



Theories of institutional change and marine privatisation

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Abstract

Privatisation, as a process that assigns more individual property rights, implies in most cases institutional change. Privatisation might occur on the level of society, when formal laws, but often also informal rules are changing, or it might take place on an organisational level when an asset under an open access regime, a cooperative, or a state-owned company is converted into a privately managed entity. From this perspective, it seems obvious that theories of institutional change provide a certain understanding of privatisation processes in the marine realm. Processes of marine privatisation are very heterogeneous in their characteristics: some processes are informal, some take part in the business world, others in the political realm, some are to a certain degree planned, others are emerging and have more evolutionary characteristics, some are characterised by huge power asymmetries others take place under more equal footing. Therefore, this paper interrogates a broad range of theories of institutional change. Our perspective does not proclaim or investigate superiority of one theory above the other, but rather inquires about *fit*. After elaborating on the theories, clarifying their focus, core concepts and assumptions, the paper illustrates the explanatory powers of the theories by looking at the case of privatisation of space in Saint Louis, Senegal. Due to strong restrictions for Senegalese fishers to fish in Mauritanian waters, the establishment of a marine protected area, and more recently the establishment of a gas field on the doorstep, fishers are confronted with an enclosure of their commons.

Keywords Theories of institutional change · Privatisation · Fisheries · West Africa

Introduction

Private appropriation of certain parts of the sea might be as old as humankind. However, we are now 40 years away from the introduction of the law of the sea, which was an important starting point for allowing more exclusive rights to the

sea (Campling and Colas 2021). We are in the era of Blue Economy and Blue Growth where there is a strong interest in expanding the economic boundary of human activity more into the sea (Germond-Duret et al. 2023). In this paper, we take a property rights approach, conceptualising privatisation as a move on the continuum of potential property rights allocations between open access (*res nullius*) and exclusive property rights to any individual or at least a very restricted group (Bromley 1989). Property rights depend on a set of rules of society that define who is allowed to do what with an economic good and who has the right to get the economic return from this good (Ostrom and Hess 2011). Due to the increasing desire to perform economic activity and to secure investments, as well as, the rising environmental problems related to overuse, there is increasing scarcity in the marine and coastal arena. Thus, a move towards more exclusive rights to the ocean, as a process of institutionalisation, is accelerating.

This process of moving towards more exclusive property rights is happening in many different sectors in many different forms. Schlüter, Bavinck et al. distinguish between the privatisation of resources, space, knowledge, and governance

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(2020). For resource privatisation, in this case fish, the most prominent example of exclusive rights to fish are so-called individual tradable quotas (ITQs). They just provide a right to a certain proportion of the overall state-controlled resources. Therefore, ITQs are different from other forms of private ownership (Bromley 2016). A fish in the ocean is only individually owned once it is caught. Therefore, ITQs cannot solve the provisioning problem. However, ITQs give the right to a fish exclusively to “individuals”. A lot of privatisation is happening in the field of marine space. Privatisation of space does not only take place on the shore, where top tourism destinations are extremely valuable, but also within the waterbody, for example for aquaculture production, the establishment of harbours, private no-take areas, or wind farms. Marine Spatial Planning, currently introduced in many countries, reflects this institutionalisation process. Again, also relating to marine space, the privatisation patterns observed are different from their homologues on the terrestrial side. For example, due to the fluidity of the water body, interdependencies between various proprietors are much bigger, leading to more potential conflicts between different actors (Schlüter et al. 2020). Another example is that the exclusive rights are often not given for an infinite period but are granted in the form of a licence for a couple of years, e.g., in the field of aquaculture (Ertör and Ortega-Cerdà 2019; Hadjimichael et al. 2014). Ocean knowledge, e.g., about marine organisms, gets increasingly patented and, therefore, leaves the public domain and is secured for private benefit (Blasiak et al. 2018). Finally, privatisation of marine governance can take the form of handing over certain tasks of governance to private entities (Partelow et al. 2019; Schlüter et al. 2020). For instance, NGOs might be marine-protected area operators, or private companies might run certification schemes, replacing state governance.

All those processes described above have in common that they relate clearly to economic activities. Privatisation is a process of change in property rights. The process changes who has the right to what and restricts the number of people having access to the resource, space, knowledge, or management. Therefore, privatisation is a process of institutional change commonly understood to operate in the economic realm. Thus, in this paper we are using theories of institutional change to help us understand the processes of marine privatisation currently underway. The paper aims to introduce the reader to those theories and to exemplify their use with the help of various processes of privatisation. This should enable us to select the most suitable set of theories for any specific empirical case of ocean privatisation.

The paper develops as follows. After this introduction the rationale for the classification and the choice of different theories of institutional change are first explained before presenting the theories. The paper’s overall argument is that privatisation of the marine realm is such a diverse process

that it will always require a mixture of different theories. Depending on the aspects focussed on, one or the other theory might have explanatory power. Therefore, after the explanation of the theories, a short schematic framework is developed, which then can be applied to different empirical processes of ocean privatisation. One could have chosen many processes of privatisation currently happening around the world. However, we focused on Saint Louis, Senegal, because it presents an interesting case where diverse changes in property rights currently amalgamate and have strongly affected resource access in the last decades. We use the enclosure of Mauritanian waters for Saint Louis fishers, the enclosure due to the establishment of a marine protected area, and the enclosure due to gas exploration and processing as three sub-cases to exemplify the application of the previously developed framework’s explanatory potential of the different theories. The discussion and conclusion section reflects, first, on the explanatory potential of the various theories in the specific case of Saint Louis, for then drawing some conclusions on institutional change theories, when applied to privatisation processes in the marine realm.

Concluding from our case study analysis, we can confirm that each of the theories can help us understand the particular aspects of the processes of institutional change we observed. However, it also becomes clear that theories emphasising the analysis of power asymmetries are particularly helpful. We also see that aspects addressed by the various theories, such as path-dependencies or isomorphism, help to understand the power resource dynamics of actor groups and how power resources influence the forms of institutional solutions that finally dominate. Every institutional change process is different. The conflicts that small-scale fishers from Saint Louis face might be an example where asymmetries in power are extremely dominant. However, we argue in the paper that in most marine settings, constellations are such that theories focusing on power asymmetries play a central role.

Theories of institutional change

The explanation of the theories builds and extends on the profound analysis of theories of institutional change and their application to the marine sector by Banikoi et al. (2023). There are many different classifications of theories of institutional change out there and which classification is most useful depends on the research focus (see, for example, Schmid 2004; Campbell 2004; Kingston and Caballero 2009; Micelotta et al. 2017; Vatn 2005; Campbell 2010). As will be shown later, the lines between the theories are not clearly defined. Authors borrow or refer to other theories and are usually aware that their approach alone is unable to understand the complexity of most processes in the real world. This leads then to combinations (Partelow et al. 2020)

that draw explicitly on various theories (Beunen et al. 2015), or which combine various of the elements that are described in the following (North 2005).

When selecting and classifying the theories for this paper we had two criteria in mind. *First*, we have chosen theories that focus, at least mainly, on a single determinant like ideologies or power. This had the aim to reduce complexity and to allow for the maximum difference between the approaches, as this paper aims to show the applicability of a particular theory in relation to privatisation in the marine realm. *Second*, we wanted to provide a holistic picture of different drivers explaining institutional change in the literature. In general, each theory of institutional change is set up by the same building blocks (see Fig. 1). A change in relative prices, preferences, ideas, power structures, or technological possibilities leads to the requirement or wish for new institutional alternatives. Those alternatives then go through a selection process, which we call the mechanism of change. If one investigates in detail (see, Banikoi et al. 2023), there are differences between the various mechanisms of change in each theory. However, in a generalised form, all theories refer to a form of competition between different institutional alternatives, ideas, or actors with different power resources (Tang 2010). This might be a central competition, for example, in a political realm with a more or less democratic system (Sened 1997). In many cases, it might be a more decentralised competition between different alternatives (Alchian 1950). This could be via the market, for example, when entrepreneurs (fishers) around the world are, without knowing each other, competing, and therewith searching for the “best” way of organising and governing their activity (Cinner et al. 2021). However, this competition does not need to take place via the market and does not

need to be explicit, but could be more subconscious, when individuals, families, organisations, or societies, testing new ways of organising, are observed and copied by others, as they seem to have found a better alternative from the observer’s perspective. This process might lead to a minor change or a huge change in institutions. It might lead to an abrupt or revolutionary change, or a constant creeping change over an extended period (Campbell 2004, 2010). Some of those processes are more explicitly and voluntarily controlled and guided by actors and others are more unconsciously emerging without being led (Kingston and Caballero 2009). However, none of them seems to be a deterministic process of change, where it is mechanistically possible to trace back the outcome, to a single event and particular actor. From this perspective, all the processes of property rights change can be understood as evolutionary processes (Van Assche et al. 2014). The outcome of the process is an interplay of many variables. It cannot be predicted deterministically as each context is a unique combination of factors. Theory can only provide insights into the relative importance of one or the other factor. Still, this allows for making recommendations for future processes of property rights changes and where to place particular attention to avoiding negative outcomes (what is negative depends on the perspective of the observer) (Bennett et al. 2021; Schlüter et al. 2020a).

