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RESEARCH

Clinker, sailor, fisher, why? The necessity of sustained demand for safeguarding clinker craft intangible cultural heritage

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Abstract
This paper examines the maintenance of the knowledge and practice of Nordic clinker boat building in the setting of coastal Denmark, characterized as a form of intangible cultural heritage (ICH). We explore the 'working' dimension of these boats as small-scale fishing vessels and the risks to this ICH as expressed in various policy, social, and economic domains. The paper centres around a working boatyard on the west coast of North Jutland, incorporating perspectives from a network of wooden boat builders, and those working in coastal and maritime cultural heritage in Denmark and the wider Nordic region. Threats to the continuation of the heritage in its 'working' form are explored using responses from semi-structured interviews, as well as documents related to the pan-Nordic application for the inscription of Nordic Clinker Boat Traditions on UNESCO's Representative List of the Intangible Cultural Heritage of Humanity. The case highlights the challenges specific to 'boatbuilding for industry' as a form of ICH and opens a discussion on which actors and institutions ought to be responsible for safeguarding, maintaining and cultivating its practice and renewal.

Introduction

Interested actors from the Nordic region have been working together since 2011 to achieve the goal of including traditional Nordic Clinker Boats on The List of the Intangible Heritage of Humanity (Forbundet KYSTEN, 2020). They succeeded, with 'Nordic Clinker Boat Traditions' inscribed in December 2021 (UNESCO, 2021). UNESCO introduced the Convention for the Safeguarding of the Intangible Cultural Heritage in 2003 (hereafter the Convention) (UNESCO, 2003a), with the aim of safeguarding intangible cultural heritage (ICH), ensuring respect for ICH and its associated actors, raising awareness of the importance of ICH and providing for international cooperation and assistance (UNESCO, 2003a, b). The Convention defines Intangible Cultural Heritage as:

> The practices, representations, expressions, knowledge, skills – as well as the instruments, objects, artefacts and cultural spaces associated therewith – that communities, groups and, in some cases, individuals recognize as part of their cultural heritage. This intangible cultural heritage, transmitted from generation to generation, is constantly recreated by communities and groups in response to their environment, their interaction with nature and their history, and provides them with a sense of identity and continuity, thus promoting respect for cultural diversity and human creativity (UNESCO, 2003a, b).

This article explores the particularities of the Nordic clinker building and its heritage with reference to potential safeguarding attempts. It examines the embodied practices of the clinker boat builders and the knowledge stored inside the minds of the boat builders, and transmitted from generation to generation, being unwritten but constantly evolving in response to societal and geographical contexts. We argue that the 'industrial craft'[1] setting has a particular impact

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[1] When talking about their craft, boat builder interviewees repeatedly used the Danish word '*erhverv*' to differentiate between working on boats that are actively used in the fishing industry and working on boats used for leisure. '*Erhverv*' has several context-dependent definitions, and does not translate directly to English. After consultation with native Danish speakers, we have chosen to use the words 'industrial'/'industry', to denote this differentiation, informing the idea of an 'industrial craft' setting.

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both on the type of risks to ICH and its manifestation and continuation, and the policy response required to effectively safeguard ICH in a sustainable and dynamic manner. By illuminating the challenges of and threats to clinker building, and relating these to potential attempts to safeguard this ICH through policy, the paper unpacks threats to ICH in an'industrial craft' setting.

With regard to the 'industrial craft' postulation, we specifically interrogate the claim that preserving the clinker tradition exclusively in a museum setting may be problematic and could jeopardize even the 'recreational' uses of clinker-built boats, ultimately resulting in the loss of the essence of the craft. Thus, we argue that preservation exclusively in a museum setting cannot be equated with safeguarding, as defined by UNESCO. In doing so, we open a discussion on the seat(s) of responsibility for safeguarding, maintaining, and cultivating this particular form of ICH, and propose a distinction between 'craft' and 'industrial craft', further discussing the implications this distinction may have for safeguarding attempts.

Using a qualitative mixed methods approach, we combine semi-structured interviews, participant observation, and document studies and work across three regional scales: coastal Denmark, the Nordic countries and territories, and the wider North Atlantic. First, we present a brief review of the evolution of definitions and policies of ICH and its relations to material and tangible aspects. Thereafter, the research methodology is detailed with a description of the case—clinker boat building craft—and its significance both as CMCH and ICH. In the empirical section of the paper (the "Significance and distinct features of Nordic clinker boats and the clinker craft" to "What is next for clinker boat building for industry: obsolescence or revival?" sections), the craft's prospects are explored, with reference to (a) challenges and opportunities for safeguarding the knowledge and (b) the possible seat(s) of responsibility for safeguarding clinker boats. Finally, in the discussion we interrogate the potential for distinction between art and tool within 'craft' for better understanding of ICH and its risks to inform safeguarding.

Safeguarding cultural heritage: a brief review

Passage of The Convention in 2003 was a result of several decades of tangible/intangible heritage discussions, encapsulating the rise to relative prominence and acceptance of ICH at the global level. Traditionally, Western countries focussed on the intrinsic quality of objects and what they represented, resulting in a conservation approach that attempted to preserve historic monuments (Vecco, 2010). A different approach to culture was cultivated in Japan, where the 1950 'Law for the Protection of Cultural Properties' included both tangible and intangible cultural heritage (Kurin, 2004). In this approach, which has influenced the erosion of the dominant 'monumental' and 'universally significant' approach to heritage (Smith, 2006, 2012), the monument is not the focus of conservation, but rather the spirit that the monument represents (Vecco, 2010). The development of an intangible cultural heritage tradition reflects an increased importance being placed on 'the wealth of knowledge and skills that is transmitted from one generation to the next' (Alegret and Carbonell Camós, 2014, p. 14), and the social, economic, and environmental value of this.

As well as promoting the value of intangible cultural heritage in global discourse, the Convention also indicated a new paradigm in heritage policy and law-making (Blake, 2014; Lixinski, 2014). The Convention in effect discards the preservation paradigm (Erlien and Bakka, 2017), embracing 'safeguarding' as the new heritage modus operandi.

> Safeguarding is defined in Article 2(3) of the Convention as, 'measures aimed at ensuring the viability of the intangible cultural heritage and, specifically, including the identification, documentation, research, preservation, protection, promotion, enhancement, transmission, particularly through formal and non-formal education, as well as the revitalization of the various aspects of such heritage' (UNESCO, 2003b).

