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Local knowledge as strategic resource: Fishery in the seasonal floodplains of the Mekong Delta, Vietnam

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the Mekong Delta, Vietnam

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Fishery in the Seasonal Floodplains of the Mekong Delta, Vietnam

Solvay Gerke and Judith Ehlert

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Abstract

Water in the Mekong Delta is omnipresent and plays a crucial role for the rural population depending on that resource in the pursuit of diverse livelihood activities. This article¹ focuses on the social interaction of paddy farmers and landless people during the annual flood season from a local knowledge perspective. It will be argued that local knowledge turns into a strategic resource in the context of growing competition for decreasing natural water products. Knowledge is not like “light” hence the strategic moment as well as the tacit component of local knowledge makes its sharing a technically limited form of interaction which is based on a delicate process of trust-building. The current transformation process of agricultural modernization as pushed forward in the Mekong Delta will probably aggravate livelihood insecurities in the future. Local knowledge as adaptive asset in this process of changing society-water relationships will be analyzed.

Keywords:

local knowledge, flood, livelihood, agriculture, fishery, Mekong Delta, Vietnam

¹ This article is based on field research in the Mekong Delta in 2008/09 within the WISDOM project (Water-Related Information System for the Sustainable Development of the Mekong Delta in Vietnam) at the Center for Development Research (ZEF), financed by the German Ministry for Education and Research (BMBF).

Introduction

The Mekong Delta is vibrant. People live on its water resources for decades adopting to the natural environment and structuring their everyday life around it (cf. Tran Gia/ Few 2006: 141). The flood season is traditionally the time of the year in which people base an even greater amount of the nutrition on natural fish² which had been an abundant source of subsistence in the past. But where there is an abundance of water there is not inevitably one of fish. Hence ecology in the Mekong Delta is changing; the relationship between society and water is getting altered in the process of human appropriating nature. In the process of developing and modernizing the rural area under pressure of a growing population, natural water products are decreasing. Industrialization and agricultural intensification trigger environmental pollution affecting local water resources on which rural and urban livelihoods are depending upon (cf. Kelly et al. 2001; cf. Adger, Kelly and Huu Ninh 2001: 3ff).³

This article will discuss the relevance of local knowledge as a strategic resource in competition for natural fish products. The importance of local knowledge especially for the development of local communities becomes increasingly recognized by research worldwide (Antweiler 1998, Evers 2000, Neubert/Macamo 2002). The broader term "local knowledge" includes any "locally and culturally situated knowledge that was and still is produced in local communities (Antweiler 1998: 490). But local knowledge does not necessarily result in sustainable or socially just activities, nor is it always shared by all members of the community. In this article it is argued that local livelihood knowledge on water is neither collective nor integrative per se but a resource that is strategically applied in the process of sharing and closing-off livelihood opportunities. Under constraining conditions of livelihood insecurity, landless people, who traditionally base their household economy on natural fish resources and fishing during the flood season as one component of wider livelihood strategies (DFID 2002), cautiously calculate the risk on whether and with whom to share their knowledge. This article will illustrate the measures that people apply, and the actions they pursue deliberately or unconsciously in order to guarantee that their knowledge on fish resources will remain an exclusive and competitive asset.

We will put an emphasis on the perspective of landless people and paddy farmers since it is the actor's 'life-world' (cf. Schütz/Luckmann 1973) that serves as reference for local rationalities of action. The focus will be put on the changing human-water environment to better 'understand' - in the Weberian sense - their application of fishery knowledge as an adaptive process in the given environmental context. The tenor of all the interviews indicates the decrease of natural fish. The growing scarcity of natural fish resources has been perceived as a qualitative change in the local natural environment which has an impact on people's actions pursued in order to adapt to this change.

In the following we want to discuss two factors which impede knowledge from being a collective asset in a certain locality: The first one is the tendency of actively controlling the transfer of knowledge in the struggle for natural resources under growing scarcity; and the second is the tacit character of local knowledge functioning as immanent barrier to knowledge sharing. These two factors undermine knowledge to move freely but instead sensibly determine where it actually travels to.

We will first describe the scenery of seasonal migration during flood season to depict the context in which the encounter between land owning paddy farmers settled in the area and landless people migrating to the area for fishing activities, took place and was observed in the field⁴. The following elaboration draws on observations and interviews in a farmer's community in Can Tho City Province during the flood season. The flood season in the research site is characterized by an interesting dualism of rest and peace of the paddy farmers and dynamic action of the landless people who engage in fish

² For regional consumption patterns of aquatic resources, see DFID (2000: 19ff.)

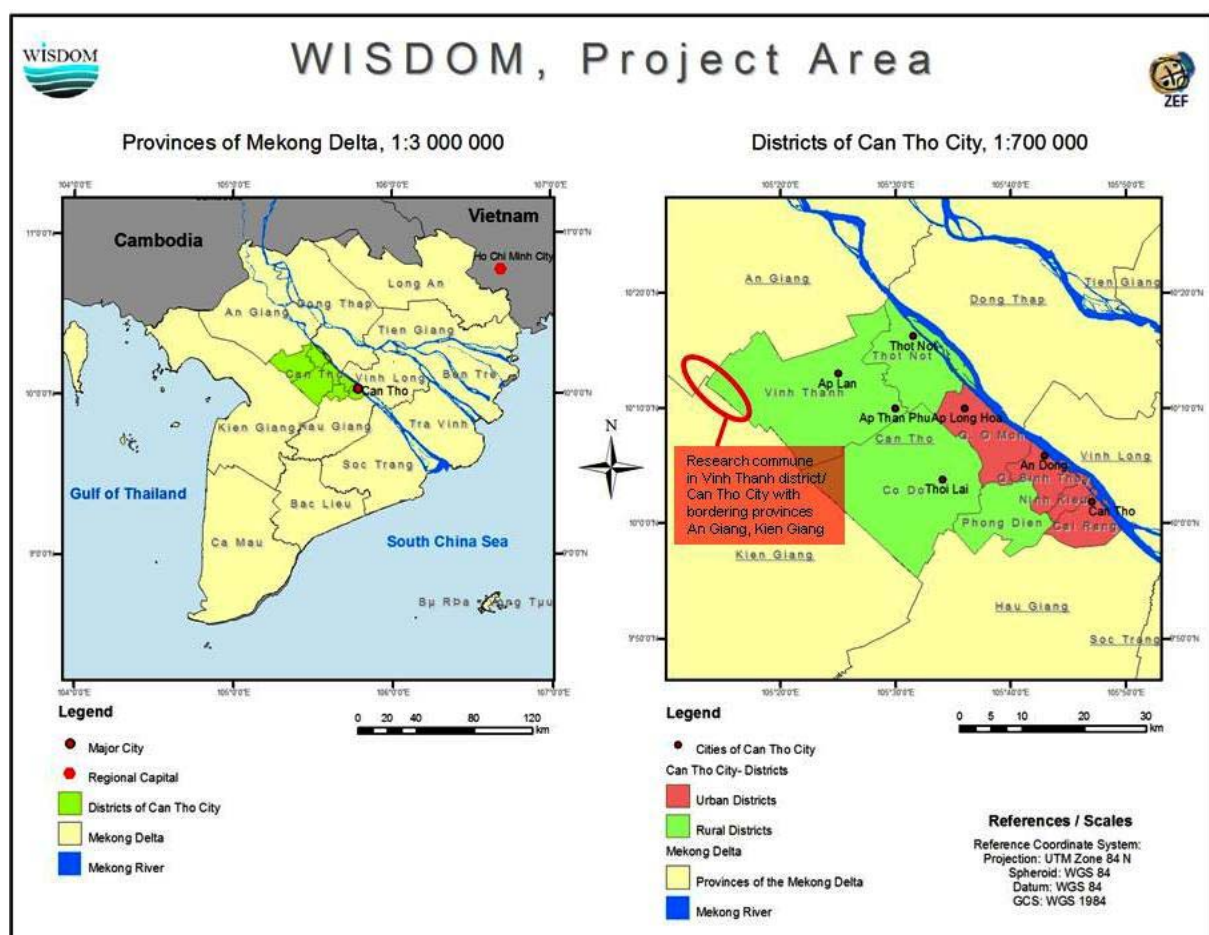
³ For a discussion on the impacts of the dyke system in Can Tho City on natural fish resources, see Pham/Ehlers/Subramanian (2009: 19f.).

