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New ways for rural finance? Livestock insurance schemes in Vietnam

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Abstract

In developing countries, insurance markets are usually underdeveloped. Nevertheless, if the development path is supported by strong structures and institutions, anonymous markets will over time replace informal insurance networks as they are more efficient. In Vietnam, livestock is an important household income source and has additional non-economic functions in the households. Rural financial institutes in Vietnam financed for a long time only a small array of agricultural investments, but frequently including livestock purchase. The absence of off-farm investment possibilities further promotes the investment into livestock production .Livestock death is considered to be a main factor contributing to poverty. Farmers using credit to purchase livestock face two risks at once: (1) loosing the livestock due to disease and subsequently (2) failure of investment. Farmers would like to reduce the uncertainty. Nevertheless, a formal agricultural insurance market hardly exists in Vietnam and farm households have to rely mainly on informal mutual aid schemes. The objective of this paper is to contribute to the discussion on the general feasibility of a livestock insurance scheme (LIS) in Vietnam. In this context the supply of LIS is discussed. Qualitative data collection took place mainly between 2003 and 2004. Four different types of insurance providers were selected for analyzing the supply side: 1. Insurance tied to credit within a state owned company, 2. Insurance tied to credit within a development project, 3. A state owned insurance company, 4. A private insurance company. By selection of these different insurance providers the variance of livestock insurances offered in Vietnam was covered. The main result is that offering sustainable livestock insurance is mostly hampered by unreliable data on livestock mortality and by politically low set premiums.

1 Introduction[i]

In developing countries, livestock is an important asset and in some situations the only cash-income source. Many households in Northern Vietnam are facing this situation (World Bank and DFID 1999). Rural financial institutes in Vietnam financed for a long time only a relatively small array of agricultural activities, among them most frequently the investment into livestock. The absence of off-farm investment possibilities further promotes this development. (Dufhues et al. 2002) found in a survey of Northern Vietnam, that 60% of the households invest credit into livestock production and (Duong and Izumida 2002) found in their survey covering parts of north, middle, and south Vietnam that 54% of the formal loans were invested into livestock. These findings reflect the fact that investment in livestock has been a popular trend in the Vietnamese rural community in recent years. Not surprisingly, livestock death and disease is considered to be one of the main factors contributing to poverty (World Bank and DFID 1999). Farmers deciding to use a credit to purchase livestock face two risks at once: (1) the risk of loosing the asset livestock (2) failure of investment. Because farmers are aware of these risks, they would like to reduce the uncertainty.[ii] As a formal agricultural insurance market hardly exists in Vietnam rural households have to rely mainly on informal mutual aid schemes to reduce their risks (Vandeveer 2000). No matter how good the informal insurance mechanisms are, members of those networks are unable to protect themselves from covariate risks (Kanbur and Squire 2001).[iii]

While scientific literature is discussing crop insurance schemes and microinsurance for health and

life in developing countries, so far little research has been conducted on livestock insurance schemes (LIS), and even less so in Vietnam. In developing countries, animal insurance schemes have developed mainly in Asia (Otte, Nugent, and McLeod 2004). However, the livestock insurance market is almost not existent and regionally very limited. LIS need to be discussed within the framework of the underlying livestock sector and, most important, the veterinary system, as setting insurance premiums is highly depending on the status of this system. Therefore, the veterinary system of Vietnam is described in detail. Particularly, the reliability of livestock risk data is discussed. At the end, a joint view of different disciplines is necessary to reveal the constraints and potentials of offering sustainable LIS in Vietnam. The objective of this paper is to contribute to the discussion on the general feasibility of LIS in Vietnam.

2 Methodology and data basis

Methodologically, this contribution is based mainly on qualitative data in combination with some secondary data from the suppliers of livestock insurance. Semi-structured and unstructured interviews with key persons, political cadres, and farmers provided general information on the research region and on the livestock risk situation in general. Interviews were conducted with employees of different suppliers of livestock insurance at all hierarchical levels. These data were analyzed from the point of view of information economics with a special focus on the principles of adverse selection and moral hazard.[iv] The results are then presented in four different key studies. The data collection took place mainly in 2003 and 2004.

