Managing Natural Resources: The Three Co’s Strategy

In this essay the author will analyse three approaches to manage natural resources - communal, state-controlled, private ownership based - consider the cons and pros and discuss possible solutions to overcome the obstacles.

1. Introduction.

Humankind depends on limited natural resources such as clean air, fresh water, fertile soil, flora and fauna. Those resources are finite cannot be exploited continuously without being revitalized at least at the rate that allows them to be reproduced. Unfortunately, technological development and population growth speed up the natural resources exploitation and pollution. Such issues as climate change, deforestation, biodiversity loss, overexploitation of nonrenewable natural resources leading to ecosystem degradation jeopardize the whole human population and put it in danger to run out of natural resources they rely on.

In this essay, the author will study three different approaches to manage natural resource management from the perspective of their effectiveness to minimise overexploitation. Those are: communal, state-controlled, private ownership based. Strengths and weaknesses of each of three approaches will be examined. A new collaborative approach will be offered as a way to improve cooperation of different interested and affected parties towards reducing natural resources depletion and their sustainable management.

2. The tragedy of the commons.

In his widely known article, The Tragedy Of the Commons”, Hardin (1968) argues that each individual who has free access to common resources being driven by selfish interest would try to maximize his own benefits. The economic advantages of each individual from the resource use are higher than his costs because the costs are shared by the whole society or a whole group of people who have access to the free resources. However, it’s easy to go above carrying capacity of the nature as cumulative negative impacts of combined behaviour of all users are not taken into consideration. Thus, a collective action of independently taking performing individuals eventually will lead to destroyment of the resources to all. When the threshold is overrun then all users lose because either they can not use the resources anymore or the benefits become too low to be useful. Thus, while in the short time each individual benefits from an increasing use of the commons, in the long term perspective such behaviour leads to inevitable degradation of natural resources. Examples of such patterns can be found in all areas of natural resource use, some of them are overfishing, timber overharvesting, air and water pollution. (Hardin, 1999) Thus, it might seem that such circumstances present a dilemma that might not be possible to be resolved by the resource users themselves.

3. Three ways to manage common resources

In this section three ways of commons’ management are discussed - common property community-based actions, control of resources by the state, privatization of resources.

3.1. Common property

While Hardin's point was that the depletion of common-pool resources is unavoidable, Ostrom (1999) claims that this might be a poor assumption per se and the people shouldn't be seen as egoistic creatures selfishly trying to simply maximize their benefits without being concerned about how the resources are impacted and the others are affected. She believes that the users can collaborate in their efforts to protect the commons. Thus, communal natural resource management is believed possible and can be successful.

Ostom argues that governance system should be decentralized in order to be more effective dealing with specific resource issues in particular area. She advocates for polycentric system, which is "a system where citizens are able to organize not just one but multiple governing authorities at different scales" (Ostom, 1999) Multiple observed examples show that people did manage to self-organize in order to look for solutions how to successfully manage common resources to avoid their overexploitation. (Rydin, 2006; Ostrom, 1999; Sait, 2018; Pound et al, 2003). This was done with or without an external assistance and is especially true for smaller scale systems.

There are certain advantages of decentralized management of smaller-scale natural resource areas by self-organized users. Local knowledge of the natural system processes is one of the most essential one. Trust, inclusion and reciprocity that often develop within the group of the users help jointly succeed in acting more efficiently. (Ostrom, 1999). However, while those are the obvious positive aspects of local resource management, self-organized governance isn't always successful. Some individuals simply won't cooperate as they don't see their own benefits. Some attempts simply fail because of the complications and conflicts between the participants. Others lack democracy and fairness or even might be discriminating within the group. Shortage of scientific knowledge used due to the limited access to the scientific resources might also play a limiting role. Conflicts within or between the groups of resource users may arise and potentially lead to a violence. And finally, this approach might not necessary work for a larger scale common-pool resources, for example clean air and climate change. (Ostrom, 1999, Van Vugt, M. 2002).

Some possible solutions might be helpful to overcome the above limitations in order to improve self-organized governance of common-pool smaller-scale resources. Bringing an outsider expert can help mediate a disagreement within the local users and facilitate discussion which might ultimately lead to a successful resolution if common-pool resource management conflicts couldn't be resolved within community. (Rydin, 2006). Collaboration of local groups with the research institutions for mutual knowledge exchange can help to reduce the gap between the scientific and local knowledge. Instances of discrimination or violence should be addressed by a the appropriate governmental authorities. Best practices examples can be shared between the groups to transfer the knowledge and avoid unnecessary mistakes and failures. (Ostrom, 1999).

3.2. Private management

Private resource management can be mostly applied to the land (for example, rangelands, forests, agricultural fields) and water (for example, fisheries), as some resources, such as air and atmosphere, can not be privatized. Privatization of the commons is sometimes looked at as one of the solutions to the common-pool resources dilemma. It has been assumed that owners

tend to be more cautious about exploitation of the resources they own (Bish,1998)

While unrestricted public use of privately owned land is usually absent due to the limited public access this could potentially lead to resource protection. (Bish, 1998) However, a private owner might not necessary have the knowledge, desire, or finances to preserve the resources effectively in order to increase long-term benefits and ecosystem resilience. Studies showed that private activities are based mostly on immediate financial gain which might lead to resource depletion and not necessary results in benefits to local community. (Keovilignavong and Suhardiman, 2018; Clements and Cumming, 2017).

