



# Navigating customary law and state fishing legislation to create effective fisheries governance in India



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## ABSTRACT

When customary legal systems exist alongside state regulations, individuals can choose between these different frameworks to support their claims to resources. Research suggests that such framework switching to maximize self-interest weakens and challenges resource management. Multiple legal systems are at work in India's fisheries and this study examines how they work to govern conflict over purse-seine fishing in the Sindhudurg district of Maharashtra State. Through participant observations, interviews and state fishing law reviews, this study finds evidence of strong customary legal systems, operating through local cultural practices, to protect common property rights, equitable access, ethical and ecological concerns. In contrast, state legislation appears weak because it addresses issues of local concern, such as equitable access, at a slow pace and over such a large scale as to be absent. Consequently, multiple legal systems in these fisheries do not create a management challenge that follows a predictable path towards resource degradation. Instead informal, customary rules applied alongside formal state legislation interact in complex ways that create opportunities for effective co-management.

## 1. Introduction

This study draws on literature on legal pluralism to examine the effect of multiple overlapping legal systems on natural resource use. Legal pluralism refers to the co-occurrence, overlap and co-existence of multiple legal orders. This branch of research does not presume a naturalized, exclusive association between law and nation-state, instead understanding law more broadly, given that societies may be ordered by a number of different normative frameworks (Benda-Beckmann, 2002). These multiple legal orders then facilitate a variety of strategies that individuals use and draw upon to claim or access resources [24]. Marine fisheries are a realm where there is abundant evidence of multiple legal practices (e.g [28,2,5,19]). There appears to be a high linkage between livelihoods filled with ecological, social or political uncertainties, such as marine fishing, and legal pluralism because multiple legal systems allow people the flexibility to adapt to changing conditions [25]. Yet much of the research on the implications of legal pluralism for fisheries governance suggests that after a period of struggle, primitive customary law declines in the face of modern state interventions (e.g [19]). Even in cases when the state includes rather than overwhelms customary law, a power struggle ensues between groups who use different customs to choose one customary legal system over another [13]. Apropos such situations, Griffiths [13] identifies

legal pluralism as a source of conflict. This paper specifically addresses a conflict that has developed due to the use of purse-seines in the fisheries of Sindhudurg district, Maharashtra State, India, to examine whether legal pluralism, in this context, facilitates adaptive fisheries management and in what ways customary laws coexist and interact with state fishing law.

The literature about customary law in Indian fisheries reveals three broad themes. First, that customary law is generally associated with small-scale, artisanal or traditional fishing (e.g [2,28]). However, recent research has begun to re-envision this association by studying larger scale fisheries, such as trawl fisheries, and finding evidence of emergent customary law (e.g [27]). This paper builds on the idea of customary law as emergent by examining customary rules to govern the use of the purse seine—a recently introduced fishing technology in Sindhudurg district. Second, community rules, where present, are better enforced within a community than state regulations. Compliance with local rules was achieved through cultural rituals, such as association with temples [28], association with caste [17], kinship ties and spatial location [3], occupational homogeneity [32], values of social justice and ecological sustainability [1,16]. However, these rules appear to breakdown outside these small, closely knit communities. For instance, the *kadakkodi* system only exists in association with particular temples and is absent among the predominantly Catholic fishing society

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Fig. 1. Location of Maharashtra State in India and the study area—Sindhudurg district in Maharashtra State.

in southern Kerala [28]. Small-scale fishing communities may not be able to continually bear enforcement costs for customary laws over larger scales (e.g [5]). Novak and Axelrod [27] find that compliance with community rules rather than district legislation occurs when communities are homogenous in terms of caste and fishing gear use.

Third, that emergent and modern customary law finds innovative ways of working with or within state legal practices. Both caste based [27] and non-caste based [29] trawl boat owners associations in Tamil Nadu have worked with state authorities to create effective fishing rules aimed at restricting new entrants and further expansion of the fishery.

