Collaborative learning, organizational innovation, and adaptive co-management:

the role of social networks in Kristianstad Wetlands, Sweden.

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Abstract:
The literature on ecosystem management and assessment is increasingly focusing on the social capacity to enhance ecosystem resilience and the services it sustains. Organizational flexibility and participatory approaches to learning in order to respond adequately to environmental change have been highlighted but not critically assessed. The aim of this article is to describe and analyze a response to declining ecosystem services by Kristianstad municipality in southern Sweden. The municipality launched the project Kristianstad Wetlands (Kristianstads Vattenrike, KV) in 1989 and set up a small, flexible organization (EKV) to initiate and coordinate water-related ecosystem projects. This case has been chosen because it appears to be an example of successful collaboration for ecosystem and landscape management and illuminates many theoretical concerns of adaptive co-management and resilience of social-ecological system.

By being sensitive to the concerns within non-environmental sectors, EKV has identified win-win situations and gained broad support for ecosystem management among a diversity of actors in the region. Operating under existing legal framework, EKV has built a network of key individuals representing stakeholders and institutions at all levels of society. EKV appears to create arenas for exchanging information, preference formation, creating meaning, and solving conflicts among actors in relation to specific nature conservation issues arising in the area. It is a dynamic system where *ad hoc* projects and sub-networks are formed for each issue arising. These arenas also make it possible for different knowledge systems, such as local ecological knowledge and scientific knowledge, to be combined. We assess how collaborative learning has been employed to monitor, interpret and respond to signals of ecosystem change; scientists have been *involved* but not *in charge* of these adaptive co-management processes. We conclude that *trust building* has been the crucial component of EKV's strategy. Our results indicate that this strategy has increased the social capacity within the municipality to navigate the social-ecological system towards a desirable trajectory. The interplay between informal social networks and formalized local collaboration will be crucial for a successful implementation of the new EU Water Directive.

1. Introduction

Human production and consumption impact on ecosystem conditions. At the same time, social and economic development relies on the support of dynamic and functioning ecosystems (ref). Resilience - the capacity to buffer, adapt to and shape change - has emerged as a crucial concept in the search for understanding complex ecosystem (Holling 1986, 1996). Sustaining and enhancing ecosystem resilience is, besides pollution abatement, a function of successful ecosystems management and this in turn rests on the social capacity to understand and respond to environmental feedback over time as well as space (Berkes and Folke 1998). Besides being a goal in itself, resilient ecosystems are instrumental for generating valuable goods and services to human society (Daily 1997).

Here, we focus on the dynamic interplay of ecological and social systems, which we refer to as social-ecological systems (SESs) (Berkes et al. 2003, Gunderson and Holling 2002, Folke and others 2002). Our normative concern is *social-ecological resilience*, which we define as the social capacity to respond to and shape ecosystem change in a way that sustains and enhances the ecological preconditions for human societies. In other words, we want to sustain a SES in a desirable stability domain (along a desirable trajectory) (Carpenter et al. 2002) in the face of change or, alternatively, transform a SES into a more desirable stability domain (Olsson et al. 2004b). Note that our normative perspective is anthropocentric: to sustain and improve human welfare. Thus, social, economic, and ecological dimensions of sustainable development are linked together and the concept of social-ecological resilience suggests how they are integrated (Folke et al. 2002).

Three issues are addressed in the literature on ecosystem management:

1. analysis of ecosystem processes and elements that increase their resilience;
2. analysis of management strategies that could enhance the capacity of ecosystem to generate ecosystem services; and
3. analysis of organizational and institutional dynamics *underlying* ecosystem management (social capacity).

In this paper we analyze the third issue, the social capacity, which has received relatively little attention in the literature (Dale et al. 2000). The case study for our analysis is the management of a wetland landscape of southern Sweden in a semi-urban region. This case has been chosen because it appears to be an example of successful collaboration for ecosystem and landscape management and illuminates many theoretical concerns of adaptive co-management and resilience of social-ecological system.

What factors are important for an *adequate* social response (according to our normative assumptions)? First, ecological knowledge and understanding of ecosystems and their dynamics is fundamental and the role of local stewardship associations and multiple knowledge systems in this context has recently been emphasized (Olsson and Folke 2001, Human Ecology paper). Second, such knowledge must be manifested in management practices and management organizations (Berkes and Folke 1998). Third, these management practices and organizations must be incorporated into, or at least allowed by, rules and regulations at different societal levels (ref?). Fourth, to be sustainable, management organizations

and rules need to be perceived as socially legitimate which in turn is facilitated by a shared understanding (worldview) among actors of the interconnectedness between social and ecological systems (ref?). Fifth, institutional and organizational flexibility is important in order to cope with the variability of environmental and social change (Duit 2002). Last, there are in general several layers of overlapping institutions involved in governing complex ecosystems and the services that they generate (Ostrom et al. 2002). Some authors refer to such governance as adaptive co-management of ecosystems (Olsson et al. 2004).

Often there is a mismatch between the scale of management and regulation on the one hand and the ecological scales on the other, resulting in policy responses on organizational levels that are inadequate to the scale and dynamics of ecosystems functioning (Wells 1998, Gunderson and Holling 2002). This mismatch is referred to as the problem of ecosystem and institutional fit (Folke et al. 1997, Brown 2003).

Wells (1998) suggest four general options for improving the institutional framework for ecosystem management and biodiversity conservation:

- decentralization of resource management decision making;
- engaging and reorienting government institutions;
- establishing new national and international institutions; and
- establishing functional linkages between key institutional actors.

In this paper we will provide fine-grain information on the social dynamics underlying a local response for ecosystem management, thus addressing the first, second, and fourth options suggested by Wells. We assess the factors and conditions that have been suggested by previous research to be important for an adequate social response. For instance, based on a sample of ten case studies, Peterson and others (2003?) found that experience of crises, shared understanding, acknowledgement of multiple knowledge systems, incentives for monitoring, institutional fit (scale matching), and legitimacy of past conflict resolution had positive correlation with innovative responses to ecosystem change. Olsson et al. (2004) identified essential conditions for creating adaptive co-management and building the resilience of social-ecological systems. These include:

- *Vision, leadership and trust*
- *Enabling legislation that creates social space for ecosystem management*
- *Funds for responding to environmental change and for remedial action*
- *Monitoring and responding to environmental feedback*
- *Information flow through social networks*
- *The combination of various sources of information and knowledge*
- *Sense-making for ecosystem management*
- *Arenas of collaborative learning for ecosystem management*

All of the propositions suggested above are to be seen as attempts to capture complex relationships in SESs that appear to be crucial for an adequate social response. Such components will always vary depending on the socio-political context.

The aim of this article is to describe and analyze how a diversity of actors within a municipality and landscape of southern Sweden has organized social responses to deal

with ecosystem change. This case has been chosen because it appears to be an example of successful collaboration among self-organized local groups and other levels of governance. It thereby illuminates many theoretical concerns of adaptive co-management and resilience of social-ecological system. The emergence of the adaptive co-management system in southern Sweden is described in Olsson et al. (2003).

Regarding scope and scale, we analyze the organizational aspects of the social responses to ongoing ecosystem dynamics at a local level. The ecosystem dynamics is local but the driving forces, socio-economic as well as ecological, appear on all levels and across scales. The social response is a result of self-organization at the local level but today it involves organizations and institutions at municipal, county, national, and international levels. We focus our analysis on the social network that has emerged at local level with the purpose to nurture the cultural and biological landscape and that transformed the social-ecological system into ecosystem management. The analytical focus is on informal institutions, since the organizational changes have taken place within the existing legal framework.

The first section provides a description of the area as well as methods and definitions used in the analysis. In section II, we examine the organizational structure of Kristianstads Vattenrike (KV) and describe the role of EKV in coordinating and engaging local actors and local steward association in the ecosystem management process. In section III, we examine horizontal collaboration with local stakeholders. (how does a social network emerge..) In section IV, we analyze preference formation and trust building that appears to be vital for identifying win-win situations. In section V, we examine vertical integration in polycentric institutions. These sections include both descriptive and analytical parts. Important findings are discussed in sections VI and conclusions are made in sections VII.

Methods and definitions

To understand the organizational structure of KV we have read policy proposals and conducted several semi-structured deep interviews. We chose two projects for closer examination and used the snowball method (källa?)
to select interviewees. Results from interviews have been triangulated by other interviews as well as municipal protocols and other official records.
(Needs to be developed)
We define a SES as the link between four systems: knowledge and understanding of resource and ecosystem dynamics, Develop management that interpret and respond to ecosystem feedback, Support flexible organizations and institutions and adaptive management processes the functions and dynamics of an ecosystem, the knowledge of ecosystem dynamics the management practices of this ecosystem, behind this management, and the institutions (social norms and rules) underlying management.
We define the legal framework and other official rules as the formal institutions (or institutional arrangements) of a society, while conventions and social norms of behavior are defined as informal institutions (Bromley 1989, North 1990).
Organizations also provide structure but should be regarded as the actors or “players” rather than the rules. This distinction between institutions and organizations is crucial. Organizations are constructed according to the institutional framework but they may also put pressure to change this framework. Institutional change in general, and

property rights changes in particular, is therefore the interplay between organizations and institutions (North 1990).
Polycentric institutions … E. Ostrom 1998 , V. Ostrom 1999, McGinnis 2000,
how it is related to adaptive co-management…
Adaptive management = scientific learning by doing/experimenting, not including multiple knowledge systems or polycentric institutions
co-management = existence of polycentric institutions = not learning, only shared responsibility
Here we mix these two = adaptive co-management implies collaborative learning
participation not= collaboration…

(Per, kan du skriva nåt klokt om detta, reda ut denna konceptuella röra? Eventuellt flyttas delar av detta till avsnitt 5 "Vertical integration in polycentric institutions")

Stakeholder eller actors
Local steward association – viktigt att lansera detta begrepp eftersom det var ett nyckelargument för vår studie inom MA.
Self-organization
Social Networks
Collaborative learning is defined as ..(Ljung 2001, p 179).

