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From MuSIASEM theory to practice: Report and reflections from field research in Kampot province, Cambodia

Arnim Scheidel[1]

Affiliation:
[1] Institut de Ciència i Tecnologia Ambientals (ICTA), Universitat Autònoma de Barcelona (UAB), Facultat de Ciències, Campus de la UAB, 08193 Bellaterra (Cerdanyola del Vallès), Spain

Contact: Arnim Scheidel <arnim.scheidel@uab.cat>
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Institut de Ciència i Tecnologia Ambientals (ICTA)
Edifici Cn, Campus UAB
08193 Cerdanyola del Vallès, Spain
Tel: (+34) 935812974
http://icta.uab.cat
icta@uab.cat

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Summary

This document contains a report and summary of the field research activities in a rural community of rice farmers in Kampot province, Cambodia in 2011, which I conducted within the context of my PhD research at ICTA-UAB (Institute of Environmental Science and Technology, Autonomous University of Barcelona, Spain). The purpose of the field research was to gather data for a MuSIASEM analysis (Multi-Scale Integrated Analysis of Societal and Ecosystem Metabolism) at the village and household level, in order to analyze the multidimensional challenges that small farmers may face nowadays within the context of global rural change and declining access to land.

While the literature on MuSIASEM offers a great variety of theoretical explanations and practical applications, there is little information available for students regarding the practical steps required for doing a MuSIASEM analysis at the local level. Within this context, this report offers not only a documentation of the field research design and data collection methods, but further provides a general overview on some organizational and preparative aspects, including some personal reflections, that one may face when preparing and conducting field research for MuSIASEM analysis.

In summary, this document thus serves three objectives: (i) to assure methodological transparency for the future work, based on the collected data during field research, (ii) to share my personal experience on the preparative and practical steps required for field research and data collection for a MuSIASEM analysis at the local level, and (iii) to make available for the further interested reader some more detailed background information on the case study village.

Keywords

Cambodia; Small farmers; Integrated assessment; Field research; MuSIASEM

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1 Introduction

This document contains a report of the field research activities in a rural community of rice farmers in Kampot province, Cambodia, which I conducted in 2011 within the context of my PhD research at ICTA-UAB. The purpose of the field research was to gather data for a MuSIASEM analysis (Multi-Scale Integrated Analysis of Societal and Ecosystem Metabolism) at the village and household level, in order to analyze the multidimensional challenges that small farmers may face nowadays within the context of global rural change and declining access to land.

While the literature on MuSIASEM offers a great variety of theoretical explanations and practical applications, there is little information available on the practical steps required for doing a MuSIASEM analysis at the local level. Within this context, this report offers not only a documentation of the field research design and data collection methods, but also provides a general overview on some organizational and preparative aspects, including some personal reflections, that one may face when preparing and conducting field research for MuSIASEM analysis.

The objectives of this document as well as the potential audiences to which it is direct are thus threefold: (i) methodological transparency regarding future research, based on the collected data during field research in Cambodia, (ii) to share experience regarding practical issues that need to be considered when doing field research for MuSIASEM, and (iii) to make available more background information on the case study village for the further interested reader.

1.1 Objectives of the report

The first objective is to provide detailed information on the field research design and data collection methods employed during the field research, in order to be transparent about the involved assumptions, methods, and potentials and limitations associated with the gathered data. The focus here is hence less on theoretical aspects of the MuSIASEM approach, on which basis the data were later analyzed. Theoretical aspects are widely explained and discussed in the peer-reviewed literature (Giampietro, 2003; Giampietro and Mayumi, 2000a, b, 2009; Giampietro et al., 2009; Giampietro et al., 2011; Gomiero and Giampietro, 2001; Ramos-Martin et al., 2007; Serrano and Giampietro, 2009). The present document focuses on how field research was prepared and designed, and how data were collected and processed. With this, I aim to increase methodological transparency, in order to enhance the quality of the follow-up research and analyses based on the collected field data. This document thus serves as a reference document for forthcoming papers, based on the

collected data. The audience, to which this objective is directed, is the scientific community as well as potential future users of the related database who should know the potentials and limitations of the data.

The second objective is concerned with the documentation of organizational and practical methodological steps that were required to conduct the field work. I believe that many PhD students, particularly those, whose case studies are not organized within the framework of a broader project, face not only the theoretical challenge of conducting a sound data collection and data analysis. They also may be faced with the challenge of setting up and managing a case study from scratch, including finding local contacts and hiring a field research team, within the constraints of funding, timing, and language. The literature on MuSIASEM offers a great variety of methods and tools for data analysis; however it does not offer much material about practical and methodological aspects regarding data collection in the field. Setting up a case study from scratch within various constraints has been my personal experience during my PhD, from which I could learn many practical issues in addition to the scientific work. The rural systems analysis group (www.ruralsystems.org) at ICTA-UAB has been a very helpful forum for discussing related concerns, thanks to the ability to share experience and reflections among the members. Within this light, I believe that this document may offer some useful practical insights that I have gained from my experience of setting up a case study in rural Cambodia. The audiences to which I direct this objective are thus Master students and pre-doctoral students at the beginning of their PhD. The aim is to share my experience, in order to provide reflections and ideas and to facilitate some discussion on how case study research for MuSIASEM analysis may be improved in the future.

Finally, the third objective of this report is to make available some more background information on the case study village. This information is largely qualitative, and partly based on observations, formal and informal interviews and discussions with the villagers and the field research team and personal reflections. This part does not necessarily cover all observed aspects, but it provides much more background information than presented in the related research publications, which – due to formal restrictions of length – can cover only general aspects in the case study description. Thus, the reader may get a deeper understanding of the case study village. Finally, although this type of information is not explicitly presented in the quantitative numbers from the survey data and the related research articles, this information was crucial for me to better understand the very different reality into which I was allowed to enter during field research. Thus, this information ultimately has been important to give meaning and context to the quantitative numbers of the survey.

1.2 Structure of the report

The document consists of seven sections and two attached documents. Section 2 provides background information on the context of the field research as well as on Cambodia. Section 3 shares my personal experience on setting up a case study from scratch, within limited funds, time and local contacts. Section 4 provides a brief introduction to the MuSIASEM approach applied to rural systems and documents the field research design; including case study selection, data gathering methods and sampling. Section 5 reports on the field research activities conducted with the local research team, while Section 6 summarizes how data were processed later on. Section 7 provides more background information and personal reflections on the case study village, based on my observations, as well as on formal and informal interviews and talks with the villagers during the field research. The last two sections attach the final research questionnaire and the explanatory document in which some basic concepts of the questionnaire are defined.

2 Purpose of the case study research in Cambodia

2.1 Research context: PhD research at ICTA-UAB

The case study reported in this document is a part of my PhD research in *Integrated Assessment and Ecological Economics* at ICTA-UAB, in which I am enrolled since November 2009. My PhD research is generally concerned with the challenges of rural development in countries of the global South that arise from a multi-dimensional as well as from a multi-scale perspective. Regarding the first, I am interested the analysis of trade-offs between social, economic, and ecological dimensions of rural development. Regarding the latter, I am interested to understand the different challenges that emerge at different scales, such as at the global, national and local scale. My dissertation consists thus of a research series of four articles, of which each article focuses on a different scale of rural development, on which emerging multidimensional challenges need to be addressed: (i) the epistemological scale, (ii) the global scale, (iii) the national scale, and (iv) the local scale (village and household level).

In the first article, I focus on the epistemological scale and thus investigate theoretical implications related to the study of multidimensional poverty and related development issues, within an ecological economics perspective (Scheidel, 2013). In the second article, I investigate the emerging challenges for smallholder agriculture and rural development at the global scale, within the context of land grabbing (Scheidel and Sorman, 2012). The remaining two article focus on rural development issues in Cambodia as a case study. The

third article addresses conflicting national and local rural development visions and realities in Cambodia and discusses how the promotion of large-scale agriculture at the national level is driving the marginalization of the peasantry due to declining access to land at the local level (Scheidel et al., submitted-b). The forth and last paper of my PhD research series focuses on a village and household case study at the local level and investigates how smallholders are able to create livelihoods based on limited access to land (Scheidel et al., submitted-a). The present document reports on how this case study was set up and how field research was designed and conducted.

2.2 Country background: Rural change in Cambodia

Why choosing Cambodia as a case study country? Cambodia is a fascinating and an interesting country with many aspects to study regarding the tremendous challenges of rural development, which some countries of the global South face nowadays[1].

Figure 1: Location of Cambodia (green) within the ASEAN countries (dark grey). Source: www.wikipedia.org

[1] From a personal perspective, it was further curiosity that brought me to Southeast Asia. Southeast Asia is an absolutely fascinating and exciting region and in my opinion, there is no better way to get to know a region, their culture and their natural reserves, than getting involved in some kind of project, rather than mere tourism. Doing research is obviously perfect, if somebody wants to know more about something.

2.2.1 A brief overview of the recent history of Cambodia

During the last 50 years, Cambodia experienced a dramatic history with radical regime changes that drastically affected the rural and urban population and their way to make use of their most fundamental natural resource: land. Figure 2 presents an overview of the key periods of recent Cambodian history, population dynamics and land governance regimes. The following historical overview is based on the work of Chandler (2008), Russel (1997), Hall et al., (2011) and Thiel (2010), which may be consulted for more details.

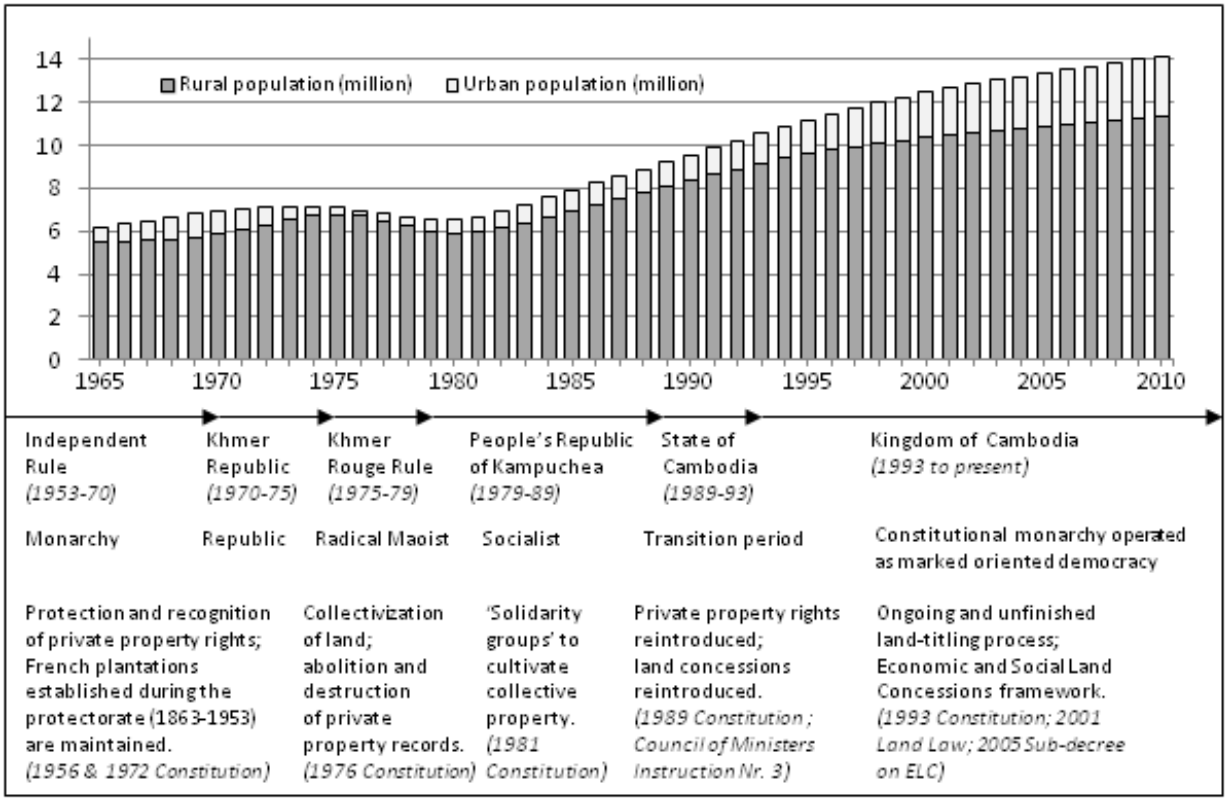


Figure 2: Key historic periods, population dynamics and land governance regimes in Cambodia since 1965. Source: own elaboration, based on Chandler (2008), Thiel (2010) Russel (1997) and FAO (2011).

In pre-colonial times (prior to 1863), land was formally property of the King, but open to use for everybody and relatively abundant in relation to the small population size. Land was possessed, based on the *'acquisition by the plough*' principle. During the French protectorate (1863-1953), property rights and land concessions were first introduced, mainly to assure security for French investors. During that time, the first rubber plantations, operated by French companies were established. Small farmers were reluctant to register their land, partly to avoid paying taxes.

During the independent rule under *Norodom Sihanouk* (1953-1970) as well as under the Khmer Republic (1970-1975), also known as the *Lon Nol* period, the French colonial land

law continued to be at the basis of the Cambodian land governance regime, and property rights and concessions continued to be recognized. The increasing civil conflicts, as well as US bombings on the Cambodian countryside in the context of the Vietnam War, led to a drastic dislocation of rural populations and a growing number of refugees from the countryside that migrated to Phnom Penh around 1970.

With the rise of *Pol Pot* and the Khmer Rouge Rule (1975-1979), devastating measures were taken in order to establish the radical Maoist, agrarian-based 'Democratic Kampuchea'. A large part of the Phnom Penh population was evacuated to the countryside and forced to collectively cultivate the land. Rural populations were uprooted and displaced. Private property rights and records were abolished and destroyed and replaced by a radical collectivization of land. Between one and three million people lost their lives due to the devastating Khmer Rouge Rule.

The Khmer Rouge rule ended with the Vietnamese occupation and the following 'People's Republic of Kampuchea (1979-1989). Led under *Heng Sarim,* among others, the radical collectivization of land ended, although small-scale collective farming was continued in small solidarity groups, called *'krom samakhi*'. Residential land was allocated based on occupation and individual peasant agriculture re-emerged in large parts.

In 1989, during the transitional regime of the State of Cambodia (SOC) (1989-1993), property rights were formally reintroduced and land concessions that would *"benefit the national economy"* were reintroduced. Smallholders were encouraged to apply for formal land titles to agricultural and residential land, but the land administration was unable to deal with more than 4 million applications lodged, resulting that less than 10% of them were processed at the end of 1995 (Russel, 1997). The current land-titling process results in 250,000-300,000 new land titles annually; however, at least 12 million parcels remain still unregistered (Thiel, 2010).

2.2.2 Current rural development issues in Cambodia

Since the establishment of the Kingdom of Cambodia in 1993 as a constitutional monarchy, Cambodia has pursued a transition towards a market economy, with particular attention to developing the rural sector. Cambodia has reached some degree of economic and political stability, but maintains to be a dominantly agrarian country in which around 80% of the population lives in rural areas and 75% of the active labor force is making a living based agriculture, fishery hunting and/or forestry (NIS, 2008b). The rural sector is mainly based on non-industrialized smallholder agriculture and farmers access on average only 1.7

ha of land (ACI, 2005). However, rural Cambodia is changing at a fast pace, instigated by both endogenous and exogenous drivers of rural change.

On the one hand, Cambodia is experiencing demographic changes and increasing endogenous pressure on natural resources. The total population has roughly doubled since the beginning of the 1980s. Being home to around 11 million rural people, Cambodia never before in its entire history has inhabited so many farmers than nowadays. On the other side, also the urban population has grown rapidly to 3 million people, which represents another unique number in Cambodia's history (see figure 2). Thus, the demand on natural resources from the countryside is also increasing from urban industrialized areas. Finally, the emergence of a global rush for land resources in the event of a global energetic, financial and food crisis (Borras et al., 2011; Braun and Meinzen-Dick, 2010; GRAIN, 2008; Scheidel and Sorman, 2012; Zoomers, 2010) has also affected Cambodia (Licadho, 2009). Hence, domestic as well as outside actors are increasingly claiming land resources.

Cambodia's governmental elite has identified in this new demand for land a unique opportunity to foster investment into agriculture, the creation of rural jobs and tax and trade revenues, based on large-scale industrial agriculture, managed through an Economic Land Concession (ELC) system (RGC, 2004, 2005, 2008). ELCs can be granted to foreign and domestic companies for the development of agro-industries and ELC contracts are usually made for 70 years. The rental fees range from 0 to 10$ per hectare, depending on quality and location of the land (MAFF, 2011). The demand for ELCs has been huge. Data from the Ministry of Agriculture, Fisheries and Forestry (MAFF) indicate a total concession area of 1.15 million ha in 2009, of which 956,690 ha have been validated with 85 companies (MAFF, 2011). This is a rather conservative number, since MAFF data do not include concessions below 1000ha. Other calculations indicate a total of 2 million ha of ELC land (Vrieze and Naren, 2012), which is a substantial amount of land for a few companies. To put this number into context, the smallholder sector, consisting of no less than 10.7 million Cambodians, accounts merely for 3.1 million ha of land (NIS, 2008b).

For the smallholder sector, ELCs are a critical issue and threat to their livelihood (Leuprecht, 2004) for various reasons. First of all, Cambodia is missing a systematic land management system that informs well about property and land use rights, as well as about land users (Thiel, 2010). In fact, at the time of writing this report, not even a comprehensive agricultural census has been conducted since the establishment of the Kingdom of Cambodia in 1993. Apart from the lack of land management information at the national level, many smallholders do not have formal land titles for their plots. Private property rights were abolished and records were destroyed during the Khmer Rouge regime. While private property and land titles were reintroduced in 1998 under the transitional State of Cambodia,

the government was unable to handle the huge amount of lodged applications and nowadays it is estimated that at least 12 million parcels still remain unregistered (Russel, 1997; Thiel, 2010).

In spite of this lack of information, the Royal Cambodian Government (RGC) largely awarded land concessions to foreign and domestic agribusiness (MAFF, 2011). This has resulted in problems of weak land governance that manifest themselves in increasing land conflicts due to the overlap of concession land with smallholder land (Leuprecht, 2004; Licadho, 2009; Vrieze and Naren, 2012). For many small farmers, decreasing access to land due to both demographic changes and increasing competition with outside actors is among the most crucial concerns to their livelihood and insufficient access to land is perceived by Cambodian smallholders among the most central elements of rural poverty (ADB, 2001; Ballard et al., 2007).

