



Financing household tree plantations in Vietnam

Current programmes and future options

Thomas Sikor

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Abbreviations

BSP	Bank for Social Policies
FSDP	Forest Sector Development Project
ha	hectare(s)
KfW	Kreditanstalt für Wiederaufbau
PFRSFM	Project on Forest Rehabilitation and Sustainable Forest Management
VND	Vietnamese dong

1 US\$ ~ 18 750 Vietnamese dong (December 2009)

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Executive summary

Access to external finance critically influences farm households' ability to establish and manage commercial tree plantations. This general observation is applicable around the world, but it holds particularly true for households in Vietnam. Research shows that the intensity of plantation management and rotation length depend on household access to external finance. In turn, household plantations are of great importance in Vietnam because they are currently one of the primary sources of industrial wood and may supply raw materials for the burgeoning furniture industry in the future.

The Vietnamese government has recognised the importance of household tree plantations and, in particular, the benefits of giving households access to external finance. In 2006, it initiated a major reorientation of the 661 Programme away from forest protection towards new plantations operated by households. In 2007, the government issued Decision 147 on the promotion of forests for productive purposes. More generally, the government has transferred about a quarter of Vietnam's forestland to households during the past 15 years. The state-owned banking system offers farm households exceptional access to credit.

This report analyses the mechanisms used in 5 key programmes that currently provide finance to households: 1) grants in kind supplied by the 661 Programme; 2) reforestation loans offered under the Forest Sector Development Project funded by the World Bank; 3) grants in kind and savings accounts used by the Project on Forest Rehabilitation and Sustainable Forest Management funded by Kreditanstalt für Wiederaufbau; 4) general loans available from the Bank for Social Policies; and 5) loans offered by the Vietnam Bank for Agriculture and Rural Development.

The report compares the 5 finance mechanisms against 7 criteria: availability (overall volume and geographical distribution); financial and operational sustainability; leakage to other productive activities; household access; cost to households; risk to

households; and match with households' finance requirements. In addition, it considers the different finance requirements of 3 types of households, differentiating households by their investment rationales (investment, surplus and survival).

The comparative assessment identifies 3 critical trade-offs faced in the design of finance mechanisms. The first trade-off is between financial sustainability and the goal to provide accessible, affordable and low-risk support to households. The second is between the goals to make finance available to many households in many places and to match external finance with farm households' finance requirements in terms of overall amount and timing. The third is between leakage and financial sustainability. No kind of finance mechanism can achieve all objectives equally. Furthermore, finance mechanisms will never meet the finance requirements of all farm households equally, but rather will serve the needs of one type best. Policymakers, therefore, face critical choices when they design finance programmes in support of household tree plantations.

The findings of the report highlight the benefits of using a loan-based approach to providing external finance to households for commercial tree plantations. Loans should have a term of 7 years to match the finance requirements of medium-rotation plantations and be charged the applicable commercial interest rate for the sake of financial sustainability. The Bank for Social Policies may be in the best position to manage the loans because of its extensive network of branches and transaction points, and because of the savings and loans groups that it operates. The groups help to reduce transaction costs and can perform an important function in monitoring the appropriate use of loans to avoid leakage to other productive activities.

The loan-based approach should include 3 distinct components tailored to the financial needs of different types of households managing commercial tree plantations. One component would offer loans of large amounts (roughly VND 15 million/ha) to

investment-oriented households in selected areas; such loans would be repaid in one payment at the end of the loan term, and households would carry all the investment risk. The second component would offer medium-sized loans (VND 7 million/ha) to surplus-oriented households in selected areas, encouraging repayment of the principal in annual instalments and putting the investment risk on households. The third component would assist survival-oriented households to establish commercial tree plantations by giving them access to small loans (VND 3 million/ha), encouraging repayment in

annual instalments and building in an insurance element that distributes the investment risk between household and programme.

The provision of finance for long-rotation plantations would target investment-oriented households. It would seek to support them in a gradual shift from medium to long rotations by inducing them to diversify management and to retain a share of their plantations for 12–15 years. The inducement would come through an extension of the loan duration.

1. Introduction

Access to external finance critically influences households' ability to establish and manage commercial tree plantations. This general observation is based on commercial tree plantations operated by smallholders around the world, but it holds particularly true for farm households in Vietnam. In general, many smallholders require external finance when they plant trees, purchase inputs or hire labour for the management of tree plantations. Smallholders also depend on access to external finance if they seek to expand their existing tree plantations by purchasing additional land. The required external finance may originate from various sources, including loans from commercial banks or other lenders, grants or input subsidies made available by state agencies, and support in kind or cash obtained under partnership agreements with wood-processing companies. Access to external finance thus complements the finance raised by the households internally, such as through cash savings or sale of productive assets.

Access to external finance tends to influence smallholders' commercial tree plantations in several ways. First, it conditions the ability of smallholders to plant trees at all. The availability of finance is one of several factors that determine the smallholder's decision whether to plant trees or not (the others include available labour, knowledge and market outlets). Second, access to external finance has a bearing on the level of initial investment in tree plantations. Smallholders enjoying access to external finance are likely to establish larger plantations and to apply more intensive management practices than those without. Third, access to external finance conditions the time at which smallholders harvest their trees. Smallholders with constrained access to external finance may be forced to harvest their plantations earlier than smallholders with good access.

These general insights apply to commercial tree plantations operated by farm households in Vietnam (Sandewall *et al.* 2010). Research conducted under this project shows that access to external finance is a

critical determinant of how farm households manage their tree plantations (Sikor and Hoang Lien Son 2009). The access may not influence households' ability to establish tree plantations and the size of their tree plantations, as those are largely determined by households' existing landholdings. Nevertheless, it has direct effects on the intensity of tree plantations, particularly the amounts and quality of tree seedlings and inputs purchased initially. It also shapes households' decisions about the time of harvest. Most farm households in Vietnam harvest plantations after 4 or 5 years, selling the wood to pulp or chip mills (cf. Nguyen Nghia Bien *et al.* 2006, Sandewall *et al.* 2010).

At the same time, Vietnam has 2 particular characteristics that support the use of external finance to promote household tree plantations. First, farm households already own and manage a large share of the tree plantations in Vietnam. Rural households hold 50-year use rights to slightly more than 1 million ha, or 40% of the country's tree plantations. They grow trees on double the area managed by the once dominant state-owned Forestry Companies (Forest Protection Department 2009). Second, Vietnamese farm households enjoy exceptional access to credit compared with their counterparts in other countries (Marsh *et al.* 2004). According to statistics published by the Institute for Banking Strategy in 2008, 70% of all rural households receive credit, accounting for roughly a quarter of Vietnam's total economic lending.

The situation in Vietnam suggests 2 additional opportunities for using external finance to promote commercial tree plantations operated by farm households. On the demand side, Vietnam's flourishing furniture industry urgently needs new sources of raw materials because of changed regulations in North American and European Union markets. The industry offers new market outlets for timber produced on domestic tree plantations if farm households find ways to extend rotation cycles to 12–15 years. Second, the Government of Vietnam passed a Production Forest Development Policy

through Decision 147 issued by the Prime Minister in September 2007. The policy accords households a central role in the plan to establish an average of 250 000 ha of new plantations every year until 2015. Moreover, it includes the commitment to make large central government funds available to support plantations.

This report analyses household access to external finance for the purpose of commercial tree plantations in Vietnam. The focus is on plantations established by households for commercial purposes, that is, to produce wood and timber and to generate income. Plantations established for other purposes (*e.g.* watershed protection, ecological restoration, poverty alleviation) or multiple purposes are outside the scope of this report. Thus, its findings and recommendations apply to areas with good market access (*i.e.* the accessible midland regions around the Red River Delta and in the southeast and along Vietnam's central coast). The report reviews the finance requirements of commercial tree plantations and households' financing practices. It provides brief syntheses and a comparative analysis of existing finance programmes. It also develops a proposal for a mix of finance programmes to support household

plantations, in particular a shift from short and medium rotations towards long rotations.

The report is organised as follows:

- **Section 2** reviews the research methods and introduces the study sites.
- **Section 3** identifies the finance requirements of tree plantations and household financing practices.
- **Section 4** introduces 5 main finance programmes: 1) 661 Programme; 2) the World Bank-funded Forest Sector Development Project (FSDP); 3) the Project on Forest Rehabilitation and Sustainable Forest Management (PFRSFM) financed by Kreditanstalt für Wiederaufbau (KfW); 4) Bank for Social Policies (BSP); and 5) Agribank.¹
- **Section 5** analyses the finance mechanisms used in the 5 programmes against 7 criteria: availability; household access; cost to households; risk to households; leakage sustainability; and match with household financing practices.
- **Section 6** concludes with a summary assessment and policy implications.

¹ The analysis in this report does not cover the disbursement of finance in projects funded under Decision 147, for 2 reasons. First, the research sites did not include any such projects. Second, arguably, the finance mechanism specified in Decision 147 for areas that are not remote or inhabited by ethnic minority groups (such as the research sites) resembles that used in 661 projects centred on the delivery of seedlings at no cost to households (see Article 5.3).

2. Data sources and study sites

This section briefly reviews the data used in this report and introduces the 4 study sites.

2.1 Data sources

The report draws on the results of a simple random survey of households conducted in 4 villages in 2008 (no purposive stratification involved). The questionnaire covered households' general livelihood situation, including assets, outstanding loans, activities (on-farm, off-farm and non-farm) and livelihood outcomes. It also sought information about households' tree plantations, including plot histories, management practices and financing. In the 3 larger villages, the survey covered random samples of 20% of all households. In the smallest village (Village 5), the sample included 25% of all households. The total number of interviews was 179.

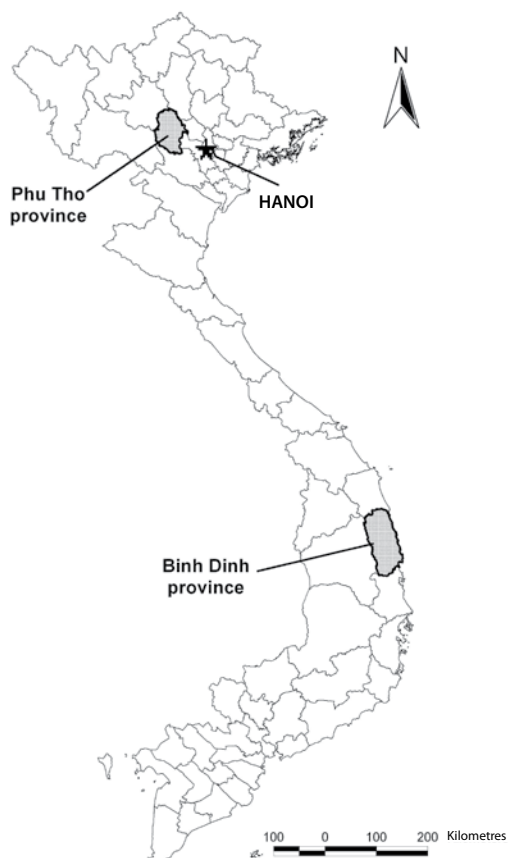


Figure 1. Location of Binh Dinh and Phu Tho

Source: Map prepared by Dao Minh Truong

The report also draws on semi-structured key informant interviews and the review of documents. Interviews in the villages revealed how households access external finance in practice. Interviews with government officials, project staff and bank officers at provincial, district and commune levels generated information about the regulations applied in the various finance programmes. The review of legal texts and programme documents available in print and on the Internet produced information about finance policy and regulations. The document review and key informant interviews covered the PFRSFM in Binh Dinh, even though the programme was not active in any of the study villages.