The case study

Kristianstads Vattenrike[1] is the name of an area around Helgeå River in southern Sweden that stretches thirty-five kilometers from upstream forests, through agricultural land, wetlands, and the city of Kristianstad to the Hanö Bay, a coastal area of the Baltic Sea (Figure 2). The whole drainage basin of Helgeå River is 4,775 square kilometers. The lower part of this area (1,110 square kilometers) belong to the Municipality of Kristianstad and this area is referred to as Kristianstads Vattenrike (KV).[2] The core of KV (80 square kilometers) is listed by the Ramsar Convention on Wetlands and contains flooded meadows as well as two shallow lakes. The agricultural area of Kristianstad is among the most productive in Sweden. The wetland areas are located within walking distance from the city of Kristianstad with about 28,000 inhabitants. There are 75,000 inhabitants in the municipality which translates to a density of 56 persons per square kilometer.

Figure 2. Kristianstads Vattenrike

The most characteristic feature of KV is that large parts of the wetland area are used for pastures (950 ha) and hay harvesting (450 ha). Due to an annual average water fluctuation of 1.4 meters, these meadows are flooded in fall and early spring and can thus only be used for agriculture in summer. The lower demarcation of the flooded meadows is the summer brink of the Helgeå water system and the upper demarcation is where permanent agricultural is possible. Most of the flooded area in between have been used for agricultural purposes for centuries and have unique cultural-historical values (Cronert, 1991). Other important habitats include large beech forests, wet

[1] The English name is Kristianstad Wetlands. Kristianstads Vattenrike roughly translates as "The Kristianstad Water Realm," but *rike* also means riches; the double meaning of the name both defines the catchment area and reflects its rich natural values.
[2] The area of Kristianstad municipality is 1,346 km².

forests, willow bushes and sandy grasslands with unique flora and fauna. The area also holds the largest groundwater reserve in northern Europe.

KV is known for its rich fauna and flora including rare plant species such as fen ragwort (*Senecio paludosus*) and river water-crowfoot (*Ranunculus fluitans*). KV also boasts an array of fauna including 40 [7] fish species, 6 [2] amphibians, 260 [31] bird species, 11 [4] bat species, and an abundance of insects and mollusks (IUCN red listed species within brackets). Some of the area's unique flora and fauna were described by Swedish botanist Carl von Linné on his journey through Scania in 1749 (Linné 1751) and the natural beauty and outstanding values of the lower Helgeå River have been described by several Swedish authors including Carl Fries (1958).

KV is in the final stages of becoming the first UNESCO Man and the Biosphere (MAB) Reserve in Sweden fulfilling the Sevilla requirements.

KV is also the name of a collaborative network established in 1989 when the municipality set up a new informal administration called the Ecomuseum of Kristianstads Vattenrike (EKV). Several events coincided making the establishment of KV and EKV possible; the historical process has been analyzed by Olsson, Hahn, and Folke (2004).
In 1989, the Municipality of Kristianstad decided to establish Kristianstads Vattenrike (KV) as a project organization and employ Sven-Erik Magnusson as the director of the office Ecomuseum Kristianstads Vattenrike (EKV). The purpose of KV is to preserve the ecological values and cultural heritage connected to water, recreate values that have been lost, and use the natural resources for economic purposes in a way that sustain the values. [3]

II. A flexible and adaptive network organization

KV consists of several projects related to nature conservation, education, and ecotourism. EKV is the agent that determines what projects are conducted in the name of KV. The idea of establishing KV emerged from interactions of different stakeholders/actors? in the region. The key individuals in the conservation projects of EKV, Magnusson and Hans Cronert, were formerly employees at the county museum and the county administration board respectively.

Magnusson created the social network of individuals that constitute KV and is still the director of EKV, which is the central node of this network. As expected for a local case study (Hoff 1998), key individuals are more important for the networking and collaboration than the organizational structure. Or rather, the organizational structure is a result of a self-organizing process coordinated by a few key individuals.

The major role for EKV is to coordinate activities related to the water resources. There are five sections of collaboration within KV:[4]

1. Nature conservation,
2. Environmental protection,

[3] Background info of KV in English is provided by EKV at http://www.vattenriket.kristianstad.se/engelska.htm.
[4] http://www.vattenriket.kristianstad.se/folder/vattenriket.pdf (Swedish, English, and German)

3. Ecotourism and recreation,
4. Education and the Nature School, and
5. Cultural heritage management.

In this paper we focus on the first section, nature conservation, which dominates the work of EKV and which is the only section of KV that has regular meetings. *The consultancy group for nature conservation* emerged as an informal group in 1990 but was formalized by appointed members from the municipal executive board and the county administration board (CAB), in November 1997. It includes representatives from the municipal executive board, several municipal administrations, the CAB, the local branches of The Federation of Swedish Farmers (LRF) and The Nature Conservation Association (SNF), the bird-watching association, the motorboat association, two fishing associations, and one hunting association. The consultancy group identifies conflicts and discusses policy proposals, usually prepared by EKV, before the municipal executive board accepts the proposals. With a few meetings per year, the consultancy group represents the most institutionalized form of collaboration within KV, yet they have no decision-making or enforcement status.

Magnusson identified the five sections mentioned above when KV was established in 1989 (Olsson, Hahn, and Folke, 2004). The explicit strategy was to identify diverse values of, and common interests in, the natural water regime so that representatives for farming, recreation, tourism, and cultural heritage would perceive nature conservation as a means to reach their own goals (win-win-situations). His vision was to "…bring together all aspects of water management – the lakes, streams, creeks, dams, flooded meadows, and the Hanö Bay – to a conceptual wholistic approach and change the notion of the wetland area as a 'water-sick area' to a 'water-rich area" (Magnusson, pers. comm.). When communicating the richness of KV, EKV makes heavy use of a citation by a famous Swedish author calling the area around Kristianstad a "water realm" (Fries 1963)[5]

Besides Magnusson, the staff at EKV working with policy, collaboration, and administration consists of Hans Cronert and Karin Magntorn. Dom andra?? Cronert works half-time for EKV and half-time for the CAB. He is coordinator for the nature conservation section for KV and the one who does most of the local collaboration. Magntorn initiated the nature school and is nowadays information secretary at the Biosphere Candidate Office that has been established following the application of KV to become a Biosphere Reserve. Most of the physical outdoor museum[6] with trails, foot-bridges, and exhibitions were built during the economic recession in the beginning of the 1990s by unemployment programs. Today there are still a few persons at EKV maintaining and developing the outdoor museum. The outdoor museum functions as a learning area with extensive monitoring of biodiversity and ecosystem conditions and functioning????

EKV functions *de facto* like a small informal municipal administration, reporting directly to the municipal executive board. Contrary to ordinary municipal administrations, there is no law regulating EKV and it has no mandate to enforce

[5] e.g. http://www.vattenriket.kristianstad.se/engelska.htm (background info of KV in English)

[6] This physical manifestation of Kristianstads Vattenrike is also called "the Ecomuseum." It consists of 25 visitors' stations in the area.

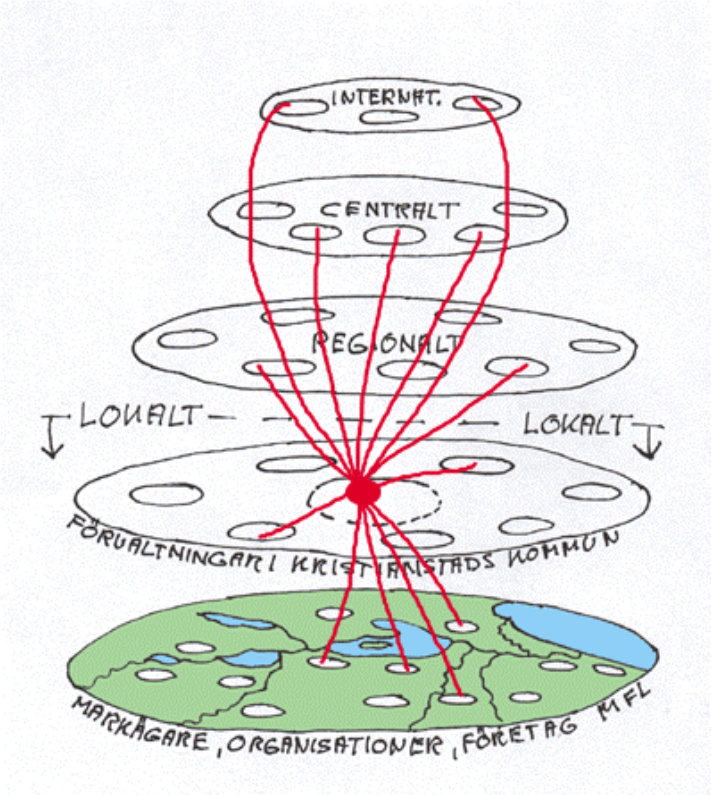
rules. This gives EKV an unusual free mandate but it is also a source of vulnerability. As the director Magnusson puts it, "there is no ceiling and no floor when it comes to what to do; if we don't flap we'll sink... We exist only as long as people within the municipality like our work." p. 40[7]

It is probably unrealistic to expect a Swedish municipality to set aside a larger staff than this to coordinate an ecosystem management project like KV. To get access to larger resources within the municipality, EKV tries to make various ecosystem management projects appear "profitable," in terms of fulfilling non-monetary goals, for the municipal administrations concerned with education, environmental protection, and development. As Magnusson puts it: "You must present your idea so they see why it's worthwhile to cooperate. Win-win situations are necessary." EKV is also supported by external funds from e.g. WWF, NV,???

