

Gendered dimensions of social wellbeing within dried fish value chains: insights from Sri Lanka

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ABSTRACT

How small-scale fishers participate in and benefit from land-based fish drying and processing activities is rarely documented and poorly understood. This paper aims to address this gap by bringing attention to dried fish value chains (DFVC), which comprise activities from fish harvesting to drying/processing and trading. We draw on value chain and social wellbeing literatures and adopt a case study approach to examine urban coastal and rural inland DFVCs in Sri Lanka. Our results emphasize the nuanced and unique ways in which people derive material, relational, and subjective wellbeing through their participation in DFVCs and the differences between the experiences of women and men. We argue that DFVCs are of disproportionate importance to the wellbeing of marginalized people in fishing communities, particularly women. We also examine the capacity of DFVCs to continue supporting the wellbeing of those who critically depend upon them and highlight the implications of emergent study findings for fisheries governance in Sri Lanka.

1. Introduction

Dried fish value chains (DFVC) comprise a unique sub-sector within small-scale fisheries that make significant contributions towards livelihoods, cultural continuity, and local economies, particularly in Asia and Africa (Belton et al., 2022). The term ‘dried fish’ refers to fish processed using simple, low-cost, low-technology methods, such as sun-drying, salting, fermenting, and smoking. A fish value chain encompasses a series of activities or ‘nodes’, from fish harvesting to processing, trading, distribution and consumption (Bush et al., 2019). The specific focus of this paper is on the land-based processing node, which primarily sets apart DFVCs from fresh or frozen fish value chains through preservation, enabling the end product (dried fish) to be stored at room temperature.

Globally, about 11% of fish harvests are processed as dried fish (FAO, 2020), with much higher volume conversions reported in developing countries. For example, in Myanmar and Bangladesh, 34% and 25% of total fish harvests respectively are processed as dried fish (Hossain et al., 2015). In comparison to other global food value chains, DFVCs predominantly remain localized and firmly rooted in local contexts through cultural connections and kinship ties (Belton et al., 2018). Fish drying activities are dispersed across remote fishing areas, products (dried fish)

are often considered artisanal, and distribution channels and markets are informal (Hossain et al., 2015; Koralagama et al., 2021). The communities who host these value chains are often marginalized and disadvantaged societal groups, such as the poor, refugees, lower castes, and other minority groups (Belton et al., 2018; Biswal and Johnson, 2023). Therefore, their survival and wellbeing are critically dependent on the benefits they generate through value chain participation including income, employment, food, and culturally important ways of living (Belton et al., 2022).

Despite their significance, our scholarly understanding about DFVCs is limited (Belton et al., 2022). The available body of literature on dried fish is scattered and focuses mostly on technical aspects, such as food safety and preservation techniques (Belton et al., 2022). DFVCs also remain a blind spot within mainstream fisheries management, policy, and practice interventions across geographies (Belton et al., 2022). A particular knowledge gap exists in relation to how gender dimensions shape different experiences and outcomes for people participating in DFVCs.

Emerging research illustrates how dried fish value chains are deeply gendered, particularly in Asia and Africa (Belton et al., 2018; Biswal and Johnson, 2023; Koralagama and Bandara, 2018; Matsue et al., 2014;

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Salagrama and Dasu, 2021a). Women predominantly make up the fish drying workforce and perform various other tasks vital to the functioning of the value chains (Biswal and Johnson, 2023; Korlagama et al., 2021; Salagrama and Dasu, 2021b). Nonetheless, women's ability to generate benefits through their value chain participation varies significantly from that of men¹ (Galappaththi et al., 2021; Matsue et al., 2014; Medard et al., 2019). For example, women often do not have access to good quality fish or profitable markets. Gendered wage gaps are also common for similar value chain tasks. Furthermore, women's presence in DFVCs and their contributions are rarely documented and remain largely 'invisible' (Belton et al., 2022).

In the context of Sri Lanka, dried fish has been produced and traded for centuries using processing methods such as salting and sun drying, smoking, and fermenting (Koralagama et al., 2021). Dried fish not only provide a source of livelihood for thousands of women and men but also play a significant nutritional and cultural role in the local diet (Koralagama et al., 2021; Weeratunge et al., 2021). An estimated 14% of fish harvests are processed as dried fish in Sri Lanka using catches from coastal and marine waters as well as the inland freshwater bodies (Koralagama et al., 2021). Dried fish is traded predominantly within local markets through an intricate network of value chains which are firmly anchored in local fishing communities and cultures.

However, very little information and statistics are available on fish drying and trading as an important segment of the national economy in Sri Lanka, including the number of fish drying operations and proportions of fishers and fish workers employed. Nonetheless, several place-based studies on coastal fishing communities provide ethnographic accounts of dried fish production and trading at the community level, suggesting substantial contributions to local economies (see Alexander, 1977; Koralagama and Bandara, 2018; Quist, 2015; Stirrat, 1988; Weeratunge et al., 2021; Yuganthan et al., 2019). These studies also reveal that processing activities comprise household operations across micro, small, and medium scales and taking place along Southern, Western, and Eastern coasts. Nonetheless, our scholarly understanding on DFVCs in Sri Lanka is limited (Koralagama et al., 2021).

The aim of this paper is to critically examine how women and men in Sri Lankan fishing communities generate social wellbeing through their participation in DFVCs and explore implications for fisheries governance. We define governance as formal and informal institutions through which societies structure collective decision-making and take action to address important issues (e.g., rules, policies, norms, and customary practices) (Kooiman et al., 2005). Understanding the implications for improving the capacity of DFVCs to support gendered dimensions of social wellbeing from a governance perspective is crucial. For example, insight on how local livelihoods are organized around dried fish activities, the kinds of value chain benefits that matter more for women compared to men, and which issues should be prioritized for interventions to promote women's wellbeing have the potential to directly inform fisheries governance efforts. The need to respond to these knowledge gaps is also linked with ongoing global and national policy frameworks and initiatives aimed at addressing the issues of small-scale and artisanal fisheries. Such high-level commitments to improve human wellbeing and address gender inequities include Food and Agriculture Organization of the United Nations (UN) Voluntary Guidelines for Small-scale Fisheries (SSF Guidelines), UN Sustainable Development Goals (SDGs), and the UN Declaration of 2022 as the International Year of Artisanal Fisheries and Aquaculture.

The next sections of this paper are structured as follows. We first introduce the theoretical foundations that guide our study design and analytical approach. Next, we outline study methods and present the study findings with emphasis on nuanced experiences of women and

men. We then synthesize key policy-relevant insights and discuss the implications for fisheries governance in Sri Lanka.

2. Theoretical framing

Our empirical study drew on two core areas of literature — value chains and social wellbeing. The study was guided by the conceptual framework depicted in Fig. 1.

2.1. Value chains

Our study draws on the concept of value chain in two main ways. First, we explore the organization of activities, people involved, and their interactions/linkages by using value chain terminology to understand the structural aspects. Structurally, a value chain is described as the full range of activities required to bring a product from the point of production to consumption (Kaplinsky and Morris, 2000; Porter, 1985). A wide array of people or value chain actors (e.g., processors, fishers, collectors, and local traders) participate in the nodes across a value chain (Bush et al., 2019; Hossain et al., 2015; Reardon et al., 2012). Various governance institutions, such as local governments, customary institutions, and traditional norms also take effect along a value chain (Steenbergen et al., 2019).

