


POPULAR EXTENSION IN THE FEDERAL NETWORK OF PROFESSIONAL, SCIENTIFIC AND TECHNOLOGICAL EDUCATION: ACTIONS AIMED AT THE LOCAL DEVELOPMENT OF A COMMUNITY OF ARTISANAL FISHERMEN/SHELLFISH GATHERERS

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ABSTRACT

Considering the social commitment of the Federal Institute of Espírito Santo (Ifes) to contribute to the social development of the communities present in its territory, this article aims to report the synthesis of an extension action that aimed to promote a diagnosis of the social reality and the beginning of a process of collective self-organization of artisanal fishermen/shellfish gatherers in Piúma-ES, in the southern coastal region of Espírito Santo. The extension activities were developed with the participation of teachers, pedagogue and students of the Fisheries Engineering Course at Ifes Campus Piúma and a group of 46 artisanal fisherwomen/shellfish gatherers associated with the Z-09 Fishing Colony, in the locality. The work was supported by two congruent epistemological anchors, one theoretical and the other methodological. The theoretical anchor was referenced in the institutional guidelines of Ifes for the extension actions developed in the institution, linked to the contribution theorist of Popular Extension that is established in the act of communication, via dialogical, participatory and horizontal interaction with socially vulnerable groups (MELO NETO, 2014). The methodological anchor was established in the procedures of action research for local development, a technique of social intervention surrounding the researchers, in partnership with the actors involved in a given problematic reality (DIONNE, 2007). The analysis of results was carried out through the hermeneutic-dialectic technique understood as a research and work dynamic that integrates the analysis of structures, processes and results in social programs through the qualitative evaluation of the multiple

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dimensions of the reality studied (MINAYO, 2016). In summary, the extension action produced a diagnosis of the social reality of the shellfish gatherers of Piúma and its results evidenced the genesis of a process of collective self-organization as a starting point for future extension actions of the Ifes Campus Piúma with a view to the social development of this traditional community of artisanal fishing present in its territory.

Keywords: Popular Extension. Artisanal Fishing Community. Seafood. Action research. Local Development.

INTRODUCTION

As an institution dedicated to professional and technological education, the Federal Institute of Espírito Santo (Ifes) has as its main objective to train and qualify professionals in the most diverse segments and areas of knowledge. In addition to offering education, the institution conducts research and promotes extension activities in partnership with the productive sectors and society. Its emphasis is on the production, development and dissemination of knowledge with a view to local and regional socioeconomic development. The inseparability between teaching, research and extension implies that these activities, even if carried out in different times and spaces, have a central purpose: to fulfill the social function of democratizing knowledge and contributing to the construction of an ethical and solidary society (IFES, 2019a).

In its social commitment to the communities in its territory, Ifes proposes in its institutional pedagogical project (PPI) to exercise the transformative role of extension in the institution's relationship with sectors of society, in the sense of social change and overcoming inequalities, through an autonomous and critical-propositional relationship, capable of generating social impact (IFES, 2019a).

Among the 23 Ifes *campuses* in operation, the Piúma Campus, created in 2010, is located in the micro-region of the South Coast of the State of Espírito Santo, in the city of Piúma, 96 km from the state capital. With a vocation in the Natural Resources axis, the Piúma Campus has an effective performance in the fishing sector through the offer of courses focused on the areas of fishing and aquaculture, including the Fisheries Engineering Course, which trains professionals capable of identifying, equating and solving problems in the area of fisheries resources in a perspective of social promotion and sustainable development (IFES, 2019b).

Adjacent to Ifes-Campus Piúma is located the Z-09 Fishing Colony, founded in 1965, which has as associates about 400 artisanal fishermen and fisherwomen in the locality. The Fishing Colony provides advice on the resolution of bureaucratic problems related to retirement and defense insurance, among other numerous activities in partnerships with public and private institutions in meeting the interests of its members (FILGUEIRAS *et al*, 2020).

In the coastal region of Piúma, various forms of fishing resource capture are practiced (ICMBio, 2011). Among these activities, the collection of the *Perna-perna* mussel (Linnaeus, 1758), known in the region as sururu, a delicacy appreciated by both

locals and tourists visiting the city, stands out. Sururu harvesting in the region is carried out mainly by women, many of whom start this occupation in the age group between 8 and 12 years, accompanying their mothers and relatives, and learn this artisanal fishing activity that helps in family subsistence, which, in some cases, is the main source of household income (FILGUEIRAS *et al*, 2020).

Sururu scavenging is most frequently carried out on the rocky shores of the coastal islands of Piúma, where access can be on foot or by bicycle on Ilha do Gambá (connected to the mainland by an artificial isthmus); on Ilha do Meio, where it can be reached by walking when the tide is dry, or by kayak, when it is full; and on the islands of Cabritos and Itapetinga, to which access is only by boat (FILGUEIRAS *et al*, 2020).

For decades, this group of women has played an important role in the local social economy, but it is an invisible work within the fish production chain, with little recognition and low pecuniary value of the product of their labor, especially due to the absence of public policies that strengthen their collective organization for better working conditions and income.

Although the Piúma Campus stands out as one of the Ifes campuses with a large volume of research and extension projects developed each year, in consultation with the annual reports issued by the General Coordination of Extension Actions CGAEX, it was found that, between 2014 and 2022 (period with available reports), there is only a single registration record of extension action with the exclusive target audience being the community of artisanal fishermen/shellfish gatherers, so that there is still a great demand for punctual care for this social group by the institution (IFES, 2024).

In addition, an important document entitled the "*Socioeconomic Census of Fishing Communities 2022 – Anchieta, Guarapari and Piúma*" was released, a publication in magazine format that shows the main census results collected from interviews with artisanal fishermen and shellfish gatherers and leaders of the fishing sector in the region. The results of this Socioeconomic Census present relevant information from the artisanal fishing community, such as: family income, education, fishing time, degree of dependence on fishing activity; in addition to the types of fishing, vessel and fish, among others. However, a curious fact draws in the results released, namely: in Piúma, 100% of the participants in the research were male fishermen. In Anchieta, the male percentage reached 99%. Guarapari was the place with the highest percentage of women fishermen interviewed (18%), even so, below 1/5 of the total public, which demonstrates a timid

participation of women fishermen in census surveys (SOCIOECONOMIC CENSUS OF FISHING COMMUNITIES, 2022, p. 11).