Using an evolutionary lens here does not mean at all that institutional change would follow a Darwinian or Hayekian trajectory of evolution, mutating and selecting the most “successful”, the fitter institutional solution (Hayek 1968). At least, it would require a definition of what “fit” means. It could be more powerful, cost-saving, or more suitable (potentially only for certain actors) under current, constantly changing conditions. It could easily be that the institutional

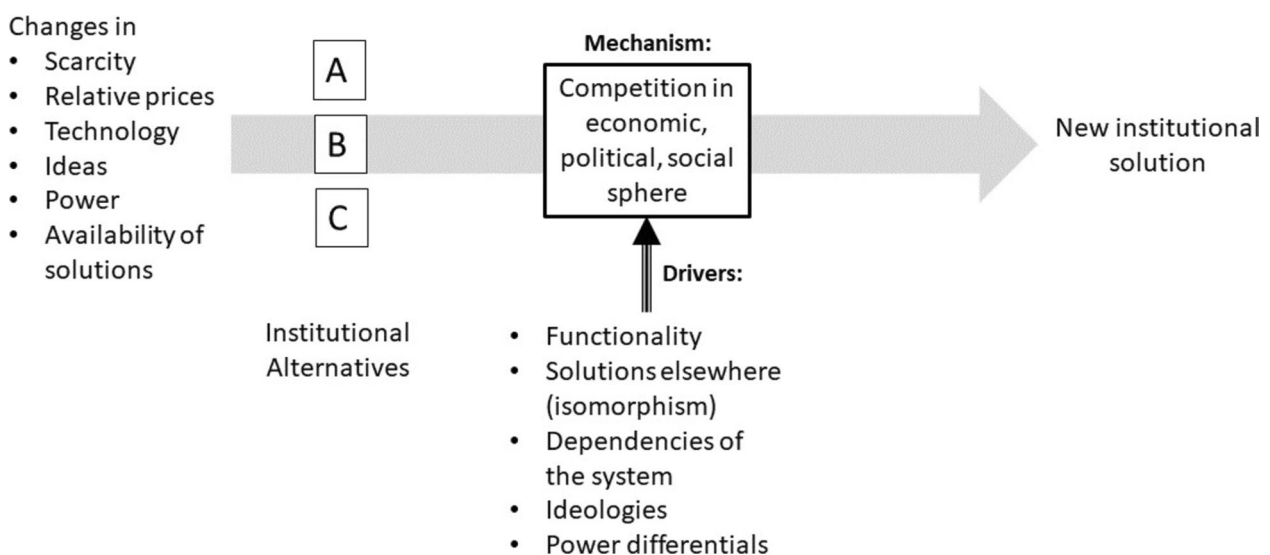


Fig. 1 Generalised mechanism of institutional change leading (in our case) to privatisation outcome

evolutionary process leads a society to a dead end (Easter Island). It only says that the process of institutional change is understood as a non-deterministic complex, often de-centrally emerging, process of co-evolution (Van Assche et al. 2014).

The general mechanism described here might be the same for all theories, however, there are substantial differences between the theories in relation to the focussed drivers of change, the factors that determine which alternative solution is selected (Banikoi et al. 2023; Schmid 2004). We distinguish into the following theories:

Functionalist theories concentrate on the ability of the competitive mechanism to be able to select the alternative solutions that best fulfil the functions of the institution in the new situation.

Isomorphism (Greek: same form), emphasises the role of institutional solutions existing elsewhere, which are then imitated, as they seem to fit.

Dependency theories focus on the role of existing structures or previous solutions, which influence the current scope of feasible solutions.

Ideational theories emphasize existing ideologies, positive and normative explanations of the world, and discourses, which provide clear bounds to what is imagined and finally selected as an institution.

Finally, some theories emphasise the importance of **power asymmetries** between different actors as driving factors for institutional change.

Obviously, these theories did not develop in isolation and can be seen as historical development. A newer theory was a response to the empirically observed shortcomings of the previously dominant paradigm. It began with functionalist theories (e.g., Alchian 1950; Demsetz 1967) that were highly optimistic about the potential of social systems to automatically select more efficient rules. However, it was particularly Douglas North, a strong believer in this functionalist approach in his early writings (North and Thomas 1973), who realised that many empirically observable changes did not follow the trajectory of leading to higher efficiency (North 1990). That is why he developed his ideas on institutional path dependencies (North 1990) and later looked at ideology as an influential aspect of institutional change (Denzau and North 1994). The idea of isomorphism is somewhat related to dependencies (Campbell 2004) as it explains new institutions as the result of recombining, copying, and adapting institutional solutions from elsewhere. It is interesting to note that none of these theories has addressed power asymmetries, which might itself be an example of disciplinary path dependency (theories have been heavily influenced by Western economic thought). Considering our case study and imagining many, if not most, processes

of institutional change around us, it seems obvious that a concept and understanding of power are crucial for understanding the process of institutional change. Jack Knight, a political scientist, developed with his seminal book 'Institutions and Social Conflict' an economic theory of institutional change fundamentally built on power as the main driving determinant (Knight 1992).

In the following, each of the theories is briefly described, emphasising the main drivers. From those drivers, we can derive under which conditions each theory might have a huge explanatory potential. This provides us with a framework (see Fig. 2), which then can be applied to the three case studies in the subsequent section. The following characterisation tries to draw clear borders between the various theories, nevertheless showing overlaps and complementarities among them. The empirically observable cases clearly show that there is always an amalgamation of various drivers. This is also recognised by many proponents of the different theories (Mahoney and Thelen 2009; North 2005).

Functionalism

Functionalist theories could be seen as the most optimistic, sometimes called the naïve theories of institutional change (Eggertsson 1990), as they believe that competition can select institutional solutions that solve newly arriving coordination problems in an efficient, transaction-cost-saving way (Demsetz 1967). From this perspective, those institutional solutions are chosen with the help of competition, which best fulfils the functions they are supposed to fulfil under the new condition (Schmid 2004). New conditions might be a technological change, a change in relative factor prices, or preferences. If competition works, the new institutional solution chosen is the one that meets the new needs with the lowest transaction costs. From this perspective, the key drivers of institutional change are changes in the preferences of actors and transaction costs. Those approaches are most closely linked to economics and might follow either a more evolutionary (Alchian 1950; Hodgson 2002) or a more neoclassical tradition, like new institutional economics (North 1990; Libecap 1989/1993).¹ Functional theories do not emphasise the availability space of institutions (isomorphism) or the institutional constraints (dependencies) under which they are emerging, nor do they consider that perspectives on how the world works and how it should work often vary between people. They also abstract from huge asymmetries between actors' possibilities to influence processes of institutional change (power). All those limiting conditions seem to imply, particularly if one looks at a

¹ See also the paper of Libecap in this collection that is using this lens, criticising the current establishments of marine protected areas.