Bavinck [4] also describes customary law of small-scale fishermen being recognized by state officials, in the Ramnad district of Tamil Nadu, possibly due to the latter's eagerness to remain uninvolved in micro-managing local affairs (Bavinck, pers comm). Such initiatives hint at grassroots movements towards creating co-management regimes. This third aspect of customary law is most pertinent to the case presented in this study because it allows for the possibility of continued legal pluralism.

Following from these themes, this study seeks to understand how fishermen navigate multiple legal systems and the implications of legal pluralism for fisheries governance. Specifically, it explores the emergent nature of customary law as it adapts to new technology in the form of the purse seine. This paper then examines the structure of customary law and its enforcement as compared to state legislation. This is achieved by examining in what ways customary law is legitimated. Finally, this research explores the overlaps between state and customary fishing law, both in principle and practice, to draw out their interactions, implications for fisheries management and potential for co-management.

## 2. Theory

A study of legal pluralism and fisheries governance employs the concept of power. Making and enforcing property claims depends on relations of power [20] and these relations are created, reproduced and maintained through daily interactions and activities (e.g. [30,31]). Power operates at two levels in situations of conflict, using multiple legal frameworks. First, power operates through individual action and by producing outcomes that are desirable to the group, individual subjects can contribute to the power of the community [9]. Second, power also operates at the level of the community or state institution through the instrument of law. These institutions wield power by creating subjects through the provision of freedoms, while circumscribing individual choice and action (*ibid.*). The ways in which legal institutions circumscribe individual action could be through disciplinary practices that are authorized by cultural and/or moral principles, or by the experience and practice of one who is deemed an authority.

Theoretically, these two sources of legitimacy are debated by legal philosophers and anthropologists [22], because one emphasizes content and the other emphasizes legal process and structure [12]. Hart's [14] perspective of law originates in custom, thus allowing for diverse interpretations and adaptability. This view of law relies on officials to interpret and make judgements. In contrast, Dworkin [8], wrote that a legal system exists only when principles are laid out in advance to guide the use of force over subjects. India's state fishing laws, being a common law legal system, and customary laws crossover this theoretical divide between practice and ideal. Therefore any analysis or comparison of the power of legal systems requires a systematic study of both structure and content. This paper follows Benda-Beckmann [6] who has created a guideline of recognizable elements that enable the structure and content of legal systems to be distinguished. These include institutionalization and systematization, the degree of differentiation of legal knowledge from everyday knowledge, the basic underlying legitimation of the legal system, the extent to which legal rules are mandatory, technology of transmission, the social and geographical scope, and the substantive content of the legal system.

## 3. Methods

### 3.1. Study area

This study focuses on conflicts over purse-seine use in the Sindhudurg district of Maharashtra State, India (Fig. 1). Although the fishing villages of Sindhudurg are connected to the nearest fish trading centre - Madgaon, Goa, by two highways, the roads run quite a bit

inland and are badly maintained. As a result, fish landings and transport are relatively less well organized and occur at a smaller scale than those of large ports like Mumbai and Alibag. The fishermen in Sindhudurg are primarily Hindus belonging to the Gabit caste. There are also Catholics who originate in Goa, and Muslim fishermen, who often serve as labour on fishing vessels. Fishermen in this region use different types of hand lines, cast nets, shore seines, gill nets, trawl nets and purse-seines.

The case study is on the Brahmeshwar group, so named due to the historically important Brahmeshwar temple that played an important role in these fisherfolk's lives. Local legend states that an important leader of the Maratha Empire had laid the foundation stone at the temple and thus this became an important temple for all fisherfolk in that area. The village that houses the temple is designated as the head village. Meetings of the Brahmeshwar group are always held in the temple. This group claims membership from fishing villages spread over a distance of about 10 km (north-south) along the coast. They claim fishing territory in the inshore waters adjacent to all these villages, in which purse seining and trawl fishing is not allowed within 5 km from shore (Karnad, unpublished data). Members of the Brahmeshwar group are not allowed to own or work on boats that operate purse-seines.

