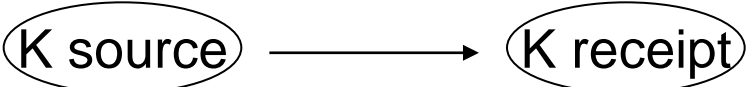


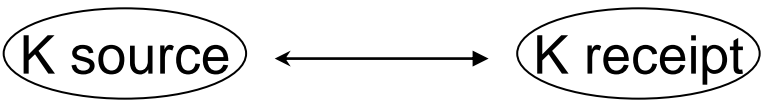


# Transforming knowledge and epistemic cultures: Diffusion of knowledge for agricultural and rural development in Vietnam's Mekong Delta

Quy Hanh Nguyen

Supervised by Prof. Dr. Hans-Dieter Evers and Prof. Dr. Solvay Gerke

- Knowledge
  - “is inherently provisional, context dependent and social” (Berger and Luckmann 1966/1991)
  - Knowledge in this research is ranged from information, awareness and understanding about reality to skills, expertise, technology and wisdom related to the agricultural and rural development (ARD) sector
  - Knowledge is not merely a static product or state but also as a process of knowing
- Knowledge diffusion
  - Knowledge transfer 

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graph LR; Ksource([K source]) --> Kreceipt([K receipt])
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  - Knowledge diffusion 

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graph LR; Ksource([K source]) <--> Kreceipt([K receipt])
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- Epistemic cultures: are cultures that create and warrant knowledge (Knorr-Cetina 1999:1)

- Embeddeness: economic activity was embedded in social structures, structural, cultural, cognitive and political mechanisms, especially social networks (Granovetter 1985)
- Threshold concepts: are defined as akin to conceptual portals or gateways that open up a transformative internal view of the subject matter or part thereof, subject landscape, or even world view within and across disciplines (Meyer and Land 2003, 2005, 2006)

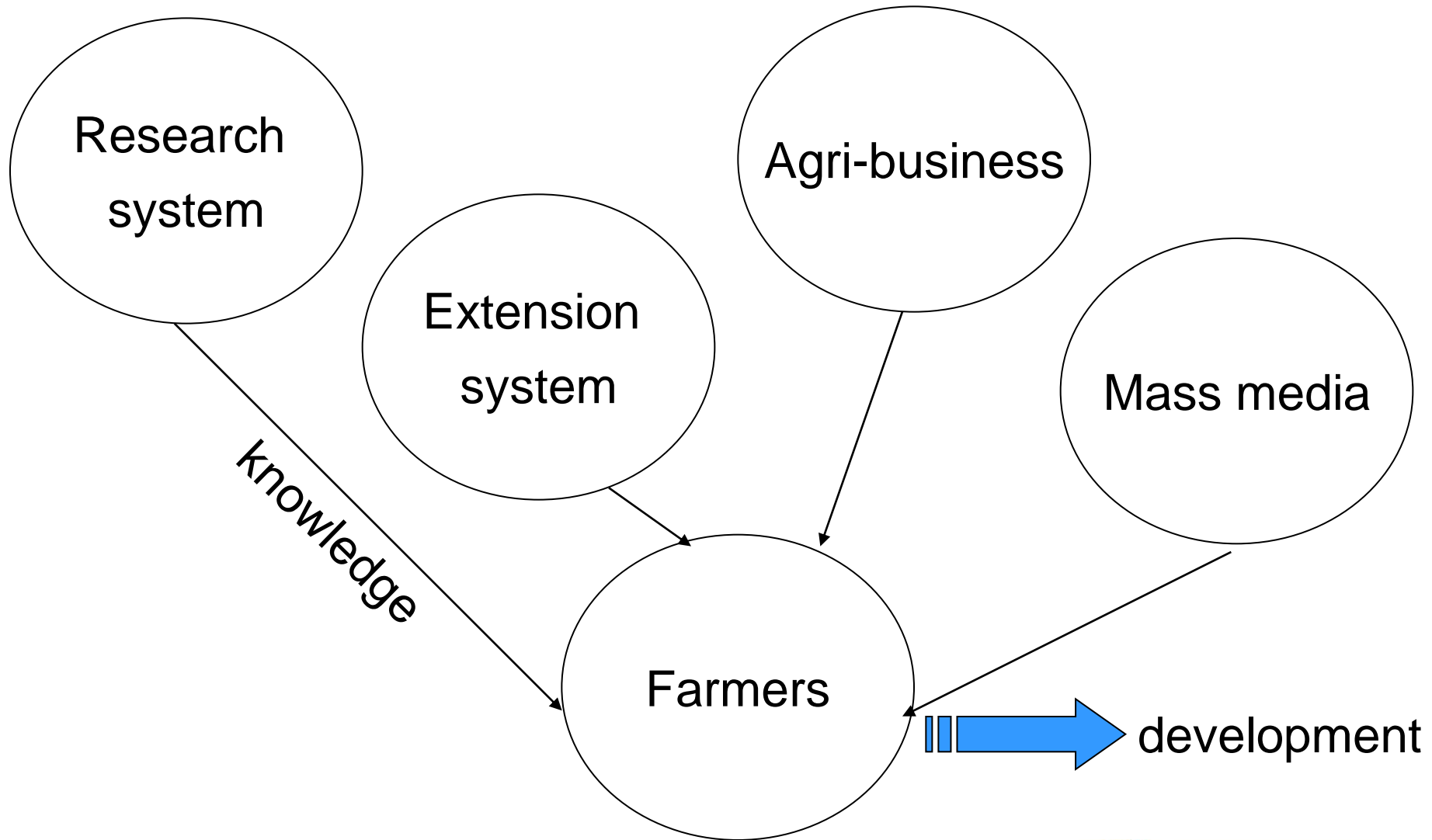
- Research objectives
- Conceptual framework
- Three cases of analysis (as finding illustrations)
  - Embedded extension
  - Farmers as knowledge brokers
  - Scientific and everyday knowledge
- Conclusions