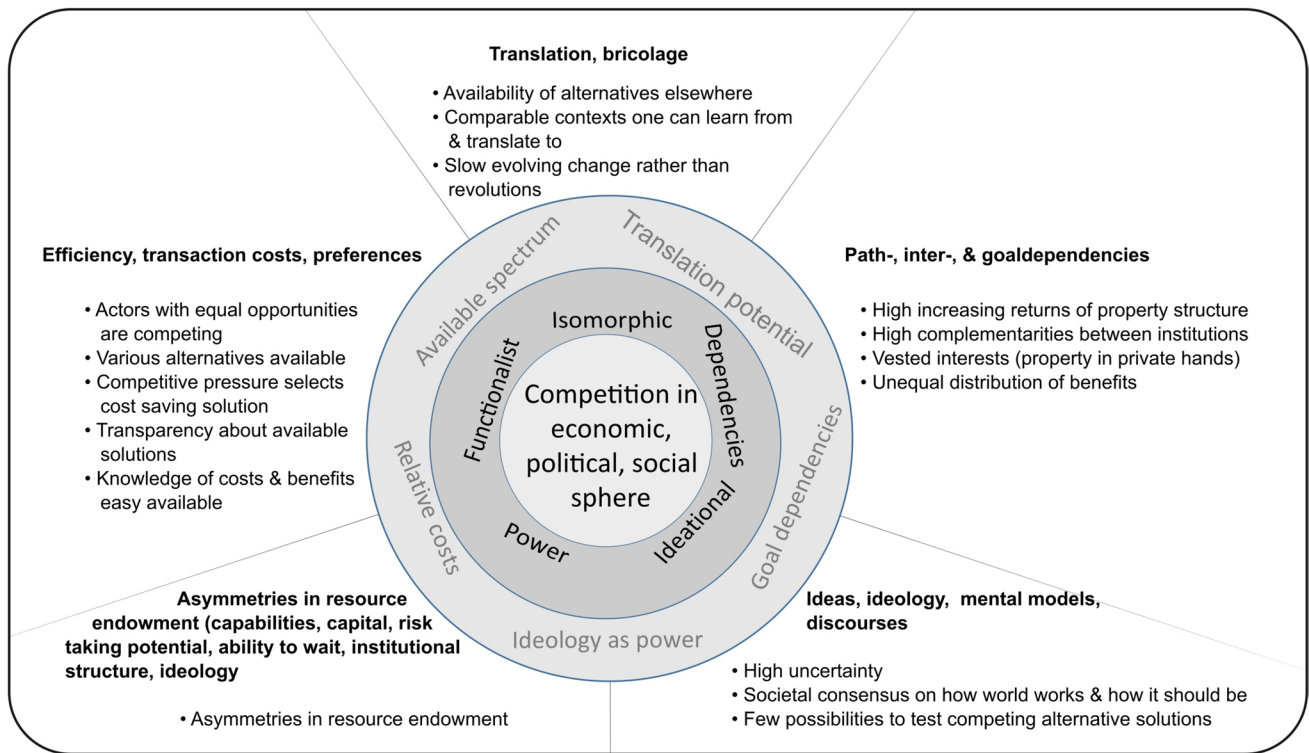


Fig. 2 Framework for assessing the usefulness of each of the theories of institutional change. For each theory the main drivers (bold) and empirical conditions which lead to a particular relevance of the theory (bullet points) are given. To exemplify that the theories are interrelated some examples are provided, indicating some overlaps between theories (outer circle). Differing transaction costs result in a

power resource for certain actors; available institutional alternatives determine the choice set, to be chosen from a functionalist perspective; dependencies determine the translational potential for isomorphism; goal dependencies ideologies creating dependencies; ideology can be a substantial power resource of an actor group

marine context, that functionalist theories might have little explanatory potential (Van Assche et al. 2020). However, in many sectors of the blue economy, global competition is particularly fierce, and therefore, the search for cost-saving (by no means sustainable) solutions is happening constantly (Campling and Colas 2021). This competition might not lead to a selection of an efficient (efficiency for whom) solution, but it drives institutional change up to a certain degree. Think, for example, about globally operating fishing fleets or the competition among various coastal tourism destinations via booking.com. Both processes are leading to more exclusive and more private property rights. Functional theories might play a significant role when competitive pressure is high among many actors, who can be characterised by similar power endowments. They operate in a situation where there is transparency on potential alternative solutions and the costs for changing from one institutional alternative to another are not too high. Also, the knowledge of actors about the system needs to be high and, therewith uncertainty low to be able to select “better” solutions. Too high uncertainty in a constantly changing system might not enable the selection of an optimal solution, no matter from whose perspective (North 2005).

Isomorphism

For Isomorphism, the process of institutional change is mainly understood as a process of copying and slightly adapting institutional solutions from elsewhere to a particular context. Isomorphism leads to a strong tendency to create similarities between various institutional solutions, a loss of institutional diversity. Two important processes for understanding the degree of isomorphic institutional change at the adopter level are translation and bricolage (Campbell 2004, 2010; Cleaver 2002; Cleaver and De Koning 2015). Institutional bricolage is a process where actors craft new institutional solutions through an innovative process of assembling and recombining institutional principles and practices of existing institutional repertoire in their local setting. Translation, on the other hand, refers to the blending of new institutional elements into already existing institutional arrangements – institutions may originate from somewhere else but are modified and blended with existing local institutional principles and practices. Both processes often lead to evolutionary institutional change but can also produce revolutionary change depending on the context and the cognitive and material constraints institutional entrepreneurs

face (Campbell 2004). In this process of adaptation, many things could play a role. An actor would only aim to copy an institution if they believe it would improve their situation (mimetic isomorphism), it is normatively appropriate (normative isomorphism) or it will enable them to compete with others who have similar institutional principles and practices (competitive isomorphism). In some instances, the adoption of institutional principles and practices of other contexts may be a result of coercive imposition by powerful actors in exchange for loans or valuable resources - coercive isomorphism (Campbell 2010). Which alternative is adopted might be, for example, determined by the preferences of the most powerful actor, who then translates the institutional solution they see fit. Mental models also could play a role. For example, a Muslim might not copy an institutional structure that builds on a Western conception of interest rates. If so, a major bricolage might be necessary to make it fit the relevant normative context. The marine space, in particular the coastal zone is a liminal space, which is open and connects to many other systems (Schlüter et al. 2020). Coastal communities have a high degree of outward orientation. Many alternatives tested elsewhere should be therefore easily available. Thus, one can imagine that copying and adapting institutional solutions from elsewhere is an omnipresent phenomenon in the marine realm. The first ITQ had fewer possibilities to learn and understand what needs to be adapted for a successful scheme than latecomers. Emphasising the importance of yet existing institutions on the possibility space of current options implies a role for path-dependencies. The need for translation and adaptation is a recognition of interdependencies between institutions.

Dependencies & incremental change theory

Dependencies can take the form of path-inter- and goal-dependencies (Van Assche et al. 2014). Path-dependencies result from increasing returns of an institutional structure, which makes it difficult to change once it has become common use. For example, if a fishery has bribes as a constituting element and certain actors expect to get them, then it is hard to change this institution. Interdependencies result from complementarities and network externalities within an institutional structure (North 1990; Pierson 2000). A market-oriented and privately organised fishing sector might need other credit institutions than a state-run or subsistence fishery. Goal-dependencies shape current institutions as our goals strongly influence the institutional changes made (Beunen et al. 2015). They are, therefore, closely related to ideology and will be explained further below. Path- and interdependencies started to become a subject of analysis once economic scholars of institutional change realised that the predictions of functionalist theories often did not hold (North 1990). The main drivers resulting in “inefficient” institutional

change were, respectively, high increasing returns to scale of institutions and existing network complementarities in institutional systems. Only later, aspects of vested interests and power have been discussed as a reason for path dependencies to occur (Mahoney and Thelen 2009; Acemoglu et al. 2021). Particularly in the field of privatisation, once a private property is established, one has created vested interests that will ensure that the own stakes are protected and not overruled. There is a collective action problem inherent in this process: when there is a move to a private property regime, the collective benefiting from open access has difficulties getting organised. However, the potential beneficiary of a private access right has a huge incentive to advocate for their right. Once it is established, the beneficiary will make sure not to lose it anymore. This effect could be seen when UNCLOS aimed to establish EEZs (Juda 1986) or when fishing quotas were implemented (Hadjimichael 2018; Said et al. 2016). According to Acemoglu and others, path dependencies are also the result of strong power asymmetries and vested interests (Acemoglu and Robinson 2008; Acemoglu et al. 2021). Those in power who have stronger possibilities to influence the process of institutional change will make sure that new institutional alternatives coming to the front will consolidate their position. Groups empowered by certain institutional arrangements may also lobby those with political power to block revolutionary institutional changes to protect their vested interests (Libecap 1989/1993; Acemoglu et al. 2021). In this respect, ideas can also be used as weapons in distributional struggles and as cognitive locks (goal or intellectual/path-dependence) pushing subsequent institutional change on the same path (Blyth 2001). The reference to power and to ideas and the reference to authors which we mention also in relation to other approaches, shows clearly how the different aspects are interwoven.