### 3.2. Data collection and case study

In order to understand the position of state and non-state actors with respect to purse-seine usage, this paper features a brief state fisheries legislation review, interviews with fisheries officers, participant observations, open-ended interviews at community meetings and semi-structured interviews with fishermen. Informed consent was sought from all participants and the interview protocols were reviewed by the Rutgers University Human Research Ethics Board (Protocol # E14-636).

The Maharashtra Marine Fishing Regulation Act [21] (henceforth MFRA), orders under it pertaining to purse-seines, as well as its amendments until 2016, are reviewed for legislation pertinent to fishing gear regulations. Interviews with fisheries officers about their interpretation of and adherence to these laws helped to link policy to practice. These interviews follow an open-ended protocol. Open ended interviews with purse-seine users provided data about their interpretation of state and customary law.

Qualitative data was gathered in Sindhudurg from February 2014 to January 2015. Participant observations of events related to a dispute resolution meeting in December 2014, between a group of fishermen consisting of gill net, hand-lines, cast net and shore-seine operators (henceforth called the Brahmeshwar group) and owners of a purse-seine vessel features as an important case. This case study was analyzed using Benda-Beckmann's [6] criteria to determine the structure and content of customary fishing law. Data from open ended interviews with meeting participants and opportunistic observations of rule enforcement was used to support this analysis.

Semi-structured interviews were conducted, following the protocol developed in Karnad et al., [18], across fishing villages in the district, to identify the ubiquity of findings from the case study.

This data was coded and analyzed using percentages, both individually and grouped by village. Group membership and composition was modelled using classification trees [7]. The list of codes corresponding to the information sought is given in Table 1.

## 4. Results and discussion

### 4.1. The emergence and structure of customary law—a case study

On 6th December 2014, all Brahmeshwar group members were asked to forego a day's fishing and meet at the temple to hear the case of a purse-seine operated in their waters two days prior to the meeting. The meeting was facilitated by village elders and relatively experienced, 'worldly' members, who were politically savvy, college educated

**Table 1**  
List of data sought and codes used.

Code	Data used
Type of fishing	Gear and boat types used
Fishing institution	Occurrence of meetings, evidence of fishing rules, resolution of conflict
Origin	Village of residence, village of birth
Type of decision making	Consensus, majority, elected representatives, village elders etc.
Market linkages	Connectivity through roads, networks with agents, use of mobile phone
Religion	Hindu, Muslim, Catholic
Meeting place	Temple, community halls, fisheries society buildings, prominent house

men, seen as capable of mediating with “outsiders”. They did not make decisions themselves, only structuring the proceedings. All participants adjudicated in a relatively egalitarian manner, with facilitators summarizing, trying to achieve consensus, moving the conversation to the next agenda item and creating space for everyone to express their opinion. Creating an effective platform for speech and negotiation is critical to overcoming power inequities, ensuring equitable distribute rights to resources and effectively manage natural resources [24]. This equal platform was respected by all participants, including the transgressors. The response of those outside the influence of customary law, including state authorities, such as the police, the judiciary and the fisheries department, could not be gauged because they are generally absent from such proceedings.

The owners of the purse seine (henceforth purse-seiners) were ‘invited’ to the meeting, but confessed to attending because their net had been taken hostage. The purse-seiners were offered chairs, out of respect, but this made them visible to all group members who sat on the floor, or stood along the walls or outside the hall. The purse-seiners claimed that they did not know that purse-seining was banned in these waters. So the group had to establish that they had been fishing within Brahmeshwar territory. Territory was identified using distance and bearing, where distance was measured in running time, given an engine of particular horsepower. Markers, such as large rocks, small islands and underwater structures, such as reefs, were also used. No maps, digital or otherwise, or other written records of fishing zones were used (or available), thus excluding formalized knowledge that would be recognized by the state.

