

# A Participatory Systemic Approach To Rural Community Development In Vietnam

Tuan M. Ha, Ockie J.H. Bosch, Nam C. Nguyen

**Abstract:** Various failures of the traditional approach in community development in developing countries have led to the development of a more appropriate and holistic approach to address complex development issues. Systems approaches and cutting-edge tools have recently been embraced to deal with such complexities under contexts of interwoven relationships amongst social, economic, political, cultural and environmental factors. This paper provides reflections on practical value of the Evolutionary Learning Laboratory (ELLab) through a case study on improving the quality of life for women farmers in northern Vietnam, where gender-bias labour hardship and poor living-standard are evident. The first five steps of the participatory systems-based ELLab were implemented during 2013-2014 providing valuable results that have made both practical and theoretical contributions with substantial implications to community development. Our study finds that the context-based results reshaped the original project goal. The approach and framework helped to identify and engage right stakeholders in problem analyses and decision making activities. Fuzzy problems within the complex web of life of the women and rural households were uncovered using relevant systems tools to develop a big picture (systems model) of the current situation, defining levers for systemic interventions. The ELLab helps to build capacity of local people for taking ownership of the process and outcomes to guarantee sustainability and long-term impacts. It also facilitates true participation and co-learning amongst stakeholders, triggering transformative learning. Contributions to action research and an innovative mechanism for sharing reflections and lessons at both local and global levels via the online Think2ImpactTM are discussed.

**Keywords:** Action research, Rural community development, Evolutionary Learning Laboratory, Stakeholders, Systems approaches, Transformative learning.

## 1 INTRODUCTION

Many community development efforts around the world have been focused on supporting resource-poor communities in developing countries where agriculture provides major livelihoods for the rural poor [1-3]. Income of smallholder farmers in these countries is mainly reliant on labor-intensive production and rural employment [4, 5]. People in these regions, particularly women smallholder farmers, have to face various challenges which involve multiple stakeholders, are multidimensional and interconnected [6, 7]. Those include, for instance, production risks, capital shortage, poor access to productive resources and services, limited access to lucrative markets, low literacy level, discrimination against women, and other cultural barriers [7, 8]. Development efforts through the traditional approach of linear thinking, which tends to solve immediate (visible) problems in isolation without an understanding of the local contexts and participation of direct beneficiaries and related stakeholders, have posed many flaws, leading to various failures and even counterproductive outcomes [9-12].

For example, a study by Doss [13] revealed that failures in disseminating technological devices for African women were due to the lack of awareness of “the complexity of women’s roles, responsibilities within the households and communities” and their “dynamics” in responding to different contexts. Consequently, chronic poverty, malnutrition, health problems and gender gap issues, etc. still persist in these regions, particularly in Sub-Saharan Africa and South East Asia [7]. In reality, a community possesses its own characteristics, interests, challenges, needs and culture [14, 15]. It is a system of interactions amongst its constituent parts, including both human and non-human factors [16]. All problems always emerge within a “complex web” of interconnected factors [17]. Different environmental, economic, political, social and cultural elements are intertwined and interdependent within a community [18]. Environmental conditions, local cultures, values and spiritual beliefs, household capacity, socio-economic and political settings clearly influence agricultural systems and cropping structures in a certain rural community [19, 20]. Similarly, these influence decision making of farmers at a household farm level [21-23]. Chronic poverty and food insecurity cannot simply be addressed by introducing new production technologies or new varieties without understanding the local conditions, human and financial capacities, production habits, and specific challenges and needs of local people, etc. [24, 25]. Similarly, solving community issues such as resource conflicts and sustainable resource management cannot be resolved by a single organization or a sector. It requires coordinated planning and negotiations amongst different stakeholders at local, national and regional (inter-country) levels [26, 27]. The so called “dark age of pest control” during the 1940s-1960s was an evident failure and serious consequences of “quick fixes” and/or “treating the symptoms” in the agricultural development history due to an inappropriate understanding of the interactions amongst different components of agro-ecosystems [28]. Therefore, sustainable development entails the need for addressing all economic, social and environmental facets in an integrated way [29, 30] since one can lend strength to another and vice versa [31]. Such complex problems should be rather resolved through a more holistic approach. In which, an issue is