Second, we focus on the term 'value' to rethink the complexity of value creation across the value chain (Fabinyi et al., 2018; Pradhan et al., 2022). As a concept rooted in business literature, value chains often focus on incremental value addition or value creation in financial terms, as a product moves through the nodes of the chain (Porter, 1985). In the context of DFVCs, this opens up an opportunity for us to expand the scope of value creation by bringing specific attention to both material and non-material benefits (e.g., cultural values, social ties) (Belton et al., 2018; Berenji et al., 2021; Salagrama and Dasu, 2021b). This holistic conceptualization of value is also consistent with the approaches to explore value in social theory. For example, Graeber (2001, p. 1) points out that value can be understood in multiple ways — in a sociological sense, value as what is good and desirable in human life; in an economic sense, value as the extent to which objects are desired and what is foregone to achieve these desired objects; and in a linguistic sense, value as the meanings attributed to objects.

2.2. Social wellbeing: pursuit and attainment of material and non-material benefits

Social wellbeing is an elaborated approach to wellbeing rooted in international development literature (McGregor, 2008; White, 2010) and has been fruitfully applied in the context of small-scale fisheries (see Biswal and Johnson, 2023; McGregor, 2008; Weeratunge et al., 2014). Social wellbeing is defined as "a state of being with others, where human needs are met, where one can act meaningfully to pursue one's goals, and where one enjoys a satisfactory quality of life" (McGregor, 2008, p. 1). This definition alludes to the 'social conception' of wellbeing, and argues that wellbeing outcomes are socially and culturally constructed in a relational manner (Coulthard et al., 2011). Within DFVCs, for example, this helps understand the community embedded practices that determine access to fish or the transfer of knowledge about processing methods, which shape the outcomes (or the benefits) derived by the people participating in the value chains.

The analytical framework offered through the social wellbeing concept systematically incorporates three interdependent dimensions — material, relational, and subjective wellbeing. The material dimension includes objective or physical resources that determine practical welfare and desired standards of living (e.g., income, wealth, physical health) (Gough and McGregor, 2007; McGregor, 2008; Weeratunge et al., 2014; White, 2010). The relational dimension includes social relations that determine the scope for personal action or influence within a community (e.g., social ties, sense of belongingness, gender relations)

¹ While we acknowledge that gender categories fall within a spectrum and that it is crucial to move beyond the gender binary, people in the study communities in Sri Lanka identified themselves as women and men.

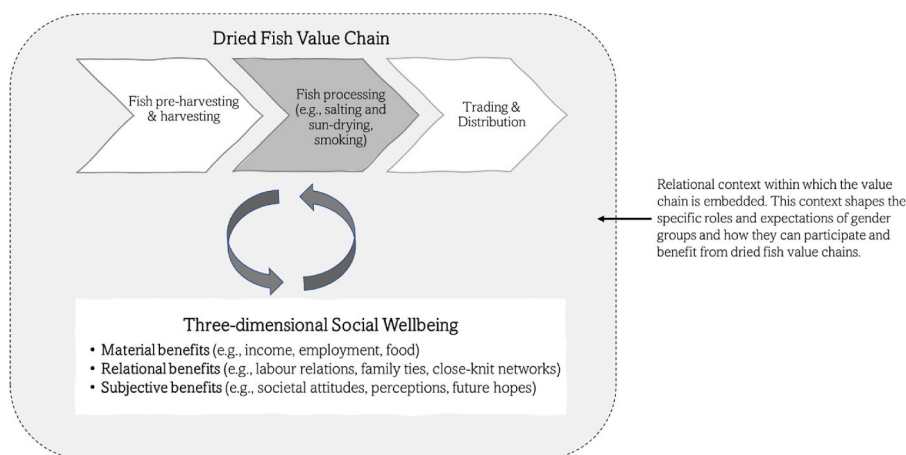


Fig. 1. Conceptual framework.

(Coulthard, 2008; Gough and McGregor, 2007; Weeratunge et al., 2014; White, 2015). People's own perceptions about what they have and can do are represented by the subjective dimension (e.g., values, perceptions, feelings, trust) (Acott et al., 2018; Coulthard, 2008; Weeratunge et al., 2014; White, 2008). Furthermore, social wellbeing is a flexible approach to examine pursuit of wellbeing at both individual and group/community levels (e.g., lines of solidarity within gender groups, collective action at the community level) (Coulthard, 2012). In doing so, a dual focus on wellbeing and illbeing can also be maintained, for example, by exploring health and safety or poverty issues that the workers experience (McGregor, 2008; White, 2010). In addition, social wellbeing complements the broad conception of value generation through value chain participation as described above.

3. Materials and methods

3.1. Study location and context

Sri Lanka is a tropical island located on the Indian ocean. The island's fisheries resources include a marine Exclusive Economic Zone spanning over 517,000 km² and about 2,600 km² of inland freshwater bodies. Sri Lanka's fisheries sector is considered small in scale.² Marine dried fish production in the country has steadily increased over the past two decades from 24,000 Mt in 2000 to 64,000 Mt in 2017 although about 30% of local demand is being met through imports (MFARD, 2018, 2020). Marine dried fish production occurs along the entire coastline surrounding the island, which extends about 1,770 km. Substantial inland dried fish production also occurs in inland water bodies, both perennially and seasonally.

Reliable recent measures on the socio-economic status specifically for the households participating in DFVCs or in fishing do not exist in Sri Lanka (e.g., poorest, low-, middle-, and high-income categories or poverty levels). However, of particular importance to dried fish is the 2003/2004 Consumer Finance Survey of the Central Bank of Sri Lanka, which revealed that higher poverty rates were associated with the households who engaged in primary sectors of the local economy such as agriculture, fishing, forestry, mining, and plantation crops (Gunewardena et al., 2007). Yet, the survey also found that the households

² Although broadly classified as small-scale based on the length of fishing vessels (with more than 24-m length vessels classified as commercial), the size of Sri Lanka's fishing fleet operating in marine waters (48,976 in 2019) and the fishing area covered is considered substantial in comparison to other countries in the Indian ocean. Approximately 90%, 8%, and 2% of the country's total fishing fleet operate in coastal waters, offshore, and high seas respectively (Source: Fisheries Ministry of Sri Lanka, 2023).

with those who engaged in fishing had the lowest rate of poverty relative to other primary sectors of the economy, with the exception of coconut growing households (Gunewardena et al., 2007). Nonetheless, broader conceptualizations of poverty and wellbeing of fishing households assert that poverty estimates alone do not provide a comprehensive understanding of socio-economic status due to various forms of vulnerabilities associated with fishing on a daily or seasonal basis (Amarasinghe and Bavinck, 2011; Béné, 2003). For example, income uncertainty due to the unpredictability associated with catch levels and price levels, losses due to weather conditions, occupational risks of fishing are among the vulnerabilities that directly impact fishing households.

3.2. Study communities and DFVCs

The study communities were located in the coastal strip of Kalutara district and in proximity to the Kantale reservoir in Trincomalee district — herein after referred to as coastal and inland communities (Fig. 2). These two sets of study communities were selected based on several criteria to represent urban coastal dried fish production and inland freshwater artisanal dried fish production. The selection criteria included type of fishery (marine and coastal vs. freshwater), location (urban coastal vs. inland rural), evidence of both men's and women's involvement within the fish drying node, and volume of dried fish production according to the most recent district-level statistics from Sri Lanka.

