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Republic of Tajikistan

Priorities for Sustainable Growth: A Strategy for Agriculture Sector Development in Tajikistan

Technical Annex 4. Horticulture Sector Review

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I. Introduction:

During the Soviet period Tajikistan was a major supplier of fresh and processed horticultural products to Russia (Moscow, St Petersburg). In the initial period following independence, production of both fresh and processed products fell as a result of the collapse of a centralized purchasing system. This decrease in production was compounded by the effects of internal conflicts until 1998. With the noticeable exception of melons, the production of fruits has generally tended to decrease since 1991, even though planted area has not decreased, implying a fall in yields per hectare. In comparison, since 1998, whilst the area planted to potatoes and vegetables has increased markedly, production has increased even more, which demonstrates a noticeable increase in yields over that period. Since 1998 the production base has continued to be split relatively evenly between the North and South of the country for vegetables, fruits and berries (although the majority of melons come from the south). In addition, the area used for fruits and vegetables is increasing at the household and private farm level, whilst that at the large farm level is decreasing. This is partly due to the ongoing privatization of the large farms (thereby passing their land to the other 2 categories), but also due to an increased land usage, especially in the vegetables sector.

The main problems facing the sector are

- negative factors in the agricultural business environment in Tajikistan;
- a failure to re-orient production and post harvest handling to new consumer trends;
- increased competition in export markets;
- a general lack of investment from production through to processing;
- geographical/climatic inhibitors and technical and non-technical barriers to trade.

Many of the problems in the business environment are common to most agricultural crops:

- lack of security of land tenure; lack of collateral; under-developed agricultural credit sector;
- lack of medium to long term financing; severe fragmentation of production etc.

The net effect of these problems is (i) a fundamental lack of confidence among producers to re-invest in their land, machinery or orchards; (ii) an inability for processors to undertake the necessary capital expenditure and business expansion; and (iii) an aversion for the trading community to become involved in building and developing export links with foreign markets.

What is clear from historical production figures, as well as the recent upward production trends, is that Tajikistan has the potential to develop a strong and sustainable horticultural sector. In the short term, the degree of competitiveness for the domestic market is not a prevailing concern, although it will increasingly become so in the medium to long term future, as neighboring countries continue to develop at different rates and relatively free terms of trade enable the passage of product at minimal tariffs. For exports, however, the long term success of the sector will depend on specialization in horticultural products for which Tajikistan has a competitive advantage (be this price, quality, seasonality etc).

Given that the horticultural sector has been privatized in Tajikistan, any strategy for its development will clearly depend on a clear segregation of the roles of the various actors in the supply chain. The report clearly sets out those sorts of actions that could be taken by the Government to improve the overall production, financing, processing and trade of horticultural products – the agricultural business environment. Should such steps be taken, the producers and processors will be enabled to positively react to the demands of the market.

To capitalize on this stimulus to the sector, there are also clear roles for the IFI/donor community in the form of projects, financing and the introduction of modern production, handling and processing technologies. It should be noted, however, that care should be taken in the sequencing of any such sector strategy, as the beneficial effects of increases in production volume or quality (at the fresh and processed level) could be lost or, could even negatively impact the sector, if access to external markets is not realized and there is limited opportunity for import substitution.

II. Horticultural production in Tajikistan

2.1 Production trends

About 22% of arable land in Tajikistan, or 170,000 ha, is currently used for horticultural production (85% of which is irrigated). Over 80% of households are involved in horticulture and is an important contribution to household food security, net income and access to cash. Total production amounts to 682,000 MT of vegetables and 247,000 MT of fruit (2004 data).

2.1.1 Fruits

Fruit production in Tajikistan falls into 3 main categories – fruits (seed and stone, citrus, subtropical and nuts), melons and grapes. Historically, fruits constituted the largest production category, in terms of output and land usage. Recently, however, melon production has surpassed other fruit production (although not when measured by land usage, since melons are cultivated on a smaller area), although much of this is because production has fallen by less than for other fruits. As Figure 1 shows, total production has fallen between 1991 and 2003, most notably for grapes (77% decline) and other fruits and berries (50% decline). While melon production has been steadily increasing since 1996, total production has fallen by 12% over the whole period.

Figure 1: Percent change in crop production per ton (1991-2003)

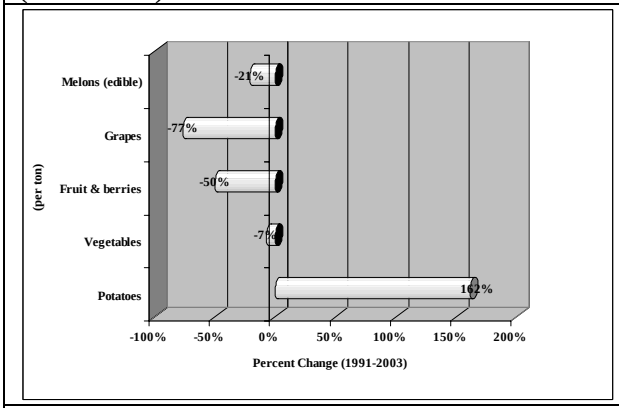
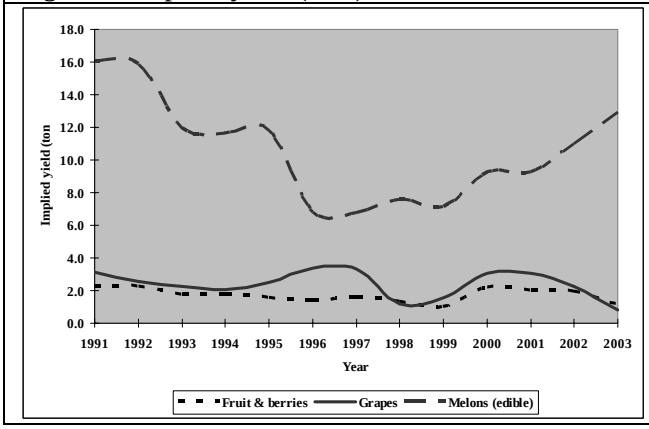


