

# briefing

No 01

## Linking the Poor with Rice Value Chains\*

**Improvements in rice productivity in Viet Nam over the past decade have seen massive increases in the production and profitability of rice and significant reductions in poverty. Yields of rice in Viet Nam are the highest in the region, and returns per hectare are among the highest in the world. While there are numerous constraints in the marketing chain, farm gate margins are relatively high—indicating that most of the marketing margin accrues to producers rather than middlemen. However, significant numbers of the poor are either land scarce or landless and there is limited potential for significant productivity increases from improved rice production. This implies that rather than concentrating on rice production as a vehicle for poverty reduction, government policies should emphasize income maximization and diversification into highly profitable farming systems. For the land poor and landless, policies should concentrate on the development of labor-intensive farming practices and labor-intensive rural industries.**

### Overview of the Rice Industry in Viet Nam

Agriculture plays a relatively important role in the economy of Viet Nam. Agriculture contributes 24% of GDP and generates 20% of export revenues. Over 70% of the national labor force is employed in the agriculture sector, and a further 6% is employed in the agricultural postproduction sector.

The cropping subsector in Viet Nam is characterized by a large number of small-scale producers with a relatively small land area. The average land area per capita in the rural areas in Viet Nam varies between 0.06 hectare (ha) in the Red River Delta and 0.29 ha in the Central Highlands region. The national average is 0.14 ha per capita in rural areas.

The growth rate of rice production between 1990 and 1999 was an average of 5.6% per year, driven by increases in yield (2.8% per year) and planted area (2.7% per year). The total harvested area of paddy in Viet Nam is almost 7.5 million ha, with the largest proportions of paddy harvested area being in the Mekong River Delta (50.5%) and Red River Delta regions (16.1%).

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Although rice production is prevalent throughout Viet Nam, yields and growing periods vary substantially. The average yield for paddy in Viet Nam is currently 4.3 tons (t)/ha, with average yields in the Mekong Delta around 4.2 t/ha and in the Red River Delta around 5.3 t/ha. While areas such as the Mekong Delta are able to produce up to 10.12t/ha, other areas are able to produce only 2.4 t/ha. The higher productivity of the Mekong and Red River Deltas underline their importance in rice production for surpluses and food security within Viet Nam. Equally, surpluses in other areas of Viet Nam remain highly dependent upon stable climatic conditions and farmers often face a food deficit for many months per year.

Despite areas outside the Mekong and Red River deltas being in rice deficit, Viet Nam produces a surplus of rice and has been a significant net exporter of rice since 1993. In 2001, export volumes of rice were around 3.56 million tonnes, an increase over the 3.37 million tonnes exported in 2000, but significantly lower than the record export level of 4.6 million tonnes in 1999.

### Dimensions of Poverty

Viet Nam has experienced a significant reduction in the level of poverty during the 1990s. Nevertheless, the percentage of poor households in Viet Nam remains relatively high and over 90%

of the poor is concentrated in rural areas. Poverty is much more common among farming households than others. Approximately 80% of poor are farmers and farm households have higher poverty rates than unemployed households.

Despite the improvements in poverty rates in Viet Nam, poor households remain vulnerable. Farmers that are income constrained and subject to food insecurity and poor health often find themselves in a perpetual debt cycle that increases food insecurity. This is compounded by the poor farmers often having limited assets and low levels of savings to depend on during crisis.

While the incidence of poverty is greatest in remote and mountainous regions, by far the greater numbers of poor households live in the Red River and Mekong deltas. Substantial numbers of poor households are involved in paddy production, or are landless laborers dependent on seasonal agricultural work. In the Mekong Delta, over 39% of households in the poorest quintile are landless, compared with 31% in the Southeast and 7% in the Red River Delta.

Poor households have less land than richer households, with households in the poorest quintile only having 0.11 ha/capita, while those in the richest 2 quintiles having 0.2–0.25 ha/capita. In terms of cropping land, households in the poorest quintile have only 0.064 ha/capita while those in the richest quintile have 0.103 ha/capita. In addition to having less land, poor households have lower agricultural productivity than other households. For example, in the case of rice, paddy yields for the poorest quintile average 3.37 t/ha, while the richest quintile gets 4.11 t/ha. Given that poor households have less land per capita, and the land cultivated being of lower quality than richer households, this translates in lower levels of food production per capita.

