GOOD SEED FROM THE INFORMAL RICE SEED SECTOR
A study on the local rice seed sector in northern Vietnam

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Summary

This study on the local, informal seed sector in the Red River delta, the North East and the North West (Vinh Phuc, Phu Tho, Bac Kan, Lai Chau). The study aims at policy makers interested in dialogue, to develop a local, informal seed sector. The objective is to feed back experiences to policy makers, to create awareness on issues to address, to create an enabling environment for local seed production.

The informal seed sector provides opportunities to improve farmers’ access to good seed, adapted to local requirements, while making use of local resources (farmers’ expertise, local market mechanisms, labour).

However, studying the functioning of this sector in several provinces, it was found that this sector is structurally
hampered by the fact that on local level there exists no appropriate (i.e. feasible, functional) system for seed quality control. Also, and because of this, seed producing organisations depend too much on local authorities, that may be at times supportive, but usually limit their role to supervision and control, not only seed quality control, but also controlling the organisation itself and the marketing.

Technical support for local seed producers is only provided through foreign funded projects (appropriate extension material recently developed, based on formal standards).

Further, marketing of locally produced seed does not take place on a level playing ground, as local producers face competition with subsidised agencies in all kinds of ways.

For more favourable conditions to develop a local seed sector, the quality control system needs to be reviewed, technical services to farmers specialising in seed production and/or breeding need to be developed, extension services (technical support) should be separate from economic transactions (to avoid competition), and local authorities should play a more supportive role, allowing seed producing organisations to function as more independent economic actors.

Besides, the matter of Plant Breeders Rights needs to be looked into, to ensure access to varieties, and thus the survival of the local seed sector under international trade agreements (WTO-TRIP).

1. Introduction

This study focuses on the seed sector in northern provinces: the Red River delta, the North East and the North West (Vinh Phuc, Phu Tho, Bac Kan, Lang Son, Lai Chau). In these regions the figures over the past five years show that the planted area of winter paddy is remaining more or less the same, while the planted area of winter-spring paddy tends to slightly increase.

1.1 Why is good rice seed an issue?

For most farmers in Vietnam, rice production is the major source of income and developments in the rice sector much determine chances for households to fall into or climb out of poverty. Rice production is, and will remain important to ensure food security in Vietnam, and so will supply of good rice seed.

Several studies indicate that development of the rice sector should focus both on productivity and production of appropriate varieties of rice for which there is a niche in the market. Currently average yield in Vietnam is 4.3 t/ha, but especially in remote, mountainous areas there is scope for increasing average yield. To increase yields, improvements are needed in the seed sector, access to inputs, and agricultural extension.

It is argued that, apart from investments in irrigation, the public sector’s role in increasing the productivity in the rice sector should be confined to an enabling role, through legislation, and provision of enabling services, rather than provide subsidized inputs or research. This argument corresponds with formal policies to shift economic activities of research institutes to companies (for example seed production – probably Pre-Basic and Basic Seed is meant - is not to be a task of research institutes), to encourage SME (creating a level playing field allowing private sector development) and to abandon subsidies on seed.

As the private seed sector in Vietnam only starts to emerge, it is interesting to take a closer look at the rice seed sector to identify trends, opportunities, constraints, on local levels. This can contribute to dialogue on how that state can further improve its enabling role in this sector.

To avoid misunderstanding of the terminology, here the official OECD Seed Classification Systems, see table below. However, this system does not make clear how to classify seed produced in the informal sector, in a professional way (according to standards for quality), and based on input seed that can not be classified by this system, for example because it is a traditional variety (found among Farmer Saved Seed), or because part of the seed from the formal sector somehow escapes the certification system.

Table 1: The OECD Seed Classification System

<table>
<thead>
<tr>
<th>OECD Type</th>
<th>Terminology often</th>
<th>Remarks</th>
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</thead>
</table>

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1.2 Farmers’ access to rice seed: formal and informal sources of rice seed

Sources of seed for farmers can be classified by using three criteria:

1. the variety origin,
2. who selects the variety that is produced, and
3. how is the seed production organised.

Based on the classification in the following table, the professional seed sector (excluding Farm Saved Seed) can be divided into two parts: the formal sector (sources 4 and 5), and the informal sector (sources 2 and 3) in which – in principle – the farmer organisation selects itself the seed, and controls the quality management and marketing, while still being an organisation without legal status to operate (autonomous) in the private seed sector.

In this study we compare both the informal and the formal seed sectors, with a special focus on opportunities and threats for the development of the informal seed sector.

Table 2: Sources of rice seed

<table>
<thead>
<tr>
<th>Source of seed</th>
<th>Variety origin</th>
<th>Who selects the variety</th>
<th>Organisation (see chapter 4)</th>
<th>Using quality management standards</th>
<th>Formal quality control</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Farm Saved Seed (FSS, from inside the farmers’ farm or exchanged between farmers)</td>
<td>Both formal sector and traditional varieties</td>
<td>Farmer</td>
<td>informal, individual</td>
<td>no (selection of seed from main crop, no separate plots)</td>
<td>no</td>
</tr>
<tr>
<td>2. Seed from local seed breeders (farmers)</td>
<td>Traditional varieties (combined with varieties</td>
<td>Seed breeder farmer</td>
<td>informal, organised networks for knowledge exchange (and marketing?)</td>
<td>yes (more or less)</td>
<td>to some extent</td>
</tr>
</tbody>
</table>
Most seed that farmers use is Farm Saved Seed, obtained from their own farm or obtained from another farmers’ Farm Saved Seed. This Farm Saved Seed is a collection of traditional varieties and modern varieties that are re-used. Farmers exchange or sell through informal networks: between neighbors, cousins, etc. For exchange of seed these networks follow some unwritten rules of their own; in most areas people know and apply fixed exchange rates of between 1 and 1.5 bag of grain for one bag of rice seed. These farmer seed systems remain the predominant source of seed for the vast majority of resource-poor farmers, for example because they have difficulties to pay for seed in cash.