Figure 2: Implied yield (tons) 1991-2003

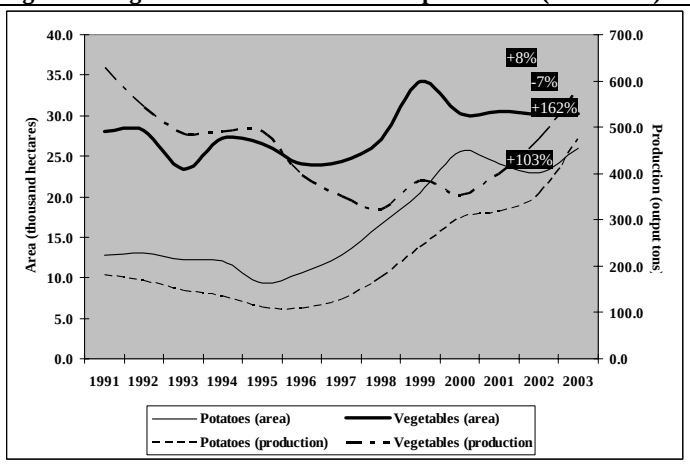


To understand this in context, it is important to examine the area of land used for these crops. Between 1991 and 2003, the area allocated to fruit and berries has not changed (despite a marked increase in production around 1994), the area used for grapes has only decreased by 12% and the area for melons has decreased by only 2%. Some of the annual falls in production can be attributed to unfavorable weather conditions, which these are most noticeable in large production swings (e.g. grape production between 1997 and 1998). However, the implied yield data for melons appears to show continuing improvement; since 1998, there has been an 81% increase for melon yields per ton (see Figure 2). This is largely due to the fact that this is an annual crop, which is not negatively affected by lack of tree/vine replacement (which is the major factor in the other areas of production.).

2.1.2 Vegetables

The production of potatoes has increased by 162% from 1991 to 2003 (see Figure 1), while the production of other vegetables has decreased slightly (7%). Figure 3 provides trend data for vegetable and potato production (in tons) and area (in thousand hectares) allocated to this production. Generally, the area used for vegetables has increased slightly (8%), but has risen dramatically for potatoes (103%). As a result, potato yields have increased by 29%, whereas vegetable production has fallen by 14%.

Figure 3: Vegetable and Potato area and production (1991-2003)



2.2 Production base

2.2.1 Fruit Producers

Unfortunately, detailed data was only available for the production split between large farms, private farms and households in the area sown to melons. Between 1996 and 2003 the total area sown to melons increased by 40%. Whilst large farms dominated production in 1996 (with 77% of total land sown), production had equally shifted by 2003. In that year, large farms sowed 35% of the total melon area, 33% by private farms and 32% by householders. This is a large switch in production and shows that the latter 2 groups are seeking to grow melons for sale and profit (as it is not a food security crop). Although a contributing factor to this trend may be the land privatization of the large farms into private farms, it should be noted that the increase in total land sown suggests that this may only be a contributing factor.

For total fruit production in the country, large farms accounted for 17%, private farms around 12% and the balance (around 70%) was made up of household production. In order to obtain a clearer picture of the production base, it would be necessary to compare the volume of production in each production unit and the area sown, as there may well be large efficiency differences in the production of the units.

2.2.2 Fruit Regionality

Fruit production varies quite a bit by region (see Figure 4): melons are clearly produced by the south of the country (Khatlon Oblast), accounting for nearly 70% of total national production. While melons are also grown in the Sughd Oblast (17%), the area is dominated by fruits and berries (54% of the total in 2003). The RRP oblast grows melons (11%) and fruits and berries (22%). Area split information for grapes was not available for the whole Republic, although data that was available showed similar areas sown to grapes in Sughd and Khatlon in 2003 (15,000 ha and 12,000 ha respectively out of a total area of 58,000 ha).

2.2.3 Vegetable Producers

Appendix 3 details the area split between the 3 main production units for vegetables and potatoes. For vegetables, the reduction in area sown by large farms has been almost exactly matched by the increase in area sown by private farms and this would suggest that this is due to the land privatisation process. The most noticeable change in the period, however, is that households have increased their area sown to vegetables by a 40% and this largely accounts for the total expansion in the period in question. It should be noted that the household sector dominates the area sown to vegetables, with around 70% of the total area sown. The most dramatic change in the sector has occurred in the area sown to potatoes, which increased by 145% over the period 1996 – 2003.

Figure 4.1: Melon Production by % contribution by Region (1998-2003)

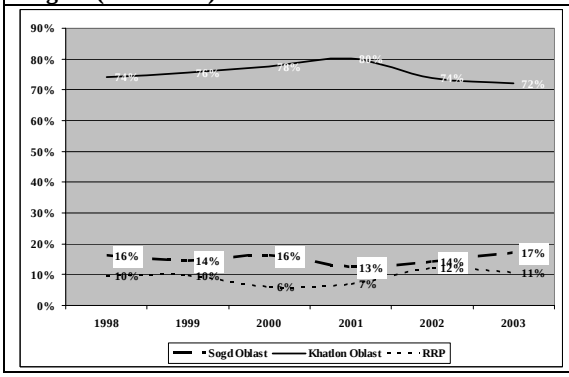
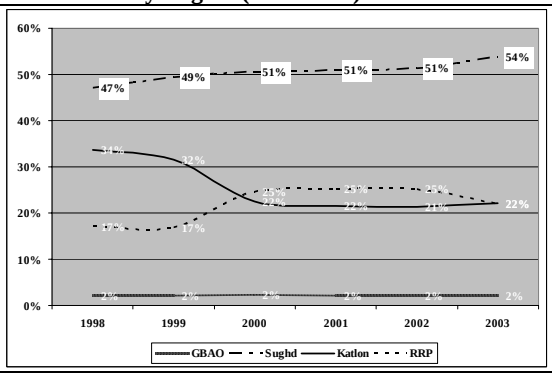


Figure 4.2: Fruit and Berry Production by % contribution by Region (1998-2003)



The area sown by large farms remained relatively flat over the period, whilst the largest growth in terms of actual hectares planted was in the household sector (almost another 10,000 hectares). The private farm sector also saw a large rise in plantings of around 5,000 ha, equating to an enormous expansion in area over the period of around 4,000% (although it started from a low base of around 120 hectares in 1996). As with vegetables, the household sector dominates the area sown to potatoes at around 70% of the total.