Two of the study sites are located in Phu Tho, a province in the north of Vietnam, and the other 2 are located in Binh Dinh province in the south (see Figure 1). Phu Tho was selected because the Vietnamese government has promoted household tree-planting in the province since the late 1980s (Sandewall *et al.* 2010). The province is home to Bai Bang Pulp and Paper Mill, which was built by the Vietnamese government with Swedish support in the late 1970s. Household tree-planting is more recent in Binh Dinh, where tree plantations continue to expand rapidly in response to international demand. Facilitated by their proximity to the coast, households have planted trees on large areas to supply a number of chip mills located near 2 local ports.

A range of institutional arrangements for tree-planting are in place in the 4 study sites (Sikor and Hoang Lien Son 2009). The institutional arrangements directly affect the external finance available to households for planting trees. For villagers in Phu Tho province, including the people of Village 5 in Ca Dinh commune (Doan Hung district) and of Xom Lam in Tram Than commune (Phu Ninh district), access to external finance targeted at tree plantations is largely limited to the state 661 Programme. By contrast, the villagers of Tan Quang in Can Hien commune (Van Canh district, Binh Dinh province) use loans extended through the savings and loans groups operated

Table 1. Livelihoods and tree plantations in the 4 villages

	Village 5	Xom Lam	Tan Quang	Thuan Phong
No. of households	96	124	249	384
Household size (no. of individuals)	4.0	4.3	4.6	5.1
% households with brick house	21	56	68	86
Sown area of rice (m ² /household)	3 171	3 205	1 774	2 805
Other agricultural land (m ² /household)	4 223	5 212	1 616	13 386
Net borrowing (million VND/household)	1.8	13.3	14.5	8.7
Rice output (kg/household)	1 236	1 205	519	740
Total income (million VND/household)	26.7	31.5	20.4	25.5
Size of tree plantation (ha/household)	2.1	1.5	2.8	2.1
Investment in trees (million VND/ha)	2.6	2.1	4.0	3.7
Returns from trees (million VND/ha)	1.2	1.8	1.9	0.9

Note: The income data refer to gross cash income (omitting self-consumed products, cash expenditures and household labour). The estimates given for on-farm and total income exclude earnings from tree plantations.

Source: Household survey conducted in 2008

by the BSP to fund the recent expansion of tree plantations. Thuan Phong in Cat Lam commune (Phu Cat district, Binh Dinh province) has been the target of the World Bank-financed FSDP since 2005. Households in all sites take out loans from Agribank, but the extent of use varies significantly amongst the 4 villages.

2.2 Study sites

The household livelihood strategies differ across the 4 study villages (see Table 1).² The people of Village 5 in Phu Tho emphasise rice self-sufficiency, as they possess a significant area of wet rice fields and come close to meeting their own food requirements. They produce supplementary income from tea plantations, livestock husbandry and off-farm work. Households generally hold small amounts of outstanding loans only. The mean household income is roughly equivalent to the average for the 4 villages, and only a few villagers live in houses built from bricks and tiles. Tree plantations mainly consist of eucalyptus,

which farmers have planted and replanted under the instructions of state officials since the late 1980s, as well as the more recently planted acacia. Their mean size is at the average level for the 4 villages, as are the mean level of investment and mean returns generated from them.

The villagers of Xom Lam are better off than their counterparts in Village 5. They report higher earnings from on-farm and off-farm activities, achieving the highest income levels in both categories amongst the 4 villages. They also achieve a level of rice sufficiency that comes close to that observed in Village 5. As a result, more than half of the village households live in houses built from bricks and tiles. Households do well because they generate good earnings from tea, livestock (especially fish) and off-farm activities. At the same time, they have incurred high levels of outstanding loans. Like their counterparts in Village 5, they have grown eucalyptus for 2 decades, which remains the tree species of choice. Their plantations are the smallest amongst the 4 villages, as are the reported levels of investment; however, the returns are relatively high.

Tan Quang is the most disadvantaged of the 4 villages in terms of its limited access to land. Lack of water restricts the amount of land suitable for rice

² The purpose of the following discussion is to introduce the 4 study sites briefly. The emphasis on village averages is not intended to overlook the presence of significant differences amongst households within the villages (cf. Sandewall *et al.* 2010). Please see Section 3.2 for an attempt to capture the variations amongst households and see Sikor and Baggio (2011) for a detailed analysis.

cultivation, forcing people to purchase rice for more than 6 months of the year. Similarly, villagers do not possess much land suitable for other agricultural crops. On-farm activities contribute less than half of the total income. Households make up some of the shortfall through off-farm activities, in particular paid work on other farms, but their total income remains the lowest amongst the study villages. Tan Quang's economy, therefore, is highly commercialised, as many households purchase their food and work for cash payment. The level of debt taken on by households is relatively high. In terms of tree species, households show a preference for acacia, which has overtaken the previously favoured eucalyptus in recent years. They have the largest plantations, invest the greatest amounts and generate the most sizable returns of the 4 study sites.

The fourth village, Thuan Phong, has relatively abundant land. Although lack of water keeps rice yields low, villagers generate significant earnings in the cultivation of other crops (primarily cashew

nuts). Access to off-farm opportunities is limited, keeping total income down. As a result, an increasing number of young people leave the village for urban and industrial centres in search of employment and a better life. Nevertheless, almost all households live in houses built from bricks and tiles, and the level of indebtedness is moderate. Most of the trees grown in the village are eucalyptus. Plantation sizes are average. The high level of investment has yet to result in correspondingly high returns per ha.

2.3 Summary

This report combines the results of in-depth research in 4 villages in southern and northern Vietnam with a review of finance regulations issued at national and provincial levels. The 4 study sites encompass a wide range of socio-economic conditions and include 4 finance mechanisms operating under the 661 Programme, the FSDP financed by the World Bank, the BSP and Agribank.

3. Household finance requirements and practices

This section reviews the finance requirements for tree plantations and juxtaposes them with household financing practices. It distinguishes 3 production models, which differ in their finance requirements, and identifies 3 types of households according to their financing practices. The use of these typologies is not intended to suggest that actual plantations and households fit the categories neatly. Their sole purpose is to highlight the wide range of production models and financing practices related to household tree plantations in Vietnam; they should therefore be understood as ‘ideal types’.

3.1 Finance requirements

The households in the study villages manage tree plantations on short and medium rotations only. The 179 household interviews and silvicultural samples did not reveal any stands older than 7 years (Schnell 2009, Sikor and Hoang Lien Son 2009). Instead, households harvest acacia and eucalyptus somewhere between 3 and 7 years after planting. The following discussion, therefore, distinguishes between short rotations of 3–4 years and medium rotations of 6–7 years to reflect households’ actual practices. It also includes a third production model based on a rotation of 12–15 years. The latter is included because of its potential profitability, as it would enable households to produce logs for the furniture industry (Nguyen Nghia Bien *et al.* 2006, Hoang Lien Son 2011).

Many households manage their tree plantations on short rotations, harvesting eucalyptus or acacia after 3 or 4 years. Furthermore, they seek to minimise the costs of externally purchased inputs. They purchase cheap tree seedlings from small local nurseries for as little as 100–150 VND per seedling. They use little fertiliser, apply some silvicultural techniques in the first year only and do not seek professional extension advice. Very few hire any labour. Most sell standing trees to local wood traders for eventual use in pulp or chip mills. Short rotations and low management intensity are very common practices in

the 2 northern study sites but are also found in the southern villages.

The finance requirements for short-rotation plantations are low.³ Households need to cover very modest cash expenses of VND 1–2 million/ha in the first year, or even less. Including the costs of their own labour, they spend around VND 5–7 million/ha in the first 2 years. After 3–4 years, they harvest relatively low volumes of wood, which they sell for a modest price to local traders, generating a return of approximately VND 20 million/ha. Many households can finance the cash investment from their own surplus and rely on their own labour for the required work, as the average size of tree plantations is only around 2 ha (Table 1). Moreover, some households that engage in short rotations have intensified their plantations somewhat by shifting from a eucalyptus coppice system to new plantations of eucalyptus and acacia. These households were able to cover the additional investment required to purchase new seedlings.

A number of households manage their plantations under medium rotations.⁴ Households following this model harvest trees after 6–7 years. In addition, they apply some management techniques to their acacia and eucalyptus plantations. They purchase high-quality tree seedlings for 800–1200 VND/seedling, as well as fertiliser. They hire some outside labour to perform silvicultural management and seek professional extension advice. They may eventually hire labour to cut their trees and marketed the harvested wood more aggressively to wholesale traders or the mills directly.

The finance requirements of medium rotations are greater than those of short rotations. Households have cash expenditures of VND 3–4 million/ha in the first year. Including their own and hired labour,

³ See Hoang (2011) for a more detailed financial analysis.

⁴ This was the management model promoted by the World Bank project until the middle of 2009. It appears that the project recently started to advocate long rotations.

they need to pay some VND 10 million/ha in the first 2–3 years. They generate returns after 6–7 years only, but these may reach VND 30–35 million/ha. Thus, the finance requirements of medium-rotation plantations typically exceed households' financial capacity. They require access to external credit to finance the plantations, unless the plantations are very small.

No household currently manages a tree stand under a long-rotation model. However, it may be profitable for households to extend acacia rotations to 10–12 years for the production of saw logs. Long rotations would require households to purchase high-quality seedlings for 1000–1200 VND/seedling. Households would need to purchase additional fertiliser, hire outside labour and pay for professional extension advice in support of planting and thinning. They would also have to acquire additional marketing skills and hire outside labour for the harvest of saw logs.

The finance requirements of long rotations are high because of the amount of initial investment required and the long rotation cycle. Households would require about VND 15 million/ha for the hire of labour and purchase of inputs in the first 3–4 years. Although they may generate large returns from the initial investment, these would not be realised until 12–15 years after plantation establishment. Households would obviously not be able to finance long-rotation plantations from their own resources but would require access to suitable external finance.

In sum, the investment requirements for plantations managed under short, medium and long rotations differ significantly (see Figure 2).