Ideational theory: Ideology and discourses

Like path dependencies, the focus on ideas, ideology, and discourse in economic theories of institutional change is a result of the empirically observed shortcomings of functionalist theories (Blyth 2002; Campbell 2004; North 1991, 2005; Blyth 2001). Many institutional choices can only be explained by referring to the ideas the society and, in particular, influential actors have over the subject at stake. One needs to investigate the mental models of actors about how they believe the system is operating. It makes a difference for institutional choice, in which causes of climate change or lack of fish abundance a society believes in. A mental model that attributes the latter problem to overfishing and sees it as a main solution to implement protected areas, will advocate for a different institution than an actor who understands overfishing as a problem of lack of alternative livelihood. Yet another actor, who

believes that God will always provide us with fish, might have difficulties buying into either of the potential institutional suggestions. Apart from the belief about how the system is operating, the normative aspect of an ideology - the idea of how the system should work and which outcomes it should produce - has implications on institutional choice (Blyth 2002; Denzau and North 1994). It will change the alternative advocated for if, for example, either equality or competitiveness are seen by decisive actors as an important outcome of the institutional system.

The selection mechanism in ideational theories is not competition between different institutional solutions, but competition between different ideas, ideologies, and discourses. The potential of a discourse and its relative power in the competitive process is related to how many people and particularly influential people believe that it can fulfil its envisaged function. The availability of a successful implementation of a similar idea elsewhere (isomorphism) will also help. Discourses that connect easily and are compatible with existing institutional solutions (dependencies) will have a greater chance of getting implemented. Ideologies might be, on the one hand, better used by powerful, institutional entrepreneurial actors, as they have more potential to get their ideas through in the competitive process (Blyth 2007; Campbell 2004). On the other hand, ideology can be an important source of power, particularly for actors, who otherwise do not possess many other sources of power. If many actors support the discourse that one represents, this results in an advantage in the negotiation process for institutional change.

Under which circumstances we can assume that ideas, ideology, and discourses play a huge role in understanding institutional change? According to Denzau and North (1994), the level of uncertainty plays a key role. If it is exceedingly difficult to assess the pros and cons of a particular institutional solution, then one can only refer to beliefs on what is good or bad from an actor's perspective (Corona regulations might serve here as a good example). However, to make a discourse influential for institutional change, there must be a consensus among many actors, or at least the influential ones, that the proposed idea will lead to an improvement of the situation from the perspective of the respective actor. The level of consensus is influenced by the level of uncertainty. The reduction of uncertainty about an institutional choice is directly related to the number of times this institutional choice takes place. If an institutional choice, for example, a fishing contract, is made several thousand times and institutional learning can take place, it can be assumed that the role of ideology would be minor. Therefore, in case institutional choices are overly complex, context-dependent, and can only be taken very few times (e.g., a fishing law of a respective country) ideology might play a substantial role.

Power and distributional struggle

Power approaches see competitive bargaining as the main mechanism of institutional selection (Knight 1992). Different institutional solutions have different distributional consequences (Schmid 2004) and actors will aim to influence institutional choice in their favour with the help of their power resources (Libecap 1989/1993). An actor's bargaining position is a function of its power resources. Many issues can become a power resource not only resources in a narrow sense. Obviously, the amount of resource ownership, in particular financial assets, is an important power resource that also influences many other sources of power. However, other sources could be different capabilities, like human capital or social networks. Those resources influence more abstract power resources, like the ability to take risks, the ability to wait, while bargaining for an institutional solution, or the exit options an actor has in a particular position (Knight 1992). The importance of coercive or political power has also been noted to influence institutional change and institutional choice (Acemoglu and Robinson 2010; Schmid 2004; Levi 1990). A change or redistribution of coercive and bargaining power resources within the institution can trigger institutional change (Levi 1990), and the political power of the different groups or actors will be the deciding factor in the bargaining process (Acemoglu and Robinson 2010). Influential agents who lack political power can lobby politicians who have the power to change laws and administrative practices or to block institutional change if they are not sufficiently compensated (Libecap 1989/1993).

As indicated above, existing formal and informal institutional structures are often an important source of power, e.g., allowing or not allowing a woman to enter the fishing activity as such, influences her starting position in a bargaining process. As just indicated, ideologies and discourses can be important power resources. However, their respective potential is context-specific. Examples might be the neoliberal, blue economy, participatory, or justice discourses, which can develop, depending on the context, varying degrees of leverage. Most often a resource becomes a power resource only when it is asymmetrically distributed among the actors. If nobody has the capability of writing, or nobody can provide capital, actors are in a similar bargaining position. Often different power resources can balance each other out and can substitute each other to a certain degree (Mahoney and Thelen 2009). For example, not having financial resources might be compensated partially by strong networks. Actors search consciously or unconsciously for those bargaining resources where they have a relative advantage. The explanatory potential of power and bargaining theory for institutional change is therewith directly an outcome of the existing power asymmetries between actors. In situations of huge

asymmetries, power theories can likely contribute a lot to their understanding.

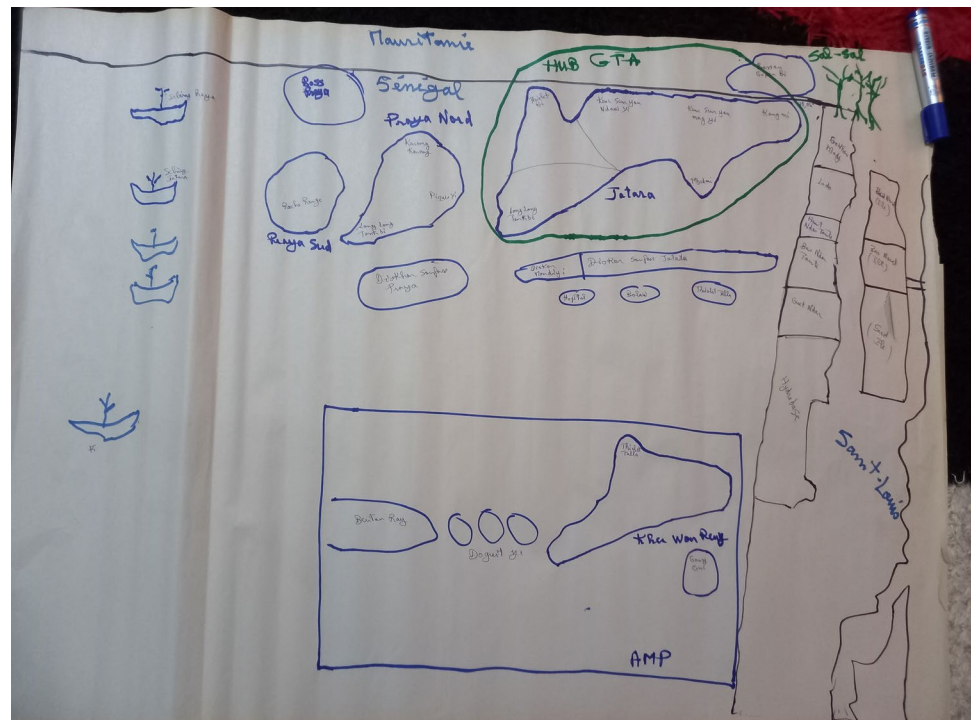
The case study

To exemplify the use of this framework, we consider the case of artisanal fisheries in Saint Louis Senegal. We use this case because fishers have seen three diverse forms of privatisation taking place in their fishing grounds within the last decades. The first process relates to the accessibility of fishing grounds and fishing stocks in Mauritania by Senegalese fishers. These fishing grounds had been traditionally used. However, the foundation of independent states, UNCLOS, and many Mauritanian rules led to very restricted access to Mauritanian waters by Senegalese fishers. This led to institutions in the form of laws and formal and informal contracts between Mauritanian middlemen and Senegalese fishers. It is a privatisation of space and resources if the resources do not migrate into Senegalese waters. The next process of enclosure was the establishment of the MPA in 2004, to the South of Saint Louis. The objectives of this 49600 ha MPA, created by decree no. 2004 – 1408, are to:

- (i) Conserve the structure, functioning, and diversity of the ecosystems.
- (ii) Rehabilitate degraded habitats.
- (iii) Improve fishing yields and socio-economic spin-offs for local communities.