2.2.4 Vegetable Regionality

Figures 5.1 and 5.2 present vegetable and potato production by region between 1998 and 2003. Perhaps not surprisingly, the total production split between the main irrigated areas (Sughd, Khatlon and RRA) is relatively equal, whereas the share of the total land sown is relatively low in GBAO (since it is a mountainous area). This is largely due to the fact that the producers in these areas grow vegetables mainly for food security and therefore there is no apparent regional specialization. Given the fact that potatoes grow better at higher elevations, however, one would expect that the percentage of land sown in GBAO would be higher than the 7% seen in 2003. This may, of course, be due to the fact that producers in GBAO only have a limited amount of arable land and that other crops tend to dominate their food security concerns (which can be seen in the relatively high levels of wheat and grains planting area in GBAO).

Figure 5.1: Vegetable Production by % contribution by Region (1998-2003)

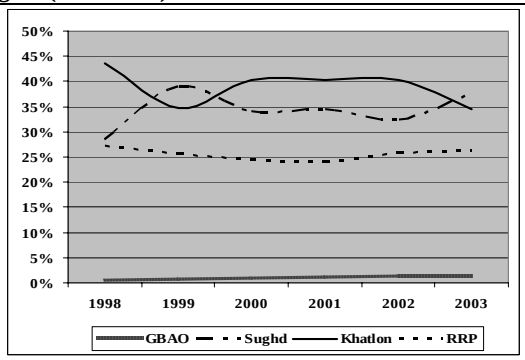
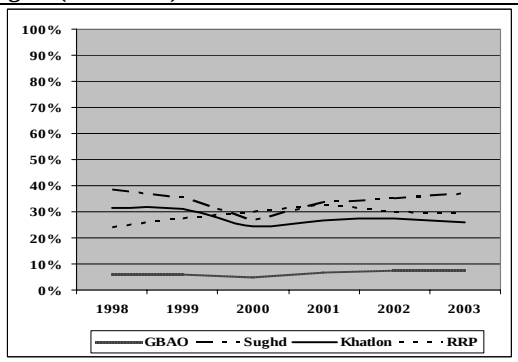


Figure 5.2: Potato Production by % contribution by Region (1998-2003)



2.3 Processing

Of the 40 registered processors in the sector, only 32 were found to be still operating, with a total capacity of 120,000,000 liters. The average capacity of these companies was 3.7 million liters, compared to an average in Russia of 20 million liters. It is striking to note that around 66% of processors have an actual capacity of less than 1 million liters and therefore the sector is dominated by small and potentially inefficient processors. However, it should be noted that, even with these low capacities all processors are operating at only around 30% of their potential capacity, with total production approximately 41 million liters.

There is a marked divide in the processing in the country, with over 80% being undertaken in the north of the country. This is partly due to the level of raw material production in the north (54% of the fruit trees and 38% of the vegetables), the lower cost of labor in comparison with Dushanbe and also the availability of improved export transport links from the north.

Due to the length of the harvesting season and lack of ability to store raw materials (both physical and financial), the processing season is limited to 5 or 6 months for most processors. On this basis, processors employ mainly seasonal staff, with permanent staff in large processors only representing around 5% of the total workforce during the processing season. For processors that are involved in the production of different types of product, they are able to extend their processing period due to the differing harvesting periods and ability to store some of the raw materials for longer periods (e.g. onions).

There is a degree of small scale processing undertaken mainly at the household level. This tends to concentrate on the drying of fruits, which are consumed by the producer and also sold through local markets. It is still common practice for many householders (especially in the urban areas) to pickle their own vegetables for the winter period. It was not possible to estimate what percentage of total production was carried out this small scale level.

The main types of processing in Tajikistan are juices, tomato paste, jams, pickles and dried fruits and vegetables. Of 28 companies for whom data was available, 20 were involved in the manufacture of 3 types of product or more, with 13 producing 4 types of products. Diversification of production enables processors to extend their processing period and also to expand their range of products for market share. The majority of processors (77%) are involved in the manufacture of juices, 50% produce pickles, 41% produce jams and 50% of companies produce tomato paste. Precise information on the share of total production for each type of produce was not available, as official data and that collected by other organizations appeared to differ. According to data collected by ITC, the share of tomato products processing jumped from 48% in 1990 to 80% in 2005, whereas the share of fruit products processing fell from 48% to 12% in the same period.

Apparently, with only the exception of one fruit juice plant and 4-5 new drying plants, the other processors operating in the sector are doing so with equipment manufactured in the early Soviet period (circa 1930's). This equipment is highly inefficient and in need of continual repair and maintenance, with only a few of the processors actually managing to achieve this. Obviously, investment in the sector has been minimal and the smaller plants rely on high levels of labor intensity.

Quality control and grading systems are still based on the Soviet Goststandart system, which is now out of date and also not compatible with the system of international standards (which differentiate between technical food safety issues and voluntary quality ones). Equally, packaging is in glass jars (with the exception of one fruit juice processor), a hangover from the Soviet period, whereas most export packaging in international markets is in sealed plasticized cardboard containers (such as TetraPak). The advantage of the latter system of packaging is not only that produce generally lasts longer, but also that it is far more cost efficient in terms of transport and unit cost. Also, with bespoke packaging of this nature, it is much easier to identify product through clear company branding, as opposed to the normal stick on labels that are often damaged or fall off glass jars.

III. Agricultural Trade in Tajikistan

Current trade in horticultural products is estimated at 20% of total production. However, given the apparently relatively high levels of exports, it is contended that this figure is actually in the region of 40-50%. It appears that most households (70% of total production) produce for their own consumption and then sell their surplus and that the majority of the production from dehqons and large farms (30% of total production) are sold commercially. Of the traded production, it is further estimated that 60% is used by large scale processors, 20% is consumed by small scale processors and 20% is sold as fresh product. However, once again, given the level of fresh produce exports, it is likely that the share of production sold to small and large scale processors is lower than the indicated figures. It should be noted that these are averages across the whole horticultural sector, whereas some products (e.g. melons) are primarily for fresh sale and export and others (e.g. tomatoes) are predominantly processed.

3.1 Supply chain

For the small amount of production that is sold by households, they generally sell to intermediaries or through a local market (if they are sufficiently close to one). Intermediaries range from other small producers with transport means or non-producers whose main source of income comes from trade. If a party is transporting produce not from their own land, then they are supposed to pay a license fee to their local district tax committee (25-30 Somoni/month). Although efficient transport of horticultural products requires the use of suitable packaging to minimize transport losses, quite often these are not used or are over filled, leading to a reduction in the quality of the product. These intermediaries sell their goods wither through the bazaars, to retailers, to processors or for export. There are few examples of producers who sell direct for export.