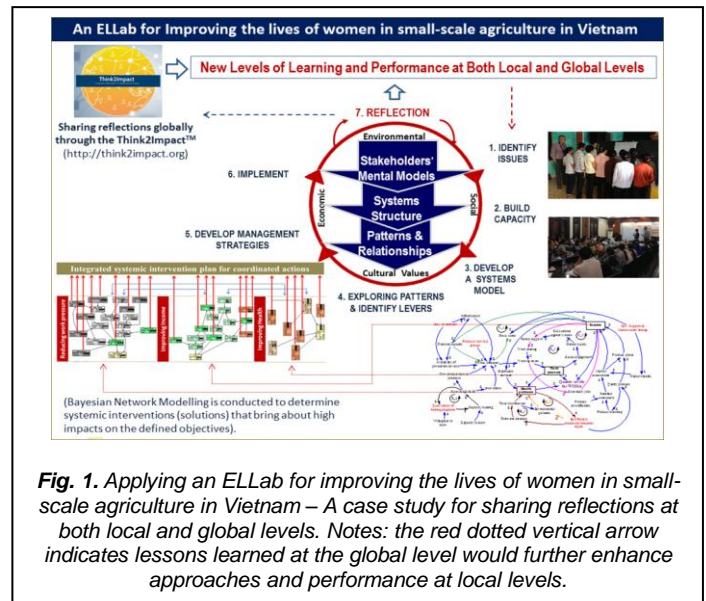
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analyzed within its “interrelationships” with others and within a system where different factors are interdependent and many actors are involved [18, 32]. The root causes of a perceived problem need to be determined to define systemic interventions, while unintended consequences can be envisaged and thus avoided by using a systems approach and systems thinking. The failures of the so called “reductionist” approach have led to wider adoption of systems thinking around the world [e.g. 33, 34-41]. The approach provides a “new way of thinking” towards understanding and managing complex problems [42, 43]. In this light, the systems-based Evolutionary Learning Laboratory (ELLab) has been developed and successfully applied in a number of contexts around the world [35, 44-46], particularly in development fields in Vietnam [17, 47, 48]. The purpose of this paper is to provide initial reflections on the practical value of the ELLab through a case study on improving the quality of life for women small farmers in rural Haiphong, northern Vietnam..

## 2 THE ELLAB APPROACH, PROCESS STEPS AND KEY FINDINGS

### 2.1 The systems-based ELLab framework and process steps carried out in Haiphong

Under the auspices of the Bill and Melinda Gates Foundation through the Grand Challenge Exploration Grant, the project was initially conducted in 2013 with an “original goal” to seek labour saving strategies and innovations for women smallholder farmers in rural Haiphong, northern Vietnam [49, 50]. A seven-step ELLab and its built-in systems tools (Vensim® and Netica™) were employed through the first five steps (Figure 1) to define the real challenges and needs of the target group and to formulate a systemic management plan to address the defined difficulties the women are facing. The first step (issue identification) includes a baseline survey and a number of issue workshops and forums with women small farmers in four rural districts and relevant stakeholders (representatives of government departments and organizations, and input/service providers). Key representatives of the stakeholders were engaged in practical “capacity building” activities (Step 2). Some of the trained members from a previous project in Haiphong [51] were involved to assist the skills training. The purpose of this step was to improve understanding and to facilitate taking ownership of the process and thus outcomes [10, 17]. Using Vensim® software [52] enabled the working group to integrate all inputs (mental models) of the participants from the previous workshops into an interim “systems model” (Step 3). By exploring and defining “patterns of relationships” amongst variables within the system, potential “levers for systemic interventions” were defined (Step 4). Thereafter, the model was presented at a plenary workshop for feedback and modifications and/or validation.