In order to efficiently sustain natural resources, private land managers should consider a long-term ecological monitoring that leads to increasing an ecosystem resilience and improves productivity in the long term. Efforts towards biodiversity conservations, proper land planning, protected species monitoring would ultimately pay back. (Clements and Cumming, 2017)

3.3. State-led management

External governmental control of the natural resources has been seen as a strong alternative to a commonly managed resources. However, most of the government common-pool resource management generalized approaches based on the believe that the resources are similar to some extent and can be managed by directing from the central government. Thus, the centralized government organizations are often unsuccessful because they fail to develop general regulations that would be effectively working for all areas and system levels. Furthermore, the governments often don’t have sufficient resources and overall capacity to enforce the regulations. (Ostrom, 1999). In fact, negative impacts of government control were recorded in various locations. (Higgs R. 1996; Shepherd 1992; Thomson et al,1992.)

However, concerns have been raised whether institutional management of common-pool resources will be functioning and efficient, whether desirable benefits can be accomplished. Furthermore, and not less important, how the expenses and gains will be distributed between and shared by present and future users of the commons. (Wilson, 1977). In many cases, professional expertise, which is not based on local knowledge and without community support failed to achieve desirable results. In some occasions it even produced a resistance from the local community. This approach failed when community users’ needs were not considered (Rydin, 2006)

4. The three co’s solutions: collaboration, co-management, cooperation.

The sections above demonstrate benefits and weaknesses of each of three approaches to manage the common-pool resource: common property, private, and state-led. Obviously none of them alone can perfectly help deal with the issue of exploitation of natural resources.

Managing environmental resources through the common property can lead to a resource depletion (Hardin, 1968). This can also be very successful for a smaller-scale common-pool resources, while having its limitations as well. Common property resource management might not be applicable on the larger scale commons, such as, for example, clean air and climate.

Privately managed resources, which are managed rather for a revenue, show that the managers focus on improving an ecosystem productivity in the short-term and often fail to address long-term processes which eventually leads to the ecosystems resilience reduction. When the resources are managed for non-economic purposes, long-term ecological consequences are rarely addressed as well.

Government-led management potentially could be useful at larger scale common-pool resources such as clean air and climate, through taxes, fees, penalties. However, it has also showed its weaknesses. The governments often don't have capacity to control and monitor the compliance to the regulations. When imposing regulations the authorities might not get support from the communities, hence the efforts wouldn't be successful. (Ostrom, 1999)

What all these three strategies have in common is they rely mostly on one-sided approach. They all are missing a collaboration with all involved and interested parties. Collaborative approach has proven to be an effective method that combines a top-down process and stakeholder engagement (Pound et al, 2003). Stakeholder is "any individual, group and institution who would potentially be affected, whether positively or negatively, by a specified event, process or change".(Grimble, R. and Wellard, K.,1997) Multistakeholder engagement and collaboration are considered to be an essential element of environmental management nowadays (Poncelet, 2004). Multiple case studies show that collaboration between government, private and public sector results in the positive outcomes. (Yandle, T. 2006; more citation)

Community involvement in the environmental management decisions and actions creates a number of benefits both to the decision-makers and communities themselves. Including locals in the co-management of the resources results in the outcomes that contribute to their life improvements. Hence it creates an initiative for locals to get actively into resource conservation. (Fraser, 2016; Gaodirelwe et al, 2018; Thakadu, 2005) Thus, involvement of key stakeholders, collaboration on developing a strategy, joint actions and developed trust between parties are crucial elements of reaching a collective action towards preventing common-pool resource degradation. (Rydin, 2006; Thakadu, 2005))

This approach also addresses the issues mentioned in the section on governmental control of the common-pool resources regarding its efficiency and fairness. Integration of users' concerns into the management tools would likely improve the efficiency and fairness of the resource managements approaches as well as sustainability of the management decisions.

Develops trust and enhances collaboration between the experts ("and those" with policy or regulatory authority") and locals. Hence it stimulates collective action not only on developing strategy for common-pool resource management but also fosters a collective initiative to protect natural resources. (Pound et al, 2003). Engaging local community actors bring more comprehensive data based on local inputs that outsiders aren't now aware On the other hand, the community benefits from education, its empowerment and increased capacity to protect the natural resources. (Fraser, 2016). Finally, collaborative approach is more democratic because it operates with transparency, openness, stakeholder involvement and their opinion consideration. All affected and interested parties feel like their voices are heard.

While collaborative governance is being the most comprehensive approach that covers all three elements of sustainable development, it also has its drawbacks. It's more time and resource consuming because of the need to coordinate multiple stakeholders. Collaborative management

might be a challenging task as it brings together multiple actors with diverse interests, goals, and agendas. (Ahebwa et al, 2012; Masozera et al, 2013, Maclean et al, 2015) This becomes even more complicated when a large area, cross-border problems, or complex issues are involved (Rydin, 2006). It could be difficult to activate such a collective action when environmental change remains predicted rather than immediately apparent to local actors. Thus, when environmental degradation hasn't reached it's obvious range that is visible to the local actors, it might be challenging to encourage such a collective action. Thus tangibility of the issue might facilitate success while predicted (hence, not yet visible) environmental impacts observed to be much less encouraging to the community participants to get involved. (Rydin, 2006)

5. Conclusions

The study presented demonstrate benefits and weaknesses of each of three approaches to manage the common-pool resource: common property, private, and state-led. None of them alone showed to be efficient enough to deal with the issue of overexploitation of natural resources. A new collaborative and multistakeholder approach was offered to improve cooperation of different interested and affected parties towards reducing natural resources depletion and their sustainable management. The author calls is a"Three Co's Approach" as it includes collaboration between the parties, co-operation and co-management of the natural resources.