

Building strategic networks for a sustainable development in
biosphere reserves – a perspective from new institutional
economics

- Work in progress -

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ABSTRACT

To analyse sustainable development and biosphere reserves this paper suggests a wider economic perspective based on the new institutional economics. The paper presents how the concept of sustainable development has developed and how it has been interpreted at international, national and local levels. At the local level the development of a sustainable development is studied in a biosphere reserve of Kristianstad.

By the use of recent contributions from new institutional economics this development is analysed as an institutional change. By using the studied empirical process, contributions to this theory is suggested identifying concept innovations as important vehicles in institutional change.

Key words: Sustainable Development, Biosphere Reserves, Institutional change, Institutional entrepreneurs, Strategic Networks.

Today there is a wide acceptance for the need of sustainable development. This implies new and changing social institutions at international, national and local level of our societies. At international and governmental levels, strategies and recommendations have been crafted, especially within the framework of the United Nations and among national governments. International agreements have been made and national regulations and other activities to implement these agreements have been introduced. One example on the impact of sustainable development is the UNESCO's Programme on Man and the Biosphere, the worldwide network of biosphere reserves and the development at one of these reserves in Kristianstad, Sweden.

How do institutional changes like these come about? Economic theories that analyse institutions have focused on the relation between institutional structures and economic activities and outcomes. But there is a lacking understanding of how institutions change. A recent contribution in this field was presented by Douglass C. North who suggests a new research agenda based on new assumptions and propositions. This purpose of this paper is to analyse the institutional change associated with a sustainable development from this perspective and to discuss how experiences from the cases can be used to develop the theory of institutional change. Finally the paper discusses how strategic networks can be analysed from this perspective.

1. The concept of sustainable development

The concept sustainable development has been widely adopted by policy-makers around the world. It was introduced at a wide international level in 1987 by the World Commission on Environment and Development (the Brundtland commission) organized by the United Nations. Here the concept was defined as a development that meets the needs of the present without compromising the ability of future generations to meet their own needs. The commission also stated that a sustainable development implies limits imposed on the present state of technology and social organisation on environmental resources and by the ability of the biosphere to absorb the effects of human activities. (World Commission on Environment and Development 1987). The World Commission was the third UN initiatives that tried to find global consensus around important global issues. The first ones – the Brandt and the Palme commissions – had been focusing on the common security. Here environmental issues were introduced as global problem, besides the risk for wars.

The idea of sustainable development came from the discussions about the need to conserve natural resources and can be seen as a response to the criticism that conservation stops development. By the introduction of the concept "sustainable development" the idea was born that society should strive for a development without destroying nature and the environment for future generations. The idea had earlier been advanced in The World Conservation Strategy in 1980 but the Brundtland Commission made it established (Pearce et al, 1989).

Among researchers the concept was discussed and found support in various fields. In environmental economics researchers analysing the market system and environmental externalities argued that incomplete information and lacking incentives makes an optimal solution in environmental policy impossible to find. Rather than optimal solutions one has to use satisfying limits in environmental policies. The idea of sustainable development provides such a guiding principle for creating limits for environmental degradation (Pihl 2003). One discussion at this time was if a development that created benefits for future generations by increasing the stock of capital could be accepted even if that meant diminished benefits from nature? Those on the conservation side answered no; no development is acceptable if it diminish future benefits coming from nature. Those on the development side said yes. If the benefits for future generations exceed the costs of loss of nature, then it is acceptable (Pearce et al 1989)

Other aspects of a sustainable development, such as the urgent need for poor nations to develop, had been described in the Brundtland report but did not get as much attention. Critical voices soon argued that a development within the boundaries of what is environmentally acceptable is not enough. Especially leaders for poor nations wanted a stronger focus on economic development and the reduction of poverty in third world nations. The result of this process was that the core of the idea was extended. In 1992 at the UN Earth Summit in Rio de Janeiro sustainability was defined as protecting the environment as well as eliminating poverty. A developed agenda was created, Agenda 21, in which it was stated that: "The special situation and needs of developing countries, particularly the least developed and those most environmentally vulnerable, shall be given special priority." (Article 6, Rio Declaration on Environment and Development 1992).

Also this interpretation of sustainability was criticised for being too narrow and for having a too strong focus on economic and environmental issues. Ten years after the Rio conference, at the UN-conference on sustainable development in Johannesburg 2002, the concept had expanded once more

and included various new elements. Beyond environmental protection and economic development for poor nations, sustainability also was given a social dimension with concerns for issues like health, education and gender equality.

