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DEFINING THE REAL NEEDS OF WOMEN SMALLHOLDER FARMERS IN VIETNAM: THE IMPORTANCE OF GRASSROOTS PARTICIPATION AND MULTI-STAKEHOLDER COLLABORATION

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ABSTRACT: *In response to gender gap and hardship due to heavy production and domestic tasks of women smallholder farmers in developing countries, this study was conducted under the auspices of the Gates Foundation with an original goal of formulating labour saving strategies and innovations for the rural women in Vietnam. The first five steps of a systems-based Evolutionary Learning Laboratory (ELLab) framework together with other management tools were employed in the first phase of the project during April 2013 to April 2014. The project has identified actual challenges and needs of the target group using appropriate systems approaches, including a flexible use of stakeholder analysis and engagement, and a log-frame approach for evaluation. Interestingly, saving labour was not identified as the highest priority for the women and was ranked second after the need for increasing their income. The outcomes of the study served as feedback and a rationale for reframing the project goal and objectives to address the 'real issues', 'real needs' and thus appropriate intervention strategies to address the identified challenges of the women farmers in the research area. Process steps of issue identification, rethinking and reframing of the project approach, goals and objectives are discussed and analyzed to prove the value and validity of the unique ELLab processes as an appropriate framework to deal with complex problems in the context of interconnected economic, environmental, social and cultural factors. The findings have not only brought about practical solutions for the women, but also formulated context-based recommendations for funding agencies and local governments.*

KEYWORDS: Decision processes, Collaboration, Labour, Participation, Stakeholders, Women smallholder farmers.

INTRODUCTION

Background

Vietnam is an agriculture-based country with more than 70% of the population residing in rural areas and nearly 60% dependent on agriculture (Hoang, 2011). The country has gained considerable achievements in socioeconomic development and poverty reduction since the reforms in December 1986 to move from centrally planned to a market oriented economy (Arkadie & Mallon, 2003; Wolz & Duong, 2010). This could be considered as a milestone for

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many development issues in Vietnam, particularly agricultural growth, poverty alleviation in one of the poorest countries and malnutrition during the 1980s, to the second largest rice exporter (Mai *et al.*, 2013; Marsh *et al.*, 2006). In fact, Vietnam has changed to a country that today has one of the fastest transition economies in Asia (Arkadie & Mallon, 2003; Wolz & Duong, 2010).

Despite the three notable economic recessions during the 1980s in Vietnam (prior to the 1986 reforms), late 1990s (East Asian economic crisis) and since 2008 (global crisis), agricultural growth has remained steady to support the Vietnamese economy and other sectors (Hoang, 2011). The agrarian reforms regarding decentralization of land tenure played an important role in the agricultural growth. This is continuing to motivate farmers to invest labour and capital in production, while enabling them to search for the most efficient and effective forms of land use (Coxhead *et al.*, 2010; Wolz & Duong, 2010). As a result, the country has gained "bright successes" with an annual growth rate of approximately 7% since the reform (Schmidt, 2004). Moreover, the country witnessed a remarkable reduction in poverty levels, from 60.0% in 1990 to 20.7% in 2010. Around 30 million people were lifted above the poverty line, whereas employment, education and health were significantly improved (Mai *et al.*, 2013). Besides, Vietnam's favourable legal environment has enabled huge foreign aids via Official Development Assistance (ODA) and Foreign Direct Investment (FDI) to be more efficiently used in its comprehensive development (Mai *et al.*, 2013).

While many successes have been evident, the government's objective to be an industrialized country by 2020 remains rather ambitious (Taylor, 2004). The country needs to solve emerging problems in the transition period (Nguyen *et al.*, 2011b; Schmidt, 2004). Imbalanced growth among sectors and rising social concerns in certain areas such as inequity and migration and even poverty have been reported (Giang, 2007; Taylor, 2004). Significant impacts on small-scale farmers and rural communities are particularly evident. Small land holdings were found to be a major impediment to market access, especially after Vietnam joined the World Trade Organization (WTO) in late 2006 (Dung & Jenicek, 2008; Giang, 2007; Marsh *et al.*, 2006). Inadequate planning during the industrialization and urbanization process has also led to many consequences in rural areas such as reduced farmlands, unemployment and labour migration (Thinh, 2009). A noticeable level of gender disparity has been reported (FAO, 2010; Kabeer, 2003; Liu, 2004; SDSN, 2012) in spite of the continuous effort of the central government to promote gender equality through its strategic development - "growth with equity" (Cuong, 2011; Fritzen, 2002). Women farmers were found to take on the main tasks in agricultural production, while more and more men moved to work in non-agricultural sectors (Thinh, 2009). These results are also consistent with conditions in the Red River Delta (RRD) of Vietnam (FAO, 2010; Ha *et al.*, 2014b). According to Thinh (2009), rural women have to work extended hours (8 to 17 hours per day) under unsafe conditions (e.g. toxic chemical use) and using mainly primitive production and harvesting tools.

Response

In response to the gender issue and labour hardship of rural women in developing countries, the Grand Challenges Explorations funded by the Bill and Melinda Gates Foundation aims to seek novel labour saving strategies and innovations. Many previous labour saving initiatives have failed due to an inappropriate understanding of the local context; dynamics of interwoven economic, social, cultural and technical factors; and a lack of participation and understanding of the real needs and capacities of women (Gates-Foundation, 2013). For these reasons, this study employed a systems thinking approach and the establishment of an Evolutionary

Learning Laboratory (ELLab) framework (Bosch *et al.*, 2013b) that consists of holistic and participatory processes to understand the context, uncover real issues and formulate appropriate and systemic strategies to address the real needs of women smallholders in rural areas of the RRD in Northern Vietnam. In fact, it is well established that complex problems are very often interrelated in "non-linear" manners that cannot be addressed in isolation. Systems thinking is therefore needed to address the challenges in a systemic way (Whiteman *et al.*, 2013). From a holistic viewpoint, the hypothesis is that labour saving may not necessary be the priority, but only a part of the solution (interrelated systemic interventions) to improve sustainable livelihoods and quality of life of the women smallholders. This assumption was tested and validated during the context analysis, issue identification and formulation of the systemic interventions.

Moreover, this paper also discusses practical contribution of this research to *organizational learning* theory (Argote, 2013; Fiol & Lyles, 1985) through reflective changes in perception and thus subsequent actions among the stakeholders.

Theory

Past failures in labour saving initiatives due to the nature of linear thinking and "top-down" approaches:

While a number of successes have been evident in providing labour saving technologies in production (Bishop-Sambrook, 2003; Carr & Hartl, 2010; Fernando & Porter, 2002; Ragasa, 2012), many studies have proven that supply-driven and/or top-down approaches generate a number of counterproductive outcomes and unintended consequences such as job losses, ownership shift of production tools and poor adoption rate of labour saving technologies. In Vietnam, for instance, the introduction of plastic drum seeders in rice production with a purpose of reducing hardship for poor smallholders turned out to benefit the resource-rich groups, while 50 to 100 percent of the poor and landless women farmers lost their jobs as hired labourers on the farms of resource-rich holders (Paris & Chi, 2005).