3.1.1 Fresh trade

It is estimated that 94% of the retail trade in horticultural products goes through the bazaars. The sales system for the bazaars and retail shops is dominated by an organization called TajikMatlubot, which owns almost 75% of the bazaars in the country and 2,700 shops. TajikMatlubot is a co-operative, created during the Soviet period, although only 0.1% of its total capital is owned by its shareholders (around 500,000 people). A small number of larger private shops have opened in Dushanbe, with only one supermarket (owned by a company called M&P).

3.1.2 Processor purchasing

Generally speaking, processors buy either at factory gate from intermediaries or from wholesalers at the market. A few of the processors have managed to build stable relationships with some of their suppliers, but these are normally based on informal and personal relationships. Many processors have attempted to purchase direct from producers, but the success of this has been limited by the fragmented production base and the weakness of both their and the producers' performance under the contracts. In order to try and increase performance, some of the processors have tried entering into limited pre-financing arrangements with some producers, but the success of this is yet again hampered by defaults from both parties and is therefore considered to be too risky as a purchasing method.

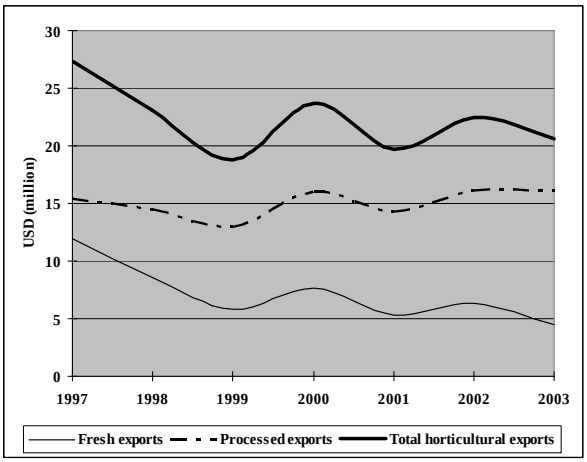
3.1.3 Export

Figure 6 presents trend information for both fresh and processed exports. While it is clear that, between 1997 and 2003, the total value of horticultural exports fell by 24%, it should be noted that the value of processed exports actually increased slightly over the period (5%) and that the main reason for the fall in total exports was due to a 62% decrease in the value of fresh exports (for both fruit and vegetable). The dynamic of processed exports is interesting in that one of the traditional exports of Tajikistan – dried fruits has fallen substantially (41%). The marginal increase in total processed exports has been accounted for by a major increase in fruit juice exports (550%) and dried onions (18%). It should also be noted that the this export base is founded on only 3 major product groups and therefore any negative change in their competitiveness will severely affect the sector's performance.

It is estimated that 20% of fresh and over 80% of processed horticultural production are exported. Over 95% of these exports are sold to Russia and they had been growing steadily until 1997, although the Rouble crisis in 1998 led to a marked decline and recovery has been slow since that time. Exports are undertaken either by the processing plants themselves or by traders. In recent years, the number of large traders has decreased significantly, with 90-95% of traders now being classified as "small" (i.e. 1 – 3 wagons or trucks per year). The main reason for this are that the operational difficulties involved in exports (border problems, import restrictions etc) have dissuaded many larger operators from involvement in the sector (due to lower profit margins).

3.2 Value chain

Figure 6: Horticultural Exports (1997-2003)



Although it was not possible to calculate the returns for a large number of products, it does appear that horticultural crops are more attractive for producers than other competing crops, such as cotton and wheat. Returns in vegetable production are in the region of 20 - 40% of the costs of production, which are certainly attractive to producers. Returns in the fruit sector vary enormously, the main reason being that they are heavily dependent on yields. For example, the average yield for citrus trees in Tajikistan is only 1.5 MT/ha compared with an international average in excess of 20 MT/ha (and much higher in some circumstances). However a large producer that was interviewed, who was obtaining yields of 15 MT/ha, was making returns on costs in the region of 200%.

In the apricot value chains, the percentage of total retail value received by producers was low at around 12% for fresh produce and 30% for dried produce. Although specific data was not available, it appears as though producer margins at the farm gate are low throughout the horticultural sector. This helps to explain why over 55% of farmers in a survey undertaken in 2000 indicated that they would much prefer to sell their produce direct in the bazaars. It would appear that the percentage of the value chains shared by producers is very dependent on the product that they are selling and the level of supply in the market. This is consistent with the relatively low demand in the market place for fresh produce versus the generally high supply. Especially in the fruits sector, it appears that the percentage share of the value chain is higher for dried produce, indicating that it is in producers' interests to initially process their production before sale. Of course, producers need to assess both the costs of processing and weight loss in order to assess whether the extra income represents an increase in profitability.

In the above example of fresh apricots, the margin between producer and bazaar prices was 87% of the value chain, which appears to be extremely large. Even taking into account the official costs of licences, wages for sellers and transport, these margins are excessive and are indicative of high supply of produce, versus a narrow marketing corridor controlled by a small number of parties. Further demonstration of this point is seen in the annual autumn "exhibitions" arranged by TajikMatlubot, at which each region is invited to bring its produce for sale in the weekend markets in Dushanbe, with transport for these exhibitions subsidized by TajikMatlubot. Prices in these markets are generally 30-40% cheaper than available in other markets, the difference not simply being accounted for by the transport subsidy, but rather due to the increased competition and access to the markets for producers (who also benefit from a higher share in the value chain).

It appears that returns for processors are very low, with some companies reporting margins as low as 3%, even before allowing for depreciation and interest costs. Many companies claim that up to 90% of their costs of production are made up of raw material costs. This is most unusual, as the sales prices for most horticultural products in Tajikistan are low and that, generally speaking, costs of raw materials in the fruit and vegetable processing sector range from 30 – 60% of the total costs of production (depending on the product being processed). It is likely that the foregoing is due to several factors, including under-reporting of profitability, lack of supply of varieties suitable for processing and large processing losses due to outdated and inefficient equipment. It is also likely that the reason for such low profitability is that processors are unable to maximize their sales prices due to bad management, poor quality product, bad packaging and inability to purchase sufficient volumes of raw material at the height of the season when sales prices are at their lowest.

IV. Problems facing the sector

4.1 Fragmented production

Almost 70% of horticultural products are produced on small farm plots and this means that there are majority of the production is being grown by a very large number of producers. This makes it difficult for parties wishing to trade in the produce to assimilate parties of goods for shipment at the farm gate level. It also makes it almost impossible to introduce demand driven quality requirements, as organizing such a diverse production base to change its practices or introduce new varieties is almost impossible.

