

Autochthonous Institutions for Natural Resource Utilization? Knowledge Sharing in the Search for Appropriate Institutions for Sustainability

Winfried Manig
Institute of Rural Development
University of Göttingen

1 Outline of the Problem

Survival strategies practiced by human beings in early societies can be – cum grano salis – characterized by the extensive use of natural resources which frequently led to their depletion. Those strategies did not sustain nature as an intended goal. Nevertheless, the situation led for the majority of the population to poverty and hunger. The consequences of the overutilization of natural resources and their depletion took place mainly locally or regionally and not globally. Therefore, natural resources and their characteristics could be easily regenerated or restored by space and time due to the overall low population density which left most of the resources unused and untouched. On the one hand, part of the natural resources were overexploited and depleted and, on the other hand, only a small portion of the stock was used.

Nowadays, drastic population growth in developing countries along with increasing expectations, international influence, poverty and unequal access to the available resources, certainly cause extensive ecological damages. In the agricultural sector, the factors lead to the necessity to intensify production, which results in the depletion of and/or damage to the resources (destruction of the rain forests, soil degradation, etc.). It is specifically the increases in agricultural production and the combat of poverty accompanied by an increasing population which leads to the damage of resources. In industrial countries other reasons for damaging the environment exists, esp. the industrial production methods. The danger of conflicts between nations also increases as a consequence of competition for scarce resources (e.g., water in the Middle East).

Did societies have developed indigenous institutions in their development processes that pursue the explicit goal of preventing natural resource degradation from which we could learn?

2 Definitions

Institutions are relatively stable regulating mechanisms and principles governing the interactions between people and their relationship to the environment. These rules are established by human activities in order to regulate potential conflicts in all **those social fields which are considered important**.

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With respect to resource utilization, they regulate the access to and the allocation of resources, the rules regulating the utilization of resources, and the distribution of the benefits. In all of these fields, if there is **scarcity**, there is a **social conflict potential** and therefore a **need for regulation**.

Out of the vast number of **resources** only **soil** and its fertility and **water** will be discussed here.

3 Development of Institutions for Sustainable Resource Utilization?

A societal need for regulations is met by the development of specific or general mechanisms for just this purpose. These mechanisms can be generally binding values and norms and institutions. A need for regulating mechanisms exists

- where social conflicts arise
- where the resources are scarce, which can lead to conflicts.

In cases in which there is an overabundance of resources, there is no driving impulse for developing institutions. In the case of resources growing continually scarcer, regulating mechanisms will be established in order to **primarily** secure the existence of the society by reducing conflicts concerning the resources and not for the purpose of securing the sustainability of the resources or their utilization. Securing the resource sustainability appears, in other words, not to be a conscious regulating principle established for this purpose.

With respect to the resources land for cropping and water for irrigation, the above general statements can be concretized as follows:

3.1 Abundance of Resources

If there is an abundance of land and water in relation to the population, then no institutions for regulating the property rights governing the utilization of the resources will be developed. There is simply no need to take actions. Therefore the fund of knowledge accumulated by the society on measures for preserving the sustainability is not very large.

In situations in which resources are abundant and are, thus, virtually 'free goods,' the utility is either not considered, or undervalued. Even in modern societies, sustainability is only discussed until the 'environment' and 'environmental quality' became endangered and thus scarce goods; factors which can lead to social conflicts.

3.2 Scarcity of Resources

Not until resources begin to become scarce and acquire an economic value is there a societal need for regulation. Those resources create considerable social conflict potential which is reduced by the establishment of institutions.

Only then when exclusive property rights in natural resources already exist for specific groups regulating mechanisms can evolve in the forms of norms and institutions with the intended goal of sustainability of the existence or permanence of the productivity of the resources. But even in this case, it must be mentioned that the regulating mechanisms tend to focus more on securing the sustainability of the existence of specific groups, or guaranteeing their survival.

Such institutional regulations can be interpreted as regulating mechanisms that secure sustainable resource utilization, for example, peasants' conceptions of soil fertility preservation. It is only then

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when the resources have become scarce and experience has been accumulated through intensive utilization that shows that the utilization system is fragile and resources can be degraded. Here mechanisms are developed in order to preserve the resources. In this situation, it is economically sensible for individuals and small groups to invest in the sustainability of the resource utilization.

Wherever the population pressure demands intensification in the utilization of land, the tendency to invest in 'soil fertility' only exists if the results of investment either

- can be exploited exclusively by the investors (Boserup, 1965) or
- in cases in which the system of rule enforces it (e.g., hydraulic societies and similar constellations, Wittfogel, 1962).

A high degree of stability in resource utilization is achieved by those agrarian systems faced by resource scarcity in which small or smallest groups have long-term rights of utilization to the land. On this basis, long-term behavioral patterns can develop with which the continuation of the generation succession can be striven for. At the same time, behavioral rules governing the way the most important resource, land, is dealt with are based on this continuity. Their goal is to secure the sustainability of its carrying capacity (peasant behavior patterns). In this sense too, it is necessary to make a small, but important restriction. Striving for continuity in the small group, i.e., family, is a primary goal in the behavior of the peasants and aims at securing the succession of the generations. This is the foundation upon which they strive to preserve the land as the basis of their subsistence by the production organization ('cyclical economy'). In this case, the sustainable resource utilization, i.e., the preservation and improvement of the soil fertility, is a derived value.

All in all, there seems to be very little knowledge about the social organization in relation to securing the sustainability of the utilization of resources, or the man-environmental relations in its historical geneses.

4 Institutions that Have Effects upon Sustainable Land Utilization

In the following, a few institutional regulating mechanisms will be analyzed, which have consequences for the sustainability of the productivity of the soil and the utilization of water. The institutions were not developed for the purpose of resource preservation or the sustainability of the productivity, but rather have under certain social constellations merely the corresponding effects.