Today the concept of sustainable development has been introduced and integrated into regional and national governmental policies, with further contextual diffusions. In countries like Sweden this has meant that the government today define sustainable development in economic, environmental and social dimensions. The Swedish government distinguish eight core areas of a sustainable development; the future environment, limiting climate change, population and public health, social cohesion and security, employment and learning, economic growth and competitiveness, regional development and cohesion, and community development (Sweden's National Strategy for Sustainable Development 2002). Among the various aspects that are seen as part of a sustainable society we find equal opportunities, irrespective of gender, socio-economic class or ethnic/cultural background. A sustainable society also is defined as a society imbued with education and healthcare for everybody, democratic values and citizens participation in the decision-making process. The government has asked for sustainable development in specific areas such as education and in this context sustainable development has been defined as; using interdisciplinary working methods, clarifying conflicting objectives and synergies, having a long-term perspective expanding from the past to the future, from the global to local, using democratic working methods, using reality-based learning with contact with nature and society, focus on problem-solving, critical thinking and readiness to act, stressing both the process and product of education. (SOU 2004:104)

A reflection is that the idea of sustainable development has thus been going through different phases and each new phase has brought new meanings to the concept. The result is that the concept today has been enlarged to a point where it today stands for almost everything worth striving for, from peace, environmental protection, economic development, solidarity with the poor, good health and long lives for everyone, equal opportunities, democracy and everyone's right to participation in the development of society. The concept has also been used for developing areas such as the development of education into specific directions. One pessimistic interpretation of the concept is enlarged to an extent where it becomes useless. When sustainable development was introduced the aim was to put priority to environmental damages and by adherence the leaders of the world committed themselves to a development within environmental limits for what would protect the

well-being of future generations. Today the concept includes a wide spectrum of ambitions and the fundamental priority to environmental issues has disappeared on the way. On the other side the conceptual enlargement might have provided the condition for the wide acceptance of the concept among people and that it has been integrated into the central policies of nations.

2. Implementing a sustainable development

At the Rio conference 1992 the institutional development needed for a sustainable development was expressed in general terms with a focus on the actions of national governments. Governments should, for example, enact effective environmental legislation with environmental standards, develop national law regarding liability and compensation for the victims of pollution, apply the precautionary approach, promote the internalisation of environmental costs and the use of economic instruments, use environmental impact assessment etc. Several principles also encouraged international cooperation among the participating states.

After this initial agreement, the continuing Kyoto protocol of 1997 made more precise agreements on the reduction of green house gases each coming from the participating nations. Agreements which, in some occasions, can be traced as arguments for introducing new green taxes, trade with emission permits and environmental regulations. But in practice there were little evidence that the world was changing in the desired direction. Ten years after the Rio conference, at the UN-conference on sustainable development in Johannesburg 2002, the conclusion was drawn that the implementation of a sustainable development had been a disappointment. (Johannesburg Summit, Feature story, 2002). Sustainable development had lead to a philosophical and political debate rather than actions and results. The conference therefore called for implementation rather than new declarations. The conference urged leaders of the world to engage in a necessary institutional development for implementing the ideas of a sustainable development. A result of the conference resulted was a plan of implementation which focused on the development of an institutional framework for sustainable development: "An effective institutional framework for sustainable development at all levels is key to the full implementation of Agenda 21 ..." (Plan of implementation of the World Summit on Sustainable Development, p. 54).

The need for institutional change was now identified at the international level, the regional level and at the national level (the states). The changes needed were expressed in general terms. At

the national level states should strengthen existing authorities and mechanisms necessary for policy making, formulate and elaborate national strategies, enforce clear and effective laws, promote public participation, establish sustainable development coordination structures at the national and local level and enhance the role and capacity of local authorities. (Plan of Implementation of the World Summit on Sustainable Development, p 62 f)

The need to develop institutions has been observed also by the national governments. In Sweden the government declared in a "National Strategy for Sustainable Development" the need to strengthen institutional structures, including sectoral integration, impact assessment methods, dialogue and voluntary agreements between government and the enterprise sector, sustainability reports and local investment programmes supporting sustainable development. ("A Swedish Strategy for Sustainable Development" 2003,)

A summarized impression is that the institutional development needed for a sustainable development has been lagging behind and it has been focused on international agreements and regulatory activities on the national level. Later suggestions have included other "soft" measures like assessment reports and voluntary agreements.

3. Biosphere reserves

As noted above, the institutional development surrounding the idea of sustainable development has had a focus on the international and national level. An explanation to this is that the environmental problems such as climate changes require global coordination and that state governments, without global authorities, are the most encompassing regulators. The need for local initiatives and developments were not given much attention. What does a sustainable development mean in the local context? What kind of institutions is locally needed for the development to be sustainable? Can strategic networks develop locally for a sustainable development? The issue was touched upon in the following statement in Agenda 21.

"Indigenous people and their communities and other local communities have a vital role in environmental management and development because of their knowledge and traditional practices. States should recognize and duly support their identity, culture and interests and enable their effective participation in the achievement of sustainable development."

(Principle 22, Rio Declaration on Environment and Development 1992)

What this part of a sustainable development means is not clear, or how it will be created. Can local initiatives be encouraged and local institutions be created that leads to a sustainable development? How is this done? What role can local authorities play? How do new institutions develop at the local level?