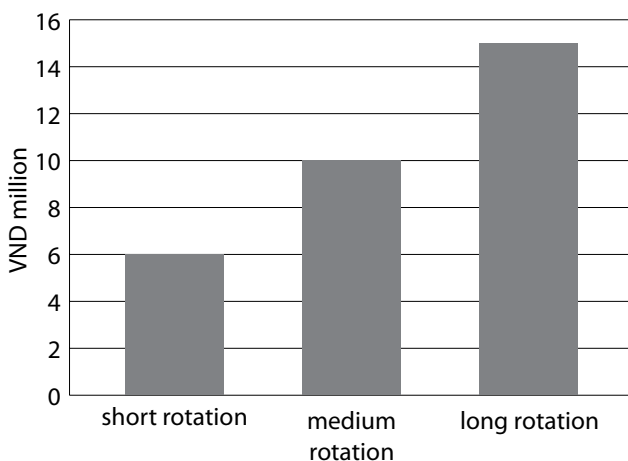


Figure 2. Investment requirements per ha

3.2 Household financing practices

All households, whether rich, poor or somewhere in-between, invest in one way or another. However, they vary in terms of their financial rationales, as they evaluate potential investments differently and refer to different criteria when assessing the finance available for investment in productive activities. Differences also arise because households evaluate the returns made from productive activities differently. As a result, households judge the feasibility and attractiveness of potential investments in different ways. This section presents 3 ideal types of household to illustrate the range of financing practices: investment-oriented, surplus-oriented and survival-oriented households.⁵

The financial rationale of investment-oriented households follows conventional investment behaviour as depicted in economics textbooks (cf. Hoang 2011). When considering investing in production, households perform separate calculations for each option available to them. They identify the costs and benefits of each to estimate their eventual returns and, in this manner, identify the most profitable options. They ultimately choose to invest in a certain activity if the projected returns justify the initial expenses in light of their own time preference and in comparison with other potential investments. Furthermore, they estimate the amount of capital required to cover their initial expenses and identify suitable sources for that capital. Investment-oriented households may borrow significant amounts from external sources if the projected eventual returns justify the initial investment. Similarly, they are ready to hire significant amounts of labour if the expense is expected to pay off in the long term. Investment-oriented households tend to be relatively rich or outsiders engaging in business in a village, but some less well-off households also apply conventional economic logic to potential investments.

Investment-oriented households, therefore, invest in tree plantations if the expected returns justify the

⁵ This section uses numerical examples to illustrate household financing practices (see Figures 3–7). As stated, the examples present ideal-type households chosen to demonstrate different kinds of investment rationales. Even though these types are informed by numerous interviews with households, they are not based on a statistical analysis of the household survey described above.

initial expenses (see Figure 3). They are willing to incur high debts and to make annual interest payments if they expect the trees to produce significant income later. Similarly, they are ready to purchase high-quality inputs and apply silvicultural management techniques if the related expenses are likely to yield suitable returns later. For investment-oriented households, the key challenge with tree plantations is that they do not generate returns for several years. This is a steep challenge to meet given the uncertain conditions characterising primary production in Vietnam, in general, and the vagaries of unknown tree species and wood markets, in particular. The eventual returns, therefore, need to be significantly higher than those achieved from other activities with a faster turnover.

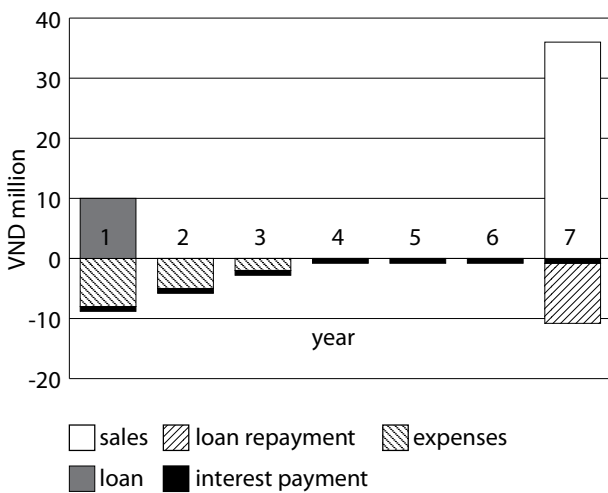


Figure 3. Financial flows of investment-oriented households

Surplus-oriented households adopt a different investment rationale. Like investment-oriented households, households oriented towards the generation and productive use of surplus seek to generate returns on their productive activities that exceed expenditures. However, in contrast to the other household types, surplus-oriented households do not separate out different productive activities. They engage in an integrated household economy, each year seeking to generate surplus from all their activities. Once they have realised a surplus, they think about how to reinvest it in production in the following year. When they reinvest the surplus, they again aim to ensure that there will be a surplus at the end of the following year. The reinvestment of annual surplus thus fulfils an important savings function for such households in the absence of savings accounts

and other savings mechanisms. The reinvestment of annual surplus follows savings logic, as households seek to preserve and increase the saved surplus through suitable reinvestment. Surplus-oriented households tend to include the better off in a village, that is, those households that can feel reasonably sure of producing more than they need to cover their own reproductive requirements.

When they plant trees, surplus-oriented households seek to finance the required investment from the available surplus in a given year and to safeguard the generation of a surplus in the following years (see Figure 4). Their approach to plantation establishment, therefore, is radically different from the rationale guiding investment-oriented households. To surplus-oriented households, the eventual returns of plantation investment are of secondary concern. Their primary concern is that the amount of surplus generated in the preceding year suffices to cover the initial expenditures of tree-planting, and that they will have a surplus available again in the following years. By implication, their initial investment may be relatively low as it is constrained by the available surplus. They may consider selling small productive assets, such as cattle, to increase the available amount of surplus. Nevertheless, surplus-oriented households may invest small amounts of capital only, even if the expected returns justify higher initial expenses. As a result, their eventual returns may be much lower than the potential returns, but this is of secondary concern to them.

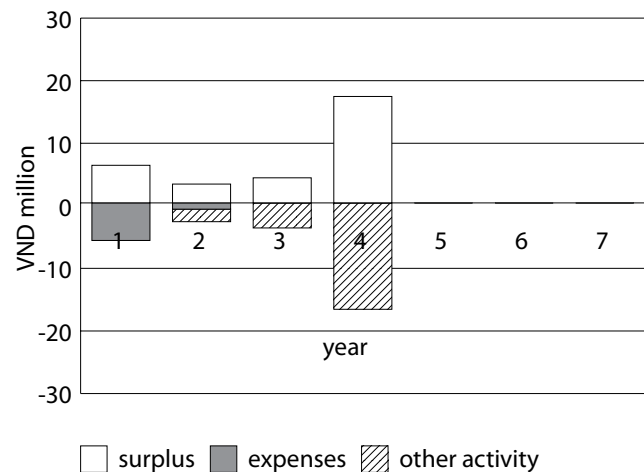


Figure 4. Financial flows of surplus-oriented households without loans

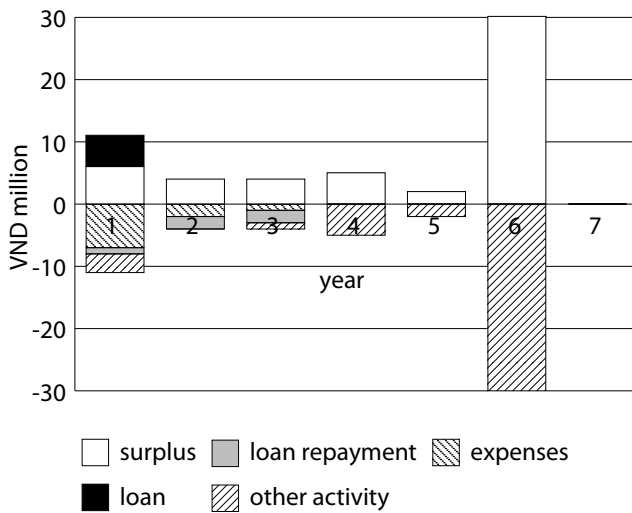


Figure 5. Financial flows of surplus-oriented households with loans

By implication, surplus-oriented households also follow a different logic when they take out loans. Such households may take out a loan to cover the investment in tree plantations, as illustrated in Figure 5. They may do so with the expectation that they can repay the loan from the surpluses made in subsequent years, independent of when the returns of the plantation investment are actually realised. The key issue for them is to produce sufficient surplus in the following years to cover the expenditures of tree-planting and loan repayment. This rationale is also the main reason why many households prefer to repay loans in annual instalments. In this way, surplus-oriented households use tree plantations and loans to build up savings. They use the surplus generated in the initial years to produce a big payout in the form of an eventual wood sale, as they have repaid the loan by the time the wood is harvested. A related observation is that surplus-oriented households may take out a larger loan for the stated purpose of establishing a tree plantation than is needed to cover the shortfall between tree-planting expenses and surplus, as depicted in Figure 5. They may use some of the loan for other productive activities, even if the loan is designated for tree-planting only.⁶ Again, however, they would try to make sure that they can repay the loan from the surplus generated in the following years and build up savings in this way.

⁶ This seems to be the case for many of the households that took out loans under the World Bank-funded FSDP. They used the tree-plantation loans to generate capital for investments in other productive activities.

Survival-oriented households apply a similar investment rationale to that of surplus-oriented households. The only difference is that survival-oriented households have a much harder time generating a surplus each year. They have difficulties making ends meet and are highly vulnerable to unexpected expenditures, such as the costs of hospital treatment. As a result, their focus is on meeting their immediate needs, primarily food and basic consumer items, and possibly saving a small surplus as a buffer against unexpected expenses. Due to their concern with meeting the requirements of reproduction, they may perpetuate some activities that are less profitable than others in the long term but produce annual returns (*e.g.* growing cassava instead of planting perennials). Vice versa, they may terminate activities that may be profitable in the long term but not yield any immediate returns (*e.g.* cutting coffee plants to make way for rice in response to an unexpected shortfall in income).

Investment in tree plantations is a challenge for survival-oriented households (Figure 6). The issue for them is not only that they have to finance the initial expenses; they also tend to re-evaluate their tree plantations each year in light of the surplus generated from other activities and required expenditures. As indicated in Figure 6, they may decide to harvest trees prematurely if they face large unexpected expenditures—even if that implies a loss according to a conventional investment rationale. Nevertheless, many survival-oriented households plant trees because they recognise that plantations represent potential sources of future income. Similarly to the

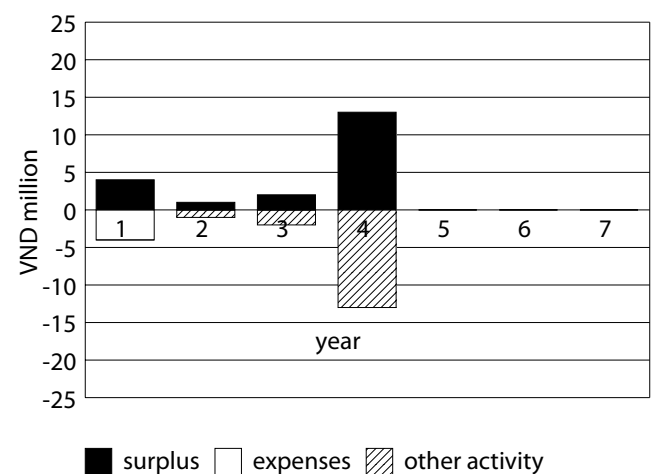


Figure 6. Financial flows of survival-oriented households without loans

surplus-oriented households, they use tree-planting to build up savings from an annual surplus. However, in a crisis, they sell the trees prematurely.