Implicit in this paradigm shift is the understanding of heritage as something that 'changes and is transformed over time' (Lixinski, 2018, p. 31), a change recognised in the adoption of 'safeguarding' as opposed to its predecessor, 'preserving' (Lixinski and Schreiber, 2017, p. 19).

The adoption of the Convention consolidates a shift in focus 'from valuing monuments, sites, artefacts and other objects, to safeguarding a living heritage that is primarily located in the skills, knowledge and know-how of contemporary human beings' (Blake, 2018, p. 18). Conserving cultural heritage in this paradigm is not about protecting dormant monuments to culture/of cultures, 'of value to history, art or science' (UNESCO, 2005), but about protecting culture itself, in its living form (Aikawa-Faure, 2014). The growing influence of this approach to cultural heritage preservation (Nerinck et al., 2020) is reflected in the changing selection criteria for cultural heritage, which has shifted from being based on 'historic' or 'artistic' values, to including, 'the cultural value, its value of identity and the capacity of the object to interact with memory' (Vecco, 2010, p. 324). The change in vocabulary to include both the protection and safeguarding of intangible cultural heritage further exemplifies this point.

Beyond certification and signalling however, the UNESCO designation does not actively contribute to safeguarding, which is left to other public and private organizations, groups, and individuals. Furthermore, policies and mechanisms that ensure the continuation or maintenance of ICH may require

action in diverse economic, political, social, and cultural arenas. According to UNESCO, ICH can cover, 'Traditions or living expressions inherited from our ancestors and passed on to our descendants, such as oral traditions, performing arts, social practices, rituals, festive events, knowledge and practices concerning nature and the universe or the knowledge and skills to produce traditional crafts' (UNESCO, 2003b). As characteristic of its intangibility, or non-physical and invisible nature, interventions which safeguard ICH, especially those rooted in traditional crafts and technologies, face particular obstacles. Focusing on 'traditional crafts', UNESCO states, 'safeguarding attempts should instead concentrate on encouraging artisans to continue to produce craft and to pass their skills and knowledge onto others, particularly within their own communities' (UNESCO, n.d.). However, based on UNESCO's definitions of 'safeguarding' and 'traditional crafts', we identify a potential blind spot of safeguarding, which we aim to illustrate with this article's case.

On the distinction between tangible and intangible heritage

In the words of Tan et al. (2020, p. 440), 'if there is no one to continue practicing a particular ICH, it will slowly fade away and disappear', and this disappearance may be overlooked because 'the impact of the loss of ICH is not as intense or noticeable as the impact on the tangible heritage…arising from the demolition of an old building' (ibid, p. 440). Nonetheless, Kirshenblatt-Gimblett asserts that 'the division between tangible, natural, and intangible heritage and the creation of separate lists for each is arbitrary, though not without its history and logic' (2014, p. 171). We agree that it is hard to argue that all three categories are discrete; however, given that these categorizations are used by UNESCO (i.e., there exists a distinct 'List of Intangible Cultural Heritage of Humanity'), and consequently inform policy and academic literature, the division has practical merit. For the purposes of this article's case, it is necessary to distinguish between the tangible (material) and intangible (immaterial) elements of the cultural heritage. In the case of the boats, the loss of ICH is intertwined with the material culture, but the interventions may still focus on tangible cultural heritage as opposed to the knowledge of the boat builders and their corporeal memory. Furthermore, the clinker craft is an oral and embodied tradition, hence unwritten, adding to a further sense of intangibility. We will, accordingly, refer to clinker boat building as an example of intangible cultural heritage.

Methodology

The empirical material supporting this article and used in the analysis are based on document studies of the UNESCO statutes and submission materials of the Nordic Clinker boat Traditions UNESCO ICH application, as well as wider grey literature on clinker boats, including news articles and museum materials. In addition, semi-structured key informant interviews (7 interviews with 12 individuals) were conducted, and their transcripts were analysed using NVivo software. Key informants[2] included 6 boat builders at different stages of their careers (1 early career, 3 mid-career, 2 seniors), 3 persons working for community organizations related to traditional clinker boat building (including 1 rope-maker), 2 teachers at a folk high school (*højskole)* in the case area, and 1 museum curator. All interviews were conducted in Danish, recorded and transcribed, and completed between November 2018 and September 2020. Of the 6 boat builders, 5 worked commercially at the time of interview, including 1 employed by a museum. Coding analysis included an a priori coding tree, which was supplemented by inductive codes. Additionally, ethnographic field notes and excursions to the boatyards and surrounding areas in Slettestrand, Thorupstrand, Løgstør, and Holbæk, Denmark, contextualized the interviews.

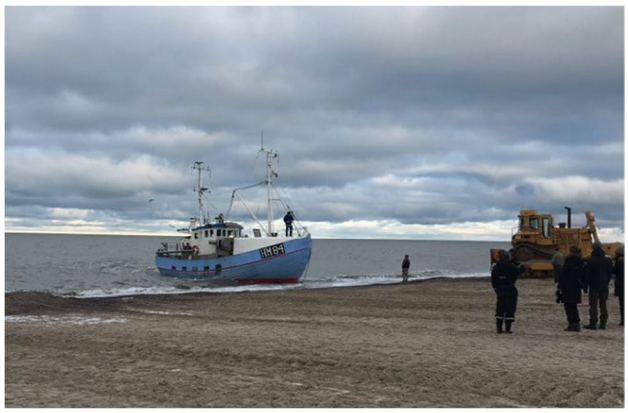

Fig. 1 Clinker built fishing boat being dragged onto the beach after a day working at sea in North Jutland, Denmark

Nested in the context of the wider clinker UNESCO application, the interviews focused on the case of clinker boat building in Denmark, particularly on an industrial boatyard and fishing fleet on the west coast of North Jutland. Here, clinker-built fishing boats are still in use and are hauled onto beaches when not in use, as opposed to being moored in a harbour (see Figs. 1 and 2). These coastal fishers are some of the last to carry out this practice, which was once ubiquitous along the Danish coast. There are also still active clinker boat builders, who are building new fishing vessels. There are initiatives to help preserve this tradition,

[2] To protect the confidentiality of interview participants, gender-neutral pseudonyms and pronouns have been used and specific mentions of organizations and affiliations have been removed.

