices specific to visual anthropology (Conord 2007). Previous studies on place attachment have incorporated photography in different ways (Beckley et al. 2007, Dennis et al. 2009, Stedman et al. 2014). In these studies, cameras were given to the participants who were free to choose what photos to take, following more or less predefined categories. In most of these approaches and as described by Banks (2001), the relational forms that link the different actors and objects involved, or the photograph's external narratives, are not taken into account. Our interview-photos method and analysis are based on situated narratives, which means that the narrative is produced at the shooting place and is framed by the interview with the investigator. All of the stories related to place were recorded, translated, and transcribed. Following the pragmatic perspective, it was a process of discovering, through content analysis of these stories, the ways the participants felt affected by the places and the elements involved in place attachments.

#### *Territorial negotiation in a rural community: the forum theater*

Following the surveys and interview-photos, we introduced a forum theater play designed by the project's researchers and the Kaddu Yaraax professional troupe of actors from Dakar. Forum theater is a participatory form of theater created by Augusto Boal (1931–2009), designed to discuss situations of oppression, conscious or not, among a diversity of actors. A forum theater performance comprises four main phases: (1) a play is created that reflects real events representing the tension between different characters, (2) the play is presented before a concerned public, (3) a moderator invites the spectators to share their interpretations and views on the play and the actions of the characters, and (4) spectators are invited to replace certain characters to test possible solutions and encourage a collective discussion. The last stage thus introduces collective experimentation with new alternatives.

A diverse number of disciplines have used theater as a collaborative research tool, but it has seldom been used with agricultural and environmental themes (Heras and Tàbara 2014, Jankowski et al. 2020; see also [Voipastorales-débatte des trajectoires des sociétés pastorales](#)). Compared to more familiar planning methods (e.g., community-based scenario planning), collaborative theater gives more room to the emotional dimension, collective reflexivity, and empathy (Brown et al. 2017, Brown et al. 2019). The use of collaborative theater has emerged through participative research and performance, i.e., art-based ethnography (Conrad 2004, Dennis 2009, Muller et al. 2017). These approaches are based on the analysis of the representations of reality created by the actors concerned, i.e., their auto-representations. The forum theater also offers a methodology that responds to the theoretical postulates of the French pragmatic sociology that considers relationships as always temporary results, continuously evaluated and tested in each situation. The debates and collective experimentation that followed the theatrical performances enabled the formulation of evaluation criteria for the attachments and meanings associated with the

various places represented. The interpretation of these self-representations is part of a process of negotiating meanings; the role of interpreter is shared by the researcher and the different participants in a collective analytical framework. In these types of approaches, the goal is also to give the actors tools that they can use in their particular environments. These approaches themselves respond to the ethical and political issues of the research.

Our objective was to create a forum theater play that revealed the diversity of attachments and meanings associated with places in order to observe how certain elements in the sense of place can be prioritized during a territory development. The play was co-constructed on the basis of the survey interviews and interview-photos. Various places and values mentioned in the responses to the survey were represented in the play. The stories collected through the photo-interviews were used to shape the characters and their discourse about the places. From these elements, a play comprising two scenes was created. The first scene presented an inhabitant who is taking care of a visiting foreign friend. He introduces the friend to different places in the village that are important to his family and/or the village as a whole. The places are diverse: a mosque, the village square with its sacred tree, a field, a family home, and the banks of a lake. The second scene presented the arrival of a young technician, originally from the village, who is there to explain a road construction project that she is coordinating. However, not all of the villagers agree with the anticipated path of the new road and the transformation of the places affected by the project. The various characters justify their disagreement by explaining the meanings that are associated with the places affected and ways they are attached to them. The play ends with the characters in disagreement and the situation in a stalemate.

