

THE UNIVERSITY OF ADELAIDE



Tuan Minh Ha

**ESTABLISHING AN EVOLUTIONARY LEARNING LABORATORY
FOR LABOUR SAVING INNOVATIONS FOR WOMEN
SMALLHOLDER FARMERS IN VIETNAM**

Thesis submitted to The University of Adelaide in fulfilment of the
requirements for the degree of Doctor of Philosophy

Marketing and Management, Business School

Faculty of the Professions

The University of Adelaide

July 2016

TABLE OF CONTENTS

LIST OF TABLES AND FIGURES.....	II
ACKNOWLEDGEMENTS.....	III
ABSTRACT.....	IV
DECLARATION.....	VI
LIST OF PUBLICATIONS.....	VII
CHAPTER I: INTRODUCTION AND LITERATURE REVIEW.....	1
1.1. INTRODUCTORY BACKGROUND	1
1.1.1. <i>Introduction to the study context</i>	1
1.1.2. <i>Labour saving innovations and analyses of past failures</i>	2
1.1.3. <i>Systems thinking and the Evolutionary Learning Laboratory as a new approach and framework to cope with complexity</i>	4
1.2. RESEARCH QUESTIONS.....	6
1.3. OBJECTIVES OF THE STUDY.....	6
1.4. THEORETICAL FRAMEWORK AND METHODS	7
1.4.1. <i>Theoretical framework:</i>	7
1.4.2. <i>The Evolutionary Learning Laboratory (ELLab)</i>	17
1.5. CONCLUSION AND RESEARCH GAP	20
1.6. OVERVIEW OF THE DISSERTATION	21
REFERENCES	23
CHAPTER 2: ESTABLISHING AN EVOLUTIONARY LEARNING LABORATORY FOR IMPROVING THE QUALITY OF LIFE OF VIETNAMESE WOMEN IN SMALL-SCALE AGRICULTURE: PART I—THE CURRENT SITUATION	28
CHAPTER 3: ESTABLISHING AN EVOLUTIONARY LEARNING LABORATORY FOR IMPROVING THE QUALITY OF LIFE OF VIETNAMESE WOMEN IN SMALL-SCALE AGRICULTURE: PART II – SYSTEMIC INTERVENTIONS	42
CHAPTER 4: SYSTEM DYNAMICS MODELLING FOR DEFINING LIVELIHOOD STRATEGIES FOR WOMEN SMALLHOLDER FARMERS IN LOWLAND AND UPLAND REGIONS OF NORTHERN VIETNAM: A COMPARATIVE ANALYSIS	63
CHAPTER 5: PRACTICAL CONTRIBUTIONS OF THE SYSTEMS BASED EVOLUTIONARY LEARNING LABORATORY TO KNOWLEDGE AND STAKEHOLDER MANAGEMENT.....	74
CHAPTER 6: SYNTHESIS AND CONCLUSION.....	91
6.1. OVERALL CONCLUSIONS	91
6.2. REVIEW OF THE RESEARCH OBJECTIVES.....	92
6.3. LESSONS LEARNED.....	94
6.4. THEORETICAL CONTRIBUTIONS	98
6.5. PRACTICAL IMPLICATIONS	102
6.6. LIMITATIONS OF THIS STUDY	103
6.7. FUTURE RESEARCH	105
REFERENCES	106

LIST OF TABLES AND FIGURES

Table 1. 1 - Description of four levels of thinking and examples under this study context.....	15
Figure 1.1 - FAO’s Socio-cultural research (SCR) approach	8
Figure 1. 2 - Areas of interventions for labour saving technologies	8
Figure 1. 3 - A farm-household structure and decision making by its holder.....	9
Figure 1. 4 - Maslow’s hierarchy of needs	11
Figure 1. 5 - Traditional problem solving approach	12
Figure 1. 6 - Systems thinking approach for solving problems	13
Figure 1. 7 - Four levels of thinking	14
Figure 1. 8 - “Fitness” trajectory of new technologies and adoption by end-users.....	15
Figure 1. 9 - A comparative view between traditional linear thinking and systems thinking approaches	17
Figure 1. 10 - Evolutionary Learning Laboratory for Managing Complex Issues	18
Figure 6. 1 - Levels of community participation	98
Figure 6. 2 - Combining proposed strategic actions to develop an integrated master plan to solve fuzzy problems for achieving the desired sustainable communities	100
Figure 6. 3 - New levels of learning and performance among stakeholders at local and global levels from an adaptive management perspective	101

ACKNOWLEDGEMENTS

First and foremost, my heartfelt gratitude goes to Professor Ockie Bosch (Principal supervisor) and Dr. Nam Nguyen (Co-supervisor) for accepting me as their student to pursue my professional development in the field of systems science. I am so grateful to you both for your encouragement, wisdom, guidance as well as your timeless efforts to make this completed dissertation a reality. Thank you very much for your ongoing support, patience and insightful feedback during my candidature. Your inspiration, mentorship and invaluable advice have substantially improved my competence and confidence, and broadened my academic and career visions. Your encouragement and humour made me feel at ease and continually increased my motivation for doing the best I can during my studies. One could not wish to have better (in every aspect), friendlier and more supportive supervisors. Thank you for everything. Too much to write here.