One approach to answer such questions is to identify local communities which fulfil the requirements for a sustainable development and to make them models for institutional change. One such attempt was early made by UNESCO by recognizing Biosphere Reserves. Biosphere Reserves are areas of terrestrial and coastal/maritime ecosystems which are internationally recognized within the framework of UNESCO's Programme on Man and the Biosphere, which was launched in 1976. The context of biosphere reserves has developed over the years and in 1992, at the Earth Summit in Rio de Janeiro, Biosphere Reserves were getting the attention as being examples of areas with a sustainable uses of biological diversity. Biosphere Reserves were used as models of how conservation of biodiversity can be combined with the development needs of local communities. Today there are 482 sites worldwide in 102 countries. The idea of Biosphere Reserves fits well with the function of UNESCO, which today described its role as being a laboratory of ideas and a standard-setter to forge universal agreements on emerging ethical issues, a clearinghouse for the dissemination and sharing of information and knowledge and a help for member states to build their human and institutional capacities in diverse fields (UNESCO, 2006).

At the International Conference on Biosphere Reserves, organized by UNESCO in Seville 1995, the function of biosphere reserves was specified further. Biosphere Reserves should promote and demonstrate a balanced relationship between humans and the biosphere. Further, a biosphere reserve should fulfil the functions of conservation, development and logistic support and foster economic and human development that is both socio-culturally and ecologically sustainable. As models for sustainable development the reserves should share their experience and ideas nationally, regionally and internationally within the World Network of Biosphere Reserves. (UNESCO – Man and Biosphere, 2006) The conference resulted in a “Seville Strategy for Biosphere Reserves”, with recommendations issued at the international, national and individual reserve level. The goals identified were to (1) conserve natural and cultural biodiversity (2) provide models of land management and of

approaches to sustainable development (3) use biosphere reserves for research, monitoring, education and training and (4) to implement the biosphere concept. Objectives and recommendations on how to reach the goals were issued for the international, national and individual reserve level.

For the individual reserves to be models of sustainable development the conference issued a range of recommendations. These recommendations reveal how the member nations envisioned an institutional change at the local level. Three objectives were defined, from which recommendations were drawn. The first objective was to secure the support and involvement of local people. Here the recommendations were to 1) Survey the interests of the various stakeholders and fully involve them in planning and decision-making regarding the management and use of the reserve. 2) Identify and address factors that lead to environmental degradation and unsustainable use of biological resources. 3) Evaluate the natural products and services of the reserve, and use these evaluations to promote environmentally sound and economically sustainable income opportunities for local people. 4) Develop incentives for the conservation and sustainable use of natural resources, and develop alternative means of livelihood for local populations, when existing activities are limited or prohibited within the biosphere reserve. 5) Ensure that the benefits derived from the use of natural resources are equitably shared with the stakeholders, by such means as sharing the entrance fees, sale of natural products or handicrafts, use of local construction techniques and labour, and development of sustainable activities (e.g. agriculture, forestry, etc.).

The second objective was to ensure a better harmonization and interaction among the different biosphere reserve zones. Here the following recommendations were issued. 1) Develop and establish institutional mechanisms to manage, co-ordinate and integrate the biosphere reserve's programmes and activities. 2) Establish a local consultative framework in which the reserve's economic and social stakeholders are represented, including the full range of interests (e.g. agriculture, forestry, hunting and extracting, water and energy supply, fisheries, tourism, recreation, research).

A third objective was to integrate biosphere reserves into regional planning, with the recommendations to organize forums and set up demonstration sites for the examination of socio-economic and environmental problems of the region, and for the sustainable utilization of biological resources important to the region.

Finally, following on goal 3 to use biosphere reserves for research, monitoring education and training, one find the recommendation to use the reserve for developing indicators of sustainability (in ecological, economic, social and institutional terms) for the different productive activities carried out within the buffer zones and transition areas.

A few years later, at the General Conference of UNESCO, in October/November 1999, an overall evaluation of the Man and Biosphere Programme was decided upon. The result was presented in the report "Evaluation of the MB Programme" by UNESCO in 2002. The report starts with the conclusion that the original concept of Biosphere Reserves has been developed from the early 1970s until today and that the concept today has a much "more complex present situation, with global, economical, political, ethical aspects taken into consideration alongside with conservation" (UNESCO 2002). The report came to the somewhat surprising conclusion that biosphere reserves have limited possibilities to become models for a sustainable development. The report concludes:

"It is difficult to assess precisely how biosphere reserves contribute to the implementation of Agenda 21. They cannot obviously provide for broad scale sustainable development, which cannot be achieved simply at the level of individual sites. They cannot in particular realistically escape the world market forces, or the impacts of modern technologies. However many Biosphere Reserves are seeking and demonstrating more sustainable means of land/water use, with accompanying systems of social development. This includes for example low impact agriculture/forestry, or the use of native species to provide alternative income (e.g. floriculture, extraction of non timber forest products such as "chicle", snail raising, use of Xate palm, butterfly farming, bee keeping, olive oil production, mushroom, harvesting, production of argan oil, etc.; One should also mention revegetation and rehabilitation using native species for soil erosion control, fodder, or fuel; organic products, building materials for traditional architecture, etc. This experience is not sufficiently known and this dissemination should constitute one of the basic functions of the Secretariat and the World Bank."

