

Fig. 2 Permits for shellfish on foot by zones and guilds (2019). Source: Galician Institute of Statistics. www.ige.eu

In addition, a detailed analysis of the literature on gender and labour segmentation in fisheries has been carried out for this study. This includes, first, a review of articles that analyse the role of women in the fishing economy and their importance in maintaining traditional activities linked to the sea. Secondly, theories related to the division of labour by sex are considered, alongside those that try to explain the causes and implications of gender-related changes in the labour market.

Finally, a review of the local press that specialize in maritime affairs in Galicia has been carried out; this is a valuable source of information for data on retirements and new entries

in shellfish gathering permits at a local level, details that in many cases are not published in official statistics.

Gender and labour segmentation in fisheries

The gender social systems under which women participate in fishing and fisheries

A large body of research has developed over recent decades highlighting gender segmentation in the labour market (Blau and Wallace 1979; Walby 1988; Bradley 1993; Hanson and

Pratt 1995; McDowell 2009). Other studies have also been concerned with occupational segregation in fishing communities (Yodanis 2000; Hapke 2001; Porter and Mbezi 2010; Kleiber and Harris 2015), particularly with regard to South-East Asia and some regions of Africa where fisheries have great economic and social weight. Academic articles, books, official reports, and scientific meetings—from the First Global Workshop on Women in Aquaculture organized by the Food and Agriculture Organization (FAO) in Rome (1987) to more recent ones—have multiplied, and highlight, among other issues, the important role of women in relation to fishing activities and the lack of information and visibility of their function (Sunderarajan 2002; Williams et al. 2002; García Negro and Zotes Tarrío 2006; Porter and Mbezi 2010; Dowling 2011; Kleiber and Harris 2015).

Women's participation in fisheries-related activities is often linked to economic precariousness (Kleiber and Harris 2015). Poverty is a feature of many coastal communities (Macfadyen and Corcoran 2002; Hapke 2001; Porter and Mbezi 2010), and so women's work is a key contribution to household income. Following the argument of Sunderarajan (2002), it is necessary to pay more attention to the change, from a focus on women in fisheries to gender and fisheries (Williams et al. 2006; Williams 2008). The latter implies not only evidencing gender roles but also understanding the subordinate position that women occupy in terms of the performance of their activities. Authors such as Lambeth et al. (2002) highlight the need to work with the entire community involved at every stage of the productive chain; separating men's and women's tasks prevents us from seeing the problem as a whole, just as it does if we project an exclusively sectoral vision. Broullón Acuña (2011) analyses the subsidiary character given to shellfish in Galicia and frames it in terms of sexual dimorphism between land and sea, in which the latter is associated with harshness, heroism, and virility and is therefore masculine (Martínez García 2017). This sea/man vs. land/woman dichotomy reflects a discriminatory structure in gender relations (Broullón Acuña 2011).

Kleiber and Harris (2015), in their gender study of small-scale fisheries (including non-boat fisheries such as the gleaning of invertebrates in intertidal spaces), review the content of published research. In addition to evidencing and trying to understand the causes of the important gaps in data provision, especially quantitative data, they defend and demonstrate the relevance of gender analysis in small-scale fisheries “not only for socio-economic concerns, but also to gain a more comprehensive and robust understanding of the human role in marine ecosystems” (Kleiber and Harris 2015: 558). While recognizing that gender roles are dynamic and open to change, some of the aspects addressed by Kleiber and Harris (2015) in their bibliographical review raise the point that women tend to work in intertidal spaces where the capture of invertebrates predominates, as in the case of bivalves in Galicia; such

spaces also include the practice of other post-harvest activities (Sunderarajan 2002).