In addition, I would like to express my sincere thanks to the University of Adelaide Business School and the Australian Department of Education and Training, who have offered me a great opportunity for my PhD studies through the Adelaide Scholarship International (ASI) and International Postgraduate Research Scholarships (IPRS), respectively. Also, I would like to thank the Business School and the Bill and Melinda Gates Foundation for providing funding (through a grant to my supervisors) for my fieldwork and attending conferences.

I am grateful to the Haiphong People's Committee, Department of Agriculture & Rural Development, the Extension Centre, Department of Planning & Investment, Department of Statistics and the district extension networks in Vietnam for their continuous cooperation and logistical and financial support. A special thank you is given to all the women participants of Kien Thuy, Vinh Bao, An Lao, and Tien Lang districts of Haiphong for their time and many valuable contributions to this research.

Thank you to the entire academic and support staff members of the Business School, Adelaide Graduate Centre and Library for their support and guidance during my candidature. I would like to thank my friends and fellow postgraduate colleagues for their friendship, encouragement and support. My special thanks and appreciation go to my housemate, Phong Nguyen, for his kindness, mindfulness and great support during my stay in Adelaide.

Last but not least, to my dearest parents and family, words would never be enough to express how thankful I am to your undying support, love, care and encouragement.

ABSTRACT

Various shortcomings have been revealed in many development efforts using conventional supply-driven and/or top-down approaches with linear vision in developing countries, including labour saving initiatives for the disadvantaged and marginalised groups. Various failures, unintended consequences and even counterproductive outcomes have been evident. Solutions and interventions tend to ignore local contexts, affordability, participation and needs of targeted groups. The inability of traditional approaches to deal with complexities and uncertainties of socio-cultural contexts, interwoven with relationships of both environmental and human factors across regions have highlighted a high need for developing and embracing more holistic and participatory approaches and structured frameworks to address complex problems.

In response to gender-biased labour hardship of women smallholders in the developing world, this study employed the systems-based Evolutionary Learning Laboratory (ELLab) approach, aiming at formulating the most economically, environmentally, culturally and socially appropriate systemic solutions to labour constraints. The latter is a prominent issue pre-determined by a funding body, for women small-scale farmers in rural areas of Haiphong, Vietnam. The first five steps of the ELLab were implemented with active participation of representatives of the target group and relevant stakeholders in the planning phase. This started from identifying issues, building local capacity, engagement and empowerment of the participants throughout problem structuring and decision making processes via a participative, interactive and co-learning environment towards developing a systemic management plan to address the real needs of the women farmers.

In-depth analyses through a baseline survey and a number of interactive workshops helped to understand and frame the context through developing a big picture (systems model) of the current situation. The model depicts a complex life situation and interconnectedness of various factors influencing the quality of life of the women farmers. Increasing income turned out to be the most urgent need, followed by the needs for reducing work pressure and improving health. Labour hardship was found just part of many interrelated issues. The decision making process with the aid of systems and relevant management tools enabled the participants to define systemic interventions and develop an overall systemic management

plan to address their real needs. The identified solutions support one another to address the labour hardship of the women and improve the quality of their lives as a whole.

This study has clearly proven the value and validity of the systems-based participative ELLab as an effective and powerful problem-structuring and solving framework to deal with complex problem across contexts and regions. It embraces bottom-up and participatory approaches in practice, builds capacity of local people and changes the mindsets of stakeholders involved from traditional linear and silo thinking to a more holistic and interconnected way of thinking that leads to appropriate actions and mutual collaboration. The study has addressed drawbacks of other approaches and provided substantial theoretical and practical contributions to various disciplines. These include community development, operational research, gender studies, agricultural systems research and development, participatory action research, project stakeholder and knowledge management, and organisational learning. It has also laid a strong foundation for future research in the mentioned fields.

DECLARATION

I certify that this work contains no material which has been accepted for the award of any other degree or diploma in my name, in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text. In addition, I certify that no part of this work will, in the future, be used in a submission in my name, for any other degree or diploma in any university or other tertiary institution without the prior approval of the University of Adelaide and where applicable, any partner institution responsible for the joint-award of this degree.