3.2.1. Coastal dried fish value chain

Coastal fish drying activities are organized as independently-owned and managed operations using wage-labour. Key activities comprising the DFVC include purchasing fish harvests, salting and storing fish, washing excess salt, sun drying, and selling (Fig. 3). The main source of fish is the auction at the Beruwala fishing harbour, with additional fish supplies coming from several smaller traditional beach landings (e.g., Maggona landing, North Payagala and South Payagala landings). Relatively lower-quality raw fish is typically sold for drying (good quality fish is sold fresh). Fish drying operations can be small or medium in scale depending on the volume of fish handled. Small drying operations handle relatively low volumes (50–250 kg of raw fish/day) and are home-based, often taking place in backyards of family homes. In comparison, medium scale year-around operations typically handle larger fish volumes (about 1000 kg of raw fish/day) and have dedicated areas for fish drying. Fish is dried on the ground on coir mats or on temporary drying racks and occasionally on house roofs or large rocks by the sea. Dried fish is sold through several channels — wholesale shops (larger stocks), small traders who buy and sell, nearby roadside dried fish stalls (retail), or direct sales to consumers. All dried fish products moved

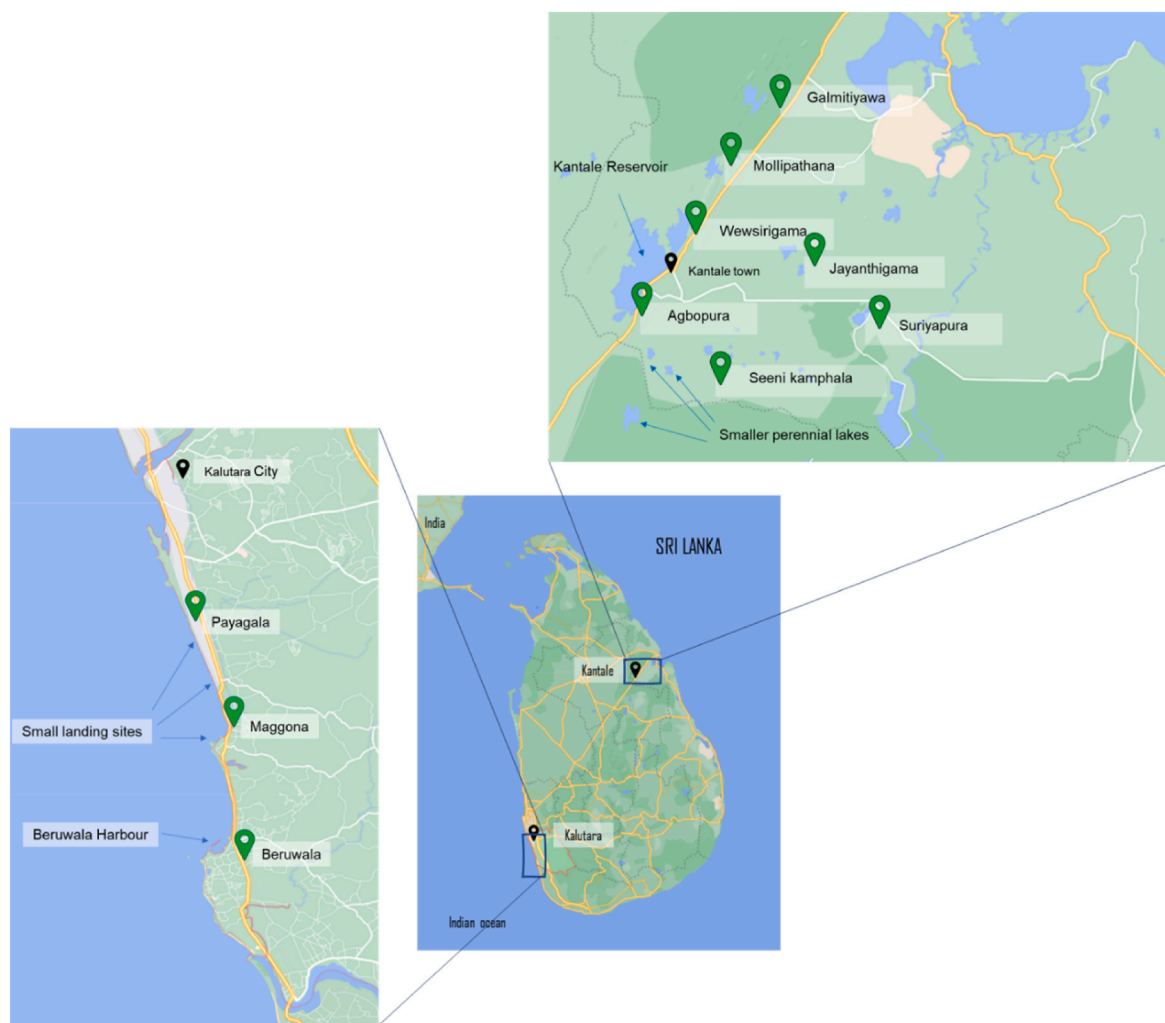


Fig. 2. Study locations and communities (Source: Google Maps).

through the studied coastal value chain are destined for domestic markets.

3.2.2. Inland dried fish value chain

The inland DFVC consists of community-embedded backyard artisanal drying activities. The key value chain activities include fishing, salting, drying, and selling (Fig. 3). Fishing mainly takes place at the Kantale freshwater reservoir, with additional fish supplies coming from perennial and seasonal lakes in surrounding areas. About 70% of processors use their own fish catches for drying while others prefer to buy raw fish at landing sites. Salting and sun drying is the most popular processing method, using home-made temporary wooden structures with wire mesh, or on metal roofing sheets. In addition, some processors (about 15%) prefer to smoke the large-sized fish in their catches using firewood and wire mesh. About 80% of processors sell their dried fish to door-to-door collectors who visit the community, while others prefer to sell to roadside stalls within the community. Few processors (four) also act as village level dried fish collectors who supply to retail shops outside the community.

3.3. Data collection methods and analysis

Field data was collected by a local field research team from January to October of 2021. Field activities were led and coordinated remotely by the first author due to COVID-19 pandemic related health and safety restrictions. Data was collected through field interviews with dried fish

processors ($n = 70$) and key informant interviews with stakeholders ($n = 19$) who have influence and control over DFVCs (e.g., community leaders, fisheries managers, harbour officials, and development officials). Field interviews were conducted in-person while the key informant interviews were conducted virtually. The first author is fluent in Sinhala and conducted virtual interviews in this language using both video and phone calls, depending on participant preference. The snowball sampling method was used to initially identify the study participants followed by purposive sampling to improve gender representation in the sample. Identification of key informants was done using the purposive sampling method. Table 1 shows the sample overview and the nature of study participants' engagement in DFVC activities. The Ethical Protocol for this study and the COVID-19 Health and Safety Plan for all in-person field activities were approved by the University of Waterloo's Office of Research Ethics (ORE No. 41888).