⁴ The argumentation of this article is based on 17 semi-structured interviews on mostly with paddy farmers and landless people in a north-western district of Can Tho City Province.

harvesting. How this encounter is structured knowledge-wise seems to be an exciting endeavor of local knowledge research.

‘Like an Ocean’: Seasonal Migration and Knowledge Flow

After the green fields have been harvested before the onset of water-rise in August, during the peak of the flood season in October, the rice fields are covered with water and the scenery reminds of an ocean and is often denoted by the local population as such⁵. All paddy farmers in the research site – a commune in the North-West of Can Tho City Province along the Cai San channel – cultivate two crops per year and let the flood water into the fields after the summer-autumn crop. The flood season offers the soil time to rest and the annual nutrients needed for a successful winter-spring crop that follows the flood season. By contrast, the bordering area of this commune belonging to another province – An Giang – follows a different flood management regime as to be seen on Picture 1.



⁵ Flood in the Mekong Delta is an annual event characterized by slow water-onset, long inundation and slow withdrawal. The flooding season in the delta inundates large areas in the period from July to November with water levels constantly rising up from one to three meters, and affects about 8.5 million people, of which 17% live in urban and 83% in rural settings (cf. Huu Ninh 2007: 6).



Picture 1 Flood management border lands: Green fields (3rd crop) in neighboring province An Giang and seasonal floodplains in Can Tho City Province (Photo: J. Ehlerst 2008).

Farmers in this border land keep the flood water out of their fields in order to do triple cropping. This difference in flood management regimes stimulates seasonal migratory processes. Landless people in the neighboring area of An Giang province cannot harvest fish in the rice fields because the seasonal waters and therewith the fish are directly irrigated downstream without entering the agricultural land. In the pursuit of accessible fishing grounds, landless people from from the bordering province Kien Giang as well as from the surrounding communes belonging to Can Tho City temporarily migrate to the research site. The commune that had been chosen as research area is the focal point for the observation of such seasonal migration. The natural and socio-cultural conditions in this commune, makes it a prominent destination for landless people coming from these neighboring areas because the flooded fields are wide and comparably rich in fish resources; and the land owning farmers – Northern Catholic Vietnamese who came to the delta in the 1950s – base their livelihood exclusively on rice cultivation and thus leave the fishing niche open for exploitation by the landless. The Northerner's community in the North-West of Can Tho City forms a specific case of an 'internal diaspora' of Northern Vietnamese in the Mekong Delta. The Northerners possess bigger landholdings than the 'local people' or the 'Southerners' in the neighboring communes in Can Tho City⁶. 'Local people' or 'Southerners' are the terms used in the Northerner's community to refer to the people who lived in the area before they settled down there; the term 'Northerners' is applied by the local population to denote the cultural and geographical origin of

⁶ The termination of the first Indochina war in 1954 and the foundation of a communist state in the north (Democratic Republic of Vietnam/ North Vietnam) and a separate state in the south (Republic of Vietnam/ South Vietnam) induced internal migration. Between 1954 and '56 more than one million people moved south. Among them about 800,000 Catholics to escape the communist takeover of the North (UNHCR 2000: 80f.). Catholic refugees to the southern zone supported the succession of the anticommunist regime in Saigon: President Ngo Dinh Diem himself being a Catholic. Large scale government support was given to the Catholics and the northern refugees who were strategically settled in rural development centers such as at Cai San channel in the western Mekong Delta between Long Xuyen and Rach Gia (Rambo 2005: 83ff.)

the new settlers. These emic categories served to demarcate cultural 'otherness' often fueled by mutual prejudice in terms of habit and character traits between the 'Northerners' and the 'local people'. Since it is only the people without any or little agricultural land among the 'local people' who migrate for fishing activities during the flood season, the Northerners use the term 'landless' interchangeably with 'Southerners' or 'local people' to refer to the people who annually come to their lands for fishing. While the landowners of the Northerner's community use the flood season as time to rest, the flood season is a very important time for landless people from around the area since it offers them natural fish for subsistence livelihood and small-scale business. The flooded fields in the area are openly accessible to anybody for fishing activities⁷. This is not only the case in the Northerner's community but common informal practice. However, flooded fields in the Northerner's commune are wide and less crowded in the water-rising season because the commune itself mainly refrains from fishing on a larger scale. As soon as the agricultural land is covered by a layer of flood water, individual land property rights are literally 'undermined' from the covering water resources being conceived of as common property. This is the period when seasonal migration for fish harvesting sets in. Landless people either come to the flooded fields everyday by boat if they live nearby or temporarily settle down for the whole flood season on the residential land of rice farmers if they come from further away (see Picture 2). In case people come from the neighboring provinces they would have to register with the police department of the commune if they want to stay during the water-rising season.



Picture 2 Seasonal migration: Landless people living on their boats for wild capture fisheries in the floodplains (Photo: J. Ehler 2008).

⁷ Besides triple cropping, another exception for open access to flooded land however is culture fish raising. The modernization of agri- and aquaculture will improve the opportunities of raising culture fish. This certainly is a reasonable measure to compensate for decreasing natural water products. However, the model of culture fish only benefits the landowners while flooded fields are literally fenced and thus closed-off for landless people who neither can participate in such models nor access the land for traditional floodplain fishing. During the flood season in 2008 however floodplain fish culture was not implemented and in general was not perceived as successful model by the farmers in the research commune.