Within this context, it becomes of crucial importance to understand how small farmers are able to deal with declining access to land and how this affects the many dimensions of rural poverty. However, in order to generate a better understanding, it is necessary to account for the different situations in which households encounter themselves, as well as the different alternatives they might choose to make a living. For example, an old widow that posses land but lacks labor power faces very different challenges than a young and large household that has its own labor power available, but does not possess sufficient land. Further, availability of new economic activities, institutional arrangements regarding the management of productive resource and new agricultural techniques further influence the livelihood opportunities of a household or a village.

Particularly in the recent years, there has been a strong presence of NGOs and aid organization in rural Cambodia that intervened with small farmers and fostered new livelihood strategies. One example is the Cambodian NGO CEDAC (Cambodia Center for the Study and Development in Agriculture, www.cedac.org.kh) that strongly promoted the establishment of community savings groups, ecological livestock rising and multi-purpose farms, as well as the System of Rice Intensification (SRI). SRI was developed by poor farmers in Madagascar as a set of low external input rice cultivation techniques that help to save seeds, fertilizer and water, while having the potential to substantially increasing yields based on the use of traditional rice varieties (Stoop et al., 2002; Uphoff, 1999). SRI found very positive response in Cambodia, with an increasing number of farmers who have adopted the techniques (Anthofer, 2004). Apart from farm diversification, farmers have increasingly engaged in non-farm activities that range from setting up own small businesses, such as motor-taxi driving, battery-recharge stations or petty trades, over wage laboring in

the service sector (collaborations with NGO, public positions, such as police men teacher, administrative posts) or the new industries, in particular construction and garment factories.

Summing up, the impacts of declining land availability on rural livelihoods as well as the possibilities and viabilities of livelihood diversification depend on many aspects and dimensions. These are on the one side the individual conditions of the household itself (i.e., land endowment, household size and structure, available capital and labor etc.) as well as the possibilities at hand for livelihood diversification (alternative agricultural techniques such as SRI, non-farm work opportunities, community development such as community savings group or paddy rice banks). Cambodia, being in the middle of processes of rural change, is offering interesting cases to be studied, that may help to better understand the current multidimensional challenges of rural development in Cambodia, as well as generally in countries of the global South, within the context of global land grabbing and declining access to land for smallholders.

2.3 Research objectives of the case study

Before describing the objectives of the case study research, a brief comment on the research culture of the integrated assessment research group at ICTA-UAB (www.societalmetabolism.org), seems to be appropriate. Being concerned with the study of complex living systems that may change in an unpredictable way, the research group has largely moved away from doing conventional research in terms of previously defined research questions, hypotheses and research objectives that are pursued from the beginning until the end of the research. To be able to be responsive to the emerging questions and issues that may come out during the research process, research in the integrated assessment group is encouraged to be process oriented[2]. Within this context, also the objectives of the case study were defined only on a general level. However, they were maintained largely open in order to be able to adapt them to the conditions and issues that would be encountered in the field.

Having this said, the general objectives of the case study were:

1. To conduct an in-depth analysis and comparison of household types within a non-industrialized smallholder village in Cambodia, in order to better understand the

[2] For example, students at the beginning of their PhD are usually asked to define reachable research questions and objectives, which are then to be pursued during the whole PhD. However, it is particularly at the beginning of a PhD, when students know the least about the topic. Many questions asked at the beginning may seem stupid, obsolete or irrelevant after a year or two of investigation. This also happened in my case and thanks to the encouragement of my supervisors, I was able to be responsive to the emerging issues and could constantly adapt to what I was learning.

multidimensional challenges that small farmer may face nowadays within the context of declining access to land and global rural change. The analysis should focus on both the village and the household level. The analysis should further be able to account for the different livelihood strategies a household may choose (such as SRI or non-SRI farming, non-farm work in the new industries, etc.), as well as for the different social, economic and ecological conditions of the household in which it is embedded.

2. To compare this case study on smallholder agriculture in Cambodia with other case studies available from the rural system analysis group (China, Tibet, Italy, Spain, Guatemala and Nicaragua), in order to identify common challenges related to rural change across the globe.

In order to meet these objectives, I set up a case study research, in which I focused, as described below in detail, on a non-industrialized wet-season rice-farmers village that was supposed to inhabit SRI as well as non-SRI farmers. Surprisingly, once being there, SRI seemed to be less important in the village than other things, such as the establishment of a strong and modern grassroots village community, including a community savings group and a paddy rice bank. Thus, while the documents prepared for the organization of the case study, including the criteria for selecting the village and the final research questionnaire, included a focus on SRI farming, SRI is playing a minor role in the subsequent analysis.

3 Organization of the case study

The steps and difficulties that arise from the organization of case study research largely depend on the research context. Conducting case study research within the framework of a broader project with funds and local partners may produce fewer troubles to students than independent PhD projects, in which the doctoral candidate may be funded, but not necessarily travel costs and a local research team. Further, local contacts are often not available and need to be established from outside. Thus, a variety of challenges related to funding, local contacts, timing, language barriers and ultimately lack of experience, arise. There is some literature available on doing case study research in rural communities, covering some organizational issues (e.g. Angelsen et al., 2011; Singh et al., 2010). The following sub-sections share my personal experience and considerations in setting up a case study and further reports on the involved institutions.

3.1 Timing

The timing of the research activities are crucial to consider before planning the case study. Particularly, research in agrarian communities should be timed with the agricultural activities and related seasons. When the researcher enters the community during labor peaks, such as rice transplantation in the wet season or harvest time, he or she will have the opportunity to observe many activities; however, farmers will likely not have time for interviews and so on. On the other side, when visiting a farming village during leisure periods, such as the dry season in Cambodia is, he or she won't be able to observe all the important activities; however, farmers may have plenty of time for interviews as well as for informal, but usually very informative, talks. Further, if local students are involved in the research team as translators or enumerators, the timing of field research should not overlap with periods of exams, etc. in order to assure availability of the field staff. Summing up, timing of research activities needs to be considered already at the beginning of organizing case study research.

Various visits during different seasons would be beneficial in most cases, however, might not always be possible, and – depending on the research objectives – might not always be necessary. In my case, I visited the study village various times over a period of three months between March and May 2011, thus, within the same season (dry season). In order to be able to conduct the detailed household survey, the dry season was the only possible time frame, since only during this period sufficient time for interviews was available from the farmers. Additional visits during other seasons would surely have benefited my understanding of the village dynamics; however, I believe that the time spent in the village was sufficient to assure a minimum of quality of the subsequent analysis.

3.2 Funding

As mentioned previously, independent PhD projects might consist of a fellowship to pay the PhD candidate's salary, but may not always include travel costs or field expenditures. While I was convinced that I was going to win a travel grant for doing my field research, which I had started already to organize, I finally was unlucky and did not have any grant available to cover field expenses. Part of the story was that one evaluation criterion was the amount of published papers of the local research partner. Being a project-focused organization in a developing region, my local host was perfect for setting up case study research, however did not have any peer-reviewed papers published, but mostly project reports and policy briefs. One year later, I applied for 'office research' (i.e., doing the analysis of the collected data in front of my computer) in a research group at a Japanese University

that had many publications. I won the grant, although I did not need any money for covering expenses in the field.

There are three reasons why I share this story. First, I learned to be strategic with fund applications; it is important to look at various criteria when choosing a host partner. One aspect is the adequacy for doing field research; another is the possibility to get research funds. Someone might also go for two hosts; one for the funds and the other for setting up the case study. Second, it might be worth considering the opportunity costs of not carrying out the field research. In my case, I started already with the organization but then did not have any funds available. However, stopping what I have started would have meant loosing already established contacts and at least one or two months of preparation work. Thus, I decided to cover expenses with my normal salary. The biggest post was the travel expenditure, but once in Southeast Asia (a region with comparatively low living costs) I could live cheap and further share my European salary to pay the research team in the field. However, I also want to state that I faced financial constraints in setting up the case study, which also limited the possibilities in terms of amount of regions and villages I could survey. I preferred thus to limit the survey to only one village, but collect in-depth information on various dimensions of the village and their households.

3.3 Local contacts

Good local contacts are obviously crucial for doing case study research and should be established at various levels. Someone might need institutional and intellectual support from local universities and/or research and policy institutions, as well as contacts for hiring a field team and ultimately for establishing a relationship to a village and their inhabitants. Thus, various ‘entry points’ (Singh et al., 2010) need to be established. They should be carefully selected, as they further influence the relationships the researcher may be able to build in the region. Thus, when setting up a case study, someone may consider what local contacts can offer them, but definitely should also consider what in turn can be offered to the local contacts.

3.3.1 Institutional and intellectual support

Being affiliated to a local research unit in the case study country, such as a university, a policy institute or a development organization brings many advantages. The university in your home country might not be known in your case study country. In turn, a local host can offer institutional support and may have many further local contacts at their disposal, which is important when trying to set up interviews with other actors or institutions. A local host further

can offer intellectual support through competent staff and a local library that may contain many reports on local issues that are not available from outside. Depending on the research activities, some countries might also require a formal permission or a special visa for doing research, or at least a letter from a local host that supports your activities. It is recommendable to inform yourself previously about the required formal procedures, for which in turn you might require a local host.

There are a few things that a PhD student may offer in turn to the local host institutions. In the best case, the local host is working on the same issue and thus has one resource person more working on it. If the topic is not currently on the agenda of the institute, other things to offer are information exchange through preparing a seminar or talk, an outside perspective on local issues, potential future publications in collaboration/acknowledgment of the host, and building collaboration for potential future projects between the host and the home research group. When contacting potential local hosts, it may be helpful to provide a list of what kind of support you are asking for and what you can offer in turn.

For the present case study, I contacted a variety of institutions in Cambodia as well as Southeast Asia. Finally, I was accepted as visiting scholar at the Mekong Institute (MI) for Development and Cooperation in the Greater Mekong Sub-region (GMS), located in Thailand. The MI is an intergovernmental institute that focuses on capacity building, policy and research. Thanks to their status as intergovernmental institute, I could obtain a governmental workers visa for Thailand. Thanks to their knowledge and their contacts, I could receive valuable institutional and intellectual support and got in contact with many other actors from Cambodia. Among them was the research group of agricultural economics and rural development of the Royal University of Agriculture (RUA), in Phnom Penh, which was very welcoming and helpful for the further work. Thus, both MI and RUA had been important institutional and intellectual contacts for the further case study work.

3.3.2 Entering the case study village

For getting in contact with an adequate case study village, it is recommendable to enter through an institution that has already established contacts. In some cases, this might be the intellectual host; in other cases, an additional contact is needed. Another advantage of choosing an institution, rather than going on your own, is that you may receive help in finding a case study that fits the characteristics you need for your research undertaking. Moreover, relations of trust maybe already established through the host institution, on which you can build when contacting the villagers. Local NGOs might often be good partners through their longstanding cooperation with villages. However, this also may influence the research

outcome. At least, the previous interventions from NGOs need to be considered when doing research in the village. Also here, a PhD student can offer in turn the provision of research material and data that the institute or NGO might use later on in their own work. This also helps to focus the research on issues that are relevant not only for the PhD project, but also for a larger audience.

I am thankfully to CEDAC for accepting my collaboration of doing research in one of their project regions. Choosing an NGO that had previous projects in the case study village, fitted well my own research objectives, since I was interested in the new rural livelihood opportunities that were emerging, not at least through the interventions of NGOs. CEDAC not only facilitated me contacts to the case study village, but was crucial in helping me identifying an adequate village for my research as well as in providing feedback on the research questionnaire in terms of relevance and feasibility. CEDAC also offered me help in finding a local field research team.

Once the contact to the case study village was established, the research undertaking needed to be formally approved by the villagers. Usually, there is some official representative, who can be asked to approve your undertaking and it is recommendable to inform yourself previously about the hierarchies and procedures in place. For the presented case study, permission was obtained first by the commune council and afterwards by the village chief[3]. The permission was obtained orally in an appointment. For the local authorities (police, etc.), CEDAC further recommended to have a letter of my home and/or host university that would state the purpose of my visit in the region.

3.3.3 Finding a local research team

A local research team that helps you conducting field activities becomes crucial as soon as language barriers exist. For my case study research, I needed a field research team due to lack of familiarity with local culture, language barriers and a lack of knowledge of the place (e.g., location of the village, access roads, contacts to key persons of the village such as village chief, etc.). Both RUA and CEDAC were very supportive in helping me finding a local research team.

The rural development research group at RUA agreed to help me finding an undergraduate student who needed, like me, a case study for his final thesis. To do so, I prepared a call for a research assistant that the colleagues from RUA could share with their undergraduate students. For the work of a field research assistant and translator, I offered

[3] A commune is and administrative unit in Cambodia that consists of various villages. Various communes form a district.

the student a financial compensation, that amount I previously had discussed with the local research group in order to assure adequacy. I further covered travel expenses, food and accommodation costs for the research assistant. Not at least, we both agreed to share the collected data so that our independent work could be helpful to each other. The student further had a motorbike at his disposal, which we could use to move around – a crucial issue that I did not consider in my planning. We ended up being close friends and I believe that we both could help each other a lot in conducting the field work for our study.

Having a field research assistant and translator who knew about local rural issues (he himself studied rural development and his family were small farmers too) was a great source of knowledge. Further, it was absolutely indispensable for preparing and conducting the field work (translation of questionnaire and other documents, interviews, etc.) as well as for organizational issues. In rural Cambodia, where tourists don't enter and almost nobody speaks English, I needed assistance even for the smallest things, such as finding a place to stay, etc. In addition to the research assistant, I further needed local enumerators who knew the village sufficiently (e.g. where the village boundaries were, which was not obvious for outsiders) and who were sufficiently educated to conduct a household survey. Therefore, CEDAC put me in contact with their local office in Kampot province, where my case study was located. I could engage the field staff of CEDAC's former project. They knew the region well, had conducted previous surveys for other project evaluations and had already an established relationship of trust with the villagers. Unfortunately, they did not speak well English, so most of our communication was facilitated by the research assistant.

Summing up, the local research team consisted of four resource persons. One of them was engaged as field research assistant and translator and was an undergraduate student at RUA. The others were engaged as enumerators and were previous CEDAC staff who knew the village and the regions because they themselves lived in close by villages.

4 Research design

4.1 Methodological background

This section provides a brief overview on the MuSIASEM approach applied to rural systems, on which basis the case study was later on analyzed. A detailed theoretical explanation and practical applications are available elsewhere (Giampietro, 2003; Giampietro and Mayumi, 2000a, b, 2009; Giampietro et al., 2009; Giampietro et al., 2011; Gomiero and Giampietro, 2001; Pastore et al., 1999; Ramos-Martin and Giampietro, 2005; Serrano and Giampietro, 2009; Siciliano, 2012). The objective of this section is to provide a general

overview, so that the reader is able to contextualize the research design of the case study research.

The used methodology for the analysis of rural livelihood profiles is a farming system analysis that focuses on the allocation of land and human activity in terms of time use of rural households and the associated production and consumption of biophysical and monetary flows. While rural systems in non-industrialized countries across the global are highly different and complex, they share one common characteristic: 'time' and 'land' of a rural household are among the most important resources as well as constraints (Giampietro, 2003; Pastore et al., 1999). 'Time' can be spent as on- and off-farm labor, leisure, local institutions, sleeping, eating, cooking, childcare, education, care of elder people, etc. However, the time budget of a household is limited by its demographic structure and therefore has to be spent carefully. It can be spent in many ways, resulting in different livelihood strategies. Likewise 'time', also 'land' is a crucial resource of rural households and at the same time an important constraint. The 'land budget' can be spent on different farming practices, leading to the production of different agricultural goods that further allow for subsistence and income generation.

The MuSIASEM approach applied to rural systems, focuses thus on the use of land and time, by splitting them into different categories, which are perceived as relevant by the observer. To illustrate this for the time budget, annual total human activity (THA) expressed in hours (family members * 365 days * 24 hours) can be split into fractions of physiological overhead (time for sleeping, healthcare, eating, etc.), social overhead (education and leisure), subsistence work (subsistence farming, cooking, childcare, collecting firewood), and income generating activities (paid work, cash cropping). Land budgets are likewise analyzed, split for example into total available land (TAL), ecological overhead (land for biodiversity, ecological processes), land for subsistence agriculture (home consumption), land to pay farming inputs (share of land needed to cover production costs) and land for income generation (crops or livestock sold on the market). Livelihood strategies can thus be analyzed by looking at the structure of a household's land and time allocation pattern and the related variables of production and consumption. Based on such an analysis, time-, land and labor costs of different livelihood activities can be addressed, while capturing consistently their complex interactions.

While the original Land-Time-Budget analysis (LTBA) was developed a decade ago (Pastore et al., 1999), the approach has advanced enormously during the last years with the development of the related MuSIASEM approach (Giampietro et al., 2009). The MuSIASEM approach established a procedure to conduct such an analysis not only at one scale (e.g. household or village level) but also across scales (e.g. households – village – nation).

Serrano and Giampietro (2009) further developed and exhaustive visualization scheme, capable of illustrating the quantitative linkages between land use, time use, and produced and consumed flows. Figure 3 shows such an example analysis, conducted at the village level in rural Lao PDR (Serrano and Giampietro, 2009). With this type of analysis, it is possible to make a multidimensional quantitative assessment of farming system typologies, which can be used to generate, among others, the indicators presented in table 1.