Obviously, in places where there is no development of an informal seed sector, the formal seed sector is important, entirely determining farmers’ access to new varieties, Certified Seed. Both the Provincial Seed centers (SOE’s) and Extension Stations have their own seed distribution network (including ‘their’ cooperatives). In places where is also an informal rice seed sector, it influences farmers’ access to seed, which will be explained in this report.

1.3 The objective of this study

This study is aimed at policy makers interested in dialogue to improve policies and regulations regarding the seed sector, especially the local seed sector. The main objective is to feed back experiences in the development of the local, informal seed sector to policy makers, to help them to further improve this sector by creating an enabling environment for local seed production, to improve availability of good seed.

2. The agricultural policy regarding seed

Vietnam’s agricultural policies focus on the formal seed sector. These policies are under pressure to reform, but so far reform has not focused on how to facilitate an emerging private seed sector, with small enterprise on local levels. It is commonly understood that, at least on local levels, there can be a vast difference between policies and practices, and that practices vary from place to place. Experience with district level authorities in a handful of district reveals that, at local level, it is still often believed that:

a. In order to increase quality of seed that farmers use, the state has to play a more active role in producing, promoting (propaganda), subsidising and distributing the officially recommended varieties. State extension services see it as their task to promote and sell seed from the formal (state) sector.

b. Seed quality can only, or best, be controlled through state regulations (e.g. requirements regarding certification); if left to the private sector, the quality of the seed will not be as good.

As this study will make clear, local authorities’ practice of is much based on these beliefs. Informal (private, local) seed supply activities are often overlooked, and – except where foreign funded projects collaborate with good willing staff from local extension stations on this subject – do not receive much support.

However, there are trends, and some policy dialogue on-going, calling for a review of these beliefs:

Ad a:

- "Reduction of a diverse gene source due to … replacing traditional varieties with new ones has resulted
problems caused by pests and increased disease prevention and control is necessary. The use of fertilizer, pesticides, herbicides and growth hormones has exceeded the limit for a balanced environment, leading to soil degradation, water pollution and harmful impacts on human health.\textsuperscript{7}

- Recently marketing of (Pre-)Basic Seed was done only by agricultural services, but now there are some SOE also involved in seed supply, and sometimes there is mention of a private sector (cooperatives or Small and Medium size Enterprise, SME) that play a role in local input supply.\textsuperscript{8}

- Trade liberalisation, globalisation, joining WTO agreements like TRIP (Trade Related Intellectual Property Rights) will lead to replacement of national regulations by international agreements, in which plant varieties have to be protected either by patent rights or by Plant Breeders Rights (PBR also called ‘sui generis’). The latter allow some access to varieties for public research and local seed producers/breeders, where patents can potentially raise costs of seed, enhancing monopoly of more profit-driven patent holders (often large multinationals). To design Plant Breeders Rights into national legislation of Vietnam, the policy makers require understanding on grass root realities and development goals in the seed sector. Is this understanding sufficient to withstand the actual pressure on Vietnam to adopt patent rights rather than adopting ‘sui generis’ systems? Is there scope to develop alternative models, using Plant Breeders Rights? There is a legislation problem with local seed production, not only because since the ’91 act farmers can be charged royalties on produced seed (it is expected that, in the next 20 years, such a system would never work in practice in Vietnam), but also because, if the UPOV model is adopted, will farmers’ rights as breeders be taken into account? Local seed producers/breeders may be required to pass an official D.U.S. test (‘Distinct, Uniform, & Stable’) and it still remains to be decided up to what scale local producers can be excepted from this requirement. Are policy makers aware of India’s experience, developing their own model (Plant Variety Protection and Farmers Rights act, 2001) that allows further development of its own informal, private seed sector, to protect national food security?\textsuperscript{9}

Ad b:

- Economic liberalisation will introduce the idea that market mechanisms can be more effective to ensure quality.\textsuperscript{10}

The discussions in the following chapters will contribute to the policy dialogue, on the importance of a local, informal seed sector, and on how to create better conditions for this sector to develop.

3. Farm Saved Seed quality

It is generally agreed that there is much scope for improving Farm Saved Seed. But what should be improved exactly? One thing that may be improved is the management of Farm Saved Seed, by selection, hygienic ways of threshing, drying and storage, germination tests, and removal of unhealthy seed throughout the whole cycle.\textsuperscript{11} In fact, all farmers do something on seed quality management, no matter whether they are formally trained for this or not. There is potential to improve their practices but this subject but will not be discussed here further. The second option is to obtain better quality seed from outside the farm.

Where will the farmer buy seed? That depends on some interrelated aspects:

- the varieties offered (available when the farmer needs it)
- the seed quality and health
- and the price.

Price

For better-off farmers, and in more accessible area like the Red River Delta, where farmers generally spend money on additional inputs like fertilizer and pesticides, the price of seed is not all that important, as the expenditure of seed counts for only a small proportion of all investments of the rice crop. In more remote areas, where less inputs are applied, and especially for poor farmers, the price of seed may be more important, potentially influencing the farmers’ choice to buy seed or to use their Farm Saved Seed, especially when comparing with the costs of hybrid seed, requiring more inputs, a better control of farming conditions, and no re-use of the seed.

Seed quality and health
Will the quality of seed on-farm be upgraded when purchasing more seed off-farm?

In places where the rates of re-use of seed are high (re-using up to 6 times), the quality and health of seed may degrade, but this also depends on on-farm seed management, storage.

And of course we assume that seed purchased from off-farm sources is of better quality, but is it really?

Studies so far indicate that there are no indications to believe that there is a significant difference between quality of seed (based on abnormal, non-germination and dead seed rates) originating from the formal sector and of seed from the informal sector (from local seed producing farmers). Though, in this context, it is interesting to note that there is a significant difference in price.

Altogether, the seed quality may not be a decisive factor, as yields of seed from either source are not or hardly influenced by seed quality.

The varieties offered

Will farmers’ choice to buy seed depend on the varieties that are offered?