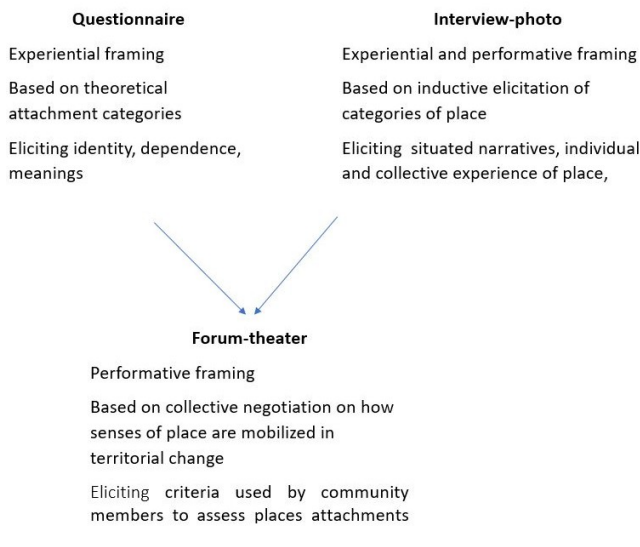
In order to guide the forums associated with the play, we defined a set of questions advance to enable audience members to explain the criteria they used to assess the attitudes of the characters and the values of the places represented in the play. All performances were filmed, and the recordings were transcribed. A content analysis was used to examine the modes of argumentation and justification of the various place attachments given by the members of the public during the forum.

There were three performances of the forum theater play: one at Ngnith and two at Yamane. The participants in these performances may or not have been interviewed as part of the questionnaire surveys or interview-photos.

## RESULTS

For our project, we tailored a combination of methods (depicted in Fig. 2) to capture both the perception of place (questionnaires) and the experience of place (photo-interviews) of individuals as well as the negotiation among diverse community members' senses of place (forum theater). The analysis of the questionnaire results, mainly descriptive statistics, looked at the meaning, identity, and dependence dimensions at the territorial scale and the sense of place for specific places. The content analysis of the photo-interviews looked at the relationship dynamics between people and places. The analysis of the forum theater performances considered how place is mobilized in debates on the relationship between individual and collective attachments.

**Fig. 2.** Mixed methods methodology.



**From territory to specific place: the plurality of senses of place**

*Meanings associated with the territory*

For the meanings, we inductively coded the three words given by participants (90 different words out of 463 answers), grouping them into categories. Words within the following categories were mentioned more than 20 times:

1. culture, encompassing words such as tradition, baobab (*Adansonia digitata*) from Nder, history, religion (116 occurrences);
2. social values, encompassing words such as solidarity, hospitality, sincerity, peace (96 occurrences);
3. work, encompassing words such as agriculture, livestock, fishing (92 occurrences);
4. resources and infrastructure, encompassing words such as Lake Guiers, water, cultivatable land, lack of roads (80 occurrences);
5. employment, encompassing words such as Senegalaise des Eaux (SDE), WAF, lake factories, lack of work, my career, lack of work for women (30 occurrences);
6. belonging, encompassing words such as rootedness, strong family links, my family, my life, my everything (21 occurrences).

Culture and social values were the two dimensions mentioned the most by the surveyed participants, before work, resources, and employment infrastructures.

*Identity and dependence associated with specific places*

Regarding place identity, 46 different types of place were identified out of 475 responses. Among these 46 types of places, 9 were mentioned more than 10 times; their exact counts are indicated in Table 1. The dominant responses were in the House

**Table 1.** Place dimensions mentioned more than ten times for identity and dependence (160 surveys) and more than one time for the other dimensions (15 surveys).

Place	Identity	Dependence	Places that have changed	Place important for collective	Conflictual places
House	82		2		
Village place	34			2	
Lake	31			3	
Mosque	27			3	
Nder baobab	25				
Childhood house	23				
Village	21				
Field	19	58	7		
School	13				
Market		20			
Workplace		19			
West African Farm (WAF)		14	3	4	2
SenHuile			5		9
Deforested area			3		
Ndiael			2	3	1
Irrigated scheme				2	
Cemetery				2	
Cuvette				2	
Pump				2	
Blocked road					2
Farmer/herder					1
conflictual place					

category, which encompassed words such as home, bedroom, and my home’s courtyard. After these were places of spirituality and culture (e.g., baobab de Nder, mosque), learning (e.g., school), and work activity (e.g., lake, field).

In relation to place dependence, 23 types of places were mentioned within the 315 answers (Table 1). Field, market, and WAF (agro-industry) were cited more than ten times. Numerous places like workshop, garage, and job site were grouped under “other workplaces.” These words present the infrastructures that allow for different types of behavior—respectively, subsistence farming in the field, commerce at the market, cash crops with WAF, and other jobs.