At present, KV has around 20 projects running. However, not all projects are active at the same time and the collaborators within each project meet only when they perceive an issue as pressing. EKV takes part in all projects and offer an arena for collaborative learning and conflict resolution. Policy issues for those projects concerning nature conservation are discussed by the consultancy group for nature conservation and this group is the most institutionalized part of KV.

Each project has a unique social network that is coordinated, but not necessarily administered, by EKV. The project *Flooded meadows* is the largest one and its network is illustrated in Figure 3.

[7] pages refers to Kristin's interviews



International Scale:
Poland
Denmark
National Scale:
Local Investment Program
WWF
EPA
Stockholm University
Regional Scale:
County Adm. Board
Farmers´ organizations
Municipal Scale:
EKV
Municipal Administrations
Sub-municipal Scale:
Farmers/Landowners
Local Business
Local Steward Organizations

Figure 3. The social network or policy community for the project flooded meadows of Kristianstads Vattenrike (KV). For instance, experiences of wetland management has been gathered from Poland and Denmark. Each node includes one or several key individuals, often employed by an organization. Ecomuseum Kristianstads Vattenrike (EKV) is the central node of the network. The cross-scale collaboration has started as informal contacts by EKV and has sometimes become formalized by contracts and joint ventures. Thus this policy community involves multi-layered (polycentric) institutions (modified after Magnusson 2002. [8])

KV has emerged and functions today as an adhocracy, i.e project driven (Mintzberg 1979. In the management literature, the work life of managers was described as a rational process of planning, controlling, and coordinating until the 1970s (Westley 2002:334). A decentralized organic project structure was named “ad-hocracy” by Toffler (1970). Adhocracy has been suggested by Mintzberg (1979) as one of five organizational types, the other being simple structure, machine bureaucracy, professional bureaucracy, and divisionalized form. It was suggested to fit the innovative and collaborative organization, “one that is able to fuse experts drawn from different disciplines into smoothly functioning ad hoc project teams”:

> “To innovate means to break away from established patterns. So the innovative organization cannot rely on any form of standardization for coordination. In other words, it must avoid all the trappings of bureaucratic structure, notably sharp divisions of labor, extensive unit differentiation,

[8] http://www.vattenriket.kristianstad.se/presentation/natverk.htm Magnusson in turn developed his figure after meetings with the authors.

> highly formalized behaviors, and an emphasis on planning and control systems…Coordination can no longer be planned but must come through interaction. The structure of the Adhocracy must be flexible, self-renewing, organic. (Mintzberg 1979: 432-33).

Since then a number of writers have highlighted the role of uncertainty, surprise, contextual dynamics, and complexity in managerial decision-making (Westley 2002:334). "Self-organizing adhocracies" have become a common organizational type, for example in Dutch emergency sevices (Scheffer, Westley and others 2002:108) and medical services (Per, referenser???)

The flexibility and adhocracy are typical characteristics of KV. Since the start 1989 there have been several suggestions to subordinate EKV to an ordinary municipal administration. This would reduce the present flexibility and has been resisted by the director: "…then we would have an additional layer or filter to pass in all our contacts. It's better if we can continue to choose, from what is adequate for each specific project, which of the administrative directors or external stakeholders to contact and to cooperate with." p20

The projects often start as initiatives from the EKV staff, such as protection and restoration of flooded meadows, the nature school, the stork project, as well as several smaller nature conservation projects. Some ideas just lie and wait for the right moment to be implemented, e.g. "The Riverboat for tourists" which was an idea by Magnusson that materialized a few years later when an entrepreneur interested in ecotourism turned up.

Another example is a harvest machine for wetlands that was constructed when the state made an opportunity for farmers to apply for investment grants. In this case EKV assisted a farmer, who had a keen interest in this, to write an application. Since then it is the farmer at Hovby meadows (Håkan Olsson) who owns the project; he has developed the technology of harvesting wetlands, using his own network that included a factory in Germany, and constructed the machine (Olsson, pers. comm.). p.22,43,65,66 (these refer to the pages in Kristin's draft)

Other projects are initiated by farmers who perceive problems with cranes or geese (grågås latin?), by fishing organizations who worry about the fish stocks, by the local nature conservation association, or by external partners like the Worldwide Fund for Nature (WWF) or a firm producing potato chips (OLW). A fixed structure with regular meetings for all 20 projects would require a large administration but the staff at EKV has deliberately chosen a flexible project organization to take advantage of sudden changes and respond to these. As Magnusson puts it: "There is no optimal organization, it has to adapt continuously and be flexible. A nucleus of reliable staff is essential, and the competence they lack is borrowed from each specific project."

Two of these projects – the flooded meadows and the cranes – will be discussed in greater detail in the following section as examples of how KV collaborates horizontally.

III. Horizontal collaboration with local stakeholders.

Virtually all literature on "public participation" treats participation in a top-down framework in which the top (government or external donors/researchers) invites local inhabitants to participate in development programs and projects (e.g. Scoones and Thompson 1994, Rocheleau 1994). In this literature, there are two fundamental reasons for participation. One sees it as a means to increase efficiency; if people are involved in a project they are more likely to support it. The other view regards participation as a fundamental right, aiming at empowerment (Pretty 1995).

In western societies, public participation is increasingly being employed for sustainable community development (Hoff 1998, Röling and Wagemakers 1998, Ljung 2001). However, in this literature *collaborative learning* is more often used to describe participatory endeavors.

The social network organization of KV is a good example of collaborative learning. The horizontal collaboration that we describe and analyze here takes place at the municipal and sub-municipal levels between landowners, municipal administrations, local steward associations, and EKV which is the central actor initiating and coordinating most projects.

Cronert is in charge of the section nature conservation and he describes the working methodology of EKV as three steps:

- Assessment of conservation and other values.
- Connecting to potential collaborators – mainly landowners or tenants on land with high values.
- Further contacts with the municipality and at higher organizational levels.

To assess this we describe two projects involving substantial collaboration. The crucial components of collaboration are further analyzed in section IV.

The flooded meadows project

Kommentar: Något tydligt exempel behövs för hur KV monitor, interpret and respond to signals of ecosystem change

The size and character of the flooded meadows of Kristianstad – the historical continuity of agricultural use – are unique in a north-western European context (Cronert, 2001).[9] The practice of using flooded meadows for hay-making and grazing declined rapidly in Sweden last century due to low profitability. Kristianstad was an exception; thanks to the annual floods rich in nutrients, as much as 800 ha were still used in 1989 as pastures and 400 ha for hay making, including some post-harvest grazing (Magnusson, Andersson, and Vägren, 1989).[10] By 1996 these figures had increased to 950 ha and 450 ha respectively and the quality of management had increased dramatically.[11]

[9] Handlingsprogram 2001-2003.
[10] Magnusson, Andersson, and Vägren, 1989. Spoven, Supplement nr 1. Nordöstra Skånes Fågelklubb.
[11] Wendt-Rasch and Cronert, 1996. Helgeåns nedre vattenområde. Spoven Supplement nr 5/KV.

The municipality was not aware of the uniqueness of their flooded meadows until several inventories, combining maps on cultural heritage with maps on land-use practices, were conducted 1986-1989. Magnusson was involved in these inventories together with bird-watchers who had monitored declining waterfowl populations. Realizing that the values of the flooded meadows can only be sustained by active management became the starting point of KV in 1989 (Olsson, Hahn, and Folke 2003).

Restoration of flooded meadows can be subsidized by the EU:s Common Agricultural Policy (CAP) by 1,000 Euro per year and hectare for a five-year period. This is much more than for most conservation projects but changes in the CAP also represents a major source of vulnerability.

Restoration includes clearing bushes and reeds and then fencing the meadows for cattle. The farmers we have interviewed appreciate flooded meadows and contact with water. The farmer at Hovby meadows said: "Today we can see the lake. When I was a child we could only see the reed, my father did not dare to harvest near the water given the technology he had. At the time of my grandfather they harvested by hand with a scythe and today we are harvesting the water brink again but with my new machine. Apart from the aesthetic values we gain fodder or grazing land. Besides, the number of birds and other animals has increased." (Olsson, pers. comm.). p75

EKV combines and incorporates the local skills and knowledge of a variety of stakeholders/actors who have been observing and interacting with the ecosystems of KV. For example, EKV maintains a close collaborative relationship with farmers, utilizing their knowledge and understanding of agricultural practices that often has been developed and passed on from generation to generation. An example of such collaboration is the adjustment of grazing pressure on flooded meadows in relation to biodiversity. If only grazed by cattle the ground takes on a tussocky surface; if grazed by horses it develops a smooth even surface (instead of grazing by horses, the wet grassland can be mowed to acquire the same result). Some bird species are dependent on a mixture of the two types of surfaces. The use of horses is returning in the landscape after declining till the 1970's. EKV uses inventories to increase farmers' awareness of the unique values of their land in a larger context. The inventories are important for continuously "tuning" management practices to secure goals. [12]

The flooded meadows project consists of several parts, each embracing one or several landowners or tenants. In 1989 EKV chose to focus on six areas for restoration. The municipality and the county administration board agreed to finance Cronert's work with this project for one year (this has become a long-term solution) and the Worldwide Fund for Nature (WWF) agreed to pay other project costs. Pulken meadows were chosen by EKV as a pilot and the farmer, Ulf Börjesson, showed interest.