In order to explain why women work in these near-home habitats, Kleiber and Harris (2015) compile, from the existing literature, multiple examples that allow us to have a clear idea of the situation. Thus, authors like Tekanene (2006) point out that the activities that women tend to carry out are characterized by their location close to the home, being part-time and requiring low costs in terms of investment and maintenance. In short, their aim is to combine professional and domestic tasks, including the possibility of taking their children with them while they work on the sandbanks. Women's fishing and fisheries labour are often viewed as simply part of their domestic tasks, the catch was destined for family food, and the surplus was sold or exchanged. In addition, this work is associated with craft characteristics that require little expenditure on work equipment. It is clear, therefore, that this division of roles reflects the classic patterns of discrimination in which the role of women as housewives and life support for the family is given priority over their role as fish workers. This is compounded by other prejudices such as the social rejection of women's inclusion on board ships, a workplace that is almost exclusively reserved for men; there can be no doubt that this is the case in Galicia. In fact, on a scale ranging from large vessels that fish in international waters to small vessels that fish close to the coast, the presence of women is almost irrelevant in the former and very insignificant in the latter (García Negro and Zotes Tarrío 2006, Ocupesca 2017).

Changes in this gender social systems and the cost of these changes to the women and men in fisheries

Another characteristic of women's work in sea-related activities is their dedication to tasks and to the harvesting of species that are less lucrative and generate less economic benefit (Porter and Mbezi 2010). In the case of Tanzania, Porter and Mbezi (2010) point out that as the value of a catch increases, the field is increasingly monopolized by men, leading to the deprivation and marginalization of women.

The masculinization of jobs that were considered female has not received the same attention as the feminization of typically male jobs (Lindsay 2007). Bradley (1993) describes three stages in gender changes in the labour market: infiltration (occurs when only a few men are present in a woman's occupation), invasion (occurs when many men enter an occupation that women have not completely abandoned), and take-over (occurs when an occupation is redefined as “men's work”). Meanwhile, Lindsay (2007) identifies four key issues for understanding the process: scarcity of alternative employment, opportunities for faster promotion, changes in working conditions, and the incorporation of technology. In both cases, it is important to point out that we are not only facing a process of substitution; the implications are greater, assuming, for

example, an increase in the status of that work so that it is considered “real” work (Lindsay 2007).

In short, if the incorporation of women into previously masculinized jobs does not take place under equal conditions, as evidenced by many official reports (European Commission 2019b; International Labour Organization 2018), the masculinization of what are considered women’s jobs also reveals structural issues in which power takes a leading role. Walby (1988) warns of the relationship between policies designed and implemented by administrations and the sexual segregation of the labour market. In this sense, Lindsay (2007) points out that historical evidence suggests that the most powerful professions exclude and delegitimize other professions.

Women’s fisheries labour in Galicia is concentrated in the most precarious and worst paid activities such as the processing and selling of fishery and aquaculture products (Gago and Ardora Formación 2004). Additionally, there is strong gender segregation in the fish and aquaculture processing industry, where women have the lowest paid and least stable jobs (Red Española de Mujeres en el Sector Pesquero (REMSP) 2018). In the case of shellfishing on foot, as soon as the conditions in which the activity takes place improve, it is regarded as professional work with higher monetary returns, which therefore improve its social recognition and trigger the masculinization process (Martínez 2019, Red Española de Mujeres en el Sector Pesquero (REMSP) 2016).

The importance of fishing and shellfishing in Galicia

Galicia’s shellfishery evolution

Galicia is one of the most important fishing regions in the European Union, with the highest employment level and economic dependence on fishing (Salz and Macfadyen 2007; Surís-Regueiro and Santiago 2014). Within the sector, the activity with the greatest relative importance in terms of income and employment is sea fishing, which accounts for 73% of gross value added at basic prices (GVA bp) and almost 60% of full-time equivalent employment (FTE), compared to aquaculture, which represents almost 20% of GVA bp and 23% of employment. Finally, shellfish farming on foot, the traditional subsector for women’s employment in coastal communities, accounts for 7% of GVA bp and 17% of FTE (Surís-Regueiro and Santiago 2014). There are large differences between Spanish coastal regions in terms of the importance of women in fishing, with Galicia being the region where the percentage of women is highest, 31.5% of those in Galicia associated with Special Regime for the Sea of the Social Security (SRS).