- Overall objective:

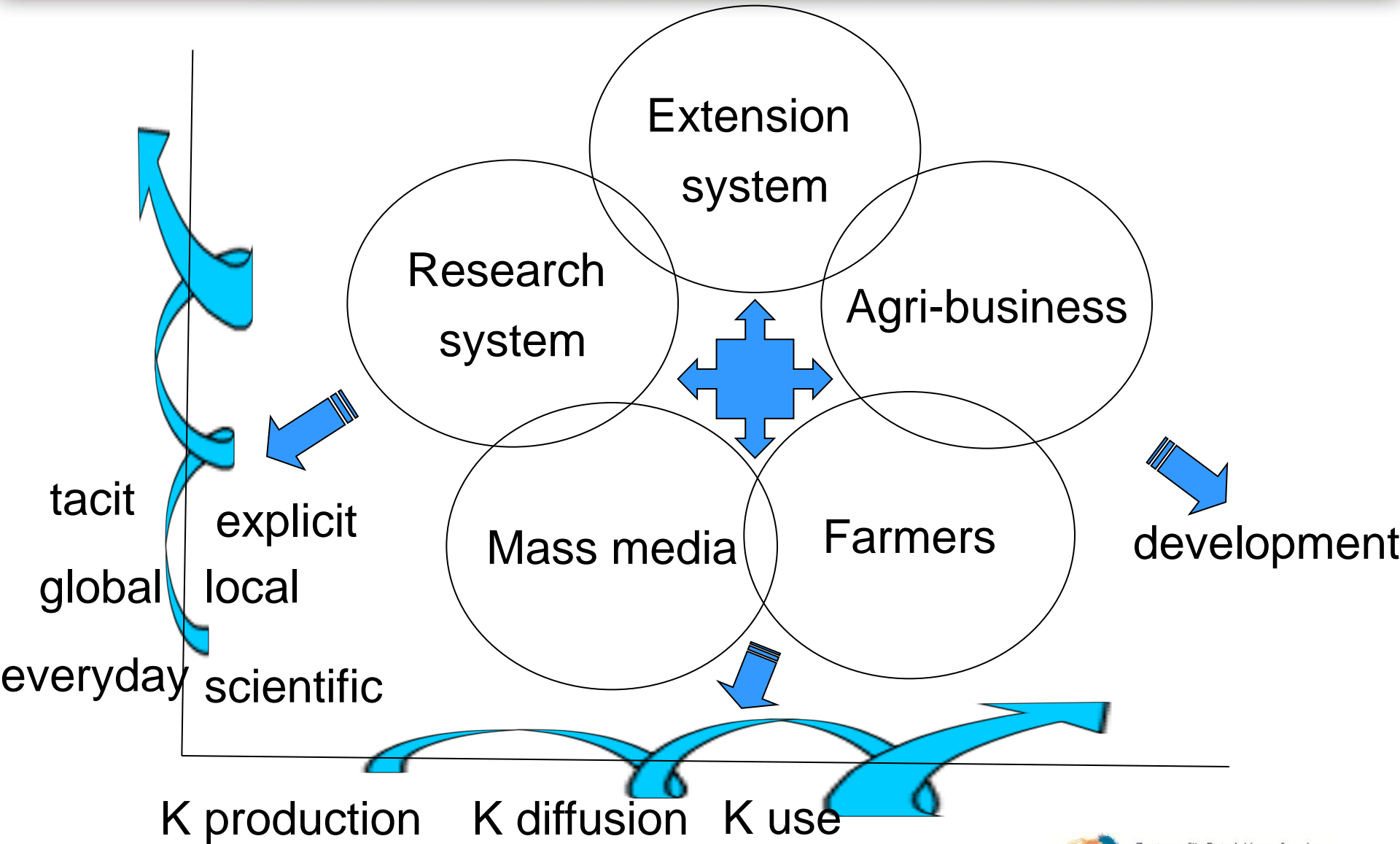
This research aims to provide a systematic understanding of knowledge diffusion for agricultural and rural development in the Mekong Delta of Vietnam and reconstruction of the epistemic culture of development (culture of knowledge production and use) from practitioner's knowledge perspectives.