In his analyses, Silva Souza (2022), in the article entitled "The Participation of Women in Fishing Activity", ponders on the relevance of female work in the fishing production chain, stating that:

Therefore, it is necessary to emphasize the importance of women in the capture and commercialization of fish. Therefore, it is necessary to consider the presence and participation of women as active subjects in fishing activity, emphasizing their importance in this economic sector. Being considered a popularly male activity and with a predominance of men in fishing, women occupy a large part of the fishing activity, being predominant in the processing and marketing of fish (SILVA SOUZA, 2022, p. 21)

Still far from social recognition and its importance, 85% of the artisanal fisherwomen/shellfish gatherers involved in the present study stated that they had never participated in any extension activity at Ifes Campus Piúma. This indicates that, although the institution develops powerful teaching, research and extension activities with the fishing community in general, there is still a vacuum and a repressed demand for the offer of extension actions aimed at the interests and demands of this specific social group.

In this sense, Silva Souza (2022) also points out that several studies have highlighted the importance of fishing activities carried out by women for the maintenance and reproduction of the family and the group. However, these activities are still not properly valued, becoming dependent on public policies and rights related to fishing, due to the lack of recognition of women as workers in the sector.

Therefore, in view of this local social scenario, and considering the institutional mission of Ifes Campus Piúma, the general objective of the extension action carried out was to promote the beginning of a process of collective self-organization of artisanal fisherwomen/shellfish gatherers in Piúma-ES with a view to the development of latent social demands in their reality.

To this end, the proposal of the extension action developed was structured in two epistemological anchors: one of theoretical foundation and the other of methodological procedure. The theoretical anchor was built through the institutional guidelines of extension at Ifes, established in its Institutional Pedagogical Project (IFES, 2019a) and by the theoretical framework of Popular Extension (MELO NETO, 2014). The methodological anchor was based on the technique of Action Research for Local Development, organized

in four phases: i) identification of initial situations, ii) design of actions (objectives and planning); iii) carrying out the planned activities and iv) evaluating the results obtained (DIONNE, 2007), which will be detailed below.

THEORETICAL ANCHOR

INSTITUTIONAL GUIDELINES FOR EXTENSION AT IFES

The Institutional Pedagogical Project (PPI) is the theoretical and methodological guide that establishes the educational policy of the Federal Institute of Education, Science and Technology of Espírito Santo. This document serves as a reference for the daily practices of teaching, research and extension since outlines the political, pedagogical and philosophical elements that support the educational actions developed, aiming to foster the conditions of humanity and society desired by the institution (IFES, 2019a).

The PPI is a component of the Institutional Development Plan (PDI), a broad document that defines the principles and guidelines for the preparation of the institution's strategic and operational plans, both educational and management, and reflects the main conceptions that guide teaching, research and extension activities.

The reference that guides the Extension Guidelines at Ifes is based on the concept agreed upon at the First Meeting of Pro-Rectors of Extension of Brazilian Public Universities - FORPROEX, which established the following definition:

University Extension is the educational, cultural and scientific process that articulates Teaching and Research in an inseparable way and enables the transformative relationship between University and Society. Extension is a two-way street, with assured transit for the academic community, which will find, in society, the opportunity to elaborate the *praxis* of academic knowledge. On their return to the University, professors and students will bring learning that, submitted to theoretical reflection, will be added to that knowledge. This flow, which establishes the exchange of systematized knowledge, academic and popular, will have as consequences the production of knowledge resulting from the confrontation with the Brazilian and regional reality, the democratization of academic knowledge and the effective participation of the community in the performance of the University. In addition to instrumentalizing this dialectical process of theory/practice, Extension is an interdisciplinary work that favors an integrated view of the social. (NATIONAL POLICY OF UNIVERSITY EXTENSION, 2012, p. 15).

Following this bias, extension actions at Ifes should include pedagogical proposals that meet the interests of society, aiming at the transformation of a given problematic reality and promoting social equality through dialogical interaction with the communities present in its area of operation.

Thus, in their planning and execution, the extension actions at Ifes should propose the exchange of knowledge, knowledge and experiences between the actors involved on both sides, that is, civil servants (teachers and administrative technicians) and students of Ifes and members of the local community in order to develop actions that contribute to the solution of the demands that emerge from the reality of social subjects.

That said, for the development of Extension at Ifes, the PPI establishes a set of guidelines, among which we highlight three that are directly related to this object of study:

Exercise the transformative role of Extension in the relationship of Ifes with all other sectors of society, in the sense of social change and overcoming inequalities, through the autonomous and critical-propositional relationship with public policies in structuring programs networked, capable of generating social impact;

- To contribute to the development of society by constituting a bond that establishes the exchange of knowledge, knowledge and experiences for the constant evaluation and revitalization of research and teaching;
- Integrate teaching and research with the demands of society, its interests and needs, establishing mechanisms that interrelate academic knowledge and popular knowledge (IFES, 2019a)

Therefore, following these Guidelines, the Fisheries Engineering Course, offered by Ifes Campus Piúma, provides in its pedagogical project for the development of extension actions that integrate the theoretical and practical training of students articulated with the resolution of problems present in the local community. Thus, inserted in a coastal region with a large part of the economy focused on activities related to fishing resources, the development of extension actions in the Fisheries Engineering course represents an important role in the social transformation of the traditional fishing communities present in its territory, as well as in the training of professionals socially committed to the development of the region (IFES, 2019b).

POPULAR EXTENSION

Researchers point out that there are basically two predominant conceptions of extension practices within the scope of Brazilian educational institutions: an extensionist model understood as a vertical and messianic transmission of knowledge inserted in the authoritarian profile of the university and another that considers extension as the

communication of knowledge, in a non-welfare or mercantilist view, that is, a theory based on the production of knowledge in a two-way street through exchange of academic and popular knowledge, in a horizontal perspective and with the purpose of promoting social justice among socially vulnerable groups (GADOTTI, 2017).

