



The Challenges of Market Sustainability

Accountability and Organisational Change in CEDAC's Agricultural and Empowerment Programmes in Cambodia

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1.0 INTRODUCTION

This thesis explores how and why sustainable agricultural programming has expanded beyond the boundaries of strict ecological sustainability and made compromises with the capitalist world system. In development discourse, the concept of sustainability has grown to encompass a wide range of ideas and practices, ranging from specific methods for improving eco-efficiency to broad theories concerning how to (re)structure consumer society. In practice, sustainability is operationalised by each user in an evolving manner (Judge, 1990). In the short-term, development actors often define sustainability simply as the advancement of an environmentally-oriented activity, such as the promotion of ecological rice production. This simple goal usually translates into early success and emboldens development actors. This honeymoon persists until development actors recognise that agricultural techniques are of limited use unless broader market and societal configurations are brought into alignment with production realities. Thus, the initial engagement in short-term issues eventually breeds a longer-term—and more differentiated—view. It becomes clear that the long path towards a sustainable outcome (e.g., sustainable consumer society, sustainable industry, sustainable agriculture, etc.) involves comprehensive engagement with society and markets. In this thesis, I examine how rural development goals are affected by this ad-hoc (re)configuration of idea and practice by analysing the past and future programming of the Cambodian Center for Study and Development in Agriculture (CEDAC).¹ More specifically, I address the question of what are the consequences for rural people of continuously redefining sustainability in a way that favours market-based frameworks?

I highlight the tensions and advantages of the evolving NGO-model of socially responsible enterprise adopted over time by CEDAC. In particular, I show how an initial focus on the improvement in rice-based agricultural livelihoods has transformed into an imperative for building up market-oriented networks to expand organisational capacity. Because these networks are defined by CEDAC to be inherently sustainable, growing their capacity is logically seen as sustainable development. Improving rural livelihoods has thus become a by-product of system expansion. This has been marked by a shift in accountability that favours a passive, market demand-pull-based strategy for drawing in previously uninitiated farmers, rather than the grassroots approach favoured since the inception of rural development programming. I argue that this shift is symptomatic of the larger convergence of promising sustainable agricultural initiatives upon the reformist, technocentrist and increasingly hegemonic ‘market sustainability’ paradigm of sustainable development (SustainAbility, 2003). This state of affairs concurrently provides immense potential for displacing traditional industrialist modes of agricultural development, but also makes it increasingly vulnerable to cooptation by them (Jacobs, 1999: 281).

2.0 LIVELIHOODS TO ACTOR-WORLDS: SITUATING THEORIES OF SUSTAINABILITY AND RURAL DEVELOPMENT

This study focuses on two relatively discrete subjects—farmer families and institutions—and how they are bound together in a chain of relational macro-micro interactions that form a particular representation of the macro-social space of sustainable development (Knorr-Cetina, 1981). In particular, I focus on how various ‘technologies of knowledge’—such as the System of Rice Intensification (SRI), group formation and social enterprising—have been employed instrumentally by CEDAC in order to enrol farmer-participants into its practical model of sustainable development. My informants include 70 farmer families from three districts in which CEDAC works in Takeo province, as well as more

¹ This is a French acronym, the original of which is Centre d’Étude et de Développement Agricole Cambodgien.

than 40 interviews with farmers, government officials, and NGO staff. This thesis employs institutional analysis of a socioeconomic variety, informed by actor-network theory to illuminate the processes of enrolment and network expansion.

2.1 Melding the Discourses of Sustainability and Agricultural Development

Contemporary theories of sustainability in agriculture are largely an emanation from the Global North, and in particular from the influences of environmentalism and post-industrialism and, later, neo-liberal economic discourse (Adams, 1990). The early paradigm of sustainability was largely normative in nature, emerging from post-industrialist atavistic notions about returning to nature, leading simpler lives and honouring rural farm heritage (cf. Leopold, 1981; White, 1967; Wilson, 1996). The collective interpretation of embedded actors such as animal rights activists, family and artisan farmers, discriminating consumers and concerned agronomists have radically increased environmental awareness and enrolled support for international health and environmental agreements (Singer, 1974). More recently, this paradigm has been appended and challenged, by scholarship taking an economic, or pragmatic, view of environment and social development (Freeman, 1998). This new definition has either been seen as a reflective shift away from the narrow concerns of mainstream economics and modernisation (Friberg & Hettne, 1985), or as falling in line with neo-liberal economic development, because it shares a similar foundational premise prioritising capital accumulation, competition, and efficiency (Adams, 1995; Aseniero, 1985; Haque, 1999). Between these cleavages in the discourse of sustainable development, many hybrid development models have emerged. Fairtrade is a recent manifestation of this more systemic, economic approach to dealing with rural agricultural livelihoods through the normative lens of sustainability. Global institutional discourse has echoed this new tension, materialising most significantly in the Kyoto Protocol's market-oriented Clean Development Mechanism. The non-profit sector, the primary subject of this thesis, has also been encouraged to partially adopt business plans and market-based structures (SustainAbility, 2003).

The Cambodian Center for Study and Development in Agriculture (CEDAC)

CEDAC is a national-level NGO in the throes of redefining its self-image and operating structure in response to the perception that their initial programming was limiting their potential to respond to emerging development challenges. Founded in 1997 by a cadre of seven Cambodian professionals focussing on the promotion of low-external input, management-oriented agricultural extension, CEDAC was poised to benefit from the growing movement within the development industry for partnerships with national NGOs. The French NGO GRET² was the first to co-sponsor CEDAC's activities by providing seed funding from which it was able to develop its initial rural programmes. This recognition and the base programmes it spawned attracted funding from Oxfam America and, in subsequent years, many other donors. The primary draw of CEDAC during this early period was its success in diffusing ecological rice cultivation, and other ecological farming practices. CEDAC's initial identity and purpose were relatively clear: it was promoting agricultural practices embedded in the sustainable agricultural discourse and its work symbolised the alternative to the modernist AusAid-funded project of the International Rice Research Institute called the Cambodian Agricultural Research and Development Institute (CARDI).³ Following an "additive" logic of sustainable development, CEDAC began expanding the scope of its programming rapidly. It began encouraging the formation of Farmers Associations (FAs), intended as an umbrella under which local interest groups could form

² GRET is known as the Group for Research and Exchange of Technology.