### **Government Policies for the Rice Industry**

Historically, food security has been one of the top priorities of the Vietnamese Government. The need to ensure adequate supplies of grain to meet the needs of the population meant that government policy was directed toward expansion of paddy production areas and the development of irrigation infrastructure. In addition, the Government was committed to the nonconversion of paddy land into alternative uses. The policy of nonconversion of

rice land was enshrined in several pieces of legislation including Directive 247-TTg (28 April 1995).

Government reforms in land use rights, production decision making, tariffs, and quotas have all had a major impact on production levels and productivity. Coupled with increasing use of fertilizers, pesticides, and high-yielding varieties, the production of paddy has increased significantly during the mid 1990s and early 2000s. Poverty and hunger alleviation in remote and mountainous regions has been boosted with the provision of hybrid varieties to replace lower yielding traditional varieties.

Since the mid-1990s successive surpluses of rice has decreased concerns about food security, and policies on paddy land have been relaxed. Recent legislation covering this changed policy include Resolution 03/2000/NQ-CP (2 February 2000) and Resolution 09/2000/NQ-CP (15 June 2000). During the past few years the Government has moved away from trying to improve paddy yields and expanding paddy cropping area toward income maximization and diversification, through programs such as the D50 million per ha model. In comparison, gross returns from paddy production average D10–20 million per ha per year.

One of the main rationales for the relaxation of the nonconversion policy is that allowing farmers to change their production systems from low-value rice cropping to potentially high-value activities—such as shrimp aquaculture or fruit tree production—will contribute to poverty reduction in these areas. This is especially the case if conversion is undertaken on marginal land, or nonirrigated land. The low rice yields in these areas and the higher levels of poverty mean that benefits to farmers of conversion of this marginal land could be significant.

### **Rice Value Chain Constraints**

Inhibiting the development of the rice industry and value adding are a series of constraints along the marketing chain—affecting producers, traders, millers, and exporters. Some of these constraints are outlined below.

#### **Producer Constraints**

##### *Land Use Constraints*

Farmers have found that the best way to raise incomes from their land is to diversify out of rice monocropping and into higher value crops or land uses. While the Government no longer prohibits farmers from moving out of rice production, institutional factors still affect such movements and production decisions. There remain other constraining factors, not least of all the long-term suitability of rice land for other uses and the small size of land plots that reduces the scope of alternative land uses. Where alternatives are available, such as fruit trees or shrimp farming, the availability of investment funds may be limited and returns subject to long gestation periods. Equally, in the case of shrimp farming questions of long-term sustainability remain.

#### *Seed Improvement Constraints*

Rice farmers are currently heavily reliant upon locally produced farm-saved seed. Reductions in seed purity will potentially decrease quality and yields overtime. Though alternative seed sources are available from universities, research institutes and central and provincial seed agencies, the quality of seeds sourced from these agencies is in most cases no different from farm-saved seed and there are problems with certification systems. The seed breeding system is focused on producing seed for export varieties and high-yielding hybrid varieties. Often there is little feedback from farmers on what varieties are economically and technically suitable for particular areas and which varieties are actually demanded.

There remain significant weaknesses in the breeding pyramid for rice seed in Viet Nam, which includes a lack of investment at the top levels of the breeding system. Coupled with a lack of breeder rights and enforceable standards for seed, this has led to commercial pressures on breeding centers and the premature release of seed varieties. This affects the stability of variety lines at lower levels of the breeding pyramid. Equally, commercial pressure reduces the incentive to develop new seed varieties or to ensure standards. These pressures also lead suppliers to introduce imported, proven seed varieties such as IR and Chinese varieties. While these imported seeds can bring about increased yields, they are often introduced singularly and not as part of a technology package, reducing their effectiveness. These distribution and adoption methods result in reduced quality and yields, particularly in areas

outside of the Mekong and Red River deltas.

#### *Input Constraints*

Most of the imports of fertilizers and pesticides are currently controlled by provincial and central state-owned enterprises (SOEs). This restricts access to affordable inputs and forces farmers to source fertilizer and pesticides from the "black market" and smuggled inputs. This reduces the ability of the input sector to operate efficiently and limits the regulatory system for agricultural inputs. This in turn reduces the efficiency of environmental and health monitoring in the use of fertilizers and pesticides.

Irrigation systems in Viet Nam benefit substantially from state financing. Despite this support, irrigation management companies continue to make large losses and are unable to maintain and fund irrigation operations efficiently. The current charging system for water and irrigation services has much to do with this inefficiency. Irrigation fees are often charged on a community basis and rice farmers are then charged a fixed amount rather than a fee based on their actual use of irrigation services.

