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# **Beekeeping, Wellbeing, Transformative Change: Development Benefits According to Small Farmers in Vietnam**

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## **Abstract**

This paper seeks to show the important influence of design, both on the outcomes of an intervention and on the nature of information gathered for the research and the quality and depth of the resulting analysis. The paper presents the serendipitous findings of an evaluation of a donor-funded project in Vietnam seeking to “enhance rural livelihoods” among small farmers through modern beekeeping. Among the innovations introduced was the use of light, movable hive frames. Using mixed methods and combining audit and participatory approaches, we probed into the process of diffusion, that is, the type of training provided, post-training technical assistance and the associated benefits and opportunity costs. A sociometric survey was complemented with key informant and focus group interviews. The survey results indicated successful diffusion of the innovation beyond the target group and project site. The interview results allow us to suggest that the successful diffusion of beekeeping innovations in this Project can be partly explained by the fact that beekeeping increased household incomes from the sale of beekeeping products, but further, it also enhanced the participants’ wellbeing as recorded by improved health, happier family relations, maintenance of cultural tradition and greater community respect.

Keywords: beekeeping, wellbeing, Vietnam small scale farmers, participatory evaluation, mixed methods.

## 1.0 Introduction

Since the late 1950s international development assistance agencies have, directly or indirectly, sought to stimulate development and improve the quality of life of the poor in developing countries through the introduction of new technologies, practices and policies. These interventions have met with varying degrees of success. The explanations are varied and complex (see Moris, 1981; Emmerij, 2014). What is becoming clear is that the adoption and implementation of new ideas, practices and technologies, whether by individuals or collective entities, is “not frictionless, costless nor instantaneous” (Robertson & Jacobson 2011, p. 2).

This paper seeks to show the important influence of design on the outcomes of innovation diffusion interventions and on the type and depth of information obtained in an inquiry. It presents the serendipitous findings of an evaluation of a 5-year donor-funded project introducing beekeeping innovations among small scale farmers in Vietnam with the goal of “enhancing rural livelihoods”. Rather than simply documenting the number of farmers who adopted the new practices and the resulting financial outcomes, we probed the process of diffusion and the consequences from the perspectives of the farmers. The paper starts with a definition of key terms, followed by a review of relevant literature and a summary description of project rationale, context and implementation. The methodology adopted is described in detail. The contribution of the study to the development literature is clarified by drawing upon the diffusion of innovation, wellbeing and gender empowerment discourses. The paper closes with reflections on lessons for those who seek to evaluate development interventions with a more context-differentiated, learning-oriented framework.

### Definitions of key terms

In this paper ‘innovation’ refers to “any non-trivial change in product or process, if there has been no previous experience” (Nelson & Winter, 1977, p. 48). Technology consists of both hardware and software (Galtung, 1979). It is “a more complex bundle of knowledge, with much of it embodied in ... artefacts, people, procedures ... know-how and arrangements needed to integrate these elements in an enormously variable range of different production systems” (Bell & Albu, 1999, p. 1717).

## 2.0 Review of the Literature

### 2.1 *The Challenge of Diffusing Innovation*

The literature on diffusion of innovation (DOI) is vast and spans many research traditions. DOI studies range from diffusion of hybrid seed corn among Iowa farmers (Ryan & Gross, 1943), HIV-AIDS prevention in San Francisco’s gay community (Rogers, 2004), organisational models among large businesses (Fligstein, 1985), policy reforms among governments (Pitlik, 2007), to protest concepts and repertoires of action among social movements (Andrews & Biggs, 2006). Among the earliest to attempt interdisciplinary integration was the rural sociologist Everett Rogers. Rogers (2003) argues that between 49-87% of the variance in the adoption rate can be attributed to 5 sets of variables, namely:

- perceived attributes of the innovation
- type of communication channel—mass media or interpersonal

- characteristics of the social system—collective or individualistic
- change agent’s promotion efforts
- innovation decision - whether made by an individual, by the entire system collectively, or by a few individuals in the system.

*Perceived attributes* of an innovation refer to: (a) its relative advantage over the existing or alternative practice; (b) its compatibility with existing norms, values, beliefs, past experiences and needs of potential adopters; (c) its technological complexity; (d) whether it is amenable to experimentation; and (e) its performance, observable (Rogers, 2003). Rogers’ framework guided the design of the survey questionnaire and the questions in the key informant and focus group interviews in this research.