Landless people migrate and carry with them knowledge on fishing tools, skills and experiences of how and where to make the biggest catch of fish. On their way, when temporarily settling down in the Northerner's farmer community for their fishing activities, they encounter rice farmers whose expertise lies in farming and who do not possess knowledge on fish harvesting; and they meet other landless people with comparable livelihood knowledge who compete for the same fish resources on the paddy farmers' lands. This context poses questions of knowledge access: How is the transfer of knowledge controlled in the case of direct competition between landless people; and how is the knowledge exchange structured in the context of non-interfering livelihood strategies as between paddy farmers and fishermen?

Local social spaces and knowledge encounters

The concept of local knowledge postulates dynamic and flexibility. The stock of local knowledge is capable to integrate new knowledge and practical experience generated in the process of human actively engaging with and changing their natural environment (cf. Antweiler 1995: 42). The integration of knowledge in this way however is depicted as a one-way endeavor of the recipient only. It neglects the position of the vis-à-vis knowledgeable actor who might hold back certain knowledge strategically. It furthermore underestimates the tacit component of local knowledge as something to be 'integrated' by the recipient. Rather one should talk of 'internalization' which is achieved only through a long-term simultaneous process of practice and cognitive reflection. This openness to 'external' influences thus might falsely imply the assumption that when people with different (or even the same) livelihood expertise and livelihood niches meet in local space, 'new' knowledge is mutually 'interrogated' and then integrated through this kind of static exchange. But instead, such knowledge encounters constitute social spaces in which "communities of practice" (cf. Gerke/ Evers 2006: 5) meet, beforehand negotiate the rules and practices of knowledge transfer. Hence not only their knowledge as such might enable people to cope with current situations or future challenges (cf. Schröder 1995: 4), such as e.g. the growing competition for natural fish; but especially the way they regulate its access might give them advantages at hand in coping with growing livelihood insecurity. Since local knowledge is not something 'outside' or abstract from actors but their 'embodied practice' (Pottier 2003: 2; cf. Schütz/ Luckmann 1973; cf. Knoblauch 2005: 13ff.) it is the actors themselves who either stimulate or constrain knowledge transfer. It is argued here that this negotiation process is strategically motivated.

It will be shown that in the case of traditional floodplain fishery, the transfer of knowledge is less delimited and wide and does bear no comparison with the picturesque image of flood being like an open sea.

'No open sea' – Limits to knowledge sharing

Migratory processes make different people meet and facilitate new social spaces, in which diverse actors with different livelihood experience encounter. The flood covering the land with water reminds of a wide ocean that can be freely entered by everybody. This metaphor however only applies to open space in physical terms. This image of open waterscapes rather describes wide geographical openness. Sharing the same locality does not inevitably mean to freely share ideas, experience and knowledge. In our case, the 'strategies of knowledge sharing' reflects a very fine-tuned negotiation process of knowledge flows and capture based on rationale action.



Picture 3 (Photo: J. Ehlert 2008).

Strategies of Knowledge Sharing

The human design of the Mekong Delta as “hydraulic society” (Wittfogel 1957; cf. Evers/ Benedikter 2009) serves agricultural intensification by a complex irrigation system controlling the waters of the Mekong for purposes of economic development. Water management schemes of channel and dykes cut the open land of the delta into grid-like plots to which the flood waters are guided towards according to human decision (see picture 1). But before the development of irrigation channels and border dykes, the flood waters spread evenly everywhere⁸ and with it the natural fish. In all of the oral history interviews on flood experience in the past, community elderly remembered the abundance of fish brought into their homes by the flood water. In line with the other oral history stories, one female respondent vividly recalls her memories from the big flood in 1978 when she and her family were literally sitting on their beds to fish the fish and the snakes that were in their house.

In accordance with Wittfogel, a local journalist traces back the development of the delta as hydraulic society. His explanation tersely represents the popular view on the ecological nature of the Mekong Delta and its changing society-water relation:

“The flood is actually called the water-rising season by the local people. The people lived normally with the flood. They lived with the water because at that time there was no dyke. The reason is that at this time the population was little and the cities were not so developed. People lived alongside the channels, rivers and the channels in the fields. Thanks to the water season, they lived by jobs such as catching fish and prawn, making fish sauce and raising fish. They lived completely by nature. [...] The government continued with the work to open the wide land, enlarge production, develop science and technology – they increased rice production because they brought science and technology to the wide land and developed infrastructure. They built factories, services, traffic streets and brought electricity. [...] But the natural water products are used up and limited because so many people catch fish and because of the multiple rice crops that causes environmental pollution – from the pesticides, from the agricultural waste water the water products decrease”.

Under the current transformation of the human-environment relationship in the Mekong Delta, the main aim to use water-livelihood knowledge strategically is a subsistence strategy of landless people. Nevertheless, the motivation to capture or to acquire such knowledge in order to either close off or to open up livelihood perspectives might grow as well as experience a new quality in the future. In the future, human design of ecology will enter a new phase as agricultural modernization is being pushed

⁸ For a detailed description of the development of water resource management in the Mekong Delta, see Miller 2003.

forward. In the pursuit of modernization and in order to live up to the country's ambitious rice export orientation, the agricultural policy for the Mekong Delta – the 'rice bowl' ⁹of Vietnam – foresees a further shift in land-use pattern from scattering to concentration (Nguyen 2006: 3). This concentration of land with ongoing mechanization might aggravate the unemployment rate and stabilize the trend of landless households in the rural areas of Vietnam and especially in the Mekong Delta as had been observed in the country's post economic renovation era of the late 1980s (ibid: 37) Small-scale farmers who lose out in this process of rural transformation will increase the number of people depending on natural water products as source of subsistence. The pressure on natural fish resources is thus growing. This scenario calls for strategies of 'survival' of an ever growing number of landless people¹⁰. The strategic and controlled transfer of local fishing knowledge thus is an adaptive measure to cope with growing scarcity and competition.

At first glance competition for natural fish seems to be irrelevant in the case study area due to exclusive livelihood niches of landed rice farmers on the one hand and landless fishermen on the other. One landless fisherman coming from the neighboring province An Giang permanently settled down in the Northerner's commune explains:

"I come from Long Xuyen, An Giang province. My parents were poor and just gave me the ground for the house but no farming land. With only one ground you cannot live in An Giang because An Giang does not have so much fish. So we moved here and I saw that the Northerners do not catch fish so much and so I saw that I could easily live here. I live here now since 21 years already thanks to the fish job."