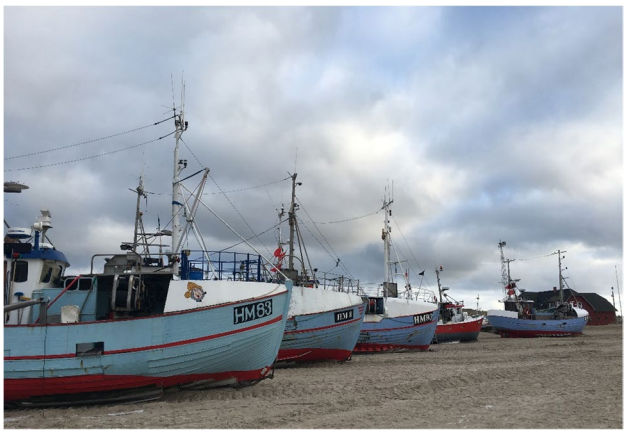

Fig. 2 Clinker built boats on the beach in North Jutland, Denmark

including the establishment of a new cultural centre, a crowdfunding campaign, and a UNESCO proposal together with groups from other areas with a Nordic cultural heritage. Over the course of the research, it became clear that taking a network perspective on clinker boat building would improve the analysis. Thus, interviews were done with those working elsewhere in Denmark, and the UNESCO application documents supplemented the interviews.

Significance and distinct features of Nordic clinker boats and the clinker craft

For over a millennium, it has been possible to see clinker-built ships and boats in the North Sea and North Atlantic, as well as in European rivers, transporting warriors, merchants, fishers, and emigrants (Indruszewski, 2009). The clinker boat building ICH is one that is part of a 'shared Nordic cultural history' (Vikingeskibsmuseet, 2019) and a cultural history in the wider North Atlantic coastal area. However, clinker boat building is not homogenous, with boats having different forms between and within countries, depending on geographical characteristics (e.g., deep fjords versus sand beaches) and the intended use of the boat--various shapes and sizes of clinker-built boat are found in areas with Nordic cultural roots. Originating from roughly 2000 years ago, the clinker boat tradition had three basic features: 'boat-shaped lines[3]', a symmetrical frame system, and shell first principle, which had such 'permanence over more than a millennium that it was as if a proper master plan had been imposed followed by everyone working within this tradition' (Crumlin-Pedersen, 2009, p. 156). However, there was no master plan: 'Ships built in the Nordic clinker tradition during the Viking Age were conceived and constructed simultaneously by eye, in a shell-first manner, and using rules-of-thumb to control both the longitudinal and transversal shape of the hull' (Dhoop and Olaberria, 2015, p. 95).

While there is more variation in form today, with the clinker craft being used to construct a larger range of sizes and shapes of boats, the lack of master plan continues. Clinker-built ships are still constructed without a drawn plan, 'the design of the boat is in the tradition, and in the heads of the boat builders. This kind of boat, we have no drawings, no design, no blueprint beforehand,' (EuroNews, 2020). Instead, the boats are constructed from 'mental templates' (Dhoop and Olaberria, 2015), and based on 'living traditions' (Indruszewski, 2009). Dhoop and Olaberria argue that mental templates, constituted of a series of 'rules-of-thumb', support the transmission of knowledge from boat-building master to apprentice (Dhoop and Olaberria, 2015). The inherited mental template provides the correct dimensions and angles of the boat, and the builder's eye judges and adjusts the correct placement and shearing of the planks. The mental template allows the rules-of-thumb of clinker boat building to be passed down from generation to generation, as well as moving geographically with the boat builders that possess them (ibid).

Craftsmanship and learning the trade

Clinker boat building is an artisan tradition, which 'requires many years of experience in understanding the complexity of the hull shape and interaction between the hull and the rigging' (Friis-Olsen, 2021). Emphasized in interviews and in the UNESCO application materials, clinker boat building is a 'learning by doing' enterprise. The knowledge is not written and read but embodied, learnt tacitly over time from master to apprentice. Rather than draw and read physical plans, clinker boat builders 'need to be able to see the finished boat [in their heads] before they start building. You need to be able to work out how it will move through the water, and you need to do this before you start' (Sam). Not only is it important to understand the form of the boat, but also how the raw materials will eventually come to make up this form. The clinker boat builder needs to be able to see sawn pieces of wood in two dimensions and imagine how they can bend and would look in three dimensions when they are lapped one on top of another:

> "It will look completely different when (the wood) is lying flat… But the flow of the strakes [the sides of the boat] is so clear on a clinker-built boat, because

[3] 'A double-pointed, elegant shape with rising lines towards the curved stems, as well as slender frames and beams which are symmetrical to the centre plane and places with a regular, wide spacing along the length of the hull… to Scandinavians this set of features defines what is considered a 'proper boat shape' for a traditional boat" (Crumlin-Pedersen, 2009, p. 148).

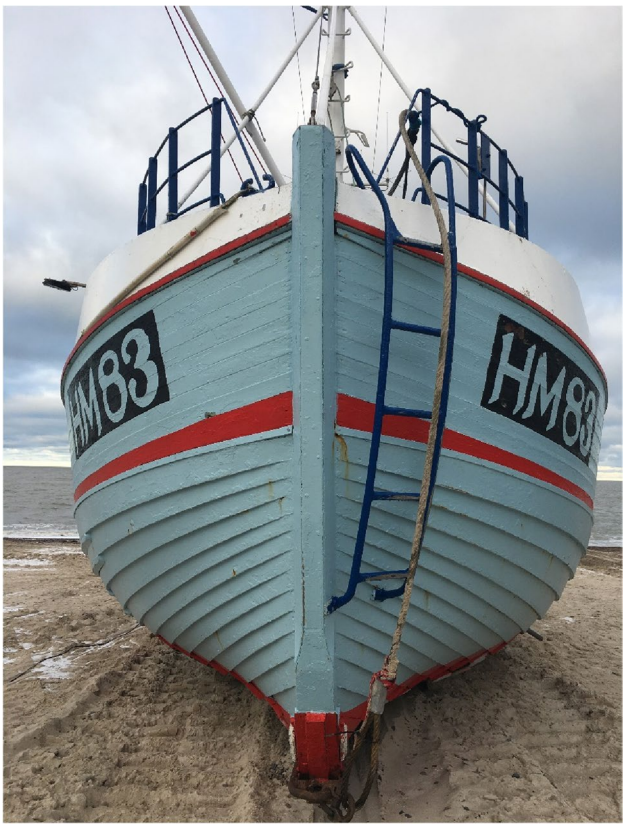

Fig. 3 Close up of a clinker built boat, showing the form of the sides of the boat, with the overlapping planks. Only an experienced individual can make the sides appear this even—and it is impossible to make the sides truly symmetrical

> they lie on top of each other and that makes it look really nice, it's something that comes precisely because you have done it many times… you can measure and do everything possible, but you do not get the right [result]. It is only when you understand: I measure and then I take a little off here, leave a little on there, then it will be right. That experience, it is one of the most important elements… when clinker building." (Robin)

Some have noted the parallels to garment design—taking something lying flat in two dimensions and building it into a three-dimensional object (Fig. 3).