The importance of women’s work at sea has always been underestimated, largely due to the serious shortcomings of

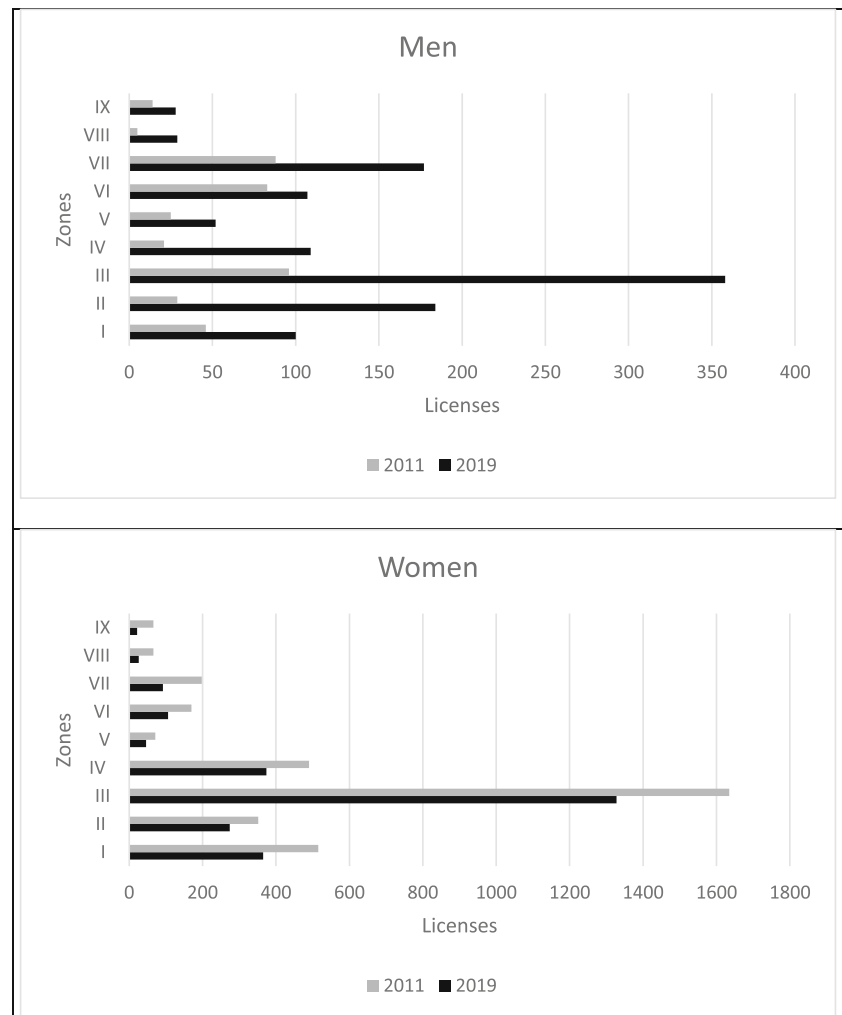
fisheries statistics, which stem from the informal nature of a significant part of the activities carried out in coastal communities. Therefore, for decades, women were absent from statistical counts (Aldrey and Lois 2001; Negro et al. 2006). Their work in the fishing sector has been very important for the maintenance of family economies, although in most cases it was carried out outside the formal economy. In this sense, Barnes and Christophers (2018) discuss the socially constructed concept of economy and the power of statistics to legitimize a country’s wealth. Indeed, García Negro and Zotes Tarrío highlight the poor quality of the document prepared by the European Commission entitled *The role of women in the fisheries sector* (European Commission 2002), particularly in relation to Galicia, pointing out that this document, when used as a tool for decision-making, can lead to erroneous conclusions.