Some sources indicate that a disappointing adoption of HYVs (and high rates of re-use) may be more related to inappropriateness of varieties (not the varieties that farmers would like to use) more than to the price. Our study gives similar indications.

In Lai Chau 30% of the farmers has no special, proper storage place for Farm Saved Seed, thus they store it just as grain. Most of the seed used by farmers in Lai Chau is Farm Saved Seed. If Certified Seed is purchased, it is re-used 4 to 6 times. Why so much re-use? Maybe because in Lai Chau varieties of farmers’ choice are not available or not in sufficient quantity at the time it is needed? In spite of the fact that in Lai Chau seed is sold for subsidised prices, some farmers develop initiatives to produce seed locally, as indicated in case 1.

In Cho Don district, Bac Kan province, once seed of the required variety was available, it was found that farmers change seed more often: after 2 seasons instead of 5 seasons as practiced in the past.

Farmers in Tam Duong obtain 20% of the seed from agencies (state and/or private, only 3% is hybrid seed), and 52% is Farm Saved Seed. The remaining 28% is obtained from local seed producers. This local seed (Certified Seed) is re-used about two times only, according to farmers because it is easy to replace this seed, as locally produced seed is very accessible, and cheap.

As for Binh Xuyen, where locally produced seed is also very accessible: nowadays 99% of the seed used by farmers originates from the locally produced composite seed.

4. How is the local seed sector organised

Formal seed production may take place in the same valley as where the informal sector produces seed, but production and marketing is controlled in a very different way. Formal seed production is organised by contracting individual farmers or small groups, that are not in control of the choice of variety and the marketing. On local levels this formal seed supply system usually involves provincial seed centers (SOE), while and agricultural departments, and extension services are sometimes involved in the promotion and distribution.

So far the informal seed sector has received little attention, its importance seems to be often overlooked, also by authorities that are themselves economically active in the seed sector. There is an exception of a few projects funded by foreign donors, where project teams, often in good collaboration with local authorities of some provinces, have helped local seed producers to build up experience on seed production. Farmers were trained and organised to select varieties, produce (or in the BUCAP project: breed), monitor the quality according to formal standards, and do the marketing. Some of these networks have a great potential to develop into cooperatives or small enterprises.

These efforts in the local informal seed sector are formally supported by authorities resorting under MARD (VASI, PPD, DAFE, some DARD, OARD, Extension Stations).
Who are the local seed producers?

Basically the production takes place on household level. These household producers are organised in farmer groups (with 5-20 members, most women, each producing seed on an average area of 1.5 to 4 Sao\textsuperscript{17}), and united in rice producers’ networks or federations, that cover groups from several communes. This organisation is important, to improve exchange of expertise and information (needs assessment, production plans), efficiency of buying seed, the organisation of quality management, quality control procedures, and last but not least the marketing\textsuperscript{18}. The networks (or federations) are mostly informal, but receive a kind of formal recognition from either an extension station, or the agricultural office, or mass organisations, which allows them to operate.

Table 3: Rice seed producing groups

<table>
<thead>
<tr>
<th>Districts</th>
<th>number of rice seed producing groups in 2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tam Duong</td>
<td>14</td>
</tr>
<tr>
<td>Binh Xuyen</td>
<td>15</td>
</tr>
<tr>
<td>Ha Hoa</td>
<td>9</td>
</tr>
<tr>
<td>Thanh Ba</td>
<td>6</td>
</tr>
<tr>
<td>Lang Son</td>
<td>3</td>
</tr>
<tr>
<td>Cho Don</td>
<td>1</td>
</tr>
</tbody>
</table>

Source: CTSH staff and local seed producing groups

The local policy environment

The success of these projects has been much depending on the goodwill of local authorities to support them. But, in many cases, local authorities feel that besides (or instead of) giving support, they have to supervise these organisations. What we mean here is not just monitoring the quality of seed, but also getting involved in organisational matters, and ‘allowing’ the marketing of the seed.

Some collaborating authorities express their intention to allow these networks to become cooperatives, but in practice none of these networks has yet received a legal status, even though they exist and function for some years, developing their own labels, local reputation, and scale of production. In practice many authorities remain in control of these organisations, some tend to decide who should and who should not be a member of the cooperative to be formed, and have themselves appointed as leader of the organisation (even though not themselves producing seed; this attitude may be explained referring to a government regulation that counts time spent in cooperatives for build up of pension).\textsuperscript{19}

Needless to say that this is not according to the spirit of the new cooperative law, that prescribes that cooperation should be based on principles of voluntarism, independence, democracy and mutual benefit.

This independence is necessary to function in an increasingly open economy, but in practice it is hard to follow: the networks depend for many things on the extension station or other state agencies. Not so much for supply of Basic Seed, but also for formal quality control of the Certified Seed they produce, and being allowed to market the seed as such (Certified Seed), and making use of formal seed distribution channels.

The leadership (farmers) of the network in Tam Duong indicates that their most crucial (and costly) problem is not the buying of the certification service for the Certified Seed (for a price of 180,000 VND/ha), but rather the stamp needed from the extension station, to approve each sales contract that the network of local seed producers makes. This practice does not give the informal organisations a favourable position, compared to the formal sector (for example the provincial seed centers, SOE, that receive subsidy for their business).
5. Informal local seed production

5.1 Obtaining the right varieties of input seed (or (Pre-)Basic Seed)

For an average farmer it is already quite a problem to obtain seed. Even if the formal seed distribution seems to be well organised, farmer may not find seed of the required variety, or quality, or the seed required will not arrive in time or in insufficient quantity. For example in Lai Chau it was found that the registered demand for seed (Certified Seed) was not met. To counter this problem farmers can take the initiative to produce seed themselves, locally (using Certified Seed or if available Basic Seed), but such initiatives are not always encouraged by local authorities. In Lai Chau farmers intended to solve the seed supply problem, proposing they become seed authorities. But they were not provided with the input seed they had asked for, this seed (Pre-Basic Seed) was instead sold on the food market (see case 1).

Local seed producers sometimes have to reach – through their informal network - seed stations or institutes in other provinces to buy the variety and quality of seed they require.