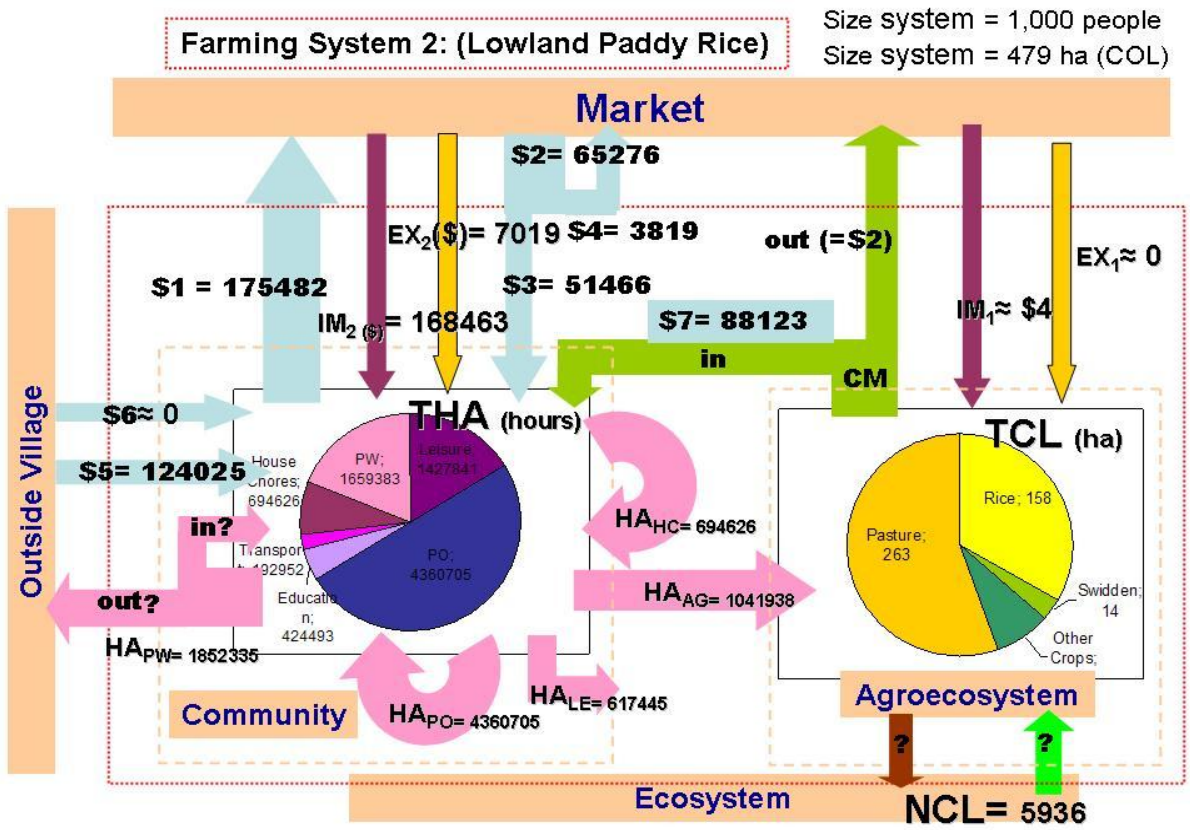


Figure 3: Land-Time-Budget analysis of a farming system typology in Laos (Lowland Paddy rice). Note: THA = Total Human Activity; TCL = Total Colonized Land. Blue arrows indicate monetary flows, pink arrows indicate time use, green arrows indicate agricultural flows (food and cash crops), purple arrows indicate material flows and yellow arrows indicate energy flows. IM=imported materials; EX=exosomatic energy; CM= Crop-mix. HApw=Human Activity in paid work; HApo= Human Activity for Physiological Overhead; HAle=Time for Leisure and Education; HAag= Human Activity in Agriculture; HAhc= Human Activity for Household chores (Source: Serrano and Giampietro, 2009.)

Table 1: Indicators of the multidimensional rural livelihood analysis, based on the MuSIASEM approach. Source: Own elaboration, based on Serrano and Giampietro, 2009.

Economic dimension	Social dimension	Environmental dimension
Income **-** Monetary income ($/yr) - HH consumption ($/yr)	**Physiological resilience** - Calorie intake (kcal/cap/day) - Time for sleeping and eating (hrs)	**Demographic pressure** - Colonized/non-colonized land (ha/ha) - Persons/land (hrs/ha)
Expenditure - $/yr	**Social resilience** - Time available for social activities (hrs)	**Environmental loadings** - Fertilizer use (kg/ha) - Pesticide use (l/ha)
Land poverty - Access to land (ha)	**Cultural resilience** - Time for formal and informal education (hrs)	**Energy efficiency** - Crop output/Energy input (kg/J) - Income/Energy input ($/J)
Land productivity of different crops - $/ha - Kg/ha	**Institutional resilience** - Time available for local institutions and cooperation (hrs)	
Labor productivity of livelihood activities - $/hrs - Kg/hrs	**Food sovereignty** - Months of rice surplus (M/HH) - Dietary mix	
Food security/ sovereignty - Months of rice surplus (M/HH)		

As shown in figure 3, this analysis can be used to analyze the village performance, based on land and time allocation patterns and the associated production and consumption of monetary and biophysical. However, it can be further used at the household level, in order to compare the performance of livelihood strategies of different household types.

While multidimensional poverty assessment have become popular in the recent years (Alkire and Santos, 2010; Cohen, in press), most approaches do not account for how the different dimensions are interlinked, but rather present them in parallel. Hence, they may offer useful tools for the *evaluation* of multidimensional poverty, but are less appropriate for the *analysis* of multidimensional poverty, since no information is provided on how the dimensions are interrelated. The MuSIASEM analysis can account for such linkages, but require the collection of a large variety of data regarding human activity, land use and produced and consumed biophysical and monetary flows.

4.2 Simplification of complex rural systems – some considerations

As seen in the above section, conducting a MuSIASEM analysis applied to rural systems requires the collection of a multitude of data, particularly regarding human activity, land use, material, energy and monetary flows of a case study village. However, it is important to acknowledge that it is not possible to capture all the complexly related flows of money, time, materials and energy associated with a rural system. There will be always some things left out, partly stemming from activities and/or other things that the interviewed

people do not remember or do not want to share with the researchers, and partly from the fact, that some things that are not asked because they are not relevant for the analysis to be done. Thus, every kind of data collection is always a 'heroic simplification' of a complex rural system and the issue is rather to find the adequate simplification, which allows answering some relevant research question. The painting process offers a metaphor for the simplification of complex systems (figure 4). First you see what is there, secondly you focus on the elements you consider crucial in your observation (you never draw everything you see) and finally you find some proxies to represent them. For painting, the used proxies might consist of paper, pencils and colors. In research, the used proxies are the collected data and the subsequent analysis.

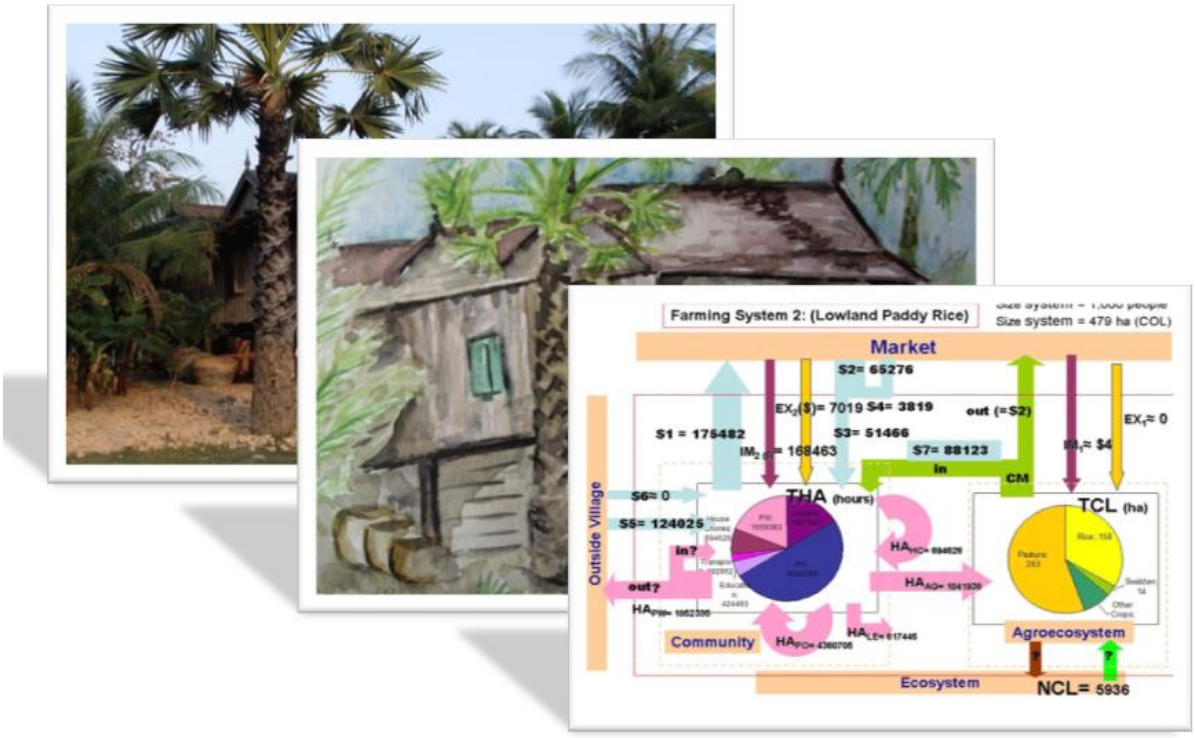


Figure 4: Simplifying complex rural systems. Source: Own elaboration.

When simplifying the representation of complex rural systems through data collection via a research questionnaire, a few trade-offs need however to be considered. Asking too many details, the farmer may stop answering because it will take too much time. Asking to little details, the researcher might not be able to address all the research questions. Further, farmers may not always be able to answer all types of question that the research might want to know. For example, recalling labor requirements of particular activities might not be possible on a too detailed scale, but only in rough categories. For example, there is not always a clear cut between the labor requirements of preparing the seedbed and leveling the whole land for rice farming, because it goes together. Participative observation approaches may help here, but are time consuming, and in my case have not been possible. Thus, the

adequate depth of data collection needs to be considered within the individual constraints of the research project. When designing the case study research, the related potentials and limitations of data need to be known for the further analysis. The following section explains on which basis the case study was selected and under which criteria and information depth the research questionnaire was developed.

4.3 Case study selection

In order to find an adequate case study village for the planned research, a series of criteria was defined, on which basis a village was purposively selected. The criteria were derived from my research objectives on comparing different livelihood strategies within different individual household contexts. As previously mentioned, there was a strong focus on SRI farming as a new livelihood activity for the case study selection, which however was not pursued afterwards in the analysis. The focus is the subsequent analysis was rather on other emerging livelihood activities, such as the cooperation processes at the village level. They seemed to me more interesting and more feasible to study. Nevertheless, based on the initial criteria, a document was prepared that described these criteria. The document was used to consult experts from CEDAC in order to help me finding a village that would fit to the research objectives. The village *Khcheay Khang Lech* (hereafter KKL), located in Damnak Sokram Commune of Dang Tong district in the coastal province Kampot (figure 5), was selected as case study village. Table 2 summarizes some general characteristics of KKL in 2008.

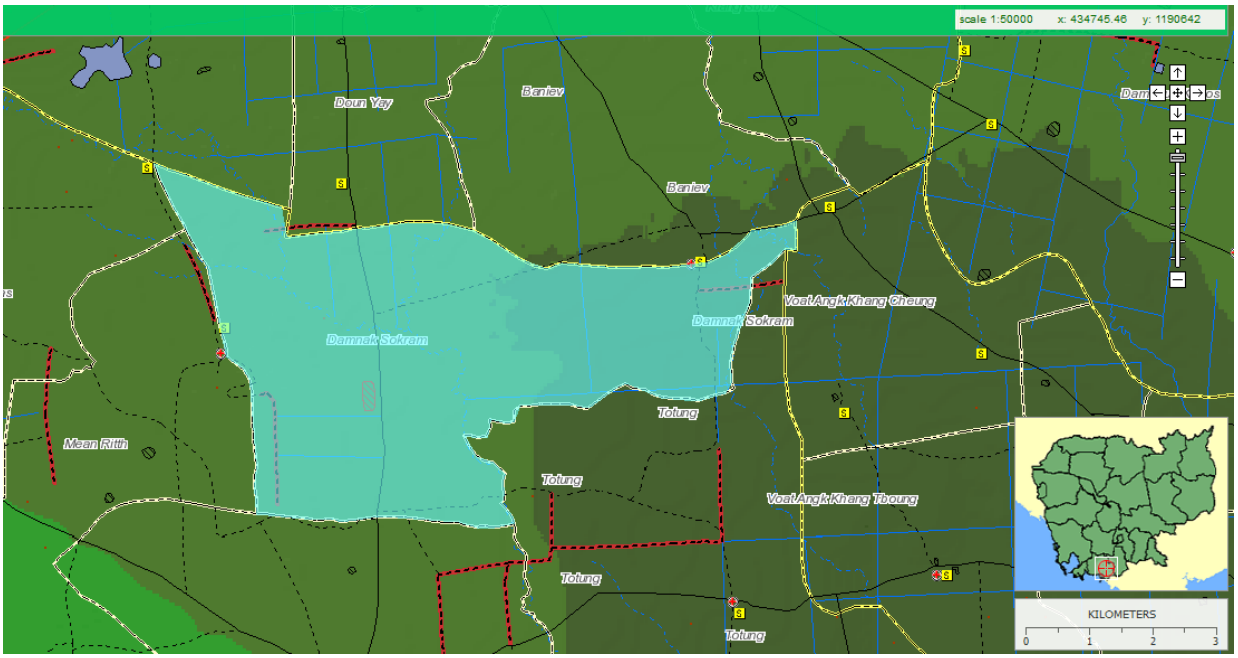


Figure 5: Location of Damnak Sokram Commune, Kampot province. Source: www.cambodiaatlas.com (21.06.2012).

Table 2: General characteristics of the case study village *Khcheay Khang Lech* in 2008. Source: (NIS, 2008a).

Community Profile

(based on the General Population Census of Cambodia 2008) 25/02/2013

Area: Village - 03 Khcheay Khang Lech [07 05 01 03]

Age / Sex distribution

Age group	Total	Males	Females	Sex ratio
Total	725	360	365	98.6
0-4	83	45	38	118.4
5-9	82	40	42	95.2
10-14	82	41	41	100.0
15-19	97	52	45	115.6
20-24	94	47	47	100.0
25-29	64	33	31	106.5
30-34	39	16	23	69.6
35-39	58	28	30	93.3
40-44	35	20	15	133.3
45-49	19	8	11	72.7
50-54	20	6	14	42.9
55-59	11	3	8	37.5
60-64	9	5	4	125.0
65-69	18	12	6	200.0
70-74	4	0	4	0.0
75+	10	4	6	66.7
Median Age	20.2	19.3	21.0	
Dependency Ratio	62.6	N.A.	N.A.	

Household Information

	Total	Regular
# Households:	188	188

Average household size: 3.9

Occupancy status:

Owner	Rented	Free	Other
188	0	0	0

Source of Light:

City	Generator	Both C/G	Kerosene
4	0	0	102

Candle	Battery	Other
0	82	0

Cooking Fuel:

Firewood	Charcoal	Kerosene	LPG
188	0	0	0

Electric	None	Other
0	0	0

Toilet Facility:

None	Sewerage	Septic	Pit	Other
187	0	0	1	0

Drinking Water:

Piped	Pipe Well	P.Dug well	N.Dug well
1	14	1	128

Rain	Spring,River	Bought	Other
0	44	0	0

Access to improved water: 8.5 %

Population indicators		Total	Male	Female
Child Woman ratio		410.9	N.A.	N.A.
Singulate mean age at marriage (years)		19.6	21.3	18.4
Proportion Heads of Households		100.0	79.8	20.2
Proportion Migrants		9.38	10.00	8.77
Number of Disabled persons (Since + After Birth)		13	5	8
Adult Literacy Rate (aged 15 and above)		72.2	82.5	62.3
Percentage aged 6 and above attending school		28.94	33.66	24.36
Educational Level of Literate persons aged 25 years and above (in %)	1.None	0.00	0.00	0.00
	2.Primary not completed	0.00	0.00	0.00
	3.Primary School	0.57	0.99	0.00
	4.Lower Secondary	60.23	57.43	64.00
	5.Secondary/Tech. Diploma	23.30	22.77	24.00
	6.Beyond Secondary	15.91	18.81	12.00
Crude Economic Activity rate		56.83	52.78	60.82
Employed persons by Industrial Sector	1.Primary	99.27	98.42	100.00
	2.Secondary	0.00	0.00	0.00
	3.Tertiary	0.73	1.58	0.00
Secondary Activity of Economically Active persons (in %)	1.None	1.70	2.63	0.90
	2.Crop farming	6.31	13.16	0.45
	3.Live-stock farming	91.50	83.68	98.20
	4.Other	0.49	0.53	0.45

Note: P.Dug Well = Protected Dug Well, N.Dug Well = Unprotected Dug Well

KKL had some characteristics that were common to many other smallholder villages in Cambodia, such as the demographic structure, land use patterns and main livelihood activities. The primary economic activity was agriculture, in particular wet-season, low-land

rice cultivation based on non-industrialized techniques. These characteristics made KKL an interesting case study to analyze common challenges of rural development, faced by many smallholders in Cambodia.

KKL however had also some special features, such as the co-existence of both SRI and non SRI-farmers and a high degree of cooperation and local institutions among the villagers, partly due to previous activities of NGOs regarding community development. Local institutions included a grassroots village community with democratic elections every three years. The village community operated a variety of villager groups, such as a rice paddy bank, a community based savings group that could provide micro-credits to villagers, as well as a women group, youth group and poorest group that fostered empowerment of certain social groups. These features turned KKL into an interesting case study for the analysis of emerging opportunities from new activities and new institutional arrangements.

4.4 Development of the research questionnaire

Once, the case study village and the related region was selected, I started with the design of the household survey and the research questionnaire. This data collection method seemed to be the most feasible option to survey the livelihood activities both at the village and at the household level, within the limited amount of funds and time available. The additional data collection method and field research activities are documented in Section 5. The final research questionnaire was developed during three research phases that entailed the development of a preliminary version, a draft version and the final research questionnaire. The development of the three versions involved the following research steps (table 3):

Table 3: Steps in the development of the research questionnaire.