Four different types of insurance providers have been selected for the analysis: 1. Insurance tied to credit from a state owned company (Moc Chau Dairy Cattle Enterprise), 2. Insurance tied to credit from a development project (Groupe de Recherche et d'Échanges Technologiques (GRET)), 3. a state owned insurance company which failed to supply sustainable insurance (BAOVIET), and 4. a private insurance company (Groupama). The authors selected these insurance providers as being representative (the variance of livestock insurances offered in Vietnam should be covered) and instructive for other organization seeking to establish or improve livestock insurance.

3 The animal health system in Vietnam

Functionality of veterinary services in Vietnam: Premiums need to be calculated based on a loss history (the frequency and the amount of losses over time). In the field of animal production, this information is provided by the animal health system of a given country and in particular by the country's disease surveillance system. In Vietnam, however, animal diseases are often not detected, not reported in time, or not reported adequately and accurately. Generally speaking, in many cases diseases are not diagnosed or wrongly diagnosed, leading to insufficient or inappropriate treatment and to a misleading picture of the epidemiological situation, and may hamper or delay the appropriate treatment of bigger disease outbreaks. These shortcomings are a result of the following reasons: 1) At grass root levels, veterinary 'fieldwork' is done by animal health workers (AHW). Those are private entrepreneurs earning their income from farmers service fees (Landon-Lane and Thao 2001). However, the activities of AHW are only loosely controlled, their training is very limited, and their total income is low, reducing motivation (Lan 2000); (ASPS and ACI 2002). 2) Producers are reluctant to report outbreaks since they do not want or cannot pay for treatment and are afraid to have their animals culled. Often, producers react on animal diseases with sale or slaughter of the affected animals (ASPS and ACI 2002). The availability of a livestock insurance and thus compensation for animal losses would eventually improve farmers' motivation to report animal diseases and losses. 3) The diagnosis of animal diseases by AHW is based on clinical symptoms of diseased animals (Lan 2000). Further diagnosis can be done at higher levels with improved laboratory facilities (Lan and Phuong 1999). Routine reporting is done on a monthly, quarterly and annual basis to the department of animal health; in addition,

there are notification and monitory reports on disease outbreaks. Standard post-mortem inspection or sample-taking are rarely conducted. The surveillance system can build upon data from laboratory submissions, veterinary services at field level, national and international checkpoints/quarantine stations, and from population data from mass vaccination campaigns and livestock census (Lan and Phuong 1999). In general, it is hampered by limited finances, technical and computer equipment. Data analysis and processing are still conducted manually; computers are only used for recording and storing data (Lan and Phuong 1999).

Disease prevention measures: Since the liberalization, subsidies for vaccination have heavily decreased and are now only paid in areas with special conditions.[v] As a result, the vaccination coverage has decreased from 70-80% in the 1980s to 40-50% in the 1990s (Thuy 1999). While official vaccination campaigns are compulsory, their efficiency is limited which can be the result e.g. of lacking or insufficient cold storage of the vaccine, or of vaccination not conducted up to medical standards (Lan 2000); (Thuy 2001). Due to ignorance or due to negative experiences, many producers consider vaccinations to be not necessary, too expensive, not helpful, or even dangerous (Lemke et al. 2000); (Thuy 2001).

Data liability of animal diseases: The number of new incidences in the population per time unit (short: disease incidence) is the most important epidemiological information for estimating disease costs or disease control costs (Stein and Leman 1982). However, incidence is only seldom assessed since that requires panel data on a large scale (Harrison and Cameron 1999). In Vietnam disease prevalence (number of diseased animals at a certain time as percent of the total animal population) is used as a substitute for incidence information. However, animal disease prevalence data for Vietnam have to be looked at cautiously: systematic surveys on diseases are lacking, the surveillance system is not working properly and official (information) policy is restrictive (Werthmüller 2000). That means that the most accurate and important epidemiological information for setting up a LIS is not available anyway and that the (partly available and not always reliable) prevalence data are a substitute for any potential insurance company to deal with.

Beside the weaknesses of the animal disease surveillance system discussed above, leading to a low reliability of epidemiological data, it is assumed that in fact more data on animal diseases have been recorded with a greater accuracy than known in the public. An example is the outbreak of the highly pathogenic avian influenza (AI) in 2003/04: development aid projects working in the area reported outbreaks earlier and in greater number than reported in the Vietnamese state media and than confirmed by local authorities. When Vietnam declared itself finally free of AI by the end of March 2004, Food and Agricultural Organization (FAO) and World Health Organization voiced repeatedly concerns regarding Vietnam's information policy on and openness regarding the outbreak. One reason for underreporting of animal diseases may lie in the strong export orientation of Vietnam. Meat export from Vietnam is hampered by its veterinary sanitary status which is unacceptable for most importers (Barwinek 2002). Countries free from major diseases tend to ban livestock imports from areas affected by animal diseases with a focus on the OIE (Office International des Epizooties) list A diseases.[vi] The desire to get access to export markets is the driving force behind many animal disease eradication efforts, but eventually also behind the attempt to veil the actual epidemiological situation. However, if that consideration influences the Vietnamese way to handle epidemiological information remains hypothetical.