4.2 Yield

Yields in most horticultural products are falling and this is due to a mixture of different causes, such as a lack of new certified seeds, non-replacement of fruit trees at the end of their productive cycle, failure to apply sufficient inputs and a lack of knowledge on the part of producers in agronomic practices.

4.3 Lack of specialization

Most producers are not specialists and merely view horticulture as a means of feeding their own family units and perhaps small income generation through the sale of the balance to the market. They are therefore concentrated on producing quantity, not necessarily quality. Whilst this may be a natural way for subsistence farmers to act, in the horticultural sector it is very dangerous, as this is a sector where success is determined by quality parameters. Price maximization (and therefore returns) for farmers depend on consumer behavior, all of whom demand quality when buying fresh produce. Quality is not such an issue when supplying to processors, but prices paid by this sector are generally 50% of fresh market prices. In this situation, producers need to be sowing varieties suitable for processing (which tend to be higher yielding) and this compensates for the lower prices paid.

4.4 Land tenure

The basis for land privatization in Tajikistan does not give producers any real security of tenure, as their land plots (and Presidential plots) can be removed by local government before the beginning of each season. This negatively impacts annual crops because producers are loathe to invest in drainage and proper soil fertilization and affects perennial crops even more, as producers will not re-invest in new trees (hence falling yields and quality of products such as lemons). Lack of security of tenure and properly registered rights also mean that producers are unable to pledge their land (and associated attached assets such as trees) in order to be able to raise finance to enable them to purchase the necessary levels of inputs and re-invest in things such as drainage and new trees.

4.5 Finance

At the production level, there is a general lack of credit partly due to the lack of availability of collateral from producers. Local financiers are loathe to accept immoveable property in the regions and generally will only accept such things as apartments in Dushanbe. Land is not considered to be usable as collateral for the reasons we have mentioned above. Equally, there is little credit available for horticultural production, as the main financiers in the agricultural sector concentrate their lending on the growing of cotton. Whilst this is a dangerous practice in terms of portfolio management, financiers feel more confident in cotton, as it is an export crop with internationally traded prices (which they feel better enables them to manage their risk profile). Even when finance is available to producers, it is really only suitable for annual crops, as it is only of a short term nature. This type of credit is not suitable for investments in perennial fruits/nuts. Of course, financiers are also concerned that the majority of fruits are highly weather susceptible and the chances of total crop loss or very low yields are very high in a mountainous country such as Tajikistan.

Processors are hampered by their raw material purchasing volumes being directly linked to the value of the collateral that they can pledge and hence the amount of finance available. Financiers in Tajikistan are still collateral based lenders and part of this is due to National Bank provisioning requirements. In fact, in Tajikistan, the requirements are not that restrictive (although they are being increased), but many banks have suffered huge losses in the agricultural sector and therefore the remaining operators have become extremely risk averse. Part of the problem here are the current bankruptcy regulations, which enable companies to declare bankruptcy in name and effect transfer of ownership to themselves in another guise, whilst leaving the creditors with no chance of recouping their losses. Whilst there are a number of different leasing packages that are now becoming available, they are either considered too expensive or not suitable for the purchase of processing capital equipment. In general, the sector is suffering from a lack of medium to long term credit (which is necessary for capital investment).

The trade in horticultural products (especially export) is hampered by a lack of commodity finance credit. Sales to export markets (especially the Russian ones) are based on payment after 30 days (or other credit terms) and without commodity finance being available this means that exporters have to rely on their own cash flows to be able to trade. Also, given the fragmented nature of production, the trader is faced with bridging the domestic financing gap whilst they are collating parties of goods of sufficient size to be able to export.

4.6 Export

It is clear that there are many barriers to export, the majority of them being non-tariff in nature. Firstly, in order to export by any means other than air freight, Tajik produce needs to transit various countries and cross many borders. For the bulk of exports, the main sales market is Russia and this requires exports passing through Uzbekistan. There is a long history of border problems with this country and shipments by truck or train are often held up at border posts by Customs authorities. This not only leads to long delays and increase in costs (non-official payments), but also much higher levels of spoilage if the products are fresh. Equally, the costs of road transportation are becoming prohibitive and making Tajik products uncompetitive in markets such as Russia. Recent surveys have indicated that 45% of road transport costs are made up of unofficial payments and this means that the costs of freight from destinations such as Belgium and USA are cheaper to Moscow than from Tajikistan. Therefore, even if Tajik exporters attempt to target the low cost, low quality market in countries such as Russia, they are unable to do so because the costs of transport make them too expensive.

Further, on the issue of competitiveness, Tajik produce is facing a lot of competition in what it considers to be in its traditional markets, Partly this is due to transport costs, but it is also due to such issues as quality versus price and also the large spoilage rates that are suffered for fresh produce due to the lack of proper transit packaging and overloading of wagons and containers (which is an attempt to reduce unit transport costs). It should also be noted that producers and processors are failing to react to changes in consumer behavior patterns in their export markets. As incomes rise in these countries, their markets become more differentiated and quality demands rise. Product presentation (i.e. packaging) is one of the greatest determinants of consumer behavior and Tajik exports are clearly failing to introduce modern packaging and presentation. The traditional Tajik “brand” that is a hangover from Soviet times is also under threat. Fro example, Tajikistan was famous for its lemons and these were previously in high demand in former Soviet markets. However, a failure to replace old trees is leading to Tajik lemons becoming more bitter and this is negatively impacting demand for them (and consequently for other Tajik products as well). It is also noted that exporters are failing to manage their “brand” in destination markets. There are many examples of produce from other destinations being sold in the Russian markets as Tajik produce.

4.7 Standards

Quality certificates in Tajikistan are issued in accordance with a standards system that is based on the Soviet Gosstandart system. This standard is not in accordance with international practice and mixes together technical compulsory parameters (food safety) and voluntary standards (quality, such as sugar content etc). The accepted international technical standards are those maintained by the WTO and those for voluntary are dependent on the country of destination of the product, e.g. European Directives (as well as international standards such as ISO and HACCP). Failure to be able to supply goods with internationally recognized certificates means that export to many destinations is not possible or extremely difficult. It should be noted that countries such as Kazakhstan and Russia are already moving to adopt international technical and voluntary standards and export to these destinations will technically become as difficult as it is to export to countries such as UK and France. Also, as markets become more developed and incomes rise in Tajikistan, it is also likely that Tajik consumers will being to demand products certified according to international standards, as this will be the certification that will be on competing imported products.