³ (Yi, 21 September 2007)

and through which CEDAC's information and programmes could be disseminated. These FAs are viewed by CEDAC as an entry point for empowerment programming and a forum for farmer-to-farmer extension and local cooperation.⁴ FAs were also, importantly, the organisational hub for local savings groups that provide one alternative to high-interest moneylenders and large-scale microfinance organisations. FAs, thereafter, enabled the recruitment of farmers into CEDAC's Natural Agri-Product Marketing Program, which provides market assistance for promoting organic agricultural products. After years of very rapid institutional growth under these conditions, CEDAC highlighted at their 10th Year Anniversary celebration in Phnom Penh on 1 August 2007 that it was moving toward a market-oriented approach to sustainable agricultural promotion.⁵

Immediately after the anniversary, large-scale meetings were held to communicate the rationale for this decision and initiate the so-called "business plan". The plan, CEDAC hoped, would enable a performance-oriented institutional culture and bypass some of the structural constraints in promoting markets for sustainable agricultural products. By 2008, CEDAC had divided itself into three "Core Programs": (1) agriculture and social development, (2) agri-based enterprises support and (3) the CEDAC Institute of Local Development (CEDAC, February 2008). The first Program could be seen as the "original" programme of CEDAC, focusing on SRI extension, ecological livestock raising and group formation. And although only one of these Core Programs (number 2) explicitly deals with business and enterprise, a private sector-like performance orientation has suffused institutional practice in all three Programs. The implementation of the "business plan" has thus become the third stage in CEDAC's institutional history, following from its initial focus on agricultural extension, and subsequent focus on group formation and empowerment programming. Analysing the process through which CEDAC reached this juncture is critical to understanding how organisations balance the evolving discourses of sustainable development with the practical challenges inherent to operationalising them.

The System of Rice Intensification

This thesis primarily focuses on one product of agroecological research diffused by CEDAC, namely the System of Rice Intensification (SRI) developed in Madagascar by the Jesuit missionary Henri de Laulanié (1993). Laulanié's original formulation (according to Uphoff, 2005) is as follows:

- ❖ Transplanting younger seedlings (age 8-15 days)
- ❖ Transplanting individual seedlings with increased and regular spacing between hills (25cm or more)
- ❖ Maintaining a moist, not saturated, paddy
- ❖ Applying proportionately more organic matter, rather than chemical fertilizers
- ❖ Controlling weeds frequently, particularly with a mechanical weeder

Subsequent additions to the set have stipulated shallower transplanting, same-day transplanting, additional ploughing and field levelling, elevated nurseries, and an enhanced focus on seedling and seed selection. Critical to understanding the nature of SRI is that both *wholesale adoption of practices and strict conformity to the stipulated parameters is not necessary to see improvement in productivity*. Also important for a comprehensive analysis, based on total factor productivity and environmental imperatives, are the potential seed-, water-, labour- and fertilizer-saving features accompanying some of the steps (Satyanarayana et al., 2007; Uphoff, 2003, 2006b). Improvement in overall soil fertility is another potential by-product.

⁴ (Yi, 21 September 2007)

⁵ (Yang Saing, 1 August 2007)

In South and East Asia, SRI cultivation has spread rapidly and become popular amongst development organisations, yet it continues to be contested by certain members of large agronomic research institutions. In practice, low external input techniques such as SRI have often been criticised for producing low outputs (yields), not making good on adoption expectations, being only appropriate in limited circumstances, and not even being theoretically possible (Dobermann, 2004; McDonald et al., 2006; Moser & Barrett, 2003; Sheehy et al., 2004; Sheehy et al., 2005). Rebuttals by SRI advocates point to specific data and methodology problems with the critical assessments and are often quick to point out the widespread civil society support and rapid proliferation amongst farmers in several countries (Stoop et al., 2002; Uphoff, 2006a).

2.2 Applied Actor-Network Theory

The methodological suggestions arising from actor-network theory (ANT) are typically concerned with reassembling in full view the mechanics of actor-worlds that have become obscured over time. As Michel Callon has written, “Successful translation quickly makes us forget its history” (1986b: 28). Using ANT terminology, CEDAC’s vision of sustainable agricultural and rural development is being continually *punctualised* (Latour, 1987)—a situation in which a complex and historically-constructed system of institutional practice becomes increasingly opaque whilst inputs into and outputs from the system remain visible. This is not necessarily a deceptive process; it simply describes how complexity is masked in order to present a comprehensible front, just as turning on a faucet does not reveal the enormous complexity of the system of water delivery.

To preface the empirical and ethnographic evidence I present below, I highlight a few terms from ANT that are directly relevant to this case study. Foremost, ANT is primarily based on examining processes of *translation*, or strategic representation of a situation for the purpose of enrolling actors. *Interessement* is one of the primary translation exercises employed in the development field. Organisations or leaders create practical or ideological incentives for joining concrete activities that draw on the moral resources of ideas such as ‘sustainable development’ and on the practical (i.e., financial) resources of the development industry. In order to facilitate this, ‘sustainable development’ is *problematized* in such a way as to create a host of initiatives or activities (e.g., development projects, technological innovations, environmental education, etc.) that are able to attract, retain and put to use a variety of human and non-human actors such as field staff, SRI techniques, farmers, agricultural inputs, offices and expatriates.

Certain projects, or technologies, such as the SRI, become gatekeepers, or “obligatory points of passage”, through which access to other initiatives, such as trainings, Farmers Associations, women’s groups and organic markets, become available. Activities such as writing reports, taking surveys, applying to donors, organising producer group meetings and publishing research papers serve as constant *displacement* (or “buzz” of routine tasks), which often serve to distract actor-members from reflecting on the controversies of their work.

3.0 ENCOUNTERING THE EXTENSION AND EMPOWERMENT SYSTEM

3.1 CEDAC’s Typology of Farmers

The pioneers. From CEDAC’s perspective, rural people who exhibit a high level of willingness to participate and adopt techniques are commonly referred to as pioneers. To some degree, pioneers are self-selected; they are those with the confidence, entrepreneurial spirit and material resources who come forward voluntarily. In other cases, pioneers are “made”, either by direct payments for participation or by receiving an official title. Although

initial willingness is the minimal prerequisite to be informally seen as a pioneer by CEDAC, pioneers come in many different forms. Mey Som, the “first” pioneer of SRI in Cambodia, is a national-level figure who has contributed heavily to the corpus of agricultural innovations, local organising practices and livelihood philosophies promoted by CEDAC and academics. Prak Ches, a regional-level pioneer of SRI, multi-purpose farms and environmental thought, is well-known in CEDAC’s Zone II. Teap Mom (pseudonym), a village head and SRI farmer, has become a leading figure at the commune-level for his leadership abilities and presence in local organisations. Dein Toin (pseudonym), a village-level hero, achieved notoriety for his record-breaking SRI yield in 2004, but has remained aloof of local organising. Lop T’neen (pseudonym) is a “pioneer” because he simply tested SRI in the first year that CEDAC came to his village. The liberal conditions by which one can become labelled a “pioneer” suggest that CEDAC uses this label to honour these farmers for being so readily recruited. For CEDAC, pioneers of all types become critical leverage for promoting the success of agricultural programmes to donors and are indispensable agents for assisting in the diffusion and extension of new agricultural techniques and group organising activities.