Version of questionnaire	***Research steps***	***Validation methods***
Preliminary questionnaire	Literature review	Feedback from CEDAC experts
Draft questionnaire	Participative observation Formal and informal interviews Landscape reading	Test-interviews in the field
Final questionnaire	Experience from test-interviews in the field	Field interviews

a) Preliminary questionnaire: This first version of the questionnaire was elaborated, based on a literature review on livelihood activities in Cambodia, with a particular attention to

Kampot province and SRI farming communities. The scientific literature was reviewed (published research articles and dissertations), as well as CEDAC field reports and other assessment studies. Feedback on early versions was given from CEDAC experts, who revised the questionnaire and provided comments for further improvement, on which basis the preliminary questionnaire was prepared. In order to estimate the duration of the interview, the questionnaire was tested with a colleague.

b) Draft questionnaire: After having elaborated the preliminary questionnaire, I visited with the research assistant and translator the case study village in the context of a home-stay with a rice farmer's family. The contact was established through CEDAC and we stayed about one week day and night with a farmer's family. During this time, we did participant observation, 'landscape reading' (i.e., identifying the most important crops and agricultural practices as well as biophysical conditions of the village), formal interviews and informal talks. Based on this experience, the preliminary questionnaire was revised and the draft questionnaire was developed.

c) **Final research questionnaire:** After having elaborated the draft questionnaire, we returned to the case study village, in order to conduct some test-interviews. These were crucial for developing the final version. The draft version contained too many 'closed questions', in which the units were already pre-defined, such as 'amount of annual rice production in kg'. The test-interviews however showed that most questions with pre-defined units were difficult to answer by the farmers, as some knew the information for example in 'kg', others in 'bags of rice' and others in 'baskets of rice'. Thus, for the final questionnaire, most pre-defined units were removed and the enumerators instead were trained to ask for additional information where necessary. For example, if the answer was '12 baskets of rice', the size of the baskets in terms of kg was further asked. Further, the draft questionnaire was too long; one respondent left after two hours because she had other things to do. This forced me to reduce the detail of many questions and simplify the planned representation of the rural system. Also, I noted that many questions, particular regarding time use, could only be answered in a rough way, with certain uncertainty. This forced me to skip the objective of making a detailed comparison between labor requirements of SRI and non-SRI rice farming, for which purpose self-reporting did not seem to be the adequate data collection method. In this light, the collected time use data from the research questionnaire may be used only as a rough approximation to human activity of the different households. The final questionnaire was translated by the research assistant into a bilingual questionnaire, in which Khmer was the main language, but notes in English were maintained. The final research questionnaire was validated in

the field on the first field research day with the enumerators. A copy of the questionnaire is available in the final section of this document.

4.5 Sampling

The planned household survey in KKL pursued two objectives. First, to obtain a representative sample at the village level, in order to analyze the village performance based on the MuSIASEM approach. Second, to obtain detailed information on individual household, on which basis an in-depth analysis of individual household types could be conducted. To be able to conduct a MuSIASEM analysis, data on demography, land use, livelihood activities, income and expenditure, time use and institutional activities of the sampled households were required (see the final research questionnaire in the last section for detail on the collected data). In order to reach these two objectives, a random household sample, representative at the village level was planned, as well as a few additional purposive household samples that would focus on previously selected characteristics (i.e., land-poor and non-land poor households, etc.).

For the preparation of the survey, the number of the total households was obtained in an interview with the village chief and cross-checked with the commune council. At the time of field research (March - May 2011), KKL was home to 195 households. Assuming a normal distribution of selected characteristics across the surveyed population, a minimum sample size of 65 households was required in order to obtain a random sample that would be representative with a confidence level of 95% and a margin of error of 10%. In order to counteract potential 'dropouts' (questionnaires that were dropped later on due to mistakes, see section 6.2) and to increase the information available from single households that might further serve as individual household case studies, the random household survey was planned to reach a minimum of 90 households. In addition, around 10 purposively selected household samples were planned, in order to analyze individual household case studies based on previously defined characteristics (land-poor, non-land-poor, SRI and non-SRI farmers).

The sample that was finally obtained after conducting the household survey consisted of a total of 104 households, of which 92 households were part of the random sample, and the remaining 12 households were purposively selected. Six questionnaires from the random sample dropped out (see section 6.2 for its justification), resulting in random sample of 86 households out of a total of 195 households. This is a representative sample at the village level, with a confidence level of 95% and a margin of error of 8%.

5 Field research in practice

5.1 Research team, training sessions and quality checks

The research team available in the field consisted of five persons: a research coordinator (the author of this report), a research assistant and three local enumerators.

On the first day, a training session was organized, with the purpose to inform the enumerators well about the structure, objectives and definitions of the household survey and the related research questionnaire. For this purpose, a bilingual explanatory document was prepared that addressed general points of the questionnaire, as well as specific questions with potential difficulties (see last two sections of this report). Conventions were established on how to fill in the questionnaire. During the first part of the day-long training session, the questionnaire was introduced with help of the explanatory document. During the second part, a role play was organized, in which the enumerators interviewed each other, playing the role of the interviewer and respondent. The training session was hold at the local CEDAC office in Chhouk town, Kampot province. The enumerators were compensated for the training session with the payment of a full work day (17$ per person).

Further, due to the existing language barrier, it was important to establish a good information flow between farmers, enumerators, the research assistant and me to assure quality of the household survey. For this purpose, the research team usually met three times a day during the field work period; once in the morning to inform the team about the daily planned activities, then for having lunch together and finally one hour before the end of the workday. The objectives of the daily meeting at the end of the working day were (i) to discuss all issues and difficulties that appeared during the day, (ii) to transmit as much as possible all formal and informal information gathered during the interviews, and (iii) to assure that the enumerators always had written down all the necessary information, in particular the varying units provided by the farmers (kg, tons, baskets, riels, dollars, etc).

During evening and night, the research assistant and I briefly checked the quality and completeness of the collected data. If there were issue to be improved, feedback was given the day after in the morning meeting.

Finally, we organized a few social events within the research team (going for dinner, visiting nearby places) that also helped to maintain a good relationship and good mood over the period of intensive field work.

5.2 Principal field research activities

The field research activities mainly consisted of conducting the household survey with 104 households, but further involved 19 semi-structured interviews to key actors and experts, the study of village documents (savings group accounts, village report book, etc.), as well as various visits to key places in KKL and the surrounding villages (i.e., the village dam, the next administrative district center, etc.). Table 4 provides a summary of the research activities, including the participant observation on which basis the research questionnaire was developed.

Table 4: Principal research activities during field research.

Research activity	***Key tasks***	***Duration/Quantity***
Participant observation, landscape reading, informal talks	Home stay with a rice farmer's family. Spending time in the village	One week of living in the rice farmer's home (during day and night). Various further visits and stays in the village (during the day) over a period of three months.
Household survey	Data collection through a research questionnaire, conducted by local enumerators	104 household samples, obtained within a period of 3 weeks.
Semi-structured interviews	Semi-structured interviews, conducted by me and the research assistant (translator)	19 interviews, obtained over 3 months with: *Public administrative bodies:* Commune leader (1 interview) Village chief of KKL (2 interviews) Other village chiefs in the commune (4 interviews) *Formal village institutions representatives:* Village community committee president (1 interview) Savings group secretary (3 interviews) Paddy rice bank committee member (1 interview) Infrastructure group president (1 interview) Women group president (1 interview) Youth group president (1 interview) Poorest group committee (1 interview) *Farmers associations and NGOs:* Rice mill association president (1 interview) Farmer-Nature Network president (1 interview) National Bio-digester Program officer (1 interview)
Study of village documents	Photocopy of all documents that the village members agreed to share with us	Village report book Savings group account Rice mill association account Latest district statistics (2008) Document and statistics from previous community development projects conducted by NGOs

The household survey was conducted during the first weeks of May 2011. This was just after Khmer New Year (14-16 April 2011) and at the turn of the agricultural season: It was after harvest and before the new rice cultivation cropping activities would start. As the majority of villages in Cambodia, KKL has only one rice yield per year, cultivated during wet-season. This had the advantage that the farmers could be interviewed regarding the last agricultural year that just came to an end. Thus, household data from the survey refer to the 2010/2011 agricultural year. Only the savings group accounts were managed based on the calendar year, thus the savings group account data refer to the 2010 banking year.

While the enumerators conducted the household survey with the research questionnaires, the research assistant and I conducted the interviews and all other tasks. In addition to the main research activities summarized in table 4, key landmarks in the village were recorded using GPS. A field diary was written, in order to keep all the informally obtained information available for the time of 'office research' (analysis of collected data).

6 Data processing

This section briefly describes the different data processing steps that followed the data collection in the field. During data processing, a memo was written to record the main processing steps.

6.1 Digitalization of field data

A digital save copy of all information obtained in paper (questionnaires, copies of village documents, etc.) was made by taking digital photographs of each page. The notes from the semi-structured interviews were passed to the computer, with the contextual information (place, time, people present, etc.). This was a precautionary measure taken against baggage loss, which, although not often, may happen.

Once back to office, the questionnaires were checked for quality and consistency, and further processed by transferring the raw information to Microsoft Excel (and later on to Microsoft Access). During this process, it was intended to maintain the maximum information available from the questionnaire. Thus, at this step data were transferred 'as they were' (e.g. no unit conversions were made at this step). Written comments from the farmers or enumerators were recorded using Excel's comment function. A copy of the original raw data in Excel, including all informal comments, has been maintained separately until present.

Afterwards, the data were normalized and processed into Microsoft Access for further analysis.

6.2 Dropouts

During the field work and the subsequent quality check in the office, six questionnaires from the random sample were dropped for the following reasons (table 5):

Table 5: Dropout questionnaires and justification.

Household ID of questionnaire	***Reasons and justification for dropout***
1	Mistakes in units, unanswered questions. This was the first household interview of Enumerator 1.
9	Inconsistent data, particularly labor data. This questionnaire was from the first day of Enumerator 1.
11	Inconsistent data, particularly income and expenditure. This questionnaire was from the first day of Enumerator 1.
32	Inconsistent data, zero income in one year. This questionnaire was from the day, Enumerator 2 had a hangover, because the day before he attended a wedding party.
33	Inconsistent data. This questionnaire was from the day, Enumerator 2 had a hangover, because the day before he attended a wedding party.
X	According to the Enumerators, towards the end of the interview, the respondent got crazy about something and they had to stop the interview.

Moreover, all data regarding the amount of vegetable produced (in terms of kg), as well as on the amount of fish yielded from fish ponds, was not used further, because the collected data were inconsistent. This was partly due to my fault; I did not define well in the questionnaires which vegetables were included (e.g., no specification if herbs are included, if only vegetables from the field, or from the home-garden etc.). Data on vegetables were further weak, because many households were just not able to answer well the question of vegetable production, since farmers usually just go on the field or home garden when they need some vegetables, without counting the amount they collect. (This is different with paddy rice production; because harvest is at a particular time in the year and the yielded paddy rice is stored in bags, so the farmers know generally very well how much they produce). I do not think that any meaningful analysis can be drawn from the available data on vegetables, for which reasons an analysis of vegetable production in terms of amount of production was not further pursued. Note, however, that income data from selling vegetable are available and have been used in the further analysis.

6.3 Data normalization

During data normalization, all data from the household questionnaires were converted into common units. If a temporal dimension was involved, data were converted to 'per year' values, referring to the agricultural year 2010/2011.

Monetary units were generally converted to riels/year. Indications in dollars were converted to riels, based on an exchange rate of 1 dollar = 4100 riels. Note, that the exchange rate tended to change between 4000 and 4100 riels. 4100 riels was however the most common exchange rate found in *Chhouk* (the next close-by town) during the survey period. See also http://www.xe.com/currencycharts/?from=USD&to=KHR&view=2Y for 2010/2011 exchange rates (accessed on 13.06.2012).

Agricultural production data were normalized to kg/year and livestock production data were normalized to either animals/year, kg/year, or eggs/year, depending on the item. Labor data were recorded both in workdays/year and hours/year, depending on the particular tasks. An additional table was created in Microsoft Access, in which all labor tasks were converted to hours/year. For this purpose, workdays were converted into hours, based on additional information and interviews regarding the particular labor tasks.

Land units were converted into hectares/household. For agricultural land, a conversion procedure needed to be established, since the majority of farmers in KKL did not know the amount of land they owned in terms of hectares, but rather used 'slak' as a land unit. Slak, however, does not refer to land area, but is a slightly different concept, because it refers to the amount of rice bundles that can be planted on a given area. Hence, the relationship between slak and hectare also depends on the rice planting density. A conversion factor (CF) was used to convert slak into hectare, based on the following ratio:

CF='total ha of agricultural land in the village'/'total slak of agricultural land in the village'.

Information on 'total ha of agricultural land in the village' was obtained based on an interview with the village chief. Information on 'total slak of agricultural land in the village' was calculated based on *average slak/household*total amount of households*. Average slak/household was obtained using a representative random sample of 78 households out of 195 households (= all the households of the random sample that indicated agricultural land in slak). The obtained CF was 0.5. Note that with this procedure, land holdings could be sufficiently approximated in terms of ha in order to conduct a general analysis at the household level. However, in reality there might be a slight variation in the land holdings due to different planting densities.

Time use data were recorded at the daily level for general activities (hrs/day) and at the task level for seasonal activities (hrs/task). In order to arrive at an annual account of human activity, annual time use of a household needed to be reconstructed, because information from both the daily level (e.g., daily activities such as eating, sleeping, household work, etc.) needed to be integrated with information from seasonal activities (e.g., rice cultivation tasks, off-farm work, non-farm work during dry season, etc.). The annual human activity in terms of hours/category/household/year was reconstructed for each household as presented in table 6.

Table 6: Reconstruction of annual human activity at the household level [hours/year].

Acronym	***Description***	***Annual Reconstruction [hrs/year]***	***Data source***
THA	Total Human Activity	= Household population * 24h * 365 days	HH Questionnaire, table 2.1
HA_PO	Physiological Overhead	= Daily hours of sleeping, eating, personal care * 365 days	HH Questionnaire, table 9
HA_HC	Household chores	= Daily hours of household work * 365 days	HH Questionnaire, table 9
HA_LE	Leisure time	= Daily leisure activities * 365 days	HH Questionnaire, table 9
HA_ED	Educational Activities	= Daily educational activities * 231 school-days[b]	HH Questionnaire, table 9
HA_Rice	Rice cultivation activities	= Sum of total family rice cultivation activities + Total rice labor exchange hours [hrs/year]	HH Questionnaire, table 8.4
HA_Live	Livestock activities	= Daily livestock activities * 365 days	HH Questionnaire, table 7
HA_Off	Off-farm activities	= Sum of all off-farm activities [hrs/year]	HH Questionnaire, table 6.4
HA_Non	Non-farm activities (including related transport hours)	= Sum of all non-farm activities, including related transport hours [hrs/year]	HH Questionnaire, table 6.5
HA_Other[a]	Residual hours, to arrive at the full time budget of the household population during the whole year	= THA – (HA_PO + HA_HC + HA_LE + HA_ED + HA_Rice + HA_Live + HA_Off + HA_Non)	Residual calculation, based on other categories

[a] HA_Other = Remaining activities not mentioned in other categories, including: agriculture other than rice such as vegetable gardens, chamkar, fruit gardens, market work (selling products), fishing, maintenance of rice fields during dry season, administrative works, etc. [b] The school-year in Cambodia consists of 231 schooldays (UNESCO, 2008).

Note, that time use data, collected with daily activity sheets and the self-reported labor requirements (workdays and working-hours) of different livelihood activities, only represent a rough approximation to human activity at the household level. Thus, these data are not adequate for an 'anthropological' characterization of the household, which would require a more detailed collection of time use data. However, their 'resolution' is well enough to get the general picture of human activity of a household and to analyze the general livelihood profile with the MuSIASEM approach with a focus on available time as both resource and constraint for rural livelihoods. The further interested reader on time use in

Cambodia, is also referred to the available time use study from the National Institute of Statistics, Cambodia, which is a valuable source for conducting a MuSIASEM analysis at the national level (NIS, 2007).

6.4 Calculation of village data

The previous steps have shown how data were obtained and processed at the household level. In order to arrive at a representation at the village level (i.e., total agricultural production, total village income, total village expenditures, etc.), the average household values were calculated, based on the representative random sample (86 households). Once, the average household values were obtained; they were multiplied by the total amount of households (195 households). The obtained values were used as a proxy to analyze the village performance.

A note on the village population: The total population *calculated* (741 inhabitants) based on the random sample is lower than the population *indicated* in the village report book (799). This difference of 7% between the survey estimate and the village report book is within the margin of error of the survey design (8%). There is however also a further explanation, which is related to the definition of 'household member' in the survey, which included only those persons that spend more than 50% of their time in the village (thus, those that live more than 6 months/year in KKL). Hence, for example sons and daughters who study in Phnom Penh, may not appear as household member in the research questionnaire, but may appear as such in the village book.

In order to be consistent with the definition of a household member in the survey design, any analysis at the village level thus only refers to those villagers that spend more than 50% of their time in the village. Thus, the population size in the analysis at the village level, corresponds (if not indicated otherwise) to the survey estimates and not to the population size indicated in the village book, which would include those working or living most of the time outside the village.

7 Background information, observations and reflections

This last section provides background information, qualitative observation and a few subjective reflections from the field research. It presents a general overview on various aspects of the village, based on my own observations, formal and informal interviews and talks with the villagers during March and May 2011. Finally, this type of qualitative

information was crucial to be able to contextualize and to give meaning to the obtained survey data. All pictures in this section were taken during the field research by the author of this report.

7.1 The meaning of *Khcheay Khang Lech*

Khcheay Khang Lech (KKL) is the name of the case study village and means 'in the edge of the west'. Its meaning is thus related to its location. However, KKL is located at the eastern border of Damnak Sokram Commune. Thus, the name actually comes from the other commune located at the eastern border. From their perspective, KKL is located in the west.

7.2 Land and physical infrastructure in KKL

7.2.1 Land use

Land is among the most crucial livelihood resources in KKL. According to the village chief, total available land in KKL amounts to 195 ha, whereas agricultural land amounts to 170 ha, followed by household land (ca. 21 ha). The remaining 4 hectares are covered by roads, canals and protected areas. Being home to 195 households, agricultural land in KKL is a scarce resource and there is no unused land available for new villagers. According to the village chief, it is unlikely that the landless household in KKL will receive a Social Land Concession (SLC), because of lack of land in the village.

Figure 6 shows the land use and settlement patterns in KKL from the satellite view. It can be seen that houses are scattered across the landscape in a diffuse settlement pattern. Since the road in KKL is relatively new (it was constructed only a few years ago), the houses are not necessarily constructed close to the road, as it may be known from other villages. Most farmers have their rice plots just next to their house, which is built on the household land, surrounded by fruit-trees. Only a few farmers have their plots located away from their house, due to heritage and/or marriage into other villages. The profile map in figure 7 provides an overview over the main land use categories at the village level.

Figure 6: Land use and settlement patters in KKL - satellite view. Source: Google Earth.

	I	II	III	IV	V	VI	VII	VIII	IX
Land use & Cover	**Canals**	**Shrubbery**	**Tombs & Temples**	**Paddy fields**	**Household land**	**Fishponds**	**Sugar palms**	**Paddy boundaries & Paths**	**Road**
Main Societal Functions	Recreation, Fishing, Water control, Irrigation Ecological regeneration	Fuel-wood source, Stabilization of canals	Cultural use	Staple crop production, Pasture	Housing, Fruit-gardens, Vegetable gardens, Animal stables	Fishing, Water control, Irrigation source for home-gardens and nearby paddy fields	Cash crop production, Sugar production for subsistence	Access-ways to fields and houses, Water control of paddy fields	Access-ways to administra-tive centers, markets, other villages

Figure 7: Main land use categories and their societal function in KKL. Source: Own elaboration.