*Collective dimension of specific places*

For the subgroup of 15 people we photo-interviewed, we asked questions on the changes, tension or conflict, and the collective dimension in relationship to specific places. Table 1 shows the places mentioned more than once. The places participants indicated as having changed reflect both negative and positive transformations. These included, for example, the school, the health center, and the fields that can be cultivated all year and also the places that have deteriorated to the point of no longer accomplishing their main function (e.g., salinization of cultivated land, environmental or sanitary degradation of water sources). The responses regarding places important to the collective (Table 1) were very diverse, including workplaces, spaces around the village, and religious places. The places of tension (Table 1) are largely linked to the arrival of actors from outside the area (Senhuile, WAF, SDE, water, and forest).

The results showed that the distinction between the identity and the dependence dimensions of the relationship to place was relevant but insufficient. The places associated with identity and

dependence were often distinct; the first referred to childhood, home, environment, and religion, whereas the second referred essentially to work and the market. However, some places, like the fields or the Lake Guiers, were cited as objects of both identity and dependence because they were valued both for their economic, social, environmental, and recreative uses. The results also showed that places of identification did not systematically refer to socio-cultural places and places of dependence to places of physical resources, which aligns with Stedman's (2015) observation that there is complex relationship between ecological and sociocultural dimensions of attachment. The three categories (change, collective, and conflict) that we introduced to the 15-person subgroup shed still more light on the relationship to place. The relationship to place was not restricted to the individual and given place at a given moment. The collective and relational dimensions were also at stake and important to identify to reflect the plurality of senses of place.

#### **Relationship dynamics: places that affect and are affected**

In the participants' narratives about specific places that were photographed, how they felt affected by these places was expressed, explicitly or implicitly, through a distinctly sentimental discourse. The analysis of the expression of these emotions distinguished different types of places: (1) places that instilled a sense of pride, (2) places that instilled a sense of loss, (3) places that instilled a sense of distress or injustice, (4) places that instilled a sense of community, and (5) places that instilled a sense of being part of a history. No differences were found among the three groups of participants.

A farmer told us about a plot that was no longer cultivatable, which forced him to move to another village (Fig. 3). Through a subsequent opportunity (a dam built upstream by a private actor) and personal investment, the farmer was able to install an irrigation system in the plot. He drew our attention to the size of the plot, pointing to the abundance of plants on it as evidence of its productivity today. He also showed us a hut located on the periphery of the plot, telling us that it used to be his house. It is now inhabited by the workers that he could employ to work in the field and who were present during our visit. It is these elements in particular that he wished to photograph (abundance of cultivated plants contrasting with the surrounding bare plot, his previous house, and the farm workers). The places instilled a sense of pride that was related to the individual's involvement and associated efforts and the tenacity and capacity to develop and improve the place. The photographed elements of this place constituted many observables and elements defining the commitment of this farmer in his activity and in this place. These places of pride could also symbolize the person's involvement in his community and its development. For example, another participant indicated the places where infrastructure was built after he had negotiated with an agro-industry (Fig. 4).

The places that instilled a sense of loss were either places of dependence, places considered as important to the collective, or places that had changed. For example, one participant took a photograph of the banks of Lake Guiers, where the village young people had gathered and engaged in sports (Fig. 5). The photos in this category often represented the disappearance of space. This is the case in Fig. 6, taken to show the lack of space for livestock due to the increase in cultivated fields. As can be seen in this figure, barbed wire fences delimit cultivated areas on the place, which

**Fig. 3.** A field that was no longer cultivatable.



**Fig. 4.** Infrastructure built after negotiation with an agro-industry.



had previously been an open pasture. Some studies have highlighted the way by which the physical characteristics of a place participate in its meanings (Sébastien 2020). It is interesting to note how this category revealed the way that the absence of entities (physical and socio-cultural) also participated in the participants' sense of place.

Similar to places of tension, places that aroused feelings of injustice, distress, or even anger were all associated with the presence of an agro-industry. This was the case when the location of an ancient cemetery was demolished by the agro-industry while

**Fig. 5.** The banks of Lake Guiers.



**Fig. 6.** The lack of space for livestock due to the increase in cultivated fields.



most of the livestock farmers were out of the area for the herd's migration (Fig. 7). Before taking the picture, the photo-interview participant explained,

*Before, there were trees and grasses. This was used for charcoal, food.... Then they cut everything down and did not grow anything. All the farming was concentrated here before. It's been like that since 2012.*

As places that instilled a sense of loss, it is the disappearance of elements of the place and its associated uses that participants described. These discourses expressed a strong sense of injustice linked to a lack of consideration of the inhabitants, how the places had previously been used, and the history in the places.