- More specifically:

- First, to provide the analysis of agrarian changes and the evolution of the local knowledge system for ARD in the Mekong Delta
- To investigate practices of knowledge production, transfer and use of knowledge-based professionals and practices and how motivational, institutional, political and cultural factors determine their knowledge work
- To explore farmer's practices of knowledge sharing, adoption and use as well as their role as an agent of development and knowledge generator



## Conceptual framework (2) Interactive ARD knowledge system



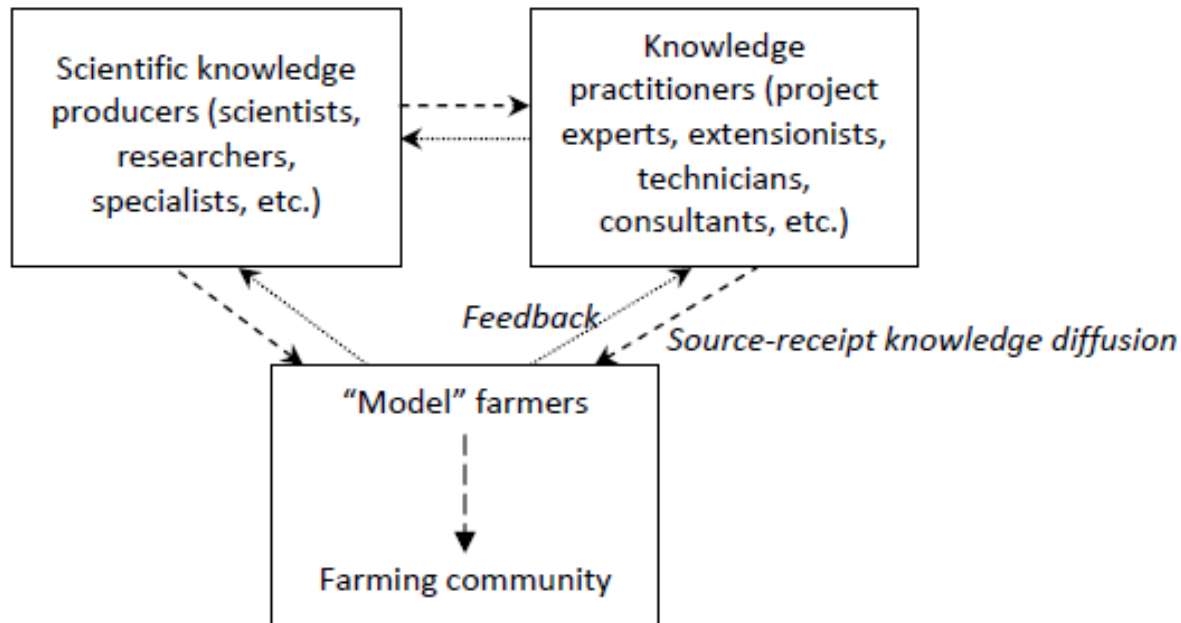


## Case 1: Agricultural extension practice: embedded extension and suspended learning

- Established in 1993 with the state extension as the nucleus.
- A broad network from the central level to the provincial, district and communal levels, even hamlets and villages.
- Extension services are unable to reach wider rural population in need because of the solid maintenance of a top-down extension mechanism, sole reliance on technical staff and thus the prominent practice of the one-way techno-scientific knowledge transfer
- Thin extension coverage with lowered-qualified extension workers weakened by increasing brain drains is defying efforts to further expand and extent extension services to agricultural producers who are progressively more diverse and demanding in updated and modern knowledge and technology.
- Without penetrating structural changes, public agricultural extension cannot lead but more or less “chase after farmers” (Interview 149, senior researcher, male, 05.10.2010).



## Case 1: Agricultural extension practice: embedded extension and suspended learning



- Model farmers: “from model farms to extensive fields”
- Model farmer groups: Rum Soc’s agricultural club, Cau Ke district, Tra Vinh province
- Model village: An Loi in An Giang province “Model” village versus normal village

## Case 1: Agricultural extension practice: embedded extension and suspended learning

- At the grassroots level, knowledge diffusion is ineffectively and passively undertaken due to motivational and professional crisis (commune level)
- Knowledge-based task allocation and management maintains state management bureaucratic practices
- In some cases, local extensionists work closely with villagers can learn and duplicate farmer's "best practices"