Poor adoption rates are due to many factors such as the lack of understanding by advisors and technologists of the local settings, socio-cultural factors, knowledge of the people, affordability (Khavul & Bruton, 2013; Ragasa, 2012; Vien, 2003; Vien *et al.*, 2006), users' expectations (Bishop-Sambrook, 2003; Khavul & Bruton, 2013) and their context-based constraints (Khavul & Bruton, 2013). Complexity of the women's roles, responsibilities and their dynamics (Doss, 2001) have also led to many failures in saving labour for women smallholder farmers worldwide, including Vietnam.

Systems thinking as an innovative approach to address linear thinking and biases:

The above mentioned failures and shortcomings of linear thinking that leads to "quick fixes" and a supply-driven approach, often reflect the biases of policy makers, donors, developers and practitioners. The traditional reductionist approach has been proven ineffective since it seems to ignore the reality of complex systems in which different elements are interrelated (Adams & Cavana, 2009). In other words, a change in one part of a system results in changes of other constituents and systems and there are always feedback relationships (Sterman, 2001). Additionally, due to limited personal knowledge (Sterman, 2001) and inability to deal with complex issues (Bosch *et al.*, 2007a) people tend to jump to solutions in a single-minded manner which has led to many side-effects (Sterman, 2001; Vester, 2007) and even counter-

productive results (Maani, 2013). The evidence of the past failures as described above reflects these viewpoints.

In contrast, systems thinking provides a holistic outlook on multiple-aspects and interrelationships of complex issues (Bosch *et al.*, 2013a; Rubenstein-Montano *et al.*, 2001; Sterman, 2001). It facilitates an innovative approach towards solving complex problems, which enables an all-inclusive identification and understanding of the underlying root causes within a multi-dimensional context (Maani, 2013) and thus lead to systemic interventions for sustainable outcomes that are based on multi-stakeholder and multi-disciplinary communication and cooperation (Bosch *et al.*, 2013a; Bosch *et al.*, 2013b).

Four levels of thinking: The basic philosophy of systems thinking for systemic interventions lies in the four levels of thinking, as critically examined by various studies (Bosch *et al.*, 2013b; Cavana & Maani, 2000; Maani, 2013; Maani & Canava, 2007; Testa & Sipe, 2006). The levels were analyzed through representation of an iceberg analogy, starting from events or symptoms (the most visible part) to patterns, systemic structures and mental models (the bottommost level) (Figure 1).

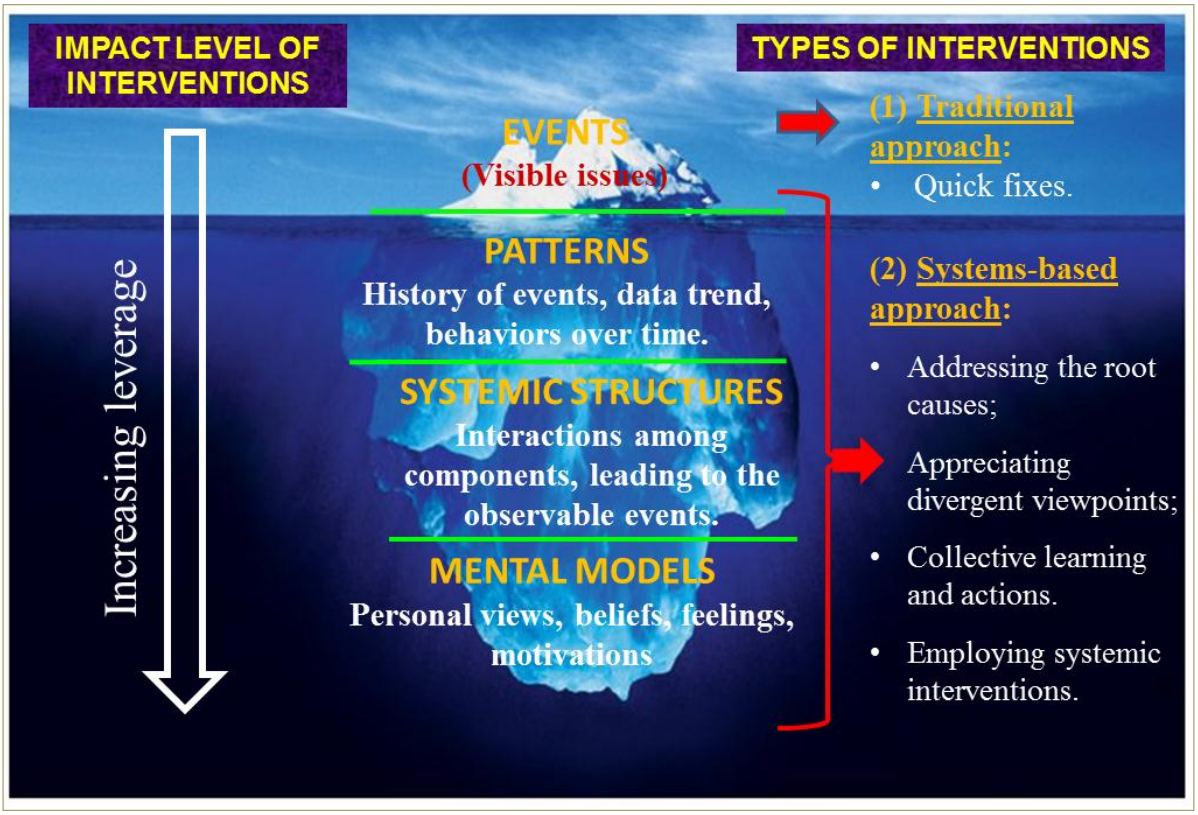

Figure 1. Four levels of thinking *(Modified from Maani & Canava (2007) and Bosch et al. (2013b)).*

The *events* level can be regarded as the tip of the iceberg, the most tangible and visible part. It provides a "snapshot of reality" (Maani & Canava, 2007), i.e. the "incidents" and "events" that draw people's attention, followed by instant responses (Maani, 2013). Such interventions are considered as "quick fixes" and/or "treating the symptoms" due to their ease of identification and implementation, yet sustainable outcomes are not obtained (Bosch *et al.*, 2013b). *Patterns* represent the behaviours and history of events over a period of time (Bosch *et al.*, 2013b; Maani, 2013). *Systemic structures* represent the interrelationships among elements that induce

the visible events and patterns (Bosch *et al.*, 2013b; Maani, 2013; Maani & Canava, 2007). *Mental models* are the deepest level of thinking, characterizing "human factors", namely, beliefs, experiential knowledge, motivations, values, assumptions, perceptions, hidden reasons behind people's decisions and deeds (Maani, 2013; Maani & Canava, 2007). Table 1 summarizes the background theory and its linkages to the context of this study.