The first conception of extension, more focused on market interests, reinforces the elitist profile of higher education, further deepening social inequalities. It is characterized by assistentialist and unilateral action, in a kind of one-way street that only goes from the university to society, not considering the possibility of reversing this direction. Therefore, this model does not consider what comes from society to the university, that is, there is no reciprocal dialogue (BENINCÁ & CAMPOS, 2017).

The second perspective of extension, on the other hand, is rooted in reality, in a proposal in which extension should influence teaching and research in an integrated way in favor of the desires of society. This concept presents a democratic, interdisciplinary university extension integrated with the sociocultural reality of the community in which it operates (BENINCÁ & CAMPOS, 2017).

Thus, in recent decades the field of university extension has contributed to a broad and diversified movement of experiences based on a socially referenced and politically oriented action for the formation of critical citizens, that is, an extension as a form of communication between people based on social work that articulates extension, research and teaching aiming at its transformation into another possible logic (CRUZ, ARAÚJO and RODRIGUES, 2021).

This perspective of extension, of *popular* approach, goes beyond the institutional walls, acquiring social work with social organizations, in the perspective of exteriority, through educational actions implemented from their objective reality, based on dialogue and respect for the other, with a methodology that exposes the contradictions of the dominant mode of production, allowing the workers to critically read the world, even with little schooling or low qualification, elements that generate economic exclusion in the most vulnerable layers of society (MELO NETO, 2014).

Table 1 – Theoretical Fields of Popular Conceptions

THEORETICAL FIELDS OF POPULAR CONCEPTIONS
<p>1. ORIGIN</p> <p>Something is popular when it originates in the people, in the majorities. Some indicators: it comes from the base; it comes from the experience of the people; it comes from the tradition of the people; it comes from the underprivileged classes; it is addressed to the majority, ...</p>
<p>2. METHODOLOGY</p> <p>Something is popular when it brings with it a procedure that encourages participation, that is, a means of dissemination and promotion for the search for citizenship. Some indicators: directed to the humble people; expanding participation channels; exercising active participation; enabling decision-making; listening to and implementing decisions; promoting new forms of intervention by the masses; ...</p>
<p>3. POLITICAL AND PHILOSOPHICAL POSITIONING</p> <p>Something is popular if it expresses a crystalline political and philosophical position before the world, bringing with it a propositional-active dimension aimed at the interests of the majority. Some indicators: taking up the struggles of the people; serving the interests of the population; Rescuing the vision of a changing world; proposing to improve the life of the people; bringing the perspective of the people; ...</p>
<p>4. OTHER ASPECTS</p> <p>Other conceptions emerge, bringing the possibilities that being popular goes through the institutional. It can originate from the institutional, such as unions, environmental associations, etc. Others understand that being popular is a matter of conscience. Some indicators Something that comes from association (grassroots communities, landless movements, unions...); a matter of conscience.</p>

Source: adapted from Melo Neto (2014, p. 27)

According to the table above, educational actions under the approach of Popular Extension can develop useful social work with democratic intentionality, promoting collective participation with a view to the conquest of rights, sharing of knowledge and cultures, promoting a new perspective of economic rationality for subaltern groups, enhancing community emancipation to transform their reality (MELO NETO, 2014).

In this way, Popular Extension presents a theoretical and methodological option capable of promoting the collective organization of economically oppressed sectors of society, in the sense of emancipation and autonomy in the struggle for a more just and egalitarian society. Therefore, from the Popular perspective:

Extension is, therefore, a useful social work on reality, carried out as a dialectical process of theory and practice of those involved in this work, externalizing a product that is new knowledge, whose production and applicability enable the exercise of critical thinking and collective action. (MELO NETO, 2014, p. 94)

In this way, Popular Extension, the theoretical reference of this experience, is characterized as useful social work with the intention of connecting teaching and research through the social relations between the educational institution and members of a given community based on its objective reality, that is, an educational process with content based on social reality whose change occurs through the collective action of the subjects involved in the problematic situation (MELO NETO, 2014).

Thus, *"when trying to enter into the concept of Popular Extension, we can understand it as a search for another rationality — a struggle for humanization, which is humanizing and aware of individual and collective subjectivity"* (CRUZ, 2011, p. 60).

Therefore, the Theoretical Anchor of the extension action reported here was referenced in the assumptions of Popular Extension and guided by the Institutional Guidelines of Extension in Ifes. Once the theoretical foundations were built, the extension action was planned, executed and evaluated, as will be detailed in the next topic that will address the second epistemological foundation of this process.

METHODOLOGICAL ANCHOR

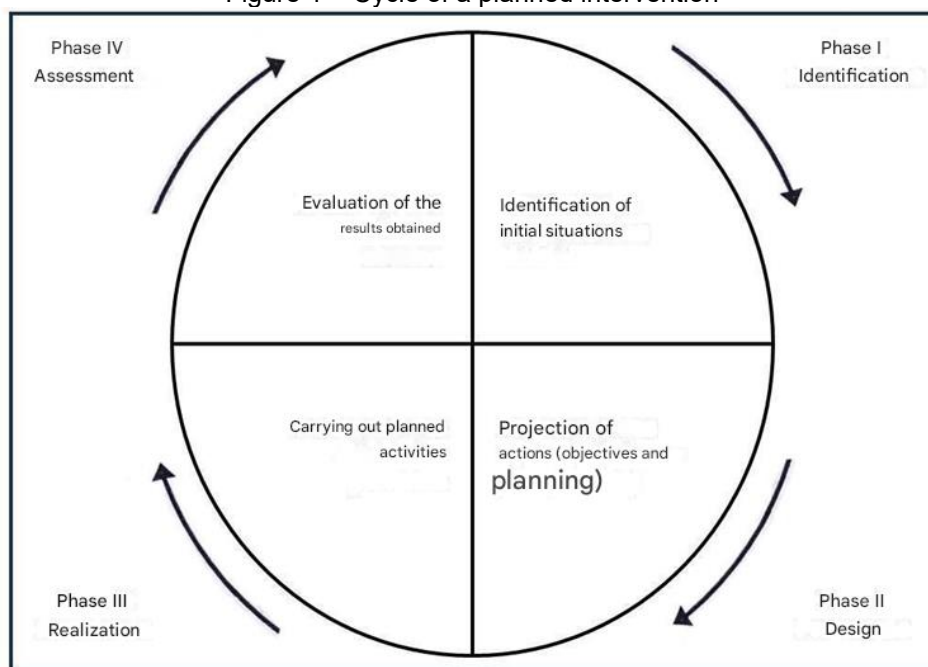
ACTION RESEARCH FOR LOCAL DEVELOPMENT

Taking into account the context of the extension action, its institutions and its respective actors (Ifes Campus Piúma and Colônia de Pesca Z-09), the action research technique was adopted as the most appropriate methodology to achieve the objectives proposed in the scope of the work.