7.2.2 Infrastructure and land marks

While the majority of the land in KKL is used for agriculture, there are a few important landmarks with administrative, cultural and ecological importance. They are briefly presented below.

Commune center, village community hall and rice paddy bank

The commune center is located in the nearby village *Trapaing Tameas* (about 200 meters from the border to KKL) and consists of a school (primary and secondary), a police station, the pagoda and the administrative commune center. In addition, KKL has its own grassroots village community that owns a community hall and the rice paddy bank building (figure 8). The community hall is mainly used for meetings, but serves on weekends as a location for a weekend school, in which English is taught. Next to the hall is the rice paddy bank, which mainly opens at the beginning of the rainy season, when rice supply from the previous season may become short.

Figure 8: Community hall (in the front) and rice paddy bank (in the back).

River and protected area

The river sets the western boundary of KKL. It has an important function for water supply and also provides various ecological niches and thus serves as a habitat for biodiversity. The river flows in from the North and passes through the commune towards the South. A small area of the river is formally protected (figure 9). This area is used by the villagers for recreational activities such as taking a bath and swimming, as well as a place for environmental regeneration and the protection of species. It is forbidden to fish as well as to collect firewood in the protected area.

Figure 9: River and protected area (blue sign) at the border of KKL.

Dam and canals

The dam is an important element of the village, providing a crucial function for small-holder agriculture. The dam allows controlling the water flow when the rainy season starts and is connected with a canal system that goes through the village. Thanks to this canal system, also the villagers that do not live next to the dam have their water supply assured.

Figure 10: The dam of KKL

The dam was constructed by the villagers, with support from NGOs, who provided technical assistance and food for the workers. The dam is maintained by the infrastructure group of the village community. Each year, the infrastructure group collects funds and food from the villagers, which is then used for repairing the dam. The workers are voluntary workers from the village, who are compensated with food supplied during the working days. Sometimes also machinery is needed to maintain the dam, which has to be paid by the collected funds.

There are some typical conflicts between downstream and upstream villagers. Downstream villagers complain that they lack sufficient water supply, while upstream villagers say that the dam does not affect the water flow and if the dam would not exist, the water would just flow down the river without benefiting anybody. Personally, I guess that both positions are somehow right. However, I believe that the dam and the associated canal system benefit substantially more villagers upstream than those who live next to the river, downstream. Only a few people mentioned this conflict, so I did not get the impression that it was a big issue in the village.

Pagodas and Tombs

With regard to religious and cultural land uses, the most important land mark in KKL is the pagoda, located in the commune center in *Trapaing Tameas* village. Four monks live in the pagoda, depending on gifts, particularly food, from the villagers. Since only one pagoda

Figure 11: Monks in front of the pagoda in the neighboring commune, next to KKL.

exists for the whole commune, KKL doesn't have a pagoda on its territory, but another pagoda is located in the neighboring commune in the Southeast of KKL. Villagers also go to this pagoda for their religious activities. It is open to all persons, no matter to which village they belong (figure 11).

Figure 12: A big tomb between the rice fields

There are further some tombs located between the rice fields. These tombs are of private use and belong to different families. While most of the tombs are rather small constructions, there are a few exceptions that mark the landscape. Figure 12 shows one of these bigger tombs.

Transport ways

While there are many small paths and cart-ways crossing the village in an anarchic way, there is only one bigger dirt road going through KKL, with a total length of 3500 m (table 7). It was constructed in 2002, with support from the german aid agency GTZ (Deutsche Gesellschaft für Technische Zusammenarbeit)[4]. GTZ compensated the villagers involved in the construction of the road by providing food during the work days. All the workers came from KKL. It can be assumed that prior to the construction of the dirt road, no larger road existed in KKL, which may explain the diffuse settlement pattern (figure 6). The households are scattered across the landscape, but not necessarily located next to the road. This has some advantages in terms of proximity to the rice fields, but also disadvantages regarding trade and transportation.

Public transport

A regional 'public' transport system exists that connects the market and administrative towns such as *Chhouk Town* with the surrounding villages. The transport vehicle consists of a motorbike, connected to a big

Figure 13: Public transport in Chhouk and surrounding villages.

[4] GTZ is now called GIZ(Deutsche Gesellschaft für Internationale Zusammenarbeit).

clinger, which can carry easily fifteen to twenty persons and much more if they squeeze together. Further, it allows transporting bulky materials such as timber for house construction, etc. The transport system is operated by private agents. One return ride from KKL to *Chhouk* costs around 5000 Riels (=1.2$).

Table 7: A typology of transportation ways in Dang Tong District. Source: Own elaboration.

Road type	*Road cover*	*Width*	*Characteristics*	*Examples*
Paths	Soil & grass	0,3 – 1m	• Small paths between the rice paddy fields. They connect the farmer's houses from the road, and give access to the paddy fields. • Walking, Motorbikes and bicycles	
Cart ways	Soil & grass	1 – 2m	• Access ways to the fields and houses • Motorbikes, bicycles, cart loader, tractors	
Roads	Red cravel	2 – 6m	• Connect villages and districts • Motorbikes, bicycles, cart loaders, cars, public transport, broker's trucks (Picture: Small road in KKL)	
National Roads	Asphalt/cement	< 6m	• Connect provinces as well as some districts • Any type of transport vehicle (Picture: National road in *Chhouk*)	

Market towns

The most important market town near KKL is *Chhouk*, which has quite a big market, a transport center, and many little shops (figure 14). *Chhouk* has further public transport connection to *Phnom Penh,* as well as to *Kampot* and *Kep*. It offers definitely more services, than the rather small district center *Dang Tang Town*. However, also *Dang Tang Town* has a small market area.

Figure 14: Chhouk is the most important market town next to KKL.

Administrative district center

The administrative center for KKL is *Dang Tang town*, which is the district center of *Dang Tang district,* to which KKL belongs to (figure 15). Here, the corresponding office for social affairs is located (responsible to pay the pensions and governmental jobs), as well as the local agricultural office (in charge of reporting agricultural data on an annual basis to the higher administrative centers). In comparison to *Chhouk*, *Dang Tang town* is rather a small town. However, this might change soon, if rumors become true that the current dirt road is going to be developed to a national road. The road connects with Vietnam and therefore has high potential to become one of the main transport and trade routes in the region in the near future. This would also largely affect KKL.

Figure 15: Dang Tong town, the administrative center of Dang Tang district, in which KKL is located.

7.3 'Social Infrastructure' in KKL – formal institutions

There are mainly two formal institutional systems that are important parts of the 'social infrastructure' of KKL: i) the governmental administrative system, represented through the commune leader, the commune council, the village chiefs and the associated workers, and ii) the village community, represented through the village community committee and the village community members. Table 8 provides an overview of the different formal institutions available in KKL.

KKL, in comparison to other villages in Cambodia, shows a high degree of cooperation between the villagers. This can be seen in the existence of a strong village community that jointly operates a community based savings-group, a community based paddy-rice bank, a women group, a youth group, a poorest group and a helping group (see table 8). The name of the village community is *'Rathanak Samaky Rung Roeung'*, and means *'sharing and helping each other in order to be prosperous'*. The village community is organized as a democratic grassroots group with a president, a cashier, a secretary and other positions, that are elected every three years. The group was established with support from national and international NGOs and aid organizations. As explained by the village community secretary in an interview, the idea for such a villager groups was first introduced by CEDAC in 2003 and also GTZ were active in promoting different ideas such as the

establishment of a rice paddy bank. However, the villagers underpinned that the inhabitants of KKL were responsible of establishing the groups and its rules. CEDAC only shared cases of best practices from other areas and countries, which served as inspiration for the villagers to found a formal village community with 6 members in 2005. At the time of field research (March - May 2011), the village community had 168 members, 118 of them female.

Table 8: Formal institutions and their features in KKL and the commune. Source: Own elaboration, based on interviews to representatives of different institutional arrangements.

Institution	*Level*	*Nature*	*Key functions provided*
District center	District	Governmental	• Administrative services • Office of social affairs (payment of pensions)
Rice mill community	District	Grassroots	• Stabilize and increase prices for smallholder (Rice cartel) • Seed conservation • Provide credits • Dividend to share holders
Commune center	Commune	Governmental	• Administrative services • Education (School) • Security and state control (Police)
Commune council	Commune	Governmental	• Administration and Planning • Provision of information
Village committee	Village	Governmental	• Administration • Provision of information
Savings group	Village +	Grassroots	• Help and foster saving • Provide credit and increase household liquidity • Assure village liquidity • Benefits for shareholders • Avoid capital outflow of village
Rice bank	Village +	Grassroots	• Provide rice credit • Increase food sovereignty at the household level • Increase food sovereignty at the village level • Allow farmers to adopt to price fluctuations • Support community activities (e.g. provide rice for voluntary dam construction)
Infrastructure group	Village	Grassroots	• Maintain village infrastructure • Enhance infrastructure • Foster village cooperation
Women group	Village	Grassroots	• Knowledge exchange • Women empowerment • Foster cooperation between women
Youth group	Village	Grassroots	• Knowledge exchange • Youth empowerment • Foster cooperation between young villagers • Avoid emergence of criminal youth gangs

Note: "+" indicates that the institution is based and maintained by the village, however, its services are not exclusively restricted to villagers of KKL.

7.4 Reflections on the relationship between the villagers and the research team

Finally, I would like to share some reflections on the different perceptions that may have existed between the research team and the villagers. As these surely have influenced our relationship and trust regarding facilitating information, they might also influence in some way the research outcome. Making them transparent, I think, is one way to increase the quality of the research.

I believe that my relationship with CEDAC was most important in shaping perceptions and relations between me and the villagers. However, there are other elements that influenced our relationship; mainly that I was European, that I was working at a University and that my research assistant was a young and educated Cambodian, whose parents were farmers themselves.

I had the feeling that I received some respect for working in a European University, and that the farmers were curious about this. I remember that once we wanted to interview a woman for the test-interviews. When I wanted to introduce myself, she said it was not necessary, she knew already who I was. Thus, I was sure that there was some rumor, but, at least in my impression, in a positive manner. Another example I remember was, when we (the research team), went to a Cambodian soup restaurant for having dinner. Coincidently, we met the leader of the infrastructure group. He was extremely friendly and I was touched by his attitude and warmth towards us. We spent some time talking and expressing our gratitude to have met each other here coincidently. I could also see the good relation he had with the enumerators from CEDAC. When we talked about our research activities in the village, he said that we should have told him before and that he would have liked to help us where possible. As said before, in general I had the feeling that farmers were proud and happy to share information, as well as curious to know more about me, being a foreigner from Europe. I personally have to say that I also was extremely happy to be able to be there, to be able to learn from the farmers and that people shared their knowledge with me. I believe that the villagers, particular those involved in the village community, could feel this and that generally our relationship was based on deep respect for each other.

Further, I guess that some farmers associated me with foreigners from aid agencies from abroad which had been to the village before. I think that GTZ and CEDAC were the most important agencies that intervened in KKL. I had the impressions that they had done good work, or at least that the villagers had had a good experience with foreign interventions and were open to receive foreigners. Hence, this might be another positive aspect that helped building our relationship. However, it might also have contributed to the issue that, in my opinion, farmers tended to state their expenditures more in detail than their incomes. The

poorer they appear the higher the chances to receive some aid? I think there are always some problems of data accuracy related to self-reporting. However, there also may be a certain bias from the farmers themselves regarding their income and expenditure, which also may be related with the issue that people just more easily remember their expenditures rather than their incomes?

Having a young Cambodian student of rural development as research assistant was not only crucial for being able to conduct the research, but also for entering the village. I think the assistant was well accepted in the village as a young student who was working in the village to finish his studies. While I was doing research in Phnom Penh, the research assistant spent quite some time in the village for doing his own research. During that time, the villagers got to know him well and I am sure that he, as a very kind and educated young Cambodian, whose parents were farmers too, left a good impression on the villagers.

Finally, I believe that some villagers, especially those from the village community committee, were also proud of what they have achieved in their village. KKL developed strong social capital and the villagers enjoyed a high degree of cooperation between farmers, which is not necessarily common in Cambodia. During the interviews with the village community committee members, I had the feeling that they were all proud of what they had achieved. All of them were extremely helpful in providing information, including sensitive information, such as the documents of the savings group accounts that indicated monthly payments, debts, etc. Thus, in general I perceived the majority of the villagers as very friendly people, who were interested to exchange their knowledge with me and who were curious themselves about foreigners who visited their village with interest in their activities.

Final research questionnaire for the household survey

Time- & land-use for livelihood activities in Kcheay Khang Lech Village, Damnak Sokrom commune, Kampot province, Cambodia

Questionnaire Nr. _____

អ្នកសំភាសន៍/Enumerator:	កាលបរិច្ឆេទ/Date:	ហត្ថលេខា/ Signature:

ជំរាបសួរបងប្អូនទាំងអស់គ្នា ខ្ញុំមកពីសាកលវិទ្យាល័យ បាសូឡូណា ទ្វីបអ៊ឺរ៉ុប ហើយខ្ញុំនឹងធ្វើការសិក្សាស្រាវទៅលើសកម្មភាពចិញ្ចឹមជីវិតរបស់ប្រជាកសិករនៅទីជនបទ នៅឃុំ ដំណាក់សុក្រំ ដោយមានការជួយជ្រំជ្រែងពីអង្គការ សេដាក ។ ខ្ញុំសូមអនុញ្ញាតធ្វើបទសំភាសន៍ និងសាកសួរអំពីបទពីសោធន៍ក្នុងការប្រកបរបរចិញ្ចឹមជីវិតរបស់បងប្អូន។ បទសំភាសន៍នេះនឹងចំណាយរយៈពេលប្រហែល១ម៉ោង៣០នាទី ហើយខ្ញុំសូមអរគុណចំពោះការចូលរួម និងការចំណាយពេលវេលារបស់បងប្អូន។ សូមអរគុណសម្រាប់ការផ្តល់ពត៌មានរបស់បងប្អូន។ ខ្ញុំសូមធានាថារាល់លទ្ធផលនៃការស្រាវជ្រាវគឺសម្រាប់តែហេតុផលនៃការសិក្សាប៉ុណ្ណោះ ហើយរាល់អត្តសញ្ញាណ និងពត៌មានរបស់បងប្អូននឹងត្រូវរក្សាការសំងាត់។

Dear participant, the Autonomous University of Barcelona in Spain, Europe, is conducting with help from CEDAC a study on rural livelihood activities in Damnak Sokrom commune. We kindly would like to interview you and ask your experience. The interview will take about 1 ½ hours. Thank you very much for your cooperation and time. Your information is greatly appreciated. We assure you that the results of this survey are only used for study reasons and that your identity and information will remain STRICTLY CONFIDENTIAL.

Internal Use:

ID of Data entry: _____

Entry done by (Name): _____

Date of data entry: _____

Comments:

1) អ្នកដែលត្រូវធ្វើការសំភាសន៍/ Respondent

គោលនាម/ (a) Family Name	នាមខ្លួន/ (b) Given Name	ភេទ/ (c) Sex	អាយុ/ (d) Age	អ្នកជាមេគ្រួសារឬ?/ (f) HH head?	
				☐ បាទ.ចាស់/Yes	☐ ទេ/ No

2) ស្ថានភាពគ្រួសារ / Household structure

2.1) តើក្នុងគ្រួសាររបស់អ្នកមានមនុស្សរស់នៅប៉ុន្មាននាក់(រស់នៅយ៉ាងតិច៦ខែក្នុង១ឆ្នាំក្នុងគ្រួសារ) / How many people live in your household? (more than half of time)

(2.1.x)	ទំនាក់ទំនងទៅនឹងមេគ្រួសារ(ដូចជា ប្រពន្ធ, កូនប្រុស, ឪពុកជាដើម.....) (a) Relationship to Family Head? (wife, son, father, etc.)	ភេទ/ (b) Sex		អាយុ/ (c) Age	កម្រិតវប្បធម៌/ (d) Highest grade of education	គួសគ្រឹសចំពោះមេគ្រួសារ/ (e) Indicate Household head
		ប្រុស/ Male	ស្រី/ Female			
1		☐	☐			☐
2		☐	☐			☐
3		☐	☐			☐
4		☐	☐			☐
5		☐	☐			☐
6		☐	☐			☐
7		☐	☐			☐
8		☐	☐			☐

2.2) ផ្ទះរបស់អ្នកមានទំហំប៉ុន្មាន/ How big is your house? _____ម៉ែត្រ/m2

3) រៀបរាប់ពីដីដែលអ្នកមាន/ Farm census

3.1) តើអ្នកមានដីស្រែប៉ុន្មានហិចតា/អា/ស្លឹក?/ How much land do you own? _____

3.1.1)តើអ្នកមានដីភូមិប៉ុន្មាន?/ What is the size of your household land? _____x_____

3.2) តើអ្នកមានជួលដីពីអ្នកដ៏ទៃទេ?/ Do you lease additional land from other farmers?

☐ គ្មាន/No; ☐ មាន/ Yes; សូមបញ្ជាក់please explain:

3.2.1) តើអ្នកជួលដីពីអ្នកដ៏ទៃប៉ុន្មានអា?/How much land do you lease? _____

3.2.2) តើអ្នកចំណាយលុយប៉ុន្មានសម្រាប់ដីដែលជួលពីគេ?/How much do you pay for the leased land?

☐ ថ្លៃបង់អោយគេ/Fixed rent of _____រៀលសម្រាប់រយៈពេល/Riel for a period of _____ខែ/months

☐ ចំណែកទិន្នផលអោយទៅម្ចាស់ដី/Share cropping: _____ភាគរយ/percent for the land owner

3.3) តើអ្នកមានជួលដីអោយទៅកសិករដ៏ទៃឬទេ?/ Do you rent out your land to other farmers?

☐ គ្មាន/No; ☐ មាន/ Yes; ចូរពន្យល់please explain:

3.3.1) តើអ្នកជួលដីអោយគេប៉ុន្មានស្លឹក/អា/ហិតា/How much land do you rent out? _____

3.3.2) តើអ្នកទទួលបានថ្លៃជួលប៉ុន្មាន?/How much do you get paid?