Contrary to the traditional connotations of the word “pioneer”, such as independence and autonomy, pioneers in the context of CEDAC’s agricultural programming are “recruited” actively. There are two primary routes for this recruitment. One route, which usually comes chronologically first, requires the purposeful selection of key local people, usually based on their status as village head or renown for being a particularly talented farmer. These villagers are either paid directly to field-test certain agricultural techniques⁶ or are ennobled by staff members to be key facilitators in the ensuing programming. Very often, these people are charged with organising the first village meeting or performing the first local-level field-test of SRI. These key individuals pave the way for a subsequent round of recruitment—the soliciting of “interested farmers” during an introductory town hall meeting held in the village. Attendees usually hear a participatory presentation by CEDAC staff and are then asked, by a show of hands, who is interested in testing SRI. In subsequent years, some of these interested farmers will passively garner the title of “pioneer”—especially if they themselves become promoters of SRI.

As the CEDAC-initiated programming becomes more established and grows in scale, opportunities for upward mobility by pioneers become numerous. As the set of agricultural techniques expands from SRI to vegetable intensification, sustainable livestock production and to multi-purpose farming, pioneers are continuously obliged to take part in more activities. Usually this entails increasing involvement in Farmers Associations, producers’ groups, Commune Cluster organising, and eventually village enterprise activities. Drawing pioneers into positions with more responsibility is a rather subtle process; but before they know it, many pioneers are absorbed in CEDAC’s programming.

The wait-and-sees. Particularly as SRI cultivation is usually the ‘entry point’ for broader agricultural programming, there are many farmers who prefer to allow pioneers to take the initial experimental risks in their villages. They often want to make certain that the proposed cultivation changes are suitable for their local agro-ecosystem and scale of production. Generally, wait-and-sees are exposed to CEDAC through an introductory meeting or by word-of-mouth and have elected, for a variety of structural and personal reasons, not to experiment in the initial year. The following quote illustrates a typical outcome of waiting:

⁶ The practice of funding individual farmers has diminished markedly since the early years of CEDAC (perhaps up to 2002). Now, CEDAC’s reputation and networks largely set the stage for early collaboration. Initially, payment was provided to insure farmers against the risks of trying experimental cultivation practices and might be seen as a ‘research partnership’. However, one cannot deny the utility of this practice in “making” pioneers of local individuals.

In 2005, I started SRI. I saw people from previous years getting high yields, so I decided to test it for myself. I tried it on 6 ares. That year we had a good crop. But since then we have had bad weather and other problems unrelated to SRI – pests and accidents. But I know these did not cause the lower yield for SRI, so I did half my field the next year [2006] and this year I did all SRI. (male, age 42, Samraung district)

Many farmers such as these are sceptical of CEDAC's claims about high yield or they are risk-averse and concerned that the new system may not be reliable or appropriate for their fields. Others lack confidence in their ability to implement the system or feel socially awkward about trying something new. The experience of having one's primary activity (i.e., farming) fundamentally transformed is rather unsettling to farmers and can erode their confidence.

Whilst there are indeed formidable constraints to *full* adoption, the possibility of applying as many or as few SRI "steps" as desired and the relative ease of making a small test plot mean that the costs and risks of trying SRI are low. *The existence of so many wait-and-sees (approximately one-third of my sample) near successful SRI farmers suggests that complex social constraints affect the propensity to experiment.* I will explore these in detail later. However, these constraints can serve as a rough filter for weeding out farmers who might not subsequently join CEDAC's broader organisational and empowerment activities. Once a village has received its initial SRI training, the "wait-and-sees" are on their own in deciding whether to apply SRI or not—they do not require intervention by CEDAC. That said, the personal initiative of many passionate field staff often transcends this operating imperative, especially when it comes to including socially important individuals and women.

The difficult group. In a list generated by farmers and field staff at a workshop, "lack of agricultural techniques and knowledge" and "laziness" were the top two reasons for why people remain poor (field notes, 7 September 2007). The first reason effectively legitimises CEDAC's role as purveyors of agricultural techniques in the countryside, whilst the second reason summarily justifies why some misguidedly do not take up these techniques. The "difficult group", then, as informally known by CEDAC,⁷ are those farmers who, in spite of agricultural training opportunities, elect not to take part in rural agricultural development programming.⁸ For CEDAC, "difficult" means that the farmer exhibits a *personality trait*, such as conservatism, irrationality, or closed-mindedness that affects his or her ability to judge SRI on its merits. This rather imbalanced representation lumps together those with and without legitimate constraints to participation because it presumes that SRI is objectively superior in most, if not all, cases. However, within this group, the range of rationales for abstaining varies enormously and could be disaggregated in order to determine whether a farmer is "difficult" (in terms of his or her character) or structurally constrained in ways that limit his or her capability to implement SRI.

I would likely not recommend SRI to many others, because I think those who can manage to do SRI with their land have already started and know about it. A few more people have started this year on small plots, but there are so many that just cannot do it because of their land. (male, age 36, Tramkok district)

Because CEDAC staff (as a result of training and experience) believe that there is a clear solution to most reported constraints, they tend to underestimate the salience of some rather important ones. In many cases, "laziness" is likely a synonym of "constrained". For

⁷ I wish to stress that the "difficult group" is not an official term used by CEDAC, but a heuristic used informally and occasionally by CEDAC staff when encountering difficulty in extension.

⁸ (Yi, 21 September 2007)

instance, *in theory*, SRI cultivation can be performed with less labour; however, most farmers require a few years of experience in order to reach this stage and are thus put off by overly optimistic claims during training. The local rumour mill can magnify the salience of some constraints, which serves to bulwark the position of many non-adopters. For example, the scientific fact that tall stalks and improved yield usually counteract the negative effect of lower planting density on straw production is unable to compete with rumours circulating that SRI reduces straw output, and may mean that the family's cow will have less fodder to consume late in the dry season.

The “difficult group” is, in fact, comprised of a broad range of farmers with many reasons for being unable or unwilling to implement SRI. I have also shown that CEDAC portrays this group as “difficult” in order to rationalise the lack of emphasis made on addressing their constraints. But the underlying reason for why such a heterogeneous group are marginalised from CEDAC activities is because they not only require additional resources (i.e., personal attention, action research) for inclusion, but they have a lower propensity to join CEDAC's other activities, which is essential for CEDAC's growth.