**Case 1: The Lai Chau farmers seed initiative**

Farmers in Thanh Hung commune, Dien Bien provincial city, say that the provincial seed company makes an inventory of the demand for Pre-basic seed. But it usually only supplies 70% of the demand. Meanwhile, the companies' seed is sold to the food market, for example, one variety of Pre-basic seed is bought by the company for VND5000/kg, and sold as grain for VND2000/kg to rice retailers, who sell it on the local market or elsewhere, for consumption. The farmers complain, as they do not understand why their demand for seed is not met. So they took initiative to offer the provincial seed company to buy Pre-basic seed, and multiply it (one group had 20 ha available for seed production), to sell back the produce ('elite' seed or at least: Certified seed) to the company. Regrettfully, this proposal was not honoured.

Source: Key local seed producers.

**Case 2: The Bac Kan PASC seed initiative**

In the past, the province Bac Kan has had to import seed at a relatively high price (transportation costs), and found that the quality of that seed was still insufficient. Meanwhile, it was found that farmers in Cho Don district like to produce and consume specific varieties (Bao Thai, Ai Lun), but the input seed (super-elite) was hardly available in the formal seed supply system (Provincial Agricultural Service Company).

Therefore they changed their policy, with help of GRET/CTSH, and encouraged farmers to organise themselves, to improve the local Bao Thai variety. In this way PASC became a provider of input seed (probably Basic seed), for a subsidised price, and farmers became seed producers, and successfully produced quality seed of their choice.

Unfortunately this initiative lasted only for one season. The problem was not that the farmers could not produce good seed, but rather the marketing. The sales contract with PASC offered a subsidised price for the input seed, but also a low price for the produced seed that was to be sold back to PASC. The company was late to buy the seed. By that time the contract price was even below the price of grain, and farmers decided to sell themselves, through their own networks, and refused to sell back to PASC. Apparently, because PASC was not in control of the marketing (and benefits) of this seed, it decided to discontinue supply of input seed to these farmers and that was the end of the initiative.

Source: Key local seed producers.

Informal channels, by their character, can be very diverse. For example, seed producing farmers in Thanh Ba and Ha Hoa districts (Phu Tho province) and Tam Duong and Binh Xuyen districts (Vinh Phuc province) all obtain their Pre-Basic Seed from the seed technician of Binh Xuyen district extension station, who buys the seed from the Seed Center of Quang Ninh province. In Cho Don seed producing farmers obtain (Pre-?) Basic seed from Bac Ninh Seed Center.

These kinds of informal channels are quite reliable, as long as there is local authorities’ goodwill (persons in extension stations willing to help obtain different varieties of super-elite) and the presence of a project. When authorities make an effort to supply (Pre-)Basic Seed to seed producing farmers, they often also try to gain some kind of control over the marketing of the produce. The Phu Tho provincial seed station initially told experienced local seed producers that they are not allowed to produce Certified Seed unless under contract with the provincial authorities' who dictate which variety to produce, and sell the entire production, according to the formal model as described in chapter 4). Luckily, in a later proposal this seed station positioned itself more into the role of a client, tolerating the local seed producers to also produce the varieties they choose, for other clients.

In more formal models of collaboration between seed producers and seed centers farmers are not in control of the benefits, while they do take risks (see case 2).

Appropriate seed varieties

Vietnam’s diversity of environments demands different varieties adapted to local specific requirements. Local
markets may demand a specific taste, or seasonal demands for sticky rice. Local environments can demand varieties adapted to particular conditions (limited water supply or rainfed agriculture, low temperature, specific pests). And finally, poor farmers, aiming at risk reduction, may look for varieties that minimise requirements for other external inputs (in case they can not afford to buy these).

It is especially the local seed producers that are able to take all local requirements into account when selecting varieties. The formal sector tends to distribute more standard varieties, following more general variety recommendations, that may not be adapted to local needs. If that is the case, farmers will rather refrain from buying that variety, and choose to re-use once again their Farm Saved Seed, of which the quality may not be entirely right, but the variety is what they need\(^1\).

### 5.2 Production quantities

Since 1996 the project of GRET/vasi, in good collaboration with the district extension station, started to support farmers in Binh Xuyen district that wanted to produce seed. The trained seed producing farmers, organised in groups, managed to increase considerably the production of good quality seed. Not only were their local sales very successful (they managed to establish a good reputation), but also, they received orders from the formal seed sector. In 2001 they produced almost 900 tons of (elite) Certified Seed, partly sold to the formal sector, partly locally.

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</tr>
</thead>
<tbody>
<tr>
<td>Tam Duong</td>
<td>3</td>
<td>34</td>
<td>92</td>
<td>99</td>
<td>430</td>
<td>276</td>
<td>421</td>
</tr>
<tr>
<td>Binh Xuyen</td>
<td>10</td>
<td>21</td>
<td>44</td>
<td>256</td>
<td>363</td>
<td>892</td>
<td>n.a.</td>
</tr>
<tr>
<td>Ha Hoa</td>
<td>9</td>
<td>7</td>
<td>17</td>
<td>32</td>
<td>30</td>
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<td></td>
</tr>
<tr>
<td>Thanh Ba</td>
<td>16</td>
<td>8</td>
<td>12</td>
<td>22</td>
<td>24</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td>Lang Son</td>
<td>2</td>
<td>10</td>
<td>9</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Cho Don</td>
<td></td>
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<td>8</td>
<td>10</td>
</tr>
</tbody>
</table>

Source: CTSH staff, local seed producing networks, extension staff.

### 5.3 Seed quality management and technical support

As for specialised, local seed producing farmers, obviously there is a need for technical support (seed evaluation, selection, upgrading, breeding, storage etc.), guided by standards that are defined on national level. Some projects work on this and have gained interesting experience, showing that farmers, when trained, are indeed able to produce good quality seed according to national standards.

In most cases there is little or contradicting information comparing seed quality from different (formal-informal) sources. Based on the little information that is available\(^1,13,21\), there is no reason to believe that locally produced ‘Certified’ Seed is of less quality than Certified Seed from the formal sector.