Despite the absence of statistics and the invisibility of women’s economic contribution, women have been present in fishing and shellfishing activities, especially in shellfish gathering on foot, sewing fishing nets, mussel farming, algae harvesting, and in the process of the sale and distribution of fish and aquaculture products (Santos 2001). In addition, in many cases, they have been involved in the administrative and management tasks of vessels engaged in artisanal fisheries. In all of these activities, many of these women have remained in the informal sphere; consequently, their contribution has not been quantified and has been underestimated. It was not until the final decades of the twentieth century, with the professionalization of trades such as net mending or shellfish gathering on foot, and the awareness of women of their role as sea workers, that their activity has begun to be quantified in a more accurate way (Marugán 2010; Piñeiro 2013, 2015); this has allowed them to be incorporated into the so-called formal economy.

Shellfishing in its two forms, on foot and afloat, refers to the collection of shellfish (mainly bivalve molluscs) in the intertidal zone in marine waters. Such activities are undertaken under the shared management of the Galician regional government and fishermen’s associations (guilds), who carry out intense regulatory, supervisory, and control activities. Traditionally, shellfish gathering afloat is carried out by men in a small boat, whereas shellfish gathering on foot is carried out by women, generally without boats and using very rudimentary tools (Mahou 2008).

This is a traditional craft activity that is halfway between harvesting and extensive aquaculture. Most of the work is done with elementary production methods on the sandbanks of the intertidal zones and is mostly part-time employment (Martínez Ferreiro et al. 1998) (Pérez 2010). In Galicia, as in other parts of Europe, seafood harvesting has been a subsistence activity carried out for centuries by women and children on the shore, which is considered to be a public space that is open to the whole community. Demand for these products has

Fig. 3 Permits for shellfish on foot by fishing areas in Galicia (2009–2019). Source: Galician Institute of Statistics. www.ige.eu



wealth of the shellfish sandbanks and the value of the commercially available species. They range from almost 14,000 euros per year in the Cofradía of Cambados in 2016 to just over 12,000 euros in O Grove and Carril and 7200 euros in A Illa de Arousa (Estévez 2017, *La Voz de Galicia*). This income levels do not generally give workers complete economic independence (Frangoudes et al. 2008), a key aspect that will determine the continued incorporation of men into the activity.

Secondly, shellfishing on foot is an elderly profession. The figures reflect the decline in the number of permits granted since the beginning of the twentieth century, as well as retirements and terminations for various reasons, which have led to the development of an ageing workforce. Fifty-six per cent of women working in the sector are over 50, compared to 28 per cent of men in this age range. The incorporation of men is leading to the rejuvenation of the profession, as 35% of men with a shellfishing on foot permit are under 40, compared to 12% of women.

Discussion and conclusions

In the heavily masculinized fishing sector in Galicia, women have been confined to those less lucrative, informal occupations that are seen as supporting the main extractive activity. These include repairing nets, shellfishing on foot, and selling catches, usually on a local scale. These less professionalized activities have been the subject of a process of planning since the last decade of the twentieth century, led by the regional administration with extensive planning and management powers. This process has been highly dependent on the arrival of European funds linked to the Common Fisheries Policy.

Shellfish extraction on foot has been one of the subsectors most affected by this new organization of activity. Its workers were traditionally engaged in the harvesting of molluscs in the intertidal strip, destined for self-consumption or barter, with a strong seasonal character and without any type of labour recognition or social protection. Today, following a process of professionalization that has taken place over several decades,



Fig. 4. Annual evolution in guilds with more than 100 permits for shellfishing on foot in 2019 (2011–2019). Source: Galician Institute of Statistics. www.ige.eu

they have become professionals engaged in activities of preparation, cultivation, maintenance, and surveillance on the shellfish banks, throughout the year. These workers have managed to see their labour rights recognized, their social benefits improve, and their salaries increase, although there is still a long way to go before shellfishing on foot can become the main source of income for a family. Some progress that remains to be seen are those related to the recognition of professional diseases and innovation aimed at improving uniforms, protective elements, and work tools.