All interviews were conducted in Sinhala, the local language spoken in study communities, using a semi-structured topic guide. Each interview took place at the outdoor work settings of participants and the duration of each interview varied between 40 and 90 minutes. An open-ended topic guide was used for key informant interviews. Study data were validated using follow-up calls with processors and through the key informant interviews. All interviews were digitally recorded and transcribed in English for analysis. Emerging findings and themes were discussed with local researchers for further validation and to ensure accurate interpretation. Key findings were extracted through qualitative content analysis using NVIVO-12, a qualitative analysis software. The

Coastal DFVC



Inland DFVC

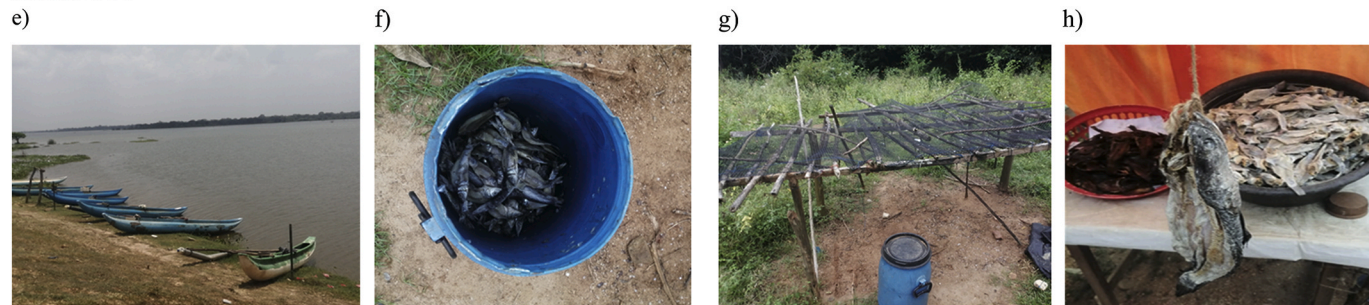


Fig. 3. Land-based activities of coastal and inland DFVCs

Coastal DFVC: a) multi-day fishing boats at the Beruwala marine fishing harbour, b) washing salted marine fish before sun drying, c) sun drying on coir mats laid on the beach, and d) a retail marine dried fish shop; Inland DFVC: e) a fish landing at an inland lake, f) salting freshwater fish, g) backyard drying racks, and h) a roadside dried fish retail stall selling salted-sun-dried and smoked freshwater fish.

Table 1
Sample overview.

Coastal community (n = 40)	No. of participants	Inland community (n = 30)	No. of participants
Gender representation in the sample (as self-identified by the study participants)			
Men	28	Men	17
Women	12	Women	13
Type of work (at the time of interview) and gendered nature			
Owners of fish drying operations	16 (All were men)	Owners of fish drying operations	28 (Three were run by women alone, others were family-based)
Workers at fish drying sites	18 (Eight women)	–	–
Dried fish sellers (roadside dried fish stalls or home-based sales)	6 (Three women)	Dried fish sellers (roadside dried fish stalls)	2 (Both were women)

approach to coding was inductive (i.e. open coding) to allow for codes and patterns to emerge from the dataset (Creswell, 2014). While percentages were calculated and provided in the results section below for clarity, the percentage values are merely indicative of the proportion of study participants involved in a particular observation, as the study was not based on a quantitative random sample.

4. Results

4.1. The pursuit of wellbeing within dried fish producing communities

In Sri Lanka, many people participating in DFVCs belong to marginalized and disadvantaged groups, such as casual wage labourers, people with lower levels of formal education, and people living in rural areas with less options for livelihoods (Koralagama et al., 2021; Weeratunge et al., 2021). They are also confronted with many issues within their households and women often bear the brunt of these struggles (e.g., poverty, poor living conditions, increased alcohol consumption among men that impact their contributions to family income and the capacity to work). For many, participation in dried fish activities might thus be the only option available for work to meet their survival needs. We systematically organized the key study findings below on the specific ways that they derive wellbeing under material, relational, and subjective dimensions.

4.1.1. Material wellbeing

Material wellbeing refers to objective (physical) resources that determine practical welfare and desired standards of living (McGregor, 2008; Weeratunge et al., 2014). Three key themes emerged in the dataset in relation to material wellbeing: a) daily wages and pay gaps; b) flexible payment arrangements, work schedules, and expenses; and c) hardship at work and working conditions.

a) Daily wages and pay gaps

Daily wage rates in coastal drying sites are considered slightly higher than other informal casual labour jobs available in the area (e.g., unskilled construction labour, casual housekeeping jobs). Specific daily wage rates, however, are decided by the drying site owners who take various factors into consideration, including the going rates for casual labour in the area, workhours of a typical workday depending on the quantity of raw fish handled, and personal attitudes and preferences around gendered pay rates. Dried fish workers mentioned that their daily wage ranges between LKR 2000–3500 (USD 10.30–18.04) with about 15–20 days of full-time workdays during each month. Lower end wage rates are usually supplemented with meals provided by the owner. However, the general practice is to pay women about 20–40% lower rate

than men, although two owners (12%) mentioned that they pay the same rate for all workers. Despite the discrepancy in wage rates, in practice, women often work longer hours than men. While labour arrangements and work allocation varies among drying sites, a typical workday starts around 8:00 am for all workers. However, men tend to leave the worksite around 4:00 pm while women work until about 5:00 pm. Study participants mentioned that women are expected to stay until the sun goes down to complete the end of the day tasks such as storing dried/partially dried fish, as sun-drying is generally considered a designated women's task.

Drying site owners confirmed that fish drying is profitable although they rarely do any proper book-keeping. The workers are paid the same daily rate throughout the year, regardless of income fluctuations experienced by the owners due to seasonal fish supply levels and weather patterns. The earnings from smaller home-based seasonal fish drying contribute towards family incomes. These operations are often managed by women on a part-time basis.

In contrast, 26% of owners in the inland DFVC hire part-time help during peak seasons. These helpers are typically women who are also extended family members or neighbours. Family labour is generally unpaid while others are paid in cash or in kind: they are paid about LKR 200 (USD 1.03) for cutting and salting 10 kg of fish or they are given a small quantity of fish/dried fish to consume at home.

In both value chains, earnings from fish drying are uncertain as they depend on various factors such as fluctuating catch sizes due to seasonal variations, weather conditions, credit relations, and individual circumstances that shape the quantity of dried fish to be produced. For example, women who raise young kids manage to find time to process much smaller quantities of fish. The uncertain nature of earnings was described by a study participant, whose livelihood comprises both fish drying and door-to-door fresh fish selling:

“For us, money always come and go. We borrow, earn, and repay ... There seem to be money in hand all the time, but we have to pay back here and there, and we at the end earn only a small margin. That also becomes nothing if one or two people don't pay back. We continue to make a living in the middle of such difficulties.” - P1:14 (Fish processor and trader, male, inland)

b) Flexible payment arrangements, work schedules, and expenses

Flexible daily wage arrangements help workers meet day-to-day survival expenses. About 12% workers mentioned that they have arrangements with their owners to save a portion of daily wage and collect as a lump-sum at the end of the month. Small interest-free borrowings from the owners are also common among workers, both women and men. Work hours are mostly flexible (e.g., late arrival, taking a day off). Women workers especially benefit from this flexibility as they manage work alongside household caretaking responsibilities. Twenty eight percent of women workers have been able to access small group loan schemes by listing their fish drying job as proof for their ability to pay back. They use these small loans to improve their basic living conditions and housing (e.g., cementing floors, installing permanent roofing, adding brick-made rooms to existing temporary houses, buying cookware and small household appliances). Study participants mentioned that such credit schemes exclusively cater women as they are perceived to be better in making monthly repayments on time. However, among all the women interviewed (12), only one woman has used these credit arrangements for dried fish related activities — operating a roadside dried fish stall in the village.