## ***2.2 Wellbeing as a Development Outcome***

Wellbeing has been a topic of active scholarship for several decades, largely in psychology and behavioural economics (see Ryff & Keyes 1995 for a survey), going back to Maslow’s (1968) “Hierarchy of Needs” Some of the debates revolve around indicators and measurements (Kahneman & Krueger, 2006), determinants, and whether they are absolute or relative (Diener et al., 1993; Emmons & McCullough, 2003; Wood, 2006; Helliwell, 2008; Howell & Howell, 2008). Others have focused on developing conceptual frameworks and research instruments (e.g., McGregor, 2006; White, 2010). Ryff and Keyes (1995) theorised six dimensions of wellness: autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance.<sup>1</sup>

In the last ten years, and inspired by Sen’s (1993) “capability approach”, these debates have penetrated the international development literature. Wellbeing is frequently presented as a substitute for, or complement to, traditional income-based welfare measures such as GDP (Gjoksi, 2010), or to alternative measures such as quality-of-life, happiness, and connectedness (e.g., Camfield et al., 20089). It is argued as a more positive focus in lieu of poverty, social exclusion, or social dysfunction, which are seen as stigmatising labels (e.g., White, 2010). McGregor (2006, p.4) theorised wellbeing as arising from the interplay of the resources a person has, the goals and needs the person can achieve with these resources, the meaning given to the goals achieved and the processes engaged in, all taking place “in the context of society and social collectivity”.

For women a more personal dimension of wellbeing has been argued – the ability and agency to make a choice (Kabeer 1999). The North-South cleavages characterising early discourses on gender equality have blurred considerably in the last twenty years but ambiguities and contestations remain around definitions (e.g., what constitutes empowerment, Mosdale, 2005), categories (e.g., third world women as a homogenous other, Mosdale, 2005), and strategies (e.g., the individual or the collective; Mosedale, 2005). There is nevertheless general agreement that gender relations are not immutable, that empowerment is claimed rather than given, that it includes making decisions of importance to the claimant and having the necessary agency to implement it, and that it is a journey not a product. Some push the boundaries with the argument that empowerment is “contingent and contextual”

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<sup>1</sup> This six-factor model was developed for and tested in the United States.

(Cornwall & Edwards, 2010) and “manifestation of agency may include negotiation, deception and manipulation” (Kabeer, 1999).

### **3.0 The Project: Context, Rationale and Implementation**

The Beekeeping Development and Rural Extension Project (Project) was funded by the Canadian International Development Agency (CIDA) through the Association of Universities and Colleges of Canada (AUCC). It ran from 2007 to 2012 in six communes in Ha Tinh, a coastal province in North Central Vietnam. The partner institution was the Vietnam Bee Research and Development Center (BRDC), the primary organization in Vietnam involved in training rural farmers and extension agents in beekeeping.

#### **3.1 The Socio-economic Context**

Located about 340 km south of Hanoi, Ha Tinh is one the poorest provinces of central Vietnam, with a population of 1.3 million in 2006 (ISPONRE 2009). Over 90% of its workforce is untrained, compared to the national average of 75% (ISPONRE 2009). It has over 300,000ha of forest land with natural forests constituting about 55%, production forests, 30%, and protected forests, around 15%. Agriculture, forestry and fisheries contribute 35.5% of total GDP (ISPONRE 2009). The main plants cultivated are food crops (rice, corn), short-duration cash crops (bean, peanut), long-duration industrial crops (tea, rubber) and fruit trees. The main livestock raised are cattle, poultry, pigs, and deer (ISPONRE 2009). The average number of farm plots held is 2.18 and average landholding size is 0.40ha. Most of the farmers are thus classified as small farmers (Reardon et al., 2009).

#### **3.2 Why Beekeeping**

Beekeeping offers accessible opportunities for income generation for the rural poor. Bees are a free, renewable resource available from the environment. Ownership of land is not required and very little capital is needed. When practiced on a small scale, beekeeping is not particularly labour intensive, and tending to bees can be restricted to periods outside peak work times. Beekeeping can therefore productively complement rural livelihoods, particularly farming, as honey bees increase the yield of most animal-pollinated crops.