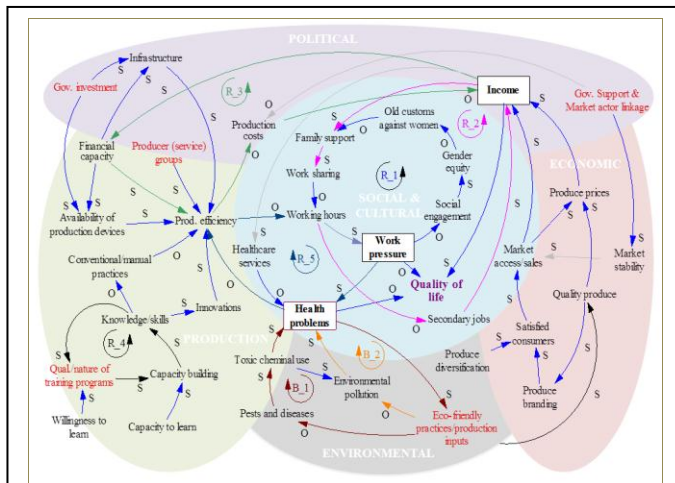
The refined model was then used to identify “systemic interventions” and develop a “master management plan” (Step 5) through Bayesian Belief Network (BBN) modelling [53] to achieve the defined objectives from the previous steps. As it turned out raising income via improved market access was defined as the most prominent issue of the women farmers. This cannot be addressed if potential agribusinesses are not engaged in the problem structuring and decision making processes [10]. Therefore, follow-up market surveys and a number of workshops with agribusiness companies and the aforementioned stakeholders were conducted to understand the context in more depth and to redefine systemic interventions, particularly possible actions to facilitate contract farming and to improve production organization amongst individual farmers. Many studies have proven positive effect of contract farming on income of smallholder farmers in developing countries [e.g. 54, 55-59] and in Vietnam [60, 61]. It is therefore feasible in the research area due to the ease of land consolidation and current supporting policies of the local government [62]. In addition, public-private partnership has been proven as a key strategy to sustain market access and profitability of smallholder farmers [63].

### 2.2 Key findings from implementing the first five steps

The baseline survey [64] showed various difficulties that the women are facing. These include their burdens of housework and production tasks, poor health and a relatively high level of domestic violence. These difficulties were found to be multidimensional and interdependent. It means addressing only work burdens of the women cannot warrant their improved quality of life. The challenges are presented below in order of importance.

1. Poor income as a result of market access constraints and limited capital to invest in production (the women's main livelihood);
2. Lack of production implements and unsafe working conditions/practices that engender heavy workload and poor health; and
3. Limited production knowledge and skills that influence production efficiency and thus poor income and health due to high labour input.

Issue workshops and follow-up activities of the ELLab process (capacity building and developing systems models) helped to produce a “big picture” of the current situation that reveals different determinants of the women’s lives under causal relationships (Figure 2). Raising income turned out to be the most urgent need, followed by reducing workload and improving health. Variables determining these three factors were found to be interlinked. The developed systems model enabled participants to explore patterns of relationships amongst the variables within the system and to determine leverage points for systemic interventions. Details are described in Ha et al. [24].



**Fig. 2.** CLD model for improving the lives of women smallholders in rural Haiphong. Red colored variables represent potential levers for systemic interventions identified by participants during model interpretation. Legend: S - same direction; O - opposite direction; R - reinforcing (feedback loop); B - Balancing (loop); [Source: adapted from 24].

Bayesian Belief Network (BBN) modelling enabled the participants to define systemic interventions in achieving three objectives, namely, improving income, reducing work pressure and improving health. Details of this step are discussed in Ha et al. [24]. The BBN modelling comprised sensitivity analyses and testing of future scenarios, which allow the participating members to identify strategic actions for development of an overall systemic management plan. These actions include:

1. Improve income through improving market access, reducing production costs, and creating opportunities for secondary jobs;
2. Reduce work pressure by enhancing production efficiency through supporting production implements, capacity building, infrastructure, and production service groups.
3. Form and strengthen cooperatives/producer groups for enhanced market linkages, product volume and quality, reduced production costs, and many other benefits. See Ha et al. [62] for more details.
4. Improve health via reducing work pressure, improving and facilitating wider adoption of eco-friendly production facilities and practices, and enhancing rural hygiene and access to healthcare services.