Rinkaby meadows were not initially on the list because it was a common-pool land owned by several farmers and the power transmission lines above these meadows facilitate for crows to prey on wading birds. But one dedicated farmer, Mikael Hove,

[12] Hela stycket är kopierat från historie-artikeln

contacted EKV and managed to convince his neighbors and rented the meadows from them. Here, EKV only assisted in the clearing of reed and bushes before Hove's cattle could start grazing (Cronert, pers. comm.) p.49-50

Horna meadows were also an initiative by a landowner. Inspired by neighboring Rinkaby meadows, Mats Larsson at Horna meadows contacted EKV to explore the opportunities of restoring the flooded meadows on the common-pool wetlands at Horna. Larsson has functioned as a mediator and convinced his five co-owners to rent the wetland to the farmer from Rinkaby. Larsson is, however, very critical to turning private land into nature reserves an issue that we will revisit later. p.45-47

According to Larsson, all landowners at Horna agree that euthrophied and overgrown wetlands look horrible. However, some want to make embankments in order to transform some of the wetlands to arable land. Embankments may not, however, be allowed because of the Convention of Wetlands. Hence, this would entail conflicts with the county administration board (CAB). The CAB has two roles, enforcement of rules and supplier of grants. Larsson regards this as an opportunity: "If we landowners handle this properly, we may gain a lot." p. 47-49

These sub-projects have faced various conflicts. One source of conflict has been the stiff EU-regulation requesting farmers to pay back several years of received EU grants if an unusual high water level one year made the decided management plan very difficult or impossible to implement. Fortunately, the present EU program is more flexible (Cronert, pers. comm.). p37 Another source of conflict has been that the EU grants require that no chemical fertilizers or pesticides are used on flooded meadows. The Pulken farmer told us that "some farmers think the meadows don't provide enough fodder without fertilizers. But EKV supports this prohibition. This is the only conflict with EKV that I've heard about" (Börjesson, pers. comm.). p64

The most serious conflict on flooded meadows concerns the merits of nature reserves. We will return to this in section IV.

The crane project

KV has 150,000 visits each year including hundreds of school classes, other local inhabitants, researchers, and ecotourists from outside the region. An increasing number of visitors are bird-watchers and cranes are very popular. There have always been cranes in KV but since spring 1997 their number has increased. The farmers who were most affected were unhappy although the CAB may compensate severe damages.

The first meeting on this issue took place on October 8, 1997 between the bird-watching association and EKV. It was decided to contact ornothologists and farmers from Hornborgarsjön, the most famous Swedish bird-watching lake, to learn from their experience. The crane group was initiated at a meeting on December 1, 1997, where experiences from Hornborgarsjön were presented and strategies for Kristianstad discussed (protocol of the Crane group, 1997-12-01). Three farmers participated, including the chairman of the local division of the Federation of Swedish Farmers (LRF), together with three representatives from the bird-watching association as well as Magnusson and Cronert at EKV.

The crane project is a spin-off from the flooded meadows project, partly using the same social network. Information of the emerging potential conflict between birdwatchers and farmers reached Cronert at an early stage through his ordinary contacts with farmers. Cronert and Magnusson had personal talks with individual farmers to avoid stereotypes and "lift the discussion" prior to the first meeting. Not all affected farmers were invited to the initial meetings. Through the early response, a conflict escalation was forestalled according to Magnusson: "Had we not acted and gathered this first meeting, the farmers' organization would probably have developed their own policy and strategy only looking at their own interests."

The farmer Ulf Börjesson has been involved in the flooded meadows project since the beginning and since 1998 also in the crane project. In Sweden, crane-hunting is prohibited so Börjesson and other farmers "used to drive around on our land trying to chase them away to other lands. EKV contacted some of us to find out a solution considering several interests… Cronert asked for a coordinator and an old farmer, Carl Andersson, volunteered" (Börjesson, pers. comm.). p.53

A farmer from Hornborgarsjön and a manager from the Swedish EPA that cooperates with farmers around Hornborgarsjön on bird issues participated in the next meeting of the crane group in March 1998. Börjesson showed interest in feeding the cranes on his lands if they would land there. It was decided to monitor the behavior of the cranes and develop a response strategy for 1999. In 1998, Carl Andersson, the new member of the crane group, spread cereals on a piece of land to attract the cranes. However, the cranes did not respond to that. Since then they have tried to follow the cranes by feeding them with cereals as soon as they have landed. It works like an adaptive management project or, in the words of Börjesson:

> "Carl Andersson consults the landowner/tenant before he spreads cereals [paid by the CAB]. But if the next group of cranes has chosen other fields, it's not easy to steer them… We knew how they have solved this around Hornborgarsjön. They [also] feed cranes to prevent damage on other arable lands. A farmer from Hornborgarsjön came down to share his experiences. But we learn mostly from our own experiences, if something doesn't work one year we try something else next year. We learn together but we still have a lot to learn." p.54

Inviting a farmer from Hornborgarsjön was Magnusson's idea and part of the trust-building process: "A farmer is more likely to accept information given by another farmer than from a conservationist. The best thing is if people who speak the same 'language' share knowledge and enthusiasm. This is a general strategy." (Magnusson, pers. comm.)

Magnusson strives to control the collaborative process by inviting individuals selectively. When asked why a specific farmer, who had problems with cranes, was not invited to the group, Börjesson replied:

> "Last year he had cranes but no severe problems, but he borrowed some of the new kinds of scarecrows that we have bought. I was there to assist him. I think he is positive because we have helped him and I haven't heard otherwise.

> That's what we are for, to help other farmers who suffer from cranes… It was Cronert and Magnusson who gathered those farmers they knew had problems with cranes, the goal was never to gather everyone who was affected." (Börjesson, pers. comm.) p.54

(I will call that farmer to verify this story)

In October 2002, the crane group made a study trip to northern Germany (Stralsund) to take part of their experiences in handling large concentrations of cranes. The county administration board provided funding for the trip (Magnusson and Magntorn 2002). However, this should not be interpreted as an institutionalization of the crane group. KV is an adhocracy and the crane group is no exception. The Pulken farmer explained:

> "If the problems of cranes disappear then the crane group will also vanish. We don't have any board, we just meet… When the problems with gray geese emerged the other year, some farmers thought the crane group should look after the geese as well. But Cronert argued that they [those affected by geese] should make a new group because nobody in the crane group is paid, we are all volunteers." (Ulf Börjesson, pers. comm.).

Farmers get monetary compensation and self-esteem for participating in the crane project while nature conservation is enriched and the tourist administration is happy. One farmer witnesses how the project has transformed his identity:

> "We have started arranging bird-watching events on our land… It feels good because we farmers have not generally a good reputation – 'farmers always complain although they live on subsidies and produce the wrong stuff' – but the involvement in KV is only positive. They lift us to the sky. We have an interest in nature and we can make money on it! It's fun, I think everybody agrees." (Olsson, pers. comm.)

Environmental degradation erodes ecosystem capacity while conflict escalation may erode the learning environment and trust – both parts of the social capital[13] – vital for maintaining social capacity (Folke, Colding, and Berkes 2003). The crane project is an example of the importance of early response. It seems to have forestalled conflict escalation and thus deterioration of social capacity needed to maintain and strengthen the capacity of an ecosystem to provide goods and services important for societal development at all scales.

HIT 27/11

IV. Preference formation and trust building

Our findings from studying these two and other KV-projects suggest that there are at least four aspects characterizing how EKV collaborates with other stakeholders:

[13] In a book chapter by Scheffer and others (2002), Frances Westley puts social capital in the framework of resilience theory.

a) careful selection of what individuals are invited to a project
b) communicating scientific knowledge for preference formation
c) trust building across knowledge systems
d) securing victories by formalizing collaboration

a) careful selection of what individuals are invited to a project

EKV is very selective in the way they invite other stakeholders to different projects. A project starts by personal meetings with individuals from the most important stakeholder groups. After having established a good relation they extend the group. We refer to this as *collaboration by gradual selection*. As Magnusson puts it: "We don't invite negative individuals in the beginning of the process; increased knowledge and enthusiasm among the positive individuals take care of them later… Sooner or later we have to face the negative farmers but often they approve when they see how it works and that their neighbors are positive."