4.1 Social Values and Norms

In the value systems and notions of life in many societies, concepts exist which have direct and indirect consequences for sustainable resource utilization:

Such concepts involving the 'image of limited goods,' i.e., the notion that the total goods available in the universe are limited, are supposedly widespread in many peasant societies. The consequences of such notions are the fact, that as a result of people appropriating large portions of the limited resources for themselves, the share of the goods available to other members of the society is curtailed. Since these ideas lead to social conflicts, any striving towards change is considered negative. Far-reaching social regulating mechanisms are built upon this fact which hinder any deviating behavior with consequences for the stability of the resources. Such notions can naturally

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also be interpreted as attempts on the part of the owners of property rights to ward off the wishes of others with respect to the resources (CANCIAN, 1989).

4.2 *Institutions Regulating Access to and the Allocation of Land*

Such institutions serve to regulate conflicts concerning the limited resources, land (and water), by reducing the transaction costs for the overall society or for specific groups.

In this respect, there are many forms of property rights all over the world with a multitude of superimpositions.

4.2.1 *Tribal Property Rights in Land*

The traditional land rights based on custom in Africa south of the Sahara should be specifically mentioned in this context (BUSCHMANN/MANIG, 1987).

This land tenure led in the past to egalitarian societies with relative and little social polarization in traditional African societies and functioned as an institution for regulating conflicts as long as sufficient land was available. As a result, with respect to the sustainability of the land utilization, there was hardly any degeneration because the soil fertility could be regenerated by the limited utilization intensity and the long fallow periods.

The rapid population increases, and the continuation of traditional cropping systems (e.g., shifting cultivation) resulted in an increasingly intensive utilization and this led to growing degradation. This 'tragedy of the Commons' indicates that individuals maximize their income to the detriment of the overall society and the sustainability of the productivity of the resources by utilizing the land intensively, in particular in the instance of animal keeping. Under the altered societal conditions, the traditional land rights in connection with deteriorating social organizations can neither maintain equality in the social structure nor secure sustainable utilization.

4.2.2 *Rights of Disposition of Land among Small Groups*

If the property rights are analyzed in the case of small groups at the village level, it is frequently referred to as communal property. The property rights are frequently for forest, grassland, and land which is not suitable for cropping, and the land is used by the members of the community as common land. With increasing population and growing pressure on the land, this form of property rights is easily transferred to individuals or the land and resources are subject to ruthless exploitation by all.

4.2.3 *Individual Property Rights in Land*

In the case of resources which are growing scarce, there is a tendency towards individualization/privatization of long-term utilization rights in land, all the way to private property. Individual rights of disposition are, nonetheless, no guarantee that the land will not be degraded, as historical and current examples show:

- Currently, income maximization dominates the forms of utilization. The trend towards intensive utilization with the additional utilization of finite fossil energy is certainly a current danger for the sustainability of the soil fertility in European countries at present as a result of the agrarian policies. But intensive cropping does not necessarily mean degradation of the soil fertility.
- Destruction of the productivity by unequal allocation of the land in the case of rapid population growth. The residual land and marginal land have to be used intensively. Soil degradation is

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caused by the lacking resource endowment among the poor which leads to further perpetuation of their poverty in the sense of a 'cumulative reciprocal causality' of the chain poverty — degradation — increasing poverty — etc.

As the above examples show, degradation of the soil is possible under every form of land tenure. This can also not be expected of an institution which pursues entirely different goals or was established or developed for other purposes than sustainability.

5 Conclusions

The search for institutional regulating mechanisms showed that societies to date do not seem to have been able to gather collective historical experience which could secure long-term resource sustainability. The current situation appears to be new because until now resources such as land and water were always available in relative abundance. The waves of European emigrants in the past centuries to countries in the 'New World' presented a chance to escape the scarcity of resources. Thus, in the historical process it was not possible for institutions to form which had resource sustainability as their intended goal. If one takes a look at the decline of hydraulic societies, it is possible, however, to also come to the conclusion that no society managed to muddle through until it was too late for a change to take place. How is it today?

An analysis of the present development processes and their effects in industrial and developing countries and on the type of resource utilization signalizes that there is in reality a need for change. Since the situation is a new one in history, an intentionally developed resource-management policy must be conceived on the basis of the presently existing knowledge and implemented with its primary goal aiming at sustainability. That means, we have to develop and establish appropriate regulating mechanisms and share the information, knowledge and experiences with others. The following observations could provide a few impulses:

- The present state of man's control over nature demands a new sense of responsibility when dealing with nature, i.e., new ethical 'Principle of Responsibility' (JONAS, 1984).
- Nature as part of the societal operating capital demands a reassessment so that its existence can be secured or improved.
- This new responsibility towards nature, or the new ecological ethic, cannot be found in a search for an intact world by directing one's sight towards the past. Positions based on nature per se or natural law cannot bring us closer to this goal. That can only be achieved by 'ethical reason'.

In concrete terms, this signifies that when creating and designing this goal or intervening in events that, among other things:

- It will be necessary to enable and promote self-control and self-organization within the societies, including adequate mechanisms for solving conflicts by decentralizing the societal decision-making structures. Active participation in decisions respecting change processes will result in a local responsibility restricted to a limited spatiality and strengthened by its graspability.
- Based on what has been postulated above, this signifies the establishment of locally interlinked economic cycles which are integrated in larger process cycles.

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- Promoting social plurality creates stability in the change processes.
- It will be necessary to promote and strengthen the sense of social obligation when utilizing resources.
- The creation of social frame conditions by means of national and global policy decisions.

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