On local level, when trained by project staff, there may be common understanding on what are the seed quality standards and norms, even though there is always scope to improve the practices. Since 1996, the Red River program (CTSH, Vasi/GRET/VECO) has trained farmers in three provinces to produce Certified Seed, and develop materials to help farmers follow more or less formal quality control requirements (improved and approved by VASI)\(^23\) for seed production, including germination tests, colour observation, etc. The farmers are more or less able to follow these standards and norms.

But the problem is rather the absence of a common understanding on quality control systems, on how to
formally label the ‘controlled’ quality on the bags. To be allowed to sell this seed, a formal quality control system is to be applied. Whatever this system is according to law, in practice it varies from place; in each district this quality control is organised differently, and sometimes different ways of controlling the quality exist within one district.

In Tam Duong district the Extension Station has contracted the NCVESC to evaluate the quality of the seed produced by some seed producing farmer groups. In the same district, the Dao Tu Agricultural Input Cooperative contracted the Provincial Seed Center for evaluating seed quality produced by some local groups. In total, the quality of about half of the Certified Seed produced locally is officially checked.

In Binh Xuyen district the provincial seed station supervises local seed quality, but they delegate the task to district extension staff. Part of this locally produced Certified Seed is sold to farmers in other districts and provinces, and - according to contract - to several state agencies. The ties with state agencies seems to provide the seed producers with interesting contracts, but also more requirements; the farmers have been informed that, for future contracts to deliver Certified Seed, they are to improve the drying by means of a seed dryer (costing around 40-50 million VND). Is seems to be a hard condition, if not, no registration as cooperative, and no approval for Certified Seed labels.

In Ha Hoa district the extension station itself checks the quality of locally produced seed.

<table>
<thead>
<tr>
<th>Case 3: Thanh Ba rice seed bags</th>
</tr>
</thead>
<tbody>
<tr>
<td>As the district extension station did not approve of local seed production (according to them because the producing organisation can not be formally recognised and the seed produced is not certified), it was difficult for the seed producers to think of what to write on their bags, to obtain the confidence of the buyers. Finally they approached OARD to obtain a letter recognising their network, and designed bags referring to the CTSH project.</td>
</tr>
<tr>
<td>The labels mention all that is required by law.</td>
</tr>
</tbody>
</table>

In the same province, Thanh Ba district, in absence of support from the extension station, the network of local seed producers takes itself responsibility to check the quality of its seed, even though the OARD is mentioned on the bags. OARD recently gave some kind of formal support to local seed production, approving the existence of the network of seed producing farmer groups, and carrying out experiments to compare the performance (germination, yield, economics) of formally distributed Certified Seed with that of locally produced seed (CTSH assists).

In Lang Son farmers were explained that for seed testing have to take samples (make combi-samples) to send via DARD for testing (price about VND100,000/sample). Seed producing farmers considered this expensive and labourious, and instead opted to do germination tests themselves. Commune authorities authorised the Women’s Union to monitor the quality of locally produced seed (the Women’s Union helps to sell the seed, and draws a percentage of the profit for administrative costs).

Last year in Cho Don seed producing farmers had a contract for selling Basic Seed to the PASC (see Case 1), PASC was formally controlling the quality; Red River Program staff assisted with quality management.

In fact, considering the many systems of quality control, covering only part of the locally produced seed, and delegation of tasks in these systems, one can state that the only sure system of quality control for ‘Certified’ seed, what really exist, is the evaluation by the final users: the farmers themselves. It is through the reputation of local producers, and continuous field evaluation by the users, that quality is indeed controlled, to some extent. As explained in chapter 3, in Binh Xuyen district, 99% of the seed used by farmers originates from local seed producers, who clearly established a good reputation in their district. But, it should be noted, this good reputation is not only based on the farmers’ perception on the quality of the seed, but also on the fact that these local producers give reliable access to the varieties that farmers require.

Even if the state would like to remain entirely responsible for quality control of all seed, whether formal or informal (in as far as the existence of this informal sector is acknowledged), it will have insufficient capacity to control the quality of locally produced seed. This is why the ADB report proposes to make certification of seed voluntary for the informal seed sector.

Farmer buyers may assess themselves the quality of seed, but this is not easy when labels are in Chinese, and in absence of clear procedures to feed back seed quality complaints. In other countries quality control problem have been addressed, solved, by allowing voluntary certification, and counting on customers’ or suppliers’ quality control (indirect feed-back mechanisms - through reputation - and direct - through formal procedures to file complaints about seed quality). In Andhra Pradesh, India, where certification services are provided (for reasonable prices, and not compulsory), 45% of the locally produced seed is certified.
To conclude: formal seed quality control systems are little known, and not functional, but the fact that all seed production is supposed to be formally controlled gives reasons to local authorities to get involved in local seed producers’ business, often in a restrictive way. Adherence to the formal quality control systems is an obligation which is in practice not feasible, and leads to all kinds of ‘creativity’, calling for the goodwill of all kinds of authorities, whoever can give a ‘kind of’ formal approval for marketing of locally produced seed. Whenever this goodwill is there, it has its costs and usually leads to loss of economic autonomy of the seed producing organisation (the authorities controlling more than just the quality).

Additionally, there is insufficient recognition of opportunities offered by market mechanisms to farmer buyers/users to control seed quality themselves. Different sources of seed have different reputations among farmer buyers. If farmers do not like the varieties offered, they may prefer not to buy seed and continue using their Farm Saved Seed. Mechanisms for feed-back can be developed, making use of farmers’ assessment.

To avoid confusion: it is not the need for standards and norms for production of quality seed that is put into question here. Of course, these standards should be understood and applied by all seed producers. But for that, knowledge on these standards and norms has to be passed on to the seed producers. Until now, few efforts have been made to transfer this knowledge to state extension services. Extension material on this has recently developed.26

6. Marketing

At first, in more remote areas, with ethnic minorities, HYV were given to farmers for free. Later it was sold for a subsidized price. With this in mind, being used to not spend money on seed from the formal sector (keeping their own seed on-farm, or receiving seed for free), farmers are reluctant to pay for seed, even if heavily subsidized27. In remote areas the alternative of a local seed sector may help overcome farmers’ reluctance to buy seed.