Once consensus was reached that the purse-seiners had been fishing in the group’s territory, the next step was to establish intent: purse-seining in Brahmeshwar territory despite knowing the group’s stand against it. The purse-seiners resorted to state legislation, claiming purse-seining was a legal fishing method in Maharashtra. The response from some young members was, “Don’t tell me that you didn’t know [our rule]. Everyone knows. We have had this rule for so many years”. State legislation was ignored and the argument put forward was that each group had exclusive right to water adjacent to their villages, therefore the purse-seiners could have remained in the waters adjacent to their home village, instead of drifting into Brahmeshwar territory.

The lack of respect for state legislation and legitimacy of customary law was made evident in a statement made by one facilitator. He said, “As traditional fishermen we have a unique understanding of how best to care for the sea. We know which fish are declining and why. We have even made representations to the government about the disappearance of hilsa, some catfish etc., but they did not pay attention”. The government’s act of ignoring the community’s representations strengthens boundaries between government and community. In distinguishing themselves clearly as neither individualistic, economic rationalists nor associated with government, the facilitators identify the philosophical underpinnings of their customary law as very different from state legal philosophy. However the structure of the hearing resembles court proceedings.

Members decided on a fine as punishment. The purse-seiners paid the amount, equivalent to the income foregone, to the temple. Meeting

facilitators decided on how to compensate individual meeting participants. The symbolism of payment to the temple invoked the idea of judgment not only by the members, but also by the local *devta* (god). Money placed in front of the deity was counted in public view, so the *devta* and all the witnesses could decide if it was appropriate, and ensure that no-one was cheated. Members who were absent, in order to go fishing, were punished by social ostracism and by foregoing any compensation received. Thus participation was immediately acknowledged and membership enforced by the expectation of attendance.

#### 4.2. Marine fishing regulations in principle and practice

Section 4 of the second chapter of the MFRA identifies the need to regulate fishing in order to protect the interests of different sections of fishermen and to conserve fish (Subsection 2a, 2b), but Section 5 promotes the idea of open access. This section states, “Nothing in [this Act] shall be considered as preventing the passage of any fishing vessel from, or to, the shore, through any specified area to, or from any area other than specified area, for the purpose of fishing in such other area or for any other purpose.” The Act does not prevent or regulate fishing by vessels from any other Indian state within its jurisdiction. In the context of fishing territories, this part of the MFRA makes enforcing local fishing territories illegal. All the four fisheries officers in the two fisheries department offices in the district, who participated in interviews, mentioned this part of the Act. They made statements like, “These are Indian waters, we can’t prevent Indians from fishing here, no matter where they are from”. When asked about the conflict with purse seines, one officer replied, “It is not an illegal fishing method, so how can I intervene? They [fishermen] should not be fishing too close to shore with large vessels, and usually no one does that”. Five of the eight fishermen, using purse-seines, interviewed also refer to this part of the Act, making statements like, “I can legally fish wherever I want as an Indian citizen. Only the fishermen with small gear object, saying this area is mine, that area is yours. Why should I listen to them?” Six fishermen also claimed they use mini-purse seines (a new variant of purse seines), which are not regulated by law.

Order ADF 14 [11] under the MFRA was passed in recognition of the conflict regarding purse-seine use. It prohibited purse-seining within 12 nautical miles from the coast. However, this order was subsequently challenged in court [15], which resulted in it being put on hold until the report of an advisory committee was submitted for all coastal districts in the state. According to the recent amendment of the MFRA [26], the advisory committee report was submitted in 2012, and its recommendations accepted and notified only four years later in 2016.