4.8 Processing sector

As mentioned, processors are hampered by various problems, meaning that they are unable to raise working capital and investment capital finance. The outcome of this is that the majority of processors in Tajikistan are operating with old equipment and at levels below their actual capacity. The problem is therefore that they will, overtime, be unable to compete with imported product, which will be of a higher quality, better packaged and potentially cheaper. Equally, due to their low output levels, they are unable to maintain their market presence throughout the year at the retail level and therefore consumers will naturally switch to competing products that are available and with which they will form brand loyalty. This is not simply a question of a lack of modern machinery or working capital; it also goes to the root of the problem, which is the generally low level of management expertise in most of the processing companies. Whilst many of the managers may well be specialists in processing, their marketing and financial management skills are often very weak. Revitalization of the processing sector is dependant on a move from supply driven manufacture to consumer driven supply. It is also noticeable that there is only a limited degree of semi-processing in Tajikistan (with the noticeable exception of onions). Traditional processors seem to be reticent to semi-process for supply to processing companies situated in export markets. The advantage of this activity is that it reduces spoilage in transport (as opposed to fresh), reduces units' costs of transport (due to a reduction in weight) and increases potential sales (due to quality not being such an overriding consideration).

4.9 Market infrastructure

The infrastructure that enabled Tajikistan to export such large amounts of horticultural products during the Soviet period has largely collapsed. Storage facilities have either fallen into disrepair or passed into alternative usage after privatization. For the horticultural sector this is especially problematic and compounded by the fragmentation of production. Also, since Independence there has been almost no investment in modern storage facilities (such as Controlled Atmosphere – CA – warehouses). Whilst there are a lot of trucks available for hire, they are generally old and none of them equipped for CA transport. The rail infrastructure has suffered from a lack of repairs and maintenance and an almost total lack of new investment in track or rolling stock. The continuing domination of TajikMatlubot at the bazaar and retail level is clear, although whether this is beneficial or detrimental to the sector has not been analyzed in the original report. So long as costs and bureaucratic entry to the market system are minimized, the existence of the infrastructure should be beneficial to producers, processors and consumers alike. However, it should be noted that the maintenance of such a system of ownership will not be beneficial to the economy in the long term (due to potential market distortions and lack of private ownership) therefore plans to privatize and restructure this organization should be considered.

4.10 Legal environment

The general legal environment in Tajikistan is weak, mainly due to problems with obtaining transparent and fair rulings from courts. This problem means that the terms of contracts are often not adhered to, with the party in breach not fearing the commercial consequences. This is a major disincentive to both producers and processors to enter into crop pre-financing arrangements. Equally, the protection of rights does not appear to established, with a current lack of sufficiently developed property registries (both for moveable and immoveable property), which has a direct affect on both the law of contract and the financing sector. Dispute resolution depends on court proceedings, due to a lack of availability of sound third party arbitration procedures (although DFID is making progress in this area).

4.11 Agricultural taxation

Although developments have been made to move towards a system of agricultural taxation based on a land tax, the continuing existence of District tax regulations is a disincentive to group marketing activities (e.g. the provision for obtaining a license from the tax authorities for transport/sale of produce not grown on the party's own land). Given the relatively low revenue from this source, the problems with monitoring it and the opportunities for rent seeking both at the local level and road police, there is little gain in this provision.

V. Policy Implications

Given the above, it is clear that there is no "silver bullet" for the rejuvenation of the sector. Successful development will come as a result of various reforms and the creation of the correct incentive environment for the private sector participants. We have split this section on potential solutions/interventions into 3 categories – government, sector participants and IFIs/donors.

5.1 Government

Land reform and quotas: In order to encourage producers to invest in their land and production means, it is imperative that they have stable, long term rights to the use of their land. Whilst it is understood that the government is concerned that producers should only be able to maintain this right so long as they are making rational use of their land, the provision for removal of usage rights for misuse must be clarified, made transparent and executed by an independent authority free of rent seeking opportunities. Alternatively, an independent Ombudsman could be appointed to review cases of dispute of local government's execution of their powers.

Although there is now no official system of production quotas, it is well accepted that the continued existence of a national quota for cotton production is being applied by local government. The effect of this is to limit dramatically the amount of land that is available for the production of horticultural production. Given the apparent higher levels of profitability available in the horticultural sector, allowing producers to increase their production in this sector would inevitably lead to higher rural incomes and a reduction in the levels of poverty.

It is also necessary for the government to create and maintain a registry for moveable and immoveable property rights. This will enable the gearing in the financial markets to be increased and result in an increase, not only in credit liquidity, but also the willingness of financiers to lend to producers and processors alike (which would also result in the reduction of the current interest rate levels). It should be noted that a lot of work is being done by USAID in this area and the continued support of government is vital.

Legal environment: The success of any market economy is based on the building block of the rule of law, clear legislation and a transparent, independent judiciary. Without these things, participants in the economy are unable to interact with each other on a "level playing field". This results in an atmosphere of distrust and abuse of bargaining position. Clearly, the participants in the horticultural sector (as in many others) do not have confidence in the legal system and this has lead to an effective collapse in the law of contract. The government needs to ensure that its laws in the areas of contract, bankruptcy, property rights, anti-monopolies and pledge are reviewed, codified and made publicly available. The roles of the legislative, judicial and executive branches of government should be clearly divided and defined, with particular emphasis on the role of Presidential Decrees in the legislative framework. The current work of DFID to create third party arbitration courts in Tajikistan is an extremely important development for the commercial sector and should continue to be actively supported by the government.

Standards: Adherence to and application of internationally accepted standards is becoming increasingly important in international trade. Countries which fail to harmonize with these standards leave their exporters facing insurmountable technical barriers to trade, which will have long term negative impacts on their domestic economies. Whilst adoption of these standards is imperative, their correct application is equally important. This necessitates the creation of a suitable infrastructure (reference laboratory, accredited independent testing laboratories, accreditation authorities etc), a clear delineation of their roles and maintenance of their independence from government and the production/processing sectors. This will require the government to overhaul their current standards system and begin harmonization with such systems as the WTO Codex Alimentarius, HACCP, ISO etc.