4 Livestock insurance schemes in Vietnam

4.1 Cattle livestock insurance scheme of Moc Chau Dairy Cattle Enterprise

The Moc Chau Dairy Cattle Enterprise is under direct control of the Ministry of Agriculture and Rural Development and the Cattle Husbandry Company of Vietnam and is therefore to be considered a state-owned enterprise. Its main activities are the supply of breeding cows and dairy cattle to contract farmers and the processing and trading of dairy products. The main product of the

enterprise is pasteurized milk. The processing plant is working at 80% of its capacity. In 2002, 429 farmers were members of the Dairy Cattle Enterprise. Moc Chau is considered a favorable location for dairy cattle keeping in Northern Vietnam due to its relatively cool and dry climate. Today, the seventh generation of imported Black-and-White cattle is kept in Moc Chau. However, the established keeping system would rather call for keeping cattle genotypes, which are better adapted to the hot and humid climate as well as to the limited nutritional base than Black-and-White cattle or even higher yielding and higher demanding Holstein Friesian cows. Thus, the enterprise has a considerable production risk based on the selection of the cattle breed kept.

The Dairy Cattle Enterprise implemented a first LIS in 1993 in cooperation with the state-owned insurance company BAOVIET. However, it was terminated in 1995 by the Cattle Enterprise, since the procedure to compensate losses was very 'complex', the indemnity was low, and the premium was high. However, statements from farmers draw a different picture. According to the statements by farmers, e.g. "I was compensated in three cases (two cows did not get pregnant and were sold for slaughter; one cow died)."; or "we paid the premium only for old and sick animals. Our experience with cattle production was also very limited … the animal losses were high." Therefore, it is reasonable to assume that moral hazard and adverse selection went out of control and thus, resulted in the break down of the scheme.

After the first LIS was terminated, it was perceived by the company, however, that an LIS is still necessary. As the director puts it "Farmers, who want to keep cattle must have capital. The time to get the required capital is long. Disasters may happen. There is a demand for the insurance scheme." The insurance operations are rather seen to promote the cattle production and as the means to facilitate access to loans and to protect the credit portfolio. The second, modified LIS has been implemented by the Enterprise from 2001 onwards. Farmers, who finance their cows by a loan from the Enterprise, are obliged to participate, while those few farmers, who keep self-financed cows, are free to participate. The insurance contract starts with the first year of keeping the cow and, afterwards, it is annually extended on a mutual agreement. About 97% of all cattle keeping farmers take part in the LIS.

The company employees its own veterinarian for assessing the insured animals. However, treatment is paid by the farmers and not subsidized. The death of cows is compensated regardless of the type of disease. Accidents are not compensated in those cases where farmers keep the cows in areas not approved by the Enterprise (e.g. certain upland areas). However, in 2002 only two claims were rejected. One is inclined to assume that also the normal replacement of an old cow is compensated (decreasing milk yield), which was not said explicitly, however. It would mean that farmers get a compensation for each cow. As the Dairy Enterprise is not running on its full capacity, the insurance scheme might be used as hidden subsidy to attract more farmers to rear cattle on a contract basis with the Enterprise.

The premium is collected once per year in cash and it is calculated based on the following figures: a) mortality of heifers: 2% p.a., b) sale of heifers for slaughter: 3% p.a., c) mortality of cows: 5% p.a., and d) sale of cows for slaughter: 7% p.a.. Additional explanations of the director on the calculation of the premiums were not clear. It seems that premiums are based on the age of an animal and the estimated mortality at that age, but the figures are contradicting (same premium for three to 12 years age interval). The director further explained that the LIS has just started. Therefore, there are not much data available as a calculation basis (which is not convincing, since the production figures of the enterprise – value of the cow, longevity, and mortality – should be available on a long term basis since the 1970s at least for the Black-and-White cattle). This might be a sign for the low technical knowledge on insurance operations of the company's executive staff, as long-term data are essential to accurately determine the premiums. Another reasonable explanation could be that the executive staff is fully aware of high mortality rates in the past and but deliberately does not use them, as the premiums would rise to such an extent that it would be an immense burden for the farmers. So far the Enterprise receives no technical support from a