3.2 The “strategic agents”

This final category of farmer families, which I have coined for this study, includes those who have interacted openly (and willingly) with SRI techniques and have found the system wanting in their particular context. This group overlaps with many of those included in CEDAC's “difficult group” but I argue that they are strategic in their behaviour, rather than “difficult”. This view prompts open exploration rather than marginalisation of their adoption constraints. Primarily, strategic agents include those struggling to overcome structural constraints, those who have experiment with SRI and have abandoned it and those for whom certain elements of the system—but not others—are viewed as unsuitable. The most common strategic agents are those who have “disadopted” SRI. In my randomised sample of 70 farmer families, 30% of my respondents are disadopters.⁹ Although disadoption should be seen in light of the “fairness” (or comprehensiveness) of the field-test(s) conducted by the farmer (Moser & Barrett, 2003), I have deliberately chosen the strictest of definitions: farmers who have at least tested SRI and chosen not to continue. Some farmers might be seen as having “unfairly” disadopted due to an idiosyncratic shock like poor weather in the testing year, but I maintain that even this should be seen as disadoption because it reflects the lack of warnings, preparation and over-optimism of agricultural extension.

Analysing the motivations and constraints of these strategic agents is particularly gainful, as this sub-group represents farmers who have meaningfully engaged with rural development programming, including SRI, and encountered important constraints. Very often, a farmer who disadopted would provide me a veritable laundry list of their constraints:

I stopped [doing SRI] after 2004. I got less yield, small clumps, and with poor soil and bad water management it was very difficult to do. I also have less compost on my land and had to deal with a big problem of weed problem. Oh right! I also got less straw. (male, age 39, Samraung district)

Resolving the constraints of this sub-group is likely to be the most expedient means of deriving feedback and reflexively evaluating the potential for broader reform and improvement.

3.3 Recruitment

⁹ This represents 22 farmers out of a sample of 70. Farmers who disadopted after scaling up (usually after at least two years of testing) comprise 6 out of the sample (9% disadoption).

Because history, experience and theory have shown CEDAC that SRI practices increase yield and because savings groups provide a profitable solution to the lack of rural credit, staff go out into the field confident that the real work is simply to convince farmers to “participate”. The question of whether SRI cultivation should be practiced at all (by certain farmers) has, for them, already been closed and the new question becomes “how” to efficiently encourage people to adopt. In this way, ongoing scientific disputes, such as those surrounding SRI, are ignored for the sake of moving forward with the project (Desai, 2006: 174). Having committed, or sold themselves on SRI, field staff become defensive insiders rather than reflexive instructors and *their pedagogy switches from one of education to one of recruitment*.

CEDAC staff thus launch into a type of translation called *interesement*, which is focussed on recruiting people into the CEDAC system through indirect incentivising, such as promising more yield and profits from savings and shared production. Tentative recruits often believe they are simply testing SRI cultivation, when in fact they are already on their way towards induction into the broader range of CEDAC activities, of which SRI is only the entry point. One tactic used to sustain the *translation* is the practice of giving recruits titles (e.g., Village-Based Animator, Community-Based Animator, etc.) or giving them the chance to earn titles (e.g., president of the nascent Farmers Association, the treasurer, etc.). Recruits are also generally kept busy organising their various group activities, refining their , which serves to make the question of whether or not SRI is a fair test for recruitment in their community redundant.

CEDAC staff themselves are often unaware of the structural marginalisation that ensues. Because they generally work with those who have been (easily) recruited, the lifeworlds of those who have not taken up SRI become increasingly distant. The discomfort with the existence of such people is the impetus for the three groupings: pioneers, wait-and-sees, and ‘difficult group’. It is also the reason for the lack of a mental category called “strategic actors”. Because the staff themselves exist as inductees in the chain of *interesement* populated by their managers and bosses, donors, development academics, and development discourse itself, their distance from strategic actors permeates to other types of actors.

4.0 FIELDWORK: RECRUITMENT CONSTRAINTS AND REALITIES

4.1 CEDAC by the Numbers

In the study area of Takeo province, which is a flagship area for their agricultural and rural development initiatives, the view of many donors, development agencies and NGOs is that CEDAC programmes have improved the agricultural production of many farmers in addition to empowering them to engage more thoughtfully with producer and credit markets.¹⁰ In addition, farmers have internalised a set of important ecological concepts and many active members have significantly reduced or eliminated their use of chemical fertilizers and pesticides. Furthermore, this has been accomplished without risky or unnecessary investments into fossil fuel-run farming equipment or external seed, and has enabled farmers to have more control over cultural change in their communities. Empowerment programming, primarily utilising group formation strategies, has activated networks that have led to enhanced farmer-to-farmer extension, co-operative sales and purchasing groups, certified organic rice sales, improved local governance and increased social capital. With the initiation of CEDAC’s business plan in 2007, participant farmers

¹⁰ Although the list of CEDAC’s “fan club” is numerous, a fairly complete collection of outside views, reports and assessments can be found at website of the Cornell International Institute for Food, Agriculture, and Development (CIIFAD). Web: <http://ciifad.cornell.edu/sri/countries/cambodia/index.html#reports>

now also engage in far more entrepreneurial activities, such as shared investment in village shops, organic chicken sales, natural palm sugar production, eco-tourism and all-organic catering. CEDAC's activities are generally looked upon favourably by government, and, in particular, SRI has received support from the Minister of Agriculture, Forestry and Fisheries (MAFF) and SRI's place in policy has been enshrined in the SRI Secretariat, a governmental working group. Many development agencies and northern donors see CEDAC as their darling organisation; indeed, one prominent manager at the Japan International Cooperation Association (JICA) has called CEDAC "our hope".¹¹ These achievements and this recognition are indeed substantial in the realm of rural development, where development programming in Cambodia has produced very little widespread success.

However, in many cases of run-away success, those who are left behind tend to stand little chance of catching up with the pioneers or, more simply, they tend to be forgotten far behind. During fieldwork, I randomly sampled farmer families from CEDAC target villages and compare the unbiased village-wide results with CEDAC's own statistics kept *only for CEDAC member farmers*. By and large, I find that the absolute gains reported by CEDAC are mostly true: CEDAC members' livelihoods improved over project periods. However, I also find that some of the gains are statistically insignificant and, when comparing to overall village results, find that many non-CEDAC farmer families fared just as well or better.

My primary sources for this assessment are impact evaluation reports, English-language brochures to celebrate CEDAC's 10th anniversary, and CEDAC's self-representation at press conferences. For comparative quantitative data, I primarily use two of the most recent impact assessments produced by the now-defunct Research and Development Department at CEDAC: one focusing on country-level impacts (Suon, 2007a), and the other focusing on the area in which I conducted fieldwork (Suon, 2007b). As an alternative angle, I also analysed individual Khmer-language staff reports from Zone II, although these generally do not impact CEDAC's official external and internal representation. Now, let's look at a few highlights.