The places that instilled a sense of community did not reflect all the places indicated as important to the collective. Place identification and place dependence were also involved, and a

**Fig. 7.** The location of an ancient cemetery.



**Fig. 8.** Irrigated zones.



wide diversity in the types of places were noted in the survey: irrigated zones (Fig. 8), a sports field, a mosque (Fig. 9), and a palaver tree. Several of the local inhabitants led us to sites where the community had acted collectively to obtain the human and financial means to develop a canal. More than the specific resources of these places (physical, recreational, and/or spiritual), the participants emphasized the sense of solidarity and coordination at the heart of the community.

The places that instilled a sense of being part of a history were places related to both identification and dependence. For example, on a personal level, a story about family was evoked by a

**Fig. 9.** A mosque.



habitation; on a national level, a tree symbolized the battle against slavery (Fig. 10); and at a societal level, the school building elicited statements of hope about the community's future. (Fig. 11). The ensemble of narratives associated with these photos were particular in the sense that they linked the past, the present, and the future.

We note that all the places have changed over time. The attachments and meanings expressed by participants intimately linked to these transformations and their consequences in terms of the emergence or disappearance of entities of various kinds. More than the physical and/or social characteristics of places, the discourses and photos made explicit the relational histories between humans and/or humans and non-humans (through uses) that define the places. These also made visible a set of individual (perseverance, tenacity, etc.) and collective (cohesion, solidarity) values. The relational stories shared in these interviews revealed how humans participate in the history of places, their evolution, and, conversely, how places participate in the trajectory of humans: who they are as farmers, herders, village leaders, and/or communities.

#### **Evaluation criteria used by community members to assess places attachments and meanings**

The forum theater play was a means to observe the processes used to evaluate a sense of place, revealing the relationship between individual and collective values. At the end of the performance, the Kaddu Yaraax troupe asked the audience, following a few predefined questions, how they felt about the play and if they thought the play's characters reacted well or poorly to the situation. The aim was to invite members of the public to explain the criteria they use to evaluate the characters' behaviors and the values of the places represented in the play. One of the first spontaneous responses concerned individual interests defended to the detriment of community interests.

*What I saw was villagers that only think of their own interests and not those of the community. Everyone*

*protects their own interests to the point that something which could help the village to develop is pushed aside in favor personal interests. (Yamane villager)*

The majority of participants disparaged the attitude of the characters who refused to have their personal property (represented as a home and a field) transformed or displaced to allow a road to be constructed through the village. The spectators emphasized that, as members of the community, they had a duty to consider its well-being. Several of the participants signaled the need to be selfless and to be willing to contribute to the good of the collective. A responsible villager was defined as someone who would accept the loss of something (in this case to separate from a place) for the benefit of the village. The intransigence of the character who insisted on keeping his house or his field was interpreted as a lack of altruism and an irresponsible act with respect to the community.

**Fig. 10.** A tree symbolizing the battle against slavery.



**Fig. 11.** Access to schooling and writings.



Beyond that of the individual, the honor of the family clan with respect to the community was also used by the spectators to convince one of the characters to give up part of his family rights or his field. For example,

*Your grandparents fulfilled their obligation, now it is your turn to fulfill yours toward your neighbors.* (Yamane villager)

An argument making reference to prior acts of one's family is in line with a collective history. In order to convince the characters to give up their property, several participants called on the values promoted by the Muslim religion, such as assistance and solidarity.

*In a similar position, I recently demanded a favor because the solidarity between Muslims demands it.* (Yamane villager)

Places marked by collective attachments in the sense that they constituted places of convergence (like a village square), sacred places (like a mosque), or places linked to tradition (like the sacred tree) also became objects of debate in terms of what was considered beneficial or not to the community. For some individuals, favoring the good of the community signified participating in its development.

*As a child of the village, do you want to see progress in the village, or not?* (Yamane villager)

With this question, the participant defined the link between the villager and his community and the appropriate response. By defining the villager as a child of the community, he characterized the villager's link with the other inhabitants and his duty toward them.