#### **3.3 Why the Need for Innovation**

A baseline survey conducted at the start of the Project indicated that most of the honey in households came from honey-hunting in the forests, from *Apis cerana* and *Apis dorsata* bee colonies, both indigenous to Vietnam, with a small amount from log hives and top-bar hives. Log hives and top bar hives cannot be divided to increase the bee population, or combined to strengthen weak ones. Nor can they be examined to check the condition of the queens and worker bees. The honey cannot be extracted easily and can be harvested only once a year with yields of 2-3kgs. Beekeepers relying on these hives do not need to know the seasonal cycle of colonies, nor how to divide or join colonies, rear new queens, detect diseases and brood conditions. To collect honey they must cut out and destroy the combs. This activity is not sustainable as most bee colonies, particularly in the tropics, frequently abscond at certain periods of the year (Woyke et al., 2012). Among the innovations introduced by the Project was the use of light movable hive frames. Because the frames can be removed easily, the conditions of the queen and the worker bees can

be checked regularly, and because they are light they can be handled easily by everybody, including women, children, and the elderly.

### ***3.4 Selection of Project Participants***

The Project targeted poor communes near the national parks in Huong Son and Vu Quang districts. The Peoples' Committees of the two districts recommended which of their communes would participate in the Project based on the availability of floral resources and the number of farmers practicing traditional beekeeping. Farmers in each of the 6 communes discussed who among them should participate. Three criteria were imposed by the Project: a maximum of 30 farmers from each commune, a third of whom should be female and a third from poor households. There was greater interest than anticipated. In the 5-year period of the Project, 195 farmers, 71 of whom were female (36.4%), received beekeeping training.

### ***3.5 Introduction and Diffusion of the Technology Package***

Workshops on basic and advanced beekeeping techniques were delivered one year apart by BRDC personnel who received prior training in participatory techniques. Relying heavily on audio-visual materials and interactive pedagogical techniques, the workshops introduced farmers to the *hardware* (i.e., hives, frames, extractors, wax foundation, protection garments) and the *software* (i.e., bee biology, individual bee and colony level lifecycle and processes, queen rearing, hive inspection, bee feeding, identification of floral resources and bee pests, and honey build up, flow and harvest).

At the end of the basic beekeeping workshop each participant was given a Beekeeping Manual and two beehives, and each commune was strongly encouraged to form a beekeeping club. All six did. In the first year BRDC staff visited each commune every two months and every three or four months in subsequent years. In Year 2 a DVD on selected audiovisual materials was developed for use in the workshops and copies left with each beekeeping club. The clubs coordinated equipment sharing. The size of these clubs varied from 30 to 45 with both men and women members, contrary to local practice. Some restricted membership to Project participants, others have been more open. Most meet every two months, each meeting lasting between two to four hours with 90-95% of members attending regularly.

## **4.0 Methodology: Strengths and Limitations**

We combined audit and participatory approaches to the evaluation. Audit evaluation basically examines to what degree a project has been effective in achieving its goals (OECD-DAC, 2002). Participatory evaluation puts greater emphasis on reflection and the potential for learning during the evaluation process (Armytage, 2011). From a development perspective it was important not only to determine the effectiveness of the Project but also to understand why. A quantitative survey would indicate whether the Project was successful or not and to what extent, but not why it was effective. Key informant and focus group interviews would allow the researchers to see beyond the numbers (e.g., what did the increased incomes mean for the household?). A mixed methods research strategy (Johnson & Onwuegbuzie, 2005) was thus adopted. Data triangulation was possible by bringing together the results from the surveys, key informant and focus group interviews and document review.

The evaluation was conducted in two steps: a reconnaissance mission (17 February-1 March, 2012) and the formal evaluation (5 April-5 May, 2012). During the reconnaissance mission the evaluators explained to the farmer-beekeepers the purpose of the evaluation, what it entailed, and approximately how much time it would take. They were informed of their right not to answer any question, and to withdraw participation at any time. The 193 who signed the Consent Form helped schedule the evaluation by determining the available days of the week as well as start and end times for the process.

The survey questionnaire had two parts. Part 1 collected information on socio-economic background, farming practices, other livelihood activities, honey production levels and incomes of the households. Part 2 posed cued questions on inter alia: (a) the participant's initial sources of beekeeping information; (b) problems encountered during initial implementation and source of technical assistance; (c) benefits and disadvantages of beekeeping; and (d) impacts if any, on household decision making process and work distribution. Those who expanded their beehives were asked when they made that decision; whether or not they had trained others in the new bee management techniques, and if yes, how many. Where the question required selection of responses, 'other' was one of the options. That the diffusion questions involve recall and retrospection was not considered problematic because the experience and events happened within the previous four years. The survey was followed by semi-structured interviews and focus group discussions. These were conducted by two teams, each consisting of a senior researcher, a graduate research assistant, a BRDC staff, and a translator. Key BRDC personnel were invited as observers, as part of the delineated Project was hands-on training in evaluation. The possibility of BRDC staff presence biasing the responses of the farmers was recognised. Since the interviews largely invited participants to elaborate upon their responses to Part 2 of the questionnaire, the bias on the qualitative research results is not significant. A bigger limitation of this study was its scope. It was restricted to the farmers trained by the Project. There is no information on the total number of either farmers or potential adopters in the six communes. So the extent of Project benefits could be skewed.