4.1.1 Overall Impact.

According to the CEDAC president's statement at a press conference 18 March 2008, 82,000 families, or 4.5% of rice farming families, which engage 2% of rice land in Cambodia, are employing SRI techniques. Overall, the latest impact evaluation from 2007 reports that average agricultural incomes of participants have increased from 1.7 million Riel (~\$425) to 2.2 million Riel (~\$550) during the period 2004-2007 (Suon, 2007a). Within these figures, several quantitative and qualitative issues emerge concerning the absolute and relative nature of the numbers, their significance overall, and the context they obscure. Firstly, the increased agricultural income (30%) is not calculated using Purchasing Power Parity and came at a time when inflation was hovering between 5-11% (nominal) per annum and spiked to nearly 20% in the early months of 2008.¹² Secondly, attributing all income increases to project intervention during that time period ignores many exogenous factors, the least of which is the fact that the Cambodian economy grew rapidly (5-13% real GDP growth) in the evaluation years. Whilst poor subsistence farmers are somewhat insulated from the effects of inflation and are not component to the tourism and garment sector-driven GDP growth, the rural economy has not been stagnant and it relies increasingly on consumer goods. CEDAC is not unaware of these statistical problems and also includes a subjective assessment by respondents about their overall living standard (but not about the project's impact's *per se*): 15.6% reported no increase in living standards, 37.2% reported a slight increase, 39.5% reported a medium increase, and 1.7% reported a high increase (Suon, 2007a). This follows my own results very closely, which is to say, it follows the trends of the

¹¹ Anonymous, 23 March 2008, personal communication

¹² See official figures at the National Institute of Statistics (Cambodia): <http://www.nis.gov.kh/>

villagers in general because I sampled from participants and non-participants alike. In other words, many of the improvements observed in CEDAC's impact evaluations could apply to farmer families in areas without any CEDAC intervention. This is not a surprising result, as one would expect even rural villages to improve their livelihoods in the context of a rapidly growing economy. This conclusion is *not* to say that CEDAC programmes are not improving livelihoods. Indeed the reduction in chemical fertilizer usage, increases in social capital, microcredit availability, and entrepreneurial training are positive externalities, but this does suggest that ecological agriculture techniques are not being applied on a wide enough scale to be significant.

4.1.2 Impact in Ecological Agriculture.

Table 1. Rice land and yield from various reports, 2007

Rice production in the sample (This study)

	Quartile 1	Quartile 2	Quartile 3	Quartile 4	Overall
Total Rice Land (ha/hh)	0.35	0.46	0.59	0.64	0.51
Total SRI rice fields (ha/hh)	0.14	0.28	0.19	0.45	0.26
Total SRI rice fields as a proportion of total	0.40	0.61	0.32	0.70	0.51
Total good SRI rice fields (ha/hh)	0.12	0.30	0.22	0.43	0.24
Total partial SRI rice fields (ha/hh)	0.19	0.27	N/A	0.56	0.36
Overall rice yield (t/ha)	2.10	2.32	2.10	2.37	2.22
Rice yield excluding SRI (t/ha)	1.89	1.94	1.92	1.98	1.93
Overall rice yield (t/ha) for SRI farmers	2.39	2.68	2.33	2.54	2.49
Rice yield excluding SRI (t/ha) for SRI farmers	2.01	1.80	1.79	1.69	1.83
SRI yield, good SRI fields (t/ha)	2.57	2.92	2.57	5.03	3.07
SRI yield, partial SRI fields (t/ha)	2.43	2.87	N/A	2.65	2.65

Rice production in the sample (Samraung Report, CEDAC)

	Quartile 1	Quartile 2	Quartile 3	Quartile 4	Overall
Total Rice Land (ha/hh)	0.48	0.76	0.78	1.07	0.77
Total SRI rice fields (ha/hh)	0.32	0.54	0.48	0.91	0.57
Total SRI rice fields as a proportion of total	0.67	0.71	0.62	0.85	0.74
Total good SRI rice fields (ha/hh)	0.17	0.27	0.25	0.34	0.27
Total partial SRI rice fields (ha/hh)	0.31	0.46	0.38	0.79	0.50
Overall rice yield (t/ha)	2.48	2.26	2.84	2.34	2.48
Rice yield excluding SRI (t/ha)	1.94	1.50	2.40	1.63	1.88
SRI yield, good SRI fields (t/ha)	3.61	2.91	3.75	3.42	3.41
SRI yield, partial SRI fields (t/ha)	2.74	2.56	3.20	2.33	2.74

Rice production in the sample (Country Report, CEDAC)

	Quartile 1	Quartile 2	Quartile 3	Quartile 4	Overall
Total Rice Land (ha/hh)	0.83	1.21	1.38	1.89	1.33
Total SRI rice fields (ha/hh)	0.43	0.64	0.62	0.91	0.66
Total SRI rice fields as a proportion of total	0.52	0.53	0.45	0.48	0.50
Total good SRI rice fields (ha/hh)	0.21	0.28	0.26	0.34	0.28
Total partial SRI rice fields (ha/hh)	0.45	0.62	0.61	0.96	0.67
Overall rice yield (t/ha)	1.78	1.84	1.85	1.86	1.83
Rice yield excluding SRI (t/ha)	1.45	1.41	1.41	1.51	1.44
SRI yield, good SRI fields (t/ha)	3.10	3.10	3.30	3.20	3.20
SRI yield, partial SRI fields (t/ha)	2.10	2.20	2.40	2.20	2.20

SRI farmers allocate on average 51% of their fields to SRI (CEDAC reports indicate 57-66%). To compound this, less than half of the overall field allocation for SRI receives ‘good’ SRI treatment,¹³ which diminishes the yield-raising potential. All of the studies I reviewed, including my own, find comparable *per hectare* yield increases from SRI ranging from 49-122%, but this is contrasted by an increase of only 15-36% in overall yield, with the lowest projections emerging from my figures (see **Table 1**).

My suggestions here are based on descriptive statistics but they are also borne out by significance tests and econometric analysis. Firstly, a paired t-test indicates that *SRI yields are significantly higher non-SRI yields*, on a per-hectare basis. However, two OLS models below indicate that SRI application is not found to be a significant factor in explaining *overall* yield (see **Table 2**), as many farmers do not cultivate enough of their fields using SRI practices. Furthermore, the OLS models displayed in **Table 3** show that *SRI cultivation is not significantly associated with wealth*. In other words, SRI cultivation does not raise incomes.