professional insurer. However, the Enterprise has taken up contacts to the Son La Insurance Company. The Enterprise has no reinsurance. If the total indemnity to be paid at a certain occasion/loss is higher than the available capital from premium payments (e.g. in case of an epidemic), the deficit will have to be covered by capital from other operations of the enterprise (e.g. revenue from selling processed milk) or indirectly by governmental supplies. The enterprise is promoted heavily by the state, as it will play a special role by distribution programs of crossbreed dairy cattle for resettled farmers (in connection with the hydro power plant construction in Muong La).

The new insurance scheme was able to reduce the time for the approval of the claim, due to the integration of the LIS in the Enterprise/its extension system. Thus, the employee checking the final claim knows the case already before (e.g. if a cow has been sick over a certain period of time). Therefore, the true reason of death/replacement is easier detected (Figure 1). Nevertheless, this can also produce severe drawbacks on the impact of the extension. The relationship between extension worker and the farmer might be disturbed when the extension worker is refusing a claim. This has happed so far only in about 5% of all claims. However, this low figure might also be an indicator that extension workers might turn a blind eye on the claim to keep good relationships with the farmers.

Figure 1 Claiming procedure of the livestock insurance scheme of the Moc Chau Dairy Cattle Enterprise

A) Sale for slaughter:	*B) Case of death:*
1. The farmer calls the vet for checking the condition of the cow.	1. The farmer makes a claim (i.e. reports the death of the cow) to the enterprise.
2. The vet will check whether the cow can be treated or if treatment will be ineffective.	2. One of the agricultural engineers checks the claim (post-mortem examination).
3. The vet gives approval to sell the cow for slaughter.	3. The farmer sells the carcass to the butcher.
4. The farmer follows procedure B) – but no post-mortem examination!	4. After the approval and a period of 15 days, the compensation is paid (total time before indemnity is paid up to one month).

4.2 GRET and its livestock support system

GRET has been active in Vietnam since 1988. It supports livestock husbandry, especially pig keeping, by a combination of a financial support system, the establishment of 'medicine cabinets, the introduction of new breeds and by training measures. The pig livestock insurance is integrated in the whole approach and can, therefore, not be described separately.

The medicine cabinets: The strong negative effect of pig diseases and losses on pig production, especially in poor households, the poorly developed or not existing local veterinary services, and the lack of extension measures in pig/livestock production were the main reasons for the establishment of the medicine cabinets. Farmers contribute a certain amount of money to establish a medicine cabinet under the technical management of a vet or AHW. The veterinary staff plays a major role by assuring the communication between farmers and GRET, managing the medicine cabinet (sell medicine, vaccinate, treat animals), recording data, collect money, manage funds for small credits, and manage the insurance schemes at the household level. Nevertheless, the management of medicine cabinets is always under main control of the commune authorities.

The livestock insurance: The LIS was at first subsidized at a level of 50% by GRET (the other 50% were contributed by the farmers). Now, 100% of the capital is contributed by the farmers. The insurance fund is used to support piglet treatment and, especially, to compensate for piglet losses. It helps the households to reduce the production risk. The livestock insurance is introduced for pigs from weaning (two month age) to sale (six month fattening period = eight month age). As the insurance fund is part of the medicine cabinet, it is organized and controlled by the vet and the commune officials. The LIS means also safety for the AHW and vets, many of them

with poor practical experience, because it assures them against the risk of not properly treating animals, thereby causing their death. However, this can result in moral hazard for vets supporting quickly and badly performed animal treatments. This again, results in bigger losses for the insurance scheme endangering its long-term sustainability. It also reduces the incentive for the vets to receive further training to improve their skills and performance.

The insurance is compulsory for all households financing piglets through the piglet fund to protect the capital of this fund. Households borrowing from the piglet fund are (by project requirements) poor by national standard and it is assumed that they may not have the conditions for proper pig keeping. Poor households cannot invest properly into pig production due to scarce resources. However, that causes additional production risks, e.g. buying cheap piglets of poor genetic background, without vaccination or deworming. In addition, poor households do seldom invest in feed of higher energy/protein content. This means that the premiums should reflect the extraordinary high production risk of this group.