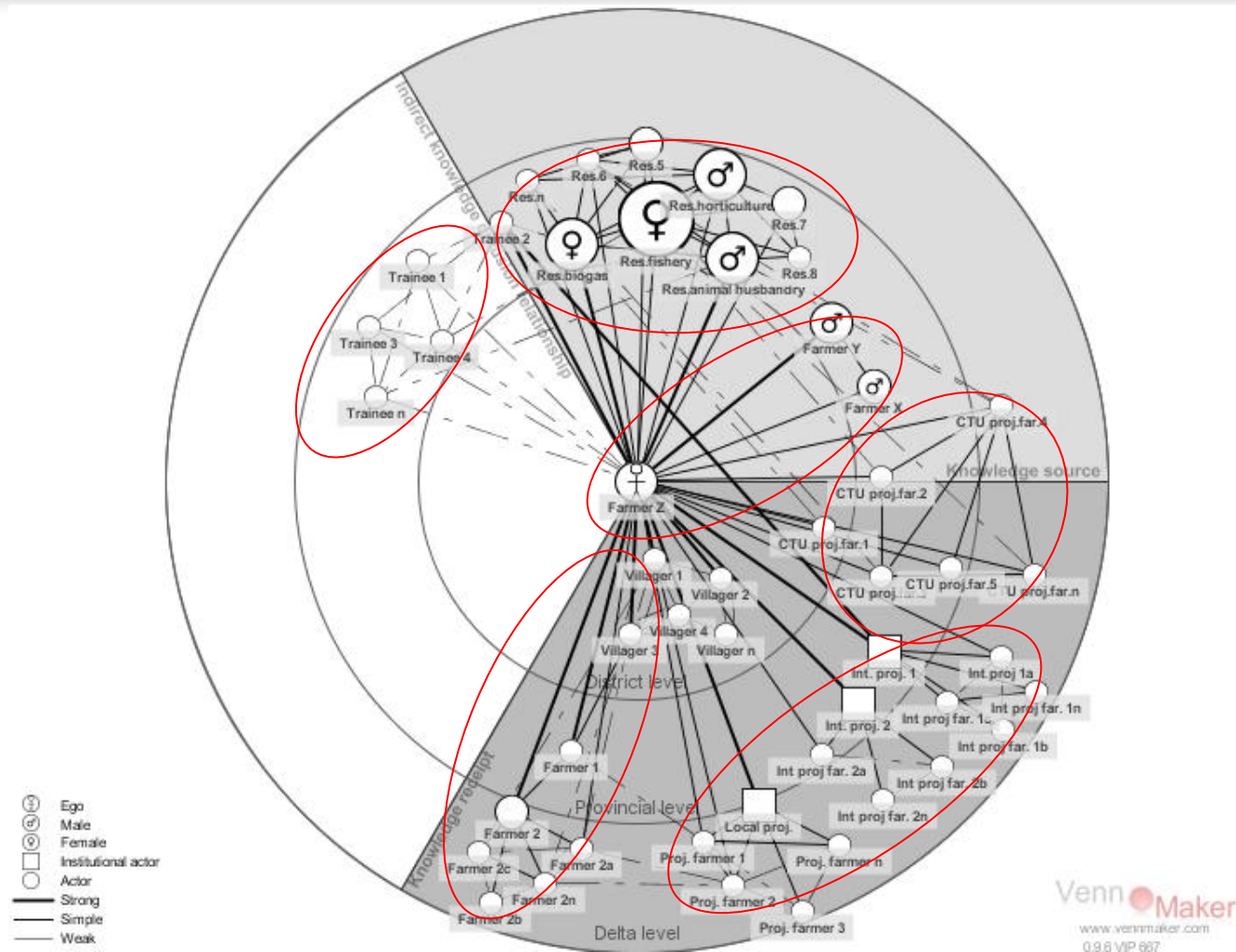
### Local extension is embedded

- (system oriented) to the centralised bureaucracy structure and practices
- (rural community oriented) rural higher demand of information and knowledge

## Case 2: Researcher-farmer interactions and the emergence of farmer groups as knowledge brokers

- VACB designed to make small-scale rural farming more sustainable through integrated horticulture (V), pisciculture (A), animal husbandry (C) and biogas installation (B)
- particularly from Can Tho University (CTU), have diffused VACB technologies through their development-induced action-research interventions.
- These projects are planned and implemented directly by groups of university researchers from relevant disciplines.
- Due to their research-driven features, such research/development projects frequently provide better access, constant contacts, relation maintenance beyond project boundaries and learning spaces between the knowledge source and the recipient.
- In addition, by working closely with farmers, scientists can provide short, instantaneous problem-solving advice and extensive, well-prepared lessons to farmers as well as conduct experiments and tests and make modifications corresponding to farmer's experiences, local conditions and practical trials.
- Throughout this process, localised knowledge and new values are generated and added, and trained farmers have emerged as a new category of VACB knowledge brokers working across the delta

## Case 2: Researcher-farmer interactions and the emergence of farmer groups as knowledge brokers



Knowledge flow network of a farmer as a knowledge broker

# Case 3: Glocalised knowledge: IPM and care

## Integrated pest management (IPM)

- Since 1990, IPM introduced as a solution to change pesticide abuse habits of local farmers and better protect environmental and farmer's health via:
  - FAO: farmer field schools (FFS)
  - IRRI: multi-media based “no early spray” campaigns
- The media campaign was estimated to reach 90% of farmer households in the Mekong Delta