☐ ថ្លៃជួលទទួលបាន/Fixed rent of _____រៀលសម្រាប់/Riel for a period of _____ខែ/months

☐ ចំណែកទិន្នផលដែលទទួលបាន/Share cropping: _____ភាគរយសម្រាប់អ្នក/percent for you

3.4) សូមរៀបរាប់ពីទ្រព្យដែលគ្រួសារអ្នកមាន/Specify the number of assets your household owns:

	ទូរទស្សន៍/ (a) TV	វិទ្យុ/ (b) Radio	ម៉ូតូ/ (c) Motor-bikes	កង់/ (d) Bicycles	ម៉ាស៊ីនកិនស្រូវ (e) Rice-mill	ត្រាក់ទ័រ/ (f) Tractors	ឧស្ម័នជីវឥន្ធន/ (g) Biogas system	ម៉ាស៊ីនភ្លើង/ (h) Power generator:
ចំនួន/ Number:								

4) ការប្រើប្រាស់ធនធាន/ **Resource consumption**

4.1) តើគ្រួសារអ្នកប្រើប្រាស់ម្ហូបអាហារអស់ប៉ុន្មានក្នុង១ថ្ងៃ ឬក្នុង១ខែ(អាចគិតជាគីឡូ ឬចំនួន)?/ How much food does your HH consume? (kg or nr?, per day or month?)

(4.1.x)	អង្ករ(គីឡូក្រាម) (a) Milled rice	បន្លែ(គីឡូ)/ (b) Vegetables	សាច់និងត្រី(គីឡូ)/ (c) Meat & Fish
ការប្រើប្រាស់ម្ហូបអាហារសរុប/ Total food consumption			
ភាគរយដែលទិញពីផ្សារ/ Percentage from market			

5) ចំណាយក្នុងគ្រួសារ/ **Household Expenditures**

5.1)រៀបរាប់ពីចំណាយមធ្យមក្នុងគ្រួសារអ្នកទៅលើទំនិញនិងសេវាកម្មខាងក្រោម(គិតចាប់ពីដើមរដូវធ្វើស្រែឆ្នាំមុនរហូតដល់ឥឡូវ) / Describe your average regular HH expenditures on the following goods and services (2010/2011)?

ទំនិញ, សេវាកម្ម និង សកម្មភាពផ្សេងៗ/ Good, Services and Activities (5.1.x)	ចំណាយ(ក្នុង១ថ្ងៃ? ១ខែ? ឬ១ឆ្នាំ?)/ Expenditure (per day? Per month? Per year?)
ម្ហូប/ .1 Food	
សាំង/ .2 Gasoline	
អុស/ .3 Firewood	
សំលៀកបំពាក់/ .4 Clothing	
សំភារៈប្រើប្រាស់ក្នុងផ្ទះផ្សេងៗ/ .5 Housing	
សុខភាព/ .6 Health-care	
ការធ្វើដំណើរតាមយានជំនិះសាធារណៈ/ .7 Public Transport	
ការតទូរសព្ទ/ .8 Telephone	
ការសិក្សា(គិតតែសមាជិករស់នៅក្នុងផ្ទះ))/ .9 School & Education (only HH members	
លំហែកំសាន្តផ្សេងៗ(រួមទាំងចំណាយលើចំនងដៃអាពាពិពាហ៍)/ .10 Money spent on weddings in the last year (2010-2011)	
ប្រាក់ដែលចំណាយលើការកំសាន្តនិងសកម្មភាពទាក់ទងនឹងសាសនា(ដូចជាថ្ងៃសីល, បុណ្យភ្ជុំ, ចូលឆ្នាំ, កឋិន មាឃបូជាជាដើម)ក្នុងអំឡុង១ឆ្នាំចុងក្រោយ២០១០-២០១១/ **.11** Money spent on Leisure and religious Activities (Going to Pagoda, etc.) during the last year (2010-2011)	
ចំណាយផ្សេងៗទៀត .12 Other:_____	

5.2) តើអ្នកមានអាគុយប៉ុន្មាន?ហើយប្រភេទណាខ្លះ(**40kw, 50kw, 70kw**)?/ How many and which type of batteries (40KW, 50KW, 70KW) do you own?

_____

5.2.1) តើអ្នកបញ្ចូលភ្លើងប៉ុន្មានដងក្នុង១ខែ ឬប៉ុន្មានថ្ងៃទើបបញ្ចូលភ្លើងម្តង?/How often do you recharge them?

_____

5.3) តើអ្នកមានផ្ញើលុយអោយសាច់ញាតិនៅក្រៅភូមិទេ(ដូចជាកូនរៀននៅភ្នំពេញជាដើម)?/ Do you send money to relatives who live outside the village? (Example: Daughter studying in Phnom Penh)

☐ គ្មាន/ No: ☐ មាន/ Yes:សូមបញ្ជាក់ please specify:

(5.3.1)	អស់លុយប៉ុន្មាន// (a) How much money?	ប៉ុន្មានដង?(ក្នុង១ខែ? ក្នុង១ឆ្នាំ?)/ (b) How often? (per month? Per year?)
រៀល/ Riel:		

5.4) តើអ្នកមានចំណាយមិនមែនកសិកម្មផ្សេងៗដែលបានរៀបរាប់កន្លងមកឬទេ?/ Do you have any other regular expenditure apart from farming costs which you have not mentioned so far?

☐ គ្មាន/ No: ☐ មាន/ Yes: សូមបញ្ជាក់please list:

1.)_____

2.)_____

3.)_____

6) ចំណូលក្នុងគ្រួសារ/ **Household Revenues**

6.1) តើអ្នកមានតូបលក់ឥវ៉ាន់រឺទេ?(រួមទាំងកន្លែងបញ្ចូលភ្លើងអាគុយ) Does your HH has a petty trade? (Including recharging batteries, etc)

☐ គ្មាន/ No: ☐ មាន/ Yes: សូមបញ្ជាក់ please specify:

(6.1.1)	ចំណាយក្នុង១ថ្ងៃឬ១ខែ?/ (a) Expenditures (per day or month?)	ចំណូលដុល(ចំណូលសរុប)ក្នុង១ថ្ងៃឬ១ខែ?/ (b) Gross Revenues (per day or month?)
រៀល/Riel:		

6.2) តើគ្រួសាររបស់អ្នកមានសមាជិកក្នុងក្រុមសន្សំរឺទេ?/ Is your HH member of a savings groups?

☐ ទេ/ No: ☐ បាទ.ចាស់/ Yes: សូមបញ្ជាក់ please specify:

6.2.1	អ្នកបង់ជាមធ្យមប៉ុន្មានប្រចាំខែ?/ (a) Average monthly payments?	ប្រាក់សរុបរបស់អ្នកនៅក្នុងក្រុមនៅចុងឆ្នាំ២០១០/ (b) Your capital stock in 2010?	តើអ្នកដកលុយប៉ុន្មាននៅចុងឆ្នាំ២ ០១០(ខែ១២)? (c) How much money did you take out in the end of the year 2010	តើអ្នកបានខ្ចីលុយពីក្រុមសន្សំឬទេនៅឆ្នាំ ២០១០?ខ្ចីប៉ុន្មាន?អស់រយៈពេលប៉ុន្មានខែ?/ (d) Did you borrow money from the group in 2010? How much and for how many months
រៀល/ Riel				

6.3) តើគ្រួសាររបស់អ្នកមានទទួលប្រាក់សោធនិវត្តន៍, ឬលុយពីសាច់ញាតិបងប្អូនឬទេ?/ Does your HH receive pensions or money from relatives who do not live in your household?

☐ ទេ/ No: ☐ បាទ.ចាស់/ Yes: សូមបញ្ជាក់ please specify:

(6.3.1)	ចំណូលពីប្រាក់សោធនិវត្ត/ (a) Revenues from pensions:	ចំនួនទឹកប្រាក់ទទួលពីសាច់ញាតិឬបងប្អូន/ (b) Money received from relatives:
រៀល/Riel		

6.4) តើគ្រួសារអ្នកមានចំណូលពីការលក់កម្លាំងពលកម្មនៅកសិដ្ឋានអ្នកដ៏ទៃក្នុងភូមិរឺទេ?(ស៊ីឈ្នួលគេ)(គិតតាំងពីដើមរដូវធ្វើស្រែឆ្នាំ២០១០រហូតដល់ឥឡូវ)?/ Did your HH work on other farms in your village during the last season (2010/2011)?

☐ គ្មាន/ No: ☐ មាន/ Yes: សូមបញ្ជាក់please specify:

(6.4.x)	អាយុ/ (a) Age	ភេទ/ (b) Sex	ការពិពណ៌នាពីការងារ(ឧ. ក្ហរាស់, បោកបែន, ច្រូតកាត់ជាដើម.....)/ (c) Description of work	តើគ្រួសារអ្នកធ្វើការបានប៉ុន្មាន?(អាចជាចំនួនថ្ងៃដែលបានធ្វើការឬចំនួនកណ្តាប់ស្រូវសរុបដែលបានច្រូតពោលគឺអាស្រ័យប្រភេទការងារ) (d) How much did your HH members work? (workdays? Nr. of harvested paddy rice bundles?, etc).	រៀបរាប់សំណងពីការងារដែលបានធ្វើ(អាចជា ការប្រាស់ដៃ, ជាលុយ, ជាស្រូវ, ឬអ្វីៗផ្សេងទៀត)ក្នុងរយៈពេល១ថ្ងៃ ឬក្នុងមួយចប់កិច្ចការ?)/ (e) Describe Compensation (Labor exchange?, Riel?, rice?, other?) (per day? Per task?)
សមាជិកគ្រួសារ/ HH member					
សមាជិកគ្រួសារ/ HH member					
សមាជិកគ្រួសារ/ HH member					
សមាជិកគ្រួសារ/ HH member					
សមាជិកគ្រួសារ/ HH member					
សមាជិកគ្រួសារ/ HH member					

6.5) តើគ្រួសាររបស់អ្នកមានចំណូលពីការងារមិនមែនកសិកម្មដ៏ទៃទៀតរឺទេក្នុងអំឡុងពេល១ឆ្នាំចុងក្រោយ(គិតពីដើមរដូវធ្វើស្រែឆ្នាំមុនរហូតដល់ឥឡូវ)?/
(ឧទាហរណ៍ កម្មករកាត់ដេរ, គណកម្មាធិការក្រុមសន្សំប្រាក់, ការងារសំណង់, គណកម្មាធិការភូមិឃុំ, គ្រូបង្រៀន, ប៉ូលីស, រត់ម៉ូតូឌុប, ដឹកអុសលក់/
Did your HH have revenues from other non-farm work during the last year (2010/2011)? (Examples: Work in: Garment factory, Savings group committee, Construction sector, Commune/village committee, Teacher, Policeman, Moto taxi driver, collect firewood etc.)
☐ គ្មាន/ No: ☐ មាន/ Yes: សូមបញ្ជាក់please specify:

(6.5.x)	អាយុ/ (a) Age	ភេទ/ (b) Sex	ប្រភេទការងារ/ (c) Description of work	នៅក្រៅភូមិ?/ (d) Outside the village?		រយៈពេលធ្វើដំណើរទៅធ្វើការ/ (e) Transport time	ចំនួនថ្ងៃឬចំនួនខែដែលអ្នកធ្វើការ(ចាប់គិតតាំងពីដើមរដូវធ្វើស្រែរហូតដល់ឥឡូវ)? (f) Describe how much you have worked in 2010/2011? How many days? How many months?	តើអ្នកធ្វើការប៉ុន្មានម៉ោងក្នុង១ថ្ងៃ (g) How many hours per work day	(h) Season		រៀបរាប់ពីចំណូលសរុប(ចំណូលក្នុង១ថ្ងៃ, ចំណូលក្នុង១ខែ, ឬចំណូលក្នុង១ឆ្នាំ?) (i) Describe Total Revenues ? (per day? month? Year?)
				នៅក្រៅ Yes	មិននៅក្រៅ No				វស្សា Wet	ប្រាំង Dry	
សមាជិកគ្រួសារ/ HH member				☐	☐				☐	☐	
សមាជិកគ្រួសារ/ HH member				☐	☐				☐	☐	
សមាជិកគ្រួសារ/ HH member				☐	☐				☐	☐	
សមាជិកគ្រួសារ/ HH member				☐	☐				☐	☐	
សមាជិកគ្រួសារ/ HH member				☐	☐				☐	☐	
សមាជិកគ្រួសារ/ HH member				☐	☐				☐	☐	

6.6) តើអ្នកមានប្រភពចំណូលមិនមែនកសិកម្មផ្សេងទៀតក្រៅពីប្រភពចំណូលដែលបានរៀបរាប់ខាងលើឬទេ?/ Do you have any other income sources other than farming which you have not mentioned so far?
☐ គ្មាន/ No: ☐ មាន/ Yes: សូមបញ្ជាក់please specify:_____

_____

7) ផលិតកម្មសត្វ, ចំណូលនិងចំណាយ(ចាប់គិតពីដើមឆ្នាំធ្វើស្រែឆ្នាំមុនរហូតដល់ឥឡូវ)/ Livestock production, revenues and expenditure in 2010/2011

ប្រភេទសត្វដែលអ្នកមាន/ (7.1.x) Which animals do you have?	ចំនួនសត្វចិញ្ចឹមដែលអ្នកមានឥឡូវ/ (a) How many animals do you own now?	ចំនួនសត្វដែលទិញសម្រាប់ឆ្នាំ២០១០-២០១១?/ (b) Nr. of animals bought in 2010/2011?	ចំនួនលក់ក្នុង១ខែ/១ឆ្នាំ/ (c) Amount sold per:			តម្លៃលក់ (រៀល/១ក្បាលឬរៀល/គីឡូ?)/ (d) Price of selling animal? (Riel/animal?) (Riel/kg?)	ចំណាយសរុបលើចំណីសត្វនិងចំណាយដទៃទៀត(ក្នុង១ខែឬ១ឆ្នាំ?)/ (e) Total production costs? (feedstuff and other) (per month? per year?)	ទំហំទ្រុង(ម៉ែត្រការ៉ែ)/ (f) Cage Size? (m2) (A x B)	តម្រូវការពលកម្មជាមធ្យម(ម៉ោង/ថ្ងៃ)/ (g) Average Labor Requirements? (hrs/day)
			ចំនួនឬគីឡូ?/ Number? Kg?	ខែ/ Month	ឆ្នាំ/ Year				
☐ គោ/ .1 Cattle	___ចំនួន/ Nr			☐	☐				
☐ ក្របី/ .2 Buffaloes	___ចំនួន/ Nr			☐	☐				
☐ សេះ/ .3 Horses	___ចំនួន/ Nr			☐	☐				___ម៉ោង/ថ្ងៃ/Hrs/day
☐ មាន់/ .4 Chicken	___ចំនួន/ Nr			☐	☐				
☐ ទា/ .5 Ducks	___ចំនួន/ Nr			☐	☐				___ម៉ោង/ថ្ងៃ/ Hrs/day
☐ ជ្រូក/ .6 Pigs	___ចំនួន/ Nr			☐	☐				___ម៉ោង/ថ្ងៃ/ Hrs/day
☐ចំនួនស្រះចិញ្ចឹមដង្កែ និងត្រី / .7 Fishpond & Fishes	___ចំនួនស្រះដែលមានត្រី/ Nr of Fishponds	[redacted]	.....ត្រីដែលបានលក់(ចំនួនគ្រីឬគីឡូក្រាម/ Nr of sold fish (kg)	☐	☐				___ម៉ោង/ថ្ងៃ/ Hrs/day
☐ សត្វផ្សេងៗ/ .8 Other: _____	___ចំនួន/ Nr			☐	☐				___ម៉ោង/ថ្ងៃ/ Hrs/day

7.2) ផលិតកម្មស៊ុតមាន់ ទា និងចំណូល(គិតចាប់ពីដើមឆ្នាំធ្វើស្រែរហូតដល់ឥឡូវ)/ Egg production and revenues in 2010-2011

ប្រភេទស៊ុតដែលផលិត/ Which eggs do you produce?	ស៊ុតផលិតជាមធ្យម(ក្នុង១ថ្ងៃ?ឬក្នុង១ខែ?)/ (a) Nr. of eggs produced? (per day? month?)	ចំនួនស៊ុតដែលបានលក់(ក្នុង១ថ្ងៃ, ឬ១ខែ?)/ (b) Nr. of eggs sold? (per day, month?)
☐ ស៊ុតមាន់/ .1 Chicken eggs		
☐ ស៊ុតទា/ .2 Duck eggs		

8) ផលិតកម្មកសិកម្ម ចំណូល និងចំណាយ នៅឆ្នាំ២០១០/២០១១ **Agricultural production, revenues and expenditures in 2010/2011**

១តៅ=_____kg
(8.1.5) 1 Basket = _____Kg

តើអ្នកដាំដុះអ្វីខ្លះ?/ (8.1.x) What do you cultivate?	ដាំលើផ្ទៃដីប៉ុន្មាន? (ប៉ុន្មានស្លឹក?ប៉ុន្មានអា?ប៉ុន្មានហិចតា? (a) On how much land/? (slag?are? ha?)	នៅរដូវណា?/ (b) In which season?		ទិន្នផលដំណាំសរុប (គីឡូ?តៅ?) (ក្នុង១ថ្ងៃ? ក្នុង១ខែ?ឬក្នុង១ឆ្នាំ?) (c) Total Crop Production: (Kg? Baskets?) (per day, month, year?	តើបរិមាណជីគីមីប៉ុន្មានដែលអ្នកប្រើ?(ប៉ុន្មានគីឡូ?ឬប៉ុន្មានបាវ?/ (d) How much chemical fertilizers did you use? (kg? bags?)	តើអ្នកប្រើប្រាស់ថ្នាំសំលាប់សត្វល្អិតបរិមាណប៉ុន្មាន? (ប៉ុន្មានលីត្រឬប៉ុន្មានដប?)/ (e) How much chemical pesticides did you use? (liter? bottles?)	តើអ្នកប្រើប្រាស់គ្រាប់ពូជអស់បរិមាណប៉ុន្មាន(គិតជាគីឡូក្រាមឬតៅ?)/ (f) How much seeds did you need? (kg? baskets?)	តំរូវការពលកម្មសរុប(ថែទាំដំណាំ,ស្រោចទឹក ។ល។)?/(អាចគិតម៉ូ/ថ្ងៃឬម៉ូ/សប្តា (g) Total Labor requirements? (hrs/day?) (hrs/week?)	សម្រាប់តែប្រើប្រាស់ក្នុងគ្រួសារ/ (h) Only for Home consumption?	បរិមាណដែលលក់/ (i) Amount sold:			តម្លៃក្នុង១ឯកតា/ (j) For which price?
		វស្សា /Wet	ប្រាំង /Dry							ប៉ុន្មានគីឡូក្រាម?ឬតៅ?/ (Kg? baskets?)	ខែ Month	ឆ្នាំ Year	
☐ ស្រូវ ប.វ.ស/ .1 SRI rice		☐	☐						☐ មាន/ Yes		☐	☐	
☐ ស្រូវតាមទំលាប់/ .2 Conventional rice		☐	☐						☐ មាន/ Yes		☐	☐	
☐ ចំការរឺសួនបន្លែ/ .3 Vegetable garden / Chamkar		☐	☐					___ម៉ូ/ថ្ងៃ/H/d	☐ មាន/ Yes		☐	☐	
☐ ផ្សេងៗទៀត(ដូចជាអំពៅ)/ .4 Other crops (e.g. SugarCane): _____		☐	☐					___ម៉ូ/ថ្ងៃ/H/d	☐ មាន/ Yes		☐	☐	

8.2) តើដាំដំណាំអ្វីខ្លះក្នុងសួនបន្លែឬក្នុងចំការរបស់អ្នក?ហើយក្នុងរដូវណា?/ Which plants do you have in your Vegetable Garden/Chamkar in which season?