For the processors participating in the inland value chain, the earnings provide a source of family income or a supplementary income towards meeting day-to-day living expenses. Women often store dried fish at home and sell in small quantities as a way to ensure a regular flow of income over time.

c) Hardship and working conditions

Fish drying involves a considerable hardship because of exposure to sunlight and salt for extended periods, and the need to respond to changing outdoor weather conditions (e.g., rain, direction of sunlight). Study participants also mentioned occupational health and safety concerns such as scrapes and wounds (caused by fish bones and scales), and backaches (due to excessive bending and lifting) associated with dried fish work. Some of these hardships and working conditions were expressed by an owner of a home-based small drying site, employing five women workers:

“This is a good income, but the work is hard. Lots of sadness. Cuts in hands, poked by fish bones, itchy legs in salt, get wet in rain, get dry in sun, get tanned, get colds and flu ... have to pile up the fish being dried when rain comes even if I am in the middle of a meal.” - P2:30 (Drying site owner, male, coastal)

While these working conditions are largely shaped by the nature of outdoor work (e.g., dependency on sunlight and wind for drying), the hardship is also due to the types of assets invested in these operations. For example, most buildings where fish is prepared and stored are makeshift temporary constructions and the drying racks, if used, are home-made structures. The equipment used also vary among different drying operations. For example, wheelbarrows are used in three coastal drying sites for carrying heavy items such as salt bags and large fish, instead of lifting them manually. The lack of health, safety, and sanitary standards is due to the casual and unregulated nature of dried fish work that falls within the informal sector of local economy.

4.1.2. Relational wellbeing

Relational wellbeing refers to social relations that determine the scope for personal action and influence within a community (McGregor, 2008). Three key themes emerged on relational wellbeing: a) gendered roles, business ownership, and division of labour; b) trade relations and credit transactions; and c) familial ties and close-knit networks. Notably, labour relations are more prevalent within the coastal DFVC than the inland one, as paid hired labour is less common within the latter.

a) Gendered roles, business ownership, and division of labour

Substantial differences exist between the two study value chains in terms of gendered roles and business ownership, largely owing to different fish volumes handled within each chain and the degree of commercialization. In coastal DFVC, all activities along the chain are led by men as all full-time drying sites are owned and run by men, while women participate as wage workers. About 20% of the fish drying workforce are women. Women are generally assigned with cleaning and salting of fish, washing excess salt, and drying activities, whereas cutting fish, carrying loads, and packing are considered men's tasks. However, in practice both women and men collaborate in completing daily workloads and help each other. In fact, the entire drying operation in three coastal drying sites (about 18% of all full-time drying operations in the area) are handled only by women. In addition to their participation as wage labourers, women play supportive roles in home-based drying activities. Both women and men engage in selling dried fish in nearby roadside stalls and also act as community-level dried fish collectors. However, all sales activities outside the community are handled by men.

In contrast, women play a more prominent role across the inland DFVC. They lead the drying node and also participate in activities across the value chain, including fishing in the main reservoir, fish cutting, salting, drying, road-side sales, and dried fish collection and distribution outside the community. However, women do not fish in perennial and seasonal lakes except the main reservoir (a customary practice). Road-side dried fish selling is also considered a women's task. Three women processors also act as village-level door-to-door dried fish collectors who supply to wholesale shops outside the community, however, the

amounts they handle are smaller than the quantities handled by men. Overall, the higher level of women's engagement in the inland DFVC is because these drying operations are organized as family-run small businesses with earnings supporting family incomes.

b) Trade relations and credit transactions

In both DFVCs, trading activities are mediated by social relations that determine material flows (buying and selling of fish or dried fish, volumes handled), trading partners, and type of transactions (credit or cash). In the coastal DFVC, dried fish trading is decentralized with many buyers and sellers who engage in privately arranged transactions based on personal contacts and trust relations. Despite the quantity, fish buying and dried fish selling is largely based on credit and rarely on cash, with credit repayments made on agreed upon timelines (often after each batch of fish is processed and sold). These credit relations make fish drying affordable for many and ensure its continuity although the credit-bound nature of these transactions may limit price negotiations. A male owner of a home-based small drying site with three full-time wage workers and who has been in the dried fish business for over 17 years, illustrates the relational organization of a coastal drying operation:

“Sales at the harbour auction are on credit and we repay within one or two weeks. I also have connections with two [dried fish wholesale] shops in Colombo. I also send to Dambulla, Polonnaruwa, Nuwaraeliya, and Badulla [major regional produce markets]. I have contacts [distributors of various products] who take to each of these areas. They take the stocks on credit, sell, and repay. This drying site is on my uncle's land. He just takes some dried fish. I don't have to pay a rent. Quality of fish is the key to maintain these connections. I also know lots of people at this harbour. Also, in Galle and Mirissa [long distance] harbours ... When it rains continuously, I load the fish to my lorry and take to Hambantota [located in dry zone of the country]. I have boys there to help with drying. I dry and sell there when it rains here.” - P2:4 (Small drying site owner, male, coastal; clarifying details added)

In comparison, although dried fish trading in the inland site is also decentralized, trading is more competitive because many collectors visit processors offering slightly different prices causing a higher demand. About 10% of processors also supply directly to shops outside of the community, based on pre-arranged orders. Credit-bound trading and verbal/informal contracts are common (about 60% of study participants have received loans from collectors). Fish/dried fish buyers settle payments on a bi-weekly or monthly basis. In case of loan repayments, buyers discuss with the processors/fishers each time to decide on a payback amount as there is no set amount for monthly payback.

c) Familial ties and close-knit networks

Dried fish activities in the coastal DFVC are largely organized around familial ties and close-knit networks. While family labour undoubtedly sustains home-based operations, owners of several year-around drying sites also depend on male family members in supervising hired workers and in managing financials. Although the activities at traditional fish landings have become less relational and more financial oriented over the past, processors belonging to intergenerational fishing families continue to benefit from the social positions of power associated with their fishing heritage. For example, priority access to fish at the traditional fish landings enable them with guaranteed good quality fish supplies, as explained by a male fresh fish seller, who uses part of his fish stock to produce dried fish that he sells at his father's roadside stall.

“My grandfather was a fish broker in this beach landing. He got the whole fish lot and then he sold to others at 200 rupees for a box of fish. The fish is sold very quickly. We know how to guess the weight of a box. Those days, no one sold fish before he came to the beach. He

was well respected. I send my uncle to buy now. He knows people and the practice continues ... In this beach landing, fishers have to give us fish boxes first before bidding starts or giving to anyone else. When harvest arrives closer to the beach and if we are not there, people call us to come ... We get the fish boxes on credit. But we cannot do that in other landings. We have to bid just like others and pay cash." - P2:28 (Fish seller and processor, male, coastal)

Within the inland DFVC, family ties and close-knit networks not only sustain drying activities but also attach a sense of obligation towards the collective wellbeing of everyone participating in the value chain. For example, all processors and buyers maintain similar price levels during each season although slight differences exist depending on product quality and established trading relations. Processors also help each other sell their dried fish stocks through information sharing (word of mouth). Helping each other's workload is also considered a customary obligation within family and close-knit networks and women particularly benefit from this kind of support in managing their daily workloads — both value chain work and household responsibilities (e.g., meal preparation, raising children, and caring for elderly family members).

A female trader who sells home-made dried fish, smoked fish, and fresh fish on a motorbike to support her family of three children and a husband living with a disability (due to an elephant attack while going for night-time fishing), illustrates the experiences of many study participants in the inland community:

"I sell home-made dried fish and also some fresh fish in many villages, sometimes on credit but I don't have to write down because people always pay back. My husband helps at home and my sons go and buy fish at the lake. Fishers are my neighbours. They always give fresh fish to me before giving to anyone else. They know how hard I work to raise the family." - P1: 29 (Fish trader and processor, female, inland)

This example reveals, in particular, how family support and close-knit networks (relational) within the community shape and influence the creation of wellbeing across dimensions — access to fish/dried fish (material), credit relations and mutual trust (relational) as well as the sense of obligation and values (subjective) people have for supporting livelihoods of the disadvantaged.