The marketing system of the informal, local seed production sector an essential factor for the development of this sector. As in other aspects mentioned in previous chapters, also the marketing depends on goodwill of local authorities, related state agencies or research institutes.

Packing, labeling

Locally produced Certified Seed is packed in 10kg bags with labels following more or less the formal requirements (see 5.2 on seed quality control, and taking into account the confusion on seed terminology3), mentioning, among others, variety, season, variety origin, a quality statement, and a contact address.

There is a dilemma on mentioning the producing organisation; as these organisations are not yet formalised they tend to put the name of their ‘protector’ instead. For example in Binh Xuyen the Certified Seed is sold under the name of both the extension station and the seed producing network, and in Thanh Ba the agricultural office is mentioned on the bags.

Not only do the networks need these for having a formal address, but also the favorable and much needed collaboration of local authorities seems to make such practices unavoidable, for successful marketing.

On the bag, the seed quality is guaranteed by the producers themselves, and sometimes also the agency that controlled the quality is mentioned (extension station, or women’s union, or provincial seed center, etc.).

Further quality statements are mentioned on a paper inside the bag: the agent that has evaluated the quality, e.g. the name and address of the producer household (in Thanh Ba and several other places), NCVESC (in Tam Duong and Binh Xuyen), or the Provincial Seed Center (in Tam Duong). Also technical and storage guidelines are given in this paper inside the seed bag.

Contracts

Some informal, local seed producing networks have established a good reputation, and - with help of the extension station - they are able to receive important sales contracts, selling to state agencies, e.g. the Provincial Seed Center (TT GCT Tinh), VASI (Vien KH&KTN VN), the Food Crop and Food Stuff Company (Cong ty CLT & CTP), the Maize Institute (Vien Ngo – only for maize hybrid seed, not rice), the Genetics Institute (Vien Di truyen hoc). Those agencies have become clients of local seed producers’ networks in Binh
Xuyen and Tam Duong, allowing these networks to increase their production considerably, sometimes more than double).

But when local producers start to depend on larger contracts, there is a risk: what if the agreement is not followed through? One case of a difficulty with a contract is already mentioned in case 2. From this case we know that the local price of Certified Seed can be up to 1.5 the price of grain. Contracts that deviate much from this market force, are under pressure.

Distribution channels

Locally produced seed is exchanged and/or sold among farmers individually (mostly Farm Saved Seed), and through the seed producers networks (Certified Seed). For sale beyond commune and district borders, the channels of distribution can be informal networks, small business people in the commune (grocery shops), extension station staff, Women’s Union, farmer organisations, etc. Only in Vinh Phuc province there is more large scale sale of locally produced Certified Seed through more formal channels, see table below (and the previous paragraph, on contracts). The table below shows that all sale of locally produced Certified Seed, also in areas depending only on informal seed supply, is increasingly successful.

Table 5: Sale of locally produced Certified Seed

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</tr>
</thead>
<tbody>
<tr>
<td>Tam Duong²⁸</td>
<td>92</td>
<td>71</td>
<td>80</td>
<td>70</td>
<td>56</td>
<td>81</td>
<td>n.a.</td>
</tr>
<tr>
<td>Binh Xuyen²⁹</td>
<td>90</td>
<td>90</td>
<td>84</td>
<td>78</td>
<td>74</td>
<td>79</td>
<td>99</td>
</tr>
<tr>
<td>Ha Hoa</td>
<td></td>
<td>71</td>
<td>37</td>
<td>51</td>
<td>30</td>
<td>58</td>
<td>n.a.*</td>
</tr>
<tr>
<td>Thanh Ba</td>
<td>14</td>
<td>41</td>
<td>30</td>
<td>18</td>
<td>42</td>
<td>n.a.*</td>
<td></td>
</tr>
<tr>
<td>Cho Don</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>50</td>
<td>80</td>
</tr>
</tbody>
</table>

Source: CTSH staff and local seed producing groups

*: figures were provided but soon outdated due to sharp rise in demand caused by extreme cold; in Thanh Ba, where previously only 33% of the seed was sold, this resulted in selling almost all seed. We assume the same for Ha Hoa.

The formal seed distribution keeps a tight supply. In particular circumstances, like the extreme cold period in early 2003 (increasing mortality in seedbed stage), there may suddenly be a greater demand for seed. In places where, besides the formal seed supply, there is also informal production of seed, this reserve of locally produced seed can prove to be very useful, acting as a buffer in the supply.

Important reasons for farmers to buy local seed can be found in its accessibility:

- Accessibility of the required variety is important, as already explained in chapter 3.
- The distribution is always in time, reducing the risk of delay that is most often faced in remote places.
- Lower prices (± 20-30% lower than seed from the formal seed sector) make it affordable, see table 6.

Table 6: Prices of seed

<table>
<thead>
<tr>
<th>Seed supply system</th>
<th>Average price (VND/kg):</th>
<th>Pre-Basic Seed</th>
<th>Basic Seed</th>
<th>Certified Seed (‘elite’)</th>
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</table>

To conclude, the economic environment for local seed production is favourable; there is a great potential market for locally produced seed. But as explained in chapter 4, restrictions posed by authorities do not always favour the evolution of local seed producing organisations into autonomous cooperatives, focusing on their core task of producing and selling Certified Seed. They remain vulnerable for unfair competition with state organisations that also operate on the same seed markets, and whose economic transactions are subsidised in all kinds of ways, and reinforced by formal propaganda to promote only the seed that is sold in the formal sector.

7. Conclusions

The term "informal seed sector" refers to a seed sector in which professional farmers specialise to produce Certified Seed, and are well-organised in informal networks, ensuring that seed is produced according to formal standards and norms.