(Evaluation of MAB Programme, UNESCO 2002)

The business of tourism, or more precisely ecotourism, was especially given attention to, offering a “great potential for biosphere reserves /.../ it has the potential to be one of the major sources of income for many Biosphere Reserves”.

The evaluation thus expresses a reduction of expectations – the role of being a model for a sustainable development is difficult to play and therefore biosphere reserves are not evaluated as such. The evaluation gives some examples on sustainable development but shows no interest in how these business projects came about. Had the biosphere reserves found ways to encourage new sustainable activities? What specific institutional development had occurred in those situations mentioned? The report concentrated its evaluation on other issues such as contribution to education and training, dissemination of information and to research.

4. The Biosphere Reserve of Kristianstad, Sweden

Kristianstad vattenrike (The Rich Wetlands of Kristianstad) was declared a biosphere reserved by UNESCO in 2005. The reserve is situated in the southern part of Sweden in the Municipality of Kristianstad and covers the geographical area surrounding the river Helgeå and the connecting parts of the Hanö bay. The area has been cultivated for a long time and covers large parts of Kristianstad municipality with about 70 000 inhabitants. Within the reserve lies the city of Kristianstad with some 30 000 inhabitants. The distance to the Malmö / Copenhagen region is about 100 km. The area has many rare species of plants and animals and is one of northern Europe's largest aquifer:

“...the interfaces between lakes and running water and the brackish water of the Baltic Sea, and the variations in local climates have created unique conditions for a diversity of land cover types that, in turn, support a large number of ecosystems and species. Many of the values of the area in this cultural landscape are a result of the long-term cultivation of the land, but there are also areas that serve as a refuge for biological values that are not predicted on human activity”

(Kristianstad Vattenrike, Biosphere reserve. Nomination form, January 2005.)

The aim of having Kristianstad Vattenrike designated a biosphere reserve is to conserve its ecological assets and cultural heritage, and to ensure that they are used in a sustainable and careful way (Swedish EPA, 2006). By acknowledging Kristianstad vattenrike as a biosphere reserve UNESCO clarified that the area fulfil the functions of conservation of biological diversity (genetic variation, species, ecosystems, landscapes), development (economic and human development that is socio-culturally and ecologically sustainable) and logistical support (that it provides enough basis for building education, research, monitoring, etc).

But Kristianstad Vattenrike started much earlier. It all began as in the late 1980s as a project at the municipality of Kristianstad. It is built around the idea of preserving the wetlands and to increase their use for recreation and education. An early achievement was the creation of an outdoor museum in the area, with several information centres and walking paths making the wetlands more accessible.

Two individuals – Sven Erik Magnusson and Karin Magntorn – has been part of the project since the late 1980s and today they are working at a “biosphere office” at the Municipality of Kristianstad. The examples and the following discussion on how to promote a sustainable development is based on an interview with Magnusson and Magntorn, made in March 28, 2006.

When asked what a sustainable development is, the answer refers to the early Brundtland definition that today’s generation should not destroy natural resources for future generations. But the concept has been enlarged and today it has many different meanings. The response by the biosphere office is to use the parts of the concept that they find suitable for the project.

When asked in what way the biosphere reserve is a model for sustainable development, the following examples are given.

- Ecotourism, for example safaris in the wetlands, guided tours with a riverboat, possibilities to rent kayaks, to go fishing and bird-watching.
- Technical development, for example a farmer has been helped to search for subsidies for developing a new machine for hay-making in the wet lands.
- New irrigation technologies, a possibility that has attracted interest from the Swedish farmers’ organization. (The biosphere reserve is situated in one of the most irrigation intensive areas of Sweden).

- Quality meat, a group of farmers has locally started to launch quality meat under a local brand that associates to the uniqueness of the biosphere area. The cattle help conserve the black-tailed godwit, a fact that is used in the marketing of the meat.
- Kristianstad municipality is nationally recognized for its environmental concerns; the municipality has developed recycle systems for heating and fuel, has invested in energy systems, transport systems and housing.

In what way has institutions developed in the biosphere reserve that support examples like this? The biosphere office tries to act as a facilitator for projects like the ones above. One way is to support people with ideas, a part of the logistic function of the biosphere office. This is for example done by helping people apply for subsidies at development agencies or to apply for grants at research agencies. The biosphere office can help with applications and with knowledge of where to go. But one does not have any subsidies or other financial support to offer. Being a biosphere reserve might also attract companies that learn about the reserve and that want to be part of it.