- Farmers who had accessed IPM trainings or media campaigns largely reduced their insecticide use, especially those in campaign-launched areas and some years right after the campaigns
- Locally modified and improved IPM models: three reductions and three gains (3R3G), one must and five reductions (1M5R), ecological engineering





## Case 3: Glocalised knowledge: IPM and care

- A 1992-2007 monitoring survey data analysis by Escalada et al. (2009): from 2005 onward, there is however an increasing trend in farmers' insecticide use and by 2007 farmers' insecticide sprays have returned to the levels of pre-campaign years.
- We noticed that the farmer's conceptual acquisition of IPM is a crucial determinant of their practice:
  - "Application of IPM is very useful for farmers. We can reduce production costs and increase our income. IMP also helps protect the environment and the health of farmers. IPM appliers are persuaded to plant healthy rice, protect predators and visit their field frequently. However IPM has not been widely adopted in our areas because our fields are small-sized and raggedly-distributed." (Farmer FGD, Binh Thuy, 20.11.2010)
  - "Water reduction in agricultural production is intriguing but farmers tend to be reluctant to follow this practice. Fields here are not even and water has to be kept at a certain level to protect rice from rats and weed invasion. Further, water is abundant around and pumping machine is available, thus we easily pump more water into the field, just cannot wait until it gets dry. We know and understand IPM and 1M5R, but the techniques become inapplicable to our current conditions." (Farmer FGD, Phong Dien, 23.11.2010)

- Two-round internet-based Delphi survey to identify and rank threshold concepts in two selective discipline clusters: agricultural extension and pest management
- Sixteen local researchers participating in the survey. Most of the respondents maintain the dual profession of knowledge creators and knowledge disseminators.