Whatever the audience considered, the common principle mobilized for judging the value of an attachment to a place was related to the loyalty toward a family, village, or religious community. Place attachment was thus evaluated in terms of its benefit to the community as a whole. By summoning values like responsibility, respect for authorities, or solidarity with other villagers, the spectators made use of the characters' attachments to the community to evaluate their attachments to places.

## DISCUSSION

The results of this mixed-methods study provide rich information to understand how sense of place is thought out and evaluated by community members in territorial transformation. What counted for the members of the community was the maintenance of relationships and respect for their moral values. The web of attachments to place and values within the community reinforces work (Kemmis 1995, Flora and Flora 1996, Manzo and Perkins 2006) highlighting the central role of shared values in the search for desirable territorial transformations from the point of view of an entire community. As our results suggest, community members value attachments as affective relationships. In other words, place transformation is facilitated if relationships within the community are maintained and the values, specifically the moral ones, are respected. Therefore, we use the frame of affect and affective arrangements to examine the relationship between attachments and territorial changes.

## Senses of places and territorial transformation

Raymond et al. (2021a) entitled their book *Changing senses of place, navigating global challenges*, thereby acknowledging the multiplicity and diversity of senses of place. We also observed this multiplicity and diversity of perspectives, which does not necessarily lead to conflictual change processes. Whereas diverse entities are simultaneously involved in the production and evaluation of sense of place, our research also suggests that the acceptance of change by the members of a community as a whole depends on maintaining affective relationships that engage them and respecting the moral values they hold.

### *Maintaining affective relationships beyond the plurality of sense of place*

The results from the area studied describe a diversity of places, which are associated with a diversity of attachments and meanings. They also confirm that the same place can be the object of different attachments and meanings among different individuals and that this is the case even when considering collective places. The banks of Lake Guiers, for example, was cited for economic, social, recreational, and environmental value. Earlier work has described how this plurality of meanings and attachments can engender contrasting reactions among the diverse actors implicated in territorial management (Davenport and Anderson 2005, Stedman 2016, Köpsel et al. 2017). Some studies have described how the coexistence of several meanings associated with the same place can create conflict, disturbing the cohesion and management of the community (Yung et al. 2003, Chapin and Knapp 2015) and underlining the fact that transformations in a place do not affect the population in a uniform manner. The diversity of meanings within a population implies that changes are experienced differently. The community more or less accepts these different experiences of change, regarding them as a function of the different meanings individuals hold about the place (Davenport and Anderson 2005).

The change depicted in the play was based on the construction of a road. Contrary to studies that have shown opposition between strong attachment and acceptance of change (Devine-Wright et al. 2017), during the forum theater experience, none of the participants expressed opposition to the construction of the road. Indeed, in our case, the strong attachment to the area was not associated with a rejection of the proposed change; that change was welcomed. The road, as described in the play, implicated the transformation of individual and/or collective places. The debates did not focus on the diversity of meanings associated with the collective place. The attachments to collective places were assessed in terms of their benefit to the community, how they might or might not contribute to its development. Forum theater participants who could support the road project to the detriment of cultural places like the sacred tree were not necessarily signaling detachment and loss of meaning. Instead, for these participants, the attachments had a quality of modularity; the attachments and their meaning would remain coherent even if the specific space was transformed. The debate focused on possible ways to maintain attachments in the context of transformations. Some participants argued that respect for their ancestors had never meant standing still, that the village, the habitations, and practices needed to be flexible and capable of evolving. As proof, one of the participants mentioned the successive transformations of the village of Nder, a historic place in Senegalese history symbolizing

the fight against slavery. This individual described how the villagers were forced to move several times to escape crop pests or gain access to water but did so without abandoning the veneration of sacred sites whose placement had to evolve along with the community. Although the historic value of sites and their relationship to tradition are commonly described as constraints to development in communities (Briggs et al. 2019), it is interesting that this participant referred to a historic site in his argument in favor of the transformation in his community. Moreover, his argument envisioned maintaining attachment to place even in the context of its possible displacement. Attachment here is not associated with a specific physical space but with a place that acts as a memorial space. The modularity of the attachment is considered in terms of its mobility and inscription in another place. Thus, in this case, the importance in the eyes of these actors was not focused as much on the place itself as it was on the common attachment to a place of shared meaning: the maintenance of collective memory. In addition, this delocalization involved both a transposition of the meaning associated with a place (here, a cultural place) to another place and also the emergence of new meanings.

