UGANDA'S HORTICULTURE SECTOR: FRUITS, FLOWERS, VEGETABLES AND VANILLA

PREPARED FOR
UGANDA'S CONFERENCE ON COMPETITIVENESS
OF SELECTED STRATEGIC EXPORTS

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PREPARED BY THE IDEA PROJECT

FINDINGS AND RECOMMENDATIONS

- In 2001 the total *fob* value of horticultural export products was conservatively estimated at $30 million.

- Products currently exported which have growth potential are small/intermediate roses, gerbera, tropical flowers and foliage, plant cuttings, fresh chilli, passion fruit, okra, baby vegetables, vanilla, sun-dried tropical fruit and some others such as papain from papaya.

- The value of horticultural exports can grow to a value $100 million *fob* over the next five years, based on products which are already being exported in relatively small quantities. IIdentification of new products is useful but not essential in the short-term.

- Vanilla, cocoa and papain can be produced by small-scale farmers in many parts of the country. Their potential as supplemental cash crops to coffee has been largely untapped. Fresh flowers, plants, fruits and vegetables are generally require significant investment capital, but offer high quality employment, and opportunities for outgrowers to supply commercial farms.

- Export growth of horticultural exports is constrained by production rather than market factors. There are no serious market constraints facing these horticultural crops, except the need for continuity and quality of product.

- It is important to realise that Uganda cannot be a competitive producer of some of the major traded horticultural commodities, including fresh beans, banana, pineapple, mango and avocado. Climatic conditions are generally not favourable for green peas and beans, and some other disease-sensitive vegetables. Most tropical fruits are shipped to northern hemisphere markets by sea. Air freight costs are prohibitive for fruits such as banana, pineapple, avocado and mango. As a land-locked country, Uganda cannot develop competitive advantages for these fruits, except in certain small niche sectors.

- In general, investors in horticulture have benefited from the relatively favourable investment climate and financial incentives provided by government. On the other hand, public sector investment in research, education and training in horticulture is negligible. More targeted support from GOU in these areas would be instrumental in realising the potential of horticulture as a major export industry.

- GOU should focus on encouraging new private sector investment; continuing to make the airport more efficient; reducing the cost of power; maintaining roads; removing counter-productive taxes and procedures. GOU should not intervene in the supply chain by subsidising production either directly or indirectly by providing rural packhouses or similar facilities. GOU has a major role to play in education, training and research.

A. Overview

Importance of the sub-sector to foreign exchange earnings, rural livelihoods, poverty alleviation, and economic growth

In 2001 the total *fob* value of these high value horticultural export products was conservatively estimated at $30 million (IDEA Project, 2002). The figure could be under-estimated by up to

20%, because there is no reliable system in place for official collection of export statistics. IDEA uses a variety of sources, including CAA, trade associations, major exporting firms, MAAIF phytosanitary inspectors and airlines, to make reasonable estimates. URA data cannot be relied upon.

The products are shipped by air, mainly to Europe. Vanilla is the only significant export to the USA, which takes about 50% of the crop. Sales to regional markets and other destinations are less than 10% of the total.

As can be seen in table 1. The horticultural sector has almost tripled export earnings for Uganda over the last six years. Fresh flowers, plants, fruits and vegetables now account for around $19 million worth of exports annually. Floriculture exports in particular have grown by 475% in value since 1995.

Vanilla, exported as a semi-processed product, is the other star performer in the sector. It is particularly significant, since it is one of the few horticultural export crops for which small-scale growers in remote areas have a comparative advantage over large-scale agribusiness investors.

Of the products shown in table 1, vanilla, cocoa and papain can be produced by small-scale farmers in many parts of the country. Their potential as supplemental cash crops to coffee has been largely untapped. Fresh flowers, plants, fruits and vegetables are generally require significant investment capital, but offer high quality employment, and opportunities for outgrowers to supply commercial farms.

Table 1. Exports of Horticultural Products 1995-2001

Product	**1995 Value** (US$ Mill FOB)	**1998**	**1999**	**2000**	**2001**
Roses	2.30	11.68	9.95	9.12	10.93
Plant cuttings	0.00	2.34	3.51	4.50	4.97
Fresh fruits and veg.	0.63	2.30	3.13	3.16	3.07
Vanilla	0.24	0.75	1.50	2.02	6.59
Cocoa	0.64	2.12	2.80	2.02	2.87
Papain	4.46	4.94	4.20	0.98	0.55
Other HV products	2.40	0.59	0.70	0.50	0.49
Total (US$ Million)	**10.67**	**24.72**	**25.79**	**22.30**	**29.47**

Source: ADC/IDEA project seventh annual report

Floriculture comprises two main product groups, cut roses and chrysanthemum plant cuttings, shipped mainly to Holland as the primary destination. Other species are currently being tested on a trial basis.

Fresh fruit and vegetable exports are mainly to specialised ethnic buyers in Europe. Matoke and chilli (including hot pepper) account for 65% by quantity, with more than 20 other products shipped in small quantities.

Matoke is sold predominantly to the Ugandan expatriate community in Europe. The matoke banana is quite different to plantain (cooking) and Cavendish (dessert) bananas which are imported in large quantities to northern markets. It is expensive, because of air freight, and does not generally appeal in flavour to the European palate, so growth potential is small.

On the other hand, the chilli market is diverse and growing fast. Uganda is well-placed to become a major supplier to the European market.

Small volumes of starchy staples such as sweet potato, cassava and yam are also exported to niche consumers in Europe, but they cannot compete on the open market against much cheaper sea-freighted products from Costa Rica, South Africa and other sources.