Figure 2 The operational modus of the piglet insurance

- Each farmer getting a credit from the piglet fund has to contribute 15,000 VND into the insurance fund. Twenty households with 20 piglets (the usual group size) thus amount to 300,000 VND.
- The vets use 7,000 to 8,000 VND from the piglet fund to finance vaccination of piglets against swine fever, pasteurellosis, leptospirosis, and salmonellosis (in affected areas).
- The insurance takes effect on day 21 after vaccination; death in the first 20 days is not fully compensated (only 50% of the value of the pig).
- Pigs will be insured for six month (one credit cycle).
- If one of the diseases occurs against which pigs have been vaccinated, all treatment costs are refunded. If another disease occurs, the insurance fund will refund 50% of treatment costs.
- If a pig dies due to one of the four diseases mentioned above, the farmer will get the tenfold premium (150,000 VND/pig). The death must be approved by the vet. If a pig dies due to another reason (except poor management), the farmer will get the fivefold premium (75,000 VND/pig). 150,000 VND are sufficient to buy another piglet.
- If a pig dies after the first month of the credit cycle, the credit repayment can be postponed.
- Money from the insurance fund not used up in one cycle will be used in the following cycle. In that cycle, the premium remains the same for farmers. Premiums can be reduced when over a longer time sufficient capital has been accumulated.
- In case the compensations to be paid to farmers are higher than the collected premiums, the solutions are a) to use capital from the previous cycle, b) use advance payments from the project, which will be repaid by premiums of the following cycle, and c) use funds from the medicine cabinets funds.
- Death of pig without clarification of reasons, theft, sale or burying without clarification of reasons and any loss not approved by vets or project staff is not compensated. Also not compensated are death due to poor management (e.g. poisoned by cassava or fertilizer, poor feeding, etc.) and death of pigs treated by a non-project vet. Pigs less than eight kilograms weight, non-vaccinated pigs, lactating sows, pigs with chronic disease or malformation are excluded from being insured.

Source: (Lamballe 2003)

Figure 2 describes the working modus of the fund and the claiming procedure. Weak points can be summarized as follows: 1) All calculations are based on an assumed mortality rate of 10%, which seems to be too low (Dufhues, Lemke, and Fischer 2004). Insurance premiums need to be set high enough to cover future claims. (Brown 2000) states, when reasonable historical information is not available or where historical averages are no longer likely to reflect future losses, pricing should incorporate a sufficient margin of error to reflect the uncertainty in future claims. This seems not to be the case for the insurance fund here. 2) Until now, no non-project farmers have joined the insurance fund, which might be an indication for the unattractiveness of the scheme for the farmers. 3) No money could be derived from the insurance fund to pay the work of the vets, which is a result from point one and which might induce a decreasing performance of the vets and thereby an increasing mortality of the pigs. 4) Until now, there is no veterinary staff expand-

ing the medicine cabinet, and no non-project vet has until now used the insurance system (beside the medicine cabinets, where the system had been introduced by the project). This might reflect the unattractiveness of the whole medicine cabinet (including the insurance scheme) for the vets.

(Brown 2000) argues that insurance premiums should be set high enough to allow for the establishment of reserves. Reserves are funds set aside each year, to protect the insurer against unexpectedly high claims. Obviously the premiums are too low. Not even the vets can be paid, let alone the establishing of reserves. Finally it seems that LIS is simply induced by the project. After retreat of the project it is likely to run out.

4.3 BAOVIET

The Vietnam Insurance Corporation (BAOVIET) was established under a decision of the Prime Minister in 1964 and started operating on January 15, 1965, with its head office in Hanoi. Since 1980 BAOVIET has set up a nationwide network to provide services throughout the country. In 1982, BAOVIET launched a pilot LIS in three former provinces. BAOVIET was able to use the existing structures of the former cooperative system as agencies for its contracts. Through the support of the local officials of these cooperatives, it was possible to convince farmers of the advantages of livestock insurance. Furthermore, the local officials of the cooperatives supported BAOVIET through collecting the insurance premiums from the farmers. This kept the transactions and marketing costs for BAOVIET low.