Table I. Description of the four levels of thinking and examples in the context of this study

Levels of thinking	**Description**	**Sample descriptors in the study context**
Events	Visible problems; daily happenings.	Women labour hardship, inequity, labour saving options, rural-urban migration, low technology adoption rate.
Patterns	Behaviours over time; history of events.	Fluctuations of women's workload, outmigration; annual patterns of pest & disease outbreaks.
Systemic structures	Interactions among factors and components that induce visible events.	Relations among production costs, market prices, production practice, producers' capability, local natural and cultural settings, policies and how they influence technology adoption.
Mental models	Personal views, beliefs, motivations, etc.	Housework and childcare are the responsibility of women; household heads (husbands) take decisions in resource use.

APPROACHES AND METHODS

Study location and target group

The study was conducted from April 2013 to April 2014 in four rural districts of Haiphong, namely Kien Thuy, An Lao, Tien Lang and Vinh Bao. These areas are situated in the lowland RRD of northern Vietnam where 53.9% of the population is living in rural areas (HPP, 2012). The target group of this study was women smallholder farmers with limited areas for production (average of 0.31ha), poor resources and a high work burden. Their major income is dependent on small-scale and spontaneous crop and livestock production (Ha *et al.*, 2014b).

Approach, framework and process steps

Using the systems-based ELLab framework:

Recent successes of the newly developed systems-based ELLab framework have proven its validity and practical impacts. This approach (Figure 2) has been used and applied successfully in solving complex problems in a variety of contexts (e.g. Banson *et al.*, 2014; Bosch *et al.*, 2014a; Bosch *et al.*, 2013a; Bosch & Nguyen, 2014; Bosch *et al.*, 2014b; Ha *et al.*, 2014a, 2014c; Keegan & Nguyen, 2011; Kiura *et al.*, 2013; Kiura *et al.*, 2014; Nguyen *et al.*, 2011a; Nguyen *et al.*, 2013; Nguyen *et al.*, 2014).

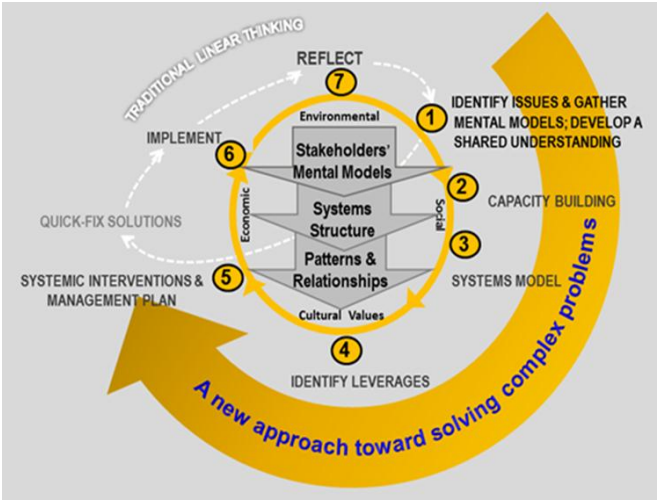

Figure 2. Evolutionary Learning Laboratory for Managing Complex Issues

(Source: modified from Bosch et al., 2013b)

The ELLab is a generic framework that enables the flexible use of a participatory approach and other systems tools to enhance shared vision, mutual learning and agreed actions among stakeholders during the whole learning and decision making process (Bosch *et al.*, 2007b). Participation should surpass beyond the level of engaging stakeholders in a number of activities to become truly active participants in the whole process (Handley *et al.*, 2006). Full participation by all stakeholders in an interactive and "safe" learning and decision making environment enhances mutual understanding and accountability toward joint actions (Maani, 2007, 2013) and thereby ensuring sustainable outcomes (Nguyen *et al.*, 2011a). True participation also generates a sense of ownership (Ha, 2014b; Stein & Imel, 2002). Moreover, knowledge acquisition can be triggered through participation and sharing of experiential knowledge amongst participants (Tallman & Chacar, 2011). The ELLab framework has been found useful to identify economically viable, environmentally friendly, culturally acceptable and socially responsible systemic solutions. Although local and/or insider knowledge is essential for appropriate interventions (Dinham, 2005; Turner, 2009; Ward *et al.*, 2009), it is often overlooked in many development programs (Eversole, 2012). The ELLab can help address this issue since the needs and concerns of local people and stakeholders are embedded in the system models, serving as the basis for discussions and formulation of intervention strategies.

Applying the ELLab would be further proven as a potential problem-solving framework in cross-sectoral contexts through this study, in which labour constraints are considered as a perceived problem (visible problem) to be solved. The learning laboratory will help policy makers, managers, developers and other relevant stakeholders to understand the value of a systems-based approach in problem solving, because "cause and effect are not close in time and space, obvious solutions could produce more harm than good, and short-term fixes produce long-term problems" (Senge, 1990). Due to the nature of continuous reflections and joint learning, this study will serve as an example and demonstration that contribute new lessons learned and shared experiences at the global scale among regions and countries in the world through the "Access" and "Engage" Hubs of the Think2Impact^{TM} Platform: http://www.think2impact.org/.

The first five steps: In this paper, the first five steps of the ELLab framework as fully described by Bosch *et al.* (2013b) were employed as a flexible approach and method that enables the integration of systems tools for in-depth understanding of context, actors involved, and thus engagement of participants (stakeholders) in developing a systemic management plan for achieving the identified goals. In summary they include:

1. Issue identification and sharing of the diverse mental models of stakeholders (representatives of government departments and organizations, service providers, and women smallholder farmers in the four rural districts of Haiphong (Step 1);
2. Capacity building, which was conducted from the very first step and throughout the whole process of establishing the ELLab (Step 2). This activity is critical for raised awareness, understanding and taking ownership of the processes of the ELLab (Bosch *et al.*, 2013b), collaborative conversations amongst participants (Eguren, 2008), enabling a 'journey of empowerment' (Dinham, 2005);
3. Integration of the mental models in a systems structure or model using Vensim® software (Ventana®, 2011) (Step 3);
4. Interpretation of the systems model and identification of leverage points (Step 4). The sharing of divergent mental models provides a broad picture of how the system works, which facilitates the identification of leverage points ("places within a complex system where a small shift in one thing can produce big changes in everything" (Meadows, 1999); and
5. Using Bayesian Belief Network (BBN) modeling (Cain *et al.*, 1999) to identify systemic interventions and the development of a systemic management plan to achieve the main objectives as identified during the previous steps by the women and other stakeholders (Step 5).

Reflection and follow-up:

A reflection on the findings after the first five steps indicated clearly that the factors that determine work pressure are intrinsically interconnected with the factors that impact on other local needs such as improving income via enhanced market access and other factors. Agribusiness enterprises and traders were not involved from the start of the project due to its original focus on labour saving innovations. Thus, additional forums and interviews with potential companies, traders and local cooperatives were conducted to gain a more comprehensive and in-depth understanding of the context and to identify potential stakeholders for engagement in the process.