The MFRA [26] was notified only after the field work for this study was carried out. It prevents new purse seine licenses from being issued, restricts purse seine usage to the months of September – December, prescribes minimum mesh size of 25 mm and prevents the use of hydraulic winches.. The exclusive artisanal zone in the study area now extends to the area up to 25 m depth, and the law applies to new variants of the purse-seine, i.e. the mini-purse seine. This makes clear that the government is sensitive to the concerns of fishermen, however state legislation moves very slowly, taking 12 years to deal with a challenge to its order.

#### 4.3. State practices with respect to customary law

Prior to the notification of MFRA [26] all the fisheries officers interviewed identified gaps between the state laws and the purse-seine conflicts that affected fishermen. When asked whether they were aware that fishermen were enforcing territories that banned purse-seine use, one officer said, “These fishermen have some traditional rules, so we cannot get involved”. Recognizing the legal gray area with respect to purse seines, another officer said, “Fishermen usually keep having these sorts of conflicts, it is best to let them deal with it by themselves”. Implicitly overlooking customary law allows state officers to keep out of potentially messy, local squabbles.

This non-interference is perceived as absence of state management

**Table 2**  
Respondent characteristics indicating personal details and details about fishing practices.

Category	Characteristic	Percentage of respondents
Age	20–30	30%
	30–40	50%
	40–50	20%
Marital Status	Married	63%
Fishing practice	Boat owners	44%
	Participates in co-operative fishing	28%
Fishing vessel used	Employed on another's vessel	28%
	Small-scale with outboard motor	54%
	Mechanized with inboard motor	44%
	Rowboats	2%

by fishermen. One member of the Brahmeshwar group stated, “*The government is not doing anything, so we have to manage our own fisheries*”. Thus while the official position, according to law, renders customary rules illegal, practices of state officers lend authority and legitimacy to customary legal institutions. The lack of formal recognition, however, makes customary law vulnerable. The state can change its position and forcefully impose rules at any time (as seen in the 2016 amendment of the MFRA), which may or may not directly correspond with customary law.

#### 4.4. Structure and content of customary law across Sindhudurg district

80 fishermen in 20 villages from Sindhudurg participated in the survey (Table 2). The respondents of the survey did not include members of the Brahmeshwar group, since they were already included in the qualitative portion of this study. Respondents in all the villages mentioned making fisheries decisions at community meetings. These meetings function not only for dispute resolution but also as authoritative enforcement mechanisms, where rules are drawn up and changed depending on context. The structure of the meetings described by all these respondents resembles the proceedings of the Brahmeshwar case study.

Following Benda-Beckmann's [6] criteria, unlike state legislation, customary legal knowledge was not restricted to or wielded only by authorities. Instead, it stemmed from everyday knowledge and practices. In 15% of villages, village elders and those with political clout are taken to represent authority, by developing moral authority through their experience and actions. Any decisions taken by them could apply to all members, but only if those decisions conformed to the local sense of social justice. For instance, foregoing fishing to attend the meeting was obviously an economic loss, but one meeting participant said, “*They [the elders] told us, and so we followed. We feel that what they are saying is right. These trawlers and purse seiners fish everywhere, even though they know that there is a [local] rule that they shouldn't fish here. They [the elders] are also sacrificing, and we are all one*”. Merriam [23] identifies a similar rhetoric in Hindu philosophy, in which adversaries need to be swayed by one's willingness to suffer. Galanter [10] also recognized the role of example and persuasion in forming what Benda-Beckmann [6] called the underlying legitimacy of most Indian customary legal systems. This concept of exemplar is embodied in the actions of the head village and village authorities. It is from these actions that the power and legitimacy of this legal system stems. This context-specific source of legitimacy differs vastly from the state's legal philosophy of applicability across different contexts. Thus customary legal systems are limited to those who recognize such cultural sources of legitimacy.