Such visualization and improvisation are not innate skills, nor ones that can be learnt by reading a book, but something that relies on an individual building this style of boat again and again. One boat builder referred to the "10,000 hour rule" from their training in Norway, emphasizing the number of hours spent on the craft in order to master it, 'That is to say, if you have done something for 10,000 hours then you can say that you can do it. It is that, that is disappearing' (Robin). Furthermore, this idea of 10,000 hours doing the same tasks or making the same type of objects highlights the embodied nature of this craft and its knowledge, 'We've talked about it before, there is some of this embodied knowledge that you cannot explain that you do it just like this and like that, you can only do it because you have done it many times' (Robin). Expressed by Robin and other boat builders, clinker craft boats require a muscle memory and corporeal understanding of how to craft them, as opposed to working from drawings. The boat builders underscored that having practiced clinker boat building over years and numerous boats was how one became an expert.

The two most senior (and respected) boat builders we interviewed underlined that they had yet to build "the perfect boat"; 'And then you think every time you make a new boat, "this is the perfect boat"—forget it, because the perfect boat, it will never be built,' (Charlie). Five criteria—speed, load bearing, handling in the water, standing upright on land, and aesthetics—make for a good clinker boat. They explained the trade-offs among these criteria:

> You can easily say that the perfect boat has never been built, nope. And with boats, there is always a compromise. Shall it run fast, shall it carry a massive load, shall it cut through the water, shall you be able to stand up, shall it look good? Then you have five parameters and you have to fit them together. I will just say hurray for the compromises because it's going to [require] a big compromise. …So, you can well see in this world, it's not easy, right? (Charlie).

Only once a boat builder has built up a wealth of experience are they able to make creative and novel adjustments to alter the characteristics of the boat. Describing the special abilities of the most experienced boat builder, Lesley explained 'because (they) have built so many boats, they can adjust the drilling a little… all these small little finesses… how they can make it better and quicker and more stable and such' (Lesley). In this sense, the clinker craft is human-centred, contained within, and embodied by clinker boat builders and especially experienced "master" boat builders. Keeping this kind of knowledge vital relies on a continuous chain of boat builders with myriad experience who pass on this knowledge to each other. The threat of a break in the chain has significant consequences, 'It is knowledge that has been built up throughout so many years, and if you have just one generation that does not pass on the knowledge, it is necessary to rebuild from the bottom up' (Lesley).

Mind the gap: generational shift in clinker boat mastery and its challenges

> 'There are not many in Denmark that have knowledge of clinker-built boats in newer times. There are many in the profession that are getting older' (Frankie).

The prospects for the clinker boat appear to be beset by challenges, with a limited and ever shrinking cohort of knowledge holders remaining. The human-centred element of the clinker ICH, the generational shift in boat builders, changing demand for fishing boats, and boatbuilding skills all pose challenges to the effective safeguarding of the clinker-building craft. '[Alex] is the last that is left of them that can actually do it, and maybe also [Ashley] I would think' (Lesley) emphasizing that the carriers of this experiential knowledge are dwindling.

The current boat builders are largely at, or close to, retirement, and the various active wharfs have been struggling to train and retain apprentices. In some periods the boatyard had a new apprentice every year, but the yards struggle to keep these individuals within the profession 'in the 15 or 16 years I was [in that wharf] we educated loads of apprentices, but I think only 3 or 4 remain in the profession today' (Charlie). Some individuals move on to further education or become another kind of carpenter, in some cases because the work was too demanding. From the interviews, it became clear that being a clinker boat builder was almost a lifestyle, requiring dedication, a strong body to withstand the hard physical labour and oftentimes harsh outdoor working conditions, and a commitment to learning the craft outside of ordinary "working hours". One senior boat builder underscored the level of dedication required, 'I mean, such a day as today, sitting out under the bottom of a boat, wet and cold… and you need to do that again tomorrow, and tomorrow and tomorrow… you need to really want it [to be a boat-builder]' (Alex).

On top of the physical exertion, waning demand for clinker-built boats (see the "Developments in the fishing industry" section) means that those newly educated builders who do enter the profession have a limited number of new boats to build and old boats to renovate, and will likely need to supplement this work with other boatbuilding or carpentry work. In conversation with two senior boat builders and one apprentice, referring to the career outlook for this current apprentice, one senior remarked, 'It will not be the clinker built boats [they] will live off of. They will be a part of [their] livelihood, but it is not that [they] will come to live 100% from [building clinker-boats]' (Charlie). Acknowledging this reality for themselves, this apprentice figured they would supplement with repair and restoration work on clinker boats, other wooden boats, or even fibreglass vessels, and potentially, do other carpentry or construction work. The other two mid-career builders had similar trajectories, but one was a self-employed builder working with 'industrial' and leisure vessels.

In the Nordic countries, there are formal training and credentials for boatbuilding. Although this includes wooden boatbuilding, most students choose the fibreglass line in their educations (reported from interviewed boat builders). The four early and mid-career boat builders interviewed either did their training in a folk high school in Norway or in a professional bachelor's program in Denmark situated north of Copenhagen. In conjunction with their educations, boatbuilding students must complete an apprenticeship, and with only few master builders remaining, there will likely be fewer opportunities for apprentice positions in the future. During interviews, it became clear that the pressure on clinker built boatbuilding and safeguarding this knowledge directly connected to shifts in demand for these vessels, 'Just now it is sort of on two fronts, because if there are not any more orders [for new clinker-built boats], and [problems attracting] apprentices on the other side, it could be a critical situation' (Ronnie—community organization).

Changing demands for clinker boats (and boat builders)

Developments in the fishing industry

At the industrial boatyard in North Jutland, many expressed a sincere concern that without more orders, the clinker boat craft would simply disappear; 'But just when there is no one that will buy them [the boats], there will not be any built, and it will die slowly. Because no one is coming' (Alex). Thus, there was a very clear line established between what happens in the fishing industry and the prognosis for clinker-built boatbuilding as an industry in Denmark. Here, we unpack some of those fishery-related drivers of change.