However, these conservation measures formally prohibit fishermen from accessing and fishing in these areas. The newest enclosure is the installation of gas exploration and an LNG gas compression and loading terminal in front of Saint Louis in the West. The surrounding security zone is placed in one of the important and remaining fish grounds for Saint Louis fishers. Owing to the dangers involved and the money at stake, the exclusion of fishers from this zone is highly monitored and enforced. The image of being enclosed in all four directions (the shore is obviously also not available for fishing) is largely portrayed by many fishers (see Fig. 3). Those processes are, despite taking place in the same location, rather diverse processes of privatisation and therefore, are suitable to showcase the diversity of processes and the usefulness of the various theories of institutional change. The empirical example is a local case study about privatisation. However, it is important to point out that all three processes of privatisation are closely linked to international changes. The restrictions in Mauritania are the effect of formal decolonisation, the law of the sea, and a substantial increase in the value of fishmeal and fish oil. The establishment of the MPA results from international agreements on the protection of nature and gas exploration results from the international hunger for fossil fuel. From this perspective, the case study is not only interesting from an analytic perspective but also from a global societal agenda perspective. In the three subchapters we first describe the process of each case. Second, we show the explanatory potential of each of the approaches.

Fig. 3 A map showing the use of Saint Louis fishing spots drawn by a Saint Louis fisher (North is on top of the image). One sees the boarder on the top of the map. In the middle is Jatarra, the old fishing ground, which is now used for the LNG terminal. The square on the bottom is the MPA area (AMP in French)



The materials used as a basis for the case study were collected by various authors from independent but connected research projects. Each author focussed on one of the three privatisation processes. The first author was involved in all three research projects. All three studies used a qualitative case study approach that mainly comprised semi-structured interviews, participant observation, and a study of documents. The fieldwork took place between 2019 and 2023. The study of the enclosure of the Mauritanian waters consisted of four months of fieldwork. The main core of information is 43 interviews with key informants from different fishing sectors, public administrators, non-governmental organisations (NGOs), and universities. The interviews were conducted in Senegal and partly in Mauritania. The study on enclosure due to the establishment of the MPA involved in-depth individual interviews with fishers and past and current members of the MPA management committee and the local artisanal fishers' association. The fieldwork took place in January and February 2022, with 32 interviews lasting an average of 1 h 30 min. The study on the enclosure due to gas exploration and processing also consisted of four months of fieldwork (from December 2022 to March 2023). In this case, we conducted 43 semi-structured interviews, 34 with Guet-Ndar fishermen (the target stakeholders) and nine with others from institutions, technical services, industry, local authorities, civil society, and NGOs. All studies used a purpose and snowball sampling approach with multiple entries, aiming at obtaining the different views of all actors involved, being able to triangulate, and reaching a saturation point under given time constraints. The main actors interviewed were fishers, government officials at different levels, and NGOs. The interviews were thematically coded using different software products (MAXqda, word).

Enclosing mauritanian waters for Saint Louis fishers

The sea North of Saint Louis is characterised by the existence of a set of hydro-climatic and morphological phenomena that are favourable to the development of several species, particularly small pelagic species (sardinella, horse mackerel, sardines, anchovies, ethmalose), which represent more than 80% of the fisheries potential (Braham et al. 2014). Traditionally, the fishers of Saint Louis fished in the waters North of Saint Louis, which then became Mauritania after independence (Seck 2014). After the implementation of the law of the sea, border disputes between Mauritania and Senegal, and the interest of Mauritania to exploit and profit more from its marine resources, Mauritanian water became enclosed for Senegalese fishers. Apart from some 400 licenses valid for purse seiners (Deme et al. 2021) the only legal option to fish in Mauritania is a charter contract in which the fisher is closely linked to a Mauritanian intermediary who partly finances the operation (Corten et al. 2017).

It is a patron-client relationship with very few rights and security for Saint Louis fishers (Deme et al. 2021). Those contracts aimed to provide the raw material necessary for the fishmeal and fish oil industry emerging in Mauritania since 2010 (Corten et al. 2017).² Those contracts only serve the purse seiners, and there is no means for gill or drag net fishers to fish in Mauritania apart from informal options. Large Saint Lousian pirogues have often contributed to more than half of the landings of small pelagics in Mauritania (Fall et al. 2023). In the following, we take the various theories and show their explanatory potential for understanding the rules within the contracts that have emerged.

Many and a growing number of artisanal fishers, some with economic resources and many with little, competed for charter contracts offered by a much smaller number of intermediaries. Thousands of contracts have been made over the years, making testing possible. The entire sector is under detrimental competitive pressure to compete with many other locations worldwide to provide cheap fishmeal and fish oil (FMFO) (Wintersteen 2021). From this perspective, **functionalist theories** help understand the observed phenomenon. Only the optimistic perspective of these theories seems inappropriate when looking at the outcome of the process. Other theories may be better able to shed light on this issue. There have been many examples of charter contracts, and Chinese, Turkish, European, and other investors in the fishmeal industry (Dème et al. 2023; Corten et al. 2017) could transfer the institutional solutions they had applied elsewhere. Patron-client systems did not exist in Senegal prior to the FMFO boom. However, this institutional form could be easily copied and adapted from elsewhere. This shows the importance of **isomorphism** in this case study. Before the fishmeal industry emerged in Mauritania, some charter contracts for line and gillnet fishing existed for the then few plants focussing on human consumption (Dème et al. 2023). Many contractual arrangements, such as financing and the resulting obligation to sell fish exclusively to financing intermediaries at a lower price, were transferred to purse seiner fishing, relevant for FMFO. In addition, the division of the catch between the captain, boat owner, and crew follows a standard procedure used in many locations and fisheries, indicating the role of path **dependencies**. Under production conditions, operating with bulk fish with low technology and little formal education, such a quick

² The rich resources of Mauritanian waters have historically not been used by Mauritania, but by large foreign trawlers or to a much lower amount by artisanal Senegalese fishers, creating small knock-on effects and jobs in Mauritania. However, in 2012, the Mauritanian authorities introduced new restrictive access conditions: a 20-nautical-mile limit and the obligation to land fish caught in Mauritania so that the national fishing industry could play a greater role (Touron-Gardic et al. 2022).

rule of thumb might fit the institutional context in which this business operates, indicating interdependencies. The traditional relationships between the Mauritanian Moors, who are the intermediaries, and the black (Senegalese) fishers, where it is clear who is superior and inferior in the relationship, seems to be reproduced in this contractual relationship. The setup of the Mauritanian institutional structure makes it difficult for a Senegalese to operate in Mauritania and indicates strong interdependencies; the Mauritanian intermediaries are a bottleneck; they have access to credit and factories. Formal requirements are complex and difficult to satisfy. This seems to have led to a high degree of informality and bribery. The entire sector emerged because of the goal of the Mauritanian government to increase Mauritania's piece of the abundant national fish pie (Corten et al. 2017). Combining this with an ideology of superiority (**ideational** theory) might have made it easy to establish the selected institutional solutions. The charter contract and its associated financing operate without any interest rate but are financed via a huge spread between the prices for fish offered in the free market and those operating under a charter contract. Whether this is due to Muslim normative rules, ease of contract, or power asymmetries between fishers, intermediaries, and companies remains an open question. In the interviews, Islam was often mentioned as a reason for this contractual choice (in Mauritania and Senegal, more than 97% of the population is Muslim). Many of the aspects described thus far indicate that **power** approaches have a significant explanatory potential. The asymmetries in resource endowments, when it comes to capital, to various capabilities, risk-taking abilities, and, extremely important, the asymmetric effects of the established institutional structure on the various actors, on the one hand, and the clearly asymmetric distributional consequences, on the other, make this obvious.