Customary law has limited general applicability. Respondents in 75% of villages said that their customary rules applied to fishermen from other villages, and more than a single village participated in

meetings. Meetings were held in a head village. A village could be 'head village' for a variety of reasons, such as being home to politically connected or powerful fishermen (50% of the villages), having a well-respected or historically significant temple or monument (35%), or being larger in fishing population than the other villages (15%). The majority of these meetings take place in temples (75% of respondents). Participation in religious rituals is a hallmark because even multi-religious groups mark the start of the fishing season with a Hindu ritual of offering and breaking a coconut. All these locally known and respected cultural symbols, do not necessarily resonate beyond the district.

Within this set of limitations customary law is broadly applicable. The results of the classification tree identified that the groups participating in meetings use different types of fishing gear. Therefore meetings are not associated only with users of particular fishing gear or artisanal fishing techniques.

All respondents said rules were orally transmitted (whereas in Tamil Nadu they may be written (Bavinck, pers comm)). The way fishing territory is identified, described in Section 4.3, is an example of the absence of written records. Even though some fishermen use Global Positioning System units to mark their fishing paths and areas, it is never used in connection with demarcating territory. Despite this, territory was relatively undisputed. There was an almost perfect match (98% of respondents) between a fisherman's stated fishing area and the group to which he belongs. Only 12% of respondents recognize legal state zonation, such as territorial waters and exclusive artisanal zone.

An analysis of the content of these customary fishing legal systems reveals a slight variation in the actual rules. Oral transmission has allowed for a context-dependent diversity of rules to develop. For instance, the Brahmeshwar group, which comprises mainly of non-mechanized fishermen, ban their members from buying or operating (as labour) trawl nets and purse-seines. Other groups only ban the ownership of these fishing gears and are not as strict about their members becoming labour on vessels that use such fishing gear in nearby villages. Thus this law is not uniform.

Most (85%) institutions used consensus and majority forms of collective decision making. The consensus approach lends itself best to small groups and cannot be translated at larger scales.

Members themselves perform duties of vigilance, monitoring and reporting transgressions. Failure to adhere to local rules results in various forms of social and financial sanctions. Respondents developed a scale of sanctions ranging from public embarrassment and emotional blackmail to social ostracism. 78% of respondents identified closure of the fish market to a person's catch as the most stringent punishment, typically associated with repeated transgressions. One group identified the most stringent punishment as excommunication, where markets could remain closed to that individual for life, and his entire family would not receive community protection during emergencies, conflicts etc. This is quite a serious threat to a fisherman who does not have alternative ways to gain social and financial support, such as approaching banks for loans or courts to resolve conflicts. There are a separate set of repercussions for non-members, involving a greater threat of physical violence. Most (97%) mention that non-members are fined, and the amount is usually decided at the meetings. Five respondents from two groups remember a non-member being asked to offer food or other non-monetary compensation, if they are from a nearby village or allied fishing group. Only repeat offenders could face violent repercussions, immediate or implied. This includes cutting nets, sabotaging boats and physical altercations. In this, customary law outdoes the state. State officials confess to limited enforcement, due to the small number of people and boats that can be deployed by the fisheries department. State officials are also constrained in the types of punishment that can be meted out. Some legally mandated punishments such as confiscation of catch are easier said than done, given that the department has speed boats which do not have storage for fish.

Where state and customary law align is in providing opportunities for equitable access to all fishermen. Talking about the ban on purse-

seines, one respondent remarked, “*If one person uses a purse seine here, ten cast-netters will have to go without fish*”. This sentiment is also reflected in the designation of an exclusive artisanal fishing zone under the MFRA.

## 5. Conclusion

Legal pluralism in the fisheries of Sindhudurg district, Maharashtra state, India, consists of locally relevant, well enforced customary law that protects common property rights, ethical and ecological concerns, in contrast to ineffective state legislation that does not provide such use and management rights. Customary law has a limited reach because it operates at the scale of groups of villages and remains contextually relevant to that group, while state law must act at the scale of the state in relation to the nation, sacrificing local concerns in the process. In Sindhudurg, customary and state laws appear to overlap and coexist. The overlap between customary and state law creates unique opportunities for complementarity, because state law can work effectively at politically relevant scales for the nation, while customary law allows for adaptive fisheries management at the local scale. The reluctance of fisheries department officials, to apply state law at the village level, reveals their recognition of the shortcomings of state legislation to deal with local concerns. Since they are bound by the inflexible and slow bureaucratic procedure, officials often find it easier to turn a blind eye to practices of customary law. Thus these legal systems enable each other and cannot be studied in isolation.