A stakeholder mapping tool by Allison *et al.* (2005) was employed to identify relevant stakeholders and indicate their power/interest levels in relation to production and market access.

Representatives of the potential companies (identified through the follow-up surveys) were invited to plenary workshops with other key stakeholders (government officials of functional departments/organizations, and women farmers). The purpose of these workshops were to create opportunities for related stakeholders to communicate, share their views and concerns and collaboratively define and refine the systemic interventions, especially in terms of contract farming and production organizations. This is because some of these actors might have the same interests and vision (Ha, 2014b). However, due to a lack of opportunity during the first

series of workshops to communicate and mutually discuss the challenges from each side, the finding of solutions to address the obstacles has not been fully explored.

Finally, a logical framework (log-frame) approach was developed and discussed to justify grounds for modifying the original goal from a labour saving focus to improving the quality of life for the women, in which the original focus was identified as just a part of the systemic interventions to meet the real local needs.

RESULTS AND DISCUSSION

The results focus on the main findings and discuss the importance of the context analysis, multi-stakeholder participation and collaboration, and how these have influenced the reframing of the original project goal and objectives. In addition, some evidence is presented to prove the validity of participation and multi-stakeholder cooperation for developing a practical, context-based and systemically determined implementation plan.

Issue identification and development of a systems model

The systems model in Figure 3 is an integration of the mental models of all the women farmers of the four selected districts and other stakeholders on how they see the different factors affecting the main issues in their lives. The perceived problem of labour hardship as indicated in the original project goal, namely to identify labour saving strategies and innovations for women smallholders, was found not to be the most prominent issue that women in the research area have to overcome. The main challenges were, in order of importance, low income, high work pressure and health problems (Figure 3).

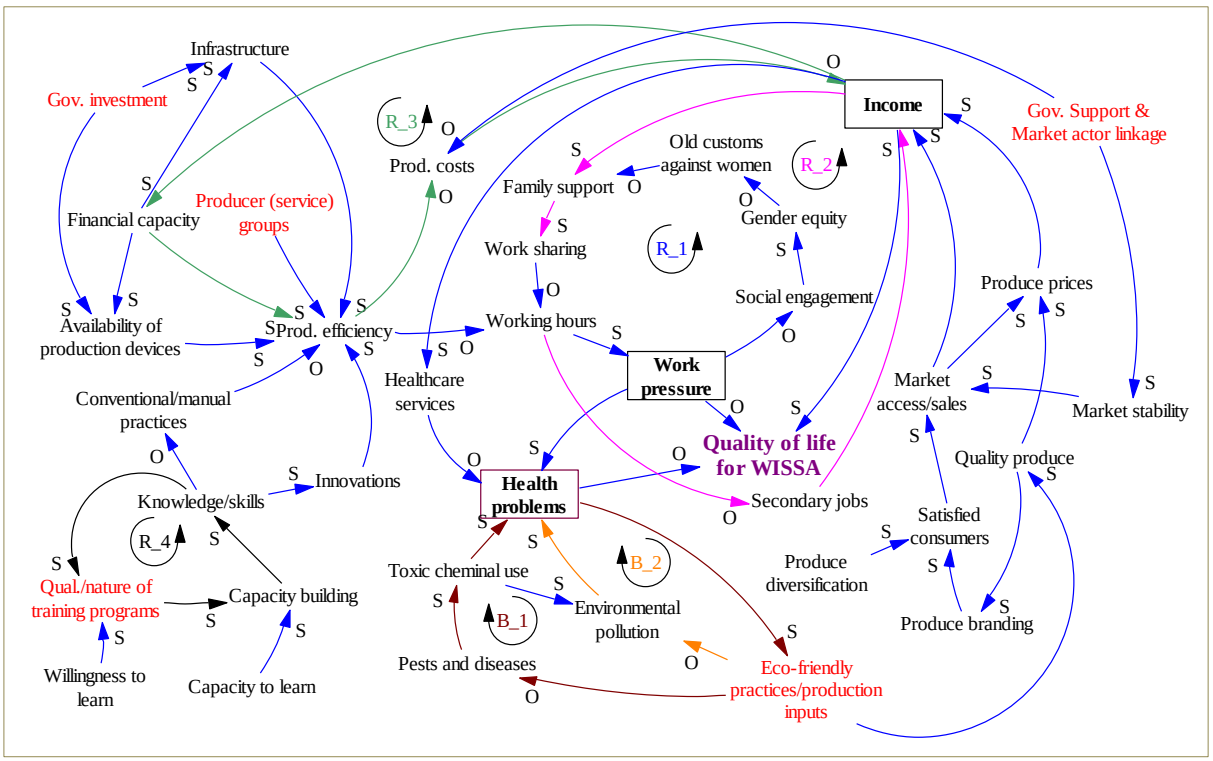

Figure 3. Causal loop diagram on improving quality of life for women smallholders in rural Haiphong. Red coloured variables represent potential systemic interventions identified by participants during model

interpretation. *Legend: S - same direction; O - opposite direction; R - reinforcing (loop); B – Balancing (loop); WISSA = Women in small-scale agriculture* (Source: Ha *et al.*, 2014a).

The challenges in the four districts were not only found to be multi-dimensional, but also similar and highly interrelated. The income of women is determined by factors such as market access, produce prices, production costs/production efficiency and availability of sidelines. The defined variables also emphasize the importance of systemic interventions where different stakeholders such as market actors, services and input providers, local government and the extension network should be engaged. The women's increased income was identified as a factor that could induce work sharing through family support and the capacity to purchase devices and improve production efficiency (leading to a reduction in work pressure and improvement of health). Limited production knowledge and skills were also found to be a major impediment towards production efficiency. To remedy this, quality and relevant training was identified as a much needed systemic intervention. Toxic chemicals for the management of pests and diseases have been identified as one of the most important factors that have a negative effect on the health of women.

The systems model provides further important insights when the patterns are explored in more depth. For example, the inability of women farmers to invest in agricultural production and labour saving implements is directly related to their hardship and poor health. Ha *et al.* (2014b) also found that their many domestic tasks are a significant contributing factor to the work pressure they have to endure. All these factors that cause their hardship and the low levels of knowledge and skills would contribute to their and others' perceptions of having a low social status. Thus, improving income and knowledge levels of the women would not only improve production efficiency (Castella *et al.*, 2006; Rahman, 2003; Wegner & Zwart, 2011), but also their social status (IFAD, 2011, 2013; Lapar *et al.*, 2006). In summary, it is clear that many of the factors affecting the three main leverages in the system are intrinsically interlinked. These results further prove the essential role of local knowledge in identifying interconnected community issues via the 'lived experiences' of community members (Eversole, 2012).

Bayesian Belief Network Model, identification of systemic interventions and development of a systemic action plan

The BBN models for the three factors (income, work pressure, and health) that were identified by the women and other stakeholders as the main determinants of their quality of life were combined into one BBN model (Figure 4a). This was essential because, as mentioned above, many of the nodes (factors or variables) in each of the separate models were interconnected with each other across the three models.