The quote represents the common situation between the two groups as encountered in the context of seasonal migration. Paddy farmers showed a general lack of interest in fishing which is due to their stable position as landowners. They tolerate the landless fisherman on their lands during flood season and accord the fishing expertise to the landless since the landless would face much more difficulties in making a living in this region because of their lack of land. In contrast, by settling down 21 years ago, the landless fisherman turns his knowledge into a strategic asset because he occupies a new livelihood niche in this community, pioneering with exclusive knowledge. The emic perspective of the landed farmers on their productive base as being stable explains why they do not consider fishing knowledge as relevant for the pursuit of their own livelihood stability. The conceptualization of local knowledge as integrative neglect the fact that it is also a matter of negotiation of what kind of knowledge is relevant for one's own purpose. Local knowledge besides being holistic is constituted by specialized knowledge. Local knowledge as holistic framework for action is automatically passed on by the socio-cultural embeddedness of a person. Whether access to specialized knowledge is aimed for or not depends on its relevance for own purposes. Thus not only sharing but also the reception of knowledge is based on strategic rationale.

Landless and landowners do not seem to interfere in each other's business. Nevertheless, it will be shown that the landless proactively safe-guard their knowledge by the application of certain strategies even in regards with the 'harmless' paddy farmers. Direct competition mainly exists within the group of landless people itself. How this competition is being act upon needs to be elaborated.

Strategies of Non-Sharing and Trust as Catalyst of Knowledge Transfer

What crystallized in the interviews with the Northern Vietnamese rice farmers as well as with landless fishermen are the ways in which fishermen deal with such growing competition. Knowledge flow is controlled by strategic patterns of action. Strategic actions serve to proactively obscure livelihood

⁹ Nowadays, the region annually accounts for about 51% of Vietnam's total rice production (cf. Nguyen 2006:1). 90% of the national rice export is attributed to this region (cf. Huu Ninh 2007: 8).

¹⁰ Population growth (1,2 % natural increase rate in 2008, see GSO 2009: 655) will further increase the intensification of agri- and aquaculture. The decrease of production costs and the introduction of technology in agri- and aquaculture business demands the concentration of land in order to be cost-effective. Industrialization and mechanized agriculture might be unable to absorb the massive labor externalities of small-scale farmers who have to sell their plots because their production does not remain competitive.

activities in order to keep it a secret and to capture the specialized knowledge that forms the basis of everyday life for landless people. In the case of consciously holding back one's skills and knowledge from others, strategies of 'not-telling' or of 'keeping it short' when being asked are applied as evasive forms of communication and interaction. These typical evasive patterns found are illustrated nicely in the following interview excerpt. The interview was conducted with a Northern Vietnamese who himself had acquired certain fishing skills not through knowledge exchange with the Southerners but through a very long-term self-instructive process. Within the paddy farmer's commune this man and his family rather represent an exceptional case since most rice farmers refrain from fishing (see above). But although for the Northerner this knowledge serves way less his subsistence than as some small extra economic income, he however applies the same strategies to actively close off his knowledge from others:

"They [the Southerners] are very creative and experienced. For each kind, such as prawn, abanas, snake-head fish, they have one catching style and one fishing tool – especially the An Giang and Dong Thap people. But they also want to hide their technology. They do not want to show it to all people. [...] Per day they can sell several 100.000s but they rarely sell the fish here so that the Northerners will see it. They will sell somewhere else. So that the Northerners here do not know that they have so much fish in their region. Because, they make a lot of money in the flood season. [...] I am the first man in this commune who successfully learnt the job of making bamboo traps. Later my younger and my older brother also learnt it. Now my younger brother is more successful than myself. But also some men around here studied my job and they are around here, not in far places. We have to keep our job a secret, I only tell all the recipes and secrets to my siblings and brothers. [...] When I place the traps I always go in the twilight of the morning so that nobody will see how I make it. Because also for myself, nobody from An Giang or Dong Thap taught me anything. So when I have my career I also want to keep it a secret. One more reason why I want to keep it a secret is that when you place the bamboo trap and pull it up, people see that you have 3 to 4 kilos of snake-head fish inside. They will envy you and try to play tricks on you so that you cannot do your job anymore - by destroying your bamboo trap or by also learning your career".

Selling the natural fish – the Southerner's knowledge- and skills-embedded business product – on a far away market to prevent the local population from getting suspicious is a strategic way to uphold the free access to the paddy farmer's lands and its flood waters as common property. The access to the farmer's lands is the prerequisite for fishing in seasonal floodplains since the seasonal water is managed by ever more complex irrigation systems (see above) that makes the access to water more and more dependent on the access to land¹¹. By proactively hiding their knowledge-informed success of fishing, they prevent the Northerners from getting interested in the potential and the resources of their own lands in the flood season. Although the paddy farmers do not represent an immediate risk, the fishermen's action is strategically foresighted to not bring on any kind of conflict around the free access to flooded lands. This pro-action is referred to as strategy of 'not-telling'. Another form of direct evasive strategy in regards with the transfer of livelihood knowledge is the strategy of 'keeping it short'. One landless woman who for many years already comes with three other families from An Giang province to temporarily settle down on the same rice farmer's residential land, articulates the tenor of what had been more or less openly indicated in most of the interviews: "Sometimes, Northerners come to ask for where and how to place the bamboo traps. Around here few Northerners place the bamboo traps but when you teach people your career you do not teach them all but very briefly."

Such conscious evasive strategies are based on a fine-tuned deliberation process in which it is decided on whom to share one's knowledge with and when to strategically close off in the first place. For the paddy farmer, who never 'shows' off in front of his neighbors and who goes in the 'twilight' to place his bamboo traps, distrust certainly is the decisive factor for safe-guarding one's livelihood skills. Because he feels that people would 'play tricks' on him. It is evident that trust is the dominant factor that facilitates knowledge sharing. Knowledge transfer is bounded in trustworthy reciprocal relationships. Kinship constitutes the basis for such relationships in which knowledge is passed on. In this case, kinship can derive from blood relation as well as being institutionalized through a ceremony that bonds non-

¹¹ For a discussion on gender and access to water and land, see Miller 2006.

biological kindred persons together as 'sisters' or 'brothers'. If trust is not guaranteed by blood then it can grow on the basis of time-consuming investments in personal relationships requiring strong commitments to mutual reliability (cf. Menkhoff/ Gerke 2002). How much effort is needed to be put into trust-building of priceless and natural bonding between people is nicely put into words by one respondent who refers the experiences of her father who tried to get hold of the fishermen's secrets:

"[...] my father, although he was very close to the An Giang and Dong Thap people and brought presents to their families many times, they never showed him their secrets and recipes. My father had to dive into the water and touch the bamboo trap to see how it is made although at that time, the water was very high".