Terms of trade agreements: Huge problems are currently being suffered by the sector in the execution on export trade. Most of these problems are due to export/transit procedures with neighboring countries. Although concepts such as a "green corridor" through Uzbekistan have been discussed, so far they have failed to be implemented. The government needs to actively pursue terms of trade agreements with its main trading partners. Not only might it be possible to simplify customs procedures, transit regulations and import procedures, but Tajikistan might be able to achieve favored nation trading status with some of its partners, which would help increase the competitiveness of Tajik products. Also, given the improvement of transport links to Afghanistan, it is certain that trading opportunities with countries such as Pakistan and Iran will improve. It should also be noted that these countries also offer Tajikistan the ability to access very competitive sea freight and other new markets (for example the Middle East).

Government can play an important role in export promotion, mainly being achieved through their foreign representations in other countries. Whilst such attempts by other transition countries have met with mixed success, the introduction of a well designed and managed export promotion strategy would certainly aid Tajik exporters and the economy as a whole.

Innovation/Research and Development: During the Soviet times Tajikistan was a leading specialist in the development of new varieties, production techniques and IPM. All of these operations were carried out by institutes maintained by the government, but since Independence funding for these research organizations has all but stopped. Whilst the reason for the removal of funding is understandable, the medium to long term sustainability of the sector is dependent on their rejuvenation. Although it is possible to import new varieties from other countries, there will be certain products that the quality of which will be particular to Tajikistan and part of the "Tajik brand". It should be noted, however, that these institutes, if initially funded by the budget, should also be supported by a simple commercial structure which will enable them to market their innovations and therefore achieve their own sustainability. Alternatively, government could introduce grant or long term credit programs in order to stimulate research in the private sector.

Taxation: The recent introduction of a unified land tax is a very positive development, as it provides a transparent system with simple assessment of taxation due and monitoring of receipts. However, the continued existence of the district tax for goods not produced on a transporter's own land is a continued disincentive to group marketing. More importantly, due to the difficulty in monitoring, it encourages rent seeking at the district level and also adds another level of bureaucracy that can be used by transport police and other authorities to seek rents from the sector. It is advised that this should be removed and the minimal fall in district tax receipts accounted for in the budget.

5.2 Private sector

Given that this sector has been privatized, participants in this sector are free to act in whatever manner they choose. Therefore, any suggestions made in this section can be only that, suggestions. The creation of an improved investment and production environment will encourage them to follow such suggestions and the existence of IFI/donor operations to support such operations will also provide the means to implement such suggestions.

Finance: As with many transition economy financial sectors, the banks and financing institutions in Tajikistan are very risk averse and base most of their lending operations on heavily discounted, pledge backed credits. Whilst this is understandable, it severely limits their liquidity and hence their incomes. As the returns on "T" bills and other banking operations (e.g. executing government financial operations, such as pensions) decrease, the banks will need to develop alternative means for income and capital generation in order to be sustainable. In this regard, it is suggested that these institutions need to develop their credit operations and lending policies in order to begin to work with their clients on operationally based risk assessment, not simply the availability of pledgeable assets. Equally, as they develop their capacity in this regard, they will need to review discounting rates and definitions of acceptable assets.

Marketing groups/Associations: It is clear that the current fragmentation of production is posing various problems (quality and volume) for processors and traders alike. It is also causing a problem for producers in that their domestic terms of trade are lessened by their lack of bargaining power and inability to enter into supply arrangements with the next market level due to having such small parcels of production available. However, the reticence of producers to work together is also understandable and a natural consequence of transition (in that producers are loathe to enter into a system that is perceived as being similar to the previous collective model). However, marketing groups (pooled supply or commodity platforms) are a different concept and only imply that producers will cooperate in the marketing of their products. They still retain their independence and choice at the production level (unless they should also decide to cooperate at this level as well). It has been noted in other transition economies (including Tajikistan) that producers are now realizing that there are clear advantages to working together in the sale of their produce and disadvantages to continuing to work in "isolation". Marketing groups are generally more successful in countries where the group is based on local or family ties (which reduce the negative impact of lack of trust). The societal structure of Tajikistan therefore lends itself to the creation of such groups, be that on an informal basis in the initial instance. It is important to note that the success of this model depends on the impetus for its creation coming from the "bottom up", as opposed to "top down" (i.e. based on producers' choice).

Another contributory solution to the problem of fragmentation is the creation of producers' associations. However, great care is required in the establishment of such organizations; as they are prone to abuse by interested parties and can really only succeed if they truly represent the interests of their members. Such associations can be formed at any level of society; although the larger they are in terms of membership, the more influence and perhaps success they have. They do not necessarily have to be based on a geographical area, but can be based around product groups. Associations can also be a very successful structure for the processing sector as well. They enable the introduction of voluntary standards, generic branding and can act to represent the interests of the sector at a political level as well.

Marketing: At the production level, producers will need to make the switch to "farming for profit" and away from simple subsistence. Whilst they may continue to produce for their domestic needs, they clearly have a balance that they sell to the general market. It is imperative that this excess production is what the market (consumers, traders or processors) require. This is not a simple question of quality, but also of the varieties used for production. In the tomato sector, for example, the varieties used for the production of tomato paste are much more efficient for tomato paste, but not so suitable for table usage. This generally applies throughout the horticultural sector. What is required is for producers to make the switch to specialization, as opposed to bulk production. Success in this area relies on an interactive relationship between all parties active in the sector and that demand information reaches back to the production level.

For retail and export sales of fresh product, it will become increasingly important for producers to consider quality issues and also for traders to raise the level of their performance in terms of packaging, washing, grading and sorting. Concentration on the opportunities for niche marketing (either unique product or specific timing of sales) will not be a sector wide success, but it will enable all parties to add value to their current production.

Processors clearly have an important role to play in the sector (perhaps the most important). Whilst they may have had a leading role in exports during the Soviet period, the most important thing for them to realize now is that they have to answer the demands of the market(s). This will necessitate them concentrating more on the efficiency of their production, their financial planning and most importantly their marketing. They are now in a position of competition, where supply in the international markets often exceeds demand, where markets and products are highly differentiated and where consumer patterns change on a seasonal and annual basis. They will need to invest much more heavily in their market information (at home and abroad) and seek the expertise of parties who specialize in the interpretation of that information. Whilst there are obvious problems in the relationships between producers and processors, it is the latter's responsibility to lead the resolution of these problems and to attempt to solve the problems in their supply chain.

