



## **The Challenge of Knowledge Sharing – Practices of the Vietnamese Science Community in Ho Chi Minh City and the Mekong Delta**

*PhD Thesis by Tatjana Bauer<sup>1</sup> (2011)*

### **Executive Summary**


Knowledge is seen “as the main driving force of innovation and development” (Evers and Gerke 2005: 5). According to the World Development Report of 1998/99 on ‘Knowledge for Development’ knowledge makes the difference between countries that are stuck in poverty and industrialized nations that have accumulated wealth. It points out that the most decisive problems facing developing countries are knowledge gaps. There is an unequal distribution of financial and human resources for research and development (R&D) which can be observed across countries but also within a state. It has been proved that scientific knowledge about health issues, financial investment or environmental matters can improve people’s lives dramatically (World Bank 1999: 1ff). However, about 80% of knowledge, which is produced by R&D institutes and comprises scientific publication as well as patents, derives from the more industrialized countries because of the costly investments for knowledge production (ibid.: 27). It leads to a knowledge trap because potentials of knowledge which exists in societies are undermined due to a one-dimensional transfer of knowledge from the North to the South (Evers et al. 2010: 170, Evers et al. 2006a). Furthermore, the uneven distribution of information and communication technologies between and within nations, also referred to as global digital divide, is widening the gap between the richer and poorer people and countries due to the different capacity of knowledge production and usage (Evers and Gerke 2005: 7).

There is a need for local research and new knowledge creation to ensure that developing countries can take advantage of the huge accumulation of global knowledge and make technology adaptations to their local conditions (UN 1999: 36, Gerke and Evers 2006). In order to make use of globally available knowledge, knowledge is needed in the first place. Thereby, universities and research institutes are main sources for the generation of new knowledge (Helmstädter 1999: 46).

In addition to the essential part of scientific research activities, practices of knowledge production also comprise interactions among individuals, groups and organizations that contribute to the creation of new knowledge. ‘Knowledge transfer’ is an important element in knowledge management which goes beyond information technologies, databases or directories. It strongly depends on the voluntary exchanges of information and knowledge among human actors in a framework of shared norms and institutions (Helmstädter 2003: 11). Thereby, the government plays a fundamental role in supporting

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the knowledge production in its country “through laws, rules and regulations and through instilling values and beliefs in the procedure and legitimacy of governing” (Evers 2010: 60). A country’s education and science system as well as the legal framework has to support the processes of knowledge creation and sharing as well as guarantee intellectual property rights (see Stehr 2004). This ‘knowledge governance’ facilitates the development of a knowledge infrastructure in terms of creating and supporting knowledge-producing organizations such as universities and colleges, research institutes, government research agencies and knowledge-intensive firms (Evers 2008: 9). Furthermore, knowledge has been identified as one of the major factors of production which improves the competitive advantage of a country in the world (Gerke and Evers 2006: 7, Evers 2010: 60, Menkhoff et al. 2010a: 2). Knowledge is of particular importance for emerging economies which try to develop high-tech industries and move towards knowledge-based economies.

So far, little empirical work about information exchange in Vietnam has been conducted (Appold and Nguyen 2009: 406). This research fills this gap and analyzes the characteristics of the knowledge production systems with a particular focus on Vietnam’s first future megacity Ho Chi Minh City and ‘Asia’s corn house’ the Mekong delta (Chong 2002: 25) granting that this region in the south of Vietnam plays a decisive role for the socio-economic development of the country. Ho Chi Minh City is not only considered to be the financial center of Vietnam, but also as an important cultural and industrial center for the entire Southeast Asian region (Truong 2007: 24). The Mekong delta, consisting of 12 provinces and directly situated to the south of Ho Chi Minh City, is one of the world’s most productive areas in terms of agriculture and aquaculture and ensures food security for the whole country. The whole area is characterized by a complex system of irrigation and drainage channels as well as river systems throughout the delta securing the main income sources of the population, namely agricultural and increasingly aquacultural production. The delta is confronted with numerous water resources management challenges such as flooding, sedimentation, salt water intrusion, droughts, drinking water shortage, deteriorating water quality, poor condition of irrigation and drainage systems as well as inadequate infrastructure for urban water supply and sanitation. These dynamics have a direct impact on production and living conditions of the local population and therewith danger the achievement of national goals such as poverty mitigation and the economic development of Vietnam (AusAID 2004). Moreover, industrialization, urbanization, the rapid growth of population and the over-exploitation of resources will increasingly intensify the pressure on water resources of the Mekong delta region (ADB 2003: 9, ADB 2006: 14, Nguyen et al. 2007: 1f). Given this background, the significance of knowledge production for the region’s socio-economic development will be elaborated<sup>2</sup> by means of taking the water sector as an exemplary case in order to illustrate the research findings and contribute to a more comprehensive understanding of this field of study in Vietnam. Occurring water-related hazards in the Mekong Delta show the paramount importance of further research on water resources management as well as the fundamental knowledge management system in this sector (Menkhoff et al. 2010b: 75ff).