Besides trust being the overarching condition for knowledge sharing other rationalities come into play. Economic and cultural motivation regarding the transfer of local knowledge have to be considered. Economic livelihood niches in the research sites are most likely but simply talking congruent with either being landowner and at least better-off rice farmer or with being landless and rather poor seasonal worker/ fisher man. If two people share the same economic status of being poor and landless, they most likely would not share their knowledge about the good fields keeping the best fish resources or the nicest landowners letting them stay for free on their compounds. Since the other fisherman's family disposes of quite the same fishing knowledge as such, they would at least try to keep an economic advantage by hiding their contextualized business knowledge. The one woman from An Giang referred to earlier brings it to the point:

"The first time they came here they did not go very spontaneously, they came in advance to observe the field. They saw that the fields here have low water level with lots of grass. Fish usually stays in the grass – as long as the field has grass, the field has fish. So when they saw that this field is perfect, they came together. About this they just talk to their 'brothers' and 'sisters', to the ones they can form groups with. Because when there is only one field but with many bamboo traps, the field does not give enough for all the people. They do not tell it to strangers.

Within the group of fishermen using bamboo traps the only advantage they have towards the others are their 'business secrets'. This is the contextualized knowledge, the 'logistical' knowing-how to get access to the fish resources in the first place before applying the know-how in the actual exploitation of the fish in a second step.

While the economic factor seems to be a strong motivation, cultural reasoning of knowledge transfer does not seem a predominant pattern. The possible assumption that the Northerners as well as the Southerners in the research site want to keep livelihood knowledge within their respective socio-cultural groups is untenable when contrasted with the empirical data derived from the interviews.

While Northerners are not much interested in fishing knowledge in the first place, once they possess such livelihood knowledge, being Northerner alone is obviously not a prerequisite for knowledge sharing with only Northerners. The same applies to Southerners not sharing knowledge exclusively amongst each other by reference to culture. Although both groups in general and rather emphatically articulate the cultural distinction from one another, as e.g. by reference to lifestyle and traits, the 'cultural sameness' seemed rather irrelevant for the transfer of knowledge compared to economic motivation.

Both however, economic motivation and cultural reference can be annulled by trust. The interviews with rice farmers as well as fishermen showed trust to be the dominant rationality of knowledge sharing. Trust cross-cuts economic status and culture and is solely based on the belief in the 'morality' of the person I share knowledge with to not apply this knowledge in any strategic way against me. Static social group categories, such as e.g. poor vs. rich, Northerners vs. Southerners may help as analytical ideal types but they do not account for actual negotiation processes of identity and cross-cut group membership. Knowledge sharing always follows strategic considerations of one's own motivations and knowledge by relating those to somebody else's goals and knowledge assets on the basis of intersecting rather than exclusive social group membership. Just because I am female does not mean I share my knowledge only on the basis of gender. Just because I am poor does not mean I only share my knowledge with other poor. Whereas within those strategic considerations of knowledge sharing, trust is an important reason for action.

Imitation and Limitation of Knowledge Artefacts

The exchange of knowledge of course is not always strategically framed but can also be restricted by technical limits. The technical limit of sharing is determined by the tacit feature of knowledge. Local knowledge is characterized by its strong component of being knowledge as practical experience and routine. Tacitness defines the sphere of non-verbalizable¹² process-knowledge that effectively informs our everyday- or specialized knowledge-embedded actions and artefacts. Besides local knowledge as knowledge and practices based on everyday experiences generally endows actors with certain frames of reference for interpretation that enables them to meaningfully act in the social world they live in (Schütz/ Luckmann 1973), knowledge can be also embedded in objects (Antweiler 1995: 29) which are here referred to as 'artefacts'. Hand-made bamboo traps e.g. in this context would be a typical knowledge artefact that is created by practical routines and the know-how of putting different materials efficiently together as a first step to obtain a good catch of fish.



Picture 4 Knowledge artefact: Hand-made bamboo trap for wild fishing (Photo: J. Ehlert 2008).

The cases in which this technical limit of knowledge transfer had directly or indirectly been indicated were manifold. The explanation by a professional bamboo trap maker interviewed typically indicates another essential point of tacit knowledge:

“When my family makes the bamboo traps, many people come to look at us and they also ask questions. I also show them but they cannot do this career because it is very difficult. If they just have one little mistake, the trap cannot work. The most important part of the bamboo trap making is the hole where the fish can go into. To make the hole e.g. you need 100 bamboo sticks but people just take 99 sticks and then the fish will not or at least less go into the trap. That is why the people around here come here to learn this career but when they go home to make the traps they cannot sell as he does.”

As had been directly mentioned or implied in the interviews the successful replication of knowledge-embedded objects does not work only by taking the same materials or ‘ingredients’ at the right amount –

¹² See Marchand 2003.

this can only be a first step. Besides using the right material in same quantities (hard facts), what is the even more decisive factor however, is to get the exact composition of the different ingredients by following the right step-by-step procedure that has a strong self-instructive element. The case of a traditional boat builder family interviewed in the research site paradigmatically presents the core of tacit knowledge as typical trait of local knowledge. To become a handicraftsman in the boat business requires long-term (self-) training of practical learning through methods of observation and especially by own experiences of trial and error. Doing things over and over again, repeating the same mistakes over and over again stimulates reflection about the problem and solution-oriented trying. Over time, the black box in between the problem and the solution gets accessible and the process-knowledge, which is required to come from problem to solution, gets internalized. It is exactly this process-knowledge that constitutes the tacitness. Process-knowledge gets routinized through practical experience. It is very difficult to be articulated because it glues the facts of knowledge-based action together; it is the know-how of doing something. As according to the boat builder, to develop a “sure eye” is more important than complex mathematic calculations to construct a steady and long-lasting boat. Marchand (2003) brings exact the same phenomenon mentioned by the boat builder to the point when he states in the title of his article “[...] why the master builder can’t explain what he knows”.

Besides the self-instructive process of learning by doing, another factor had been indicated in the interviews as determining factor for professionalism, of becoming a ‘master builder’. This has to do with the right amount of creativity and some kind of natural talent and an innate disposition to develop and professionalize certain skills.

The aforementioned process-knowledge however is not only a constituent part of knowledge artefacts itself. Furthermore, it informs the whole procedure of traditional fishing. Hence, catching fish is not done by the bamboo trap alone, no matter how well-done the imitation. A good catch further requires knowledge on where and when to place the trap, what kind of baits work for what kind of fish, movements of fish due to different water and weather conditions etc. The importance of context-bound, situated knowledge is best represented by a fisherman’s statement:

“We [the Southerners] know in which season which kind of fish will move and if it will move in deep water or close to the surface. By eye, we know when the fish goes. So we know where to place the net. The Northerners in contrast just look where there is enough space to place a net and there they put it”.