According to Dionne (2007), action research is a modality of collective intervention inspired by the decision-making technique, which involves actors and researchers in joint actions with a view to changing an initial reality, evaluated and appreciated through a shared proposal of objectives of change and transformation.

Thus, in the methodological approach, the 4 integrated phases of action research were applied for local development proposed by Dionne (2007), namely: i) identification of initial situations, ii) design of actions; iii) carrying out the planned activities and iv) evaluating the results obtained.

Figure 1 – Cycle of a planned intervention



Source: Dionne (2007, p. 83)

This methodological circle proposed by Dionne (2007) is directed to the search for the effectiveness of actions in terms of practice and knowledge. Operability occurs in cyclical and sequential movements similar to conventional management systems, but is not developed individually by the researcher, but in a shared and collective way with the other participants-actors in the process.

Although the operational procedures resemble the "Deming wheel", or Plan, Do-Check-Act (PDCA) wheel, very widespread in corporate quality management circles, the political-philosophical perspective of this proposal is based on the "action-reflection-action" cycle, widely used progressive theories based on practical principles for social change in vulnerable communities aiming at the awareness and emancipation of the subjects involved. The four phases proposed align and balance the awareness-raising dimension with the effectiveness of the action for the development of a given social group (DIONNE, 2007).

In its procedures, this methodological perspective emphasizes and highlights the conditions of passage from a real situation, considered as a starting point, to an ideal situation considered as a point of arrival, always seeking to change a given problematized reality (DIONNE, 2007).

Therefore, a summary of the four phases developed in the extension action presented in this study is presented below:

phase i – identification of initial situations

A priori, it is necessary to clarify the eligibility criteria of the public participating in the research. As already mentioned, Ifes Campus Piúma has an academic profile of courses focused on the technological axis of natural resources, in the area of fishing and aquaculture, with the Fisheries Engineering Course being the only one offered in all 23 *Ifes* campuses in operation.

In the municipality of Piúma there is a thriving artisanal fishing community, with shellfish gatherers being the most economically vulnerable category in the local fish production chain. Thus, considering the principles established in the Ifes Extension Guidelines, which prioritize university extension with audiences with greater social demand, the choice of this audience for the development of the extension action reported here is justified.

Thus, following the first phase of the methodology proposed by Dionne (2007), that is, the Identification of Initial Situations, meetings were held with the management team of the Z-09 Fishermen's Colony as a first contact and dialogues on the feasibility of an institutional partnership with Ifes Campus Piúma for the development of joint educational actions with the community of shellfish gatherers.

After the formal and documented consent of both institutions, the extension action began with collective meetings to present the teams, the possibilities and potentialities of the pedagogical proposal to be developed. After internal selection carried out by the Z-09 Fishing Colony, a total of 46 shellfish gatherers enrolled and participated in the extension action, who, due to personal and family issues, had alternating frequencies during the execution schedule of the proposed activities. On behalf of Ifes Campus Piúma, the pedagogue (researcher) responsible for the pedagogical monitoring of the Fisheries Engineering Course, three professors who teach subjects from the curricular matrix of the course and three students who acted as volunteer scholarship holders in the activities carried out.

To identify the initial situations, foreseen in this first phase of the methodology, the focus group technique was used. According to Minayo (2016), the focus group approach addresses subjects whose identity characteristics are homogeneous, belonging to the same community, however, homogeneity is never total due to the group's divergence of opinions on certain topics. For the aforementioned author, it is important for the researcher to problematize the aspects discussed in a Since,

By providing visibility of group interactions, this type of approach does not seek a single and consensual speech. What is sought is exactly the cartography of opinions, arguments and points of view, concordant or conflicting, critical or resigned. The group also allows the deepening of reciprocal influences between speakers, that is, the reflexivity of opinions. In addition to the content of what is discussed, the focus group dynamics allow us to infer the type of relationships that exist between the participants (MINAYO, 2016, p. 173,174).

So, following this methodological procedure, in the 1st meeting, 5 focus groups were formed for an initial dialogue and diagnosis of the reality of shellfish gatherers based on a problematizing script composed of 5 questions that generate debate, namely: 1. Do you feel valued and recognized for your work as a shellfish gatherer? 2. Are the amounts paid for the product of your work fair and worthy of the effort made? 3. How do environmental problems affect your work as a shellfish gatherer? 4. In your opinion, are the shellfish gatherers organized in the struggles for their rights? 5. Do you have hope that this reality can be changed?

Figure 2 – Photos of the 1st Meeting to identify the initial situations of the research



Source: Author's Archive (2022)

From the corpus of the speeches and testimonies collected, the data was interpreted using the dialectical hermeneutic analysis technique, which "is understood as the most fruitful to produce an evaluation that is both comprehensive and critical" (MINAYO 2016, p. 90). According to the aforementioned author, "the meaning of methodological praxis shifts the researcher from the posture of an external investigator,

who apprehends, to that of a researcher who positions himself together, in the middle, in intersubjectivity and part of history (MINAYO 2008, p.103).

Thus, the data produced were ordered constituting a set, a *corpus* of data to be technically worked through the following steps: (a) transcription of the audios; (b) rereading of the material; (c) organization of the reports in a certain order; (d) organization of observation data, constituting the empirical material of the hermeneutic process of field discoveries (MINAYO, 2016).

After these procedures, a framework was generated formed by the nuclei of meanings of the speeches/testimonies and suggestions for possible referrals to be shared and debated democratically with the community of shellfish gatherers.