Information about new production techniques and possibilities could help raise quality and yields in rice production. However the current research and extension service system suffers substantial weaknesses limiting the amount, quality, and appropriateness of information given to farmers. The current research and extension system is relatively new in operation and is not yet operational throughout Viet Nam. In addition, it is yet to reach the commune level. The training that is given suffers from a poor quality due to its design and the limited resources available to it.

Rice farmers also suffer constraints in accessing credit, especially navigating the bureaucratic procedures necessary to access loans through the formal banking system. The repayment system for credit also gives no allowance for the seasonal nature of agricultural production and income. A lack of access to savings as well as credit institutions also leads to an inability to "self-insure" via savings during times of no production and low income.

In addition to these constraints faced by rice farmers, improvements in rice quality and the value of rice in both the domestic and world

markets are further hindered by constraints downstream in the rice value chain. Rice collectors, private and SOE millers, traders, retailers, and exporters all face numerous and often overlapping constraints.

### **Collector Constraints**

Rice collectors are in general small private enterprises operating on small margins. Constraints felt by collectors include scarce credit and capital, as well as price and information constraints. Collectors suffer from the negative effects of spatial distribution of rice producers and are unable to take advantage of the economies of scale in collecting activities.

### **Miller Constraints**

#### *Industry Structure*

The current system of “double milling” causes both private and SOEs a major constraint in their operations. The current marketing system for rice sees a large number of small private dehuskers participating in the marketing chain, who mill paddy that is then sold as brown rice to larger private millers and provincial food companies for final milling. This multiple milling practice substantially affects the quality and standardization of rice, which in turn affects value and the opportunities to export higher-quality and higher-value rice. The large number of small private millers makes it extremely difficult to ensure rice quality and standards.

Around 36% of rice is produced for subsistence consumption and 64% for retail sales. Direct purchases between upper levels of the marketing chain, large millers, and food companies and farmers is relatively low and accounts for 20% of retail sales. There is little incentive for large millers and food companies to mill paddy directly as transportation costs are the same for paddy and brown rice (giving the incentive to transport brown rice) and the machinery for processing paddy is reportedly expensive to purchase and maintain.

One way to improve the situation and to ensure an improved level of quality and standardization is to move toward greater integration within the milling system. However such a move is sure to have significant employment effects on small millers and would also require increased financing. Though

export quality has improved in recent years, Viet Nam continues to export predominantly poor quality rice. Couple this with an export structure that relies on government organized contracts and a limited number of foreign distributors, there remains little incentive to improve quality and raise export volumes.

#### *Contracting Constraints*

Of major concern to SOEs, such as provincial food companies, are the government-to-government contracts negotiated by Viet Nam Food Corporation (VINAFOOD), around 1 year in advance. Provincial food companies are required to supply rice to fulfill such contracts and can suffer significant losses under such contracts through price movements and also because of the interest on loans they must pay to purchase rice for these contracts.

#### *Credit Constraints*

Private sector participants in the rice value chain face credit constraints in their operations. On the one hand they lack working capital, which limits their ability to purchase adequate paddy from farmers. On the other, they have access disadvantages relative to SOEs, as they are limited to receiving 70% of required capital while SOEs are able to receive 100%. This places SOEs in a stronger purchasing position.

#### *Infrastructure and Marketing Constraints*

Storage is also a constraint to millers, especially small millers because it limits their ability to purchase and store paddy and wait for higher prices. High moisture content, due to poor and inadequate drying facilities and storage, also results in substantial losses during milling.

### **Trader Constraints**

The biggest constraint identified to the expansion of rice and other food crops is a lack of markets. Many rice exporters complain that even if export markets are identified it is extremely difficult to find the quantities and qualities of rice needed to fill contracts. If prices are to rise then export opportunities must develop, as further expansion and intensification of cropping systems will put downward pressure on already saturated domestic markets. Within the domestic market the biggest constraint is the cost of transportation. If

improvements are made in transportation infrastructure, then it is conceivable that transport rates could drop by 30%.

### **Retailer Constraints**

The high level of competition in this area of the value chain leads to very low margins for retailers. Add to this poor infrastructure in many areas, especially remote areas, and the fragmented distribution system, then retailers face several constraints in purchasing rice.

### **Exporter Constraints**

Constraints suffered in exports have been identified earlier in this summary and include the current exporting system, forward contracts, credit access for private enterprises, quality of rice, and the current pricing system for rice.