In Denmark, clinker boats comprised much of the fishing fleet up until the 1960s, and the tradition of beach landing was ubiquitous, especially along the west coast of Jutland. The clinker boat is indeed well-suited for such beach landings as it can withstand the hard hits of being driven onto land and dragged up the beach, while also being relatively light. Nonetheless, the practice of beach landing has withered, especially in the fishing industry where only a few coastal landing places remain (the largest of which is strongly tied to the 'industrial' boatyard where we began our inquiry). Changes in Danish fisheries have been documented by many (Autzen Mathilde Højrup and Winter, 2020; Hegland and Raakjær, 2008; Høst, 2015a, 2015b) including the implications for Danish coastal communities (Lange et al., 2021; Ounanian, 2016, 2019a, 2019b). One of the key changes with implications for clinker boat building was the resulting consolidation of the Danish coastal fishing fleet and concentration of tradable fishing quotas on fewer vessels. It was suggested that since its introduction, the quota system has had an impact on clinker-built fishing vessels in Denmark, 'You can say that all of the wooden ships have been removed by the quota-system, with that size of boat essentially disappearing. When I was a boy, we could walk across the harbour along the boats lying in there on Sundays, but you cannot do that today… it is a completely different world' (Robin).

Fisheries management and governance, including international disputes and conflicts, have challenged small-scale Danish fishers especially, such as those dayboat fishers landing on the beach. As such, there is a general reluctance to invest in the business, for instance by commissioning a new clinker boat vessel. According to Ronnie (community organization) in recent years, 'There were three teams from [the local fishing community] that would like a new boat, but it transpired that the catches had become so bad that they could not afford it anyway'. Nonetheless, the boatyard did complete and sell an industrial fishing vessel at the start of 2021.

Leisure craft

Although there has been a significant decline in the use of the clinker-built tradition for industrial purposes in Denmark (Autzen Mathilde Højrup and Winter, 2020; EuroNews, 2020) and abroad (Elävä perintö, 2021; The Irish Times, 2020), demand still exists for clinker 'leisure craft' in the Nordic countries and wider North Atlantic. There are several clinker-dinghy building boatyards in the British Isles, and wharfs and individual boat builders using the clinker method exist in the Nordic countries. These boatyards tend to focus on producing leisure craft. In Norway, 'modern boats are mainly built for leisure use and not for fishing and everyday activities' (Friis-Olsen, 2021), and in Scotland, 'there has been a resurgence in the leisure side' of wooden boatbuilding due to their romanticisation (New Connections Across the Northern Isles, 2019), with the boats themselves becoming an attraction. Speaking about the demand for clinker-building skills, one of the mid-career boat builders noted an example of the clinker-built boat commissioned to be made out of teak with copper nails. The informant spoke about the use of such luxurious materials and the (potential) transformation into a prestige item, which could open up a new clientele and new market.

Within the collective Nordic application for designation on the UNESCO ICH list, a number of the co-applicants and supporting organizations are rooted in the leisure or sport use of these boats (e.g. rowing, sailing, recreational fisheries). The umbrella organization of the boatyard has a membership organization which owns 5 clinker-built vessels which can be used by members to sail or fish (Fig. 4). These leisure organizations are indeed an important component of safeguarding ICH, especially the sailing and rigging knowledge, as emphasized in the application video. The UNESCO application covers what can be termed the full value chain of the clinker-built boat tradition, from the harvesting of raw materials to the launching and sailing of the vessels.

Participation by youth is also a recognized component. One municipality in Zealand, Denmark, has worked with the organization, KystLiv (CoastLife), to offer educational programming—including sailing programs where kids sail and tend fish nets on clinker-built boats. Nonetheless, the organization also wanted to put the craft of boatbuilding at the centre, including ancillary trades such as rope making, and connect their mission directly to the maintenance and persistence of boatbuilding skills beyond its youth programming.

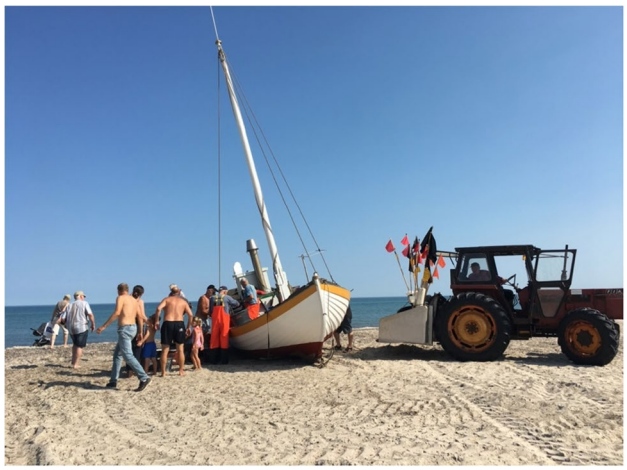

Fig. 4 Return from a recreational clinker boat fishing trip July 2019

Fibreglass

Anecdotal evidence from boat builders from across the North Atlantic coastal region suggests that the advent of steel and fibreglass has been detrimental to the clinker craft (BBC, 2018; KYSTmuseet, 2020; New Connections Across the Northern Isles, 2019; The Irish Times, 2020) as well as other wooden boat traditions (Stilgoe, 1994). These new materials have 'completely eroded' (KYSTmuseet, 2020) the clinker boat tradition, according to a builder in Denmark, and echoed by a clinker boat builder in Ireland, 'once glass fibre came in, it [clinker boat building] just stopped overnight' (BBC, 2018). Boat builders from Orkney, Scotland, state that by the mid-1980s, a few years after its first appearance, fibreglass was the dominant material for new boats (New Connections Across the Northern Isles, 2019). Speaking generally about wooden boats and their maintenance, one interview participant explained that few families would opt for wooden sailboats in comparison to the lower maintenance needs of fibreglass:

> So when people come here, they think it is very exciting, and say, 'I want that too,' but it is long, the road is long [with wooden boats] and therefore plastic [fiberglass, etc.] wins over wood because, if you have a family—Let's say you are a family of five and you have a sailboat, if you want a wooden boat everyone should be

> interested in it because they will be down there during Easter holiday scraping and painting. I mean, it is a completely different way of living (museum curator).