Data were collected from 192 completed survey questionnaires (1 was discarded), 111 semi-structured interviews (102 beekeepers and 9 BRDC staff involved with the Project), and 16 focus group discussions (1 with all BRDC staff, 9 with district and commune extension agents, and 6 with farmers from each individual commune). The data from Part 1 of the survey were analysed using EXCEL 2007 to calculate descriptive statistics. Data from Part 2 and the key informant and focus group interviews were analysed manually.

## **5.0 Results**

The average age of the participating farmers was 47.3 (range 23-71) years. More than half (62%) had prior experience in beekeeping - largely in traditional beekeeping. Son Truong had the highest number of farmers with beekeeping experience (78%) and Son Tay the fewest (39%).

### **5.1 Project Effectiveness and Relevance**

All 192 respondents not only adopted the new bee management practices but also expanded their number of hives from the original two. Sixty-five percent did so within 6 months after the basic training, 10% after one year, and 14% after one and

a half years. Table 1 shows that the number of traditional log and top bar hives declined over time. The trainees at their own expense more than doubled their supply of modern hives.

Table 1. *Number of Hives Owned by Project Trained Beekeepers*

	<b>2007/2009</b>	<b>December 2011</b>	<b>Change</b>
Number of log hives	139	86	-53
Number of top bar hives	79	25	-54
Number of modern hives	92	1,127	+1,035
Average modern hives per beekeeper	0.5	5.9	+ 5.2

Source: Survey

One of the Project targets was to have “70% of trainees become successful beekeepers with 15% making more than CDN\$200/yr. from beekeeping”. The 70% target was significantly surpassed with virtually all trainees still producing honey and many more farmers introduced into beekeeping. The 15% target was likewise exceeded with 124 beekeepers (63%) reporting an income of over CDN\$200 per year from the sale of honey, hives, bees, beeswax, queens, and so on. Further, 76% said their quality of life had improved significantly; 38 (20%) said it had stayed the same; and only 9 (5%) indicated it had declined. Asked why the training was effective, the answers frequently heard were that it was “participatory”, “interactive”, “practical”. The two hives provided at the training allowed for “practice at home”. They also credited the success of the program to the post-training technical assistance through BRDC and the beekeeping clubs.

One of the unexpected findings was how the farmers themselves enthusiastically spread the knowledge of beekeeping. An overwhelming majority (97%) claimed to have trained others, and rather successfully – spouses, children, extended family members, neighbours and customers, a total of 1170 (see Table 2).

Table 2. *Diffusion of innovation beyond target population and project site*

<b>Commune (No. of participants)</b>	<b>Average number trained by each beekeeper</b>	<b>Number trained by each commune extension agent</b>
Son Truong (32)	7.8	5
Son Tho (31)	7.6	15
Son Mai (31)	5	12
Son Diem (33)	8	30
Son Tay (31)	3.7	5.5
Duc Linh (33)	4.7	5.5
Avg. over 6 communes	6	12.2

Source: Survey and Interviews



## 5.2 *Project Benefits and Opportunity Cost*

Asked to identify the top three benefits of the beekeeping innovations, the most frequently cited was “increased income (94%), followed by “improved health” (83%), and “improved family relationship” (51%). Two others were mentioned: “maintaining cultural tradition” (41%) and “increased respect from the community and relatives” (34%). The farmers elaborated on these benefits during the interviews. Some (mostly women) said the extra income “helped pay for the children’s education”. One farmer proudly showed us his new car, another pointed to a large extension to his house that was under construction. Quite a few pointed out that “beekeeping created jobs for everyone in the family”.