_____

_____

8.3) តើអ្នកមានចំណូលពីផលិតកម្មកសិកម្មផ្សេងទៀតក្រៅពីចំណូលខាងលើដែលអ្នកបានរៀបរាប់រឺទេ?ឧទាហរណ៍ដូចជា ចំណូលពីការលក់ដំឡូង លក់ស្ករត្នោត, លក់ស្វាយ, លក់ដូង,លក់នំជាដើម/
Do you have income from agricultural production that you have not mentioned until now? For example selling Cassava, Selling, sugar from Sugar Palm, selling Mango, selling Coconut, selling rice cakes,

_____

8.4) សូមបញ្ជាក់ពីតំរូវការកម្លាំងពលកម្មសម្រាប់ការធ្វើស្រែក្នុងសកម្មភាពនីមួយៗ? / Please indicate the labor requirements for **rice farming** for each activity:

(8.4.x)		ពលកម្មជួលនិងការប្រាស់ដៃ/ **Hired labor and Labor Exchange**			ពលកម្មក្នុងគ្រួសារ/ **HH labor**	
សកម្មភាព Activity	រដូវចាំផ្តើម/ (1—12) (a) Starting Month	តើអ្នកមានជួលគេឬទេ?ចំណាយសរុបអស់ប៉ុន្មានសម្រាប់ជួលគេ?(អាចគិតជាលុយ(រៀល)ឬបរិមាណស្រូវ(តៅ))/ (b) Did you hire labor? What were the total costs of hired labor? (Riel, Paddy Rice basket,)	ចំនួនមនុស្សដែលអ្នកជួល?/ (c) How many persons did you hire?	តើអ្នកមានប្រាស់ដៃឬទេ?មានប៉ុន្មាននាក់?ហើយធ្វើការអស់ប៉ុន្មានថ្ងៃ?/ (d) Did you exchange labor? How many people for how many days?	តើមានមនុស្សប៉ុន្មាននាក់ក្នុងគ្រួសារអ្នកដែលធ្វើការក្នុងកិច្ចការនេះ? (e) How many persons of your HH did work in this activity?	តើអ្នកចំណាយពេលអស់ប៉ុន្មានថ្ងៃដើម្បីបំពេញកិច្ចការនេះ? (f)How many days did you need to finish this activity
ក្លរាស់ និងរៀបចំថ្នាលសំណាប/ Seedbed preparation, Ploughing and land leveling						
1.) ដកសំណាប Uprooting, 2.) ដឹកជញ្ជូនសំណាTransport of seedlings 3.) ស្ទូង Transplanting						
បាចជីគីមីជីធម្មជាតិនិងថ្នាំសម្លាប់សត្វ/Application of fertilizers, manure and pesticides						
1.) ច្រូតកាត់ Harvesting 2.) ឡោកបែន Threshing						
តើអ្នករៀបចំធ្វើជីកំប៉ុសឬទេ?/ Do you prepare compost?						
តើអ្នកដកស៊ំអាតស្មៅឬទេ? Do you weed the field?						
សកម្មភាពផ្សេងៗទៀត Other important activities ?						

9) ស្ថានភាពនៃប្រើប្រាស់ពេលវេលា/ **General time use profile**

9.1) សូមបញ្ជាក់ថាតើសមាជិកគ្រួសារអ្នកធ្វើអ្វីខ្លះជារៀងរាល់ថ្ងៃ(គិតក្នុងពេលបច្ចុប្បន្ន)?(ឧទាហរណ៍ ដេក ងូតទឹក ចំអិនម្ហូប បរិភោគបាយ ធ្វើកិច្ចការផ្ទះ ធ្វើការងារនៅលើដីស្រែចំការ ជួបជុំមិត្តភ័ក្ត ដងទឹក ប្រមូលអុស ទៅវត្ត ។ល។Please describe what your household member do on a normal day (now)? (Examples: Sleeping, Washing, cooking, eating, housework, working on the field, meeting friends, fetching water, collecting firewood, going to the pagoda, etc.)

(9.1.x)	អាយុ/ (a) Age	ភេទ (b) Sex	4am	5am	6am	7am	8am	9am	10am	11am	12am	1pm	2pm	3pm	4pm	5pm	6pm	7pm	8pm	9pm	10pm	11pm	12pm
សមាជិកគ្រួសារទី១/ HH member1																							
សមាជិកទី២/ HH member2																							
សមាជិកទី៣/ HH member3																							
សមាជិកទី៤/ HH member4																							
សមាជិកទី៥/ HH member5																							
សមាជិកទី៦/ HH member6																							
សមាជិកទីក៧/ HH member7																							
សមាជិកទី៨/ HH member8																							

10) សហគមន៍អភិវឌ្ឍន៍និងស្ថាប័នក្នុងតំបន់/ Cooperation and local institutions

10.1) សូមគូសបញ្ជាក់ថាតើសកម្មភាពណាខ្លះដែលគ្រួសារអ្នកពាក់ព័ន្ធ?/ Please indicate in which village activities your HH is involved?

សកម្មភាព/ Activities: (10.1.x)	តើសមាជិកប៉ុន្មានអ្នកជាមធ្យមក្នុងគ្រួសារអ្នកចូលរួមក្នុងការប្រជុំជាទៀងទាត់រាល់ការប្រជុំ?/ How many HH members go on average to the regular meetings?		ចំនួនដងនៃការប្រជុំក្នុង១ខែ/១ឆ្នាំ?/ (c) How many meetings per month or year?			(d) តើការប្រជុំម្តងៗមានរយៈពេលប៉ុន្មាន(ជាមធ្យម)?/ (d) How many hours takes one meeting (Average)?
	ស្រី (a) Females	ប្រុស (b) Males	ចំនួន/ Number	ក្នុង១ខែ/ per month	ក្នុង១ឆ្នាំ/ per year	
☐ បណ្តាញកសិករធម្មជាតិ(FNN)/ .1 Farmer Association (FNN)				☐	☐	
☐ ក្រុមផលិតស្រូវសរីរាង្គ(សេដាក)/ .2 Organic rice producer group (CEDAC)				☐	☐	
☐ ក្រុមសហគមន៍រោងមាស៊ីនកិនស្រូវ/ .3 Rice mill community				☐	☐	
☐ ក្រុមសន្សំ/ .4Savings groups				☐	☐	
☐ ក្រុមស្ត្រី/ .5 Women group				☐	☐	
☐ ក្រុមយុវជន/ .6 Youth group				☐	☐	
☐ ក្រុមជួយសង្គ្រោះ/ .7 Helping group				☐	☐	
☐ក្រុមសាងសង់/ .8 Infrastructure group				☐	☐	
☐ ក្រុមក្រីក្រ/ .9 Poorest group				☐	☐	
☐ សកម្មភាពផ្សេងៗ/ .10 Other activities: _____				☐	☐	

11) រៀបរាប់ពីស្ថានភាព ស្រូវ ប.វ.ស/ **SRI profile.**

11.1) តើអ្នកអនុវត្តស្រូវ ប.វ.ស រឺទេ? Do you practice SRI?

☐ មិនអនុវត្ត/ No ☐Yes មាន សូមប្រាប់ថាតើមានប៉ុន្មានជំហានដែលអ្នកបានអនុវត្ត/ Yes: please tell us how many steps_____

11.2.x	ការអនុវត្ត/ **Practice**		
1	☐ជ្រើសរើសពូជល្អសម្រាប់សាប / Selecting good seeds for sowing		
2	☐ សាបសំណាបលើថ្នាលដូចថ្នាលដាំបន្លែ/ Sowing seeds on the bed nursery like a vegetable bed		
3	☐ ដកសំណាបដោយថ្នមៗនិងស្ងួតភ្លាមៗ/ Careful uprooting and immediate transplanting		
4	☐ ស្ងួតតែសំណាបល្អ/ Transplanting only good seedlings		
5	☐ ស្ងួតតែសំណាបខ្ចី/ Transplanting only young seedlings	➔ តើសំណាប់ដែលអ្នកស្ងួងមានអាយុប៉ុន្មានថ្ងៃ?/ How old are the transplanted seedlings?	ថ្ងៃ/ days
6	☐ ស្ងួងដោយគ្រាន់តែផ្តិតឫសជាប់ដី(ស្ងួងរាក់)/ Transplanting the seedlings shallow rooted	➔ តើអ្នកស្ងួងសំណាបជំរៅប៉ុន្មាន?/ How deep do you plant the seedlings?	សង់ទីម៉ែត្រ/ cm
7	☐ ស្ងួងសំណាបតែ៣ដើមប៉ុណ្ណោះក្នុង១គុម្ព/ Transplanting only a few seedlings per planting hill	➔ តើអ្នកស្ងួងសំណាប់ប៉ុន្មានដើមក្នុង១គុម្ព?/ How many seedlings per hill?	
8	☐ ស្ងួងដោយមានចំងាយស្មើគ្នាពីគុម្ព១ទៅគុម្ព១ទៀត/ Transplanting with equal distance between seedlings	➔ តើការស្ងួងរបស់អ្នកមានឃ្លាតពីគ្នាប៉ុណ្ណា?/ What is the planting distance?	សង់ទីម៉ែត្រ/ cm
9	☐ សំអាតស្មៅដំបូងនិងញឹកញាប់/ Weeding early and frequently		
10	☐ គ្រប់គ្រងទឹកដោយរក្សាអោយដីមានសំណើមជានិច្ច/ Managing water by keeping the soil most		
11	☐ ប្រើប្រាស់ដីកំប៉ុស្ត រឺដីបានពីស្លឹកឈើ/ Using more compost or forest humus		
12	☐ ដាំដីបៃតង/ Planting green manure	➔ ☐ មុនពេលស្ងួង/ before transplanting ➔ ☐ ក្រោយពេលស្ងួង/ after harvesting	
13	☐ បាចជីសរីរាង្គ/ Mulching the soil with organic matter		
14	☐ ជ្រើសរើសពូជល្អៗសម្រាប់ការដាំដុះលើកក្រោយ/ Select the best seeds for the next crop		

Explanatory document, prepared for the enumerators

សេចក្តីណែនាំនិងការពន្យល់ពីបញ្ជីសំណួរ

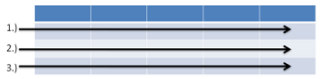
CHECKLIST and EXPLANATION of the Questionnaire

1.)សូមមេត្តាសរសេរឲ្យច្បាស់(ប៊ុនឈាន់អ្នកត្រូវតែអាចអានអក្សរដែលអ្នកសរសេរ)

Write clearly – Bunchhorn has to be able to read your handwriting ;-)

2.)សូមសរសេរតារាងនីមួយៗដោយបំពេញតាមជួរដេកនីមួយៗសិន។ បំពេញគ្រប់ចន្លោះតារាងទាំងអស់ រួមទាំងលេខសូន្យ(0)(សូមមើលចំនុចទី៥នៃសេចក្តីណែនាំ

Finish each table by filling in each row after the other. Fill in every space; including "0" (see point 5 of checklist)!



3.) ចំពោះភេទត្រូវប្រើអក្សរ M សម្រាប់មនុស្សប្រុសនិង F សម្រាប់មនុស្សស្រី។

Sex: Use **"M"** for male, and **"F"** for female

4.) ចំពោះចំនួន៖ សូមប្រើលេខរ៉ូម៉ាំង(**0,1,2,3,4,5,6,7,8,9**)

Numbers: For numbers use the roman alphabet **(0,1,2,3,4,5,6,7,8,9, ...)**

5.) បំពេញរាល់ចន្លោះពីប្រអប់ក្នុងតារាងដោយប្រើលេខ**សូន្យ(0)** សម្រាប់បញ្ជាក់ថា**"មិនមានឬទេ"** ប្រើនិមិត្តសញ្ញា **"---"** "សម្រាបបញ្ជាក់ថា**"ទេឬពុំមានមិនអាចទទួលបាន"** និងប្រើ និមិត្តសញ្ញា**"?"សម្រាប់បញ្ជាក់ថាប្រជាជនតាមគ្រួសារមិនដឹងចំលើយ**។សូមមើលឧទាហរណ៍ដូចខាងក្រោម។

Fill in every space!! Use **"0"** to indicate "nothing"; use **"---"** to indicate "no, or "not available", use **"?"** to indicate that people do not know the answer. Example:

បរិមាណអង្ករដែលទិញពីផ្សារ?/ Rice bought from the market?	តើអ្នកមានទទួលប្រាក់សោធនិវត្តន៍ឬទេ?/ Do you receive a pension?	ប្រាក់ឥណទានដែលអ្នកបានខ្ចីនៅឆ្នាំ២០១០?/ Credit taken in 2010
0	---	**?**

6.)សូមសរសេរតែឯកតារង្វាស់ដែលអ្នកឆ្លើយការសំភាសន៍បានប្រាប់។ សូមមានភាពបត់បែនពេលសរសេរចម្លើយ ប៉ុន្តែសូមកុំភ្លេចសរសេរឯកតារង្វាស់**ផ្ទៃដី៖** សូមសរសេរឯកតាផ្ទៃដីដែលអ្នកឆ្លើយបានប្រាប់អ្នក។ អ្នកឆ្លើយភាគច្រើននឹងប្រើពាក្យ**"ស្លឹក"** អ្នកឆ្លើយខ្លះទៀតស្គាល់ពាក្យ**"អា"** និងមួយចំនួនទៀតស្គាល់ពាក្យ**"ហិចតា"។** សូមមើលឧទាហរណ៍ខាងក្រោម៖

ឧទាហរណ៍ទី១៖ Q3.1 តើអ្នកមានផ្ទៃដីប៉ុន្មានៗប្រជាជនខ្លះឆ្លើយ **"១ស្លឹក២ភ្លុន"** ដូចច្នេះអ្នកត្រូវសរសេរថា **"១ស្លឹក២ភ្លុន"** ដែរ។

ឧទាហរណ៍ទី២៖ Q3.1 តើអ្នកមានផ្ទៃដីប៉ុន្មានៗប្រជាជនខ្លះឆ្លើយ**"២,៥ហិចតា"** ដូចច្នេះអ្នកត្រូវសរសេរថា**"២,៥ហិចតា"។**

ចំពោះរយៈពេល៖ សូមសរសេរតែ**ឯកតារយៈពេល** ដែលប្រជាជនប្រើ(ដូចជា ម៉ោង, ថ្ងៃ, ខែ, ឆ្នាំ)

ឧទាហរណ៍ទី១៖ Q4.1 ការប្រើប្រាស់អង្ករសរុប? ចំលើយដែលប្រជាជនឆ្លើយអាចជា **១,២៥គីឡូក្រាម/១ថ្ងៃ** ដូចនេះអ្នកត្រូវសរសេរអញ្ចឹងដែរ

ឧទាហរណ៍ទី២៖ Q4.1 ការប្រើប្រាស់សាច់សរុប? ចំលើយដែលប្រជាជនឆ្លើយអាចជា **៨គីឡូ/១ខែ** ដូចនេះអ្នកត្រូវសរសេរអញ្ចឹងដែរ។

ចំពោះឯកតាថ្លៃ៖ អ្នកត្រូវសរសេរឯកតាថ្លៃដែលប្រជាជនប្រើ៖ ដូចជា រៀល/១គីឡូក្រាម, រៀល/សត្វ១ក្បាល, រៀល/១តៅស្រូវ

ឧទាហរណ៍ទី១៖ Q7 តម្លៃលក់សត្វ៖ **១២ ០០០រៀល/គីឡូក្រាម**

ឧទាហរណ៍ទី២៖ Q7 តម្លៃលក់សត្វ៖ **២០ ០០០រៀល/១ក្បាល**

Always write down the measurement units that the respondent tells you. Be flexible when writing down the answer, but never forget to write down the units.

Land area: Always write down the **land units** that the respondent tells you.Most may use **"slag"**; some may know **"are"**; some may know **"hectare (ha)":**

*Example 1: Q3.1 How much land do you own? 1 **slag** and 2 **plowns***

*Example 2: Q3.1 How much land do you own? 2,5 **ha***

Time period: Always write down the **time units** that people use (i.e. **hours; day; month; year)**.

*Example 1: Q4.1 Total rice consumption: 1,25kg **/day***

*Example 2: Q4.1 Total meat consumption: 4kg **/Month***

Price units: Always write down the **price units** that people use: Riel**/kg,** Riel**/animal,** Riel**/basket**

*Example 1: Q7 Price of selling animal: 12,000 Riel**/kg***

*Example 2: Q7 Price of selling animal: 20,000 Riel**/chicken***

7.) **ចំពោះម៉ែត្រការ៉ែ(m 2) ៖** ប្រសិនបើអ្នកសួរប្រជាជនថាតើគាត់មានផ្ទៃដីប៉ុន្មានម៉ែត្រការ៉ែ ហើយគាត់ឆ្លើយ ៥x៣m អ្នកអាចសរសេរដូចគាត់បានប្រាប់អ្នក។

ឧទាហរណ៍៖ Q2.2 តើអ្នកមានផ្ទះទំហំប៉ុន្មាន? ៖ ចំលើយ ១0x៥m (ឺ ៥0ម៉ែត្រការ៉ែ)

Square meter (m2): If you ask for square meter, the respondent may answer for example 5 x 3 m, instead of 15 m2. This is no problem, just write down what they tell you:

*Example: Q2.2: "How big is your house?": **10 x 5 m** (or 50m2)*

8.) ចំពោះរដូវ**(២0១0/២0១១)** មានន័យខុសពីប្រតិទិន**ឆ្នាំ២0១0** ៖

- ពត៌មានទាំងអស់ដែលត្រូវសួរគឺសំដៅទៅមួយរដូវចុងក្រោយ(**ខែមេសាឆ្នាំ ២0១0 រហូតដល់ ខែមេសាឆ្នាំ ២0១១)**
- លើកលែងតែពត៌មានដែលទាក់ទងទៅនឹងក្រុមសន្សំប៉ុណ្ណោះដែលសំដៅទៅប្រតិទិនឆ្នាំ(ខែមករា ឆ្នាំ២0១0រហូតដល់ ខែមករា ឆ្នាំ ២0១១)

Season (2010/2011) vs. calendar year (2010):

- All the information that is asked refers to the last season (April 2010 until April 2011).
- Only the information regarding the savings group refers to the calendar year (January 2010 – December 2010)

ការពន្យល់អំពីសំណួរទៅតាមចំណុចសំណួរនីមួយៗ

Explanation of specific questions:

Q2.1: តើមានមនុស្សប៉ុន្មាននាក់រស់នៅក្នុងផ្ទះរបស់អ្នក?