Enclosing for the sake of the environment: The marine protected area

Negotiations at the international level, the strong commitment of international NGOs, and the depletion of fish stocks and other marine resources have prompted the president to establish conservation mechanisms in Senegal, such as Marine Protected Areas (MPAs) after the World Park Congress in 2003, fishing regulations and restrictions, and community-based resource management with the Local Artisanal Fishing Council (CLPA) (Ferraro et al. 2011). Senegal's government established the MPA of Saint Louis to co-manage marine ecosystems and resources with local communities. Meanwhile, joint decision-making processes were formally established, in which government agencies, the CLPA, and other stakeholders were involved in the sustainable co-management of fishery resources. The MPA in Saint Louis formally restricted the fishing rights of fishers

and enclosed their common access to marine space. The populations of Saint-Louis, composed mainly of families of fishers called "Guet Ndariens," are facing a significant lack of fishing space due to the MPA, which occupies the entire area from Guet Ndar to the southern limits of Saint Louis. This space also corresponds to the traditional fishing area of the Gandiole population located on the periphery of Saint Louis. These communities strongly contest the MPA's implementation of conservation measures and restrictions because it is a site rich in shrimp and demersal species. In this sense, gill net fishers and trawlers are the most hostile to the MPA because they lack alternatives. Purse seiners, which constitute the largest fishing community in Saint Louis, are not affected by the MPA, as it is not within their fishing grounds. Nevertheless, the continuous increase in the number of fishers exacerbates the situation and contributes to increased pressure on fishery resources in a generalised context of fish scarcity and competition for access to fishing grounds located on the riverside (Salem 2014).

The MPA of Saint Louis led to changes in the institutional rules and regulations governing the use of marine resources. By reducing the area available for fishing, the MPA decreased the common space available for fishers. From the perspective of **functionalist** theories, one could argue that the establishment of the MPA fulfils the rise in demand for conservation resulting from increased scarcity of fish, destroyed ecosystems, and a change in global preferences for protection. However, functional theories have difficulty explaining the direction of institutional changes in this domain. Obviously, the state and, to a lesser degree, the local actors had internationally available alternatives. However, only one set of rules was implemented once, with little competition in a comparable context. Therefore, few possibilities for comparative learning existed. Differences in transaction costs could not be revealed, as most fish in this area are caught for the local market, and the same rules apply to everybody. Only the relative competitiveness with other fishing places within Senegal might have been reduced. The introduction of the MPA has led to another closely linked process of institutional change. The MPA brought funders willing to donate money to community organizations. This funding led to the proliferation of NGOs competing for grants (Ferraro et al. 2011). However, to a large degree, these NGOs have not been created by local fishers who lack the necessary capabilities but by academics needing to create their own employment. It is difficult to judge if the emergence of such a governance structure represents an efficient form of co-management. The emergence of local NGOs that involve a lot of bricolage can also be seen as an **isomorphic** process; as those local NGOs have been created around the world, the more governments have sourced governance out to other societal actors (De Santo 2012; Groeneveld et al. 2017). The introduction of the MPA can

be much better understood through the lens of isomorphism since the government of Senegal has been influenced by the global trend towards establishing MPAs to address the depletion of fish stocks (Ferraro et al. 2011). International advisors, such as the IUCN, USAID, and World Bank, played an important role in bringing the new institutional solution to Saint Louis. Nevertheless, transformation and bricolage on a formal level seem to have played a minor role, as the general setup is very similar to other MPAs worldwide and little participation of local actors took place. A very strong mismatch can be observed between formal rules and those rules used de facto (Ferraro et al. 2011; Failler et al. 2020). The establishment of the MPA followed strong path **dependencies**. On the one hand, the establishment of the rules in form followed long-since practised modes of formal rule establishment without seeing the need to properly involve traditional users and particularly leaders of the area (Niang and Fall 2020). The formal path-dependent process has led to the exclusion of those excluded in former times (the French name of the place where the fishers live, Guet Ndar, is called “barbary tongue”). On the other hand, the rules in use remain similar to what has been traditional practice: the fishers continue to go very often, and the enforcement of the formal rules is either minor or often overridden by the traditional authorities (Ferraro et al. 2011). The rules in use still follow traditional forms of access and enforcement. Both rules in form and in use can be partly explained by **ideational** theories. Rules in form have changed due to a change in mental models and norms at the international level. Many believe that the establishment of MPAs is unavoidable for the sustainability of social-ecological systems. In addition, the pendulum between conservation and use swung towards the former. In relation to rules in use, it is referred to fairness, and there exists a strong adherence to the traditional, often Muslim leaders, whose authority is deeply ingrained into the Guet Ndarien culture. The **power** resources of particular importance for the formal rules and rules in use seem to be closely related to different dependencies and ideologies. Within the formal institutional system, fishers are particularly weak, while within the informal system, fishers and their hierarchies are the dominant power holders (Ferraro et al. 2011). The discourse on conservation on the global scene made the establishment of the formal MPA possible (see also Libecap in this collection). On the other hand, a strong belief in customary rights of access and in traditional leaders helped strongly in letting the rules in use diverge substantially from the rules in form. The reputation of Guet Ndar fishers in fighting for their rights in the political process makes the state fear the opposition of fishers. The lack of resources to enforce these rules made the management of the MPA powerless. The fact that many NGOs have been created by academics instead of fishers seems to be the result of asymmetries in capabilities.

Enclosing for feeding the world energy hunger: Gas exploration and processing

In addition to the problems of access by Senegalese fishermen to fishing grounds and fish stocks in Mauritania and the enclosure process linked to the creation of the Saint-Louis MPA, gas has recently been discovered, straddling the maritime border between Mauritania and Senegal, known as the Grand-Tortue-Ahmeyin (GTA) project. Announced in 2015 by Kosmos Energy, the GTA field is currently operated by British Petroleum-BP (majority) and is associated with the state-owned companies of Senegal and Mauritania. GTA was planned to have started production by the end of 2023. The revenue will be shared between the contractor, the state of Senegal, and Mauritania (Ndao 2020). The gas wells are further offshore; however, the LNG terminal is in a rocky area (Jatara) because it can be better stabilised there. Because of the rocks, this was an area of abundant fish, which fishers used extensively. Owing to safety regulations, there is a no-entry zone with a 500-metre perimeter where nobody, apart from the operator and gas tankers, is allowed to enter. Naval officers rigorously enforced this exclusion. The literature (for example, Queffelec et al. 2021; Dia 2018), our press review, and particularly the interviews with local fishers, indicate that fishing is the sector most threatened by gas exploitation and they lose access to space they have used for a very long time.

Functional theories help understand the process of setting up the GTA project insofar as the Senegalese state (in collaboration with Mauritania) considers the oil and gas industry to generate important economic gains for Senegal (Dia 2018). Senegal, as a production place for LNG, competes with many other production places. From this perspective, competitive pressure involves selecting cost-minimizing institutional solutions. They might be efficient from the perspective of the producer, who can choose, considering the relative costs of production, where to extract gas. It also might lead to the improvement for those in the Senegalese state, who made the contract with Kosmos, BP, and Mauritania. However, for the fishers involved, the institutional change seems to substantially reduce the possibility of earning a livelihood, as the new emerging sector might not provide many jobs for local people, as was the case elsewhere in West Africa (Graham and Ovadia 2019). The governance of West African oil and gas extraction has a track record of not producing large social or environmental benefits (Adeola et al. 2022). The fact that the rules in relation to the terminal are enforced in comparison to the rules relating to the MPA can be explained by the large revenues realised by gas extraction that can pay for the transaction costs of rule enforcement. This is different from the case of environmental protection.

Isomorphism plays an important role in this process. The State of Senegal, not yet having any experience in oil or gas extraction, copied the legislation from countries such as Ghana, Nigeria, and Angola (Ndao 2018, 2020). Due to a lack of experience, one can imagine how difficult the process of translation and bricolage must have been (Ramirez 2022). Kosmos and BP have considerable experience in relation to gas extraction around the world, knowing the relative advantage of the different institutional regimes – for example, which safety parameter to apply. They also adapted a light form of Corporate Social Responsibility practices in Saint Louis by giving life jackets, GPS senders, and other goods to fishers. The fishers have hardly any experience but have been invited by an international NGO to visit other communities where oil or gas extraction is already well established. As gas extraction is a new activity for Senegal, institutional path **dependencies** seem to play a minor role, as legislation must be imported. However, there is a perceived long tradition of extractive industries, where Senegalese counterparts benefited little in comparison to international companies (Fent 2020). This also appears to be the case in the GTA agreement, where each state holds only 5% of the project (Ouki 2020).