The factors discussed here in the "Changing demands for clinker-boats (and boat-builders)" section illustrate that while leisure craft and even some potential new uses of clinker boats keep the use of the boats (and thus demand for boatbuilding skills) intact, the overall picture is one of shrinking demand. The advent of fibreglass affected boatbuilding of both industrial and leisure vessels. Moreover, the boat builders we spoke to were honest in their assessment of the limited options without industrial uses and reflected on a preference to work on such commissions for reasons connected to the legacy of the tradition and renewal of its knowledge. For this reason, clinker building for leisure alone is not a satisfactory supplement for the loss of industrial demand, with regard to the sustainability, or safeguarding, of the clinker craft.

What is next for clinker boat building for industry: obsolescence or revival?

Innovation of the craft: an essential element of the clinker tradition?

Boatbuilding is also supported by dedicated museums (e.g. The Viking Ship Museum) and restoration enterprises, but a number of the boat builders interviewed reflected on their preferences to work on new vessels, especially those 'industrial' uses. When restoring boats or working in a museum, for example re-constructing a Viking longboat, there are often fixed drawings that can be followed, or even existing boats/models/examples that can be copied. When building boats for fishers on the other hand, ideas are being actively developed and new parameters and requirements are put in place by those commissioning the vessels. Some of the boat builders preferred this second mode of operation. Lesley, for example, expressed that 'If it [the clinker craft] is only being used for culture [cultural heritage], then you repeat a lot, making repairs or copies, but there is not that development', and Ronnie, who is embedded in a fishing community, said that, 'and I think the fun is when you develop new boats for industrial fishing and stuff—that get used, not just for museums'.

Boat builders and those working in this maritime milieu who were interviewed underscored the 'fit for purpose' aspect of clinker boat building:

> 'The tradition was to go down to someone who had built a clinker-built boat before, and then they said "I would like to order one like Karl-Einars but I would like to use it for such and this kind of fishing and I weigh such and such" and what else one wanted and then the boat-builder adapted it accordingly' (Pat, Ropemaker/Non-profit leader).

The key for many of the boat builders was whether the vessel would be used on the water:

> Interviewer: What is your opinion on why we should preserve wooden boats in Denmark if they are not needed for fishing? Is it ok with only the museum's perspective?
> I think it is nice to preserve something historical, including boats, and there are also many who enjoy sailing with them. That is what makes it worth preserving. They are used and that makes it alive rather than things that are just exhibited in a museum. However, it is then more exciting to be involved in, as here, making some boats that are used for business use. It makes a little more sense in a way, I think. Of course, it is also good to make boats for those who just love sailing with them but there is a more direct meaning here somehow (Frankie).

In addition to these personal preferences, this relationship with fishers or an industrial purpose means that the craft remains 'alive' or innovates form with function:

> 'That is what has been exciting about [that boatyard], that it has been possible to develop the boats together with the profession [fishers], so there has been an evolution in it. If it is only used for culture, then you repeat a lot, that is, you make repairs or copies, but there is not that development where the fishers say, "Not that, it could be a little better"' (Lesley).

Within the safeguarding framework, these boat builders have made it clear where the evolution rests and that while museum-based restorations are important, they fall short of providing opportunities to tweak, meddle, and innovate. Although there is creativity in museum reproductions and restorations, the aspect of creating a new or unique vessel and the problem-solving and vision required is diminished. Many of the boat builders underscored how clinker boat building was not a straightforward pursuit, but fraught with challenges which they relished: 'It is very challenging to be a boat builder, so it is a pretty perfect combination' (Lesley).

Tensions within the differentiation of craft, heritage, and industrial enterprise

As the above section illustrates, innovation constitutes an important part of the clinker craft in the eyes of those that embody it. To this end, the different methods of construction

(restoration, written plans, reconstruction, using rules of thumb, etc.) and their end points (for active use in industry, for active leisure/educational use, for display in a museum) have implications for how the boat builders view their own role, and for whether or not the craft itself was continuing to 'evolve' or 'live'. This was expressed in our interviews as a tension between building for historical or aesthetic use versus industrial use, not just in terms of the excitement or interest of the craft itself, but also in terms of how clinker boat builders saw themselves as purveyors of a living and evolving craft over and above preservationists.

'The shipyards do not see themselves as museums in that way' and 'do not want to see themselves working as a museum' (Ronnie, community organization). This tension is a result of the precarious state of the craft, which exists on a blurry boundary between "industry" and "heritage/museum". Such tension is even more acute in the younger generation of boat builders, who must supplement their income with other forms of carpentry (including boatbuilding and preservation) to a much higher degree than older generations. In terms of the nature of the clinker craft, though, it seems clear that the link to industry provides something essential, 'and one can also say that the reason why it is interesting with the fishers, is that you develop boats constantly when you build them for fishers. They make some specific demands, "and it should just be able to do this" and "it should be straight…and then we can do that…" In that sense, it's still alive, and whereas if you just restore, then it is dead, if you know what I mean' (Lesley). The need to be used for active (industrial) means raises important questions about the requirements for successfully safeguarding the clinker craft.

Re-learning sustainability

Some may question whether clinker boat building and fishing are examples of outmoded technology and practice. The clinker-built fishing boats in their distinctive blue hue are recognized symbols of Denmark, its coasts, and (shrinking) fishing communities. Beyond their aesthetic appeal and connection to tourism, these boats and their builders also harbour knowledge which may help society's current reckoning with climate change and more sustainable practices. Those interviewed brought forth reflections on sustainability. One local folk high school teacher considered the clinker built boats themselves and the mode of fishing they support to be more sustainable than larger-scale fishing, 'What spoke to me when I came up here was the way of fishing that was sustainable and gentle on the marine environment and the way of living where one was independent and not part of such a large capitalist industry'. With the folk high school's emphasis on sustainable living practices such as permaculture, they reflected that being situated in the community with these small-scale fishers raised awareness of the environmental aspect of sustainability, as well as being socially and economically sustainable as a segment of the food industry that operated on collectivism and was somewhat distanced from industrial/large-scale capitalism.