|                |                                     | N (=16) | %  |
|----------------|-------------------------------------|---------|----|
| Gender         | Male                                | 13      | 81 |
|                | Female                              | 3       | 19 |
| Age            | Under 30 years                      | 1       | 6  |
|                | 30-40 years                         | 3       | 19 |
|                | 41-50 years                         | 5       | 31 |
|                | Above 50 years                      | 7       | 44 |
| Education      | Undergraduate                       | 1       | 6  |
|                | Master                              | 5       | 31 |
|                | PhD                                 | 5       | 31 |
|                | (Assoc) Prof.                       | 5       | 31 |
| Experience     | Under 10 years                      | 1       | 6  |
|                | 10-20 years                         | 7       | 44 |
|                | 21-30 years                         | 2       | 13 |
|                | 31-40 years                         | 6       | 38 |
| Specialisation | Plant protection and environment    | 2       | 13 |
|                | Agronomy                            | 4       | 25 |
|                | Aquaculture                         | 2       | 13 |
|                | Extension and community development | 3       | 19 |
|                | Agriculture system                  | 4       | 25 |
|                | Biotechnology                       | 1       | 6  |
| Occupation     | Academic researcher                 | 12      | 75 |
|                | Industrial researcher               | 2       | 13 |
|                | Government researcher               | 2       | 13 |

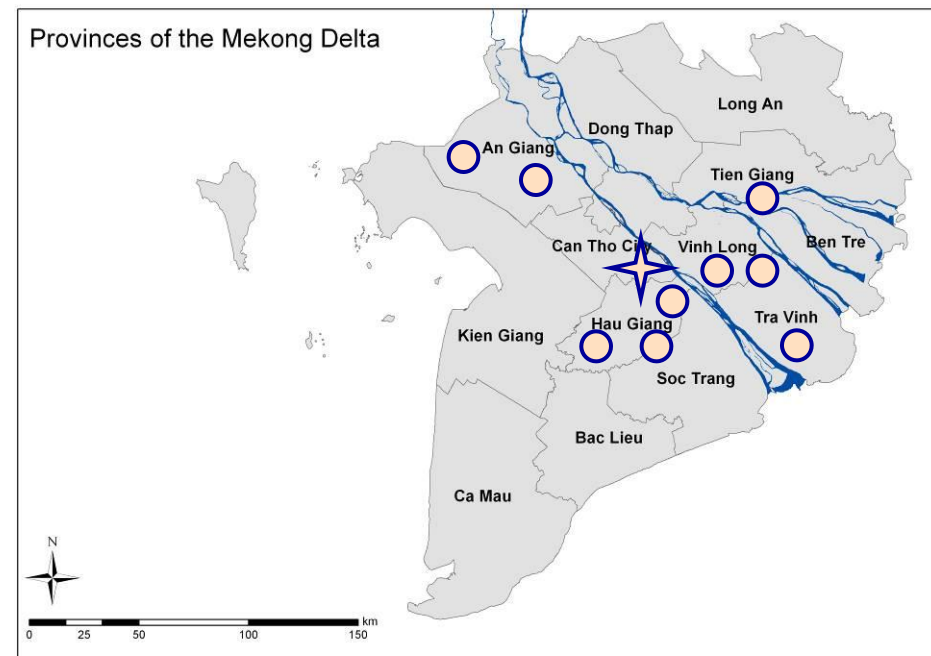
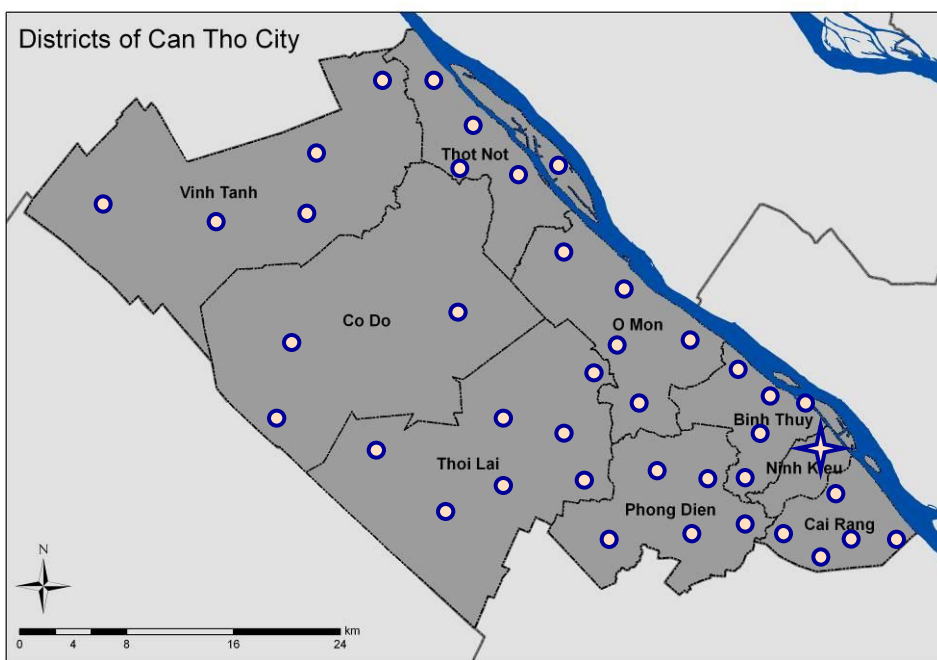