Survival-oriented households often take out loans to cover unexpected large expenditures. This is relevant for tree plantations, as the loans may allow households to avoid premature harvest. As illustrated in Figure 7, a loan may help such households to avoid premature harvest in year 4, even if they have to meet an unexpected large expenditure (as indicated by a negative surplus). The loan allows the household to postpone the harvest to year 6 in return for a higher output (compare with Figure 6). For survival-oriented households, loans thus serve an important insurance function. Loans help households to avoid the sale of productive assets and spread large expenditures across several years. They are less likely to take out sizable loans for productive investments, as such loans would further increase their risk exposure.

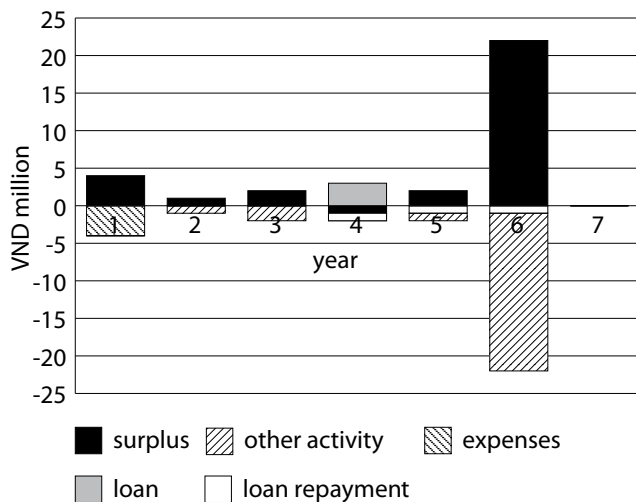


Figure 7. Financial flows of survival-oriented households with loans

3.3 Summary

This section has set out the wide range of finance requirements and financing practices observed amongst farm households regarding commercial tree plantations. As discussed, the amounts of finance that households need to raise when they establish tree plantations vary depending on whether they choose short or medium rotations. The finance requirements of a long-rotation production model, which may allow households to produce logs for the furniture industry, are significantly higher. The discussion of financing practices has distinguished 3 types of households, based on their investment rationales. Households of different types evaluate investments, in general, and investments in tree plantations, in particular, in different ways, leading to different kinds of investment behaviour. The discussion thus indicates that finance conditions are highly varied in rural Vietnam, as households follow different finance rationales and apply different production models. This resonates with the results of the household survey, which indicate that household investment levels vary greatly amongst villages (see Table 1).

How do different production models and household types correlate? In the absence of statistical analysis, one can safely assume that investment-oriented households display a preference for medium rotations because of their relative profitability. They eagerly seek out loans to finance the required investment. Surplus- and survival-oriented households are more likely to choose short rotations, even though taking out a loan may enable them to extend the rotation cycle or intensify management.

4. Finance programmes

This section turns to the programmes offering access to external finance. It reviews 5 programmes:

- the Vietnamese government's '661 Programme';
- the World Bank-funded Forest Sector Development Project (FSDP);
- the Project on Forest Rehabilitation and Sustainable Forest Management (PFRSFM) in Quang Nam, Quang Ngai, Binh Dinh and Phu Yen provinces funded by Kreditanstalt für Wiederaufbau (KfW);
- the Bank for Social Policies (BSP); and
- the Vietnam Bank for Agriculture and Rural Development (Agribank).

The section briefly summarises each programme's background and conditions under which it offers access to finance to households.

4.1 The 661 Programme

The '661 Programme' (also called the '5-Million-Hectare-Reforestation Programme') is the single most important programme through which Vietnam's central government funds tree plantations. Its name is derived from Decree 661/QD-TTg promulgated in July 1998, in which the government laid out the programme's goals and conditions. Initially, the programme focused on protecting natural forests, including a minor loan component for the establishment of new plantations only.⁷ Until 2005, the government had allocated in all a mere VND 1200 billion (equivalent to US\$ 64 million) out of a total budget of VND 7900 billion for reforestation loans for terms of up to 15 years. The loans were not accessible to households; rather, most went to the General Paper Corporation and General Forest Corporation. The loans reportedly facilitated the establishment of tree plantations for productive purposes on some 260 000 ha.

The 661 Programme remained an important source of external finance for tree plantations even after the government passed Decision 147 in September 2007. The report sent by the Ministry of Agriculture and Rural Development to the National Assembly in 2006 proposes that 43% of the proportion of the state budget (VND 1 942 billion out of VND 4 515 billion, equivalent to US\$ 104 million) allocated to the 661 Programme in 2006–2010 should be directed towards new plantations on land designated for production, protection and special use. In addition, the 661 Programme has provided direct support to plantations established by households since 2006. As stated in Decision 210/QD-TTg, this takes the form of small grants to households planting trees at a nationwide cost norm of VND 2 million per ha. The objective, as defined in the 2006 report, is to support reforestation by households on 52 000 ha in 2006. Overall, the stated goal is to establish new plantations at an annual rate of 150 000 ha, boosting the total planted area by 750 000 ha between 2006 and 2010.

Evidence from both Phu Tho and Binh Dinh suggests that state agencies and state-owned forestry companies continue to receive preferential access to the finance provided through the 661 Programme. For example, three-quarters of the 661 funds allocated to Phu Tho province in 2008 went to the General Paper Corporation, which owns several forestry companies in the province. The 661 Programme made VND 15 billion (US\$ 800 000) available for tree plantations established by households and VND 46 billion (US\$ 2.5 million) for those operated under the General Paper Corporation. Nevertheless, even though the corporation received 3 times as much finance, the area designated for planting by the corporation (2400 ha) was slightly smaller than the area of tree plantations established by households (2500 ha).

Households receive support from the 661 Programme through projects executed by Forest Protection Units, state-owned forestry companies, district-level Offices for Agriculture and Rural Development or other

⁷ The information on the 661 Programme presented in this section is taken from a report submitted by the Ministry of Agriculture and Rural Development to the National Assembly in October 2006.

state agencies. They usually sign a contract with the executing agency specifying the area and tree species to be planted, required planting density and other management practices, and a medium rotation period (around 7 years). Households do not need a Land Use Right Certificate to be eligible for programme support, but they have to prepare the land before they can receive support. The minimum plot size supported by the programme is 0.5 ha; the minimum area per household is 1 ha. In return, households receive free tree seedlings and, in some cases, fertiliser. The executing agency purchases the inputs from the programme allocation of VND 2 million/ha. The agency also organises training courses and other extension activities, for which it may use some 25–30% of the total budget allocation.⁸ Furthermore, it is required to inspect the plantations 3 times after planting. When households harvest the plantations, they retain 100% of the receipts.⁹

4.2 The Forest Sector Development Project

The FSDP offers plantation loans to households under a loan agreement between the Vietnamese government and the World Bank signed in April 2005. The agreement covers a total investment of US\$ 59 million, including US\$ 33 million allocated to BSP for loans to be disbursed to households. The project objective was to establish production-oriented plantations on a total of 66 000 ha by 2010. The project includes selected communes across 19 districts in 4 provinces along Vietnam's central coast. It covers the study village Thuan Phong (Phu Cat district, Binh Dinh province).

The loan agreement specifies that households can get loans for up to 75% of total investment costs for terms of up to 15 years. Until 2007, project management translated this general provision into the prescription that households could receive loans of VND 10 million/ha for 7 or 8 years. In 2008, it

raised the quota to VND 15 million/ha, citing as justification increases in labour and other costs. In the summer of 2009, it reportedly expanded the loan term to 15 years. The amount is paid to households in 3 instalments: half at the point of planting, 40% in the second year and the remaining 10% in the third year. According to the project guidelines, the maximum area for which a household can take out a loan is 30 ha. In practice, however, households cannot get loans for more than 10 ha. The minimum area eligible for a loan is 0.5 ha.

Households can access the loans through the BSP, as one of its several loan programmes (see Section 4.4). Households are required to deposit a Land Use Right Certificate with the bank as collateral. As few households possess certificates, the project expends significant efforts in titling forestland. Households also have to prepare the forestland before loan applications are approved. BSP charged a monthly interest rate of 0.5% until March 2008; the rate was increased to 0.65% in April 2008, and then lowered to 0.32% in May 2009 in line with its general lending policy (see Section 4.4). Households pay the interest monthly or quarterly through group arrangements that the bank set up specifically for the purpose. As for the principal, households typically expect to repay it at the end of the loan period, although project guidelines allow them to repay it in instalments spread out during the term of the loan.

4.3 Project on Forest Rehabilitation and Sustainable Forest Management

Reforestation projects funded by KfW have a long tradition in Vietnam. KfW began to fund reforestation in the mid-1990s, and has since supported 7 projects in different parts of the country. PFRSFM, the sixth project financed by KfW, encompasses selected communes in 4 provinces in central Vietnam, amongst them 12 communes in 3 districts of Binh Dinh province. The project has a total budget of US\$ 18 million to fund reforestation and natural regeneration on 22 700 ha between 2005 and 2012. Like other KfW-funded projects, its focus is on 'production forest with protective functions'. Consequently, the project makes a significant effort to identify suitable forestland through land use planning. Furthermore, it seeks to promote mixed

8 The estimate of 25–30% is from Doan Hung district. It is derived from calculations based on a 2008 report by the Forest Protection Unit and the household interviews.

9 Decision 147 (2007) and the Law on Forest Protection and Development Funds (2008) specify that households have to pay a fixed, small share of the plantation revenues into forest protection funds at the village and commune levels. This rule applies to all plantations established with state support.

plantations combining indigenous with imported, fast-growing species.

KfW reforestation projects support household tree plantations through grants in kind and cash. They provide free tree seedlings and fertiliser to households. They also set up savings accounts at BSP for participating households to compensate for their labour inputs. For the PFRSFM, the BSP received a total grant of US\$ 4.1 million. The savings accounts amount to VND 2.0–3.4 million per ha depending on the planted species. Households receive the savings accounts 3 months after planting if the survival rate is at least 80%. They can withdraw up to 20% of the deposited funds right away, and then an additional 15% every year up to year 6. The accounts receive the regular interest rate applied by BSP to household deposits (7.6%/year in August 2009). The maximum area eligible for funding is 2 ha per household, the minimum being 0.5 ha.