4.1.3. Subjective wellbeing

Subjective wellbeing captures people's own perceptions and feelings about what they have and can do (McGregor, 2008; Weeratunge et al., 2014). Three key themes emerged in relation to subjective wellbeing: a) societal viewpoints and perceptions, b) gratitude and workers' welfare, and c) perceptions about involving children in fish drying.

a) Societal viewpoints and perceptions towards fish drying-based livelihoods

Varying societal perceptions and attitudes exist within both study value chains about fish drying as a livelihood. In the coastal DFVC, the general perception dictates that there is no marginalization of dried fish workers, within the immediate community (village), who supposedly is well aware of the earning potential of the activity and other benefits. However, certain forms of marginalization occur at the wider societal level, for example, association of dried fish workers with a lower societal status. In addition, casual jobs and wage labour are also seen as work options for people with lower levels of formal education and therefore are recognized less in wider society compared to so-called office jobs.

However, the majority of workers, especially women, are not concerned about the societal attitudes because fish drying helps them overcome the struggles they face at home (e.g., poverty, debts, poor living conditions, expenses associated with children's education), as articulated by a wife of a fisher, working as a wage worker at a small-scale coastal fish drying site:

"Some people value us but for others this is like a lower job ... Go to another place, find some kind of other job, there are many people who say things like that ... We do this happily, so we say that they shouldn't make this an issue. We think of our children, our priority is the family. If we can support the family, sun or rain, it doesn't matter to us." - P2: 27 (Dried fish worker, female, coastal)

In comparison, both women and men working in the inland DFVC are more concerned about societal perceptions and attitudes. Such concerns are particularly associated with how the fishing activity fits with Buddhist principles (93% of study participants are Buddhists), where killing a living being (fish) is considered a harmful action (*pav*), which contravenes one of the five fundamental Buddhist principles. Moreover, making a living which involves killing in general is perceived to violate the Buddhist concept of a 'right livelihood'. In fact, several processors buy only dead fish (fish are sold immediately after harvesting and catches often include partially alive fish). On the contrary, two study participants mentioned that the 'secret' to making good quality dried fish is to use partially alive fish.

b) Feelings of gratitude and attention to workers' welfare

Regardless of the varying perceptions and attitudes, people engaged in both DFVCs express an immense gratitude and respect for their livelihoods and the opportunity to make a living through DFVC work. As articulated by a female processor who is also a roadside trader associated with the inland value chain, "making a living without cheating or stealing or being a burden to anyone" is what matters in terms of a good life lived. Several other study participants also expressed the same sentiment. In addition, the owners who have managed to upscale their operations – three study participants from the coastal DFVC and two from the inland DFVC – are satisfied about various aspects related to their livelihoods. For example, they are happy about the freedom they have in managing their own operations, the respect they earn through networks of mutually-beneficial contacts they have established with other businesses (e.g., grocery stores, wholesale stores in distant locations), and also sometimes the skills they possess to produce the 'best quality' dried fish in the area. Most importantly, they take pride in their ability to provide jobs and a means of living for others and thereby contribute to improving the socio-economic status of the community as a whole. In particular, two dried fish collectors from the inland community, a woman and a man, expressed being proud about their ability to bring revenues back to their community.

Labour relations within both value chains and collaboration among workers, both women and men, in completing daily workloads embody local cultural and societal values of caring and sharing. Particularly, the general welfare of workers is highly regarded. For example, several owners mentioned that they hire workers out of obligation to support them earn an income, regardless of gender, and attend to workers' day-to-day survival needs. Despite the income fluctuations experienced by owners, workers are paid the same daily rate throughout the year despite the general practice in the coastal DFVC to pay women 20–40% lower than men. Several workers also mentioned being paid full/partial daily wage even on days when there is no fish to process. Workers are also allowed to take fish and dried fish to consume at home. For these reasons, the workers expressed gratitude and commitment to keep working for the same employers, as indicated by a male owner, who runs a home-based drying site with five women workers:

"I help my workers when they are in need. No deductions from their payments. I do it from the bottom of my heart. My people are very attached to me. Both parties earn that way. I used to give double the salary for Sinhala New Year [traditional celebration] and Christmas but its hard to do because my business now is much smaller. I gave only an extra 10,000 rupees this year." - P2:30 (Drying site owner, male, coastal)

This study participant has been in the dried fish business for about 40 years now although he had downsized the operation due to damages caused by the 2004 Indian ocean tsunami. Similar sentiments are also expressed by the workers. A wage worker and a single mother of three kids shared:

“Boss gave extra 2,000 rupees to each of us [workers] for New Year this year. Boss knows about my family problems too and how much my family depend on this job. He helps when there is a need. Gives money. Only if we bring it up when we get paid and ask him to deduct some amount, he does so. But otherwise he doesn’t chase after money. Having him lend a hand when in need means a lot to us.” - P2: 39 (Dried fish worker, female, coastal)

Both the quotes above reveal how labour relations are intricately linked with values and meanings held by workers as well as the owners of fish drying sites.

c) Perceptions about involving children in fish drying

Both DFVCs show similar patterns related to future hopes and perceptions about involving children in fish drying. These viewpoints are vital for the continuity of DFVCs because fish processing techniques and associated practices constitute a body of local knowledge held within fishing communities and passed on to future generations (e.g., sensing good quality fish/dried fish, cutting a fish without degrading its texture, amount of salt to be rubbed to achieve best quality). The knowledge is transferred through hands-on practice, verbal communication, and careful observation. The drying process also needs an understanding of how different stages of dried fish feels (texture) and how different outdoor temperatures and wind conditions impact the speed of drying and product quality.

Despite the implications for continuity, over 90% of study respondents are hesitant to involve their children in DFVCs due to a variety of reasons, including income instability, harsh working conditions, and varying societal attitudes about dried fish work. For example, a female fisher in Kantale main reservoir and a single mother describes her wishes to not pass this livelihood on to her daughter:

“Uncertainty in income is what this job is about. A fisher has today, has nothing tomorrow. I will do this [fishing and drying her own catch] as long as I am physically fit to do this ... I have been doing this job since I was child. I work harder than most men around here. But I will not bring my daughter to this. I want her to get educated and find a good job. She doesn’t like to do this work anyway.” - P1:14 (Fisherwoman and a processor, inland)

Instead, the processors encourage their children to find salaried jobs after graduating school. Several key informants also confirmed this phenomenon, as did a fisheries manager from Kalutara district, providing insight into why children may enter fish drying in practice:

“Lots of people say that they don’t want their children to enter this hardship. Some people chase their children when they come to the beach, but some do let them help. The thing is, when children start to make money, they don’t want to go to school anymore and end up continuing this.” – P2: K14 (Fisheries Manager, female, coastal)

The study participants who are most eager to give up their fish drying activities, if there is another way of making a living, are the people who dry their own catches in the inland DFVC. Arguably, those participants experience the most risks and hardships associated with lake fishing in combination with the uncertainties of fish drying. Despite the majority perception to not pass on their occupation to children, three drying site owners from the coastal DFVC (12%) and two owners from the inland DFVC (7%) expressed willingness to involve their children in fish drying. Without surprise, they are the men who have managed to scale up their operations as more stable businesses.