- The survey reports a hierarchy of threshold concepts proposed. *Integrated pest management* is identified as a discipline threshold.
- It is proposed *care/caring* is a threshold concept.
- Caring would transform the way farmers think about and treat their plants, animals and environment. Farmers very often do not care or lack basic knowledge to appropriately care for their crops over growing phases. Such taken-for-grantedness seems to be much truer with farmers from the Mekong Delta where land and weather conditions are more favourable than other regions in the country.
- Caring is not restricted to hard-workingness or industriousness, rather it connects to smart crop management, individually and collectively.
- “Now that most farmers pursue intensive farming, farmers really have to care from verified seed selection, land preparation, to crop growth over various phases, frequent field visits and appropriate decisions of pest management. Farmers need to treat their crops with knowledge-based caring that goes beyond the customary perception that anything you stick in the ground will grow. ”

- The research argues that the epistemic culture of development cannot be disintegrated from practices of knowledge diffusion, use and regeneration that are embedded with the political and cultural contexts of knowledge practice and application communities
- The symbiosis of knowledge for development and action for change requires that new knowledge generation is not constricted as technological or scientific product transfers for development, rather it is a process of interactive and generative global-local, science-everyday and source-receipt knowledge(s).
- Practitioner's knowledge thus needs to be properly managed and governed → innovation capacity
- Farmers are no longer merely homogenous recipients of knowledge for development, evidenced by those in our cases, who have actively engaged in knowledge diffusion through brokerage practices and networking. They also play a crucial role in cultivating networks/communities of practice and connecting experts in the fields and farmers across the delta, from whom knowledge is shared, used and re-produced, as well as the unknowns framed and formulated.

Thank you very much  
for your attention and comments!

12 month fieldtrip mainly conducted in Can Tho rural areas, and extensive interviews in Hau Giang, An Giang, Vinh Long, Tien Giang and Tra Vinh Provinces



**Participants included:** local government officials, mass organizations, extensionists, academic researchers/scientists, local development projects, trade detailers/companies, mass media, farmers (good farmers, farmer's groups, seed providers, small-scaled, poor farmers), ethnic communities, and others: local librarians, Khmer monks, etc.



| Interviews                                  |            |
|---|------------|
| government officials                        | 106        |
| extensionists                               | 30         |
| university lecturers/ institute researchers | 29         |
| agribusiness                                | 22         |
| farmers and rural population                | 123        |
| water companies and stations                | 30         |
|   | <b>340</b> |



- 10 farmer's focus groups (2 in Hau Giang)
- 1-3 hours
- participants: homogenous groups of 5-7 farmers (old, good, women, rice, fruit, sugarcane, etc.)
- contents:
  - redefine concepts of new agricultural cultivation techniques (IPM, 3 reductions 3 increases, GAP, etc)
  - identify and rank sources of information, knowledge needs
  - assess of effects of visualised information/knowledge





- 9 trainings, workshops, conferences and rural development activities participated
  - district's training workshop for fish farmers
  - rural sanitation workshop for peri-urban people
  - commune-level conference to introduce "good" gardening models
  - hamlet's celebration of "solidarity day"
  - university conference to introduce scientific results to the public
  - research institute training for provincial extensionists
  - research institute training for agricultural trainee students
  - company training for local farmers on new pesticides
  - international agricultural fair in Can Tho
- observation, note taking and recording: contents, organisational arrangement, communication, etc.