The opposite would be inviting a lot of people that you have not met earlier to an unconditional meeting but this is unthinkable for EKV:

> "That is the worst thing you can do. Having talked to so many people out in the district we realize what bombs that might be dropped if we were to bring everybody together for a large meeting. There is always someone who is very negative, and if that person shows up, it is to show his discontent, starting by rambling on about all the wrongs the authorities have done since the 1960s... The control over the meeting would vanish into a chaos that wouldn´t favour anyone and this would result in an even more polarized situation between the ones with a negative attitude and the ones with an extremly positive attitude. You can´t say that someone is right or wrong. It´s their views! It´s all about trying to bring together these opinions in a coherent way so that we can push the question forward. I mean, you don´t gather people if you don´t think anything positive will come out of the meeting." (Magnusson, pers. comm.). p.25

When asked on what grounds individual stakeholders are selected, Magnusson suggests five criteria without hesitation:

- Positive attitude to conservation
- Cooperative skills
- Competence on the issue and respected for this competence
- Strategic position within organizations and networks and respected therefore
- Access to special resources, e.g. a farm with good conservation potential

When selecting partners, Magnusson says that usually one or two of these are enough. Nowadays they have a network of individuals with whom they have already established a trustful relation. One project is the spin-off of another. In vertical collaboration he claims that the same criteria are relevant, although enthusiasm is not enough, they must be a driving force too. If he knows no individual at an authority, he asks for personal meetings. Magnusson strives to obtain control of the whole process

because he has "bad experience of individuals who start off well but then walk astray and give KV bad publicity; this is detrimental to KV, just like for any business!"

For conservation issues, EKV looks for two things: which land has greatest conservation values and which land is owned or managed by the municipality or positive farmers. Conservation projects are started in the intersection.

b) communicating scientific knowledge for preference formation

It is difficult to argue for nature conservation and ecosystem management without scientific support. Different stakeholders within KV – EKV, the birdwatching association, the nature conservation association, and a fishing association – have conducted or initiated scientific inventories of e.g. gullstånd (*Senecio paludosus*),[14] pondweeds (*Potamogeton*),[15] riverpearl mussels (*Margaritifera margaritifera*), European catfish (*Silurus glanis*), land molluscs,[16] pikes,[17] strandpaddor/toads? (*Bufo calamita*),[18] bats, dragonflies,[19] and flooded meadows of course.[20] A comprehensive literature list (some with English summaries) can be found on their homepages. Besides, EKV has collected a list of all birds spotted in the area.[21]

In contacts with other stakeholders concerning conservation issues, EKV refers to this ecological knowledge. They also refer to national and international assessments to convince people about the special biodiversity values that exists around Kristianstad. The explicit tactics is apparently to make others interested in the substantive issues (conservation ecology, cultural heritage, ecotourism). Our results suggest that new ecological knowledge and insights have contributed to changing values (preference formation), built trust, and facilitated conflict resolution. In the words of Magnusson: "When the farmers start asking questions about bird populations etc. then I know the trust building process has started."

Community visioning is a term that has been used to describe a process in which many members of a community participate with the purpose of building a community-wide consensus for change. The participants imagine their desired future and formulate goals for how that future might be attained. It allows "members of a community to identify shared values and recognize areas of common concern... It encourages new ways of thinking beyond immediate problems" (Dukes 1996, p. 67).

Community visioning and conflict resolution may be contrasted to conflict *management* which has been defined as a static paradigm in which parties seek to maximize their individual gains and compete for fixed portions of the pie, and where the goal is to channel conflicts into *compromises*:

[14] http://www.vattenriket.kristianstad.se/litteratur/flora/gullstands2.pdf (English summ.)
[15] http://www.vattenriket.kristianstad.se/litteratur/flora/dykungen.pdf (English summ.)
[16] http://www.vattenriket.kristianstad.se/naturvard/pdf/mollusker_aug01.pdf (English summ.)
[17] http://www.vattenriket.kristianstad.se/litteratur/fisk/gadda.pdf
[18] http://www.vattenriket.kristianstad.se/litteratur/pdf/Grodrapport2001_ejkarta.pdf
[19] http://www.vattenriket.kristianstad.se/litteratur/trollslandor_02/trollslandor_hela.pdf
[20] http://www.vattenriket.kristianstad.se/naturvard/pdf/Hammarsjon2.pdf
[21] http://www.vattenriket.kristianstad.se/birds/excel/krvr_birds.pdf

> The ideology of management offers a decidedly unsatisfactory future for the public conflict resolution field... Public conflict resolution is not limited to the settlement of disputes; rather, it is a vehicle for transforming citizenry, communities, and the private and public institutions of contemporary democratic society (Dukes 1996, pp. 6-7, 115).

KV was not launched as a community visioning. Still, several aspects of the EKV approach can be described in similar terms. They try hard to avoid positioning of viewpoints and compromises between fixed preferences. They have no legal mandate to force anybody but offer an arena for collaborative learning with the explicit goal of identifying shared values and common interests, and hence transforming the mental models towards ecosystems management.

Since only a few representatives from some stakeholder groups are invited to collaborate, we refer to KV as a policy community (ref?). KV is a small, informal network of key individuals that grows organically, slow enough to allow EKV to control the process. We regard this as an adaptation to the social context of Kristianstad: this is a highly heterogenous community in which a majority have no direct link or interest in natural resource management. However, communicating ecological knowledge is just one component of preference formation. A more crucial component appears to be trust building.

c) trust building across knowledge systems

(Bör lantbrukare anges vid namn eller platstillhörighet??)

Clearly, EKV has its own agenda of what alternative future is desirable. However, they have no formal power to make other stakeholders accept their agenda. Their tools appear to be information sharing and building enthusiasm and trust. Magnusson, the director of EKV, believes there are more things that unite the different stakeholders than divide them and therefore they try to avoid building trenches (skyttegravar). He thinks most disagreements depend on misunderstanding or lack of knowledge, but under this there are sometimes fundamentally divergent opinions on for instance hunting. He believes "it's important to be sensitive at an early stage, if people take positions and make statements early, it may be difficult to change. Some degrees of early deviation cause miles off the [right] track later." p.16, 26

To assess the trust building generated by EKV we asked several of the farmers involved in the flooded meadows project and the crane project what they thought of EKV. The farmer at Pulken said: "Cronert is the coordinator [of our flooded meadows project], he is the spider in the web. I think he's good, he's really engaged, bird-watcher and scientist and whatever. Actually I don't know what education he has, he's probably ornothologist, he's extremely enthusiastic. Not like me, I just live here and cultivate the land. I have also an interest but his interest is more genuine."

Börjesson p59-60

The landowner at Horna agreed: "Many of us at Horna meadows have experienced the overgrowing of the water brink. And we have seen the effects of KV, today we have a much better bird-life. I think everybody agrees with the aim of KV, there is no

conflict about this. They have built trust. However, they must be careful not to lose it." Larsson p65

EKV has a small staff and is often asked to guide groups around the outdoor museum. However, rather than employing an additional person to do that and finance it through guiding fees, they prefer that private entrepreneurs take the opportunity and generate incomes from ecotourism. EKV has also assisted farmers in applying for different grants. The farmer who developed the harvest machine said:

"In contacts with authorities Cronert is very helpful because I speak one language and they speak another. Without cooperation this doesn't work. Previously I was almost afraid of authorities, it felt so bureaucratic somehow. But now thanks to this project I have learnt a lot and I have a completely different view… I used to perceive authorities as a pressure from above but now it's more like we all sit in the same boat. Cronert may have said 'this is how I want it' and I've replied 'I disagree, why do you want that?' We've had an open communication where everybody's opinion has the same value." Olsson p58-59

The trust building appears to be the key issue when describing collaboration. Cronert points out: "They [the farmers] tell us a lot about previous conflicts on conservation issues. I feel this dialogue is one of the biggest differences compared to previous relations." p.11

The non-legal status of EKV is appreciated by the landowner at Horna: "The first time I met Magnusson he told me that their method is to talk to people, try to identify common interests and start projects in common… I have great trust in both of them [Cronert too], they belong to the municipality authority but I think everybody feels they work differently." p60

[This is confirmed by another farmer, who is chairman of a local fishing association. He has been in conflict with the municipality for decades (?) but is full of admiration.. (ref to Per's article with interviews of Jan Göransson??]

The farmer at Horna is an engineer who moved from Stockholm to take over a family farm after Kristianstads Vattenrike was launched. He lives on the farm but lets the agricultural enterprise. Although generally positive to the approach of EKV, he is skeptical about the merits of nature reserves. Nature reserves are the most common institution for nature conservation.[22] Of KVs 110,000 ha only about one per cent is protected as nature reserves.

A land or water area can be declared a nature reserve by the county administration board (CAB)[23] with the purpose to protect bio-diversity, satisfy recreational needs, or conserve, restore, or create valuable biotopes (Environmental Act, 7:4). The CAB

[22] The area of Sweden is 45 million hectares (ha) and of this x ha are nature reserves and national parks. Scania has…

[23] Municipalities may also declare nature reserves, most often for urban green areas that have large recreational values.

decides on a management plan/regulations (Ordinance for Area Protection 1998:1252, 3 §).

When privately owned land is declared a nature reserve, the landowner (or tenant) may receive compensation if the regulations decided by the CAB considerably interferes with "on-going land-use." Whether prohibition to use chemical fertilizers qualifies for compensation has not yet been resolved in Sweden.[24] However, farmers who receive environmental support from the EU agricultural policy (CAP) receive no extra compensation from the CAB if their land is turned into a nature reserve, if the CAB-regulations overlap with the requirements to receive environmental support from the CAP. This implies a risk for the farmers since nature reserves are irreversible in practice while CAP support may cease. The farmers within KV and the CAB have, according to Cronert, agreed to postpone the conflict over this issue until the risk is more pertinent.