Another way to support a sustainable development is to initiate projects and to arrange meetings among stakeholders to discuss specific questions or problems. One such example is the present launch of quality meat produced by local farmers. The idea was initiated by the biosphere office and formulated in other terms but the concept has then been developed and reformulated by the farmers to fit their specific situation. Another example is that crane-birds in large volumes visit fields in the biosphere reserve during springtime. They attract many tourists but the crane birds eat crop and therefore annoy farmers. After meetings with farmers, bird-watchers and the local authorities the solution is to feed the cranes at special fields and to scare the off others. One also provides information about where to find the cranes on a web-site.

Creating possibilities for different stakeholders to meet and find solutions that they can accept is one function of the biosphere office. But the interviewees emphasises that there is no point in building social networks for their own sake. The work should start with real problems or projects, and then you can build networks. Otherwise the risk is that networking will be unproductive with many meetings and little action.

The most emphasised way to promote a sustainable development is to make people part of the idea. The task is to make people see the value and potentials of the water lands, not forcing them

to belong to the same organisation or obeying laws and regulations, but rather to share the views and values of the biosphere reserve.

“The tools of the biosphere office are not laws and regulations. We work in another amoeba-like room where we try to find engagement, commitment, idealism, influence, feeling and attitude. All these parts you cannot make laws about ... When we inform about the biosphere reserve we don't start by explaining what a natural reserve is or the laws and regulations surrounding it. And we do not try to force people to learn all the facts about for example the various kinds of birds that exist here. We start with experiences, engagement and that sort of things and then search for a specific angle of approach. It can be a hunter, a fisherman, someone in the local folklore, some are interested in sports and open air activities or someone interested in health issues and medical aspects. To find these personal threads that the individuals may not be aware of as linked to landscape, nature and sustainability. To find these threads and successively pull them via experience to knowledge and via knowledge to a change in attitude, or strengthening the attitude, and eventually to the possibility to influence. That is the room we work in, to get people, in small and large matters, over time to develop a mental reconstruction towards sustainability. It would be utopian to think that society in a short notice could change but one has to start at some time. Many things during this trip have not been logical, but since you cannot change the system you have to take it in small steps. You have to change slowly with solutions that are smart enough.

(Interview, Marsh 28, 2006)

At the biosphere office there is a belief that that public view of the wetlands has changed from a useless “swamp” to a valuable resource since “Vattenriket” (The Rich Wetlands of Kristianstad) was introduced in the late 1980s. A change in view can clearly be seen at the municipality level where the wetlands are now valued in a more positive way than before. One example is the attention given to the biosphere reserve in the city planning. The hope is also that there is a change in view among the general public and local enterprises. When the efforts started in the late 1980s the wetlands were

more or less seen as useless swamps of low interest for anyone. Now it seems as if more and more people with different interests find that the wetlands have positive values for them.

How, then, can the public conceptualization be changed in this way? The people working with the project have no simple solutions. There are many ways to go and it takes a long time to change attitudes and conceptualizations. The power of good examples as the importance to communicate positive values with people having different interests was described above. In the future one sees the possibility to develop monetary estimates of important values of the wetlands, and to clarify and communicate these issues with decision makers.

There are limits to this solution as well. Everyone will not be convinced and those that cannot be convinced have to be influenced by the use of laws and regulations. Another benefit would be that the experiences from the project can perhaps be transformed to those that work with the development of other control measures.

5. Institutional change – a theoretical perspective

The traditional neoclassical economics has during a long time developed a rigorous theory for analysing how the price mechanism coordinates markets. The societal institutions needed for such a system to work have been held explicit. But different societies have different institutions and have developed differently. Why do certain institutions give certain outcomes? This problem has been studied within the new research agenda of new institutional economics. Here the institutions of societies and organizations are analysed. For an overview of this tradition see Ménard 2000.

What are then institutions? Douglass C. North defines institutions as the rules of the game, the various regulations that humans impose on human interactions. Institutions can be formal, as illustrated by laws and regulations authorized by governments in nations or owners and managers in firms. Or they can be informal which is illustrated by the norms, conventions and codes of conduct that guide the individual (North 1990).

The basic idea is that institutions provide a structure of incentives and that they will constrain and direct the behaviour of individual actors a society, thereby determining the economic outcome. By analysing institutions the development of nations can be understood and explained. Nations characterized by high incomes have developed institutions that encourage high productivity activities whereas low income nations have institutions which encourage other activities.