During the process of 'Doi Moi', which started in 1986, policy and structural changes led to the restructuring of the agricultural sector. Agricultural cooperatives were mostly split up into small-scale farms. Together with the breakdown of the cooperatives, the established structures between BAOVIET and the local authorities vanished. Thus, the full cost of selling insurance contracts and collecting premiums had to be covered by BAOVIET and the demand for the insurance decreased, as BAOVIET raised the premiums. Besides, the advice of cooperative leaders lo farmers lost weight, resulting in an even lower demand for the LIS. In 1998, the losses of BAOVIET's LIS increased drastically (indemnities that have to be paid to the farmers were a lot higher than the sum of premiums that were collected). The losses of BAOVIET were caused by two main reasons: (1) after the breakdown of its broad selling system, the pool of insured people became smaller and much riskier as farmers with high production skills and less risky production methods dropped the insurance. This is the classical case of adverse selection from the point of view of BAOVIET. (2) The premiums once calculated over a broad pool of clients were not or not sufficiently adapted to the new situation, thus resulting in huge losses. Besides, it was acknowledged that the agencies implemented after the breakdown had only little knowledge on insurance performance and thus, probably accepted more claims then necessary.

BAOVIET officially still offers livestock insurance, but it decreased its efforts to sell contracts. Today, no livestock insurance contracts are active. Nevertheless, a joint study of BAOVIET and FAO confirmed that insurance services and, in particular livestock insurance, are highly demanded by the rural population. Thus, BAOVIET is aiming at revival of its LIS but this time in cooperation with the Vietnam Bank for Agricultural and Rural Development.

4.4 Groupama

Groupama is one of Europe's leading multi-line insurers and has specialized in agricultural insurance worldwide. In September 2002, Groupama started to offer livestock insurance in Vietnam and is currently working in 13 provinces of the Mekong Delta. For the future, the insurance company plans to extend its business to the center and north of Vietnam. Since September 2002, Groupama could win 2,600 clients, about 2,000 farmers in the livestock insurance and another 600 people with other insurances. Beside chicken, ducks, pigs, milk and beef cows, fish and shrimp, it is also possible to insure houses, machinery, liability, boats, as well as people's accidents. In case of the LIS, the loss of the animal due to accident and/or disease is insured. The

treatment of the animal is not covered. The main reasons for the losses are diseases; fatal accidents seem to happen less frequently.

In August 2003, due to cheating of customers in the starting phase and the low quality of public veterinary services, Groupama has set up its own team of veterinarians, which check the animals of the respective farmer before a contract can be signed. The vet team was established to control moral hazard of its clients. In order to fulfill the contract, the farmer has to follow a specific vaccination schedule, otherwise the insurance will expire. In the case of shrimp farming, the technical equipment and the water quality are also checked before the farmer can sign the contract. The vet team will surely reduce the number of claims. However, it will also raise the operating cost of the company and probably reduce the demand for the insurance as cheating is made more difficult. Nevertheless, this type of client, prone to moral hazard behavior, is better left out.

Groupama did not rely on data about animal mortality in Vietnam given by official departments, which were considered unreliable. Instead, the premiums were calculated based on mortality data collected during a survey carried out by Groupama itself. Within this survey data on animal mortality were collected from vets in specific regions.[vii] The minimum premium per contract is 200,000 VND; the maximum premium is 500 million VND (if higher, Groupama has to check with its reinsurer).[viii] The premiums are calculated by a rate for the risks as well as the value of the animal. The premiums are collected in cash by the respective agent of each province. There are no subsidies from the government.

Concerning the indemnity payment, the farmer has six hours to call Groupama after an animal has died. After that time-span, the responsible Groupama agent has another six hours to check the dead animal at the respective farm. Payment will follow as quickly as possible (max. one month later). Only a few cases were rejected. These cases occurred due to cheating of customers as well as damages that were excluded from the contract. Nevertheless, this procedure restricts the insurance clients to farmers with a reasonable access to infrastructure.

From the beginning of their activities in Vietnam in September 2002 until the end of December 2002, Groupama had to compensate 17 damages. The figure increased dramatically from January until October 2003, during which 874 damages were claimed already. Thereby, one should keep in mind that the actual number of damages is even higher, as one contract often includes more than one animal finally leading to a very high amount of indemnities. The total amount of collected premiums was two billion VND in 2003. In contrast, the total amount of indemnity was four billion VND. The director of the claims department explained these high losses by the starting phase of the company. Losses will probably be drastically reduced when new contracts, which are approved by the vet team, will present the majority of contracts.