Customary legal systems are legitimated by everyday practices of power, including the deference of state officials to customary practices and decisions, and through disciplinary practices of creating customary law abiding subjects. Within the community subject to customary law, disciplinary practices include the threat and enactment of violence, social boycott and reduction of economic opportunities. By using punishment that is tailored to suit each new case of conflict, customary law reveals itself as legitimized by practice rather than principles, unlike the state, which is constrained by its underpinnings of universal moral ideals. Still ideas of justice influence the authority of customary law, such as through the esteem given to socially just action, individual sacrifice for the group and adherence to locally upheld ethics.

The implications of such legal pluralism for resource use is that a framework for effective management exists in Sindhudurg. Fishermen can use customary law to enforce and recognize common property rights. This is possible because state officials do not enforce state law during local level conflicts. The two legal systems appear to interact when conflict escalates, and show potential to influence each other, as in the case of the MFRA [26]. However, there are many situations where this relationship breaks down, such as when fishermen from other states are enabled by lack of state restrictions to disregard customary law. Unlike the contentious cases where co-management is imposed through top-down directives, effective co-management in Sindhudurg's fisheries could build on this existing framework of legal pluralism. What would be required is the creation of more opportunities for communication between these legal systems in order to enable customary and state law to work in a complementary fashion for their mutual benefit.