4.4 Bank for Social Policies

The Vietnamese government set up the BSP in 2002 to take over the tasks previously handled by Vietnam Bank for the Poor. The BSP's main purpose is to support the government's poverty alleviation efforts. As a result, the bank operates a number of central government programmes, including loan schemes for the poor, people living in remote areas, members of ethnic minority groups and students, amongst others. Under most programmes, only poor households are eligible for support, and its primarily social goals mean that the BSP does not operate under commercial principles. The Vietnamese central government does not expect the BSP to make a financial profit, unlike the other state-owned banks. At the same time, the BSP is less independent than the other banks, as its branches are considered to fall under the control of the relevant People's Committee. This integration with government provides the BSP with the most extensive network of outlets of all banks in the country, including 612 district offices and 9800 mobile transaction points at the commune level. Total outstanding loans were VND 34 300 billion (US\$ 1.8 billion) at the end of 2007, 5 times the amount for 2002.

The BSP typically grants households loans of VND 10–15 million for 3 years. In practice, however, the

amount and duration of loans given to households vary greatly. Households that want to raise cattle or plant trees get loans for 3 years. Others that want to raise pigs or purchase small assets receive loans with terms of 1 or 2 years only. Loans with a longer term are exceptional, limited to student loans (5 years) and reforestation loans funded under the FSDP. The maximum available loan amount depends on the specifications of each particular government programme. The maximum is VND 30 million for the Loans for the Poor Programme, which accounts for two-thirds of total lending. For most programmes, households do not require any collateral. Even in those programmes that do require collateral, applicants are exempt if the loan is less than VND 20 million.

The BSP applies much lower interest rates than do the other state-owned banks operating according to commercial principles. Until April 2009, BSP interest rates ranged from 0% for loans to ethnic minorities living in difficult circumstances to 0.9%/month for business loans. Most programmes, such as the Loans for the Poor Programme, applied a monthly interest rate of 0.65%, which was the same as the rate charged on FSDP loans. In May 2009, the government lowered the rate under the Loans for the Poor Programme to 0.32%/month.

Loan recipients are not required to repay the principal until the end of the loan period. Nonetheless, the BSP encourages and facilitates early repayment either wholly or in part. In the study sites, many households repay the principal in equal annual instalments. They make the annual repayments at the bank's district-level branch.

The BSP operates savings and loans groups as a special element of its lending procedures. The groups perform several functions in the lending process: they help applicants fill in the required forms, verify applicants' financial capacity, organise counter-signatures by fellow villagers on loan applications, inform members about new loan programmes and changes in lending procedures and collect members' monthly interest payments.¹⁰ The groups typically

¹⁰ The groups used to collect members' savings. However, this function was removed because a few members wanted to deposit money with the Bank for Social Policies and some group leaders embezzled funds.

include 30–50 households from a single village or, in some cases, a commune. They are typically managed by the leader of a mass organisation, such as the Women's Union, Farmers' Association, Youth Union or Veterans' Association. In compensation, the leader of the group receives a 13% share of the total interest payments collected. Vietnam has about 180 000 such groups, which is about 3 times the number of villages in the country (estimated at around 60 000).

4.5 The Vietnam Bank for Agriculture and Rural Development

Agribank began operations in December 1990 and started to offer loans to households in 1993. The bank remains state-owned but operates largely independent from influence by People's Committees due to its commercial principles.¹¹ Agribank seeks to attract customers in both urban and rural areas. It maintains an extensive network of 2200 branches across the country, giving it a much stronger local presence in rural areas than any other commercial bank. Total outstanding loans were VND 200 000 billion (US\$ 10.7 billion) at the end of 2007. It is not known what proportion of its loans goes towards agriculture or into rural areas.

Most of Agribank's loans to agricultural households are for 3 years. Theoretically, the bank offers short-term loans for up to 12 months, medium-terms loans for 1–5 years and long-term loans for more than 5 years. In practice, most loans in the study sites are for 3 years. The current interest rate is 1.25%/month for medium-term loans, that is, an annual rate of 15%. Lenders pay the due interest to Agribank at one of its branches on a monthly or quarterly basis. The repayment of the principal is due at the end of the loan period, although early repayment is possible. Lenders require collateral, usually a Land Use Right Certificate. Loans for less than VND 10 million are available without collateral, but acquiring the required documents takes a lot of time and good will from local government officials.

Agribank also manages special loan programmes funded by government and donor allocations. In Doan Hung district of Phu Tho province, the local branch operates 2 special programmes. One programme, funded by international donors, allows households to borrow up to VND 20 million without collateral to establish or upgrade tea plantations. The loan period depends on the proposed use of the loan. In the case of a new plantation, it is 6 years. The applicable interest rate is 0.69%/month, that is, below Agribank's rate in the open market. Interest payments are paid through a group set up by the bank similar to those operated by the BSP. The total outstanding loans in this programme amounted to VND 15 billion (US\$ 800 000) in November 2008. The other programme supports the planting of grapefruit trees in the districts through funds made available by the provincial People's Committee. Total outstanding loans were VND 2.4 billion (US\$ 128 000) in September 2008.

4.6 Summary

The preceding overview demonstrates that the programmes offer households access to external finance for tree plantations under a variety of mechanisms (see Table 2). The mechanisms include the grants in kind supplied by the 661 Programme, reforestation loans provided by the FSDP, grants in kind and savings accounts established by the PFRSFM, and general loans offered by the BSP and Agribank. The programmes also differ in the amount of finance they make available to households, duration, timing of disbursements, monitoring, interest rates, repayment conditions and collateral requirements. They thus employ different finance mechanisms in their shared efforts to grant households access to external finance.

¹¹ Agribank's independence makes it much more difficult for researchers to gain access to information than for BSP.

Table 2. Overview of finance programmes

	661 Programme	FSDP	PFRSFM	BSP	Agribank
Type	Grant	Loan	Grant	Loan	Loan
Amount (VND million)	1.5/ha	10–15/ha	4–6/ha	10–30	10–30
In kind or cash?	In kind	Cash	In kind and cash	Cash	Cash
Duration (years)	n/a	7–15	6	4	4
Disbursement	Once	3 times	6 times	Once	Once
Inspection of plots	3 times	?	Annual	No	No
Interest rate (%/month)	0	0.65	n/a	0.65	1.25
Repayment	n/a	End	n/a	Yearly	End
Collateral	n/a	Land certificate	n/a	None	Land certificate
Group formation?	No	Yes	No	Yes	No

5. Comparison of finance mechanisms

This section offers a comparative analysis of the 5 finance mechanisms. The aim here is not to develop an overall evaluation of each programme, but to assess each mechanism against 7 criteria: availability of finance; household access; cost to households; risk to households; leakage of finance to other productive activities; sustainability of financing; and match with finance requirements (see Box 1).

Box 1. Criteria for assessing finance mechanisms

Availability. The amount of finance available to households as determined by the overall amount and spatial distribution of funding.

Sustainability. The ability of the finance mechanism to generate the returns required to maintain its capital stock.

Leakage. The use of support for productive activities other than reforestation.

Household access. Households' ability to apply for and receive support.

Cost to households. The costs accruing to households that accept support.

Risk to households. The risks incurred by households that accept support.

Match with finance requirements. The relationship between support and requirements regarding amount and timing.

5.1 Availability

The programmes vary significantly in their availability. The 661 Programme supports households planting trees nationwide, even though most programme funds go to state agencies and forestry companies. As a result, the programme funds support a relatively small plantation area in each locality. In Phu Tho province, for example, 661 funds assisted household tree plantations on only 2500 ha in 2008. In the same year in Ca Dinh commune, the project supported 30 ha of plantations established by 21 households. Nationwide, the programme financed tree plantations on 52 000 ha in 2006. In addition, the amount of support available per ha is relatively low. Households receive inputs and advice worth only US\$ 110/ha.

The geographical coverage of the FSDP is limited to selected communes and districts in only 4 provinces. The project is designed to assist tree plantations across a total area of 66 000 ha over 5 years, which is slightly more than the 52 000 ha targeted by the 661 Programme in 2006 alone. The area of 66 000 ha translates into an average of 3300 ha per province each year, putting the targeted area above the area supported by the 661 Programme in Phu Tho in 2008. At the same time, the FSDP makes available a much larger amount per ha: US\$ 500.

Like the FSDP, the PFRSFM limits its geographical coverage to selected communes and districts in only 4 provinces along the south central coast. Its objective is to facilitate tree plantations across a total area of 22 700 ha, that is, roughly a third of the area defined by the World Bank project. Similarly, the amount of financial support available to participating households (an average of roughly US\$ 300/ha) is smaller than under the World Bank project. In comparison with the 661 Programme, the PFRSFM targets a smaller area per province each year, but it provides about triple the financial support per ha.

The BSP operates nationwide, as its dense network of outlets and groups provides it with unique outreach to most villages in Vietnam. However, the bank's coverage in terms of the number of lenders and available financial volume per lender reveals spatial variation. For example, 80% of all households in the study village Tan Quang received loans from the BSP in November 2008. The village operated 4 active savings and loans groups with an average outstanding loan of US\$ 560 per village household. By contrast, Village 5, another study site, had only 1 group with 31 households, with an average outstanding loan of only US\$ 310 per village household.

Agribank does not offer specific reforestation loans, and households can request loans for all kinds of productive activities. Agribank also maintains a nationwide network of branches. However, the amount of finance that Agribank provides to households in a village varies greatly. In some

places, fewer households may be borrowing from Agribank than from the BSP. For example, 808 households took out loans from the Agribank branch in Van Canh district of Binh Dinh province in 2008. In comparison, the BSP granted loans to 514 households in a single commune in the district (Canh Hien) in the same year. In other places, however, Agribank may extend larger volumes of loans to households than the BSP. For example, 5800 households borrowed a total of US\$ 13.3 million from the Agribank branch in Doan Hung district of Phu Tho province in 2008 (US\$ 2300/household). In the same year in that district, the BSP's total loans to households may not have exceeded US\$ 2 million.¹²

The 5 finance mechanisms differ greatly in terms of reach. The BSP and Agribank possess comprehensive networks of branches and transaction points throughout the country. By contrast, the FSDP and PFRSFM concentrate their support on a few selected communes. The 661 Programme lies somewhere in-between, as state agencies in all areas are eligible for support but not every commune or district with forestland receives assistance under the programme. There seems to be a tendency amongst provincial Departments of Agriculture and Rural Development to spread 661 projects fairly evenly amongst all forested districts in their province.

5.2 Sustainability

The finance programmes have different degrees of sustainability. The 661 Programme and the PFRSFM depend wholly on budget allocations by the central government or donors. Actual annual allocations may fall short of projected amounts, as experienced during the 2008 financial crisis. For example, the amount allocated to Phu Tho province under Programme 661 in 2008 was half of the originally planned amount.