These practices were linked to the current sustainability discourse by the museum curator, who recognized that there is a sustainability narrative today arguing for 'turning back time'. It was suggested, with the caveat that museums cannot alter societal structures, that clinker-built fishing boats and their associated fishing practice could indeed play a part in this, in what was termed 'a renaissance in small fisheries' (museum curator). Continuing the conversation on refreshing past practices and folding them into present day because of their sustainability, Robin suggested that it would not be about turning back the clock, but rather relearning modes of sustaining resources. Their grandmother's folk high school notebook illustrated this, 'If I read from it, you would think that it was some kind of sustainability people,' noting that those living right after WWII were taught how to utilise natural resources, practices which seemed almost second nature at that point but are not as fully ingrained today. In this way, the knowledge of building clinker-built boats, sailing them, and fishing from them, may indeed inform aspects of our current pursuit of a 'green transition'. However, if this ICH dies out within a generation or two of boat builders, then resurrecting it will be difficult if not impossible.

Discussion

UNESCOs 'safeguarding' heritage paradigm has significant implications for how different examples of heritage can be protected. Appropriate means for ensuring the viability, protection, and transmission of different examples of (intangible) heritage can vary significantly depending on the nature of the different heritages. The Convention's emphasis on transmission over and above 'concrete manifestations such as dances, songs, musical instruments or crafts' (UNESCO, 2011, p. 4) means that safeguarding measures refer not only to the craft itself, but to 'strengthening and reinforcing the diverse and varied circumstances…that are necessary for the continuous evolution and interpretation of intangible cultural heritage, as well as for its transmission to future generations' (ibid p. 4). In this light, the nature of the clinker-building tradition raises issues for its successful safeguarding.

As an example of intangible cultural heritage, passed down from generation to generation using mental templates, as opposed to written plans, the clinker craft is human-centred, embodied by clinker boat builders. As such, one element of effectively safeguarding the craft is through securing the boat builders' professional milieu and providing a continuous unbroken chain of knowledge holders able to pass

on the craft—a situation currently under threat. The fact that clinker artisanship is necessarily developed using a "learning-by-doing" approach means that an appropriate education system (based on apprenticeships and a serious investment of time) is a requirement, and the erosion of such learning methods and educational opportunities is an additional threat to the "supply side" dimension of clinker safeguarding, i.e. providing the boat builders themselves.

On the other hand, "demand side" issues are abound. The 'diverse and varied circumstances' involved in shaping the clinker craft appear to be ever shrinking. Significant changes to fisheries technique, management, and policy have contributed to a waning demand for "working" clinker built boats, with issues of expense, maintenance, and time posing barriers to private pleasure craft ownership. This means that clinker boat builders entering the profession have a limited number of new boats to build or older boats to renovate, constituting both a potential threat to clinker-craft practical knowledge and indeed a threat to the livelihood of clinker boat builders more generally. The reach and influence of newer materials and more easily and quickly manufacturable boats is further reducing the demand for wooden clinker craft. Fewer opportunities to practice and develop the skills associated with the clinker craft means that some will not be passed down to the next generation and, in this way, simply disappear. Having less experience of varied circumstances and different demands to pass on may also mean that certain adaptabilities are lost from the craft. In fact, it was suggested that this is already happening, 'at the same time there are some craft elements that are lost from the way we built before, just because whereas before you may have been involved in building 20 fishing cutters, today you might find young people who have built 2' (Robin). A final crucial point, transcending the supply-demand division, is the idea that 'industrial' demands are an essential part of the clinker craft, helping to develop the craft, keeping it vital and continuing the constant evolution of both the craft and the boats produced by the craft over the last 2000 years.

In light of the above points, it is questionable whether the craft can really be described as 'safeguarded' in Denmark, if it only exists in museums, or even in leisure pursuits. There has been some discussion around the role of museums in safeguarding cultural heritage, and particularly intangible cultural heritage (Blake, 2018; Brown, 2005; Erlien and Bakka, 2017), including the increased awareness of this role (Erlien and Bakka, 2017) and improved practice as a result (Blake, 2018). However, an intrinsic part of the vitality of the clinker craft highlighted in this case study is the integral role of user's demands—namely industrial—on the craft, and the "evolution" of the craft as a result of this relationship. Maintaining the clinker craft exclusively through restoring and producing clinker built boats in museums, and thereby beyond the influence of the diverse and varied circumstances provided by the fishing industry or water sports (leisure or educational), misses the essence of the craft. Furthermore, this makes knowledge transmission and the maintenance of technical and artisan sensibilities more difficult (if not impossible). While the act of preservation in museums may preserve a corps of educated boat builders, this does not necessarily preserve the demand or activities associated with the material cultural heritage beyond its construction and academic study. Consequently, a loss of ability to produce boats that are fit for purpose in a contemporary (or imagined/future) setting may result, and the chain of knowledge transmission will be broken.

As many interview participants underscored, the clinker craft boatbuilding knowledge is embodied. Expertise in this field comes with many hours making and mending boats, a variety of vessels for different purposes, to learn the intricacies. We associate the word knowledge with the mind, which is certainly true for clinker boat building. But the muscle memory, touch, and other sensory feedback of this craft remind us that knowledge is more than the mind in this case—it lives throughout the body. Boat builders referred to past colleagues and the current most knowledgeable boat builder with bodies being 'spent' or backs 'ruined' by the work, which also gives some pause when we think about safeguarding ICH and the means to do so. Safeguarding ICH may also need to grapple with the domination of intellectual and academic values that sometimes underappreciate the tacit and tactile knowledge of craftspeople. During a session on ICH at MARE Policy Day (2021), an audience member reflected on the need to employ more people with this form of knowledge in heritage projects and other initiatives. This was also noted by our museum informants who reflect on how the field has changed toward incorporating and hiring boat builders. However, perhaps further employment allowances should be made for fishers and other ICH holders to document and carry on such traditions.

Who are responsible for safeguarding?

Safeguarding CH involves many different factors and can be approached in a multitude of ways. When cultural heritage is inscribed on one of UNESCO's lists, action needs to be taken, but an explicit recipe does not exist, nor is a specific approach mandated—and rightly so due to the complexities of ICH. A major question, with potential ramifications for the scale, comprehensiveness and ultimate longevity and success of any safeguarding effort, is the locus—or indeed loci—of responsibility. Who should be responsible for ensuring the viability, protection, and transmission of heritage, including strengthening the circumstances necessary for its evolution?