Chart 1 – Initial diagnostic synthesis of the reality of shellfish gatherers

Nuclei of meaning	Interpretation of the data	Suggestions for possible referrals
Collectivity and self-organization	The reports express the absence of a collective self-organization of the group of shellfish gatherers, who despite good interpersonal relationships, still lack greater systematized integration with a view to fighting for their rights and improving working conditions.	- Carrying out a participatory extension action as a starting point for the process of collective organization of the shellfish gatherers of the Fishing Colony Z-09 em Piúma-ES
Social and cultural appreciation and recognition	There is a feeling of lack of social and cultural recognition for the hard work done for several generations of shellfish gatherers. Although the activity of collecting sururu is impregnated with affective memories rooted in the genealogies of the families, its practice as a cultural force is suffocated by the commercial need to sell the sururu "dishes" door-to-door, with low financial return and far below the risks in the work of collecting them.	- Articulation with the Municipal Public Power (City Hall and City Council) with a view to valuing and social and cultural recognition of the work of shellfish gatherers before society, having as a starting point the application of Law No. 1338, of December 20, 2007 that " <i>establishes the Day of the Shellfish Gatherer and gives other measures</i> "

Safety, Health and Environment	<p>The work of collecting sururu is considered risky because it is carried out on rocky shores and under the influence of sea waves with a potential risk of falls or drowning. The lack of basic safety equipment puts at risk the lives of shellfish gatherers who use the company of other colleagues, children or relatives to accompany the work whose individual performance is extremely risky (risk of falling, cuts in the shells, drowning and other possible accidents of high potential severity). Another problem is the disposal of waste (sururu bark) that can be used as organic fertilizer due to the high content of calcium carbonate (CaCO_3).</p>	<ul style="list-style-type: none"> - Technical guidance on working conditions and safety at sea with a view to preserving health and life and preventing accidents during the collection of shellfish (sururu) on the rocky shores and coastal islands of Piúma. Acquisition of personal protective equipment for the work of shellfish gatherers (gloves, sneakers, glasses, caps, sunscreen, etc.). - Elaboration of an environmental project on the disposal of organic waste from the processing of sururu.
Community access to Ifes Campus Piúma (dialogic interaction)	<p>A certain distance was found between the community of shellfish gatherers and the Ifes Campus Piúma. In more than a decade of the institution's existence in the community, 30% of the shellfish gatherers reported never having entered its gates, another 30% entered only once, 35% reported that they entered up to 3 times and only 5% reported that they entered the institution's physical space more than 5 times. As the Campus auditorium is widely used by meetings and graduations of other institutions and bodies of the municipality, only in occasional situations does the community have access to the Campus. Until this research was carried out, the annual extension reports of Ifes (2014 to 2022) contained only one (1) registration of specific and exclusive extension action/event/project with shellfish gatherers aimed at meeting their social demands.</p>	<p>Offer of an extension project with financial support for the development of activities and granting of support scholarships inserting the community of shellfish gatherers in the planning of the extension practices of the Fisheries Engineering Course at Ifes Campus Piúma, including the Extension Curriculum.</p>
Social and solidarity economy	<p>The absence of cooperative practices can be seen both in the work of collecting sururu and in the sale of products. Due to the limited administrative staff of the Z-09 Fishing Colony, there are no continuous non-formal education actions for the training and qualification of shellfish gatherers with a view to cooperative and economic development Solidarity.</p>	<p>Training in self-management and solidarity economy for the implementation of a cooperative of shellfish gatherers in Piúma-ES.</p>

Future prospects	Despite the extreme difficulties and almost insurmountable challenges in the context of their work, the need speaks louder and the shellfish gatherers do not give up working because their families depend, to a large extent, on this source of income to support the home. An intrinsic motivation and satisfaction in participating in educational actions at Ifes is perceived because, before the present action, many felt alien to this possibility, and the present participation was the first time of access to the institution, something that was impossible in the imagination of some shellfish gatherers.	Development of new research to deepen the investigation of reality with new proposals to advance the local development of shellfish gatherers in Piúma-ES.
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Source: Prepared by the author (2022)

Complementing the production of initial qualitative data, an individual form was also distributed to collect census information, the results of which show a succinct diagnosis of the social, economic and educational aspects of the shellfish gatherers, revealing a general profile of the community by sampling.

Table 1 – Socioeconomic profile of the shellfish gatherers involved in the action:

Age Group (age)	18-30	31-40	41-50	51-60	61-70
Occurrences	10%	20%	45%	15%	10%

Marital status	Married woman	Single	Divorcee
Occurrences	60%	30%	10%

Quant. Offspring	None	1	2	3	4	5
Occurrences	10%	20%	40%	15 %	10%	15%

Schooling	Fundamental I	Fundamental II	Middle school
Occurrences	35%	30%	35%

Partner's occupation	Fisherman	The car/strange	Motorbike	Fishmonger	Apos entado
Occurrences	40%	15%	15%	15%	15%

Time of Seafood Restaurant (years)	1 a 5	6 a 10	10 a 15	20 a 30	30 a 40
Occurrences	15%	5%	55%	15%	10%

Collecting shellfish (sururu) as the biggest source of income?	Yes	No
Occurrences	75%	25%

Another paid occupation besides sururu hunting	Fish Cleaner	Babysitter/ The helper	Sale of fh	Art shell esanato	Cleaning lady	No other paid work
Occurrences	15%	10%	5%	5%	5 %	60%

Have you participated in any course at Ifes Campus Piúma?	Yes	No
Occurrences	15%	85%

Have you participated in any course at the Fishing Colony?	Yes	No
<i>Occurrences</i>	20%	80%

Source: prepared by the author (2022)

The quantitative data produced by the participating public were analyzed from the perspective of a sample of the community of artisanal fishermen/shellfish gatherers from Piumenses, whose results reveal a predominantly mature population, aged between 31 and 50 years (65%), married (60%), having between 1 and 3 children (75%), with a majority of elementary education (65%), whose partners perform low-paid professions such as fishermen, street sweeper, fishmonger, helper and others with similar income (100%).

The vast majority of shellfish gatherers (70%) are experienced and have been working in the sururu collection activity for a period of time between 10 and 30 years, with this activity being the main source of income for 75% of the women involved in the extension action.