As it is a loan programme, the FSDP loans are sustainable in principle. However, the loan component of the FSDP depends on significant additional assistance funded through Finnish and Dutch grants. Furthermore, it is highly unlikely that even the loan component itself is financially

¹² This number is a rough estimate derived by extrapolating the total volume of loans granted to households in a single commune in Doan Hung district in 2008.

sustainable, for 3 reasons. First, the loan may not be able to recover actual capital costs because the applied interest rate is at or below annual inflation. Second, it has yet to be seen to what degree the BSP will be able to collect outstanding debts once they are due. Repayment may be a problem for many households because of the large amounts lent. Third, it is unclear what percentage of the finance will remain available for reforestation loans once the BSP begins to repay the loan to the World Bank.

The BSP states that its operations are operationally sustainable but have yet to achieve financial sustainability (Nguyen Kim Anh 2008). The difference between the interest rates applied to loans and savings suffices to cover the bank's operational costs. However, the BSP does not generate sufficient profits to increase its capital stock at a standard market rate. This may be considered a necessary consequence of the bank's mission to alleviate poverty, as reflected in the low interest rate on loans. Nevertheless, the bank claims that it aims to achieve financial sustainability by 2020.

In contrast to the BSP, Agribank's operations are operationally and financially sustainable. The interest rate charged on loans is sufficiently high to cover costs and to secure the bank's level of capitalisation.

A comparison of the 5 finance mechanisms reveals that only the loans offered by Agribank appear to be financially sustainable. Loans by the BSP in general and under the FSDP may be sustainable operationally but not financially. The 661 Programme and the PFRSFM rely on external budget allocations.

5.3 Leakage

The finance programmes differ in the degree to which they avoid leakage, that is, the use of the finance for productive activities other than that contractually specified.¹³ Leakage is not an issue in either the 661 Programme or the PFRSFM. The 661 Programme

¹³ Leakage is not necessarily a problem, depending on the government's objectives. It is obviously a problem if wood production is the sole objective. From the viewpoints of income generation or poverty alleviation, however, households may have good reasons to direct some tree plantation loans towards other purposes that yield higher or more secure returns. A comprehensive evaluation of leakage is beyond the scope of this report.

provides support in kind and inspects the plantations after establishment. The PFRSFM also supplies seedlings and fertiliser. In addition, it checks the survival rate of tree seedlings before opening savings accounts for participating households. The project makes the release of the funds deposited in savings accounts dependent on the performance of the tree plantations.

Leakage is a significant problem with the loans offered by the BSP and Agribank. Although households have to state their investment objective and rationale in their loan applications, they often use the loans for other purposes. This is a common practice reported by households in the study sites and confirmed by bank officials. Neither bank officials nor the leaders of the savings and loans groups operated by the BSP have the capacity to monitor the actual use of loans.

Leakage is also a serious problem with the FSDP reforestation loans. As households can obtain relatively large loans, they tend to use some of the finance to invest in other productive activities and to cover reproductive expenditures. This occurs partly because the reforestation loans include a significant amount to cover the labour expended by households, even though they are designed to cover 75% of the necessary investment only. In addition, households find ways to free up some of the loans for other uses, such as by purchasing fewer inputs and expending less labour than defined in the loan contracts.

The results of the household survey conducted in Thuan Phong illustrate the discrepancy between the intended and actual use of loans. Households reported an average investment of VND 4 million per ha, which is considerably less than the amount specified in the contracts even when excluding the share attributed to labour. Moreover, they reported using reforestation loans for only VND 1.5 million of the investment.

The comparison reveals that leakage is a significant problem for finance programmes offering cash support. Leakage is even a problem with FSDP loans despite the requirement to use loans for reforestation only, because of the large amounts of finance provided and the lack of follow-up inspections. Leakage is not a problem for programmes that provide support in kind.

5.4 Household access

The ability of individual households to access finance varies between the programmes. Access is fairly easy in the case of the 661 Programme. Where there is a 661 project, most households are considered eligible for support. Nevertheless, in practice, the poorest are typically excluded from participation, as project officials rule them ineligible. Officials consider them to lack the labour capacity and/or financial preconditions for tree-planting.

In comparison, access to FSDP loans is more restricted. Whilst households may be able to get larger amounts of financial support under the FSDP than the 661 Programme, they may find it more difficult to access the support. Individual access to FSDP loans may be restricted to the better-off two-thirds in each village. For example, many households in Cat Lam commune took advantage of the loans offered through the BSP in 2006–2007. In most cases, they borrowed between VND 5 million (US\$ 270) and VND 20 million (US\$ 1110) from the bank for plantations on 0.5–2 ha. This allowed the project to support tree plantations on about 370 ha during the 2 years, extending loans totalling VND 4.1 billion (US\$ 220 000). At the same time, about 15–20% of households withdrew loan applications that they had initially submitted to the FSDP. Some of them did so out of concern about the involved transaction costs (*e.g.* land titling) and their ability to repay the loans.

Access to BSP loans is easy for most households. Interested households can request assistance via the leader of a savings and loans group. They can request loans roughly the size of the FSDP loans without difficulty. Again, however, the poorest may not be able to access loans from the BSP, despite its mandate to promote poverty alleviation. The leaders of savings and loans groups or bank officers may not consider poorer households to be eligible as they may doubt their ability to repay the loan. At the other end, well-off households may not be able to obtain loans from some of the BSP's lending programmes, such as the Loans for the Poor Programme. They are entitled to loans under other programmes, although at slightly higher interest rates.

Loans from Agribank may be more difficult to access than those from the BSP. Households have to conduct all transactions outside their village, which increases the costs of applying for and receiving loans. More importantly, Agribank requires collateral for most loans. This requirement creates problems for households without Land Use Right Certificates (*e.g.* young couples who recently split off from their parents' household) and without other valuable assets. The high average amount of loans disbursed by the Agribank branch in Doan Hung district (VND 41 million or US\$ 2200/household) reflects the bias towards large loans taken out by better-off households. Some households lacking the required collateral solve this problem by taking out loans under the name of relatives who are able to deposit the required Land Use Right Certificate, but this remains exceptional. Poor people are unlikely to obtain loans from Agribank.

The comparison indicates that household access to finance is easier under the 661 Programme and the BSP.¹⁴ Access to FSDP reforestation loans and general production loans from Agribank is more restricted. The poorest villagers are unlikely to gain access to any of the finance programmes.

5.5 Cost to households

The costs of the support offered differ amongst finance programmes. Households participating in the 661 Programme incur minimal costs because the programme support is given as a grant, and because 661 projects deliver the inputs to the villages. The paperwork involved is simple or kept simple by project staff. The opportunity costs of land use appear not to be an issue for households, as programme participation is voluntary for plantations.

FSDP reforestation loans have higher costs, albeit still modest. The interest rate charged on the loans is at or slightly below the level of inflation. For example, FSDP loans were available at an annual interest rate of 6% in 2007, when Vietnam's annual inflation rate was 8%. Households make interest payments through the village-level groups set up by the BSP. The loan procedures are extensive, especially for households

that do not hold a Land Use Right Certificate. At the same time, the project offers households considerable support in managing the procedures. Nevertheless, a large number of households cancelled their loan applications, as mentioned above (see Section 5.2).

Like the 661 Programme, the PFRSFM supports household tree plantations through grants. The associated direct costs to households are minimal, as the project delivers the inputs to villages and access to the savings accounts is easy. Nonetheless, households express a critical awareness of 2 other indirect costs incurred by accepting project support. First, many households dislike the requirement to mix fast-growing with indigenous species. They much prefer to plant monocultural stands of fast-growing species and consequently refuse to participate in reforestation even though the programme support is paid as a grant. Consequently, in 2008, the project had to adjust the proportion of fast-growing species from 30% up to 50%. Second, households consider the interest paid on the savings accounts to be low (7.6%/year in August 2009). The interest rate is often below annual inflation, diminishing the real value of the savings deposits.

Households taking out loans from the BSP incur only low costs. Most applicable interest rates are at or slightly below annual inflation, as noted above for the FSDP loans. Transaction costs are minimal because of the savings and loans groups operated by the bank in most villages.

Loans from Agribank have high costs for households, because the bank charges a relatively high interest rate. The high costs also arise from the need to conduct all transactions outside the village. As a result, many households in the study site Tan Quang expressed a strong reluctance to take out loans from Agribank. They displayed a marked preference for loans from the BSP because of its strong local presence.

The comparison shows considerable variation amongst the programmes in terms of the costs that participating households incur. At one end of the spectrum is the 661 Programme, which provides free inputs with minimal transaction costs. At the other end is Agribank, which offers loans at commercial interest rates and with high transaction costs.

¹⁴ The comparison excludes KfW-funded savings books because of lack of data.

Households also perceive the KfW savings accounts as costly because of the opportunity costs incurred.

5.6 Risk to households

Participation in the finance programmes involves different levels of risk to households. Households participating in the 661 Programme incur virtually no risk, as they receive inputs for free. Their only risk is that their labour may be wasted if plantations fail due to natural hazards or bad seedlings. There is little chance of the support being withdrawn or a reimbursement demanded. This is because the same agency executing the project typically inspects the plantations and determines the survival rate of tree seedlings. The officials have no incentive to report insufficient survival rates. In addition, they have little leverage over households after the inputs have been disbursed. As a result, the project-executing agency and, ultimately, the 661 Programme bear most of the risk associated with planting trees.¹⁵

The distribution of risk under the FSDP is opposite to that under the 661 Programme. Households bear all the risk associated with tree plantations. They must repay their loans regardless of any unforeseen biophysical or socio-economic events. If they cannot repay the loan at the end of the term, they may be able to postpone it by a few months or a year, according to the BSP's risk policy. Nevertheless, the applicable interest rate increases by one-half once the loan is overdue. More importantly, households face the risk of losing their Land Use Right Certificate deposited with the bank as collateral.

The risk distribution is more balanced under the PFRSFM. Both households and project carry some of the risk of plantation failure. The project reserves the right to freeze or terminate savings accounts if a household fails to comply with the required management practices. It has direct leverage over the funds remaining in the savings accounts, as the funds are released to households gradually. However, once most of the deposits are withdrawn, the project

is likely to encounter difficulties with repayment. Potential losses, therefore, are borne by both the project and the household.

The lending procedures of the BSP and Agribank devolve all risk to households. Households are required to repay their loans in full. Both banks also apply standard procedures to overdue loans, offering the possibility for extension and raising the applicable interest rate by 50%. However, a critical difference between the lending procedures of the 2 banks leads households to assess the risk differently: Agribank requires the deposit of collateral. Consequently, households are less likely to borrow from Agribank than from the BSP. In Tan Quang, for example, households expressed considerable reluctance to take out loans from Agribank, as they loathe the idea of putting their Land Use Right Certificates at risk. In addition, they have witnessed 2 cases of debt collection by Agribank in which the bank temporarily seized the houses of households with overdue debts. At the same time, many people in Tan Quang have accrued small overdue debts with the BSP over the years. The BSP does not force the collection of the outstanding debts, but considers the households ineligible for new loans until the amount overdue is paid.