In the interviews with the Northerners on the fishing skills of the landless, the occupation of different livelihood niches had been given as rational explanation for why the Southerners would be that much more successful in fishing while the Northerners would not be into fishing at all. Being without land, the landless so to speak had to make a virtue out of necessity in the pursuit of some kind of livelihood stability while the paddy farmer could count on the products of his land as livelihood collateral. Besides the explaining factors of livelihood constraints, natural talent and creativity for the fishing success of the local people, explanations with a mysterious, irrational connotation were given. The professionalism of the landless local people was referred back to secret recipes implicating some kind of sacred ecological knowledge on water and its resources etc. Without any disregard of the existence of an intuitive and traditional wisdom as often assigned to indigenous people in their relationship with nature¹³ this explanation model nevertheless would be too short-sighted when talking about tacit knowledge as a case. Hence, at least to a degree the mystery dissolves into the intangible blurriness that is inherent in tacit knowledge or process-knowledge. What, by ‘outsiders’, might be perceived as secret or mystery actually is, at least to a certain extent, the mere outcome of a subjective reflection on trial and error in the pursuit of problem solution. The long-term gained practical experience makes you “develop an eye for something” as had been indicated in the interview with the boat builder or as by the landless fishermen living in the Northerner’s commune who “by eye, knows where the fish goes”. It then might have less to do with irrational mystery than with rational powers of observation by knowledgeable actors.

Tacit knowledge is the knowledge on processes based on experience. It is difficult to be verbally articulated but internalized in people’s actions. It is not standardized in the form of clear cut verbal

¹³ See Berkes 1999.

instructions on how to get from A to Z, from bamboo string to bamboo trap and from bamboo trap to the big catch. Rather it is routinized practice but at the same time innovative in the adaptation to new situations. Coming back once more to the boat builder referred to earlier. He explains that it would be so difficult to become a skillful handicraftsman because “[...] there are no standards, no basis. It is not like a starter of a motorbike, which you can use for every motorbike alike”.

The Strategic Turn of Tacit Knowledge

What above has been referred to as the “local strategies of knowledge sharing” demonstrated that knowledge can be consciously held back or shared when it comes to coping with livelihood insecurities. Two strategies have been elaborated so far, namely the strategies of ‘not telling’ and of ‘keeping it short’. Furthermore it has been discussed that the tacit nature of local knowledge in itself has an exclusive moment which is constituted by long-term practical experience, inborn talent and creativity. Since this kind of knowledge is, besides factual knowledge, the precondition for the professionalization of skills, it has a latent strategic element in itself in as much as it naturally regulates its access.

In the case of the first two strategies, it is actors negotiating access by consciously holding back knowledge. It now will further be argued that the technical limit of knowledge sharing can as well be turned strategically by the actors. There is namely a third strategy to handle the demand of ‘outsiders’ for knowledge. Actors apply the strategy of ‘telling’. In contrast to the first two strategies being evasive forms of communication and interaction, ‘telling’ serves as direct form of communication and proactive strategy of keeping one’s face in interaction with others. There are few exceptions in which people would show or explain their skills to the person having an interest in their career. They would follow an ‘open’ way of dealing with knowledge transfer in the context of growing competition. This third strategy of ‘telling’ gets understandable when culturally contextualizing it.; Even this openness in ‘telling’ your skills has in itself a mechanism of demarcation based on the tacit character of your skills. The characteristic of tacitness can back up culturally appropriate ways of communication and interaction by simultaneously upholding the exclusiveness of knowledge – in this respect tacit knowledge can be strategically turned into a proactive form of communication. If somebody would ask you about your recipes of fishing success, the only thing you could do is to ‘tell’ the facts and ‘show’ him the procedure. Nevertheless, the process-knowledge you could not verbalize (see above) and the other person would have to observe your actions over a long-term and try by him- or herself in order to successfully internalize the process-knowledge. Saying nothing when being asked makes you lose your face because of your demonstration of not-knowing. At the same time you would make the person vis-à-vis lose face by not paying enough respect when leaving his or her question neglected and the situation uncomfortable. In such a situation, ‘telling’ only the facts thus perfectly meets cultural conventions while the whole complementary spectrum of water-livelihood knowledge – as facts and processes – anyhow remains exclusive and competitive by definition.

Conclusion

It has been shown that local knowledge is adapted to the changing human-water relationship and its growing natural fish scarcity. It turned out that the strategic element is a constituent part of local knowledge itself (tacitness) as well as inherent in the process of knowledge sharing. ‘Not-telling’, ‘keeping it short’ and ‘telling’ have been discussed as control mechanisms for knowledge flow in the case of seasonal floodplain fishery in the Mekong Delta.

At the moment it is rather the exception that the Northern paddy farmers in the research commune have an interest in harvesting natural fish themselves. But even the very few who acquired such knowledge try to actively hold it back from other paddy farmers in their commune. This certainly indicates competitive behavior around fishing knowledge as strategic resource. Possible future scenarios might further stimulate the demand for floodplain fishery knowledge. Growing scarcity makes a resource precious in terms of market-value. The decrease of natural fish e.g. will potentially arouse the economic motivation of better-off people in the rural area to strategically get hold of those scarce assets. The

market price for natural fish products increases proportionately to the amount of culture fish on the market, the latter being way less valued for its taste than the natural fish. The stabilizing trend of landlessness will result in more and more people aiming at the diversification of their reproductive base – here fishery knowledge could be a complimentary asset in achieving livelihood security. The strategic advantage of holding fishery knowledge might not being foreseen yet. But the potential future conflict around access rights to decreasing natural fish grounds will evidently upgrade such knowledge. Although landless people cannot control the physical accessibility of fish by fencing their lands, they can at least close-off the flow and regulate the accessibility of their fishery knowledge through strategic action.

In the Vietnamese culture, proverbs play an important role in passing on common knowledge e.g. in the form of rules or advices. Proverbs thus can be the reflection of cultural common sense. “Cho vàng cho bạc chứ ai đi buôn” is a Vietnamese proverb and can be translated into ‘You can give people gold and silver but you should not show them how to trade’. This proverb vividly relates to the canon throughout this whole text. It advises to strategically pass on knowledge by giving only gold and silver – the knowledge artefacts – while holding back knowledge on the procedure, on the ‘know- how’ to obtain gold and silver in the first place – the contextual process-knowledge or the ‘business secrets’. Furthermore, it illustrates again the technical limit of knowledge sharing – you can give people some help at hand to start with, but next they have to go through the process of trial and of making mistakes themselves in order to becoming experienced business men. The strategic and the technical notion of limits to knowledge sharing are perfectly taken up in that saying. And since this advice made it into a proverb the content certainly is of cultural relevance – knowledge transfer is strategic.