Indeed, this appears to be one of the biggest conflicts:

> "I think EKV is good at identifying win-win solutions. As landowners we want to protect our lands and we are prepared to considerable efforts for nature conservation. But if the authorities try to tell landowners what to do, then they get nowhere… EKV has succeeded because they listen to the landowners instead of forcing us with rules and legislation. They work from an understanding that you must see to everybody's interest. But the proposal to turn Rinkaby-Horna meadows into a nature reserve made me upset." (Larsson, pers. comm.) p61

Our results suggest that new ecological knowledge and insights have built trust and changed values. This has enabled the identification or creation of win-win situations and conflict resolution. However, the informality of the network organization makes it vulnerable, for instance, if farmers would no longer perceive it as a win-win collaboration they may quit. The question on nature reserves on private land is an issue that may illustrate this vulnerability. Since nature reserves are important for securing nature conservation values, the way EKV manages to resolve this conflict appears to be a crucial test of the effectiveness of their collaborative approach. The next section deals with how the conflict on nature reserves has been resolved.

d) securing victories by formalizing collaboration

The conflict on natural reserves illustrates how a project organization based on informal institutions can use formal institutions. According to Magnusson, laws and plans concerning nature reserves as well as international classifications are important for continuity, to safeguard victories or at least create a friction in the system in case other politicians and civil servants come. They are also important as authoritative support against critics who believe EKV has invented the values of KV. Today, EKV has no mandate to enforces rules and does not want that role: " These laws support our arguments but norms are not set by law. We never use the law to convince other

[24] http://www.naturvardsverket.se/index.php3?main=/dokument/natur/n2000/n2000.html

partners, it makes no positive atmosphere." (vifta med lagar = rött skynke. Hur översätta?).
(Magnusson, pers. comm.) p.34

After national parks, which must be state-owned, nature reserves offers the best legal protection for conservation. However, Larsson at Horna meadows does not support the legal constraints on private property rights that nature reserves implies:

"Cronert really made a mistake when he sent a letter to the landowners of Horna meadows suggesting that the meadows are transformed into a nature reserve and giving us 30 days to respond. This really made me angry. I see it as a mistake the way it was handled by Cronert but on the whole I don't think nature reserves are needed when landowners are interested in conservation." p61

Cronert later apologized for the letter, it was consistent to the law (1998:1252, 24 §) but not to the EKV approach. He agrees that the ideal is if private landowners have interest in conservation but he finds the question of nature reserves very tricky: "Voluntary commitment may last for a very long time but it is also vulnerable, one day you need money and may sell your land... When we reason about the fact that we don't live for ever, things start to happen. Many of the farmers who have put their hearts and souls in the land actually think nature reserves are positive. The work of their lives can be sustained, all the hours they ha ve invested in the lands are secured by nature reserves. The subsidies from the EU are on five-year basis and we cannot know what the next program is like, if it fits flooded meadows. If public support schemes are eroded financially the last land that will be abandoned [for conservation purposes] would be the nature reserves… Larsson is a generally a very positive landowner but on this issue we disagree." p35

Mutual trust is the key component here. For EKV, nature reserves function as insurance since it decreases the dependence on farmers' enthusiasm. For the farmers, nature reserves means increasing dependence on the CAB. In the words of Larsson: "Cronert is a very good person and as long as he is at the CAB I'm not worried. But who comes after him? Imagine if that is a real jerk? National authorities are crowded by jerks who think it's their job to boss people around! p60

Rinkaby-Horna meadows were finally turned into a nature reserve in November 2002. The southern part of Horna meadows, owned by Larsson, an agricultural entrepreneur who grows lettuce, and three other landowners, was not included in the reserve. On Larsson's initiative the landowners made a voluntary agreement not to embank the flooded meadows (which might not be permitted anyway) and asked the CAB for restoration support (1,100 Euro per year and ha for five years) to restore the flooded meadows. The management is the same as a nature reserves would have been but the landowners have not given up the management right to the CAB.

V. Vertical integration in polycentric institutions.

Something about decentralization and polycentric institutions fits here… (instead of in the introduction)

EKV operates on the municipality level. Municipalities in Sweden have a more effectuating/executing role compared to county administration boards (CABs). Municipalities are involved in the practical work of land management and they are generally large landowners. This is a great advantage according to the director:

"The county museum has better competence in producing exhibitions for the outdoor museum but during my time there [before 1989] we had to negotiate with each individual landowner and we did not have access to all the other resources a municipality has. The expert knowledge at municipal administrations is very important; environmental issues, tourism, planning, GIS and so on. CABs have also much competence but more on a theoretical level."

From EKV's point of view there are two reasons to collaborate with public administrations, authorities non-governmental organisations (NGOs) on hierarchies above the municipality level. The first is to get the institutional (legal and moral) protection of the most valuable land, to safeguard victories or at least create a friction in the system in case other politicians and civil servants come, as mentioned above. The second reason is to get financial support for various projects.

As for horizontal collaboration, vertical collaboration is founded on personal contacts with key individuals. An example provided by Magnusson is that previous support from The Swedish National Council for Cultural Affairs (Statens Kulturråd) has eroded because the employees who perceived the cultural heritage values of the flooded meadows retired and were replaced by employees who perceived KV as a purely "green issue" belonging to the environmental sector. Magnusson has learnt that trust building with individuals at authorities is very important, "if they care and understand they can always find money. The Environmental Protection Agency is positive to KV today because they see us as a driving force. Once we had a project that was stopped by another national authority, despite local support. If we'd had as good contacts with some individuals at that authority as we have established with the EPA, this project would not have been stopped."
(Per, har du det exacta citatet, jag tror detta kommer från en gammal intervju)

Through efforts by EKV, KV has received finds fundings from the county administration board, Local Investment Program (a national employment program), the EPA, WWF[25], and OLW (a potato chip company). Their experience is that NGOs are more flexible than national funds, which are generally earmarked to particular predefined purposes. In Magnusson's words:

"Since we have always had a trusting cooperation with WWF, we have been able to call their office in Stockholm and say that we have a farmer who is alert and ask if it´s alright to direct some of the money we were supposed to have for project x to project y instead. Sometimes initiatives are taken by the farmers and if we assess the conservation impacts to be fruitful then we approve. We can seize the moment!

[25] formerly known as the World Wildlife Fund, see http://www.panda.org/about_wwf/who_we_are/history/index.cfm

In 2002 EKV initiated, together with the Swedish Committee for The Man and the Biosphere (MAB), the application process of becoming the second Biosphere Reserve in Sweden (the first one fulfilling the new Sevilla criteria). A Biosphere Reserve is based on the Ecosystem Approach and integrates conservation with local development and support. [26]

The strategy is to submit a full application to, and be accepted by, Unesco in 2004. (Magnusson and Magntorn 2002). The *core area* of a Biosphere Reserve must enjoy legal or quasi-legal protection and this is presently increasing the pressure to safeguard victories by establishing nature reserves within KV. Besides, becoming a MAB Reserve means substantial moral protection for the *whole area*; the borders of the peripheral zone will be identical to the borders of KV, i.e. 1,100 square km.

VI. Discussion

In this paper we search for the underlying organizational and institutional dynamics that promotes and sustains ecosystem management. For local social-ecological systems, like KV, the legal framework is exogenous. Therefore, we have focused on the informal institutional dynamics going on at KV. However, the collaborative activities of KV are governed by formal institutions at various societal levels (Table 1). The interplay between formal and informal institutions appears to be crucial for ecosystem management. If this is handled well, the new EU Water Framework Directive for integrated river basin management for Europe[27] that member states must incorporate in national legislation by 2003 has potential to become a successful example of ecosystem management.

Table 1: Formal and informal institutions of Kristianstads Vattenrike (KV)

Formal institutions	**Level of institution**
Restoration grants	EU
Environmental subsidies	EU
Local Investment Grants	Government
Prohibition of embankment	CAB
Nature Reserves	CAB
Informal institutions	**Central actor**
Arena for collaborative learning	EKV
Arena for conflict resolution	EKV
Assistance in navigating formal institutions	EKV
Trust-building in social networks	EKV

[26] http://unesdoc.unesco.org/images/0011/001197/119790eb.pdf

[27] Directive 2000/60/EC, see http://europa.eu.int/comm/environment/water/water-framework/index_en.html

Based on the literature and the case presented in this article we suggest the following factors to be important for understanding and analyzing the resilience of local social-ecological systems (SESs):

- a vision that puts ecosystem management within a broader social context
- flexible organisation for collaborative learning and conflict resolution
- collaboration by gradual selection of key individuals
- preference formation by problem solving and trust building
- formalising successful collaboration within polycentric institutions
- the dependence of key individuals – vulnerability and opportunity

A vision that puts ecosystem management within a broader social context
The importance of a vision addressing multiple objectives of community-based development has been discussed by Hoff (1998), Olsson, Folke and Berkes (2004).
……

In Kristianstads Vattenrike, a vision for ecosystem management emerged the year before KV was launched as a project in 1989 when concerned local inhabitants tried to formulate a response to a perceived decline in ecosystem services. One crucial component was the cultural heritage mapping in 1989 that provided information about the cultural-historical *and* ecological values of the flooded meadows. Another crucial component was that Magnusson developed the vision in collaboration with key individuals from other sectors (university, elementary school, environmental-technical administration of the municipality, and the tourist office) before presenting the proposal to the municipality executive board. These and other factors contributing to the establishment of KV and EKV have been described in Olsson, Hahn and Folke (2004).