Other participants made suggestions for reconciling between the transformation and the respect for tradition. One of the villagers proposed preserving the sacred tree in the center of the village and creating a roundabout to circumvent it. This solution would maintain the symbolic meaning of the place while allowing the passage of the road, thus giving a new function to the original meaning. Whereas Ingalls et al. (2019) described how conflict around the multiple meanings attributed to a place can lead to the understanding of hidden meanings, in this exercise, the debates participated in the collective construction of potential new meanings.

With the collectively constructed proposals, the actors submitted the new modalities of attachment to the whole community. The acceptability of the area's transformation was not a matter of negotiating which meanings or attachments to prioritize. Instead, it became a question of maintaining the attachments to the community rather than the place. In the debate, what seemed important in the eyes of the participants had more to do with how the relationships with the place contributed to community capacity rather than the conservation of the attachment to a particular place.

The results of this research show that sense of place diversity is not an obstacle to the change process as long as this process secures the persistence of relationships that maintain the capacity to act, build, and be a community. In that sense, attachments are conceived as affective relationships. Along the lines of the Spinozian conception of affect (Spinoza 1985), an affect between entities implicates a change in their respective capacities to act or to be. Maintaining the relationships is related to the notion of power to act.

#### *Respecting moral values*

Maintaining the capacity to act, build, and be a community also requires respect for moral values. A community employs moral values to assess the transformation of a place in terms of its link with the reinforcement or diminution of the inhabitants' power to act. The results of the survey showed that the principal meaning attributed to the area of the investigation is that of values. This

was confirmed both through the interview-photos narratives and the discussion during the forum theater play. The stories about "places of pride," such as the farmer developing his field, point to his perseverance and determination, and to the engagement of the farmer in his work. Similarly, among the "places that help make us a collective," the associated narratives highlighted the spirit of cohesion and coordination at the heart of the community. These stories about a place illuminate and emphasize the values held by the individual or shared by the community. The value people assign to a place is intimately linked with the values those people hold. This was also evident in the narratives associated with tension. The places that evoked feelings of injustice bring to mind situations or practices that the individuals saw as unfair or inequitable. Several of the interviewed participants described these places in terms of the way they were transformed without any consideration for the inhabitants, their activities, or their traditions. During the forum theater, the common principle used to judge the value of an attachment to a particular place concerned loyalty to the community. Values like respect for authorities, honor, and mutual support were used to justify the participants' assessment of the attachment.

The community's values were explicitly exposed in the compensation that participants offered the play's characters for the loss of their house (which was the most cited category by the interviewees when asked for the place they associate with their identity) or field. Two types of compensation were proposed: one monetarily based on the value of the place<sup>[1]</sup> and one morally based on the shared social values (the second most cited category by the interviewees when asked for the meaning of the place—Table 1). The negotiation situation represented in the forum play is at the level of a village. In such a context, the two types of transactions proposed are inscribed in personal relationships from which they are analytically inseparable. In the context of the forums, the two forms of transaction proposed were differentiated by the predominance of the relationship to things (here, places) or the relationship between people.

The first form was suggested primarily by the local authorities or closely associated individuals and translated into a compensation, either financial or in like kind, such as another field. However, in the majority of cases, the participants relied on a second form, which drew on moral values for forms of compensation. The character's honor, or that of her family's clan, in the community was employed a number of times to convince her to relinquish part of her property. Rather than being monetary or payment-in-kind, the compensation for a gift to the village was an increase in social value: honor and recognition within the community. At this point, some participants recalled situations where they had asked for nothing in exchange for part of their field, identifying the act as a gift that suggested recognition and an obligation toward the donor.

The difference between the two types of compensation lies on the consideration of the attachments as affective relationships. In monetary compensations, the affective relationships that involve an individual and a place are denied and removed from the negotiation. In the second type of compensation, the affective relations between the individual and the place are contextualized: an individual's detachment from a place is thus compensated by a public reinforcement of his attachment to the community and his status as a moral member.