Separate BBN models for the three component objectives were combined to develop a master systemic management plan (Step 5, Figure 1). Specific implementation plans with

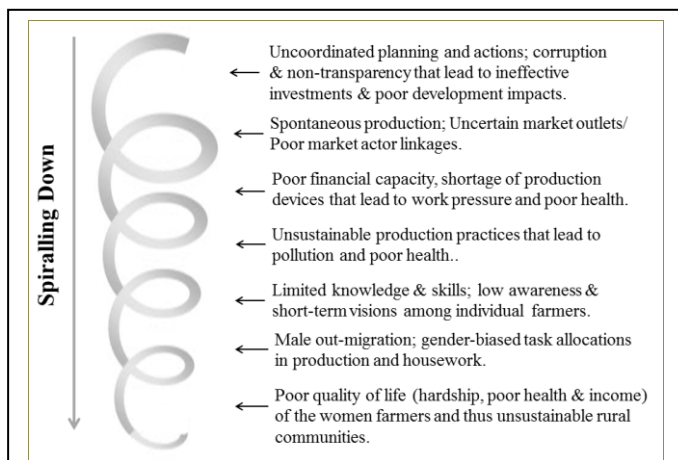
prioritized actions and allocation of responsibilities in each district will be formulated based on each particular context.

### 3 PRACTICAL VALUE OF THE ELLAB

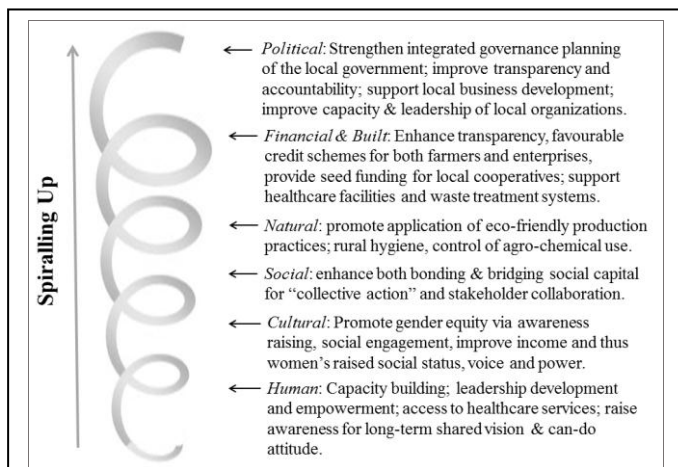
#### 3.1 Reshaping management for impacts using context-based systems approaches

Many authors have highlighted the importance of context in management and development studies [e.g. 65, 66-69]. The context is essential for explaining and comprehending a phenomenon within it [68]. It is also an important basis for establishing and/or reframing theories [66, 67, 70]. However, its role and influence are often overlooked or underestimated [69]. Tsui [68] and Shapiro et al. [67] underline the plurality of context, which consists of both “verbal and non-verbal nuances”, inducing challenges in observations and studies. The former authors also stated the need for effective tools to record and analyze data, whereas Whetten [69] recommended using graphical models and/or modelling for the ease of understanding and communications. In other words, “a picture is worth a thousand words” [67]. In the present study, context-specific analyses were paid with high attentions. In addition, systems approaches and the cutting-edge tools were employed to understand the context in more depth, providing a rational basis for informed systemic interventions to develop an overall management plan. This case study also provided practical evidence on how the context-based and participatory approach helps reshape conventional theories and development practices in the situated context. This is in line with the recommendations of Lewin [71] and George [66]. This study has proven the ELLab to be a powerful systems-based framework in managing such complex problems in rural communities due to its multiple practical applications and value. The systems approach employed does not merely seek solutions to the perceived (visible) problems of the target group, but it provides an opportunity to explore a “bigger picture” of the context (Figure 2). Places of interventions can be defined to improve performance of the whole system (i.e. rural households and communities) rather than the traditional palliative approach, which tends to solve immediate problems in isolation, due to the so called “silo and/or linear thinking” as stated by Bosch et al. [35]. By using systems approaches through the ELLab process, the project has identified the real problems that the target group is facing. The “perceived” prominent issue (labor hardship) as assumed by the funding body [49] was not identified as the uttermost difficult hurdle for the women to overcome and was ranked second after poor income. The third factor determining their quality of life was health. The factors affecting these three determinants were found to be intrinsically interlinked with each other. These interrelationships and interplays reflect the reality of the women’s lives, which is complex and is influenced by all social, economic, political and cultural factors under the studied (environmental) setting (Figure 2). Therefore, seeking separate solutions to the defined heavy workload of the women cannot warrant their improved quality of life. Rather, a systems-based approach is needed to determine solutions to address the complex challenges and real needs in a coordinated manner.