Ideational theory appears to be closely linked to path dependencies. In this particular cultural context, it seems neither appropriate nor necessary to interact closely with traditional resource holders. The Corporate Social Responsibility activities seem to have a token function, and neither the state nor BP seem to worry about a local or global licence to operate. In the Senegalese dominant discourse, gas extraction is not only related to revenues but is also associated with development goals sought by many (Kloff and Wicks 2004). Gas is not only associated with money and modernity but also with the potential to reduce the carbon footprint by producing electricity with gas (Ndao 2020).

The efforts to explain the observed institutional change with the help of the four theories above seem to be overshadowed by the importance of **power** theories. The huge asymmetries of resources between traditional users (fishers) and current users (BP and its consortium) with respect to financial possibilities, knowledge, experience, traditional relationships, and others seem to make it difficult to find institutional solutions that do not lead to fishers being losers in the bargain. Fishers of Guet Ndar have suggested that as compensation, artificial reefs could be created to replace the lost rocks due to the LNG Terminal and that Mauritania, benefiting from the extraction too, could open up a nearby marine space in its territory for those fishers who traditionally fished at Jatara. These compensatory measures, which would have been the result of the bargaining process in less power resource asymmetric societies, have not yet been considered by the states or the company.

Discussion and conclusion

First, we discuss each theory from a case-comparative perspective. Second, we draw overarching conclusions regarding the usefulness of the framework and different theories in the marine realm. **Functionalist theories** can help us explain the emergence of institutions, where there are many institutional alternatives that can compete with each other. This is more often the case with formal or informal contracts, such as those between Mauritanian middlemen and Senegalese fishers, but also exists at the level of country laws, for example, when Senegal or Mauritania aims to create institutions that attract the international petrochemical or fishmeal industry. However, the claim that this leads to more efficiency in terms of cost savings and preferable outcomes cannot be observed in our cases. In the case of fishmeal and gas exploration, it was clear for which actor group this institutional structure provided “efficient” conditions. How far an institutional change favours the functionalities of all involved parties, as is at least claimed by the naive theories of property rights (Barzel 1989) depends on factors like the asymmetry in bargaining position and therefore the power of each actor group involved (Knight and Ensminger 1998) or the level of uncertainty that allows different actors to guess correctly which solution is more “efficient” for them (Denzau and North 1994).

Uncertainty seems to be a good nurturing ground for **ideational theories** (North 2005). This could have been best seen in the case of the MPA establishment, where, on the one hand, feedback loops on the suitability of a conservation mechanism are relatively slow and, on the other hand, experimentation with different institutional solutions is extremely difficult. In the case of gas exploration, however, we can see that the level of uncertainty is often substantially asymmetric between various actors, which might lead to the effect that institutional propositions of different actor groups require distinct theories for understanding their choices.

We have seen that there exist a lot of overlaps between the various theories. This seems to have been particularly obvious in the case of **isomorphism and dependency**. For example, describing the transfer of operational rules from gillnet fishing to purse seiners could be seen as an isomorphism or a path-dependent process. When purse seiners expanded largely due to the establishment of the FMFO industry, the contracts for gillnet fishing were copied and adapted. Therefore, this represents a form of isomorphism. However, the fact that many of the operational rules have already been known by many fishers also made it much easier to adapt exactly the same rules in another domain, which indicates a path dependency. Bricolage, emphasised

by isomorphism, appears to be a ubiquitous characteristic of all presented processes of institutional change, but to a different degree. If the institutional structure to be established has already been implemented in many places, if the local conditions are not that different from other use cases, or if the power of the dominant actor allows it, bricolage becomes less important. This was the case for the gas industry, where formal and de facto rules were set simply from the outside. If the local context is particular or the power resources are less clearly distributed, then bricolage is more prominent, as in the case of MPA establishment.

For the cases presented, **power theories** seem to have the greatest potential (see Table 1). It can be observed that in all cases, various forms of power resources are relevant. Particularly in the case of gas exploration, asymmetries in knowledge, capabilities, and financial possibilities are extreme (Ramirez 2022). However, in various instances, the issues central to the other theories explained here provide important power resources. Cost-minimising institutional solutions and the competition between different solutions emphasised by functionalist theories often give a bargaining advantage to the actors who are in favour of the most cost-saving solution. In our case, the contracts between boat owners and the fishmeal industry strongly favoured the fishmeal industry. The high monetary gains from gas extraction allowed costly enforcement of the no-entry zone. Such financial means were not available to enforce the MPA’s rules. The ability of an actor to draw on available institutional

alternatives and the capability to bricolage them can be seen as an important bargaining resource (Mahoney and Thelen 2009). For example, the dominant Chinese fishmeal industry has experimented with such contracts all around the world and knows how to make functional contracts from *their* perspective. Gas exploration companies have adapted rules for running these explorations in many places around the world. Dependencies seem to always favour those who formerly had the power (Van Assche et al. 2017); this might be the state, the petrochemical industry, or the fishers, for example, the latter have an advantage for rules in use in relation to access to the MPA. Ideology and discourses favoured by ideational theories can be an important resource for power, which is often used by actors, who otherwise do not possess many resources in the bargain for institutional solutions (Polletta 2009). For all three cases, the fishers strongly referred to fairness, the right to livelihood, traditional use rights, and other aspects. The political power of Guet Ndariens at the national level was famous and feared by politicians in Senegal. However, political leverage has reduced over the years.

The omnipresence of power may indicate that using a power approach as an umbrella (Pansardi and Bindi 2021; Partelow and Manlosa 2023) that embraces the other theories might be useful. This does not necessarily reduce the importance of competition in the process of institutional change (see Fig. 1). However, within the competitive process, the analysis of power asymmetries between actors in relation to different power resources might be a key issue

Table 1 The importance of the various theories in their explanatory potential in the observed. The degree of importance stems from a qualitative assessment by the authors

	Institutional development	Potential role of theories	Degree
Border Mauritania	● Patron-client contracts between Mauritanian middlemen & Senegalese fishers	● Functionalist	++
		● Isomorphism	+++
		● Dependencies	+++
		● Ideational	++
		● Power	++++
MPA Establishment	● Rules in form about access of MPA	● Functionalist	++
		● Isomorphism	++
		● Dependencies	++
		● Ideational	++
		● Power	
	● Rules in use about access of MPA.	● Functionalist	+
		● Isomorphism	+++
		● Dependencies	+++
		● Ideational	++
		● Power	
● Emergence of NGOs	● Functionalist	+	
	● Isomorphism	+	
	● Dependencies	+	
	● Ideational	+	
	● Power		
Gas exploration	● Access rules for LNG terminal	● Functionalist	+
		● Isomorphism	+++
		● Dependencies	++
		● Ideational	++
		● Power	++++

in understanding institutional change (Knight 1992). That a perspective of power has been shown to be rather useful for understanding institutional change might be related to the particular realm we focused on: institutional change in the marine sector in the tropics. The marine and coastal environment, where the land and the sea interact, where normally a large variety of different jurisdictions or institutional structures overlap (Van Assche et al. 2020), and where a particularly heterogeneous set of actors are competing for the same social-ecological system, seems to be characterised by a lot of asymmetries in power of the various actors (Schlüter et al. 2013, 2019). This heterogeneity is amplified even in a tropical setting. Extremely rich and extremely marginalised, extremely knowledgeable and people who often cannot read or write, or extremely well networked into politics and very locally rooted people are competing for the use of a highly productive social-ecological system (Bennett et al. 2021; Campling and Colas 2021; Mansfield 2004). This bargain is increasing in the era of the blue economy when economic pressure on the sea rises (Schlüter et al. 2020). Therefore, it is essential to understand and advise on these processes. This relates particularly to aspects of achieving blue justice (Bennett et al. 2019) and the functionality of the system in the medium-to long-run (Partelow et al. 2020).

The three application cases in this study were local cases of institutional change. It remains to be seen if similar

patterns of usefulness of the various approaches emerge if they are applied to institutional change at other levels of governance. However, it becomes evident in all three cases that all local processes of institutional change are closely intertwined with processes occurring at other levels and in other institutional structures elsewhere (Glaser and Glaeser 2014). International legal frameworks strongly influence Senegalese fishing in Mauritania. Only the introduction of economic exclusive zones allowed Mauritanian middlemen to establish contracts with Senegalese fishers. The regulations and relative costs of other global production hubs of fishmeal, such as Peru, strongly influence what emerges in Mauritania (Wintersteen 2021). The relationship between global and local institutional structures is particularly evident in the establishment of the MPA, which was largely driven by international actors. Gas exploration in West Africa is shaped by demand and companies from Europe.