Besides the possibility of knowledge transfer being actively and strategically constraint by actors, knowledge transfer in general has less to do with an automatic process of knowledge integration by the recipient than with an active internalization of knowledge as ‘embodied practice’ (Pottier 2003: 2). Although the existence of local knowledge is universal (cf. Berger/ Luckmann 1980: 26f./ 45ff.), local knowledge itself is very much context specific and to a great extent characterized by process-knowledge rather than by verbalizable facts, hence a great extent of local knowledge lies beyond language (cf. Marchand 2003). There is not one collective universal process-knowledge on fishing. There are specialists in fishing with bamboo traps others specialized in using fishing nets, some using different handmade ingredients for baits while others using the same ingredients but in different proportions. Thus, even a rather straightforward ‘community of practice’ such as represented by the landless fishermen at first glance, gets highly fragmented by not following inter-subjective standards but practical personal routine shared among own kinship. Due to this very situated nature then one correctly talks of knowledges in plural (cf. Pottier 2003). While global knowledge can get “localized” (cf. Gerke/ Evers 2006: 4), the other way around then seems to be rather questionable against the background of this article. Under the paradigm of the “democratisation of development politics” (Nederveen Pieters 2001: 12), development cooperation accredits the important role of local knowledge and participation for sustainable development since the 1970s (cf. Schröder 1995: 5 /7f.). Development is based on knowledge on processes (cf. Antweiler 1995: 20) and it is exactly this process-knowledge that is difficult to be extracted and impossible to be replanted in another context. On the other hand Sillitoe (1998) stresses the need to develop a “coherent local knowledge intellectual framework” as part of the globalization process. Others argue (cf. Neubert/ Macamo 2002) that local knowledge and scientific knowledge of development have to be combined to achieve participation in development planning. In reality, as this article shows, it seems to be difficult to combine these two knowledge systems. Besides this, time constraints and ambitious output-orientation in development cooperation renders local knowledge accounts a quick and simplistic endeavor and reduces it to just another blueprint of development planning.

By postulating local knowledge to be flexible and able to integrate ‘new’ or ‘external’ knowledge, the theoretical debate consequently has to assume that this knowledge is freely accessible in the first place – knowledge as intangible “take-away”. But it has been shown that actual processes of knowledge transfer between actors or e.g. between actor and object are prerequisites for any kind of integration. And as has been argued in this article, such transfer itself depends on actors’ strategies of sharing as well as of inborn talent, creativity and quite some perseverance to vanquish ‘tacitness’ through long-

term self-instructive learning. What is perfectly described by Mango¹⁴ as the eclectic between global (scientific) knowledge and local knowledge is well discussed in academia (cf. Long 2001: 73ff.; cf. Pottier et al. 2003) These theoretical insights of global-local interfaces of knowledge can also be drawn on for the analysis of inner-'local' negotiation processes on access to knowledge in the context of micro political ecology and knowledge as strategic resource. This has been aimed at by this article.

References

- Adger, W. Neil and P. Mick Kelly and Nguyen Huu Ninh (2001) 'Environment, Society and Precipitous Change'. In W. Neil Adger, P. Mick Kelly and Nguyen Huu Ninh, eds, *Living with Environmental Change. Social Vulnerability, adaptation and Resilience in Vietnam*. London/ New York: Routledge Research Global Environmental Change, pp. 3-18.
- Antweiler, Christoph (1995) 'Lokales Wissen: Grundlagen, Probleme, Bibliographie'. In Susan Honerla and Peter Schröder, eds, *Lokales Wissen und Entwicklung. Zur Relevanz kulturspezifischen Wissens für Entwicklungsprozesse*. Saarbrücken: Verlag für Entwicklungspolitik, pp. 19-52.
- Berger, Peter L. and Thomas Luckmann (1980) *Die gesellschaftliche Konstruktion der Wirklichkeit*. Frankfurt a.M.: Fischer.
- Berkes, Fikret (1999) *Sacred Ecology. Traditional Ecological Knowledge and Resource Management*. Philadelphia/ London: Taylor & Francis.
- DFID – Department for International Development (2002) *Poverty and Aquatic Resources in Vietnam: An Assessment of the Role and Potential of Aquatic Resource Management in Poor People's Livelihoods*. www.streaminitiative.org/Library/pdf/DFID/VietnamPovertyReport_23.pdf [accessed 22.11.2007].
- Evers, Hans-Dieter (2002) *Towards a New Sociology of Knowledge*. Working Paper 15, Department of Sociology, University of Singapore
- Evers, Hans-Dieter and Simon Benedikter, (2009). *Strategic Group Formation in the Mekong Delta - The Development of a Modern Hydraulic Society*. ZEF Working Paper Series Nr. 35.
- GSO – General Statistics Office (2009) *Statistical Yearbook of Vietnam 2008*. Hanoi: Statistical Publishing House.
- Gerke, Solvay and Hans-Dieter Evers (2006) 'Globalizing Local Knowledge: Social Science Research on Southeast Asia, 1970-2000'. *Journal of Social Issues in Southeast Asia*, 21, 1: 1-21.
- Huu Ninh, Nguyen (2007) 'Flooding in the Mekong River Delta, Viet Nam'. United Nations Development Program, *Human Development Report 2007/ 2008, Occasional Paper, Fighting Climate Change: Human Solidarity in a Divided World*. Human Development Report Office, Occasional Paper 2007/53.
- Kelly, P. Mick and Tran Viet Lien, Hoang Minh Hien, Nguyen Huu Ninh and W. Neil Adger (2001) 'Managing Environmental Change in Vietnam'. In W. Neil Adger, P. Mick Kelly and Nguyen Huu Ninh, eds, *Living with Environmental Change. Social Vulnerability, adaptation and Resilience in Vietnam*. London/ New York: Routledge Research Global Environmental Change, pp. 35-58.
- Knoblauch, Hubert (2005) *Wissenssoziologie*. Konstanz: UVK Verlagsgesellschaft.
- Long, Norman (2001) *Development Sociology. Actor Perspectives*. London/ New York: Routledge.

¹⁴ Mango argues that "a model that assumes linear knowledge production (outside locality), dissemination (to a locality) and utilization (in locality) is misplaced. Both incoming knowledge as well as certain locally existing bodies of knowledge gets transformed resulting in a broadening of knowledge" (Mango 2002 in Pottier 2003: 25).