## 5a. Local radio/television stations (by post)

- Respondents: 6/12
- Contents:
  - current programs and how are they scheduled
  - how are speakers and farmers selected for the live programs
  - “good farmer” portrayed

## 5b. Delphi survey (online, two rounds)

- Respondents: 16 researchers
- Contents: Identify and rank threshold concepts related to agricultural and rural development

Xin và lòng đánh giá mức độ quan trọng của những khái niệm ngưỡng (xin đọc thêm thông tin ở trang 2-3) nếu bạn được đặt với sự phát triển bền vững nông nghiệp, nông thôn, nông dân hiện nay ở đồng bằng sông Cửu Long bằng cách đánh dấu "X" vào các ô tương ứng:

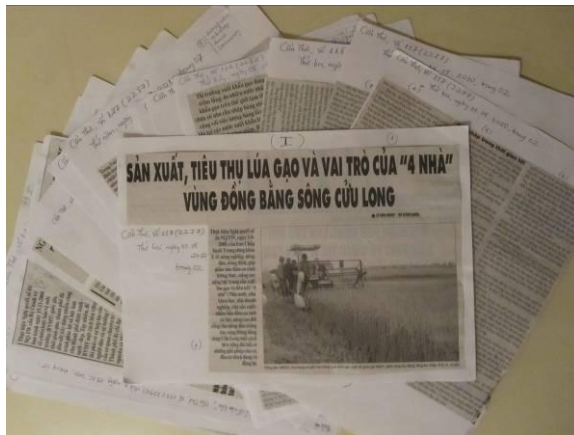
| STT | Khái niệm ngưỡng   | Mức độ quan trọng |   |   |   |   |
|-----|--|-------------------|---|---|---|---|
|     |  | 1                 | 2 | 3 | 4 | 5 |
| 1   | Chăm nom (care)  |                   |   |   |   |   |
| 2   | Ngưỡng sinh tử   |                   |   |   |   |   |
| 3   | Quản lý dịch hại tổng hợp (IPM)  |                   |   |   |   |   |
| 4   | Cảnh tác nông nghiệp bền vững  |                   |   |   |   |   |
| 5   | Hệ thống an dưỡng trong quản lý côn trùng (này màu)  |                   |   |   |   |   |
| 6   | Quản trị rủi ro (risk management)  |                   |   |   |   |   |
| 7   | Nông dân là chuyên gia   |                   |   |   |   |   |
| 8   | Khuyến nông không chỉ là giúp đỡ nông dân mà còn phát triển nông thôn và nông dân (nông dân bao gồm tất cả nông dân) |                   |   |   |   |   |
| 9   | Sự thỏa hiệp (trade-off)   |                   |   |   |   |   |

Xin vui lòng gửi lại và gửi lại câu trả lời cho chúng tôi trước cuối tháng này, 30.04.2011 thông qua email [hanh.nguyen@uni-bonn.de](mailto:hanh.nguyen@uni-bonn.de) hoặc [quyham@gmail.com](mailto:quyham@gmail.com). Chúng tôi mong nhận được ý kiến của quý vị để có thể tổng hợp mọi thông tin quan trọng của quý vị cho báo cáo nghiên cứu cuối cùng. Thông tin trả lời chỉ được sử dụng cho nghiên cứu này và các thông tin liên quan sẽ nhận được bảo mật tuyệt đối. Xin chân thành cảm ơn đã dành thời gian giúp đỡ chúng tôi hoàn thành nghiên cứu.

Trân trọng,

Nguyễn Quý Ham  
Nghiên cứu sinh, Trung tâm nghiên cứu phát triển, Đại học Bonn  
Add: Walter-Flex-Str. 3, 53113 Bonn, Germany  
Tel: ++49(0)15778052922  
Email: [hanh.nguyen@uni-bonn.de](mailto:hanh.nguyen@uni-bonn.de), [quyham@gmail.com](mailto:quyham@gmail.com)  
[www.zef.de](http://www.zef.de)

5a. Can Tho newspaper one year collection (daily, 257 articles)  
→ theme analysis,  
content analysis



5b. Selective television program analysis  
e.g. model farming,  
live programs,  
agricultural tactics



5c. Propaganda posters, pesticide prescriptions, leaflets, instructions, researcher's consultation diary



Thank you very much  
for your attention and comments!