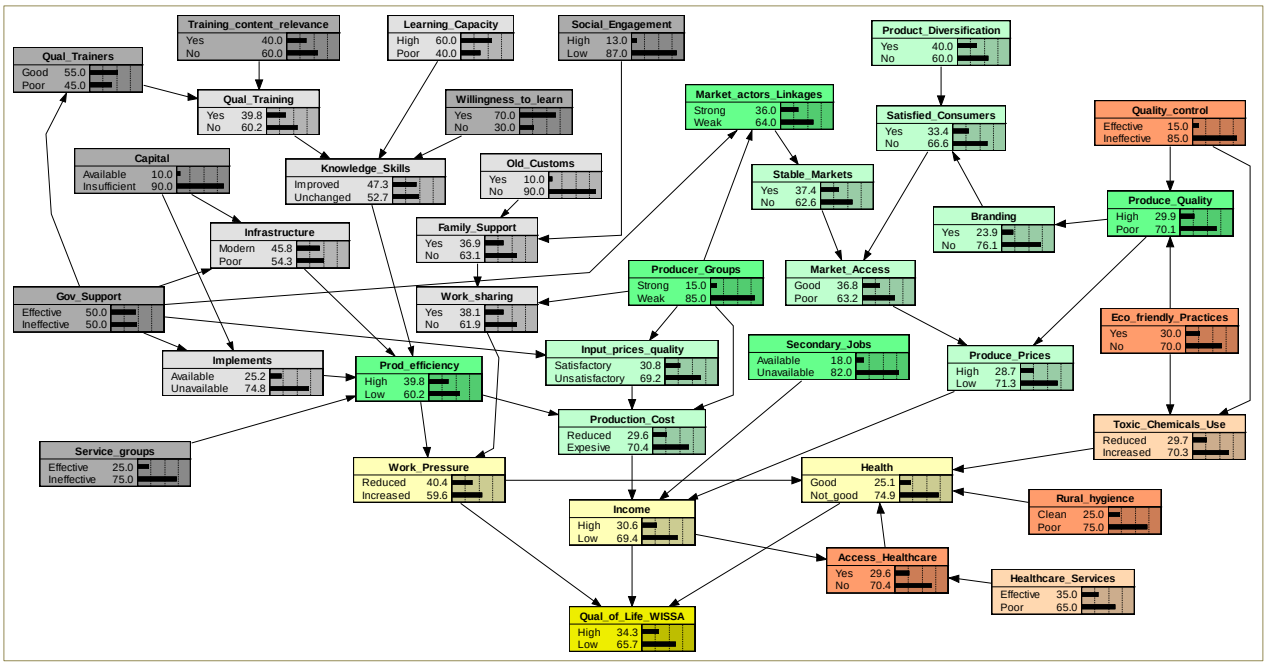

Figure 4a. BBN model of the current situation of the rural women in Haiphong (Source: Ha *et al.*, 2014c).

Figure 4a represents the current situation in the study areas of Haiphong. The probability that the quality of life of women farmers is low is currently more than 65%. The ranking of the three factors that directly influence quality of life was also confirmed by the experiential knowledge of the women. The probabilities that income is currently low and health is poor are respectively 69.4 and 74.9 percent, while the probability that a high work pressure exists is about 60 percent. Testing the effect of the various factors in the model on the three main determinants of quality of life revealed a number of systemic interventions that are indicated in darker colour shades in the model (Figure 4a). The combination of all identified systemic interventions will result in a significant increase in the probability of a higher (92.3%) quality of life of the rural women (Figure 4b).

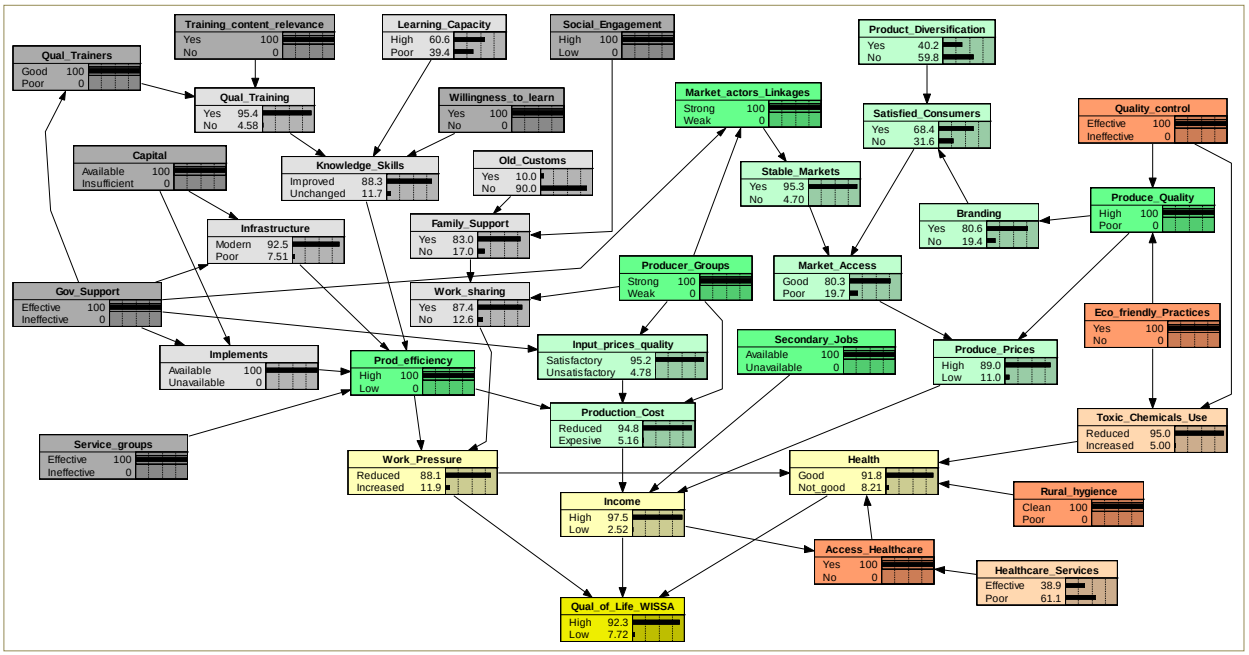

Figure 4b. BBN modelling for identifying systemic interventions to enhance the quality of life for women smallholders in rural Haiphong (Source: Ha *et al.*, 2014c). *Note: Darker colour shades represent systemic interventions.*

After a series of workshops, scenario testing, sensitivity analyses and discussions among stakeholders, the following solutions were identified and used to create a systemic implementation plan for improving the quality of the women farmers' lives:

1. Improve income via enhanced market access, reduced production costs, and available sidelines;
2. Strengthen production efficiency for reduced workload via supporting production devices, capacity building, production infrastructure and service groups.
3. Form cooperatives/producer groups for improved market actor linkages, reduced production costs and improved product quality.
4. Improve health via reducing workload, improving eco-friendly production facilities and practices, rural hygiene and access to healthcare services.