**Fig. 3a.** Spiralling down of capital assets leading to poor quality of life of the rural women, farming households and unsustainable communities



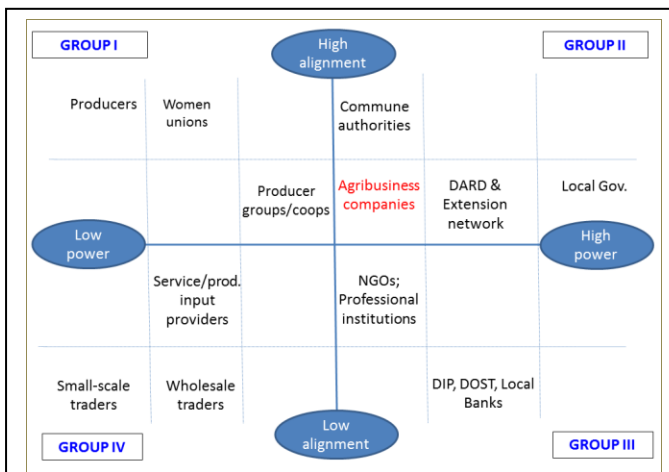
**Fig. 3b.** Strategic actions for upswing spiral of capital assets toward a sustainable and resilient community [Source: 18].

communities in broad terms (Figure 3a). By utilizing all the capital assets and developing strategic actions to reinforce the capitals, spiraling-up of the capital assets are expected (Figure 3b). Although the defined strategic actions through the CCF assist local farmers in mapping of all available and potential resources for mobilization, the actions are however overlapping due to the interconnectedness amongst the capitals and “domino effects” while taking actions [18]. In addition, separate interventions to reinforce a certain capital would not result in sustainable outcomes of the whole (community) system. Therefore, coordinated actions with the support of the built-in systems modeling tools of the ELLab will help address these shortcomings (see details in Section 3.2 below).

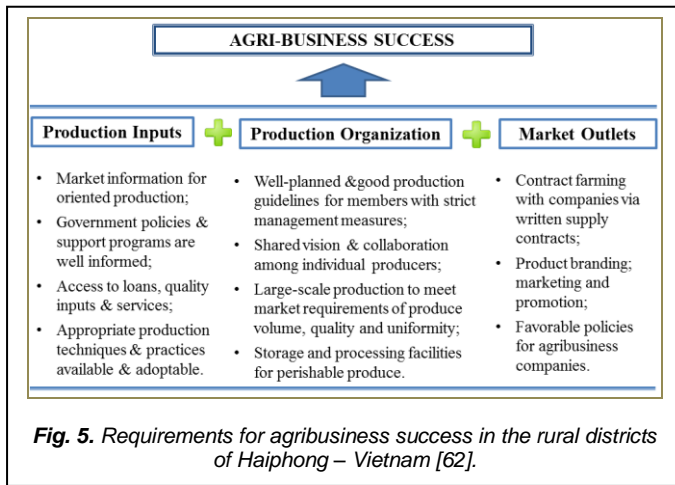
**3.2 The generic problem-solving framework with its built-in systems tools and a capacity building component**