Figure 4 summarises the key elements in the three cases related to the five theories. The issues described here are phenomena that can only be described qualitatively. Nevertheless, Table 1 attempts to assess the relative importance of each theory for understanding. We see that the relative importance of the theories for each case is closely related to their characteristics (see Figs. 2 and 4). All theories contribute positively to the understanding of the case. It is unlikely, if not impossible that we are able to understand a process

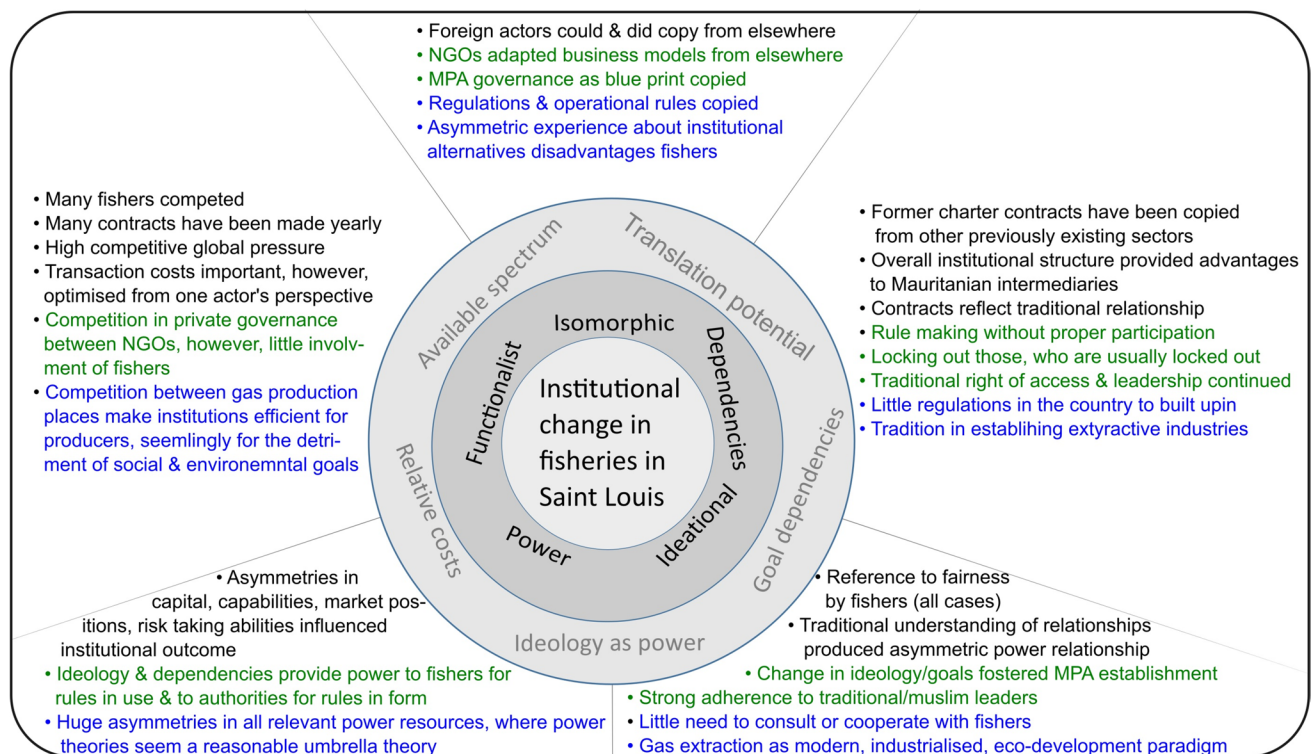


Fig. 4 Characterising the cases according to various theories. Black text relates to Fishing in Mauritania, green text relates to the establishment of the MPA, and blue text relates to the gas exploration

of institutional change using a single theory or determinant. The theories, as recognised by most proponents, complement each other. However, for different contexts, a different mix of theories might deliver sufficient reason in the sense of abduction (Bromley 2006). From this perspective, combinatory theories drawn from various traditions, such as Evolutionary Governance theory (Van Assche et al. 2014), will always have higher explanatory power than single-issue theories. A meta-theory that combines all various determinants does not yet exist. It might also not be reasonable to invest in such a theory, as different processes of institutional change might require a different set of theories to be understood. The collection of theories in this paper and the characterising conditions under which they might be particularly powerful for understanding change, can be understood as a toolbox from which marine scholars or even practitioners can borrow. After a first diagnosis of case characteristics, one should be able to draw on a context-specific mix of theories to understand and trace institutional development. Knowing about the characteristics and, therefore, theories that are more likely to be relevant also helps discussions on future institutional change pathways. Obviously, future institutional change is inherently characterised by uncertainties. Therefore, deterministic predictions are impossible. However, we can theorise about more or less likely directions of change, helping practitioners in their attempt to shape new institutions.

Our analysis of the most suitable contexts for applying particular theories through our typology-building, deductive discussion of the types distinguished, and application of the types to a case with sufficient internal complexity (many different things happened, all affecting privatisation) brings up two further points: one related to methodology and the other related to the understanding of privatisation.

With regards to methodology, our analyses bring home the point that theories can fit an empirical context to different degrees, which stems partly from the empirical context they emerged in, partly from the assumptions and core conceptual relations emphasised (choices often derived from disciplinary frames), and in part from the declared focus of the theory. It also reinforces the point that the utility of a theoretical perspective hinges on the *questions* asked by the researchers or the organisations employing them, questions which never exist in the abstract. The questions are coupled to expectations, often latent problem definitions, not uncommonly to pre-defined answers, and the selection of acceptable questions, methods and answers relates to the diagnosed centrality of power in both the governance of natural resources and the study of governance (Latour 2004; Van Assche et al. 2017).

Regarding the nature of privatisation, we refer back to Schlüter et al. (2020), distinguishing between different things that can be privatised. Our case analysis points to

the centrality of fish but also space and the creeping in of private governance. The ownership of land very transparently reveals property rights to be a bundle of use rights (of spaces, resources), but also restrictions (no hunting in town) and obligations (no taxes paid means relinquishing ownership)(Platt 2004). The sea and its resources might, at first sight, simplify the discussion of privatisation by reducing it to a question of fish, but the cases evaluated here, and a variety of other empirically observable situations, for example, portrayed in this collection, this paper is part of, oblige us to accept a similar complexity. Marine Protected areas protect a space, and other activities and their spatial demands can slowly accumulate (tourism, mining, aquaculture, seaweed culture, effects of coastal activities). Thus, coordination of those activities and their effects gains importance. An understanding of privatisation is an understanding of property, and the marine environment (traditionally under-regulated and weakly governed) can use more elaborate conceptualisations of both property and governance systems, which can turn these institutions into a reality of coordination.

Our analysis of theories of institutional change in their applicability to the marine environment and its resources thus reveals both the need for and the potential of theories of institutional change (and associated theories of governance) for this context. It also highlights the value of the different types of theories distinguished for certain specifications of this context and for different types of questions and investigations. Given the history of resource conflicts and ambiguous, weak or absent governance of the seas, we can argue that theories sensitive to the workings of power cannot be omitted from the theoretical bricolage that is likely to emerge in the analysis and preparation of new marine resource regimes. Indeed, also beyond the global south, conflicts abound. Thus, the creation, reproduction and institutional embedding of expertise cannot be disconnected from the analysis of power relations. While, even in seemingly stable settings with procedures that appear to drive themselves, power shapes and is shaped by the systems of rules and roles managing marine resources and the embedded assumptions on property, good governance, valuable expertise, and relevant questions.

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Data availability The datasets analysed during this study consist, apart from the literature, of interviews with people from Saint Louis. In the prior informed consent, it was assured that this data would only be shared within our project. All information is stored on the servers of ZMT and the University of Nantes for ten years. Please contact the first author if you have an interest in more information.

Declarations

Conflict of interest There is no conflict of interest from any of the authors.

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