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<sup>2</sup> Even though, the largest concentration of knowledge-producing organizations is located in Vietnam’s capital Hanoi, this study will focus mainly on the south of Vietnam, as the field research is an innovative investigation in this area. Certainly, knowledge production as such has led to the overall development of Vietnam contributing to different regions.



It is clear that knowledge is highly needed to support decision-making processes at all different administrative levels (Nguyen et al. 2007: 18). Hence, it is of most importance to disclose the barriers of knowledge sharing not only in the specific case of the water sector but also for research and development in general in order to enhance the flow of data, information and knowledge between universities, research institutes, governmental research agencies, knowledge-intensive firms and local authorities. A take-off into a highly productive knowledge-based economy can only be achieved by pooling the scarce resource ‘knowledge’ through cooperation and sharing knowledge.

This thesis involves a fieldwork of twelve months, six months in Ho Chi Minh City and six months in Can Tho City – both situated in southern Vietnam, from April 2008 to March 2009. It engages a mixed method research design that integrates qualitative and quantitative research such as participatory observations, informal and semi-structures interviews as well as a knowledge asset survey.


The research objectives are as follows:

1. To identify the existing mechanisms of knowledge generation, representation and dissemination of knowledge-producing organizations in Ho Chi Minh City and the Mekong delta with a particular focus on the water sector.
2. To provide an understanding of the human capacity, financial resources, institutional framework as well as the cultural and political conditions which determine the performance of knowledge-producing organizations.
3. To determine the formal and informal practices of knowledge sharing that are employed by knowledge-producing organizations and their organizational staff.

Similar to other countries in Asia, Vietnam has been industrializing with an enormous speed within the last two decades and rapidly re-integrating into the global economy. Vietnam is a country which experiences a transition from a centrally planned to a market economy as well as from an agricultural to an industrial economy at the same time. In the early reform period of the ‘renovation policy’, otherwise known as ‘Đổi Mới’, in 1986 this happened by offering cheap labor which was the only significant resource the country had at that time. Since the late 1980s the implementation of an export-led industrialization policy has been successful. Vietnam has a stable annual growth of its gross domestic product (GDP) averaging 7.1% between 1990 and 2009 (ADB 2009). The entry into the WTO in 2007 has been a milestone of the economic transition which led to a further spring-up of foreign direct investments (FDI). As a result the living standards in Vietnam have been tremendously raised, especially in the economic hub of Ho Chi Minh City. Yet, there is the need for building up a knowledge-based economy in order to continue this prosperous development in the future and respond to global challenges. This can only be achieved by investments into education and the development towards a knowledge society<sup>3</sup>. Moreover, Vietnam is challenged by the high population which demands an increase of resources and the change of climatic conditions. There are various factors that endanger the prosperous development of Vietnam in the future in

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<sup>3</sup> In a ‘knowledge society’ the level of education is relatively high and most of the employees are knowledge workers. Moreover, the government invests a large portion of its gross national product (GNP) in education, research and development (Evers et al. 2006b: 4).



terms of economic growth, creation of livelihood opportunities and adaptation to climate change (Kellogg Brown & Root Pty Ltd 2008: 2).