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## References

- [1] M. Bavinck, “A matter of maintaining peace” state accommodation to subordinate legal systems: the case of fisheries along the coromandel coast of Tamil Nadu, India, *J. Leg. Plur. Unoff. Law* 30 (40) (1998) 151–170.
- [2] M. Bavinck, *Marine Resource Management: Conflict and Regulation in the Fisheries of the Coromandel Coast*, Sage Publications, 2001.
- [3] M. Bavinck, Caste panchayats and the regulation of fisheries along Tamil Nadu's coromandel coast, *Econ. Political Weekly* 36 (13) (2001) 1088–1094.
- [4] M. Bavinck, The spatially splintered state: myths and realities in the regulation of marine fisheries in Tamil Nadu, India, *Dev. Change* 34 (4) (2003) 633–657.
- [5] M. Bavinck, D. Johnson, O. Amarasinghe, J. Rubinfoff, S. Southwold, K.T. Thomson, From indifference to mutual support—a comparative analysis of legal pluralism in the governing of South Asian fisheries, *Eur. J. Dev. Res.* 25 (4) (2013) 621–640.
- [6] F. Benda-Beckmann, Who's afraid of legal pluralism? *J. Leg. Plur. Unoff. Law* 34 (47) (2003) 37–82.
- [7] G. De'ath, K.E. Fabricius, Classification and regression trees: a powerful yet simple technique for ecological data analysis, *Ecology* 81 (11) (2000) 3178–3192.
- [8] R. Dworkin, *Law's Empire*, Harvard University Press, 1986.
- [9] M. Foucault, *The Subject and Power*, *Crit. Inq.* (1982) 777–795.
- [10] M. Galanter, *Law and Society in Modern India*, Oxford University Press, 1992.
- [11] Governor of Maharashtra, Order Lavesu-499/14141/(C.R. – 88) / ADF-1. Department of agriculture, animal husbandry, dairy development and fisheries, Gov. Maharashtra (1999).
- [12] L. Green. *Legal Positivism*. Zalta, E. (ed.) .
- [13] J. Griffiths, What is legal pluralism? *J. Leg. Plur. Unoff. Law* 18 (24) (1986) 1–55.
- [14] H.L.A. Hart, *The Concept of Law*, in: P. Bulloch, J. Raz (Eds.), *With a postscript*, 2nd ed, Oxford: Clarendon Press, 1994.
- [15] Hodekar, A.H.A.A. vs State of Maharashtra. Judgement of the High Court of Bombay, 2004. Available at: <<http://www.the-laws.com/Encyclopedia/Browse/Case?CaseId=314002063000>>. Accessed on: 10th May 2016.
- [16] D. Johnson, Category, narrative, and value in the governance of small-scale fisheries, *Mar. Policy* 30 (6) (2006) 747–756.
- [17] D. Johnson, A political ecology of legal plural disconnections in the marine fishery of Junagadh District, Gujarat, India, in: Bavinck, Jyotishi (Eds.), *Conflict, Negotiations and Natural Resource Management: A Legal Pluralism Perspective*, Routledge, NY, 2015.
- [18] D. Karnad, M. Gangal, K.K. Karanth, Perceptions matter: how fishermen's perceptions affect trends of sustainability in Indian fisheries, *Oryx* 48 (02) (2014) 218–227.
- [19] J. Kurien, A.J. Vijayan, Income spreading mechanisms in common property resource: karanila system in Kerala's fishery, *Econ. Political Wkly.* (1995) 1780–1785.
- [20] C.B. Macpherson, *Property, Mainstream and Critical Positions* 214 University of Toronto Press, 1978.
- [21] Maharashtra Marine Fishing Regulation Act, 1981. Available at: <<http://bombayhighcourt.nic.in/libweb/acts/1981.54.pdf>>. Accessed on: 8 January 2016.
- [22] A. Marmor, A. Sarch. *The Nature of Law*. Zalta, E. (ed.) .
- [23] A.H. Merriam, Symbolic action in India: Gandhi's nonverbal persuasion, *Q. J. Speech* 61 (3) (1975) 290–306.
- [24] R.S. Meinzen-Dick, R. Pradhan, Implications of legal pluralism for natural resource management, *Ids Bull.* 32 (4) (2001) 10–17.
- [25] R.S. Meinzen-Dick, R. Pradhan, *Legal pluralism and dynamic property rights*, CGIAR Systemwide Program on Collective Action and Property Rights, International Food Policy Research Institute, Washington, 2002.
- [26] MFRA, 2016. Available at: <[http://indianlegal.icsf.net/images/resources/externalNews/docs/legal\\_india/documents/59832147.pdf](http://indianlegal.icsf.net/images/resources/externalNews/docs/legal_india/documents/59832147.pdf)>. Accessed on 9 December 2016.
- [27] J.M. Novak, M. Axelrod, Patterns of multi-level fisheries governance and their impact on fishermen's adaptation strategies in Tamil Nadu, India, *Environ. Policy Gov.* 26 (1) (2016) 45–58, <http://dx.doi.org/10.1002/eet.1694>.
- [28] A. Paul, Rise, fall, and persistence in Kadakkodi: an enquiry into the evolution of a community institution for fishery management in Kerala, India, *Environ. Dev. Econ.* 10 (01) (2005) 33–51.
- [29] J. Stephen, A place to live and fish: relational place making among the trawl fishers of Palk Bay, India, *Ocean Coast. Manag.* 102 (2014) 224–233.
- [30] K. St Martin, Making space for community resource management in fisheries, *Ann. Assoc. Am. Geogr.* 91 (1) (2001) 122–142.
- [31] K. St. Martin, Disrupting enclosure in New England fisheries, *Capital. Nat. Social.* 16 (1) (2005) 63–80.
- [32] P. Thamizoli, I. Prabhakar, Traditional Governance System of Fishing Communities in Tamil Nadu, India: internal Mandate, Interfacing and Integrating Development, in: Shaw, Krishnamurthy (Eds.), *Communities and coastal zone management*, Research Publishing Services, 2010.