Thus, the research in this tradition has, so far, been focusing on the understanding of how certain institutional structures cause certain outcomes and why some institutions seem to be more efficient when it comes to bringing wealth to societies than others. Recently this approach has been expanded by Douglass North (2005). North claims that the way different institutional structure influence economic performance is something which today is fairly well understood. What is not well understood is how institutions develop and change. How can we understand the process of institutional change? Why is it that sometimes institutions do not change, even if it would be beneficial to society? By introducing questions like these North adds a new dimension to economic analysis. Neoclassical economics examine one specific institutional structure, the market system. The new institutional economics analyses the outcomes of different alternative institutional structures. What North suggests is to study the dynamics of institutions and the process behind institutional change. North, therefore, introduces a new research agenda and tries to sketch some important features of such an agenda.

To understand how institutions change North starts with the assumption that humans have a drive to reduce uncertainties and to increase predictability. Another assumption is that the world is non-ergonic; there is no underlying stable structure that will keep variations within certain limits. The world we live in, therefore, changes in true novel ways which cannot be foreseen. This is especially the case in the part of the world created by humans, which North distinguishes from the natural world. In the human society the development is based the present knowledge of the actors and it is not possible to know what the knowledge that is underlying the development will be in the future. It is therefore impossible to know the future; "to know the future we will have to know today what we will know tomorrow" (North p 21). This, and the limited cognitive capacity of humans, creates a non ergonic development where humans cannot fully grasp the complexities they face and where the feedback is incomplete. Therefore humans create institutions that reduce uncertainties and, as societies develop, the institutions become an increasingly important part of the uncertain and changing social environment that humans have to handle.

If the innovation of the earlier new institutional economics was to separate institutions from economic activities/outcomes and to analyse how the former affect the latter, the new element introduced by North is the individual belief systems between institutions and activities/outcomes;. Belief systems are the internal representations, the mental constructs that humans develop to cope

with their situation. It is the models of the reality and dominant beliefs that individuals have internalized. The belief systems of individuals come between the institutions of societies and the activities/outcomes and interplay in complex ways with both sides. Belief systems will determine how institutions are interpreted and, therefore, how institutions affect individual behaviours and outcomes.

This implies that economic theory has to embrace cognitive science and theory of learning. Based on the writing of Hayek, North concludes that learning is not a reproduction of reality. Learning is the construct of systems for classifications and interpretations of the external environment, a process that is shaped by the environment we experience. But it is an imperfect process with misinterpretations and mistakes. This, the imperfect feedback and the problem that we use our mental constructs to study what is outside them, makes it possible for different kinds of learning and for different kinds of mental constructs, models of the world to develop. This is why North uses the concept of “belief systems”. We cannot know that the constructs we have are good or right, but we believe that they are.

Belief systems affect the institutional structure and how it changes. North discusses how the development of formal political institutions is interdependent with the belief systems among people in a democratic system. Belief systems also influence the informal constraints that societies develop and, as with formal constraints, the outcome of economic activities. But belief systems and how they influence informal institutions is not well understood. North calls for research on this; “A fundamental unknown is the way the informal constraints evolve” (North, p 74). The relationship between changes in belief systems, informal institutions and the formal institutions is thus one central future question for research.

The interdependence between belief systems and the institutional structure creates path dependencies, earlier beliefs and institutions will provide the basis for the development of new ones. Changes in the institutional structure can be initiated by institutional entrepreneurs, individuals or organisations with influence enough to influence institutions. These entrepreneurs, as all humans, act with intentionality and human intentionality is therefore something that makes the evolution of social institutions different from the survival of the fittest of natural evolution.

How can then institutions change? North summarizes his thoughts with the following propositions:

1. "The continuous interaction between institutions and organizations in the economic setting of scarcity and hence the competition is the key to institutional change.
 2. Competition forces organizations to continually invest in skills and knowledge to survive. The kinds of skills and knowledge individuals and their organizations acquire will shape evolving perceptions about opportunities and hence choices that will incrementally alter institutions.
 3. The institutional framework provides the incentives that dictate the kinds of skills and knowledge perceived to have the maximum pay-off.
 4. Perceptions are derived from the mental constructs of the players.
 5. The economics of scope, complementarities, and network externalities of an institutional matrix make institutional change overwhelmingly incremental and path dependent."
- (North 2005, 59)

North concludes that it is typically individuals in organizations (institutional entrepreneurs) that make the decisions that alter institutions. Competition under constraints (both created by institutions and other constraints) will provide incentives for organizations to change institutions as part of their efforts to gain advantages. The institutional structure reflects the bargaining strength of those that are capable to change institutions. Changes can be done, deliberately or not, by influencing formal rules, their sanctions or the norms and conventions.

Over time relative prices and relative positions will change and to meet the competition, players have incentives to invest in knowledge and skills. Pay-offs determined by the institutional structure will guide these investments. The stock of knowledge is the underlying determinant and learning is therefore the major influence on the evolution of institutions. The perceptions of individuals – their mental constructs or belief systems – influence how they try to change institutions. Mental constructs are subjective models that are based on incomplete information, which makes many alternatives possible. The choices made by individuals will thus be determined by their mental constructs, which are partly determined by their cultural heritage (informal institutions) and partly determined of more individual experiences. Changes will be gradual, incremental and constrained by the historical past.