- Marchand, Trevor H.J. (2003) "A possible explanation for the lack of explanation; Or, 'why the master builder can't explain what he knows': Introducing informational atomism against a 'definitional' definition of concepts". In In Johan Pottier, Alan Bicker and Paul Sillitoe, eds, *Negotiating Local Knowledge. Power and Identity in Development*. London/ Sterling: Pluto Press, pp. 30-50.
- Menkhoff, Thomas and Solvay Gerke (eds) (2002) *Chinese Entrepreneurship and Asian Business Networks*. London/ New York: Routledge.
- Miller, Fiona (2006) 'Risks, Responses and Rights: Gender Dimensions of Water Excess and Water Scarcity in the Mekong Delta, Vietnam'. In K. Lahiri-Dutt, ed., *Fluid Bonds: Views on Gender and Water*. Kolkata: Stree, pp. 202-226.
- Miller, Fiona (2003) *Society-Water Relations in the Mekong Delta: A Political Ecology of Risk*. Division of Geography. Sydney: University of Sydney.
- Nederveen Pieterse, Jan (2001) *Development Theory. Deconstructions / Reconstructions*. London / Thousand Oaks / New Delhi: Sage.
- Nguyen, Ngoc De (2006) *Farmers, Agriculture and Rural development in the Mekong Delta of Vietnam*. Education Publishing House.
- Neubert, Dieter and Eliso Macamo (2002) 'Entwicklungsstrategie zwischen lokalem Wissen und globaler Wissenschaft'. *Geographische Rundschau* 54(10):12-17
- Pham, Cong Huu, Eckart Ehlers and Saravanan V. Subramanian (2009) *Dyke System Planning: Theory and Practice in Can Tho City, Vietnam*. ZEF Working Paper Series Nr..
- Pottier, Johan (2003) 'Negotiating Local Knowledge: An Introduction'. In In Johan Pottier, Alan Bicker and Paul Sillitoe, eds, *Negotiating Local Knowledge. Power and Identity in Development*. London/ Sterling: Pluto Press, pp. 1-29.
- Rambo, Terry A. (2005) *Searching for Vietnam. Selected Writings on Vietnamese Culture and Society*. Kyoto: Kyoto University Press.
- Schröder, Peter (1995) 'Lokales Wissen als konstruktives und kritisches Potential für die Entwicklungszusammenarbeit'. In Susan Honerla and Peter Schröder, eds, *Lokales Wissen und Entwicklung. Zur Relevanz kulturspezifischen Wissens für Entwicklungsprozesse*. Saarbrücken: Verlag für Entwicklungspolitik, pp. 1-15.
- Schütz, Alfred and Thomas Luckmann (1973) *The Structures of the Life-World*. Translated by Richard M. Zander and H. Tristram Engelhardt. Evanston: Northwestern University Press.
- Sillitoe, P. (1998) 'What Know Natives? Local Knowledge in Development'. *Social Anthropology* 6(2):203-220
- Tran, Pham Gia and Roger Few (2006) 'Coping with Floods in the Mekong Delta, Viet Nam'. In Roger Few and Franziska Matthies, eds, *Flood Hazards & Health. Responding to Present and Future Risks*. London: Earthscan, pp. 128-144.
- UNHCR – Office of the United Nations High Commissioner for Refugees (2000) *The State of the World's Refugees 2000: Fifty Years of Humanitarian Action*. www.unhcr.org/4a4c754a9.html [accessed 08/2009].
- Wittfogel, Karl Augustin (1957): *Oriental Despotism – A Comparative Study of Total Power*. Yale University Press.

- 1 Evers, Hans-Dieter and Solvay Gerke (2005). Closing the Digital Divide: Southeast Asia's Path Towards a Knowledge Society.
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- 4 Kassahun, Samson (2005). Social Capital and Community Efficacy. In Poor Localities of Addis Ababa Ethiopia.
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- 8 Evers, Hans-Dieter (2005). Wissen ist Macht: Experten als Strategische Gruppe.
- 8a Evers, Hans-Dieter and Solvay Gerke (2005). Knowledge is Power: Experts as Strategic Group.
- 9 Fuest, Veronika (2005). Partnerschaft, Patronage oder Paternalismus? Eine empirische Analyse der Praxis universitärer Forschungskooperation mit Entwicklungsländern.
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- 12 Wall, Caleb (2006). Knowledge for Development: Local and External Knowledge in Development Research.
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- 18 Hornidge, Anna-Katharina (2006). Defining Knowledge in Germany and Singapore: Do the Country-Specific Definitions of Knowledge Converge?
- 19 Mollinga, Peter M. (2007). Water Policy – Water Politics: Social Engineering and Strategic Action in Water Sector Reform.
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- 26 Eguavoen, Irit; E. Youkhana (2008). Small Towns Face Big Challenge. The Management of Piped Systems after the Water Sector Reform in Ghana.
- 27 Evers, Hans-Dieter (2008). Knowledge Hubs and Knowledge Clusters: Designing a Knowledge Architecture for Development
- 28 Ampomah, Ben Y., Adjei, B. and E. Youkhana (2008). The Transboundary Water Resources Management Regime of the Volta Basin.
- 29 Saravanan.V.S.; McDonald, Geoffrey T. and Peter P. Mollinga (2008). Critical Review of Integrated Water Resources Management: Moving Beyond Polarised Discourse.
- 30 Laube, Wolfram; Awo, Martha and Benjamin Schraven (2008). Erratic Rains and Erratic Markets: Environmental change, economic globalisation and the expansion of shallow groundwater irrigation in West Africa.
- 31 Mollinga, Peter P. (2008). For a Political Sociology of Water Resources Management.
- 32 Hauck, Jennifer; Youkhana, Eva (2008). Histories of water and fisheries management in Northern Ghana.
- 33 Mollinga, Peter P. (2008). The Rational Organisation of Dissent. Boundary concepts, boundary objects and boundary settings in the interdisciplinary study of natural resources management.
- 34 Evers, Hans-Dieter; Gerke, Solvay (2009). Strategic Group Analysis.
- 35 Evers, Hans-Dieter; Benedikter, Simon (2009). Strategic Group Formation in the Mekong Delta - The Development of a Modern Hydraulic Society.
- 36 Obeng, George Yaw; Evers, Hans-Dieter (2009). Solar PV Rural Electrification and Energy-Poverty: A Review and Conceptual Framework With Reference to Ghana.
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- 47 Huu, Pham Cong, Rhlers, Eckart, Saravanan, V. Subramanian (2009). Dyke System Planing: Theory and Practice in Can Tho City, Vietnam.
- 48 Evers, Hans-Dieter, Bauer, Tatjana (2009). Emerging Epistemic Landscapes: Knowledge Clusters in Ho Chi Minh City and the Mekong Delta.
- 49 Reis, Nadine; Mollinga, Peter P. (2009). Microcredit for Rural Water Supply and Sanitation in the Mekong Delta. Policy implementation between the needs for clean water and 'beautiful latrines'.
- 50 Gerke, Solvay; Ehlert, Judith (2009). Local Knowledge as Strategic Resource: Fishery in the Seasonal Floodplains of the Mekong Delta, Vietnam
- 51 Schraven, Benjamin; Eguavoen, Irit; Manske, Günther (2009). Doctoral degrees for capacity development: Results from a survey among African BiGS-DR alumni.
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