Table 2. Regression output for two models explaining overall yield

	(1) overall yield		(2) overall yield	
cultivation	0.174 ⁺	(1.75)	0.180 ⁺	(1.82)
soil type	-0.139	(-1.23)	-0.126	(-1.15)
organic matter	0.063	(0.39)	0.064	(0.40)
good SRI	0.216	(1.06)		
partial SRI	0.343	(1.34)		
any SRI			0.254	(1.34)
_cons	2.284 [*]	(9.03)	2.261 [*]	(9.12)
<i>N</i>	70		70	

t statistics in parentheses

⁺ $p < 0.10$, ^{*} $p < 0.05$

Table 3. Regression output for two models explaining wealth

	(1) wealth		(2) wealth	
avg. yield	0.404 [*]	(2.21)	0.407 [*]	(2.22)
soil type	0.228	(1.37)	0.275 ⁺	(1.72)
literate	0.581 ⁺	(1.90)	0.522 ⁺	(1.73)
high-paying job	0.225	(0.99)	0.244	(1.08)
low-paying job	-0.339	(-1.47)	-0.315	(-1.37)
organic matter	0.502 [*]	(2.19)	0.501 [*]	(2.19)
residents/hh	0.095	(1.31)	0.071	(1.03)
good SRI	-0.325	(-1.21)		
partial SRI	0.049	(0.15)		
any SRI			-0.191	(-0.81)
_cons	-2.414 [*]	(-3.45)	-2.353 [*]	(-3.37)
<i>N</i>	70		70	

t statistics in parentheses

⁺ $p < 0.10$, ^{*} $p < 0.05$

¹³ The question of what should be considered ‘good’ or ‘partial’ SRI is sharply debated. For statistical analyses, I avoid this problem by employing factor analysis but for the sake of comparison with CEDAC figures, I developed the following definition, suitable for this sample: a farmer is considered to apply partial (as opposed to good) SRI if he or she fails any two of the following conditions: (1) transplanting the same day as pulling, (2) ageing seedlings less than 23 days and (3) spacing hills at least 20cm or more from one another.

My overall conclusion is that whilst incremental improvement of SRI is positively associated with (and likely causes) increased yield, its effect on livelihoods is statistically insignificant due to a low commitment to SRI, as exhibited by poor technique and limited land area devoted to SRI cultivation. My own fieldwork, and other adoption studies in Cambodia (Rajpal, 2008), indicate that many of the reasons for the lack of commitment by current SRI farmers, including social and structural constraints, can result in low adoption rate, high disadoption rate, and difficulty for extension staff in recruiting and incentivising CEDAC's programming.

4.2 Adoption Challenges

This following analysis is based on the same premise as above: that, although the extension system and teaching pedagogy employed by CEDAC has been very effective relative to many other rural agricultural development projects in Cambodia, there are open questions as to whether these efforts are "effective enough" (to ultimately reach a large enough and vulnerable enough cross-section of the population) and whether CEDAC's extension is improving in efficacy over time.

First of all, it is interesting to note that in spite of SRI's pivotal role in recruitment lasting until this day, the technical aspects of SRI have received dwindling focus over the years and now action research concerning how to best tailor and adapt SRI for Cambodia and Cambodians has diminished considerably. As I have already addressed above in regards to re-examining "strategic actors", this is a glaring oversight as there is yet considerable potential for additional adoption and improvement of SRI practices, and thus more prospective recruits for the broader CEDAC system. Indeed, because the focus on adapting SRI to farmers has diminished, a consistent sub-section of farmers who face intractable structural and social constraints continue to fail to take up SRI and thus fail to become part of CEDAC's many other programmes.

The main *structural constraints*, very briefly mentioned due to space limitations, are:

1. **Water management:** history often decides who will have good water resources and who will not, and furthermore, water management affects both the ability to implement even the basic SRI steps and also the potential for optimising growth. The challenges faced by canal digging and community-wide infrastructure are considerable and the erratic rainfall patterns brought about by climate change have complicated even historical systems. Without water management, it is hard to plan for the extra labour in advance and the short window for nurserying makes the inability to plan a worrisome object for farmers considering SRI. Furthermore, the ideal within SRI of low water levels contradicts many farmers survival strategy of ponding water to withstand dry shocks.
2. **Straw production:** possibly the most passionately debated aspect of SRI production amongst my informants and responsible for most disadoption in addition to being a major factor in poor uptake. CEDAC staff will fiercely assert that, *in theory*, there is no problem with straw production from SRI. Because there are ways of increasing straw output within the framework of SRI, this issue is often discounted. However, doing so disregards the experiences of less skilled SRI farmers, usually those in their first year(s), who have not yet found a way to balance straw output. Indeed, amongst my informants, I found very few farmers who have reached the theoretical straw output claimed by CEDAC. If straw was not such an important element in the lowland Khmer farming and livestock system, this would not be such a critical concern. Indeed, I found that maintaining straw stockpiles as cattle fodder is as much of a preoccupation as keeping rice in the bowls of the family. However, once a competency in SRI is achieved, tillering and heightened stalks, as well as increased yield, should compensate. More of a concern

for me, however, was the unwillingness of many CEDAC staff to admit that this was a real, as opposed to imagined, problem for many farmers.

3. **Lack of adequate resources for organic matter:** similar to straw production, this is a matter that can be addressed in the long-term given proper preparation, but remains a potent barrier in the initial adoption and subsequent scaling-up of SRI cultivation. In fact, CEDAC has a conflicting relationship with the issue of organic vs. inorganic fertilizer. CEDAC's commitment to ecological agriculture implies that it does not support the use of inorganic fertilizers, as exhibited by the following quote:

I never know if I should say that it's okay to use fertilizer or not. I want the farmers to start learning about the environmental problems but I also want to make sure they get a good yield. If they start SRI on a field with really poor soil, the result might be disappointing if they don't use a little fertilizer, but it is against my training to recommend it. (field staff, Zone II)

On the other hand, CEDAC's commitment to diffusing SRI, which requires improvements to soil fertility, cannot often be accomplished with the resources initially available on most of its target families' farms. There is an historical precedent here that I have already mentioned: emerging from the forced organic production of the Pol Pot era, Cambodian farmers embraced inorganic fertilizers with a vengeance. Over the past 20-25 years, fundamental soil fertility, which is based on replenishment of organic material, microbial activity and sustainable cultivation, has decreased across the board in Cambodia (Kingdom of Cambodia, 2000). The contradiction is that rebuilding soil fertility is a long-term process, whilst CEDAC expects SRI adoption to be a short-term process. Because of the confusion about the role of inorganic fertilizers, and the lack of organic matter available initially on farmers' land, the relationship between SRI and fertilizers must be clearly communicated and strategies for the long-term improvement of soil fertility must be explicated.