North has, by turning his interest towards the process of institutional change, developed new institutional economics into an important field with many possible applications and integrations with new fields of research.

6. Analysis

Sustainable development can be analysed as an institutional change in the theoretical context of new institutional economics. Sustainable development has influenced the way humans regulate interactions. It has resulted in new informal institutions, values and informal codes of conduct, as well as in new formal institutions as illustrated by national laws and regulations.

How did these changes come about? With the limited sources of empirical material that we have, what tentative answers can be found? Can the theoretical approaches suggested by North be used to understand the development? Can we learn new aspects of institutional change from the experiences of sustainable development?

A first phase in the institutionalisation process of sustainable development came in the late 1980s. The concept of sustainable development was initially a concept that was developed among limited groups of individuals, especially those individuals and groups with engagement in conservation issues. Their interests of conservation of natural resources competed with different other interests with the common denominator that they all wanted to exploit natural resources. (*Proposition 1. The continuous interaction between institutions and organizations in the economic setting of scarcity and hence the competition is the key to institutional change. North 2005, p 59*)

The first step towards an institutional change came when these individuals became institutional entrepreneurs, with bargaining power enough to influence by their impact on the studies that lead to the works of the Brundtland Commission in 1987. The concept of sustainable development was here a bearer of a new idea that had been developed among these groups and that increased their bargaining power. The new idea was that there is no contradiction between the two interests; there can be both development and conservation. This idea also expressed the strong interest of future generations, an interest which probably harmonizes well with the informal institutions of most people around the world and an interest that increase with the level of development. Those in favour of exploitation without conservation and those in favour of conservation without development had weaker arguments. The concept resembled a more optimistic and a more moral view that opponents on both sides had difficulties to match. (*Proposition 2. Competition forces organizations to continually*

invest in skills and knowledge to survive. The kinds of skills and knowledge individuals and their organizations acquire will shape evolving perceptions about opportunities and hence choices that will incrementally alter institutions, North 2005)

With the Brundtland report international leaders and a larger public learned and agreed with the idea. The concept of sustainable development won attraction among a wider public this created the breakthrough on its way to institutionalization. This made the concept an important part of the global informal institutions that has found explicit expressions, and hereby wider institutionalization, within the framework of the UN. At the following World Summit in Rio 1992 the institutionalization process continued but it also took another turn as the ideas linked to sustainable developments widened and more clearly came to include the development of poor nations. This concept-widening facilitated the institutionalisation of the concept by attracting both representatives for rich nations with concern about the environment and representatives from poor nations with concern about development. After this increased institutionalisation there were some initial agreements that, with time, lead to some formal institutional changes at national levels, as illustrated by green taxes and environmental regulations. There then have been further concept enlargements at the national levels, as the Swedish strategy for a sustainable development illustrates.

But the process of transforming agreements on the international level to national formal institutions haltered, as the Johannesburg meeting indicated in 2002. Reasons for this might be that the ideas behind the concept had been enlarged to a degree that the regulatory consequences became unclear. Almost everything could, in some way, be interpreted as sustainable or criticized for being unsustainable. The vaguer a new concept is, the easier it is to win acceptance for it, and the more difficult it is to implement it. Another reason might be that the international agreements reflected the “confessions of lips” among national representatives, without enough support in the belief systems of institutional entrepreneurs at the national and local levels. A third reason might be that those against a sustainable development had enough bargaining power to prevent an implementation.

But some institutional changes at national and local levels have occurred. At the continuing Kyoto protocol of 1997 more precise agreements were made on what each nation should do to prevent green house gases, agreements which has been transformed into national politics and has been used as arguments for introducing new green taxes, trade with tradable emission permits and environmental regulations. The wide acceptance of the ideas behind a sustainable development have

increased the bargaining power of those institutional entrepreneurs that wanted new environmental policies, their ideas and suggestions won more impact thanks to the wide acceptance of sustainable development. (*Proposition 3. The institutional framework provides the incentives that dictate the kinds of skills and knowledge perceived to have the maximum pay-off. North, p 59 2005*)

At the national level the concept has been further enlarged and today incorporates the whole future strategy for the government of Sweden, with ambitions in all the areas of politics. The process at both the international and national level illustrates how the new concept of a sustainable development over time, step by step, becomes more and more integrated in the institutional structure. (*Proposition 5. The economics of scope, complementarities, and network externalities of an institutional matrix make institutional change overwhelmingly incremental and path dependent. North 2005, p 59*)

If sustainable development has been incorporating meanings from existing fields as it has developed, the case studying the biosphere reserves illustrates that existing institutions, on the other side, have incorporated sustainable development to strengthening their positions. By incorporating the ideas of sustainable development, the already existing institution of biosphere reserves managed to win further acceptance and to become more widely spread.