Rethinking stakeholder representation and problems in forming linkages

As discussed, raising income was found the most urgent need amongst other. Solving this problem via enhancing market access and other factors (Figure 4b) is essential to help solving other related issues, including labour hardship. For instance, improved income can assist the women to purchase production tools to reduce workload and enhance production efficiency (Castella *et al.*, 2006; Rahman, 2003; Wegner & Zwart, 2011). This also implies the ability to pay for healthcare services that would lead to improved health. This in turn will have a positive effect on production efficiency. The improved income was also reported to improve women's social status (IFAD, 2011, 2013; Lapar *et al.*, 2006).

The results discussed under section 3.2 suggest weak linkages with market actors (Figure 4) to address the market outlet constraints and consequently poor incomes for the target group. Forming effective linkages is an important systemic intervention because the livelihoods of the women are mainly reliant on agricultural production (Figure 5). It could even be seen as a leverage point in the system because if this could be achieved, it will have a significant effect on many parts of the small scale agricultural system (as described above), including a major effect on production efficiency (reduced workload that could affect health) and income.

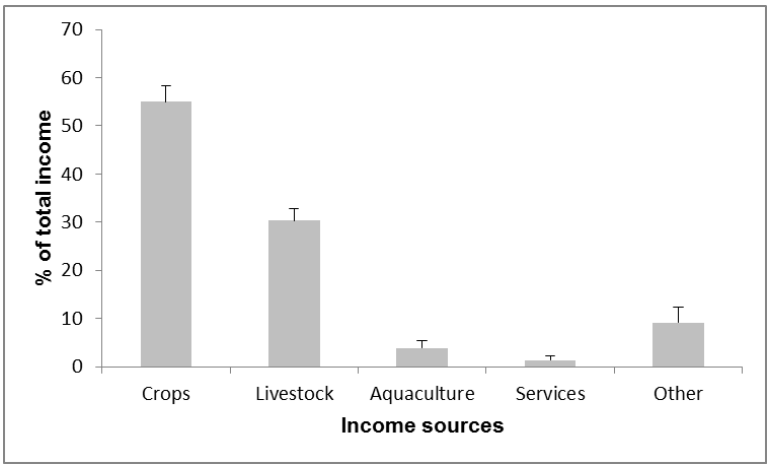

Figure 5. Major income sources of the smallholder farmers in rural Haiphong.

Note: Vertical bars (I) *represent Standard Errors (S.E)* (Source: Ha *et al.*, 2014b)

After the first series of workshops, a reanalysis of stakeholders to be involved has led to involving agribusiness enterprises to find ways to solve the market access challenge. The results are consistent with the findings of Randell (2004), El-Gohary *et al.* (2006) and Achterkamp and Vos (2008) regarding the need for continuous identification and engagement of stakeholders during project implementation. Figure 6 below reveals a picture of stakeholders involved and their alignment (interest) levels with regard to the current market situation, in which poor income as a result of limited market access was discovered as the most challenging issue for the women smallholders.

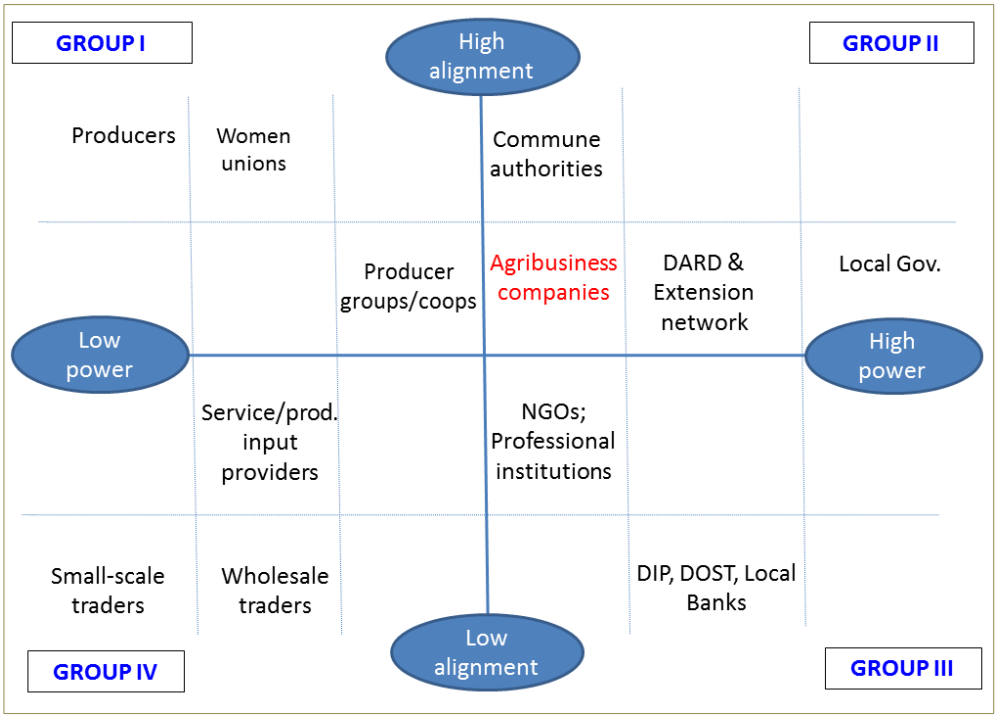

Figure 6. Stakeholder analysis for improving market access and income for women smallholder farmers in Haiphong (Source: modified from Allison *et al.*, 2005). *Notes: DARD: Department of Agriculture & Rural Development; DIP: Department of Planning & Investment; DOST: Department of Science & Technology*.

Interestingly, it was found through the group discussions that many of the stakeholders were highly interconnected in their activities and responsibilities. However, they seem to work rather independently without proper connections between them. Even though the women farmers and other stakeholders such as women unions and producer groups/cooperatives (Group 1, Figure 6) have a high interest and aspiration to improve their income via better market access, they have little power, poor resources and limited market information (Ha *et al.*, 2014a, 2014b). The uncoordinated planning and actions between local government agencies and local authorities/organizations that lead to poor performances were also asserted by others (Ha *et al.*, 2014b; Le, 2013a, 2013b). Birner and Resnick (2010) argue that market failures for smallholder farmers in Asian developing countries are largely influenced by public policies. Therefore, the role of the local government in guiding functional departments and creating a favourable policy environment for agribusiness enterprises (Groups 2 & 3, Figure 6) could be regarded as essential for having better linkages with the poor smallholders.