5. Discussion

5.1. Wellbeing outcomes among members of dried fish producing communities

This study is a critical examination of how DFVCs contribute to the social wellbeing of people in fishing communities, with attention to benefits beyond mere financial gains. Our study is empirically grounded in Sri Lanka, where DFVCs remain undervalued and have rarely received any attention in research, policy, or practice (Koralagama et al., 2021). Insights emerging through our study can therefore guide entry points to policy initiatives and practice interventions that seek to improve the capacity of DFVCs to support the livelihoods of women and men who critically depend upon them.

Our study findings are consistent with the well-established literature on the interdependencies among material, relational, and subjective dimensions of wellbeing within small-scale fisheries more broadly. For example, Miñarro et al. (2022) have analyzed how catch size impacts the subjective wellbeing of fishers; Barclay et al. (2019) have revealed the importance of the link between intergenerational decision-making and income distribution; and Coulthard (2008) has explored fishers’ attachment to a traditional tenure system amidst changing environmental conditions. Such interdependencies specifically in the context of DFVCs are evident in the flows of dried/fresh fish (material wellbeing) that are mediated by credit, trust, and labour relations (relational wellbeing), which in turn are shaped by the attitudes and preferences (subjective wellbeing) determining people’s participation in value chains. The broader three-dimensional conceptualization of social wellbeing thus holds particular relevance to understanding the unique ways in which DFVCs support gendered experiences.

While wellbeing outcomes are diverse across the three dimensions, arguably, many of the outcomes discussed above appear to link back to the ability to earn income, such as trade relations that enable better sales. While the value chain focus of the study may have foregrounded some of the economic aspects (e.g., sales, earnings, wages), our results highlight that having the ability to raise one’s family without being a burden to anyone is what matters the most to many study participants. The meaning of a happy and fulfilled life for them is therefore about relational and subjective wellbeing alongside the economic or material benefits.

Furthermore, certain nuanced findings reveal positive as well as seemingly negative aspects of DFVC participation (e.g., uncertainties and harsh working conditions, less scope for women to benefit equitably, and hesitancy to involve children). One can thus question the ‘quality’ of wellbeing supported by DFVCs and whether people’s continued participation might be more about necessity than pursuit of wellbeing. However, study participants’ experiences across the three dimensions emphasize that they sometimes may choose and prioritize certain options over others, such as giving precedence to make a living over negative societal perceptions related to dried fish smell or working conditions in handling dried fish. For example, a female worker participating in the coastal DFVC said that “money doesn’t smell bad”, by which she referred to earnings despite the lingering body smell caused by handling dried fish for an extended period during the day. Despite having to make trade-offs among dimensions, their ability to continue to participate in dried fish activities is crucial as DFVCs might be the only option for a livelihood for many, particularly women dried fish workers in both study communities. Such realities and struggles to make a living also resonate with the uncertainties and vulnerabilities associated with small-scale fisheries livelihoods in general (see Allison and Ellis, 2001; Coulthard et al., 2011; Jentoft and Chuenpagdee, 2018).

5.2. Disproportionate importance of DFVCs to marginalized groups

Marginalization of people participating in DFVCs from a wellbeing perspective is multi-faceted and complex. From a material perspective

and in terms of daily wages, men working in the coastal DFVC earn higher wages than women in general, although all workers are paid the same rate in some sites. In comparison, earnings from dried fish processing within the inland DFVC contribute towards household incomes as these are family-run operations. However, further analysis of their socio-economic status such as poverty levels or income categories can not be realistically performed using mere wage earnings from fish drying. This is because monthly incomes of the individuals or households participating in DFVCs likely constitute more than one source of income or more than one income earner within each household in both DFVCs. Developing a nuanced understanding also requires attention to the uncertainties and vulnerabilities associated with dried fish processing activities such as catch levels and weather conditions as well as the scale of activity organization (e.g., full-time, part-time, and backyard operations of various types).

Another key aspect of marginalization of people working in DFVCs is the informal and casual nature of work. Of particular relevance to DFVCs, the 2003/2004 Consumer Finance Survey of the Central Bank of Sri Lanka revealed that poverty is strongly associated with casual work in general and that the households with at least one member working in the informal sector has higher than average poverty rates (Gunewardena et al., 2007). As a sub-sector belonging to the informal sector of the economy, dried fish activities have also been systematically overlooked in fisheries enumeration, official economic reporting as well as in policy and legal frameworks of the country (Koralagama et al., 2021). In particular, the women engaged in all aspects of fisheries, including the dried fish sub-sector, lack formal recognition within the fisheries sector in Sri Lanka (Lokuge and Arambepola, 2018).

Other forms of marginalization also exist in relation to dried fish work at the societal level. For example, many people working in DFVCs are wage labourers with lower levels of formal education and limited options for alternative livelihoods (Koralagama and Bandara, 2018). They are also confronted with other issues, such as poor living conditions and the inability to afford utility bills or their children’s educational expenses. In addition, a historically misconceived narrative exists in relation to dried fish activities. For example, dried fish itself is often viewed as poor people’s food despite it being a major food item across income categories (Koralagama et al., 2021).

Our findings on the day-to-day experiences described by study participants reveal how both DFVCs embody characteristics that specifically support marginalized people’s wellbeing across the three dimensions and in ways that fit their circumstances. Table 2 provides selected examples of these characteristics.

Table 2
Characteristics embodied in DFVCs that support marginalized people’s wellbeing.

Wellbeing dimension	Coastal DFVC	Inland DFVC
Material	<ul style="list-style-type: none"> Earnings and flexible payment arrangements help the workers meet day-to-day family living expenses and improve living conditions (e.g., better housing, buying small appliances). Informal savings arrangements with the owners help workers better manage their financials. Daily payment arrangements are also affordable for the owners as they largely depend on credit relations for supplies. 	<ul style="list-style-type: none"> Earnings help the families meet day-to-day family living expenses and improve living conditions (e.g., better housing, buying small appliances). Small quantity dried fish sales generate a nearly regular flow of cash over time. Income from dried fish supplements the income from other activities (e.g., fish selling).
Relational	<ul style="list-style-type: none"> Flexibility associated with labour relations (e.g., informal hirings within close-knit networks, more work during peak seasons) benefit both owners and workers. Family support and flexible work hours help the women who run home-based operations as they manage work alongside household responsibilities. Helps marginalized groups, particularly the women working in larger dried fish operations, find a sense of belonging as they work alongside people experiencing similar circumstances. 	<ul style="list-style-type: none"> Where helpers are hired, both owners and workers benefit from the flexibility associated with labour relations (e.g., informal hirings within close-knit networks, more work during peak seasons) Family support and flexible work hours help the women who run home-based operations as they manage work alongside household responsibilities. Provides people with sense of belonging as they help each other find raw fish and sell dried fish through networks of contacts.
Subjective	<ul style="list-style-type: none"> Fosters feelings of gratitude and satisfaction towards being able to make a living through dried fish work and in accordance with their beliefs. Makes owners feel happy about being able to provide work opportunities that support people’s survival. 	<ul style="list-style-type: none"> Fosters feelings of gratitude among families for the ability to make a living by processing dried fish. Makes village-level dried fish traders and collectors proud about their ability to bring earnings back to their community.