The case of the biosphere reserve in Kristianstad illustrates an institutional change at the local level. Here local institutional entrepreneurs have worked to change the perceptions of local authorities and of the local public, to make them internalize into their belief systems the conception of the surrounding water lands as valuable assets. Before this, most people would probably have a very vague idea about these areas of land. Some saw them as worthless swamps or underutilized assets that wait for efficient exploitation. Also here, of course, different individuals and organizations have different competing interests. The lands can be used for several purposes and conservation is one of these possibilities. (*Proposition 1. The continuous interaction between institutions and organizations in the economic setting of scarcity and hence the competition is the key to institutional change. North 2005, p 59*)

The breakthrough for the new local institution that the water lands should be under conservation and sustainable development came with the launch of the new concept of "Kristianstad Vattenrike" ("The Rich Wetlands of Kristianstad"). Behind this new concept we find institutional entrepreneurs who had developed knowledge about the potentials of the water lands. They started the

institutional change in the late 1980s by convincing the local municipality to support initiatives to share this knowledge to others. This was done by the establishment of an out door museum, by an out door school and by different activities to make the wetlands accessible. (*Proposition 2. Competition forces organizations to continually invest in skills and knowledge to survive. The kinds of skills and knowledge individuals and their organizations acquire will shape evolving perceptions about opportunities and hence choices that will incrementally alter institutions, North 2005, p 59*)

The new concept “Kristianstad Vattenrike” was important in this development. It resembles the ideas of conservation, attraction, optimism and moral values and the concept has been important in the change of local informal institutions. As people starts to reflect and internalize the concept into their belief systems they change their way to interpret local surroundings. With it follows the opinion that the water and the landscape are worth conserving and that traditional ways to use the lands are worth maintaining. Reasons for the success might be that “Kristianstad Vattenrike” communicates optimism and has moral implications that most people share – it is nice to be out in nature, rare species are worth saving, buffer zones are valuable, etc. Advocates of other interests have not had the same bargaining power.

The wide acceptance of sustainable development at international and national levels have increased the bargaining power of those institutional entrepreneurs that where in favour of conservation of the water land. Since these institutional entrepreneurs have managed to convince their organizations (local municipality and other local authorities) they also have an impact on local regulations, an impact which is strengthened by the transformation of Kristianstad Vattenrike to a biosphere reserve.

The institutional changes ending up in the biosphere reserve of Kristianstad has been incorporating existing institutions and been introducing new elements over several years in small steps. (*Proposition 5. The economics of scope, complementarities, and network externalities of an institutional matrix make institutional change overwhelmingly incremental and path dependent. North 2005, p 59*)

7. Conclusion

This paper present an analysis of the emergence of sustainable development, and biosphere reserves, based on the new research agenda on the process of institutional change suggested by Douglass C. North. The analysis supports the suggestions by North that understanding the process behind institutional change is about understanding the development of new knowledge and new mental constructs in the belief systems of institutional entrepreneurs and organization, strengthening their bargaining power, in competition on the use of scarce resources. It also supports the idea that institutional change is incremental, with economics of scope, complementarities and network externalities.

What this study can add to the theoretical approach of North is two observations? A few new possible propositions can be suggested, based on the discussions in this paper.

1. Institutions develop at different levels and institutional changes at one level influence institutional changes at other levels. A change at the international level can alter the bargaining power of institutional entrepreneurs at national and local levels, as illustrated by sustainable development.

2. Concept innovations are important vehicles used by institutional entrepreneurs for institutional change. The concept of “Sustainable development” was crucial for the institutional changes that we today associate with a sustainable development. The concept of “Kristianstad Vattenrike” had the same importance at the local level.

3. There is a tendency for concept innovations to be filled with new meanings as the institutionalization process proceeds. To increase bargaining power institutional entrepreneurs incorporate new meanings belonging to the belief systems of influential interest groups, as illustrated by the widening meaning of sustainable development. Institutional entrepreneurs at lower level incorporate institutionalized concept innovations at higher levels into their own institutions to gain bargaining power, as illustrated by the inclusion of “sustainable development” into the concept of “biosphere reserves” and of “sustainable development” and “biosphere reserves” into the concept of Kristianstad Vattenrike.

4. The efficiency of a concept innovation, that is how strong survival it has in the institutional structure, is linked to how accepted and how regulatory it will be. A concept innovation that everyone accepts that not influence behaviour is not institutionally effective. The same ineffectiveness goes for a concept that influence behaviour but has no acceptance among people.

5. The concept enlargement comes with benefits and costs. The enlargement makes the concept more acceptable. At the same time the enlargement makes the regulatory content vague and contradictory.

Further development...

How policymakers can encourage new and more developed interactions between people in a local geographical context and how they hereby create the basis for networks that encourage a sustainable development. This is conceptualized as the building of sustainable strategic networks.

Finally the paper discusses how the understanding of institutional change can be used in the building of strategic networks.

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