The question of responsibility for clinker heritage was specifically interrogated in our interview with the local

museum. Acknowledging the complicated nature of safeguarding clinker as an example of maritime cultural heritage, including its interrelatedness with other areas such as fisheries, the respondents admitted that, as a museum, they 'could not change the structures of society, as such' (museum curator). The manifold factors to ensuring an effective safeguarding of clinker meant that it was beyond the reach of the museum alone. It was noted that '[the museum] will take on a part of the responsibility, trying to maintain it [clinker] and push for a greater awareness about maritime cultural heritage and clinker boat building and knowledge', and acknowledged that the protection of this heritage was 'of course our responsibility amongst others, including the state. I mean, we don't have the eternal resources available to handle it [alone]' (museum curator). The museum was ready and willing to accept and carry out safeguarding of clinker but acknowledged its own limitations both in terms of scope of influence and resources. As such, they concluded 'In the end it is the state, if you want to take care of something, then. We can all do that, so we could well agree, we want to take care of something but…it is impossible to do [with the current resources available]' (Robin).

They reflected finally on the ramifications of the Danish government being a signatory on the UNESCO ICH application, hoping that this might foreshadow or encourage concrete action from the state, 'now they have signed on to [the] UNESCO [application] and then I think that they must follow up on it,' (museum curator). Museums potentially have a large part to play in the safeguarding of the clinker craft. However, as we have described throughout the article, the clinker craft in Denmark is still part of a living industry, and inextricably linked to the wider fishing industry. Therefore, its existence exclusively in museums cannot be considered successful safeguarding—it does not give the opportunity for clinker boat builders to develop their craft, keeping it a viable and living tradition as part of a related industry. While the concrete manifestations of the clinker craft may be preserved, the craft itself is not safeguarded. If the clinker craft is to be safeguarded as per UNESCO's own definition, it is necessary to consider a wider range of actors and arenas of influence and take a more holistic approach to policy domains.

Essentially, the boat builders need to take centre stage and be recognized as central components of the heritage. This heritage cannot exist as something abstracted from the people who have continually embodied it, and as described a single "break-in-the chain" of clinker boat builders can result in a ruinous loss of knowledge with irreversible consequences. One area of potential focus therefore is supporting the education of new boat builders through years of apprenticeships and apprentice-like roles as a necessity to safeguard the intergenerational transmission of knowledge between those that embody the clinker craft. Programs like funded artist-in-residence could be used as templates, with the example of the boat builder in residence in the Orkney Islands (New Connections Across the Northern Isles, 2019). Folk high schools, which are themselves a potential example of Danish and Nordic ICH, could be another institution to help safeguard clinker craft ICH—and while there are some that already do this, expansion could also help safeguard clinker craft traditions.

Another important, interlinked policy domain is fisheries, which has both a European (EU) and Danish dimension. Denmark's domestic fisheries policy has tried to provide special compensations and provisions to Danish small-scale fishers, but with little success to date (Autzen Mathilde Højrup and Winter, 2020). At the EU level, there is some attention to expand provisions for small-scale fishers (Said et al., 2020), and indeed the EU may need to cast a wider net when looking to safeguard and promote CMCH that is linked to fisheries, such as that of the clinker tradition. Uncertain futures for Danish fishers mean that they are unwilling to invest in new clinker-built boats, and if the fisheries close altogether, the death knell also tolls for any local industrially oriented clinker wharfs.

'State' or 'government' intervention can also somewhat obscure the multiple seats of power and layers of governance in the EU and even within countries (central, regional, local authorities, and jurisdictions). In Scandinavia, the municipal level holds relatively high levels of decision-making power and capacity for intervention. Municipal interventions and funding for boat builders, paired with the EU Fisheries Local Action Groups (FLAGs), could be a means to develop mechanisms that safeguard clinker boat building and boat builders' knowledge.

A lacking distinction for 'industrial craft'?

In The Convention, the following domains are highlighted (non-exhaustively) as areas in which ICH manifests: oral traditions and expressions; performing arts; social practices, rituals, and festive events; knowledge and practices concerning nature and the universe; and traditional craftsmanship (UNESCO, 2003b). Within traditional craftsmanship UNESCO also lists a range of expressions; 'tools; clothing and jewellery; costumes and props for festivals and performing arts; storage containers, objects used for storage, transport and shelter; decorative art and ritual objects; musical instruments and household utensils, and toys' (UNESCO, n.d.). We tentatively posit that these lists betray a blind spot in UNESCO's approach to safeguarding, illustrated by the case of clinker boat building. When the craft is an active part in an industrial enterprise, approaches to safeguarding are necessarily different from when, for example, tackling the safeguarding of decorative art and ritual objects. The case described in this article, with its essential connection to the

local fishing industry, demonstrates that operating in such an industrial setting involves a different set of risks and threats and therefore a different constellation of (safeguarding) solutions. To better understand the implications, and develop safeguarding strategies, for the different nuances of heritage within 'traditional craftmanship', distinguishing between craft that has an aesthetic, spiritual, religious, or other cultural value from those valued for utilitarian or "industrial" purposes would be a productive change.

Conclusion

This article examined intangible cultural heritage (ICH) in connection to coastal and maritime cultural heritage (CMCH) in the case of Nordic Clinker Boat traditions, working from interview transcripts and the traditional Nordic Clinker Boats application materials for inclusion on The List of the Intangible Heritage of Humanity as well as wider grey literature. By detailing the unique attributes of this craft, namely its unwritten and embodied tradition, we have shown that the risk in the continued transmission of this ICH lies in the supply of knowledgeable boat builders and the demand for their skills and expertise.

Through interviews and document analysis, the paper highlighted how clinker boat building has persevered over millennia and innovated in form due to local, environmental constraints, its applications in various fisheries, and more recently in recreational and leisure uses. Although museums have come to play a central role in the research and conservation of clinker boat craft, namely in restorations and reconstructions, the boat builders interviewed in this study underscored the importance of a living clinker boat tradition. Many of the informants explicitly named the connection to coastal, small-scale fishing in Denmark, and the changes that segment of the industry has experienced as one of the key challenges to the continuation of clinker boat building. The innovation and creativity required for building a new, fit-for-purpose working (fishing) vessel stood in contrast to the attributes of restoration and reproduction. As the definition of safeguarding includes points about the sustained evolution of ICH, such a distinction must be recognized.

The question of who are responsible for the appropriate and necessary interventions in safeguarding the clinker boatbuilding knowledge highlights the complexity of CMCH in its spread over various policy domains—culture, fisheries, local development, education, tourism—and geographic scales. Furthermore, we uncovered manifestations of ICH that highlight a division between aesthetic and utilitarian, or industrially purposed values. Such a distinction may be particularly relevant for CMCH and deserves deeper investigations to identify specific risks and threats, in addition to considerations within UNESCO's framework.

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