To the question “In adopting and implementing beekeeping did you have to make major changes in your daily routine?”, the majority in Huong Son district (Son Diem, 85%; Son Tho, 87%; Son Truong, 91%; Son Mai, 94%) answered “No”. It was the opposite in Vu Quang district, with 91% of Duc Linh and 90% of Son Tay respondents saying “Yes”. Most of the changes in Duc Linh were in economic activities (e.g., wage labour) while those in Son Tay were in non-economic (e.g., cooking, washing clothes).<sup>2</sup> Interestingly, when asked whether there were any *disadvantages* brought about by beekeeping, the response was a unanimous “No”. This would suggest that even among those who had to make changes in other household activities, the changes were not viewed as outweighing the benefits. During the interviews the farmers described the impacts of beekeeping on their health, family relations and other aspects of their lives.

*5.2.1 Improved Health.* “When I come home from the farm at the end of a hard day and I see the bees, I feel so happy”, said one. Another said that he is getting old and “bees make my life more interesting. I find sitting at home watching the bees fly in and out of the beehive very relaxing”. One farmer commented that he is happiest when bees abscond because his children “bang pots and clap their hands to bring them back, and throw things in the air”. At one of the commune meetings, a female beekeeper spoke rather emotionally about what beekeeping has brought to her family. “My husband has been ill and not able to work for a long time. I taught him beekeeping and now he can do beekeeping, and he is very happy”. One summed up the benefits to his family, “First of all beekeeping has increased our income, so we have more money to spend on family needs ... Bees pollinate crops so we have increased crop harvest ... eating honey is good for health, makes you feel stronger, and gives you a happier family life.”

*5.2.2 Increased Respect from Community and Relatives.* A major discrepancy had been noted in the survey between the beekeeping income and the amount of honey produced. Upon probing, it was learned that all but one farmer (who did not produce enough) give away between 5-30% of their honey to relatives and friends. Asked why, the explanations given were consistent - to “cement relationships”, “... it is Vietnamese tradition to share things with relatives and friends”, “I gave it away to friends and family to increase their spirits and strengthen our relationship...”

*5.2.3 Improved Household Relations.* To the question “Did the Project bring about a change to more shared decision making?”, 19% answered “No”, 36% said “Yes”, and 44% said “No change, we always decided things together”. We asked “Has

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<sup>2</sup> Duc Linh and Son Tay communes had the lowest number of participants with prior experience in beekeeping. It can be argued that they required more adjustment to the new activity.

there been any change in your thinking about the role of men and women?” nearly half (47%) said “yes and it is now more equal”, 18% said there has been no change and 35% said “No change; it was always equal”. They elaborated:

You have to be patient when you work with bees. From the bees I learned to be patient with my family as well, so they are happier. (KI<sup>3</sup> no. 111, 12 April, 2012).

I continue to make all the decisions in the household, but since the Project and starting modern beekeeping, I have become happier so my relationship with my wife has improved and becoming more equal. (KI no. 34, 26 April, 2012).

Before the project, I made the decisions about everything for the family. Since the project, I now consult and discuss with my wife and children before we make the final decision. (KI no. 153, 15 April, 2012).

Another beekeeper said that his wife told him a gas cooker would save her time and make life easier so they bought one. Female beekeepers spoke of the higher respect they are getting from their husbands because of the income they are bringing to the household:

Before the project I only did housework, but now I keep bees and earn money so I feel my husband respects me more – I feel more equal to my husband since the Project. (KI no. 54, 26 April, 2012).

Before the project my husband didn’t think I could make income for the family. Now, he thinks I am more useful because I bring income to the family, which gives me a higher position. (KI no. 143, 15 April, 2012).

We asked, “Has there been a change in work distribution in the family?” Several young female beekeepers said their husbands are now assuming more responsibilities and helping out in housework. A common comment was “Since the project he will do anything around the house to help me during his free time while I am looking after the bees”. Male beekeepers confirmed these comments. For example, “My wife and children also look after the beehives, and I help around the house when I am free.” “Yes, if my wife is cooking I will go out and take care of the bees”, said another. Table 3 is a summary.

Table 3. *Shift in Household Work Distribution*

Commune (No. informants)	Changed		No change	
	More equitable	Changed a little	Always equitable	Remains unequal
Duc Linh (18)	39%	28%	22%	11%
Son Diem (17)	53%	0	18%	29%
Son Tho (19)	16%	10%	16%	58%
Son Tay (13)	54%	31%	15%	0
Son Truong (17)	35%	12%	53%	0
Son Mai (18)	33%	0	28%	39%
Avg. of 6 communes (n=102)	37%	13%	25%	25%

Source: Interviews

<sup>3</sup> KI=Key Informant

There were other benefits. A commune leader who now keeps bees said, “From the bees I learn about unity and collective work so I am applying that in my work in the community”. An elderly female beekeeper described what beekeeping has meant to her. “I use bees to educate my children the lessons of hard work and unity ... Honey collection day is a social event, everyone comes to help – my children, my neighbours”.