In this way, female participation in local artisanal fishing presents itself as an alternative for subsistence, work and income for many families. However, the devaluation and lack of recognition of women's work in artisanal fishing prevent women from being seen as active agents in this sector, despite being as important as men in the process of generating income and subsistence of the social group (SILVA SOUZA, 2022).

As a secondary occupation, 40% work in basic and general services such as: fish and shrimp cleaner, nanny, helper, fish seller, cleaner, shell crafts. However, when asked about another paid occupation besides the sururu harvest, most shellfish gatherers (60%) answered that they do not perform any other paid work, probably due to the low supply of formal job opportunities focused on the profile of elementary school schooling I and II, which is predominant in this social group (65%).

Reiterating a relevant data already mentioned, 85% of the shellfish gatherers involved in the action reported never having participated in a course or extension activity at Ifes Campus Piúma, and 80% had never participated in an event of this nature at the Z-09 Fishing Colony, which shows a large gap in educational actions aimed at this specific community.

Therefore, returning to the diagnostic framework of the initial reality (Chart 1), the interpretation of the data produced pointed out that the priority need to approach the variable Collectivity with the shellfish gatherers of Piúma was the starting point, given that

this is the starting point for the triggering of the other demands presented by the group, that is, the process of collective self-organization as a *sine qua non* condition (without which it does not) to sustain any local development project of the said community.

phase ii – planning of actions

Following the stages of action research for local development, proposed by Dionne (2007), the 2nd phase was initiated, called Actions Projection, with the purpose of defining the objectives and planning of the intended extension action.

Thus, in the light of the theoretical framework of Popular Extension, it was assumed that the Collectivity is the basis for the effective development of a given social group, and this is the indicator variable to be worked on in the intended extension action.

As a referral to the beginning of a dialogue and reflection on the problems presented in reality, a proposal for an extension action was elaborated, in dialogue with the leaders of the Z-09 Fishing Colony, with the objective of initiating a process of promotion of the Collectivity of the group of artisanal fishermen/shellfish gatherers, with a pedagogical strategy of holding educational meetings as an instrument of collective integration of the participants.

In this way, the extension action called *"Coffee with the Shellfish Gatherers: dialogues on education, work and collectivity with the women of the sea"* was designed. The title of the action refers to the time of the meetings that took place in the afternoon, in which, after the activities, a coffee with accompaniments (cake, biscuits, breads, cheese, ham, milk, juices, etc.) was offered. This afternoon time was strategic because, in the morning, the shellfish gatherers were usually busy with domestic activities, with the afternoon being the only time of day more viable for carrying out of educational meetings. Another relevant factor for the group's adhesion was that the extension action was carried out during the sururu closure period in Espírito Santo (September 1st to December 31st), during which the collection and commercialization of the mollusk could not be carried out so that the mussel could reproduce.

Figure 3 – Invitation "Coffee with the Seafood Gatherers" published in the WhatsApp group



Source: author's archive (2022)

Once the planning was carried out, the extension action had the general objective of promoting the beginning of a process of collective self-organization of artisanal fishermen/shellfish gatherers in Piúma-ES with a view to meeting their social demands. The specific objectives were: a) to carry out a diagnosis of the social reality of the community of shellfish gatherers; b) to carry out extension activities related to social, economic, cultural, environmental, anthropological and economic issues of the work of shellfish gatherers through dialogue and exchange of academic and popular knowledge; c) to forward to the municipal government the priority demands presented in the diagnosis of the reality experienced by the community of shellfish gatherers.

Following the institutional rites of Ifes, the extension action was registered and approved with the General Coordination of Extension Actions through the opening of a process for the purpose of certification of participants in the SRC - Ifes Registration and Certificate Issuance System.

phase iii – implementation of the planned activities

Following the two previous phases (identification of the initial situations and design of the actions) the intervention was carried out through the extension action "*Coffee with*

the Shellfish Gatherers" which consisted of a total of six meetings according to the schedule below:

Chart 2 – Programming of the Extension Action "Coffee with the Shellfish Gatherers"

Meeting	Theme	Disciplines of the Fisheries Engineering Course linked to the theme	Educational space of the meeting
1st Meeting	Diagnostic survey of the social, economic, environmental and cultural profile of the shellfish gatherers of Piúma*	Fishing Extension**	Z-09 Fishermen's Colony
2nd Meeting	Dialogues between scientific knowledge and Naturalistic: Biology of mollusks (Sururu)	Aquatic Zoology; Physioecology of aquatic animals	Ifes Campus Piúma
3rd Meeting	Basic principles of cooperativism from the perspective of solidarity economy	Fisheries Economy; Fisheries Administration	Ifes Campus Piúma
4th Meeting	Culture, environment, time, space and social identity of shellfish gatherers	Applied Anthropology	Ifes Campus Piúma
5th Meeting	Challenges, potentialities and the work of the Shellfish Gatherers of Piúma	Fishing Extension	Ifes Campus Piúma
6th Meeting	Referrals of the demands presented by the Commission elected by the Shellfish Gatherers	Fishing Extension	Z-09 Fishermen's Colony
<p>The meetings were held from 09/22 to 10/27/2022</p> <p>* The first meeting was part of Phase I – Identification of situations, through which a social diagnosis of the demands of the shellfish gatherers presented in the description of the respective phase was made.</p> <p>** The pedagogical practices of the discipline were conducted by the Pedagogue/Researcher. The themes of the other disciplines were developed by the Professors linked to the Fisheries Engineering Course.</p>			