The main *social constraints* to SRI adoption, summarised here briefly, are as follows:

1. **Staff become more out of touch over time.** Given limited resources for extension, CEDAC has adopted a strategy predicated on training a cadre of key farmers in each village to diffuse agricultural techniques. Under these conditions, it is natural to select the most enthusiastic and willing trainees, as these figures are more likely to be effective extension agents. In doing so, however, CEDAC not only escapes directly training the more hesitant farmers, but also misses the opportunity to learn about the constraints facing those farmers. Specifically, it becomes problematic if it results in field staff systematically escaping healthy confrontation with challenges to their model. By this logic, because so many families in Takeo, and indeed Cambodia, have succeeded nominally in applying SRI, it appears less and less rational for others not to apply. Common amongst field staff is the bipolar perception that farmers are either open or closed, and by extension, worthy or unworthy of attention. By privileging the initially interested farmers, not only have the elderly, young and the 'strategic agents' often been marginalised from early efforts to disseminate SRI, but there are few plans to learn from the dilemmas facing these groups and, thus, there is limited potential for their inclusion in the future.
2. **Staff often ignore natural social cleavages in target villages.** CEDAC works on the basis of communal and public participation—but the pioneers who join in the beginning might create social challenges for others to join, especially if there are big income differences. Firstly, although interest groups and Farmers Associations are open for membership, joining later comes at a slight risk of alienation. Secondly, there is no

particular reason why anyone would necessarily enjoy the social experience of learning and doing business with one's neighbours. Indeed, there are many divisions and social boundaries that discourage certain groups or families from attending open meetings. Thirdly, many farmers are embarrassed to attend training sessions because doing so implies that their current skills are inadequate.

3. **There are diverse opportunity costs to SRI adoption.** Inherited from mainstream institutional discourse on rural development, CEDAC historically had a very static and sedentary view of development, although this is being reviewed. The locale is of primary importance, and “enabling people to stay at home” is an overriding concern (Bakewell, 2007). In fact, preventing migration and preserving beneficiaries as “small farming households” is an integral part of their mission (CEDAC, 2007). In reality, migration, off-farm work, cottage industries and other social and economic aspirations are conspicuous elements of rural life. Indeed, 84% of sampled farmer families are engaged in work outside of the farm, 54% of families have at least two main occupations, and 46% of families have one member working a “high-paying” job.¹⁴ Some of these occupations conflict or compete with SRI in various ways. I have already outlined how a large herd of cattle conflicts with SRI. In addition, alcohol and palm sugar production require large amounts of kindling and wood fuel that could otherwise be used for compost. The more intensive weeding, stricter water management and the degree of monitoring required can also make it difficult for the entire family to slip away to weddings and celebrations. Many other jobs can conflict as well if they tie up family labour, which is important (although not necessary) for SRI, in the cultivation season(s).

4.3 Summary: How CEDAC arrived at its present state

In the preceding section, I outlined a host of structural and social constraints in order to show how the extension practice and institutional culture of CEDAC has evolved in ways that have incrementally weakened SRI as an effective entry point to CEDAC's programming. Additionally, the manner in which CEDAC represents the outcomes of its work in ‘impact assessments’ does not allow for critical self-reflection. Through statistical analysis and a review of data presentation, I show that the absolute improvements overlook a relational (statistical) insignificance and mask over exogenous factors affecting rural Cambodia as a whole. I also show that increasingly distant involvement by staff in organisations has resulted in a shift in accountability that increasingly favours a passive, demand-pull strategy for drawing in previously uninitiated farmers, rather than the grassroots approach favoured since the inception of rural development programming. This increasing distance from SRI, as I have argued above, is responsible for decreased motivation to deal with hesitant farmers and a declining capacity to conduct action research in order to make SRI a more inclusive entry-point. This conclusion is somewhat paradoxical, because whilst the technical aspects of SRI extension are receiving less and less focus at CEDAC, SRI continues to remain the blockbuster entry point for most other programmatic activities. Limiting the effectiveness of SRI extension limits the pool of potential participants—and clients—for CEDAC and, in the long-term, lowers the chance that CEDAC will become accountable to more vulnerable groups. Discussing why this is the case is the focus of the following section.

4.4 CEDAC's Performance Orientation

Although in the works for a number of years, following the celebration of its 10th anniversary, CEDAC officially kicked off a new and ambitious campaign to partially reform its activities to conform to business and performance guidelines. Although nominally split

¹⁴ What constitutes a low, medium or high-paying job is specified according to previous research. High-paying, however, is a relative term that exists only within the context of rural agriculturally-based communities.

into three “Core Programs”, only one of which is exclusively focussed on enterprise, a business-like performance orientation has permeated into all areas of programming (CEDAC, February 2008). Generally, this performance orientation has adopted recruitment, farmer group development and profitable production, as codified in reports, as its underlying goals.

Report Writing. Filling out reports to document “business transactions”, however, may threaten to objectify the participants as “clients” rather than farmers with complex social and productive lives. Whilst staff garner most of their personal feedback subjectively from day-to-day encounters, report-writing *can* slowly alter the nature of this experience. Staff subjective views become incrementally coloured by their exposure to impact assessment methodology and formulaic report-writing (Desai, 2006: 178). Through my archival research in Zone II, I also discovered that many field staff have begun decoding the underlying demands of the CEDAC report monitoring system. In their field reports, they recycle the same successful key words and ideas to manipulate the representation of their work in the field (Desai, 2006: 177). Some of this redundancy is also caused by the burden of report writing, which forces field staff to adopt economising strategies for report-writing.

Enterprise Scale-Up. Generally, the performance orientation has meant that “enterprise” becomes the highest tier of organisational activity and thus depends on the stability of the organisational structures “below” it. After evolving through Farmer Community Schools, Farmers Associations and Commune Clusters, business and enterprise are seen as the next steps. Farmers must be “groomed” for the CEDAC system in order to make them ideal partners within the framework of the national level business plan. To become partners, farmers and farmer groups must travel the track laid by CEDAC, which involves following its prescribed organisational evolution. As a result, Farmers Associations, which were originally conceived of as forums for community empowerment (Mishra et al., 2006) also serve as channels leading towards engagement in specific CEDAC-coordinated activities further down the line (Wright, 1994).

A few years ago, my son-in-law said he just wanted to try SRI. The next year, he joined the Farmers Association. The next year he was the treasurer and then he joined the Commune Cluster committee. Next year he wants to do business with CEDAC. I think many people in this village followed this path. I guess I missed out.
(male, age 53, Tramkok district)

I argue that FAs, whilst theoretically open forums, are controlled by a hegemonic relationship with CEDAC. The programme director in Zone II commented to me that FAs are empowerment-oriented because CEDAC only sets up the structures for farmer-to-farmer extension and then leaves the fate of the FA in the hands of its members. Indeed, members do share agricultural knowledge, learn how to work together to develop statutes, elect leaders and discuss important issues facing their village. Occasionally, the FA succeeds in providing a forum for empowering village residents. More commonly, however, the formal activities and structures of the FA are generally those prescribed by CEDAC field staff. For instance, all Farmers Associations adopt more-or-less the same governing structure (often the same founding documents) and most FAs feature the same interest groups and microcredit activities. Moreover, FAs often lack non-traditional features and creative initiatives, like wedding assistance programmes, equipment rental, voluntary guidelines for cattle grazing and village newspapers. FA members suggested all of these activities to me but felt that the restrictive atmosphere made it uncomfortable for them to introduce such new activities to the FA. Farmers Associations can thus be seen as training grounds, in which “participatory” techniques are used to produce potential rural partners for CEDAC. As a result of the strict track for group formation and the growing demands for business associations with rural

people, there is little room for altering the foundational organisational structures influencing accountability of CEDAC to more vulnerable groups.