As this activity has become more professional, men have begun to show an interest in it, which has resulted in a progressive increase in those seeking to obtain a shellfishing on foot permit. This widespread incorporation in Galicia is much more pronounced in some fishing areas and guilds and is

determined by the level of income gained from shellfish gathering on foot and the work opportunities for shellfish gathering by boat and fishing. These are subsectors to which women are barred from joining, as reflected in the Occupational Survey (Ocupesca), which shows that women account for 5% of workers on boats operating in the national fishery and 0.4% in the European Union fisheries and are entirely absent from boats in international waters (Ocupesca, 2017).

The example we have dealt with in this text fits perfectly with other analyses in the academic literature. The lack of information and invisibility, the scarce social prestige, the nature of family support and the demands of domestic labour, and the subsequent need for the workplace to be near home are some of the factors that unite this feminized activity with many others, as was made clear in the theoretical framework.

Furthermore, we have also seen how the professionalization of shellfish gathering on foot, due to the increase in the economic value of the species captured and the consequent need to establish regulations, has been empowering for women in this sector, while at the same time stimulating the incorporation of men who, following Bradley's (1993) criteria, have moved beyond the infiltration stage to the invasion and, even in some cases, the takeover stage.

According to Lindsay (2007), we are not simply facing a process of substitution but a change in the status of the profession with obvious implications for gender relations. In this research, we have found that, although it is true that the path to professionalization served to empower women shellfish gatherers, it was also an instrument to exclude the most fragile from the system, i.e. those who were older, less educated, or with family responsibilities that were incompatible with undertaking "real" work. Many of these displaced women had been on the front line of the conflicts that arose as a result of the sector's planning, such as those that were of a territorial nature, delineating the concession areas.

We consider it necessary to reflect on whether the regulation of shellfishing activity in the 1990s was actually a subtle form of control of women shellfish collectors and their work areas. Martínez (2016) points out that the discourse of the 1970s in favour of the privatization of shellfish sandbanks was justified as being less predatory and a more rational approach to the use of resources, exactly the same argument that accompanied the plans drawn up by the administrations 20 years later. In any event, as we have already seen, the results in human terms were, firstly, the exclusion of the most vulnerable women and, secondly, the progressive incorporation, infiltration, and invasion of men into the activity.

The empowerment of women shellfish harvesters from the 1990s onwards became stronger with their entry into the decision-making bodies of the guilds, with the recognition of their profession, and with the development of multiple initiatives ranging from tourism to the creation of their own organizations. Yet, the path was full of difficulties and was met with resistance Martínez (2019). Hence, Martínez (2016) states that professionalization has had an impact on this empowerment both at the individual and, to a lesser extent, the collective level. However, we believe that the empowerment of women shellfish workers is not the exclusive result of this process of the regulation of the activity but comes as the result of several different processes. In this sense, the fights started by the shellfish workers in the 1950s, and that intensified in the 1970s, to maintain the sandbanks as communal assets, in the face of privatization attempts, stand out as evidenced by the research of Martínez (2016).

While it is true that rural Galicia, at least since the middle of the nineteenth century, has been highly feminized due to emigration, with more than 80% of emigrants being male (Aldrey Vázquez 2006), in coastal areas, there were also absences,

sometimes prolonged, of men because they were working on board ships. This gave women an unusual role in the economic sphere and in the occupation of public frontier spaces, such as sandbanks, that were usually reserved for men (Martínez, 2016). This anomaly, associated with organized and resistant women workers (Marugán Pintos 2004; Santasmarinas 2006), seems to be normalized with the professionalization of women shellfish harvesters and their consequent empowerment.

In this study, we have been able to verify that, although women's empowerment is a necessary step to overcoming gender discrimination, it is far from sufficient to end the patriarchy. In fact, Martínez García (2016 and 2017) points out that once women's participation in the power structures of the guilds is normalized, there are subtle and vaporous forms of control that are directly related to the systems of sex-gender domination. Furthermore, according to Scott (1990), there are also power relationships within the dominated groups where, once again, these gender inequalities are reproduced.