A flexible organisation for collaborative learning and conflict resolution

Theoretical links between ecosystem management and organizational theory have been discussed by Folke (2002) and …

In his seminal article about double-loop learning, Argyris (1977) claimed that "organizational learning is a process of detecting and correcting error." According to Malhotra (1999), a contemporary follower of Argyris, 'best practices' should only be institutionalized during stable or incrementally changing environments [r to K-phase in Figure x] but "when this change is discontinuous [Ω -phase], there is persistent need for continuous examination and renewal [α -phase] of basic premises underlying the 'best practices' stored in organizational knowledge bases." (Malhotra 1999). To strengthen the capacity to anticipate and handle surprise, Malhotra suggests *loose-tight* knowledge systems, which use 'best practices' for optimization based on past experience (tight) but not as benchmarks for guiding the future; this should be live process (loose).

Organizations who operate in a complex environment need to understand and appreciate the fine grain networking and exchange of tacit knowledge that goes on at micro level. The organic school of Knowledge Management treats "the organization as a complex ecology, in which what matters is to understand the underlying values and rule sets around which that ecology is organizing. Then you can start to influence or direct it with a series of micro interventions that create a macro effect" (Barth 2000).

When KV was launched in 1989 it was only a virtual organization; the task of EKV was to develop KV. After 15 years of collaborative learning and emerging social networks it has become a loosely connected project organization based on voluntary participation. The underlying social norms of KV-collaborators are related to ecosystem management and community-based development. Understanding the natural environment, i.e. the ecosystem dynamics related to the hydrological water regime, requires a comprehensive set of knowledge systems including local ecological knowledge (LEK) which to a large extent is tacit. Our results indicate that EKV is perceived as an informal municipality agent, belonging to the municipality but not having any legal mandate and thus not posing any threat to the farmers. The network collaboration is separate from the sanctioning role of the municipal administration. Besides resulting in extraordinary organizational flexibility, this appears to have facilitated trust building which in turn has facilitated generation and exchange of knowledge about ecosystems dynamics.

KV has become a project organization consisting of about 20 projects. The administration of these could easily result in a large bureaucracy but EKV has avoided this intentionally by closing down projects that are not active. For instance, the crane group writes protocols from their meetings but the group has no formal responsibility and it exists only as long as the occurrence of cranes causes tension. This *ad hoc* project organization allows the very few staff at EKV to initiate and be involved in a multitude of social interactions. Accountability resides in the formal municipal administrations and the county administration board (CAB). The space for informal maneuvering of EKV would probably decrease if they created more problems than they solved.

Generating and communicating ecological knowledge is a key feature of the collaboration within KV. The organizational entrepreneurs at EKV have been sensitive to LEK as well as social norms and sentiments among other stakeholder in the course of collaborative learning. This sensitivity has "paid off" in terms of a multitude of small conservation projects that have created a macro effect in ecological and social dimensions. Ecological results include increasing area of cultivated flooded meadows and stronger protection to these and other biotopes. Modified management practices have enhanced biodiversity and the recreational values associated to this. Social results include a growing interest for ecosystem services, reinforced legitimatization for ecosystem management and hence constructive conflict resolution on issues of embankment and nature reserves. Put together, a transformation can be said to have taken place in which the municipality has adopted the ecosystem approach (Olsson, Hahn and Folke 2004).

This may be contrasted to the situation for another large drainage basin in southern Sweden, where conflicts have exacerbated over embankment and nature reserves (Lars Hallgrens doktorsavhandling).

Collaboration by gradual selection of key individuals

The way EKV collaborates horizontally with other stakeholders is very different from the ideals of public participation.[28] A broad public participation can only be expected when the livelihoods of many inhabitants are threatened. The declining ecosystem services that sparkled KV in 1989 were perceived as a crisis by only a few local inhabitants. Hence the social networks involve very few individuals why it is more appropriate to call KV a policy community (källa

As researchers we study an on-going process initiated by the municipal organization EKV. Its director Magnusson strives for full control over the whole process. He is aware that a minor mistake may erode the good-will of KV and that this would take much effort to repair. The insurance strategy, that EKV appears to use, is to forestall conflicts by being sensitive to concerns expressed by other stakeholders.

Legitimization… (något av Andreas text nedan bör in här, **se nedan**. Jag ser två aspekter, dels legitimiteten i att styra processen genom att bjuda in andra aktörer gradvis (spännande fråga för participation-forskare), dels standardfrågan om legitimitet i samverkan, risk för korporativism och bristande ansvarsutkrävande.)

Preference formation by problem solving and trust building

Preferences formation is a controversial issue in economic theory. In neoclassical economics preferences are assumed to exist in a tidy order prior to a choice situation; the choice reveals existing preferences (Hausman and McPherson 1993, Johansson-Stenman 1998). In institutional economics it is more common to perceive preferences as emerging in the process of solving a problem (North 1986, Neale 1987, Bromley 1990). Hence, the normative imperative of satisfying existing preferences is relaxed and the focus moves to identifying workable institutional arrangements (Bromley 1989, Hahn 2000). Preferences may change dramatically in a society facing sudden environmental change. For instance, even if only a small proportion of a population is struck by a famine, Amartya Sen has observed how a famine may induce significant shifts in preferences, and concludes: "There is a particular need in this context to examine value formation that results from public discussion of miserable events, in generating sympathy and commitment on the part of citizens to do something to prevent their occurrence" (Sen 1995, p. 17).

Analyzing the resilience of social-ecological system requires that preference formation is endogenous. Understanding how societies are transformed towards a more sustainable development includes examination of the dynamics in the underlying value systems. Asking for winners and losers in the short run assumes fixed preferences and is more relevant to a conflict management and negotiation approach than a conflict resolution approach which by definition includes value

[28] E.g. Pretty (1995). In practice, public participation often reinforces existing power structures (Agrawal and Gibson 1999, Brown 2003).

transformation (Dukes 1996). The latter is related to the context of adaptive and transformative capacity of social-ecological systems. We are interested in increasing the social capacity to respond to environmental change and one important aspect of this is preference formation.

Making inventories, based on scientific and local ecological knowledge, and engaging other stakeholders in a collaborative learning and problem-solving process is characterizing for the EKV approach. EKV tries to "lift" the discussions within each stakeholder group to regard ecosystem management in a community development context.

Formalizing successful collaboration within polycentric institutions
The collaboration within KV builds on voluntary participation by various stakeholders (municipal administrations, farmers, tourist entrepreneurs, fishing associations etc.). Under such "what's in it for me?" context it is no surprise that EKV needs to identify win-win situations and base the collaboration on enthusiasm and trust. What is more surprising is, perhaps, that EKV has managed to secure some of the victories accomplished by informal networking. The consultancy group for nature conservation has been the best instrument for formalizing these victories. The legitimacy for adopting ecosystem management within the municipality has increased through voluntary participation in various projects and EKV has, through this consultancy group, suggested which policy tools the municipal executive board should use to formalize victories.

Land use plans and management objectives decided by the municipal executive board "creates friction" in the system by making it hard for conflicting proposals by individual farmers, organizations, or municipal administrations to pass. For instance, the consultancy group suggested in 2002 to prohibit water-skiing in the Helgeå River around Kristianstad to protect the valuable wetland habitats and the municipal executive board as well as the CAB decided accordingly. Bromölla water-skiing club appealed to the Environmental Court of Appeal which dismissed the appeal (protocol from The consultancy group for nature conservation meeting 2003-06-18).

When KV was formed in 1989 only Håslövs ängar (150 ha) were nature reserves. Today EKV has, through the consultancy group for nature conservation and with help from the CAB and the EPA at the national level, transformed an additional five areas (950 ha) into nature reserves and three more areas are planned.

The organizational form of KV appears to be very flexible, based on *ad hoc* projects. On the other hand, turning KV into a Unesco Man and the Biosphere Reserve has been part of the long-term vision since 1989, according to Magnusson (källa?). Although it does not in itself imply legal protection, a MAB Reserve provides moral support to a development trajectory based on the ecosystem approach.

With the implementation of the EU Water Framework Directive Kristianstad has to collaborate with upstream municipalities within the same drainage area. So far EKV has not attempted this, realizing its limited organizational capacity and its non-existing legal mandate. However, after the severe flooding in March 2002 EKV was invited by the Rescue Service to consider ecosystem-based strategies to buffer flooding. Attempts to "control" the floods by larger embankments and removal of silt

have been avoided after consultation with EKV. According to Magnusson EKV would not have been invited to this important prestigious arena ten years ago. Flood-buffer may be the most valuable ecosystem service of KV but this potential has yet to be realized.

The dependence of key individuals – vulnerability and opportunity
(based on Per's notes from January 2002)

Organizations whose performance heavily depends on one key individuals are of course very vulnerable. Formalizing such an organization reduces this type of vulnerability but it may also reduce the flexibility that characterizes KV. For the purpose of ecosystem management, organizations and institutions need not be resilient; if anything, they should be adaptive to changes in the social-ecological system.

The organizational form of KV has been created by Magnusson, the director of EKV. The present organizational form of KV may work fine as long as the present director stays in charge. The day a new director takes over, another organizational form may be more appropriate. If one wants to keep the existing organizational structure it might be necessary to have an apprenticeship to take over Magnusson's role and earn the trust from the network. It would also take some time to learn the conflict resolution skills that Magnusson possesses. These skills are based on Magnusson's extensive tacit knowledge.

Link this to the EU directive on water management. EU members are obliged to reach the goals of the directive but how they do it is very much up to the individual member nation. This directive creates space for self-organization at the national as well as the local level. The units for management of water resources will be watershed based. The administrative organizations, decision-making organizations and other stakeholders will have to collaborate within these borders. Such watershed-based collaboration is going on in a number of places in Sweden.