5.0 CONCLUSIONS AND DISCUSSION

Evidence presented here concerning SRI adoption, group formation and organisational evolution are intended to reveal the development apparatus of CEDAC as an organisation that sees its work as constitutive of sustainable development, such that *translation*, or “network building” becomes its primary occupation. Indeed, the concept of sustainability is self-referenced; it is constantly redefined, usually in an additive manner, in order to portray organisational evolution simply as strategic re-targeting of resources in order to better achieve sustainable development (Adams, 1995: 87). Originally defined as ecological and productive improvement in rice-based agriculture in Cambodia, sustainable development has been refashioned as the building of formal, often market-based networks of producers coordinated by CEDAC. Improving rural livelihoods has thus become a by-product of system expansion rather than an activity unto itself. The shift in accountability arising from the declining importance of agricultural extension is symptomatic of an organisation seeing the betterment of livelihoods as constitutive of *its own* performance, rather than a moral goal. This is not to say that CEDAC wishes to have less participation in its programming, but to acknowledge that, in focusing on *its* performance, the outreach system has less incentive to reach each marginal recruit, whose cost of recruitment is progressively elevated by structural and social constraints.

Whilst the cost of recruitment and, by extension, the cost of increased accountability, *can be reduced* by addressing the social and structural constraints I have outlined, I show that the growing rigidity of the organisational apparatus as it evolves makes CEDAC increasingly unable to accommodate the adaptation necessary to do so. The operating parameters of CEDAC in the early years, which included action research and sensitivity to rural constraints, are increasingly crowded out or viewed as an uneconomical regression to “old” functionality in light of the new performance orientation. Impact assessments and report-writing culture further serve to obscure the past and prevent critical and reflexive analysis about where CEDAC is going by focussing on current work. The new imperative emerging from the performance orientation is to ensure that extension (i.e., recruitment) is “effective enough” to provisionally maintain donor-funding and to supply the CEDAC actor-world with sufficient and readily-drafted new recruits. It is clear from CEDAC’s relative success with SRI extension and group formation that numerically it has a strong positive influence, but these figures obscure important exogenous factors and many relative untruths about its influence in rural communities. It is my conclusion then, that CEDAC is a recent convert to the growing community of developmentalist-oriented organisations that have converged upon the reformist ‘market sustainability’ paradigm of sustainable development (Adams, 1995). Whilst critiquing this paradigm is not within the scope of this work, in *Prospects* I shall conclude with a brief discussion of the prospects for this paradigm to challenge traditional industrialist modes of agricultural development or fall in line with it.

I focus on SRI in this thesis because, in Takeo, it has become a gatekeeper through which all other activities must flow and is thus a critical element of accountability. For most farmers, learning SRI is the first step in becoming a full-fledged member of the CEDAC system, which can variously include ecological livestock raising, village microcredit, social interest groups, producers groups, farmer-to-farmer extension, and business-related activities. The inability or unwillingness to take up SRI generally pre-empts a farmer from taking part in all of these other activities, thus making SRI an ‘obligatory point of passage’ (Callon, 1986a: 26-27). I gave considerable attention to the structural and social constraints which mediate whether or not a farmer family is able to pass the SRI-gatekeeper because these

constraints effectively predict whether or not a farmer will (be able to) join the wider CEDAC system.¹⁵ I concluded that, given CEDAC's historical ability to solve constraints, as seen by its historical record of effective action research in agriculture, CEDAC has allowed these adoption constraints to persist because they help to passively select suitable partners. In other words, the constraints are a natural filter or screen, determining which farmers are worth working with (i.e., easily recruited and willing to take part the broader CEDAC system) and which farmers are unworthy (i.e., costly to include and potentially unenthusiastic about further engagement in organisational activities). This "unworthy" group is defined within CEDAC's informal typology as the "difficult group",¹⁶ which are farmers who are rather neutrally considered by CEDAC as 'beyond their ability' to include. The "worthy" group, conversely, is seen approvingly as the "pioneers". A third group, the "wait-and-sees", includes farmers who have simply not yet joined the pioneers or the difficult group. My analysis of the social and structural constraints shows that, contrary to this typology, there is a large group of "strategic agents" which includes many wait-and-sees and "difficult" group members, who have engaged with SRI and found it wanting, or face considerable real constraints. The broader question for accountability is: should these strategic agents be left out of the larger CEDAC system as well as SRI cultivation?

I also conclude the organisational imperatives of CEDAC require staff to be constantly engaged in activities that distance them from strategic agents, and thus limit their ability to see and act upon challenges to accountability. The imperative to upgrade their target villages to higher and higher levels of organisational activity draws them away from the hesitant and constrained villagers. In addition, there are increasing demands on staff to represent their work/progress in a synthetic 'impact assessment' format, which creates a competing, and increasingly dominant, lens through which to "see" farmers. In light of the business plan in particular, staff are so busy with the requirements of CEDAC, that their ability to reflect on the real beneficiaries, farmer families, decreases. Adaptive rural programming and action research, once prominent features of CEDAC's activities for broadening the access of agricultural innovations such as SRI to more people, are subtly supplanted by the operational necessities of the business plan.

The incremental convergence upon a market sustainability and performance-oriented model for sustainable development presents many risks and opportunities for an organisation such as CEDAC. CEDAC has already shown remarkable capability to succeed within the new performance-oriented framework, as shown by the rising sales of organic products, increasingly entrepreneurial cadre of farmer families and governmental support for marketing initiatives. But these successes have also arrived with significant tradeoffs in its accountability and its declining ability to sensitively document the experiences of its current participants and solve the constraints of its potential participants. This highlights the limited degree to which rural livelihoods and poverty reduction can accountably be addressed with market-sustainability based development activities.

¹⁵ To pre-empt any direct criticism here, I should point out that there are always exceptions—non-SRI farmers who join Farmers Associations and also SRI-farmers who do not join Farmers Associations. In generally, however, the presence of these individuals does not upset my overall conclusion.

¹⁶ (Yi, 21 September 2007)

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