5.3. Can DFVCs continue to support the wellbeing of people who critically depend on them?

In responding to this question, we synthesized three key insights based on our findings under each dimension of wellbeing.

i) Commercialization may further marginalize women

Our comparative findings show that women may occupy more spaces when the value chain is community-embedded, compared to a more commercialized value chain comprising private-run businesses. Furthermore, gender relations permeate across both DFVCs in a way that largely restrict women’s capacity to involve equitably. For example, men play diverse value chain roles, handle larger quantities, and own all commercial operations while women are largely affiliated with home-based family-supported fish drying. Women’s limited roles and mobility (as wage workers and small-quantity sellers within the community) also severely restrict their capacity to benefit from any commercialization opportunities such as gaining access to new markets and handling bigger quantities of fish.

In comparison, although women participate across the inland value chain and lead the drying node, subtle differences still exist in relation to their participation in other nodes. For example, it is customary that women fish only in the main reservoir and the women who act as village-level dried fish collectors also handle smaller volumes compared to male collectors. Nonetheless, the family-oriented nature of production allows women to adjust their labour to better fit household needs and responsibilities.

Overall, women are at a disadvantaged position and their labour and efforts are undervalued in both value chains, although the impact is more apparent in the coastal DFVC through pay gaps and limited roles. These types of undervaluation of female labour is also an aspect widely documented in small-scale fisheries literature (see for example Hapke and Ayyankeri, 2018; Pedroza-Gutiérrez and Hapke, 2021; Weeratunge et al., 2010).

ii) Relational underpinnings can safeguard processors’ interests

Relational mediation of value chain activities brings more capacity and flexibility in safeguarding individual, as well as community interests, such as the sense of obligation to fill purchase orders from the community and flexibility in loan repayments adjusted to individual circumstances in the inland value chain. Women benefit from the sense of protection and security, and the support they receive within close-knit networks in managing their workloads. On the other hand, limited roles

played by women undermine the opportunities for them to strengthen networks of trade relations, which in turn may work to further limit women's potential to benefit. Further, commercialization in the coastal value chain seems to undermine the relational underpinnings compared to the inland one. For example, private-owned independently-managed businesses that comprise the coastal DFVC have less likelihood of any information sharing and mutual support that could potentially lead to negotiations in ways that producers can collectively benefit (e.g., standard price levels, new sales arrangements). The study participants also described how close-knit networks and intergenerational fishing backgrounds can provide priority access to fish. Furthermore, the gender division of labour, which shapes relational wellbeing, tends to be more rigid in commercial fish drying operations, rather than in family-run operations.

iii) Hesitancy to involve children puts intergenerational continuity at risk

From a subjective wellbeing perspective, the potential of DFVCs to continue to support the wellbeing of those who depend upon them appear to be at risk as current value chain actors are reluctant to pass on their occupation to their children. The majority of study participants in both value chains is of the mindset that they themselves go through hardships to provide a better future for their children. However, our results indicate that the process of socialization within the community setting during childhood years may advertently or inadvertently influence children's future engagement in dried fish. For example, children often help their parents with workloads, observe how fish is processed in community settings, and youth may find casual work in fish processing after school hours. Indeed, varied types of value chain experiences both restrict and foster the prospects for children's involvement. For example, societal perceptions around working conditions and gendered division of labour may curb their potential participation, whereas the feelings of gratitude and welfare practices may lead to continuity.

Furthermore, despite the disproportionate importance to the wellbeing of marginalized people, prospects for social mobility through engagement in DFVCs appear to be limited. This is especially true for women as the limited number of value chain roles performed by women within their villages curb opportunities to expand their activities. These constraints seem to be more rigid in the coastal value chain. Even though women have access to small savings arranged with drying site owners and small interest-free loans, they have not been able to expand or up-scale their operations. While fully understanding the livelihood alternatives beyond dried fish work and other fisheries-related activities (e.g., fishing, fresh fish selling) requires further research, our findings suggest that economic opportunities alone do not determine people's wellbeing. For example, the community-embedded inland value chain shows that people attach higher values and meanings to relational and subjective aspects (e.g., sense of protection within close-knit networks and ability to maintain a livelihood that aligns with their beliefs) despite the lower prospects for substantial changes in their socio-economic situations.

6. Conclusions and policy implications

Our findings provide substantive evidence that help us better understand how women and men in fishing communities generate material (e.g., income, employment), relational (e.g., familial ties, close-knit networks), and subjective wellbeing (e.g., perceptions about their continued ability to support families) through their participation in DFVCs. However, certain aspects such as the unfavorable societal perceptions about dried fish related work, gendered restrictions, and the hesitancy towards intergenerational transfer of occupation, suggest that DFVCs may sometimes even undermine wellbeing. Overall, the findings across material, relational, and subjective wellbeing dimensions reveal the unique ways in which benefits of DFVCs fit the needs, circumstances,

and priorities of women and men (e.g., wages that support day-to-day survival needs, interest-free borrowings in family emergencies, and community ties that secure access to fish/dried fish). Therefore, we argue that DFVCs are of disproportionate importance to all three dimensions of wellbeing of marginalized groups in fishing communities. Furthermore, increased commercialization can have negative impacts on material and relational wellbeing of women, as well as pose risks to intergenerational continuity of dried fish production, especially in terms of women's subjective wellbeing. On the other hand, the relational organization of DFVCs embodies a unique strength that may help safeguard people's interests.

The study findings also advance our empirical understanding of social wellbeing as a concept. More specifically, the experiences of people participating in DFVCs reveal that wellbeing creation is a messy process that involves hard choices about which wellbeing aspects to be pursued (e.g., earning a living despite the negative societal perceptions associated with dried fish work). However, these choices appear to result in outcomes that span beyond the conventional understandings of duality in pursuit of wellbeing (i.e., wellbeing or illbeing) to include more suboptimal experiences as well. People's pursuit of suboptimal experiences may even seem counterintuitive. Making sense of such experiences from an empirical viewpoint, therefore, requires careful examination of how tradeoffs occur among material, relational, and subjective wellbeing as people make decisions and choices about what matters to them in given contexts.

Several key implications also emerge from our study for fisheries governance in Sri Lanka. First, policy and management interventions should aim to re-position fish processing as a critical sub-sector within fisheries more broadly. Doing so will require taking a holistic approach centered on people, not the product (dried fish/fish), and how their livelihoods are organized. Second, deliberate efforts need to be made to recognize gendered participation within DFVCs by systematically counting different types of fish drying operations with attention to the spaces where women are present and experience inequities. Such efforts to make the sector visible and improve the collection of gender-disaggregated data will help develop a range of solutions to foster benefits for everyone. The impacts of commercialization (e.g., further integration of DFVCs into existing or new markets) should be carefully explored to assess benefits and costs, especially to avoid further marginalization of women participating in these value chains. Third, harnessing relational underpinnings appears to be key to uplift DFVCs, which can happen through carefully crafted interventions to catalyze collective action among value chain actors (e.g., processor groups and cooperatives). Finally, reframing the existing narrative to better understand and address negative social perceptions associated with dried fish work remains a challenge. Targeted strategies that seek to ensure intergenerational continuity in sustaining the diverse and community-embedded activities are therefore urgently needed to foster the wellbeing of women and men within dried fish value chains.

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Authorship contributions

All authors have made substantial contributions to the development of this manuscript. MG conceptualized the study, gathered field data, analyzed, and drafted the manuscript. NW, DA, and AC provided feedback on study conceptualization and design, guided the field study, and

revised the manuscript for critical intellectual content. All authors have approved the final submitted version of the manuscript.

Declaration of competing interest

Authors have no conflicts of interest to declare.

Data availability

Aggregated data will be made available on request.

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