## **6.0 Analysis and Discussion**

What do the evaluation findings add to the development literature? Within the limitations recognised earlier in Section 4.0, we see several.

The successful diffusion of beekeeping innovation in this Project lends strong support for major elements in Rogers’ (2003) theory of diffusion. Beekeeping brought readily observable, personally and collectively felt benefits. Many farming households saw increased incomes, and reported feeling healthier and happier. Giving honey to relatives and friends earned them greater respect because the social system values sharing. For women beekeepers, generating income led to some redistribution of power and workload in the household, raising their position in the family. The technological complexity of the innovation was reduced through the interactive training approach and distribution of beehives to training participants, allowing them to experiment and observe results at home. The peer-to-peer network i.e., the beekeeping clubs, helped mentor and build the farmers’ self-confidence in beekeeping.

The farmer-beekeepers reframed the development benefits of the Project and defined what “enhanced rural livelihood” meant for them. Their incomes increased so they are doing better financially and materially, but this is not the only reason that they are feeling well. Watching the bees makes them more relaxed and happier with themselves and those around them. Consuming the honey they produce makes them healthier, and giving away some enables them to maintain good relations and feel connected to family and friends. For many women beekeepers the ability to earn an income gave access to resources and the agency to influence decisions. It appears to have given them the confidence to assert themselves, vocalise and negotiate their interests, subtly (recall the comment regarding the purchase of the gas cooker) or overtly, “Now I make all the decisions and my husband has to obey”. There appears to be the beginnings of a reconstruction of self- image, and courage to reshape one’s relations. The potential for transformation is real. As Cornwall and Edwards (2010, p. 3) argue: “Empowerment is more than enlarging the boundaries of action. It is also about extending the horizons of possibility of what people imagine themselves being able to be and do”.

The farmers defined their indicators of wellbeing, the link between their sense of wellbeing to their values, and the processes they engage in to achieve their state of wellbeing. There is an almost palpable collective dimension to the farmers’ subjective feelings of being well. “Feeling well goes beyond health ... to feeling at ease with one’s place in the world ... is critically associated with one’s relationship to others.” (White, 2010, p. 160).

Interestingly, the farmers’ indicators of wellbeing appear to be captured rather well by Ryff and Keyes’ (1995) six dimensions of psychological wellness—autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance, a model developed for and applied only in the United

States. Perhaps the measures of wellbeing are more universal and that differences in the social, cultural and economic context are reflected in the importance of the measures relative to each other?

## 7.0 Conclusions

For those who seek to develop or evaluate development interventions with a context-differentiated, learning-oriented framework this project shows the importance of design. The training program was designed to be participatory and interactive, heavily relying on audiovisual materials. The training included the provision of hives to participants so they could experiment with the innovation on their own. The Project included the establishment of beekeeping clubs as peer-to-peer mentoring network and regular staff follow up visits to the communes. The Project created the opportunity for women's empowerment by design. It imposed the condition of 30% women among the participants. This requirement also led to a mixed membership of the beekeeping clubs, contrary to existing local practice. This allowed women to socialise beyond the family and neighbourhood, expanding their social networks, and broadening their horizons and scope of influence – sustaining the transformation process triggered in the household.

The evaluation was designed deliberately to delve deeper into the process of diffusion, how the innovation was introduced, monitored and mentored, complementing the audit with a participatory approach, combining quantitative and qualitative techniques. Had we adhered exclusively to the conventional design of project evaluation we would have obtained primarily quantifiable indicators, namely, the outputs and outcomes as stipulated in the Project Logical Framework. Through the semi-structured interviews we created the time and space for the farmers to articulate the consequences of the material benefits of the Project on different dimensions of their lives. This broadened the lens and enabled them to reflect upon what the Project outcomes meant to them - in terms of family relations, everyday pleasures, affinity with neighbours and relatives, and self-actualisation in the family (for women) and in the workplace (for commune leaders) giving us a glimpse into their experiential aspects of wellbeing, their aspirations and processes, their decisions and rationales, and what development can achieve. We heard these rich conversations because of the mixed research design.

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