5 Conclusions and recommendations

The supply of LIS in the market is low and relates mainly to small-scale schemes or very limited regions. At the moment there is no insurer in Vietnam offering an area-wide, sustainable animal insurance scheme. Nevertheless, there is a demand for insuring credit financed livestock investments and there are many advantages of offering (compulsory) livestock insurance for rural lenders in Vietnam (protecting poor clients from risk, reducing lender's loan defaults, and earning additional income related to the loan portfolio). However, only sound and financially sustainable lenders should offer microinsurance services (Dufhues, Lemke, and Fischer 2004). It is highly recommended to involve by 'partnering' a professional insurer into this process. The most successful partner would probably be a private Vietnamese or foreign insurance company with existing experience in agricultural insurance as the state owned company BAOVIET was not able to offer viable LIS in the past. As soon as the government is involved the sustainability of the insurance is also endangered by the politically low set premiums to support poor farmers.

There are two problems plaguing all suppliers of LIS in Vietnam: First is the limited availability

and low reliability of data concerning livestock mortality. Thus, all investigated schemes calculated their premiums on very limited data. This leaves the insurer with a great risk of setting the premiums too low and thus endangering its financial sustainability. As long as no information on the real mortalities of farm animals is available, it is almost impossible to price an insurance product correctly. Conducting small own surveys (as it was done by Groupama) might ease the problem but is not a full substitute for time-series data. It is reasonable to assume that the demand for the schemes will decrease drastically if premiums reflecting the real mortality would be charged. Second is the low quality of the public veterinarians. Thus, all three schemes involved veterinarians educated by the insurer itself.

While moral hazard and adverse selection seems to be under control within the investigated schemes through the implementation of a strong monitoring system, it is not clear whether the cost for the monitoring can be covered without raising the existing premiums. Area based insurance for animal production has the potential to lower moral hazard on a low cost basis (Dufhues, Lemke, and Fischer 2004).[ix] Therefore, combining area based insurance and insurance of individual risks would be the optimal solution. Besides, a combination of traditional monitoring methods with group contracts (using peer pressure) and incentive techniques from MFIs seems to be most promising in reducing monitoring cost to a reasonable level: for instance, offering insurance to a group of people and after each year without a claim the premium is lowered.

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[ii] (Dufhues, Lemke, and Fischer 2004) found in a recent survey that 77% of the farm households stated a demand for a LIS even if is not bound to a credit contract.

[iii] Covariance risks affect many households at the same time. Thus, hampering the ability of risk-pooling mechanisms to protect against these risks (Brown and Churchill 1999).

[iv] Adverse selection arises when the potential policy holders are better informed about the distribution of their own losses than the possible insurer. Individuals who recognize that their expected indemnities exceed their premiums are more likely to purchase coverage than those who recognize the opposite (Miranda and Glauber 1997). This information asymmetry may lead an insurer to accept a person as client with a higher-than-average chance of loss at standard (average) rates, which, if not controlled by underwriting, results in higher-than-expected loss levels (Brown and Churchill 1999). Moral Hazard occurs when insurants change their behavior after they purchase insurance in that way that the change increases the likelihood that policy holders will collect insurance indemnities (Skees 1999).

[v] For instance, areas facing an outbreak or poor communes (Forman and Leslie 1997); (Thuy 1999).

[vi] The OIE has established a three tier disease classification system, including list A, list B and other diseases. Both list A and list B diseases are transmissible diseases of socioeconomic and public health importance and are significant in international trade. In contrast to list B diseases, list A diseases are capable of rapid spread irrespective of national boarders (Cameron, Baldock, and Chamnanpood 1999).

[vii] Vets are obliged to record all relevant data including data on animal mortality. Thus, every vet is collecting a small time series over the years. These time series plus the subjective view of the vets will most probably provide a much better view on animal mortalities in a specific region of Vietnam than the aggregated official data.

[viii] In Vietnam, it's compulsory to have 20% of the premiums reinsured with the Vietnamese Insurance Company (VINARE). A second re-insurer of Groupama Vietnam is the mother company Groupama in France.

[ix] Area-based insurances pay a predefined indemnity by occurrence of the event, e.g. a drought, independently whether the insurant has suffered loss and independent of the amount of loss. Because the indemnities would be based on area or aggregated data rather than on the individual producer's yield, a producer can not significantly increase his indemnity by altering his production practices. Thus, under an area-based insurance program, moral hazard essentially is eliminated, too (Skees 1999).