The informal seed sector, and its opportunities to improve seed supply according to farmers’ needs, is often overlooked. However, there is increasing awareness on the need to adjust varieties according to local requirements, and the need to allow the private sector (also SME) to take over state activities in the local seed sector.

There may not be sufficient awareness on the need to design Plant Breeders Rights into Vietnam’s legislation, to allow further development of a local seed sector, and ensure national food security (the alternative, patent rights, will not recognise farmers as seed producers/breeders, and make access to varieties more difficult for farmers as well as public research institutes).

Economic liberalisation will also require to review the existing quality control system, making also use of farmer seed users’ own assessment of seed quality, and designing less restrictive, more appropriate seed quality control systems for the informal seed sector.

The quality of Farm Saved Seed can improve through reduced rates of re-use of this seed, which can be achieved by improving farmers' access to the varieties of their choice, for reasonable prices.

Generally, the local policy environment is not favourable to local seed producers’ organisations. Exceptions are made once foreign funded projects initiate the development of the local seed sector, but even then it appears that local seed producing organisations highly depend on local authorities, that tend to supervise and control local organisations rather than support them. This attitude - against the principles on which the new cooperative is based - will not help develop local seed producers’ marketing position in an increasingly commercialised and privatised seed sector. Instead, it will create opportunity for local government staff to benefit from local seed producers’ efforts in all kinds of irregular ways; this frustrates local initiatives to produce seed locally (to complement the efforts of the formal seed sector, that can not always provide the required varieties for reasonable prices).

Local seed producers choose themselves the varieties to produce, taking into account farmers’ needs based on requirements of markets, farming methods and environmental factors (water management, pests, etc.).

They obtain their input seed (Pre-Basic or Basic Seed) in all kinds of informal ways, more often than not from another province. Obtaining input seed it is not a main problem.

Local seed producing networks can produce around 30 tons/year when relying only on their own distribution system, but those networks that have larger contracts with formal sector distributors can reach production levels of between 400-900 tons/year.

Technical support for local seed producers is only provided through foreign funded projects; appropriate extension material on seed quality management for local producers has been developed, based on formal seed quality standards and norms.
**Formal seed quality control systems are hardly known.** In practice quality control systems vary a lot, according to whatever government agency takes, or is given, the task to control the quality. The fact that the state sees itself as the only appropriate organisation to control seed quality, even in the local, informal seed sector, creates problems rather than contributing to seed quality. **Local authorities role in seed quality control is not transparent, and often tends to lead to other forms of control over local seed producers' organisations** (control over the organisation itself, and the marketing). Buyers’ control (through reputation of local seed producers and distributors) is not recognised, although the reputation of any source of seed (access/variety/quality/price) has a great influence on farmers’ choice to buy this seed, or other seed, or to rely once more on Farm Saved Seed.

**Marketing of locally produced seed does not take place on a level playing ground.** Local producers face competition with state organisations (provincial seed centers, extension stations) that also operate on the same seed markets, being subsidised in all kinds of ways, controlling both distribution channels and formal propaganda to promote the seed sold in the formal sector.

Development of a local seed sector (in addition to, or complementary to the formal sector) can do much to ensure farmers a reliable access to varieties of their choice, adapted to local requirements, for a good price. Compared to the formal seed sector, a local seed sector can make better use of local resources:

- **farmers’ expertise** as buyers, users, or ‘consumers’ of seed their knowledge (and networks of expertise)
- local market mechanisms that allow for more **direct links between producers and buyers of seed** (enhancing customers’ quality control, reducing transaction costs, increasing accessibility)
- local labour **available for added-value activities**, or diversification, through a local seed sector.

With a developed local seed sector farmers will buy more seed, and re-use their Farm Saved Seed less often, thus increasing on-farm seed quality, productivity, and reducing risk. This also counts for poor, more vulnerable groups of farmers, especially in mountainous areas, where the formal sector (only state agencies) can not entirely respond to farmers’ requirements (in terms of variety and accessibility), and where larger companies do not want to go.

For more favourable conditions to develop a local seed sector, some matters need to be addressed:

1. A review of the actual quality control system and its underlying assumptions, to design a system that is appropriate for a local, informal seed sector, making use of experience elsewhere (e.g. India).
2. How to support development of technical services to farmers that want to specialise in seed production and/or breeding.
3. Increase local authorities’ awareness on the need for farmer organisations to play a more independent, autonomous role, to function in an emerging private sector.
4. Increase policy makers’ understanding on opportunities offered by a local seed sector (making use of local resources - there is formal recognition of the importance of diverse gene sources and traditional varieties to reduce pests), its relation to national food security, and the need to design Plant Breeders Rights into Vietnam’s legislation, to ensure farmers’ as well as public research institutes’ long-term interest: access to varieties and enabling local small-scale producers by exempting them from restrictive regulations (on certification, d.u.s. testing, royalties).
5. Last but certainly not least: how to separate extension services (technical support) from extensions (staff) involvement in economic transactions (input supply, credits), especially seed supply, to avoid unfair competition. What incentives does the extension system have to withdraw itself from input supply activities to allow a private sector to take over?

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**Annex 1: Abbreviations**

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>ADB</td>
<td>Asia Development Bank</td>
</tr>
<tr>
<td>APEFE</td>
<td>Association for Promoting Education and Training in Foreign Countries</td>
</tr>
<tr>
<td>ASDP</td>
<td>Agricultural Sector Development Program</td>
</tr>
<tr>
<td>ASPS</td>
<td>Agricultural Sector Program Support (seed component)</td>
</tr>
<tr>
<td>BUCAP</td>
<td>Biodiversity Use and Conservation - Asia Program</td>
</tr>
</tbody>
</table>
Notes