Private sector participants in rice exporting face constraints, most notably in the distribution of government-to-government contracts organized via VINAFOOD 1 (Northern Food Corporation) & VINAFOOD 2 (Southern Food Corporation). As these contracts dominate rice exports, private sector participants are unable to participate substantially in exporting. The nature of these contracts also causes problems—there are limited opportunities for firms to participate in these contracted exports, and those that do supply rice are often obliged to supply rice to VINAFOOD, even though they may suffer losses through such contracts. At the same time many of these government-to-government contracts are for low-quality food-aid rice with a commensurate price discount to the prevailing world price.

Pricing for these exports and also domestic rice prices also cause problems. With the Ministry of Trade responsible for rice export prices, based on world market prices, and domestic prices calculated by the Government Price Commission, based on the cost of production, there have been occasions where a higher price is available in the domestic market rather than the world market. With export licenses only approved for prices higher than the world market, it is difficult for export companies to engage in exports and sign contracts due to the rigors in obtaining export permits.

The supply of rice for export is also a constraint

with supplies withheld for export until domestic demand and supply conditions are fully realized. Research shows that the supply of rice for export follows the seasonal availability of rice rather than matching global conditions and demand.

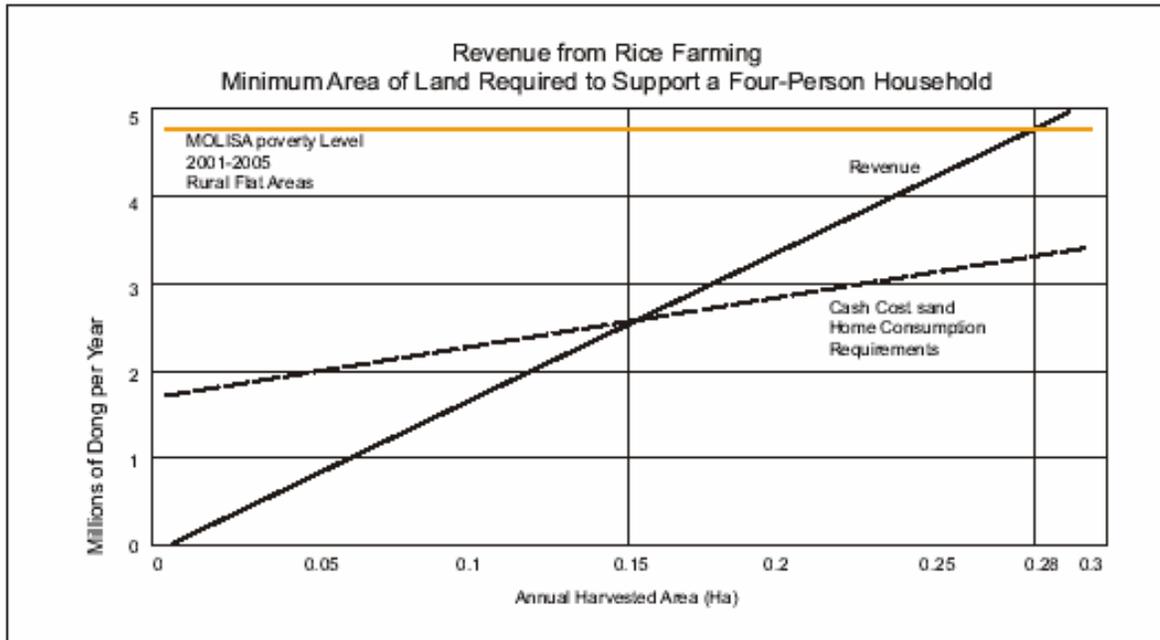
The current structure of pricing, export contracting, and the supply of rice for export produces a very risky price system with effects for the prices that farmers receive. No hedging system is currently in place to protect exporters from the risk of negative price fluctuations—exporters will continue to bear considerable risk. Equally, the lack of diversification in rice exports will make it difficult to expand and possibly maintain current export volumes.

### **Marketing Chain Margins and Returns to Rice Production**

While gross revenue per hectare in the Mekong Delta is around D16 million per ha per year, gross profit margins (including labor opportunity costs) are about D7 million per ha per year. Returns and profit margins in other regions are substantially lower. Table 1 gives an outline of marketing margins, and the percentage of the difference between input cost and retail price accruing to different levels in the rice value chain. While the marketing margin accruing to producers is relatively high at around 35%, other actors along the chain operate on volumes rather than percentages. Rice millers and exporters often make losses due to fixed contracts.