This thesis is built upon the debate about ‘knowledge for development’ taking the emergence of knowledge clusters as the most effective strategy to create a knowledge-based economy and society. It is considered to be the substantial strategy to promote the production and transfer of knowledge. Knowledge is the foundation for countries’ innovation capacity. Geographical agglomerations of knowledge-producing organizations in particular regions, so-called knowledge clusters, are central places which attract enterprises as well as other knowledge-intensive organizations due to advanced infrastructures and the concentration of highly-skilled people. These organizations have to be closely located to each other in order to make efficient use of common types of infrastructure such as laboratories, libraries and computing facilities. Thereby, the production of knowledge as well as its transfer requires practices of knowledge management. Coordinating and facilitating dynamic exchanges of knowledge among individuals and organizations is of most significance given the fact that unshared knowledge can be considered as useless (cf. Gurteen 1999: 3). The concept of geographical clustering assumes that proximity increases an organization’s innovative capacity when employees – especially researchers – can share ideas, products and services (Evers 2009). It is argued that knowledge sharing and networking activities have a positive impact on the productivity and innovative capacity of knowledge clusters and hence, on the social and economic development of the region. Investing in information and communication technologies without creating a culture of knowledge sharing will have little benefit to improve the competitive advantage of the country. Throughout the dissertation, the opportunities and barriers to knowledge flows within and between knowledge-producing organizations, i.e. to what extent proximity or clustering have led to intra- and inter-organizational cooperation and knowledge exchange in Vietnam, will be investigated.

Vietnamese knowledge-producing organizations and state agencies are slow to exchange information and knowledge. It can be assumed that there is an abundance of generated data and information scattered in different agencies, ministries and research institutes. The obvious lack of regional coordination, missing compilation as well as editing of data makes it extremely difficult, time consuming and costly to get access to this sources in order to make use of them (ADB 2003: 8).

After introducing the research framework, **chapter 2** shows that knowledge clusters gradually emerge in the south of Vietnam. Ho Chi Minh City and Can Tho City in the Mekong Delta, to a much lesser extent, are both areas that create knowledge hubs in the south of Vietnam. These regions offer favorable conditions for the creation of knowledge – a larger pool of skilled people, more advanced infrastructures and the presence of knowledge-producing organizations. This setting has led to the increase of scientific output and economic growth. However, this development is mainly based on the application of imported foreign high-technologies instead of driven by innovations. So far, the formation of knowledge clusters in this region remains uncompleted due to the limited innovative capacity of the Vietnamese S&T system and a general poor S&T infrastructure throughout the region. Consequently, the knowledge output and the sustainable economic growth of the region as well as of the whole country are restricted.




The chapters 3, 4, 5, 6 and 7 reveal the serious obstacles to the creation of knowledge which cause the poor performance of the Vietnamese innovative output.

The majority of research activities is conducted by national and governmental research organizations while the research capacity of universities and enterprises remains limited. Scientists, lecturers as well as government officials are involved in research and development. As shown in **chapter 3**, most public servants lack sufficient skills and qualifications. This fact negatively effects the determination of research topics and budget. Not only the general weak Vietnamese education system but also the biased practices in recruiting, promoting and evaluating performances seriously restrict a merit-based orientation of the public sector. Instead, the loyalty to personal contacts or party memberships ensures the gradual promotion to higher level positions for public servants. In contrast, academic achievements or skills are widely neglected. Historically rooted, public servants enjoy a high moral status in the Vietnamese society inhering privileges and the access to additional financial sources. Consequently, low qualified public servants' ambitions may not automatically reflect the actual needs of the Vietnamese science system but rather serve their personal aims. The emerging private sector and new opportunities induced by globalization have led to the occurrence of internal and external brain drain. Highly-qualified and skilled people increasingly hesitate to work for Vietnamese state agencies. It weakens research organizations' human capacity enormously and the performance remains low.

The integration into the global market economy has set off the transformation of the Vietnamese S&T system in terms of reducing the S&T monopoly practices by the state and allowing the emergence of non-state research organizations (**chapter 4**). International S&T cooperation and scientific service contracts bear promising opportunities for Vietnamese researchers to overcome the general problem of insufficient research budget. However, the Vietnamese state remains the main investor in research and development. Still, research activities rather serve the central state plan instead of deriving from socio-economic demands. Moreover, the lack of autonomy on planning, funding and human resources by research organizations further limits the chances for improving the management and performance of organizations.

The implementation of the Vietnamese science policy is still problematic. Decision-making processes by public servants as well as their selection of research projects are characterized by non-transparent criteria. In addition, knowledge production is affected negatively by the obscurity of bureaucratic procedures. Researchers struggle for funding which is to a large extent absorbed by public servants in higher level positions. Hence, inadequate research topics and insufficient research funds hinder the realization of qualified research activities.