The comparison thus indicates a range of risk distributions. The 661 Programme, on the one hand, and the loans offered by the FSDP and Agribank, on the other, are at the opposite ends of the spectrum. In the former, the programme bears all the risk, and in the latter, the households carry the full risk. The PFRSFM and BSP are somewhere in-between, with the risk shared between households and supporting institution.

5.7 Match with finance requirements

The finance mechanisms involve different amounts of support, and they have different methods of timing the support and, if applicable, its repayment. The amount and timing of support match the finance requirements of short-rotation, medium-rotation and long-rotation plantations to different degrees (see Section 3.1).

The 661 Programme supports households through small grants delivered in kind at the point of

¹⁵ In principle, budget disbursement to the agency executing the project depends on project performance. In practice, however, there is no independent assessment of project performance. Project-executing agencies typically report successful performance. This lack of accountability by the implementing agencies may explain why a large number of plantations established with the support of the 661 Programme have failed.

plantation establishment (see Figure 8). Free seedlings allow households to establish plantations for management under short or medium rotations. However, the 661 Programme does not provide enough support to meet the requirements of long-rotation management. In addition, the timing of programme support does not create any incentives for households to aim for medium or long rotations.

The FSDP provides a large loan with a single repayment at the end of the term (see Figure 9). Households receive a relatively large amount at the beginning, paid in 3 instalments. They make regular interest payments throughout the loan period and repay the principal at the end. The loan amount is sufficient to cover the requirements of long-rotation management. However, the restriction on the loan term, which was 7 or 8 years until the summer of 2009, creates a direct disincentive for long rotations.

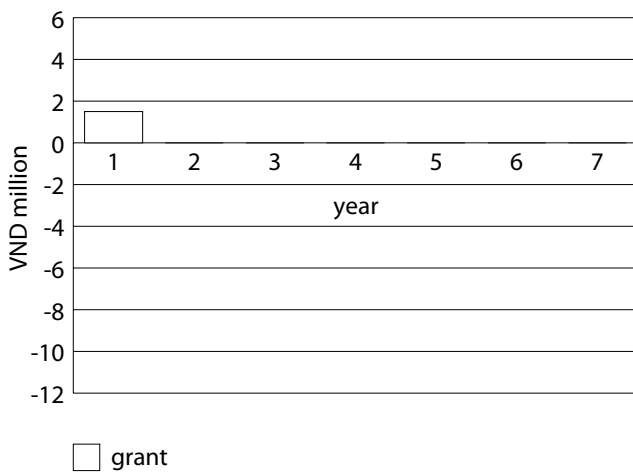


Figure 8. One-time grant under the 661 Programme

The PFRSFM supports households through grants in kind and cash (see Figure 10). Even though it staggers the grants in multiple instalments, the initial assistance in kind and cash is equivalent to roughly three-quarters of the total amount. In this way, it is similar to the 661 Programme, although the amount of support given to households is significantly larger. However, the PFRSFM adds a small component that may provide a financial incentive for households to manage plantations under medium rotation. The amount of initial support is sufficient to cover the investment requirements of medium-rotation management.

The BSP offers households the option of taking out small loans and repaying them in annual instalments, an option used by many borrowers (see Figure 11). Considering the small size of household plantations, the typical loan amounts suffice to finance the

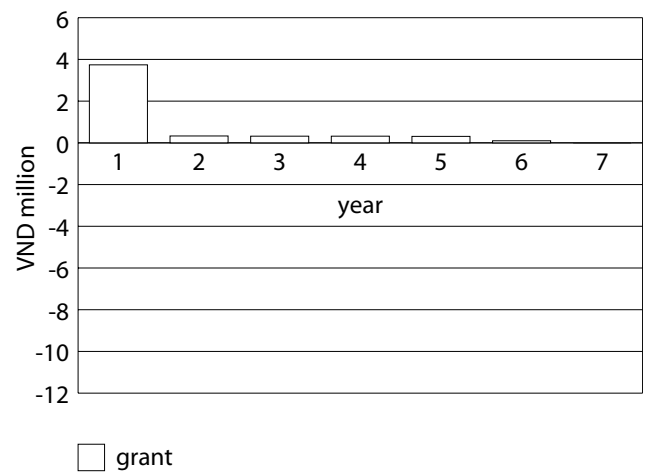


Figure 10. Staggered grant under the PFRSFM

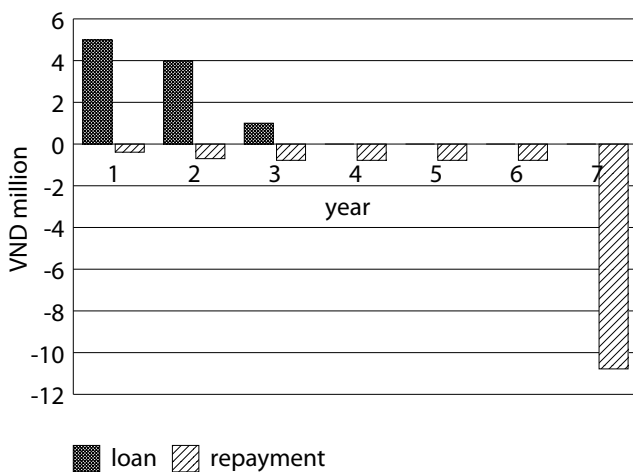


Figure 9. Loan with single repayment under the FSDP

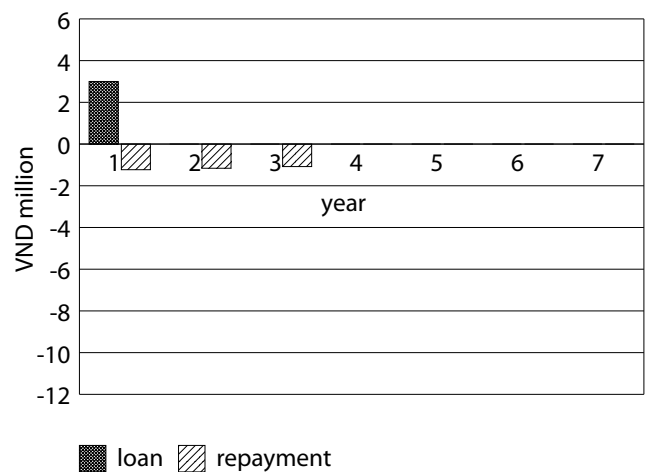


Figure 11. Loan with annual repayments from the BSP

investment requirements of plantations managed under short and medium rotations. However, the timing of support and, in particular, the requirement to repay the principal within 3 years discourage management under medium rotations.

Agribank typically offers households 3-year loans (see Figure 12). As with the BSP, the loan amounts are enough to finance the initial expenses for short-rotation and medium-rotation plantations. However, the requirement to repay the loan at the end of the third year creates a direct disincentive to medium-rotation management.

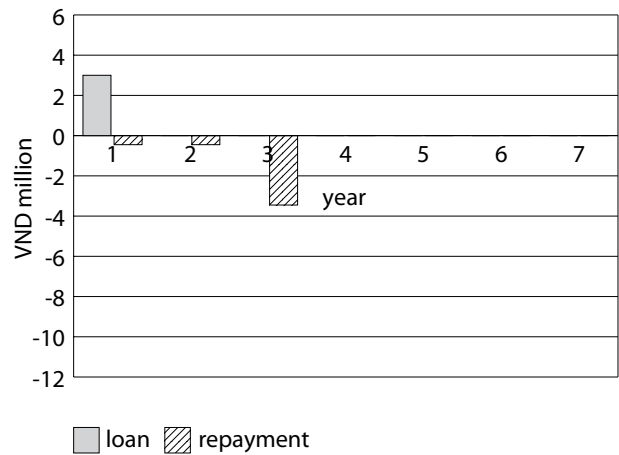


Figure 12. Loan with single repayment from Agribank

5.8 Summary

The discussion in this section shows that the 5 finance programmes not only have different characteristics, but also employ different mechanisms to support household tree plantations. No single mechanism scores high on all criteria (see Table 3).

This finding demonstrates that the design of suitable finance mechanisms to support household tree plantations involves difficult trade-offs between competing objectives, which are the subject of the concluding section.

Table 3. Comparison of the finance mechanisms

	661 Programme grants	FSDP loans	PFRSFM grants and savings accounts	BSP loans	Agribank loans
Availability	Widespread, small amounts	4 provinces, large amounts	4 provinces, medium amounts	Widespread, small amounts	Widespread, large amounts
Sustainability	No	No	No	Not yet	Achieved
Leakage	None	Some	None	High	High
Access	Easy	Medium	?	Easy	Difficult
Cost	None	Medium	High opportunity costs	Low	High
Risk	Project	Household	Project and household	Household	Household
Match	Surplus	Investment	Surplus	Surplus	None

6. Summary assessment and policy recommendations

This section summarises the assessment of the 5 finance mechanisms covered in this report. It points out critical trade-offs in the design of finance mechanisms for supporting commercial household tree plantations and demonstrates that no single mechanism can match the financing practices of all household types. It concludes with recommendations for a loan-based approach and 3 mechanisms for providing the finance required by different households establishing commercial tree plantations in Vietnam.

6.1 Critical trade-offs

Efforts to design finance mechanisms for household tree plantations encounter 3 critical trade-offs. Perhaps the most important trade-off is between financial sustainability and the goal of providing accessible, affordable and low-risk support to households. A mechanism that provides easily accessible support to households at low cost and low

risk incurs costs that make the programme dependent on continuing support from outside (*e.g.* central government or international donors). By contrast, a finance mechanism that prioritises financial sustainability erects barriers to access, increases costs and raises the risks for households.

This trade-off becomes very clear when comparing the general production loans offered by Agribank with the 661 Programme and the PFRSFM (see Table 4). Agribank's programme is financially sustainable, but it is difficult for households to access, incurs high costs for them and puts all the risk onto households. By contrast, the 661 Programme and the PFRSFM are easy to access, involve low costs and do not create much risk for participating households; however, neither of them is financially sustainable. The BSP's mechanism offers an interesting compromise between the 2 competing goals. The BSP offers accessible, affordable and low-risk loans to households at a modest level of external subsidy.