Results of the stakeholder analysis and the market surveys showed promising market potentials for agricultural produce for both domestic and export markets such as Japan, South Korea, Taiwan and China. A large number of companies were found in Haiphong and the neighbouring Hai Duong province, who expressed a high degree of willingness to cooperate and sign supply contracts with local farmers (the details of this will be reported in a forthcoming paper). There are, however, a number of difficulties that hinder cooperation between companies and local farmers. The major constraints are summarized as follows:

1. *Fragmented and spontaneous production and poor organisation of the cooperatives*: The market surveys found that these cooperatives do exist, but seems just a formality. They are often similar to an administrative unit and/or a collection of individual households with small plots of lands rather than an enterprise, i.e. each commune is called a cooperative, while all the households still possess their own land and produce their own products. Therefore, it is difficult for the cooperative management unit to operate as an entity on itself and sign contracts with companies. This might have led to the next difficulty;
2. *Production plans are not well managed*: Under these conditions the requirements of contract farming with companies in terms of product volume, quality evenness and delivery time (Ha, 2014b; Ha *et al.*, 2015) cannot be achieved;
3. *Low awareness and short-sighted visions among individual producers*: This has caused the breaking of many supply contracts with companies, which caused companies to become hesitant to continue signing supply contracts with local cooperatives. Consequently, the market outlets for producers have become limited and more dependent on private trading. This is an unstable and insecure situation. Likewise, some companies were found not flexible enough to adjust (increase) prices for farmers/cooperatives when the market prices increased. This also causes the breaking of contracts since farmers could earn higher incomes by selling their products to private traders.
4. *Unfavourable policy environment for local companies with short-term loans and high interest rates of more than 10% per year* somehow impedes the local companies to expand their businesses. Furthermore, the new Cooperative Law 22/2012/QH13, approved on 20 November 2013 by the National Assembly, will become effective in the next three years for all cooperatives in Vietnam, when cooperatives will become independent and privatized enterprises. Individual farmers will join cooperatives on a voluntary basis and share capital will be contributed by members. The current cooperatives, together with the difficulties mentioned above, possess no ownership over properties and having limited capital. This means they have no collateral security to borrow money from banks to operate their businesses.

Transformational learning among participants and impacts of the project approach

The presence of representatives of companies, government officers in the follow-up workshops with the women farmers provided them with opportunities to learn about the local government's scope of support and plans, and market potentials by the companies for their production orientation and organization among producer groups. Meanwhile, the local government leaders and staff also learned from other stakeholders regarding their respective difficulties and expectations to reflect on the local government's current policies and implementation approaches and to consider possible amendments for more effective execution

of agricultural development as a whole in Haiphong. Cornwall (2008) considers such interactive activities as a 'learning process' amongst participating members.

Such interactive communication and information sharing sessions have been found to be highly effective in helping to create a particular attitude and awareness among participants (Malouf, 2003), influencing their viewpoints (Ha, 2014b; Yorks & Kasl, 2002) and in that way enhancing the potential for cooperation to address their real needs and concerns (Fell, 2005; Ha, 2014b). Indeed, the feedback during evaluation workshops showed significant shifts and/or transformation of perceptions among government departments, organizations and the women farmers. The two project counterparts, DARD and the extension centre, highly appreciated the importance of systems thinking, systems tools and bottom-up and participatory approaches in dealing with practical challenges. At the macro level, central and provincial governments have not formulated any particular policies in favour of women smallholders. By participating in the project activities, they have learned significantly about the project approach and the available systems tools and techniques for identifying issues and potential solutions. The formulated solutions from this project were agreed upon to reflect the local needs and show feasible outcomes and impacts on the women farmers in particular, and on rural life in Haiphong in general. Thus, the two institutions expressed their willingness and commitment for cooperation in the actual implementation phase. Interestingly, during the workshops with stakeholders, a vice director of DARD stated that '*the solutions formulated from this project will be integrated into our operational plans, starting from a pilot area basis before scaling up to all rural districts'*. This leader also gave advice for participants to '*act locally, while maintaining a global view'* and form strong linkages amongst related stakeholders in the current integration period (Ha, 2014e). This means market-oriented production is needed, in which all the chains of production should be closely linked. In addition, all relevant stakeholders should collaboratively involve in the whole process. These are consistent with many previous studies in northern Vietnam (e.g. Catelo & Costales, 2008; Ha, 2014a, 2014b, 2014c, 2014d; Ha *et al.*, 2015; Lapar *et al.*, 2006; Minot & Hill, 2007; Moustier *et al.*, 2010; Nga *et al.*, 2011; Tran *et al.*, 2004; Van Hoi *et al.*, 2009). Such collective learning would produce emergent (new) knowledge which is crucial for long-term project success and innovation (Fong, 2003; Senge, 1990).

In addition, the women farmer participants provided much positive feedback concerning the project approach that enabled them to actively participate in discussions of their practical issues, identifying drivers, barriers and related stakeholders in addressing defined problems. The close involvement in the project and the interactive and cyclic nature of the ELLab process encouraged them to share their ideas and learn from others. Also, the facilitation methods and steps were easy to understand. They learned how to reflect on their current situation, analyze and prioritize issues before developing solutions. Compared to other development projects, this project was stated to be a better approach since it commenced by engaging the beneficiaries (women farmers) in identifying challenges and needs from the very first activities. Consequently, the interventions formulated and prioritized reflect their actual needs (i.e. ways to improve income, reduce workload and improve health). Furthermore, they realized a need for improved production practices, organized production to ensure product quality and meet the demands of buyers (Ha, 2014e).

Besides, the additional investigation and engagement of stakeholders in identifying issues laid strong foundations for the leverage points/systemic interventions to be further validated and re-defined on a participatory basis. For example, the market chain analysis for rice, a staple food crop in rural Haiphong, proves the need of the important role of local government interventions

via its policies and support such as long-term loans with reasonable interest rates for local companies, land consolidation (currently in progress), development plans, institutional support (capacity building) and possibly 'seed funding' for agricultural cooperatives to be capable of contract farming and meeting buyers' requirements in terms of product volume, quality evenness, and timely delivery (Figure 7).

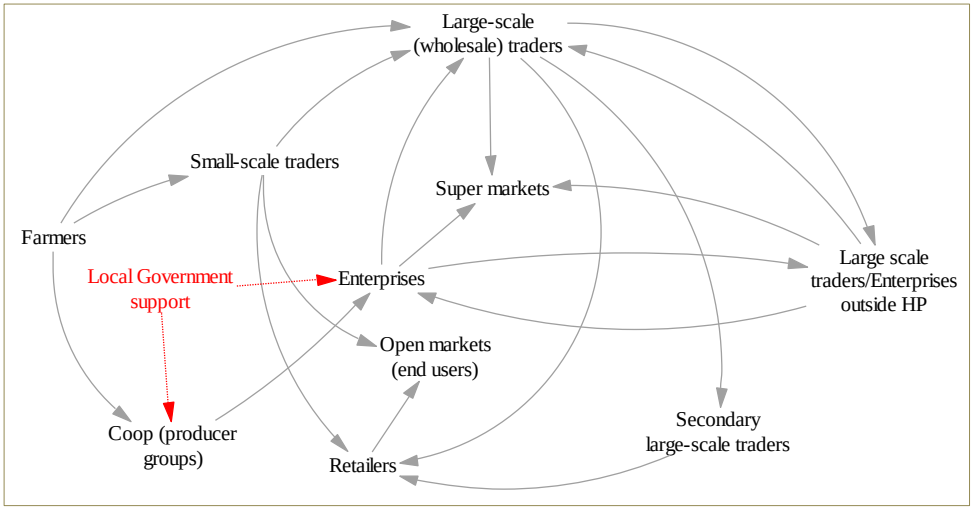

Figure 7. The role of local government (systemic intervention) for adding value for rice growers in rural Haiphong.