For the typical poor household, the question is how much land is required for self-sufficiency. Assuming four people in the household and average yields over 2 crops per year, the typical family in the Red River Delta requires just over 0.15 ha of paddy (double cropped) to produce enough rice to feed themselves; or 375 square meters ( $m^2$ ) per person (Figure 1). For the typical poor four-person household with an average paddy area of 0.064 ha per capita, this equates to around D1.2 million in surplus above food self-sufficiency needs (based on two crops per year). Given the tendency in Red River delta communes to allocate 1 *sao* ( $360 m^2$ ) per person, up to a maximum of 4 *sao* per household ( $1,440 m^2$ ), this illustrates the borderline self-sufficiency of poor households in densely populated areas.

**Figure 1: At an average farm size, revenue from rice is still below poverty line**



### Effect of Improvements in the Rice Industry on the Poor

The gains in rice production and productivity over the last decade have improved the livelihoods of many of the poor, through increased household food security and increased incomes. While the development of higher quality rice could benefit Viet Nam in entering higher-value niche markets for rice exports, the potential for further substantial poverty reduction as a result of market liberalization and export orientation of rice is unclear.

While trade liberalization in rice has had a substantial positive impact on the economy as a whole, the benefits have largely accrued to wealthier and land-rich households, while the poor have not reaped significant benefits.

For example, an increase in productivity by about 20% would result in gross farm incomes increasing from D16 million to D19 million per hectare, while profits would increase from D7 million to D10 million per hectare. For the typical poor four-person household with 0.064 ha per capita and average yields, this would equate to an increase in profits from D1.7 to D2.6 million.

If productivity gains are made without an outlet for

exports, the resulting surplus will lead to significantly depressed prices within Viet Nam. The small gap between producer and retail prices indicates that producers would be more adversely affected than consumers.

Clearly, improvements in rice productivity will not bring the gains necessary for substantial poverty

reduction primarily because the poor are either land scarce or landless. The poor lack the key resources to enable them to participate in producing rice for exports; they lack land, educational attainment, capital, and access to credit. The main asset they possess is labor, which is in oversupply.

### Linking the Poor with Value Chains

The links between export-led growth and poverty reduction are often tenuous. The key to understanding the link between export-led growth and poverty reduction for the rice-growing rural household is that the poor do not benefit directly from export-led growth since they grow paddy, whereas rice is the actual export commodity.

Most efficiency gains in the rice industry are to be realized from reforming the domestic production, processing, and trade systems, rather than from

reforms at the border. Resulting reductions in transaction costs would benefit both producers and consumers.

In localized areas where there are currently no opportunities to access other domestic and international markets, increased trade opportunities would result in an increase in local rice prices. This would benefit those with adequate resources to produce surplus rice, but would increase costs of purchasing rice for those who lack the resources to produce all household rice requirements. On the other hand, improved access to trade and higher farm gate prices would provide improved incentives for increased investment in production and this would generate increased employment.

While it is possible that some of the poor (for example, those that are net consumers of rice) could suffer welfare losses from increased rice trade, productivity and marketing improvements are expected to have a positive net contribution to reducing poverty.

However, it should be strongly emphasized that the potential competitiveness of rice be weighed against the competitiveness of other products, such as maize, livestock, or aquaculture, in the development of medium-term agricultural strategies. While improvements in rice productivity will benefit the poor and improve food security, in the end policies that promote rice production may need to be combined with policies aimed at achieving crop diversification to reduce rural poverty.

Policies that promote the use of labor-intensive production techniques and labor-intensive rural agro-industry will do more to benefit the rural poor than policies that promote the mechanization of agriculture or emphasize increasing rice production at the expense of income generation and agricultural diversification.

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This briefing paper is one of a series produced by the Regional Technical Assistance Project "Making Markets Work Better for the Poor", which supports activities in Viet Nam, Lao PDR and Cambodia. The purposes of the project are to (a) conduct analytical work on the functioning of markets and the extent to which the poor are able to benefit from them, and (b) to build capacity to support pro-poor market development through research activities, networking and the promotion of policy dialogue in the three project countries. The project is co-financed by the Asian Development Bank (ADB), ADB Institute and the UK Department for International Development (DFID). More information on project activities is available at [www.markets4poor.org](http://www.markets4poor.org).

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