I give consent to this copy of my thesis when deposited in the University Library, being made available for loan and photocopying, subject to the provisions of the Copyright Act 1968.

The author acknowledges that copyright of published works contained within this thesis resides with the copyright holder(s) of those works.

I also give permission for the digital version of my thesis to be made available on the web, via the University's digital research repository, the Library Search and also through web search engines, unless permission has been granted by the University to restrict access for a period of time.

Author:

Date: 25 July 2016.

Tuan Minh Ha

LIST OF PUBLICATIONS

REFEREED JOURNAL PAPERS (7 published/accepted):

1. Ha, T.M.; Bosch, O. J. H. & Nguyen, N. C. (2015). Practical contributions of the systems-based Evolutionary Learning Laboratory to knowledge and stakeholder management, *Systemic Practice and Action Research*, 29(3): 261-275.
2. Ha, T.M.; Bosch, O.J.H.; & Nguyen, N. C. (2015). Establishing an Evolutionary Learning Laboratory for improving the quality of life of Vietnamese women in small-scale agriculture: Part I - The current situation. *Systems Research and Behavioral Science*, 33: 532-543 (DOI: 10.1002/sres.2346)
3. Ha, T.M.; Bosch, O.J.H.; & Nguyen, N. C. (2015). Establishing an Evolutionary Learning Laboratory for improving the quality of life of Vietnamese women in small-scale agriculture: Part II – Systemic Interventions, *Systems Research and Behavioral Science*, 33(3): 341-359 (DOI:10.1002/sres.2349).
4. Ha, T.M.; Bosch, O.J.H. & Nguyen, N. C. (2015). Necessary and sufficient conditions for agribusiness success of small-scale farming systems, *Business and Management Studies*, 1(2): 36-44 (DOI: <http://dx.doi.org/10.11114/bms.v1i2.820>).
5. Ha, T.M.; Bosch O.J.H. & Nguyen N.C. (2015). Defining the real needs of women smallholder farmers in Vietnam: the importance of grassroots participation and multi-stakeholder collaboration, *International Journal of Business and Management Review*, 3(2): 35-58.
6. Ha, T.M.; Bosch, O.J.H. & Nguyen, N.C. (2016). A participatory systemic approach to rural community development in Vietnam, *International Journal of Scientific & Technology Research*, 5(4): 53-62.

REFEREED JOURNAL PAPERS (2 under review/pending submission):

1. Bosch, O.J.H., Nguyen, N.C.; Ha, T.M. & Banson, K. (2015). Applying an innovative systems-based methodology for community operational research projects in Southeast Asia and Sub-Saharan Africa, Special Issue on Community Operational Research: Innovations, Internationalization and Agenda-Setting Applications, *European Journal of Operational Research* (Under the second round review).
2. Ha T.M.; Bosch, O.J.H.; Nguyen, N.C., & Trinh, T.T (2015). System dynamics modelling for defining livelihood strategies for women smallholder farmers in lowland and upland regions of northern Vietnam: a comparative analysis, *Agricultural Systems* (under review).

REFEREED CONFERENCE PAPERS (4 published):

1. Ha, T.M.; Trinh, T.T.; Bosch, O.J.H. & Nguyen, N.C. (2015). *Livelihood development strategies for women smallholder farmers in the lowland and upland regions of northern Vietnam: A systems perspective*. International Conference on Livelihood Development and Sustainable Environment Management in the Context of Climate Change (LDEM), 13-15 November 2015, Thai Nguyen city, Vietnam.
2. Ha, T.M.; Bosch, O.J.H.; & Nguyen, N.C. (2015). *Practical Value of the Systems-based Evolutionary Learning Laboratory in Solving Complex Community Problems in Vietnam*, the 59th Annual Meeting of the International Society for Systems Sciences (ISSS), 2-7 August, Berlin, Germany.
3. Bosch O.J.H.; Nguyen N.C.; Ha T.M.; Banson, K.E (2015). *Using a systemic approach to improve the quality of life for women in small-scale agriculture: Empirical evidence from Southeast Asia and Sub-Saharan Africa*, the 3rd International Symposium on Advances in Business Management toward Systemic Approach, 21-23 January 2015, in Perugia, Italy. In Dominici *et al.* (2015) BoA-B.S.LAB-2015: 280-285.
4. Ha, T.M.; Bosch, O.J.H.; Nguyen, N.C. (2014). *Applying an Evolutionary Learning Laboratory Approach for improving the quality of life for women smallholder farmers in the Red River Delta of Vietnam*. Paper presented at the European Meetings on Cybernetics and Systems Research (EMCSR), 21-25 April 2014, Vienna, Austria. In Wilby *et al.* 2014 (Eds.) BoA-EMCSR-2014: 136-143