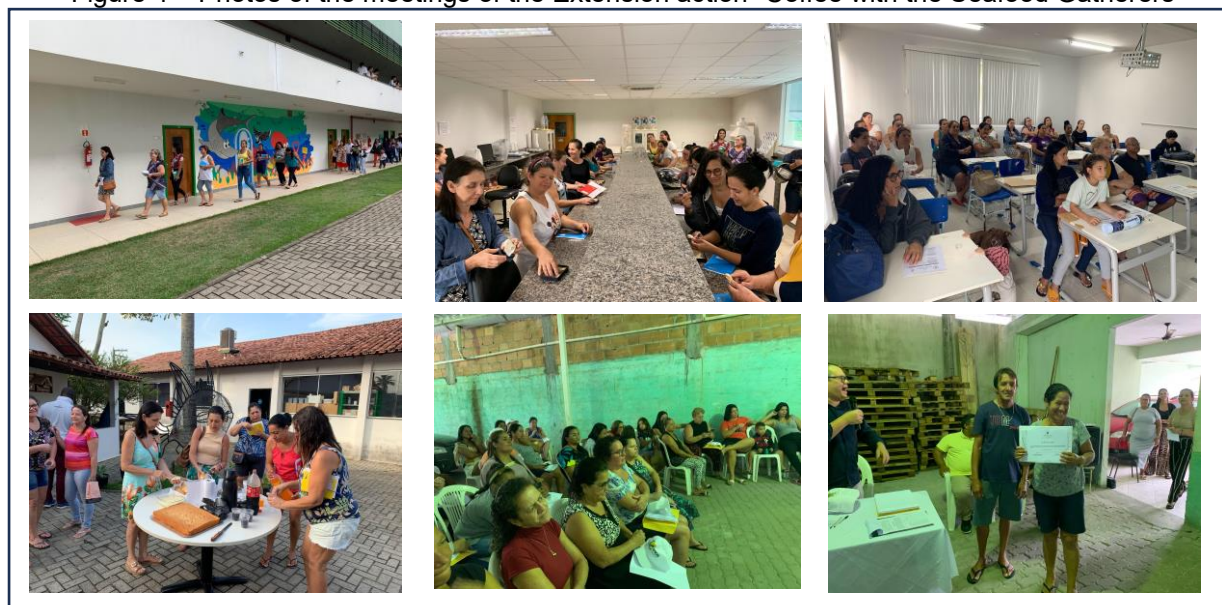
Source: prepared by the author (2022)

The activities were carried out in alternate educational spaces, initially in the Fishing Colony so as not to be strange, as it is the place where the shellfish gatherers were already used to frequenting. Afterwards, the meetings were held at the Piúma Campus, where some participants reported that they were afraid to enter because they thought that *"I had to pay to study because they thought that Ifes was a private college"*.

The feeling shown in the above statement demonstrates how much the community still feels isolated from the institution and that the simple fact of being in that space was considered something unlikely in their lives. This demonstrates how much an extension action provides an approximation of Ifes with society and, in this case, opening doors,

visible and invisible, and enabling the democratization of access to education and citizenship to economically vulnerable social classes.

Figure 4 – Photos of the meetings of the Extension action "Coffee with the Seafood Gatherers"



Source: author's archive (2022)

At the last meeting, a Commission elected by the other shellfish gatherers, produced an official letter, written and signed by the President of the Z-09 Fishing Colony, which was filed with the Municipality of Piúma, containing the collective demands raised by the group during the development of the extension action, requesting: 1) Vessel with capacity for 5 passengers and transport of 500 kg of cargo; 2) PPE (blouse with UV protection, water shoes, life jacket, hat, glove, sunscreen); 3) Tools/utensils: digger, wheelbarrow, bicycle, bag, cans (to cook the sururu); 4) Release for vehicle access to Ilha do Gambá (for transporting the sururu) and 5) Concession of box in the municipal market and space in the freezing chamber.

phase iv – evaluation of the results obtained

After the three previous phases: 1) identification of the initial situations, 2) design of the actions (objectives and planning) and 3) realization of the planned activities, the last phase of the methodological process was the evaluation of the results obtained in the extension action.

As already reiterated, the central scope of the work carried out was the beginning of the development of the Collectivity of shellfish gatherers, an action considered as a

starting point for a broader process of self-organization of the social group aimed at overcoming the problems faced in the daily life of the community through the search for their rights and better working conditions and income.

Following the same procedure as in the previous stages, the evaluation of results was carried out through the hermeneutic-dialectic technique understood as a research and work dynamic that integrates the analysis of structures, processes and results in social programs through the qualitative evaluation of the multiple dimensions of the reality studied (MINAYO, 2016).

To evaluate the extension action, a questionnaire with an open question and a form with closed questions was applied, covering the before and after of the extension action, seeking to identify the evaluation of the activities, in the view of the shellfish gatherers, regarding the main objective of the action, that is, to promote the beginning of a process of collective organization of artisanal fishermen/shellfish gatherers in Piúma-ES with a view to meeting their social demands.

Table 3 – Summary of the open-ended responses to the evaluation questionnaire

Did the extension course contribute to greater integration among shellfish gatherers? How was it before and how is it now?
"Yes. Before, there was a certain distance between the shellfish gatherers, during the meetings we got to know each other better and there was a rapprochement" (M12)
"Yes. Today we have more unity, more organized" (M20)
"Well, before I had a good dialogue with some shellfish gatherers, but with these meetings we get closer because with other thoughts we will go further and with all this knowledge, if someone looks after us it would make it much easier" (M3)
"We are more united and it is always good to have these meetings, I hope that they always hold these meetings so that our union is always strengthened so that when we need or arise a meeting we will be united to carry it out" (M17)
"Before we didn't know how valuable the product we have is and now we are going deep into our progress towards success." (M6)
"The meetings have helped because we are interacting with each other, getting to know different thoughts" (M16)
"The activities help to interact more with each other, we clear up some doubts we have and stay on top of issues such as the Cooperative, etc. We learned many things that we didn't know yet". (M4)
"Through the knowledge acquired in the classes that has provided the union between the shellfish gatherers" (M13)
"In the meetings we get to know each other better and discuss common issues." (M7)
Note: the acronym at the end of the sentence means the ordered identification of the testimonies collected, example: M20
– Shellfish gatherer 20, refers to the order number of the answer of the questionnaire applied. The answers were anonymous so as not to generate any discomfort or embarrassment to the participants.

Source: prepared by the author (2022)

The interpretation of the ideas and meanings exposed in the above statements converge to a central category, predominant and concatenated in a unifying logic, that is,

the principle of Collectivity as an elementary assumption of the self-organization and political consciousness of the group of the shellfish gatherers.