Every one of these cases differ when it comes to how they are organized and this might be due to various reasons such as trust and key individuals. Institutional structures that allow organizational forms to grow from site specific, local initiative and interaction acknowledge the fact that every place has different preconditions and contexts. This means that one organization form that works in one place might not work somewhere else. This is the idea behind polycentric institutional structure. Nations should therefore avoid implementing blanket policies, that is the same policy tools for a large region in which the problems related to natural resource management differ. We prefer to view organizations and institutions as something dynamic that is constantly changing. (maybe a word on blue-print, which MA talks so much about, that even if we should not generalize and use the same policy in different contexts, a experiences from a diversity of local settings may be helpful when confronted with a new locality)
functional groups of individuals?

Legitimizing the KWK [Andreas]

For persistence (or even survival) in the long run, all bureaucracies and organizations are dependent on the perceived *legitimacy* of its decisions and representatives. This is a fact more or less independent of the forms and tasks of the agency at hand – it is reasonable to assume that no agency within a democratic and non-authoritarian setting with even the most limited engagement in public affairs can escape the demand of being perceived as legitimate. To rule in the open society means to be seen as legitimate; no power can hope to thrive over time without it. The subjects of its domain of influence must, at least to some extent, view the agency as *the* institution whose decisions are to be complied with and that the decisions produced by the organization themselves are legitimate.

Now, what is this seemingly mystical quality of being legitimate? Rothstein means that we should assess the legitimacy of an organization by the extent to which is subject accepts its decisions and rulings, even if they work to the disadvantage to the individual subject in individual cases (Rothstein, 2001). A similar position is taken by Suchman: "Legitimacy is a generalized perception or assumption that the actions of an entity are desirable, proper or appropriate within some socially constructed system of norms, values, beliefs or definitions."(Suchman, 1995, p.574) For example, one might not be overly enthusiastic about the level of ones tax payments, but would nevertheless be prepared to accept the righteousness of the decision (all citizens should pay a part of their income to be used for acquisition of common goods) as well as the legitimacy of the organization (the tax agency treats every taxpayer alike according to a previously established set of rules) issuing it. But if the local bowling club was to send you an invoice for a percentage of your yearly earnings to be used for a new bowling alley, you might feel disposed to question both the righteousness of the specific ruling as well as the legitimacy of the organization issuing the claims. Legitimacy thus entails a assessment of righteousness as well as an appreciation of its generality, in the sense that legitimacy is an judgment of average performance and not specific instances.
Finally, it is important to note that legitimacy can, but does not necessarily need to be dependent on positive outcomes for the subject. Thus one cannot presume a simple, positive relationship between outcomes for subjects and the subject's judgments of institutional legitimacy.
On the other hand, the need for legitimacy on the manager's part stems from the problem of monitoring and sanctioning; without legitimacy every ruling or policy would require the devotion of vast resources for monitoring and enforcement, since the subjects can not be trusted to act in accordance with rules and decisions by themselves.

The other meaning of the concept refers to legitimacy *within* organizations. Here research has focused on how organizations, in order to enable internal cohesion and coordinated action, strive to create collective identities among their members. (Powell & DiMaggio, 1991) Thus all organizations are presumed to have a need for a set of common values, worldviews and norms among its members. In short, all organizations need to be able to answer the questions like "Who are we, and why do we do what we do?". In a similar vein, March and Olsen launched their notion of a

"logic of appropriateness" as an alternative model for the acting subject. An agent following the logic of appropriateness does not, according to March and Olsen, primarily strive to maximize utility. Instead, this kind of actor tries to act in accordance whit a set of norms in her environment that prescribes the suitable, fitting and just behavior for a person of her kind in that kind of situation. Action is thus understood as norm based rather than utility-driven in this account of behavior. (March & Olsen 1989) The level of homogeneity of worldviews as well as the internal pressure exhorted can of course vary considerably among different organizations, but the key point is that these factors are crucial when explaining behavior of organizations. The concept of legitimacy has within this research tradition beenused almost as a shorthand for socialization processes within organizations.

We thus have to broad types of legitimacy to consider when assessing the KWK (C.f. Suchman, 1995). For reasons of simplicity, we will label them "internal" and "external" respectively. This in turn gives rise to three central questions: 1) how is the KWK perceived among different groups *outside* the core organization, 2) how is the KWK understood by actors *within* the organization, and 3) are there significant *differences* in the conceptions of the KWK between the two groups? Below, we will tentatively try to provide some empirically informed but still tentative answers for these questions.

From the outset, SEM and the Ecomuseum have placed the task of gaining trust and trust of the farmers and landowners in the KWK on top of the agenda, but does this equate with *external* legitimacy proper? Our tentative answer is no. It seems unlikely that farmers and landowners would be prepared to accept unfavorable rulings, were they to be decided and implemented by SEM et.al. Of course, knowing this, SEM et.al. are hesitant even to admit having a specific agenda, let alone trying to impose any rulings or policies that might not be welcomed among the stakeholders. Quite the contrary, an explicit focus on win-win solutions and conflict avoidance rather than conflict management can be seen as the main managerial tools employed thus far by the KWK.

In order to eventually be perceived as legitimate, SEM et.al. has opted for a strategy of conflict avoidance and by offering win-win solutions for the stakeholders – a perfectly justified strategy for the initial phases of establishing the KWK. However, if the KWK at some point decides to taken on more contested issues such as nitrate leakage or pesticide use among farms in the watershed, they will most likely find themselves without sufficient resources, for conflict reducing proposes and otherwise. The legitimacy required for imposing such sometimes draconian measures necessary for combating diffuse environmental impacts is presently not in the possession of the KWK, and it is furthermore doubtful if it can be produced through the strategies currently employed. However, this should not be seen as a failure on part of the KWK – presumably no institutions today harbors enough legitimacy necessary for addressing such difficult issues – the point to be made is rather that the character of an institution's legitimacy often delimits and defines its area of influence. (Rothstein, 2001)

A second issue is the careful selection of stakeholders currently invited to interact within the KWK. From an already quite homogenous group of stakeholders (with regards to traits such as income, occupancy, gender and cultural heritage), a selection of the most cooperative individuals was made from the outset. Since the initial phase a subsequent expansion of the stakeholder population has taken place, but the fact remains that potential conflicts seem to have been handled by means of exclusion rather than inclusion and discussion. Furthermore, other groups presently not recognized as stakeholders might in the future begin to voice claims. We must not forget that the vast majority of inhabitants in the municipality of Kristianstad are not land-owners, farmers or even members of bird-watching organizations, but rather city-dwellers with presently unknown levels of involvement in and perceptions of the KWK. Furthermore, the fait of KWK ultimately rests in the political bodies elected by the voters of the municipality. A third objection concerns the relative absence of significant conflicts between the KWK and various groups of stakeholders. As Lundqvist has shown, as similar collective of farmers and landowners around the watershed of the river Genevadsån were seemingly unable to solve the task of reducing nitrate leaching from agriculture. Despite large amount of conflict resolving measures such as frequent meetings, opportunities for self-organization and arenas for discussions, as well as favorable background factors such as group homogeneity, definable borders of the resource pool and equity of resources, the outcome was less than promising. No collectively binding effort came into place and (Lundqvist, 2001) Disregarding substantial differences in organizational configuration (the farmer of the Genevadsån watershed did not have anything similar to the institutional settings present in the KWK) the Genevad farmers found themselves faced with a set of options potentially threatening to central interests and without any possibility for a win-win solution. Ironically, Lundqvist argues that the very factors considered conducive for CPR-management partly were to blame. In short, dense networks, intimate knowledge of network members contributed to the decisions of individual farmers not to cooperate, since they deemed the stakes too high for others to cooperate. (Lundqvist, 2001) The KWK does come better equipped in terms of institutional configurations, but ha on the other hand consequently avoided serious and high-stake collective issues such as eutrophication. All in all, this does not bode well for the capacity to handle future strains on the KWK, but luckily there are also other parallel processes working in the opposite direction. Efforts to connect the KWK to other international conventions (? Right term?) such as MAB as well as the initiative to give the KWK status of a national preservation area (Right term?) , could initiate a institutionalization process from 'behind'. Although virtually harmless in terms of substantial sanctions, the symbolic values of such conventions present a significant obstacle to those whishing to dismantle the KWK, thus making organizational survival in the long run more probable.

VII. Conclusions

Through EKV the Municipality of Kristianstad is able to collaborative with other stakeholders within and outside the municipality on nature conservation and related

issues. EKV is regarded, by farmers we have interviewed, as representing the municipality but much easier to cooperate with than other municipality bodies. One reason for this is that EKV has no power to enforce rules but instead seeks their voluntary participation. This is certainly a non-traditional role for a local government and we argue that EKV thus complements other parts of the municipality in the quest for sustainable development. If ordinary municipality administrations did not enforce regulations, EKV's collaborative efforts would probably not be so successful. E.g. Swedish farmers need to apply to their municipality for making embankments (SFS ??? jag ska kolla lagtext) and this of course helps EKV to make farmers interested in alternative measures. Thus, ecosystem management appears to require a fine interplay of formal and informal institutions.

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Figure 1. The lower Helgå River catchment with the Ramsar Convention Site, Kristianstads Vattenrike, and the Municipality of Krisitianstad. (Olsson et al 2003)