Corresponding to the limitations revealed in chapter 2, 3 and 4, the research output is necessarily of low quality. This tendency is intensified by the general skepticism to share research findings or publications given the fact that the Vietnamese state is still incapable to protect intellectual properties (**chapter 5**). Vietnamese researchers seriously lack data and information about other organizations' research activities and outcome due to the restricted access to publications and the low incentives to exchange knowledge among




organizations and individuals. ‘Keeping knowledge’ is associated with economic benefit in terms of auxiliary income sources. These information advantages are used to commercialize research output and to access additional resources when being ahead of other competitors.

Nevertheless, information is exchanged to a certain extent informally as shown in **chapter 6**. These information flows are based on social networks and bear opportunities to access additional resources, to be promoted or involved in projects. However, informal interactions seriously constrain organizational performances. In fact, individual members at all levels reduce their commitments to a minimum to invest more time in personal social networks and pursue their own interests. Moreover, there are cultural and political barriers that block innovative ideas and creativity. Hierarchy and rigid societal roles determine decision-making and only allow a one-directional exchange of knowledge. Furthermore, research output has to be politically consistent to the ideological needs of the Communist Party of Vietnam. The Vietnamese state exercises strict censorship and controls the use of information technologies which prevent researchers from providing information and sharing opinions openly. As a result, the sharing of information remains restricted to the individual level of interactions as well as communication in order to adhere to the cultural and political setting in Vietnam.

On the formalized level of interactions, cooperation and knowledge exchange among and within knowledge-producing organizations remain weak (**chapter 7**). The situation can be described as one of hierarchical or bureaucratic sharing, insofar as research results are primarily channeled into either government departments or international donor agencies. Intra-organizational knowledge sharing still seems to be in the embryonic stages of development and horizontal research cooperation as well as knowledge sharing between knowledge-producing organizations hardly take place. These organizations exist next to each other and lack linkage in terms of collaboration or coordination of their research work.

The existing Vietnamese legal framework still suffers from contradictory and overlapping regulations. Moreover, blurred responsibilities among ministries and research organizations let organizations insist on their sphere of responsibility to protect their access to financial resources. Research cooperation would permit the access to data of competing organizations and hence, it would threaten organizations’ supposed information advantages. The ruling Vietnamese science system makes duplications of research projects unavoidable while the quality of scientific output remains low. Moreover, the overall lack of institutional trust and the uncertain working environment led to the insistence in bureaucracy and networking activities. By this, stable relations and income sources have been established despite continuous policy changes.

The economic aspect has always been more important than scientific achievements. This phenomenon can be explained by the numerous uncertainties and obstacles of the Vietnamese social, economic and political setting that Vietnamese scientists have to deal with. The general weak education system can hardly equip researchers with sufficient analysis, writing and language skills. The Vietnamese culture based strongly on the adherence of hierarchy and seniority hinders young educated researchers to apply their knowledge and to develop ideas. Moreover, the strict censorship and control exercised by the state further block new impulses necessary for research and development. In addition,




the research policy insists on the centralized planning system while struggling with the implementation of the law. The institutional framework is still unable to provide clear regulations and precise responsibilities of organizations. These confusions leave space for obscure bureaucratic procedures and biased non-objective practices for the identification of research tasks and the allocation of funds which are chronically insufficient.

Given these barriers, Vietnamese researchers and knowledge-producing organizations hesitate to share data and information as well as neglect the organizational performance. Even though the Vietnamese society is considered to be a collectivist culture, Vietnamese research staff tends to act individualistic at the same time. Work units of organizations lack collective actions while R&D staff has its personal agenda. Vietnamese scientists have adapted to the existing conditions of the Vietnamese S&T system. Individual researchers strongly rely on social networks in order to overcome the barriers to knowledge production. Informal structures, which are supported by the proximity of knowledge-producing organizations within a region, allow the access to information, financial sources and guarantee career opportunities.

As a result, researchers continue to maintain their common informal practices and are resistant to restructuring processes in terms of the management and organization of the Vietnamese science system. A comprehensive management of research projects, publications, knowledge-producing organizations or contact persons would undermine researchers' access opportunities and make certain persons replaceable. As a matter of fact, cultural and political patterns have been stable and will hardly change in the near future given that R&D staff of all levels enjoys individual benefits and act in similar ways. Moreover, informality is deeply inherited in the Vietnamese cultural values and proved to be reliable in terms of providing the aimed stability and social harmony within the Vietnamese society for hundreds of years. Hence, people insist on their common behavior and practices. The promising influences of international S&T organizations are widely blocked on the Vietnamese side and hardly affect the prevailing structures given that the Vietnamese collaboration partners or people who studied abroad are not able to change the entire system. They rather leave the Vietnamese science system or enjoy additional personal advantages by conforming to the prevailing conditions that are necessary to remain part of their social networks in order manage their work.