Figure 8 below illustrates the validity of our initial assumption (hypothesis) and approach. The figure was developed by incoporating the ELLab into a logical framework (log-frame and/or project matrix) to prove the importance of using a participatory approach in defining and prioritizing 'real issues' and 'real needs' of the target group before formulating intervention strategies and/or component objectives under the overall goal. The information provided by participants can be seen as feedback and/or impacts, leading to reframing the original goal and thus objectives. Despite some criticisms concerning the logical framework due to its simplifications (Gasper, 2000; Hummelbrunner, 2010), rigidity and bureaucratic project design (IFAD, 2002), especially when 'objectives and external factors specifed at the outset are over-emphasised' (Delevic, 2011), it has remained an useful tool for project planning and management and is used widely by various aid agencies, NGOs and development projects (Delevic, 2011; Hummelbrunner, 2010). This is because the logframe provides a clear outline of the expected outcomes to be achieved and how to attain the results. In addition, indicators for measuring achievement levels of the objectives are set to guide monitoring and evaluation (IFAD, 2002). It also helps to create common understanding and communication among stakeholders (Delevic, 2011).

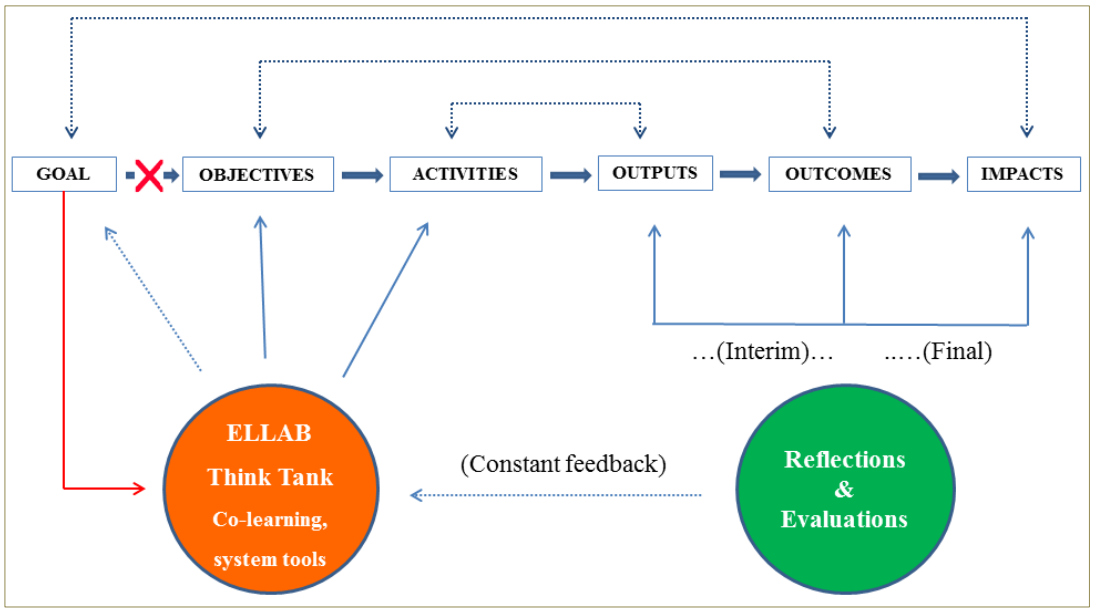

Figure 8. A log-frame approach for project cycle management.

The logframe approach is only useful for stakeholders to achieve shared comprehension of needs, objectives and interventions, if the process is well facilitated (IFAD, 2002). Additionally, the shortcomings of the log-frame can be addressed by flexible approaches in response to changes of the contexts and 'interim impacts' (IFAD, 2002), while frequent (re)assessments are needed to modify the key elements (Delevic, 2011). Newman (2008) also highlights the need for a continuous 'reflection – action cycle' during project implementation to trigger project learning and improve practice.

Therefore, instead of directly identifying sub-goals and/or component objectives, expected results and activities as in the traditional logframe approach (Gasper, 2000; IFAD, 2002), this study started from identifying and prioritizing issues and needs of the women smallholders via the ELLab framework with the help of systems tools and participatory approaches (Figure 8). It turned out that the difficulties were interrelated. Increasing income was found the most important need among others such as reduced work pressure and improved health (Ha *et al.*, 2014a, 2014b). These initial results ('interim impacts' and/or 'feedback') led to a re-analyses of context and stakeholders (as described above). Consequently, the overall goal (identifying labour saving strategies and innovations for women smallholders) were modified to 'improving the quality of life for the target group' in order to meet the real local needs. Also, the sub-goals/objectives were confirmed, namely improving income, reducing workload, and improving health (in order of importance).

CONCLUSION

This paper has presented the role of the systems-based Evolutionary Learning Laboratory in accordance with the flexible use of participatory approaches and tools in context analysis, and stakeholder engagement to define the underlying challenges that the women farmers in rural Haiphong have to deal with. The interactive co-learning environments that were created through a series of dialogues, workshops and discussions have transformed the key stakeholders' perceptions and framed appropriate intervention strategies towards more informed planning and actions among related actors. The project activities would also facilitate

communication and lay a strong foundation for multi-stakeholder collaboration in realizing the formulated objectives. Some policy recommendations have been discussed and analyzed in this paper for possible reflection and adjustment of the local government. Furthermore, modifications of the project goal and objectives via systems thinking and the ELLab, together with the logframe approach are clear evidence of the validity of the context-based approach and interventions, which further prove the value of grassroots participation at the onset of a project and throughout the entire process.

The processes of rethinking, reanalysis and engagement of stakeholders have been proven as critical to successful project outcomes. The processes help to identify context-based relevant stakeholders for engagement and to address the 'real needs' of the target group. In other words, it is essential to do "the RIGHT thing" before "doing things RIGHT" (Ha, 2014b). Active participation of the right stakeholders in problem identification and solving processes enables participants to combine their pre-existing and experiential knowledge (through communication and joint activities). This leads to better understanding (emergent/new knowledge) of the context-specific challenges and thus adequate interventions (e.g. forming relevant linkages, improved policies and organized production). The project team *per se* has gained insights of the need for a flexible approach in project management in the situated context. The contribution to organizational learning theory lies in the reflective changes in perceptions and therefore possible actions amongst stakeholders, which would be considered as the foundation for successful project outcomes and long-term impacts.

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