2. Memo of Understanding signed by MARD and ADB (ASDP: Agriculture Sector Development Program, signed on 1 July ’02 by R.Z. Renfro - ADB, and Dao Trong Tu - MARD).
3. Sometimes seed centers, institutes are not able/willing to deliver elite seed to projects supplying to local producers (assuming here the donor will pay). The seed-producing farmers, aware that they used super-elite seed, easily conclude that the output is elite (even though not formally acknowledged). Even so, the price is typically a price for first class seed (1.2 or 1.5 times the price of grain).
4. DGISP, CAB International concept paper: “The Good Seed Initiative, Improved seed health and quality in staple crops for the resource-poor”. Note: the percentage of seed that farmers obtain from the informal sector is an estimation, and may vary a lot from one region to another, for developing countries it is about 90-95%.
5. Seed ordinance 9th revision.
6. High yielding varieties, including in the subsidised budget under Decree 20 and various national and provincial seed programs. Promoting the use of HYVs is one of the main tasks of agricultural extension services: “Rice for the Poor and Trade Liberalization in Vietnam”, Final Draft Report for discussion and feedback, Oxfam GB & Oxfam HK, Hanoi, September 2001.
8. In the report: “Vietnam Agricultural Sector Program (ADB TA No. 3223-VIE) Final Report, by ANZDEC Ltd., New Zealand, in association with IFPRI and Lincoln Int.” there is mention of handing over local input supply to local companies (SME), but the approved MoU (see footnote 6) does not mention a halt on input supply by local (extension) services.
9. Media briefing 17-10-02: Why we oppose UPOV and why it is urgent that developing countries enact their own plant variety protection laws, by Consumers Internat., Action Aid, Gene Campaign. See also: www.grain.org PVP in the South: caving in on UPOV, June ’02.

Abbreviations

CAB-Int. International inter-governmental Technical; Vietnam is a member of this agency
CTSH Red River Program by VASI/GRET/VECO (‘Chuong Trinh Song Hong’)
DAFE Department of Agriculture and Forestry Extension
DARD Department of Agriculture and Rural Development
DGISP Danish Government Institute of Seed Pathology for developing countries
FAO Food and Agriculture Organization of the UN
GRET Group for Research and Technology Exchange
HYV High Yielding Variety
IFPRI International Food Policy Research Institute
IPM Integrated Pest Management
MARD-PPD Ministry of Agricultural and Rural Development – Plant Protection Department
MoU Memorandum of Understanding
NCVESC National Center of Variety Evaluation and Seed Certification
OARD Office of Agriculture and Rural Development
PAOPA Support to the Organization of the Agricultural Production
PASC Provincial Agricultural Service Company
SME Small and Medium sized Enterprise
SOE State-Owned Enterprise
TA Technical Assistance
VASI Vietnam Agricultural Science Institute
WTO World Trade Organization
UPOV Union for the Protection of New Varieties of plants.
10. For example the ADB report (Vietnam Agricultural Sector Program, ADB TA No. 3223-VIE) recommends - up to a certain scale - seed certification is to be voluntary; institutes, agencies concerned with seed quality could advise (not supervise) seed producing farmers on quality maintenance quality. However, this recommendation is not taken into account in the MoU signed by MARD and ADB (ASDP: Agriculture Sector Development Program, signed on 1 July ’02 by R.Z. Renfro - ADB, and Dao Trong Tu - MARD), in spite of the fact that Vietnam’s capacity to certify seed can never meet requirements if small scale production and sale of seed is included.

11. e.g. “Transfer of Rice Seed Health Technology in the IPM Programme. A Case Study from Bangladesh” by DGISP

12. DGISP is actually developing a well-illustrated farmers’ manual on this.

13. CTSH found that in the most intensive delta rice farming systems in Binh Xuyen, hybrids – in combination with other inputs yield 10-15% more. However, in Tam Duong, Than Ba and Ha Hoa districts the performance of locally produced seed is about equal to that of hybrids. But in how far is this performance determined by the seed quality? NCVE&SC/DGISP tested hybrid seed quality in Ninh Thuan, and found it’s quality disappointing. But other sources found quality of composite seed (formal and informal sector) reasonable; besides, the results gave indications that the FSS dead seed rate was not different from formal sector seed (which is much higher priced).

14. According to Mr. Dao Ngoc Huong, Director of Agricultural Extension Center, Lai Chau

15. Source: Ms. Nguyen Thi Quyet, who is Director of Binh Xuyen Extension Station, Manager of CTSH Binh Xuyen, and Manager of the local seed producers network.

16. The Red River Program ('Chuong Trinh Song Hong' or CTSH by VASI/GRET/VECO), IPM program (MARD-PPD/FAO, DANIDA); BUCAP (Biodiversity Use and Conservation, Asia Program); ASPS Seed Component (Agricultural Sector Program Support, MARD/DANIDA); AFEPE, SNV Lai Chau, etc.

17. One Sao = 360 m$^2$ in the North.


20. Lai Chau DARD states that the Lai Chau Seed Company could only meet about 20% of total seed demand and the remain will be filled by farmers themselves ("Report on summer crop 2002 and directions for winter-spring crop 2002-2003", Lai Chau DARD).


22. Reports of Local Rice Seed Production from projected areas led by CTSH and PAOPA workshop proceedings, Hanoi, Sept. 2002.

23. ‘Local rice seed production’, VN-version (S¶n xuÊt giè ng lóa t¹i ®Þa ph¬ng), by Le Duc Thinh et al., VASI/ APEFE/GRET, Dec. 2002.

24. NCVE&SC actually receives assistance to re-organise the system of seed quality control such that also companies are accredited to guarantee seed quality.


28. Besides, last season the local producers’ association in Tam Duong sold 66 tons of elite seed to the NCVESC and 60 tons to the Vinh Phuc Seed Center.

29. Until now, 99% seed used by Binh Xuyen farmers are locally produced and composite.

30. Amazingly, in many cases, the formal seed supply system does not provide seed of a lower class than elite seed. Elite seed (and sometimes even super-elite, see footnote 3) is supposed to be ‘too pure’ to be used directly in less ‘clean’ conditions, by average farmers, for production of grain. It is a waste of good seed, therefore elite seed is normally meant to be multiplied first, by more skilled, trained farmers, after which the produce, ‘first class’ seed, can be sold to all farmers. This is why seed producing farmers, receiving super-elite because of shortage of elite, tend to call their produce ‘elite’ seed.