It is necessary, to evolve from the perspective of women in fisheries to gender in fisheries, in order to better understand the inequality in gender relations and how these are anchored to the structure of society and to provide the basis for more appropriate action (Williams et al. 2002; Williams 2008). Broullón Acuña (2011) interprets the process of the professionalization of women shellfish harvesters in terms of social control. The border territory, in this case the intertidal zones, is a space defined as conflictive and disorganized that administrations control in exchange for the participation of women shellfish gatherers in the exploitation of those spaces. According to Broullón Acuña (2011), this change also led to the evolution of this activity from occupying a subordinate role to a more central position, under the supervision of what this author calls expert agents. Although Broullón Acuña (2011) does not expressly cite the masculinization of the activity, there is a clear warning relating to how the patriarchal socio-sexual structure is controlling this process of regularization that is leading to the gradual displacement of women as a workforce. In this way, the self-appreciation of women's empowerment without a strong gender awareness limits the potential for transformation (Martínez Vidal 2017).

In summary, at least two things have become evident from this study: firstly, that the work of shellfish catching fits perfectly with the socially established patterns of gender roles, by making it possible to combine professional and domestic work, and secondly, a process of empowerment has been described that, even with difficulties, has contributed to the normalization of the role of women in this activity. However, we have also tried to highlight the ways in which the patriarchy preserves the hegemonic position of men. In this sense, a progressive masculinization of this activity can be observed, without compensation in terms of the incorporation of women into the crews of fishing boats, which remained at 4.1% between 2011 and 2017

(Ocupesca, 2011, 2017), and in much more subtle ways that are protected by democratic ideas of justice in terms of access to shellfishing permits. Professionalization, associated with higher incomes and a greater time commitment on the part of workers, is leading directly to the substitution of the labour force and the recovery of public space, in this case the sandbanks, by men. Could it be that the empowerment of shellfishing women has generated a reaction based on a perceived attack on men and masculinity (Bannon and Correia 2006)? It is necessary to go deeper into this change, analysing in each one of the guilds the motivations that cause different degrees of incorporation of men into shellfishing on foot at a local level. It is also important to study in detail why women do not seem to follow the same path by engaging in shellfishing by boat, despite the fact that surveys suggest the availability of shipowners willing to hire them (CETMAR 2010). Finally, it is necessary to be aware that public policies must support greater equality in terms of employment opportunities in the fishing sector, and that, so far, there have been few initiatives in this regard.

Future research is required into the as yet under researched area regarding the incorporation of men into activities traditionally filled by women in the fishing sector. As has been said, the process of masculinization of shellfishing on foot is a relatively recent phenomenon, which has not been previously addressed in literature. The literature on the masculinization of feminized jobs has focused on professionalized fields, such as agriculture or nursing (Heggem 2014; Rochlen et al. 2009). In the case of shellfishing on foot, the process has been quite different since masculinization has occurred after professionalization.

The high economic value that many of the species that are caught are acquiring and the limited job opportunities in many small fishing villages point to a strengthening of the trend towards masculinization. If the 2008 crisis meant the transfer of many men who worked in construction to the hospitality industry and to other professions, such as shellfishing on foot, the COVID-19 crisis and its significant impact on the hospitality industry and tourism could accelerate the transfer of labour to sectors with increasing profitability, such as shellfishing on foot. These trends are the basis of future research that will try to delve into the implications of the masculinization of some fishing activities—such as shellfishing on foot—and of the stagnation of the incorporation of women into other strongly masculinized activities—such as fishing—for the understanding of gender roles in activities and communities highly dependent on fishing.

Author contribution Both authors have participated in the elaboration of all the phases of the study.

Data availability Not applicable.

Declarations

Conflict of interest The authors declare no competing interests.

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