As a generic framework, the ELLab enables a large degree of flexibility to employ other management tools to support analyses of emerging stakeholders during the implementation phase. This helps to engage the right stakeholders for understanding the context in more depth, serving as a basis for defining appropriate interventions. Since improving market access via enhanced market actor linkages were determined as one of the important preconditions for raised income (Figure 2), follow-up activities were conducted, including a reanalysis of stakeholders (Figure 4), a market survey of main agricultural produce, and engagement of agribusinesses in problem analyses and decision making processes. The involvement of potential agribusinesses provided essential insights of the market potentials and current challenges to agribusiness success. Those consist of fragmented and uncoordinated production, low awareness and short-sighted visions amongst individual small farmers, and unfavorable policies for local agribusinesses [10]. Discussions amongst the stakeholders have shaped a bigger picture of the requirements for agribusiness success of the smallholder farmers, which entail coordinated actions amongst the production services, organization and market access (Figure 5).

The outcomes of this study served as feedback and a rationale for reframing the project goal and objectives to address the ‘real issues’, ‘real needs’ and thus appropriate systemic intervention strategies to address the identified challenges of the local women farmers. The findings have not only brought about practical solutions for the women (social impacts on gender equality and rural lives), but also formulated context-based recommendations for funding agencies and local governments. Evident advantages of the systems approach over the traditional one are also presented in et al. [24]. The systems approach also enabled participants to explore and mobilize available local and potential external resources to address their challenges [18]. In terms of a capital asset-based approach, a high level of bridging and bonding social capital is required for sustainable development and resiliency of a community [72, 73]. Assessment of different community assets through the holistic lens of a community capitals framework (CCF) [74-76] have revealed that all the seven community capitals are currently in poor conditions in the localities. This have caused the spiraling down of capital assets, leading to poor quality of life of the rural women and farming households in particular, and unsustainable



**Fig. 4.** Stakeholder analysis for improving market access and income for women smallholder farmers in Haiphong [Source: 10]. Notes: DARD: Department of Agriculture & Rural Development; DIP: Department of Planning & Investment; DOST: Department of Science & Technoloav.

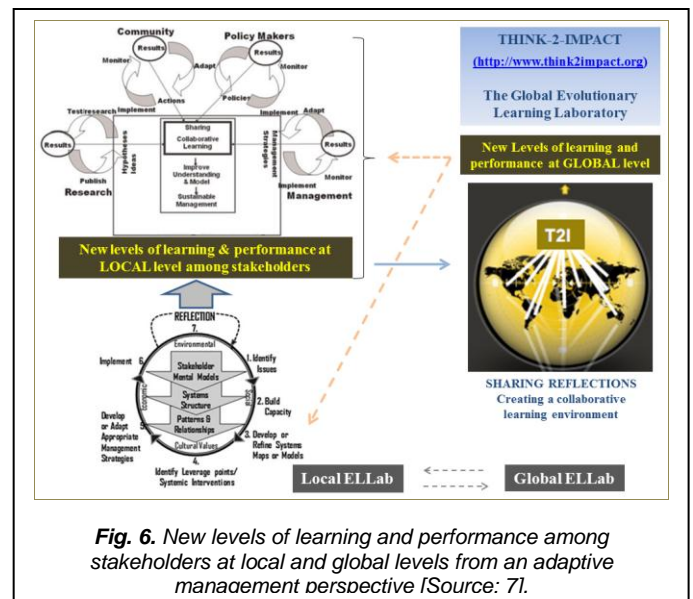


“Capacity building” for key stakeholders does not only occur in Step 2 as shown in Figure 1. It is designed in the form of learning by doing and Training of Trainers (ToT) throughout the entire guided process from problem structuring to systemic decision making and implementation. The purpose of this component is to ensure ownership of the approach, process and outcomes by the local people and thereby sustainability and long-lasting impacts. Thanks to the continued endeavors in embracing and institutionalizing systems thinking in practice in the situated context at both micro (community development) and macro (local government) levels, evident shifts in perspectives and therefore informed actions of the local government, related stakeholders and community members have been reported in Nguyen et al. [48] and Ha et al. [10]. The built-in user-friendly systems tools in the ELLab enable all stakeholders to understand different issues and their patterns of relationships for defining leverage points for systemic interventions (Steps 3 & 4, Figure 1), while impacts and possible unintended consequences could be envisaged through scenario testing using the BBN modeling (Step 5, Figure 1). These are clearly more time and cost efficient than traditional problem solving approaches.