5.3 IFIs/Donors

Clearly, there are many challenges facing the sector and potential steps that can be taken by both government and the private sector to solve these issues. They will, however, need the support and know-how of the IFIs and donors in order to catalyze many of these efforts and also to maximize their speed of their impact. There are many areas where IFIs and donors can intervene of offer their help and some of them are listed below:

Credit/grant projects: As can be seen from the report, there is clearly a need for market infrastructure (warehouses, CA storage facilities, bonded warehousing, packaging, sorting lines etc etc). Projects can be structured for private sector lending or through lending to government, where these facilities are initially leased out with eventual privatization, or credits are passed on through PFIs to enable private sector participants to establish these facilities. Equally, whilst there are issues with the types of lending, there is also a clear lack of liquidity in the credit market of Tajikistan and carefully designed finance facilities, operated through PFIs, with corresponding technical assistance to the PFIs to build their lending capacity will be fundamental to the development of the sector. It should be noted that such facilities need to ensure that they do not adversely affect the newly emerging commercial credit market that is currently developing in Tajikistan. Credit/grant facilities are also clearly required for government investments that have a public good aspect – for example the harmonization of the standards system the creation of a properly equipped reference laboratory.

Technical assistance: There are clearly glaring knowledge gaps at all levels of the sector. Although these gaps will close with time through the gaining of experience, there are opportunities to provide targeted technical assistance to build capacity in Tajikistan. Such TA should be of a practical nature and concentrate on the solving the specific problems as they have been mentioned above. There is also a need for technical assistance to the government to help them address some of the important reforms that are necessary for the creation of a suitable regulatory environment (standards, legal reforms, land reform etc).

Technical Assistance: The IFIs and donors have an enormous amount of experience and know-how gained from many years of development. Importantly, much of this experience has been gained in countries similar to Tajikistan (and even neighboring countries). Whilst it is appreciated that there are specifics to the Tajik economy and horticultural sector, many of the lessons learned in other countries can be applied or learnt from in order to help government and the private sector to move forward at a pace faster than might be achieved without the use of such experience.

Co-ordination: There are a large number of IFIs and donors operating in Tajikistan. It is imperative for the government that these organizations co-ordinate their operations in so far as it is possible. It is clear that there are many situations where organizations' operations can either be complimentary or where responsibility for various areas of the sector can be divided to ensure that the benefits of their operations can be maximized.

VI. Review of Government's Horticultural Export Strategy (in collaboration ITC)

It is clear that a large amount of work and planning has gone into the creation of the currently proposed export strategy and all participants should we warmly congratulated for the results that have been achieved to date.

The existence of such a strategy shows that the Government is of the opinion that the horticultural sector is of strategic importance to the economy and also the reduction of poverty in the country (especially given that the majority of the raw material production in undertaken by small holders in rural areas). Clearly, in order to implement the strategy, an enormous amount of work will need to be undertaken by the Government, the private sector and the donor/IFI community. This strategy, while not yet finalized, begs four important questions.

First, given that the raw material and processing infrastructure have been privatized, there needs to be a clear division made between those actions that can be taken by the Government and those that can be suggested to the private sector. Obviously, if investment in new processing facilities etc, is not seen to be profitable, then the private sector will not react in such a way. Equally, if producers perceive that the returns from increased volume or quality of raw materials is not beneficial to them, then they will switch to other crops or simply maintain their current levels of production. Clearly, therefore, the role of Government is to create a better operational and investment climate for the private sector, whilst maintaining or long term seeking to increase their returns from the sector. There is a danger, as has been seen in the cotton sector, that the existence of a target for levels of production will result in the existence (official or otherwise) of production targets at the district level. Unless this is matched by an improvement in the internal terms of trade, this may well not be beneficial to producers and may therefore negatively impact on poverty issues.

Second, given the increasing tendency of the globalization of trade and differing rates of development in neighboring countries, the issue of competitiveness must be considered in some detail. Whilst there may have been dynamic demand from Russia during the Soviet times, the consumer behavior patterns and market differentiations in that country have changed dramatically (especially since the 1998 Rouble crisis and the notable impact of hydrocarbon revenues etc) in the past 2 to 3 years. It is extremely unlikely that Tajikistan is competitive in the export of traditional bulk fresh export F&V products, such as potatoes and carrots, to countries such as Russia. They may well, however, be competitive (in the near term) for the export of these products in their processed or semi-processed forms. Whilst many of the structural reforms that are necessary would be beneficial to the sector as a whole, it is not clear that the strategy will be able to lead to an increase of production / profitability / exports across the whole sector.

Third, before the Government, private sector or donors/IFIs could be expected to react positively to such a strategy, it will clearly be necessary to undertake some form of preliminary cost/benefit analysis. Whilst the 3 scenarios detailed in the strategy are clear in their assumptions and potential outcomes, the cost of these scenarios will also need to be considered and compared with the projected outcomes. The government will then need to consider whether the levels of investment and effort being directed to this sector outweigh the potential improvements that could be obtained in other sectors if a similar strategy were to be followed. Obviously, the likely outcome of this, given Tajikistan's limited budget resources and lending/grant ceilings of donors/IFIs, will be for there to be a balanced approach across various sectors.

Finally, it is clear that the potential risks facing such a strategy are not inconsequential. Many of the export related problems that Tajik exporters are facing involve issues that are not necessarily within the control of the Government. For example, the well documented border and transit problems with Uzbekistan and the continuing problems with other exit routes (such as the Salang Pass, political unrest in neighboring countries and therefore high costs of transport and insurance) are not issues that will either be solved quickly or permanently. The potential effects of such blockages to export could be disastrous for the sector in a situation where production levels dramatically increase, as the internal market will become a "pressure cooker", the ultimate effect of which will be a dramatic drop in prices for raw materials and a potential increase in poverty levels (when producers are unable to sell their product at above cost price). Equally, the horticultural sector is particularly prone to weather risk, given the climatic conditions of Tajikistan. Particular attention will need to be paid to measures that can mitigate these risks (the introduction of new varieties, frost protection technologies). A useful example of a country facing similar problems is Armenia and perhaps certain lessons or parallels could be drawn.

This said, however, this strategy has clearly set out a potential road map for the Government, private sector and donors/IFIs to consider. The challenge for each participant will be for them to assess their willingness and ability to achieve the results of such a strategy. For the donor/IFI community, a detailed co-ordination of effort will be required to ensure that their programs and interventions are complimentary and therefore achieve the maximum developmental impact.