សំណួរនេះសំដៅទៅលើមនុស្សដែលរស់នៅក្នុងគ្រួសារលើសពីពាក់កណ្តាលនៃពេលវេលារបស់ខ្លួនៗមនុស្សក្នុងគ្រួសារ(ដូចជាកូនប្រុស កូនស្រី) ដែលរស់នៅក្រៅផ្ទះរបស់ខ្លួនជាងពាក់កណ្តាលនៃឆ្នាំ(លើសពី៦ខែ)មិនបានចាត់ទុកជា**សមាជិកក្នុងផ្ទះ**ទេ។

ឧទាហរណ៍ទី១៖ កូនដែលទៅសិក្សានៅភ្នំពេញហើយត្រឡប់មកផ្ទះនៅថ្ងៃចុងសប្តាហ៍មិនត្រូវបានគិតជា**សមាជិកក្នុងផ្ទះទេ** ពីព្រោះគាត់រស់នៅក្នុងផ្ទះតិចជាងពាក់កណ្តាលនៃពេលវេលារបស់គាត់។ ប្រសិនបើឪពុកម្តាយឆ្មើរលុយឲ្យទៅកូន អ្នកត្រូវបញ្ជាក់នៅក្នុងចំណុច **Q5.3.**

ឧទាហរណ៍ទី២៖ កូនប្រុសដែលទៅធ្វើការនៅភ្នំពេញអស់រយៈពេល២ឬ៣ខែនៅក្នុងរដូវប្រាំង ប៉ុន្តែរស់នៅក្នុងផ្ទះនៅរដូវវស្សាត្រូវចាត់ទុកជា**សមាជិកក្នុងផ្ទះ:** ពីព្រោះគាត់បានរស់នៅលើសពីពាក់កណ្តាលពេលវេលារបស់គាត់ក្នុង១ឆ្នាំ(លើសពី៦ខែ)។ អ្នកត្រូវបញ្ជាក់ថាគាត់ទៅធ្វើការនៅក្រៅភូមិនៅចំណុច **Q6.5**

Q2.1 "How many people live in your household?"

This question refers to those people who live in the household more than half of their time. Family members (e.g. son or daughter) who live outside the household more than half of a year in total do not count.

*Example 1: A daughter who studies in Phnom Penh and comes home for the weekend **is not a household member**, because she lives less than half of the time in the household. If the parents send money to this daughter, you have to indicate this in Q5.3.*

*Example 2: A son who goes during the dry season for a few months to work to Phnom Penh but lives during rainy season in the household **is a household member,** because he lives more than half of the time in the household. You have to indicate that he works outside the village in Q6.5*

Q4.1: តើគ្រួសាររបស់អ្នកប្រើប្រាស់ម្ហូបអាហារអស់ប៉ុន្មាន?(អាចគិតជាគីឡូក្រាម ឬចំនួន? ក្នុងរយៈពេល១ថ្ងៃ ឬក្នុងរយៈពេល១ខែ)
ពេលខ្លះសំណួរនេះមានភាពពិបាកក្នុងការឆ្លើយសម្រាប់ប្រជាជន។ ដូចនេះសូមអ្នកព្យាយាមសួរឲ្យបានលឿន និងកុំចំណាយពេលវេលាច្រើនពេកចំពោះសំណួរនេះ។ គ្រាន់តែធ្វើការសន្និដ្ឋានប្រហែលៗ ហើយបើចំលើយមិនត្រូវ១០០ភាគរយនោះ វាមិនមានបញ្ហាអ្វីនោះទេ។

Q4.1 "How much food does your HH consume? (kg or nr?, per day or month?)"
This question is sometimes difficult to answer for the villagers. Try to be fast and don't spend too much time on this question, make rough estimates. It is OK if the answer is not totally correct. It is a "guesstimate".

Q5.1 - សូមរៀបរាប់ពីការចំណាយជាមធ្យមក្នុងគ្រួសាររបស់អ្នកទៅលើទំនិញ និងសេវាកម្ម-
សំណួរទាំងនេះសំដៅទៅលើតែការចំណាយជារូបិយវត្ថុតែប៉ុណ្ណោះ។ ពេលខ្លះប្រជាជនមិនបានដឹងពីតម្លៃទីផ្សារ ប៉ុន្តែគាត់ដឹងពីអ្វីដែលគាត់បានទិញជារៀងរាល់ខែ ឬឆ្នាំ ដូចនេះអ្នកអាចពីអ្វីដែលគាត់បានទិញ។
ឧទាហរណ៍ទី១៖ ការចំណាយទៅលើសំលៀកបំពាក់៖ ប្រសិនបើប្រជាជនមិនដឹងពីតម្លៃដែលគាត់បានទិញសំលៀកបំពាក់របស់គាត់ ប៉ុន្តែពួកគាត់ដឹងពីចំនួនខោអាវដែលគាត់បានទិញ នោះអ្នកអាចសរសេរ- **ឧ. ខោអាវ២សម្រាប់ ក្នុងរយៈពេល១ឆ្នាំ-។**
ឧទាហរណ៍ទី២៖ ការចំណាយទៅលើអុសសម្រាប់ដុត៖ ប្រសិនបើប្រជាជនមិនបានចំណាយលុយទៅលើការទិញអុសសម្រាប់ដុតដោយសារពួកគាត់ស្វែងរកអុសដោយខ្លួនឯង ឬក្នុងគ្រួសារខ្លះដែលប្រើឡជីវឧស្ម័នដែលមិនចាំបាច់ត្រូវការអុស នោះចម្លើយគឺត្រូវសរសេរលេខ**(0)។**

Q5.1 "Describe your average regular HH expenditures on the following goods and services"
This question refers only to monetary expenditure. Sometimes people do not know the price, but know what they buy each month/year. Then you can write down what they need to buy:

> *Example 1: Expenditure on Clothes: If the people do not know how much money they spend on clothes, but they know that they buy 2 shirts and 2 trousers every year, that you can write down: **"2 shirts and 2 trousers per year"***
>
> *Example 2: Expenditure on Firewood: If the respondent does not buy firewood because they collect it themselves, or they do not need firewood because they have a biogas system, then the answer is **"0".***

Q6.1: ចំណូលសរុបសម្រាប់ការលក់ផ្លូ"
ប្រជាជនភាគច្រើន ច្រើនតែឆ្លើយជា- **ចំណូលសុទ្ធ-** ដែលពួកគាត់បានទុទាត់ថ្លៃដើមរួចជាស្រេច។ ប៉ុន្តែអ្វីដែលសំណួររបស់យើងចង់បាននោះគឺ **-ចំណូលដុល-** របស់គាត់។ **-ចំណូលដុល-** គឺជាទឹកប្រាក់ទាំងអស់ដែលពួកគាត់ទទួលបានក្នុង១ថ្ងៃ ឬក្នុង១ខែពីការលក់ទំនិញ និងសេវាកម្មរបស់គាត់ដោយមិនដកថ្លៃដើមចេញ។ អ្នកត្រូវតែមានការប្រុងប្រយ័ត្នចំពោះចំណុចនេះ ពេលគឺអ្នកត្រូវសួរគាត់ពី**ចំណូលដុល។**

Q6.1 "Gross Revenues" of petty trade:
People tend to give "Net Revenues" as the answer. They subtract already the costs. But we need the "Gross Revenues". "Gross Revenues" is all the money that they receive in one day or in one month from selling goods and services, without subtracting the costs that they had when they bought the good. You have to take care that they give the right answer.

Q6.3 តើគ្រួសាររបស់អ្នកមានទទួលលុយពីបងប្អូនសាច់ញាតិដែលមិនរស់នៅក្នុងផ្ទះឬទេ?
សំណួរនេះគឺសំដៅទៅលើបងប្អូន សាច់ញាតិ ឬមិត្តភក្តិ**ដែលមិនរស់នៅក្នុងផ្ទះ:** ឬរស់នៅក្នុងផ្ទះតិចជាង៣ក់កណ្តាលនៃពេលវេលារបស់ខ្លួនក្នុង ១ឆ្នាំ។
ឧទាហរណ៍៖ សមាជិកក្នុងផ្ទះដែលទៅធ្វើការអស់រយៈពេល ៨ខែនៅភ្នំពេញក្នុងរដូវប្រាំងហើយបានធ្វើរលុយមកផ្ទះ**មិនត្រូវបានរាប់បញ្ចូលនោះទេ។**

Q6.3 "Does your HH receive money from relatives who do not live in your household?"
This question refers only to relatives or friends **who do not live** in the household, or live less than half of the time in the household.

*Example: Household members, who go to work for 4 months to Phnom Penh during dry season and send money back, **do not count**.*

Q6.4 "តើមានសមាជិកក្នុងផ្ទះរបស់អ្នកធ្វើការក្នុងស្រែឬកសិដ្ឋានអ្នកដ៏ទៃស្ថិតក្នុងភូមិរបស់អ្នកឬទេនៅ១ដូវចុងក្រោយនេះ(២០១០/២០១១)?"
សំណួរនេះសំដៅទៅលើការងារធ្វើក្នុងស្រែរបស់អ្នកដ៏ទៃនៅក្នុងភូមិ(ស៊ីឈ្នួល)ដូចជា ការក្លេរាស់ ការច្រូតកាត់ ការដឹកជញ្ជូលសំណាប់ ការបោកបែន ជាដើម។ ប្រជាជនប្រហែលជានឹងឆ្លើយខុសៗគ្នាចំពោះសំណួរដែលទាក់ទងនឹង**ចំហាំការងារ** ឧទាហរណ៍ ពួកគាត់អាចឆ្លើយជា"**ចំនួនថ្ងៃដែលបានធ្វើការ" "ឬៗយៈពេល១ព្រឹក" ឬៗយៈពេល១ថ្ងៃរសៀល"។** ពួកគាត់អាចឆ្លើយជាសកម្មភាពដែលពួកគាត់បានធ្វើ **ឧទាហរណ៍ "ស្ទូងបានសំណាប់២ក្តួន" "ច្រូតបាន ១០០កណ្តាប់ស្រូវ" ។** សំណងមកវិញដែលពួកគាត់ទទួលបានអាចជា **លុយរៀល** ,អាចជា **ការប្រវាស់ដៃ** ឬ អាចជា**ហិរិមាណស្រូវ។** ដូចច្នេះ អ្នកត្រូវតែសរសេរឯកតាអ្វី ដែលប្រជាជនបានឆ្លើយប្រាប់អ្នក។

Q6.4 "Did your HH work on other farms in your village during the last season (2010/2011)?"
This question refers to work on other farms such as **"ploughing the land"**, **"harvest"**, **"transport of seedlings"**, **"trashing"**. People may give different answer to the question of "how much work", for example, they may answer **"workdays"**, "one morning", **"one evening"**. They also can answer in terms of what activities they have done, for example: **"Transporting 2 plown"** of rice seedlings; **"Harvesting 10 bundles of paddy rice"**. The compensation for the work can be **"Riel"**, **"Labor Exchange"** or **"rice"**. Write down what the people answer you.

Q7 ផលិតកម្មសត្វ ចំណូល និងចំណាយ៖ ស្រះ និងត្រី
នៅក្នុងសំណួរនេះ មានជួរដេកតែមួយសម្រាប់ "**ស្រះ និងត្រី"។** សំណួរនៅក្នុងបន្ទាត់ទី១ "តើអ្នកមានសត្វប៉ុន្មានក្បាល?" សំដៅទៅលើ**ចំនួនស្រះ** ហើយនៅត្រង់កន្លែងនេះអ្នកត្រូវសរសេរ**ចំនួនស្រះ**ដែលប្រជាជនមាន។ សំណួរបន្ទាប់"**ហិរិមាណដែលបានលក់**" គឺសំដៅទៅលើ**ហិរិមាណត្រី។** ត្រង់ចំណុចនេះ អ្នកអាចសរសេរហិរិមាណត្រីដែលគាត់បានលក់ក្នុងរយៈពេល១ខែ ឬ១ឆ្នាំ។ ប្រជាជនមួយចំនួនអាចឆ្លើយជា **គីឡូក្រាម**នៃត្រីដែលបានលក់ ហើយប្រជាជនខ្លះទៀតអាចឆ្លើយជា **ចំនួនត្រី** ដែលបានលក់។ អ្នកត្រូវសរសេរឯកតាតាមអ្វីដែលគាត់បានប្រាប់។

Q7"Livestock Production, Revenues and Expenditure: Fishponds and Fishes"
In this question, one row is about "Fishponds and Fishes". The question in the first line "how many animals do you own" refers to the number of fishponds: Here you have to answer how many fishpond the respondent owns. The next question "Amount sold" refers to the fishes. Here you have to write down how many fishes they sell per month or year. People may answer in kg, but some people also may answer in "number of fishes". Write down the correct unit. The line **with** the question "cage size" refers to the size of the fishpond.

Q8 ផលិតកម្មកសិកម្ម ចំណូល និងចំណាយ
1) ឯកតា
សូមមេត្តាប្រុងប្រយ័ត្នក្នុងការបំពេញក្នុងតារាង ពីព្រោះប្រជាជនខុសគ្នាអាចផ្តល់ចម្លើយខុសគ្នា។ ប្រជាជនមួយចំនួនប្រហែលជាឆ្លើយជា **ស្លឹក** ហើយប្រជាជនមួយចំនួនទៀតប្រហែលជាឆ្លើយជា**ហិចតា** ហើយខ្លះទៀតឆ្លើយជា **តោ** ឬ ជា**គីឡូក្រាម។ អ្នកត្រូវតែសរសេរឯកតាដែលគាត់បានប្រាប់អ្នក។**

- → **សំខាន់ណាស់៖** ប្រសិនបើប្រជាជនឆ្លើយជាតោ អ្នកត្រូវសួរគាត់ថាតើ១តោដែលគាត់ប្រើនោះ មានប៉ុន្មានគីឡូក្រាម ហើយសរសេរវានៅផ្នែកខាងលើជ្រុងខាងស្តាំនៃសំណួរទី៨(Q8).

2) ការប្រើប្រាស់ក្នុងគ្រួសារ

ប្រសិនបើប្រជាជនផលិតសម្រាប់តែប្រើប្រាស់ក្នុងគ្រួសាររបស់គាត់ នោះត្រូវគ្រិសក្នុងប្រអប់" ☐ Yes" ហើយបន្តទៅជួរដេកបន្ទាប់ក្នុងតារាង(អ្នកមិនចាំបាច់សួរពីបរិមាណដែលបានលក់)។ ប្រសិនបើប្រជាជនផលិតមិនសម្រាប់តែប្រើប្រាស់ក្នុងគ្រួសារ ពោលគឺគាត់ផលិតដើម្បីលក់ខ្លះដែរនោះ អ្នកមិនត្រូវគ្រិសក្នុងប្រអប់នោះទេ ហើយអ្នកត្រូវបន្តទៅចំណុច**"បរិមាណដែលបានលក់"។**

Q8 "Agricultural Production, Revenues and Expenditure"

1.) Units:

Be carefully with filling in this table, because different respondents will give different answers. Some may answer in "slag", others in hectare; some will answer in "baskets" others in "kg". You always have to write down the unit that people use.

- ➔ VERY IMPORTANT: If the people answer you using "baskets" as unit, you have to ask "How many kg has one basket?" You can write the answer down in the box in the upper right corner of Q8.

2.) Household consumption

If the respondent only produces for household consumption, than tick the box " ☐ Yes", and continue with the next row (You do not need to ask "amount sold"). If the respondent produces not only for household consumption, but sells a part of the production, than do not tick the box and continue to the question "Amount sold".

Q8.3 ៖ តើអ្នកមានប្រភពចំណូលពីសកម្មភាពកសិកម្មផ្សេងទៀតក្រៅពីចំណូលពីកសិកម្មដែលអ្នកបានរៀបរាប់កន្លងមកឬទេ?"

ចំណុចនេះសំដៅទៅលើចំណូលពីវិស័យកសិកម្មផ្សេងៗទៀតដូចជា ការលក់ផ្លែស្វាយ លក់ផ្លែដូង លក់ដំឡូងមី លក់ស្ករត្នោត ។ល។ នេះជាសំណួរប្រភេទ ទំរង់បើក អ្នកអាចសរសេរគ្រប់អ្វីដែលប្រជាជនបានរៀបរាប់ប្រាប់។

Q8.3 "Do you have income from farming activities that you have not mentioned until now?"

This question refers for example to selling mango, coconut, cassava, sugar from sugar palm, etc. This is an open question, just write down what the people answer.

Q11.1 ស្ថានភាពស្រូវ ប.វ.ស

ប្រសិនបើកសិករជាកសិករដាំស្រូវ ប.វ.ស ត្រូវសួរគាត់អំពីបច្ចេកទេសដែលគាត់កំពុងអនុវត្ត ហើយ គ្រីស(✓)នៅក្នុងប្រអប់ដែលគាត់បានឆ្លើយប្រាប់។ **សូមកុំអានអោយគាត់ស្តាប់ពាល់ចំណុចនៃការអនុវត្តបច្ចេកទេសដែលមានក្នុងបញ្ជីសំណួរនោះឡើយ** ពីព្រោះវានឹងចំណាយពេលច្រើន ហើយប្រជាជននឹងចេះតែឆ្លើយតាមថាអនុវត្តពាល់ចំណុច។

11.1 "SRI Profile"

If the farmer is a SRI practicing farmer, ask him if he can tell you the SRI techniques that he is practicing and "tick" the corresponding boxes. DO NOT READ HIM ALL THE STEPS. This takes too much time, and the farmer might say "yes" to almost any question.

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