Table 4. Comparison of Agribank with 661 Programme and PFRSFM

	Agribank	661	PFRSFM
Sustainability	Yes	No	No
Household access	Difficult	Easy	?
Direct cost to households	High	Low	Low
Risk to households	High	None	Low

Source: Information published by the finance programmes

Table 5. Comparison of 661 Programme and FSDP

	661 Programme (for 2006)	FSDP (2006–2010)
Annual budget (US\$)	5.7 million	6.7 million
Annual area (ha)	52 000	16 500
Geographical coverage	Nationwide	4 provinces
Amount/area (US\$/ha)	110	500
Loan duration (years)	n/a	7–8 (15)

Source: Information published by the finance programmes

The second trade-off is between availability and match with finance requirements. A finance mechanism that seeks to make support available to as many households as possible will encounter problems in fully meeting the finance requirements of tree plantations. Vice versa, a mechanism that provides enough support to meet actual investment requirements, especially in the case of medium and long rotations, will find it difficult to reach many households. Comparing the 661 Programme with the FSDP is illustrative in this regard (see Table 5). Although the 2 programmes have similar annual budgets available, they reach vastly different numbers of households. The FSDP supports plantations on less than one-third of the area assisted by the 661 Programme. This is because the FSDP makes much larger amounts available to households for a hectare of tree plantations, and households do not have to repay the loan for 7 or 8 years (since recently, 15 years).

The third trade-off is between leakage and sustainability. Finance mechanisms that aim for financial sustainability do not include procedures required for effective monitoring. As a result, households may use support taken up with the stated purpose of investing in tree plantation for other productive or unproductive activities. Vice versa, a mechanism that includes systematic monitoring incurs programme costs that reduce its financial sustainability. For example, the BSP and Agribank provide large volumes of finance to households under their general loan programmes. Although the stated purpose of some loans is to finance investment in household tree plantations, it is unknown what proportion actually goes towards the plantations. Similarly, the FSDP explicitly restricts all loans to finance tree plantations. In practice, however, in the absence of effective monitoring, households use a sizable share of the loans for other purposes. The situation with the PFRSFM is different. The project expends considerable efforts to assist participating households and monitor their plantations, reducing the leakage of finance to other activities.

6.2 Suitability for different types of household

The comparative analysis shows that the finance mechanisms do not suit all 3 types of household equally. This is because households value access, costs, risk and match with finance requirements differently depending on whether they orient production

towards survival, surplus or investment (cf. Sandewall *et al.* 2010). Low risk and easy access may be of critical importance to survival-oriented households but less so to the other types. Costs may be a more significant factor for surplus-oriented households than for the others, as the former want to ensure the annual generation of a surplus. By contrast, match with finance requirements, particularly the requirements of medium-rotation plantations, may be the most important factor for investment-oriented households.

Thus, no single finance mechanism satisfies the needs of all 3 types of household. Instead, it is important to compare the 5 mechanisms from the perspective of households' financing practices (see Section 3.2).

None of the finance mechanisms serves the finance needs of survival-oriented households. Households of this type are primarily concerned with ensuring their survival from year to year. They may take out small loans, but they mostly do so in order to cover unexpected expenditures and shortfalls in annual surplus. None of the finance mechanisms includes such an insurance component. The savings accounts offered under the PFRSFM come closest to providing an insurance function, yet the share of total finance put into the savings accounts is small compared with the costs of the inputs provided as a grant (see Figure 10). A bigger problem, however, is that survival-oriented households are excluded in practice from participation in the programmes. These households cannot even receive assistance from the 661 Programme, even though the low-cost and low-risk support would meet their needs.

Surplus-oriented households benefit from the finance provided through the 661 Programme, the PFRSFM and the BSP. These mechanisms match their concerns with the generation and use of an annual surplus, as they enable households to raise the available surplus without endangering their capacity to repay the loan. The grants in kind from the 661 Programme and PFRSFM help surplus-oriented households to increase their level of initial investment by adding to their available surplus. In addition, the savings accounts under the PFRSFM mimic the savings function of tree plantations. As with the other 2 mechanisms, the BSP loans increase the amount of finance that is available to establish a plantation. At the same time, the limited amount and the option of repaying the principal in annual instalments allows households to service the loans from their annual

surplus. By contrast, loans offered through the FSDP do not match the needs of surplus-oriented households because the amounts are in excess of their finance requirements, and the requirement to repay the principal in a single payment exceeds the annual surplus in that year.

Investment-oriented households find the loans offered through the FSDP to be most suitable, as they afford access to significant finance and do not require repayment of the principal until the time of harvest. The loans grant these households the necessary finance to make an investment that yields a profit in the long term. These households are ready to borrow large amounts and carry the associated risks with the expectation of eventual profits. By contrast, the other finance mechanisms do not meet their needs as loan amounts are too low and loan periods too short.

6.3 Policy implications

These results suggest important implications for the design of suitable finance mechanisms to support commercial tree plantations operated by households in Vietnam, that is, tree plantations established by households in areas with good markets for the purpose of income generation (excluding plantations established for other purposes). Policymakers need to be aware of the 3 critical trade-offs discussed in Section 6.1 and the varied suitability of finance mechanisms for each household type, as elaborated in Section 6.2.

First, the trade-off between financial sustainability and the goal of providing accessible, affordable and low-risk support to households provides a strong rationale for a loan-based approach at a time when it is increasingly difficult for the Vietnamese government to receive overseas development assistance for forestry. Assistance based on loans has an advantage over a grant-based approach in that the capital stock is maintained, making it possible to continue support to tree plantations into the future. For the same reason, the use of commercial interest rates on plantation loans will preserve the capital that the central government supplies. Furthermore, experience with the BSP demonstrates the benefits of organising loan recipients into small groups, as these groups improve household access to loans and simultaneously help to reduce transaction costs in a win-win solution.

Second, the trade-off between leakage and sustainability suggests the benefits of an approach that combines the provision of loans through the BSP with monitoring by savings and loans groups. Provision through the BSP helps to reduce programme costs, as the BSP maintains a dense network of branches and transaction points and possesses all the infrastructure and procedures to manage loans. The savings and loans groups help not only to reduce transaction costs but also to monitor the actual usage of loans. The trade-off between leakage and sustainability, therefore, provides another rationale for giving savings and loans groups a central role. Moreover, it demonstrates the special opportunity offered by the BSP—assisting household tree plantations in a way that is relatively low cost but that also safeguards the intended use of loans.

Thus, the provision of finance to household tree plantations should incorporate 4 key elements (see Box 2). Financial support to households for commercial tree plantations should take a loan-based approach, charge commercial interest rates, require loan recipients to form small groups and operate through the BSP. In adopting these elements, it would minimise the need for external subsidies and curtail the leakage of finance to other activities.

At the same time, a mix of mechanisms is necessary in order to match households' varied finance requirements and practices. The key differences between mechanisms would be the amount of finance offered, the modalities used for repaying the principal and the distribution of investment risk between finance programme and household (see Box 2).

Investment-oriented households will benefit from targeted loans for medium-rotation plantations. As these households hire most of their labour, they require relatively large amounts of support (roughly VND 15 million/ha). They have the ability to repay the loan in one payment at the end of the term and carry the full risk of the investment. Given budget limitations, such loans would have to be targeted at selected geographical areas.

Surplus-oriented households will require medium-sized loans to finance medium-rotation plantations. As household members perform most of the required activities, loans of roughly VND 7 million per ha would suffice. Surplus-oriented households would repay part of the principal every year in light of the savings function of plantations. As with investment-

oriented households, they would have the capacity to carry the full investment risk. The loans would be restricted to particular geographical areas because of limited budgets and be accompanied by technical advice to motivate the extension of rotation periods and application of improved silvicultural practices.

Survival-oriented households would benefit from small reforestation loans (roughly VND 3 million/ha). The loan amount would be enough to finance the purchase of high-quality seedlings and fertiliser, which would need to be encouraged by providing suitable advice. A finance mechanism suitable for their financing practices would also require additional savings and insurance components. Survival-oriented households would repay the principal in annual instalments. Their loans would incorporate

elements that reduce the amount of investment risk they carry. Such elements include the options of postponing repayment of the principal under certain circumstances, drawing on repaid principal temporarily and reducing outstanding loan amounts in the case of natural disasters. Considering the small amounts, the loans could be made available in all areas where commercial tree plantations are viable.

The transition towards long-rotation management would require additional adjustments to the mix of finance programmes (as well as accompanying extension efforts). The provision of finance for long-rotation plantations would target investment-oriented households, as only they are capable of raising the necessary capital and carrying the associated risks. A mechanism would seek to support a gradual shift from medium to long rotations by inducing the households to diversify management and retain part of their plantations for 12–15 years. Thus, the transition would require an extension of the loan period to 12–15 years, but no other changes would be needed to the finance mechanism developed above.

Finally, to be financially sustainable, the provision of finance for household tree plantations will need to diversify the sources of capital. The current reliance on central government and international donor funding is unlikely to generate the required capital in the future. Potential alternative sources of finance include overseas and domestic private investment funds as well as carbon finance (Clean Development Mechanism, voluntary market, Reduced Emissions from Deforestation and Degradation). Perhaps more importantly, finance programmes for household tree plantations need to identify ways to increase savings locally. Although this may represent a big task and new territory for the programmes, it would be possible in the long term. After all, surplus-oriented households already invest their surplus in tree plantations as a form of savings. In the future, investment-oriented households may find bank deposits a more secure form of investment than risky productive activities. Given the right conditions, households of both types may put part of their surplus and profits into savings accounts and other schemes offered by banks. The banks could then use the capital to finance reforestation loans to other households.

Box 2. Key elements for providing finance

Future provision of finance to commercial tree plantations operated by farm households should include the following elements:

- loans offered by the BSP
- 7-year loan period
- commercial interest rate (currently 1.25%/month)
- savings and loans groups

In addition, the provision of finance needs to include specific components tailored to the financing practices of each household type.

Investment-oriented households:

- relatively large amount (VND 15 million/ha)
- selected geographical areas
- repayment of principal at the end of loan period
- households carry the investment risk

Surplus-oriented households:

- medium amount (VND 7 million/ha)
- selected geographical areas
- annual repayment of principal
- households carry the investment risk

Survival-oriented households:

- small amount (VND 3 million/ha)
- all areas where commercial tree plantations are viable
- annual repayment of principal
- household and programme share investment risk

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Access to external finance critically influences farm households' ability to establish and manage commercial tree plantations in Vietnam, as it does elsewhere. The Vietnamese government has recognised the importance of household tree plantations and, in particular, the benefits of giving households access to external finance. Not only has the government transferred around a quarter of Vietnam's forestland to households, but it also offers them exceptional access to financial support through targeted programmes and the state-owned banking system.

This report analyses the mechanisms used in 5 programmes that currently provide finance to households. It compares the 5 mechanisms against 7 criteria: availability; financial and operational sustainability; leakage to other productive activities; household access; cost to households; risk to households; and match with households' finance requirements. In addition, it considers the finance requirements of 3 types of households, differentiated according to their investment rationales.

The report finds that Vietnam's policymakers face critical choices when they design finance programmes to support household tree plantations. The most critical trade-offs are between financial sustainability and the provision of accessible, affordable and low-risk support, between wide geographical coverage and match with farm households' finance requirements, and between leakage and financial sustainability. The report highlights the benefits of adopting a loan-based approach to providing external finance to households managing commercial tree plantations in Vietnam. It also identifies specific conditions for plantation loans for different types of households and for the transition towards long-rotation plantations.

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