Collectivity, a theoretical variable referenced by Popular Extension, represents the starting point and point of arrival of the extension practice, in a circular movement, which goes from the empirical to the theoretical and vice versa, between the concrete and the abstract (MINAYO, 2016). In this sense,

(...) we can discover other learnings brought by Popular Extension, such as the cultivation of collective construction and group work. Popular Extension cannot be done alone, that is, the work needs to be done by everyone. For this reason, it must be managed and cared for by everyone. All the people who make up a group, in this social work, need to be actively co-responsible for the process, not only in its idealization, nor in the Realization. In Popular Extension, it is necessary to horizontalize the relations. This requires that evaluations be made with everyone, in a circle, in the same space where everyone makes decisions. (CRUZ, 2011, p.54)

Therefore, the extension action provided the shellfish gatherers, in addition to the new knowledge acquired, a moment of meeting, exchange of experiences, sharing of knowledge, collective grouping and perception of the political potential of the social group. The contents discussed in the meetings served as a catalyst for the Collectivity, that is, as an amalgam that generated a fusion between different people who form a whole with a common goal.

In this sense, the results of the extension action show the pedagogical potential of Popular Extension for the beginning of a process of collective self-organization and citizen emancipation of the community of artisanal fishermen/shellfish gatherers from Piuma.

In the form with closed questions, the impacts of the extension action were evaluated with regard to awareness and empowerment regarding the action in collective groups with a view to emancipation and the importance of Ifes in approaching the community present in its territory.

Table 2 – Summary of the closed responses to the evaluation questionnaire

1) Impression of your work after participating in the extension course?	(%)*
a) I maintain the same perception. I still have the same impressions as before (we are not important, our work is not recognized, we are disorganized and our rights are always will be denied because it is not worth fighting for).	0
b) For me, it was indifferent. It didn't matter, it didn't matter. Nothing has changed my thinking about the situation of my work as a shellfish gatherer at all.	0

c) Before I thought it was not important, now I see how much my work contributes to society (care for the environment, income generation, we are an important part of the chain productive fish, a feeling that together we can do more).	100
2) About my self-esteem and empowerment after the extension course:	(%)*
a) No, it got worse. I feel incapable and unimportant in my work	0
b) For me, it is the same as before, it has neither worsened nor improved.	0
c) Yes, it has improved. I am capable and my work is important.	100
3) On the awareness of the problems and the possibilities of solution:	(%)*
a) Before, I was not aware of the problems and did not know how to seek the solution.	0
b) Nothing has changed in my thinking about problems and solutions, for me it's fine the way it is.	0
c) Now I am aware of the problems and how to seek the solution.	100
4) Do you think that these actions with the shellfish gatherers should be repeated?	(%)*
a) They must not be repeated	0
b) From time to time	14,3
c) Yes, more often	85,7
5) How do you feel about Ifes after the course?	(%)*
a) I don't feel the desire to participate in courses and events at Ifes	0
b) Whatever, for me Ifes has nothing to offer me	0
c) I want to participate in other courses and events at Ifes	100
(%)* percentage of answers given to the options of the questions formulated	

Source: prepared by the author (2022)

Both the testimonies of the open questionnaire (Chart 3, p. 23) and the data of the closed form (Table 2, p. 25) show the incipient scope of a process of development of the Collectivity of shellfish gatherers, which was the indicator and main target of the extension action developed. In summary, the results of the extension action, expressed in the evaluation of the participating shellfish gatherers, unanimously show compliance with the Extension Guidelines at Ifes Campus Piúma since, through practices with this theoretical and methodological foundation, the institution exercises its transformative role of Extension in the relationship with other sectors of society, towards social change and the overcoming of inequalities, through an autonomous and critical relationship. Capable of generating social impact (IFES, 2019a).

It can also be inferred that the results of the action presented an objective diagnosis of reality and evidenced the beginning of a process of collective self-organization of the group of fishermen/artisanal shellfish gatherers from Piúma. This process will evolve through educational actions proposed by the Z-09 Fishing Colony in partnership with Ifes Campus Piúma, or vice versa, in order to consolidate the dialogicity between both institutions in a cyclical process of development of the local community.

CONSIDERATIONS

Through this experience, it is possible to verify the pedagogical potential of Popular Extension and the method of Action Research for Local Development as anchorages of extension practices that aim at the collectivity of vulnerable social groups, producing social impact, emancipation and citizenship of the participants-actors involved in extension practices.

It is inferred that this extension action contributed to the beginning of the development process of the Collective of artisanal fishermen/shellfish gatherers and constituted a new link between the Piúma Campus and the Z-09 Fishing Colony, through an experience that enabled the exchange of in line with the Institutional Guidelines of Extension, thus contributing to social change and overcoming the inequalities of the traditional communities present in their territory.

The theoretical anchor of Popular Extension gave firmness to the pedagogical practices that were supported by the collaborative participation of artisanal fisherwomen/shellfish gatherers and reflected the awareness of how to act in a collective group in the search for better working conditions and income for the entire community.

Since Collectivity is the premise for the self-organization of traditional and popular fishing communities, this experience demonstrated how extension actions can contribute to this process, in addition to promoting the construction of new knowledge that can integrate the curricula of higher education courses, in a two-way street between the academic institution and the community around it.

The methodological anchor, based on Action Research for Local Development, ensured that every action was planned and executed having as a parameter the reality and demands presented by artisanal fishermen/shellfish gatherers, ratifying the social commitment of the researcher and other participants of Ifes Campus Piúma with the local

community, without academic imposition, but through a horizontal dialogue of respect, equality, sharing and exchange of scientific and popular knowledge.

Comparing the before with the after the extension action, it is possible to see changes in the thinking of artisanal fishermen/shellfish gatherers, which has become more collective and less individualistic in the sense that only through self-organization can the group advance in the search for equal rights and socioeconomic valorization of their work.

Therefore, this experience was only a starting point that can serve as a preliminary diagnosis for proposing future extension projects that consolidate the construction of a bridge with an uninterrupted flow of educational actions between Ifes Campus Piúma and the collective of local artisanal fishermen/shellfish gatherers, thus fulfilling its relevant social role in contributing to the transformation of the reality of the traditional communities present in its territory.

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