Forum theater allowed the observation and clarification of justifications argued by different individuals in the community for what they consider to be good doing. The subject of debate in the discussions was the moral values that should guide actions, revealing the ethical dimensions of attachments and meanings associated with places. These debates were not about preserving the social or cultural value of a place but rather about taking care of the moral values that bind humans to one another and to their living spaces. As suggested by other authors (Manzo 2005, Devine-Wright 2014, Centemeri 2015b), the moral dimensions of attachments support the need for a policy approach to territorial transformation that incorporates the moral and social costs of the disruptive detachment, thereby enhancing the likelihood that they will be considered fair and equitable by the ensemble of actors in a territory.

### Changes considered through the lens of affective arrangements

The stories about a place, as well as the arguments about their potential variations, reveal a variety of actants (farmers, crops, fences, herders, agribusinesses, local authorities, health center, sacred tree, community, irrigation systems, mosque, etc.). Examining the complex set of relationships among people and between people and places reveals that all these entities affect each other (by reinforcing or diminishing their power to act and to be) in many ways. There is a need to look at attachment to and sense of place as affective relationships; we propose theoretical development in this domain of affective arrangements.

The narratives from the photo-interviews and survey responses focused on the interrelationships among assembled diverse human and non-human entities and how each of these entities affected each other, how they transformed each other, and how they thus augmented or constrained their ability to act. All the places that individual participants took us to see have the particularity of having been transformed, and that transformation reinforced or constrained the participant's ability to act in their work in agriculture, as a livestock farmer, or even as a member of their community. In this sense, places appear to be constitutive of unique affective arrangements (Slaby et al., 2017). Slaby et al. (2019) proposed the concept of affective arrangements to take account of the heterogenous ensemble of materials—comprising people, things, artefacts, spaces, dialogue, behaviors, and expressions—characterized by a distinct entanglement of relationships that affect and are affected. This concept alludes to that of Deleuze and Guattari's (1993) "mechanical arrangement," which refers to a disposition comprised specifically of heterogenous elements that are assembled according to a non-homogenizing mode of composition. This concept is also based on the definition of affect given by Spinoza (1985). Recent studies on the sense of place (Di Masso and Dixon 2015, Berroeta et al. 2021, Raymond et al. 2021b) have used the notion of assemblages to characterize the relationship of humans to their environment. For example, Berroeta et al. (2021) described assemblage as of influences and reciprocal variations between subjective, social and spatial aspects, articulating at the same time the relationship between individual experiences of place and social and institutional processes. Although it is very close and based on the concept of assemblage, we selected the affective arrangement concept because it focuses and insists on the affective nature of the reciprocal influences within an assemblage, and it considers

explicitly the relations of power between the different elements (humans and non-humans). The affective arrangements that can be defined through the narratives of place are distinguished less by the type of actors that they implicate than by the way that actors affect each other. The places that inspire pride, just like the places that are distressing, can be related to actors from outside the community, such as the agro-industries. In the case of the places reflecting distress affective arrangement, the agro-industry has constrained people's capacity or power to act by modifying the configuration of the places. This type of reconfiguration participates in both the reduction of the villagers' power to act and the growth of the power of the agro-industry. In the case of the places reflecting pride affective arrangement, the agro-industry was constrained either by the way the villagers transformed places (such as the cultural designation of a parcel of land to prevent the advance of the agro-industry) or the way they transformed a place to augment their own power as villagers and that of specific individuals in their community (such as through the construction of a health center). In this affective arrangement framework, the feelings of pride or anger described by the participants emerged in the dynamics of affective relationships over time and the participants' roles within these dynamic relationships. The emotions expressed in the narratives appeared as a transitory, but temporarily consolidated, result of these affective meetings.

It was the same in discussions about the forum theater play: the participants' arguments in favor of a transformation or for the preservation of certain places appealed to a diversity of entities, going beyond the community. In this sense, the evaluation of the collective attachments and meanings related to those places called for a wider affective arrangement. For those who argued for a transformation of collective places, the issue was the positioning of the community in the global movement so that it will be known and recognized by the other communities.

*If you want the village to develop, you have to understand that it requires these two things, roads and electricity. You are not the only ones in the world to have religious places. If there isn't a road leading to the mosque, it will be difficult to get there. And for the fields, if there isn't a road, you won't be able to transport your production.*  
(Yamane villager)

This villager refers to the changes that the road could bring in terms of the positive ways that those changes could affect the other villagers, increasing their comfort and their quality of life.