### 3.3 Facilitating true participation and co-learning towards joint action through the cyclic ELLab framework

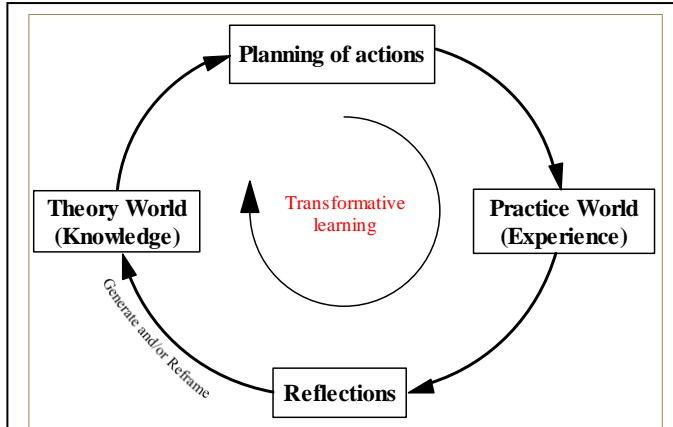
The ELLab framework embraces a “bottom-up approach” and “true participation” since opinions of disadvantaged groups, local people and all other stakeholders are embedded in the systems models (Figure 2) that reflect their actual issues, concerns and expectations. Drivers and barriers to their defined goals are fully explored in the relationships. The framework ensures the “inclusiveness” of not only all relevant stakeholders (Figure 4), but also a holistic view on hierarchical systems relationships (i.e. women farmers, rural households and farming community), and different dimensions of sustainable development (i.e. economic, environmental, social and cultural) (Figure 2). The latter is consistent with findings of Midgley and Reynolds [29] and Flints [77]. Participation also enhance “a sense of community and empowerment” [78], ownership and control of development efforts [79], group performance, transparency and accountability [80]. According to Kulig et al. [81], participation is also critical to community resilience. The ELLab creates a “co-learning environment” for all stakeholders [17]. This was evident in this case study

through triggering mutual and transformative learning amongst participants and thus appropriate systemically based actions by all the stakeholder groups (policy makers, government staff, agribusinesses and local farmers) towards strong collaboration and joint actions. It also helps to change the mindset of funding agencies [10]. Regular reflections and sharing of lessons and experience at both local and global levels through the online knowledge hub Think2Impact™ (<http://www.think2impact.org/>) provide a continuous improvement in learning and performance around the world (Figure 6). The participatory systems-based ELLab framework also reinforces action research (AR) through reflective activities, making sense of practical experience, and transforming viewpoints of stakeholders, resulting in more informed and justifiable actions. These are consistent with findings of Reason and Bradbury [82], Coghlan [83], Kemmis [84] and Flood [85]. It is, however, important to point out how the ELLab process differs from the traditional AR process. Sankaran et al. [86] illustrate AR through a general model that links between “action” and “critical reflection”. According to these authors, the latter helps to gain better understanding and thus more knowledgeable action. AR is very often participatory and is conducted through a repeating cyclic or spiral process. The ELLab framework resembles AR in this regard. Nonetheless, due to its integration of systems tools and reflection mechanisms at both local and global levels through the global knowledge platform Think2Impact™, the systems-based ELLab is a powerful tool that further embraces and reinforces AR in dealing with complex problems in a collaborative and systemic manner. This is consistent with the statement of Ison [40] with regards to the role of systems tools, techniques and methods in facilitating AR.