The Vietnamese science and research community continue to work in isolation from their national colleagues as well as from the international research arena. Knowledge sharing within and among knowledge-producing organizations is extremely under-developed. These limitations seriously restrict the creation of new knowledge. According to international research standards, the research outcome is of low quality due to the limited innovative capacity of the Vietnamese science system and the lack of knowledge exchanges. Hence, low quality research output remains less recognized in the international scientific debate. Moreover, the missing linkage to the needs of the productive sector endangers the successful socio-economic path of development in Vietnam. Vietnam's innovative output is still behind its neighbouring countries and the international science community. Low incentives to strive for innovation and technology advancement will widen the gap and threaten Vietnam's competitiveness within the global economy.



This thesis creates new knowledge and presents the situation of knowledge production and sharing as it can be found in the water sector in the south of Vietnam. In order to be able catching up with the more developed countries and closing the knowledge gap, the creation of local rather than global knowledge needs to be strongly supported in developing countries.

Ho Chi Minh City and the Mekong Delta provided an exemplary setting to observe barriers to knowledge sharing in the concrete case of water resources management and research. The Mekong River Delta is exposed to a high population growth putting pressure on natural resources due to increasing economic interests in agricultural and aquaculture production. In addition, climate change causes the altering of climate-hydrological systems and negatively effects the long term socio-economic development in this region. The Mekong Delta Basin is threatened by the rise of the sea level, the increase in the frequency and intensity of tropical storms and floods, lack of drinking water due to saline intrusion while the local population highly depends on the natural environment. Hence, there is the urgent need for integrated water resources management including the implementation of government programs and plans as well as the conduction of research projects to investigate hydrological, ecological or socio-economical factors. Combined with the regional coordination among knowledge-producing organizations and local authorities, the sustainability of the water sector's functions as well as the adaptation to the impacts of climate change could be achieved.

So far, geographical clustering without knowledge sharing has greatly reduced the effectiveness of knowledge production and knowledge output. The reality in this thesis is that the limited innovative capacity, which endangers the sustainable development of Vietnam's economy and environmental settings, is an outcome of weak intra- and inter-organizational cooperation and knowledge exchange among Vietnamese knowledge-producing organizations and scientists. Their motivations derive from personal interests and objectives. Setting up incentives for researchers to knowledge sharing will automatically lead to the improvement of the innovative capacity and research outcome of the Vietnamese science system. Continuous innovation including the creation and application of new knowledge is essential to sustain organizations' or even countries' competitive advantage. However, knowledge is perishable and short-lived. If knowledge is not shared or used it rapidly loses its value due to the acceleration of technological and socio-economic changes. Knowledge sharing has the potential to have a huge impact on innovation. The exchange of knowledge could enhance the creation of new knowledge and improve the current practices, technologies or products. Moreover, the quality of research projects can be enhanced if experiences of scientists and experts are disseminated to users that apply and adapt the knowledge to the local conditions. Costs can also be saved if unnecessary research projects are eliminated. But that would require a detailed examination and coordination of ongoing research activities and above all communication among knowledge-producing organizations. The exchange of knowledge accelerates the responds to environmental changes while the emergences as well as the spread of information and communication technologies allow scaling up knowledge sharing. It will be not sufficient to just provide high-technology to developing countries. There is the need for epistemic communities in Vietnam which are actively involved in networking activities and encouraged to exchange knowledge.



The description in this thesis provides an exploratory study that presents the reality of knowledge flows and knowledge production among knowledge-producing organizations and scientists. This thesis uses the case of the Vietnamese science community involved in the water sector in Ho Chi Minh City and the Mekong Delta to reveal main barriers to knowledge sharing. In general, the exchange of knowledge can be defined as complex formal and informal practices of various groups driven by cultural, economic and political interests, possessing different levels of authority and striving to overcome obstacles to knowledge production to achieve their aims.

It remains to be seen whether the attempts by some Vietnamese researchers bear fruit, when they start to work toward more intensive knowledge sharing among organizations. Knowledge clustering needs to be supplemented by networking, the building of knowledge-sharing as well as epistemic communities to produce new knowledge and economically viable innovations.

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