The perspective of affective arrangements makes it possible to contextualize the attachments and meanings associated with a place at a particular time and in a unique ensemble of mutually affected relationships (Bousquet et al. 2022). The sense of place comes from the reciprocal modifications experienced in a continuous transformation that involves humans, places, and the affective relationships among them (Botéa and Rojon 2015, Richard-Ferrouddji and Barreteau 2013). In this framework, the emotions explained through the interview-photos and the emotional parts of attachment reflected in the survey responses can be considered as informative expressions—from an individual perspective—about the individual's position in this arrangement. These emotions constitute an emergence of independence and

power relationships in a relative position of a given social space (Bourdieu 1984). Manzo (2005) described how places, by virtue of their value, can participate in an individual's social positioning. In this framework, the place participates through its affective power. The attachments and meanings associated with places are not considered as individual mental states, nor as uniquely emotional dimensions of the practice. The place attachments and meanings appear to emerge from the historic and socio-political context. This perspective defines sense of place as a process that evolves through the reconfiguration of affective arrangements that involve a diversity of human and non-human entities (Slaby et al. 2019). In the actors' discourses, the references to elements outside of the community and its territory also point to the multi-spatial nature of these arrangements.

## CONCLUSION

This article contributes to the call to take into account the plurality of senses of place in territorial development in a dynamic, relational, and inclusive manner. We deployed this perspective in the specific context of territorial developments and associated transformations of the living spaces of a rural community comprising several villages in northern Senegal. Beyond the exploration on a given site, some results and lessons from this study can be extrapolated and are relevant for other studies. The first lesson concerns senses of place and territorial development, the second lesson orients toward the methodological framework of affective arrangements.

In the domain of territorial development, our research on sense of place has shown that, beyond their individual relationships with place, people care for the maintenance of the community and its development. Therefore, senses of place diversity are not an obstacle to change processes as long as the process secures the persistence of relationships that maintain the capacity to act, build, and be a community. The individual and collective objective is to care for the moral values that bind humans to one another and to their living spaces. Several authors have pointed to the importance of these moral issues (Manzo 2005, Devine-Wright 2014, Centemeri 2015b). Our exploratory work confirms the relevance of their suggestion and provides a methodology to work on this aspect.

The mix methods we used, coming from the fields of environmental psychology and pragmatics sociology, made it possible to re-contextualize the diversity of senses of place at a given moment in a dynamic trajectory of the definition–redefinition of meanings and attachments associated with places. Beyond an individual (or a community) and a place, the narratives about place and the debates about their potential evolution reveal a diversity of actants (farmers, crops, fences, herders, agribusinesses, local authorities, health center, sacred tree, etc.) in the definition of sense of place. How these different entities affect each other—in the sense of a reinforcement or restriction of their power to act—contributes directly to the evaluation of territorial transformation from the point of view of the community members. The acceptance of change by the members of a community as a whole depends on maintaining affective relationships that engage them and respecting the moral values that they hold.

The concept of affective arrangements is proposed as a heuristic framework for characterizing the dynamics of the attachments and meanings associated with places. This concept appeared

relevant to us during the course of the research, with regard to the participants' explanations, and not as an a priori analytical framework. The framework of affective arrangement echoes the sense of place approaches as assemblages already used by some authors who study sense of place (Di Masso and Dixon 2015, Williams and Miller 2020). It enables the characterization of the nature of the relationships (as affective) that make up these assemblages from the point of view of the individuals involved in the research. The plurality of the assemblages is to be considered through the plurality of the perspectives that are involved in them. The framework of affective arrangements allows us to grasp the sense of place in a dynamic and relational way without omitting from where this sense of place is experienced. Moreover, characterizing the relations within these assemblages as affective allows researchers to consider the power relations not only at the level of humans but of all the actants involved.

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<sup>[1]</sup> As some authors have pointed out (Le Velly 2009, Weber 2000), the presence of monetary transfers in the transaction cannot by itself place it in the category of market transactions. Market transactions are characterized above all by the absence of interference from personal characteristics in determining the terms of the exchange.

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## Acknowledgments:

*The authors acknowledge the financial contribution of CIRAD support through CRESI funding as well as all the Ngith residents in Sénégal who contributed to this research.*

## Data Availability:

*Data/code available are not openly available because of privacy/ethical restrictions. They may be made available on request.*

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