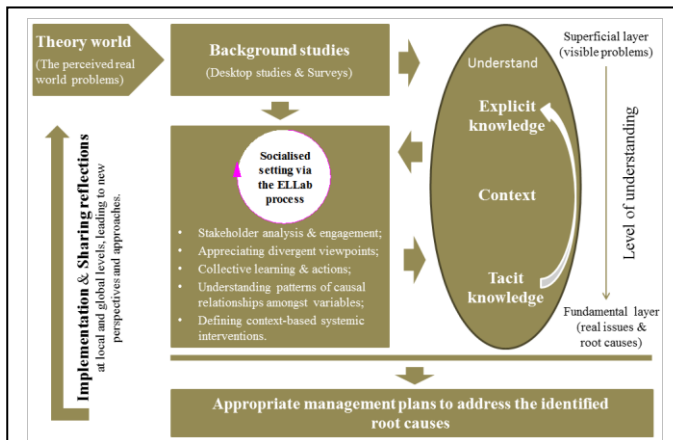


The philosophy behind the AR would be that there is a gap between the theory (knowledge) and practice (experience) worlds [87]. Reflections are essential to generate and reframe personal knowledge and perspectives about the real world and therefore appropriate approaches and actions (Figure 7). This process facilitates transformative learning amongst stakeholders [70, 88]. Through this case study, mental models and/or tacit knowledge of relevant stakeholders about the issues under consideration are uncovered and become visible

as emergent (new) knowledge for sharing through the socialised setting of the ELLab process. The co-creation of knowledge helps to better understand the context and expectations of all stakeholders involved, leading to appropriate actions. The nature of continuous reflections through the ELLab process triggers transformative learning through transforming their perceived worldviews (Figure 8).



**Fig. 7.** Transformative learning: Bridging the gap between theory & practice in professional fields [Source: adapted from 70].



**Fig. 8.** The knowledge creation process and transformational learning amongst stakeholders through the ELLab process [Source: 70].

The ELLab framework process significantly contributes to organisational learning theory via enhanced reflective changes in perceptions and thus the actions amongst stakeholders. In addition to the continuous effort to disseminate systems science at the local government level [48], this particular project has achieved profound impacts on the target group and stakeholders. Leaders of the local counterpart (Department of Agriculture and Rural Development) showed their high appreciation of the approach and method and initiated the integration of the defined systemic interventions into their future operational plan. Moreover, local farmers became ready to form formal cooperatives to enhance contract farming with potential agribusiness enterprises. These are clear evidence of perspective change and readiness to take informed actions amongst the stakeholders.

## 4 CONCLUSION

This paper has summarised the key value of the systems-based ELLab in dealing with complex community problems in Vietnam through the reported case study. Outcomes of this study clearly show the validity and advantages of systems approaches employed in the ELLab over the traditional supply-driven approach in solving intricate problems. The flexibility of its approach has enabled the project team to reanalyse and engage the right stakeholders during the issue identification and decision making process. The built-in systems tools also trigger the process's effectiveness. The ELLab's capacity building component is designed to ensure ownership of the process, outcomes by local people and thereby sustainability and expanding impacts. Thanks to the nature of its generic process, the ELLab framework could be applied in dealing with complex issues in many professional fields across the world. Successes of its applications have been evident in Australia, Japan, Africa and Vietnam. This study also confirms that the systems-based ELLab further enriches and reinforces action research through employing relevant systems tools and creating a participative co-learning environment amongst stakeholders. This helps to transform their perspectives and actions, making action research in development fields a truly "practice-changing practice" as stated by Kemmis [84]. The further development of the ELLab to Think2Impact™ will expect to bring experience sharing amongst similar applications using systems approaches to a new level of collaborative learning and actions amongst researchers, development practitioners and other stakeholders at both local and global levels. Currently, reflections from two similar case studies between Vietnam and Ghana, the two typical poor countries in Southeast Asia and Sub Saharan Africa, are being shared to learn from one another [7]. Such knowledge and experience sharing mechanism would be expected to further expand at global scale via sharing insights and lessons from different case studies around the world. Therefore, adoptable approaches, practices and their impacts would be widely disseminated in the foreseeable future.

## ACKNOWLEDGMENT

The authors would like to express the great gratitude to the Bill & Melinda Gates Foundation for providing funding (through the Foundation's Grand Challenges Explorations initiatives) to make this research possible. We are very 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 network for their continuous cooperation and valuable support. A special 'thank you' goes to all the women participants of Kien Thuy, Vinh Bao, An Lao, and Tien Lang districts for their time and valuable contribution to this research.

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