Fresh fruits with an estimated value of $1.2 million were exported to neighbouring countries in 2002 (IDEA Project, 2002 - cross-border surveys).

There are currently 20 firms in floriculture, growing 130 hectares of flowers in custom-built greenhouses, which employ directly more than 4,000 permanent staff. More than three times this number benefit from associated service industries. There are no small-scale growers of flowers since the investment requirements are prohibitive. All flower farms are located within two hours of Entebbe Airport.

Fresh fruits and vegetables for export are grown by less than 3,000 small-scale growers, who sell regularly or intermittently to opportunistic export traders. Since most growers have no irrigation, their earnings depend upon weather conditions as well as market demand. The traders operate with minimal facilities and sell to price-driven fringe importers, usually located in the wholesale markets of UK and Holland. This is a shrinking business, since the wholesale markets are gradually losing market share to supermarket chains, which operate procurement contracts with a small group of approved importers.

The ever-increasing quality, hygiene and traceability requirements of the supermarkets means that opportunities for smallholder production of fresh fruits and vegetables are very limited. Modern farms with year-round irrigation, hygienic packhouses and cold chains are essential. Mairye Estates, located 40 minutes east of Kampala on the Guyaza road, is the only commercial farm of this type producing fresh vegetables to standards approved by major European supermarkets.

Vanilla is grown by more than 10,000 smallholders, usually with less than 0.2 hectares. They pick fresh vanilla beans twice each year and sell to one of six export companies. The exporters process and dry the beans over a three-month period to about 20% of their original weight. In January 2002 farmers received 15-20,000/- per kilogram for good quality vanilla, making it the highest value crop ever grown in Uganda! The extremely high world prices, due to production problems in Madagascar which is the main supplier to the world market, are expected to drop during 2002. Nevertheless this will remain a very attractive crop for small holders in the future.

Constraints and outlook:
Contrary to popular belief, growth of horticultural exports is constrained by production rather than market factors. There are no serious market constraints facing these horticultural crops, except the need for continuity and quality of product.

According to IDEA estimates, based on demand discussions with current buyers in relation to Uganda's present market position, exports of existing products could be increased by at least ten times, to $300 million, with sufficient investment.

This growth would require private sector investments in modern production units; private and public investment in training and research; and public sector investment in facilitating services at the airport, roads etc.

Although GOU has been responsive to industry lobbying, there is still room to improve taxation and investment incentives in this sector. Government can do much to encourage private sector

investment, through public support and promotion of horticultural investment, but should avoid direct intervention in the supply chain (see below, sections 3.6 E & F).

As Uganda is dependent on airfreight for nearly all extra-regional horticultural exports, the sector will always be restricted to very high value products, that can support the cost of airfreight. This is around $1.80/kg for flowers, and $1.50/kg for fruit and vegetables.

Despite the disappearance of several passenger carriers, air freight capacity has increeased during 2001, due to impressive investment by the private sector, facilitated by th GOU.

The higher value products are nearly always non-traditional, and need relatively high input costs, good management, and considerable infrastructure at the production level.

B. Demand analysis: export realities

Flowers :
All Uganda's rose exports are going into the EU, with Netherlands as the world's floricultural trade hub, accounting for 74% of total EU rose imports. Ugandan product is going to both the Dutch flower auctions, and direct importers. Germany and UK are the next largest EU rose importers, accounting for 17% of total EU rose imports (Table 2).

Table 2. EU Rose Imports, 2000

Country	***Roses,tonnage imported, 2000***
Netherlands	48,432
Germany	6,620
UK	4,819
Italy	1,757
Spain	1,442
Belgium	887
France	736
Others	553
Total EU	**65,246**

Source: Eurostat

Fruits and vegetables
Total EU imports of fruits and vegetables for the year 2000 was over $7 billion, of which the ACP countries accounted for about $0.9 billion. Many of these are sea-freighted fruits such as banana and pineapple, for which Uganda, as a land-locked country, has no comparative advantage in the mainstream market. Uganda is listed 21st in the list of ACP suppliers to the EU by value.

Market statistics are only one aspect of determining future market potential of any crop or product. Staff of the IDEA project have been analysing and testing the comparative and competitive advantages of producing various horticultural crops in Uganda, since 1996. Some of their key conclusions are as follows.

- EU floriculture imports are valued at more than $1 billion and growing at 2-4% per annum. Uganda's exports in 2001 were valued at less than $20 million *fob* - less than 2% of market demand.

- Kenya is the biggest supplier to the EU. Israel and Zimbabwe are also major suppliers, from whom Uganda could be expected to take market share in future
- The main product groups are roses, chrysanthemums, carnations, lilies, gerbera fresia and foliage. Uganda has distinct competitive advantages over other African and southern hemisphere for certain types of roses, gerbera, foliage, tropical flowers and chrysanthemum plant cuttings. This industry can grow to $100 million within ten years by taking market share from less competitive growers in Europe and Israel.
- The market for tropical flowers and foliage is largely untapped and has tremendous growth potential. Uganda could become a pioneer in this sector.
- World demand for vanilla is about 1,800 tonnes, valued at $100-150 million based on historical price trends. Uganda's exports in 2001 were valued at only $5 million *fob* - less than 5% of market demand. Yields, quality and cost of Ugandan vanilla are competitive with Madagascar, the principle supplier to the world market, and superior to other suppliers. Based on specific orders from existing buyers, this industry can grow to $50 million within ten years.
- EU vegetable and fruit imports are valued at more than $7 billion and growing. Uganda's exports were valued by IDEA at $3 million - less than 1% of market demand. However, EU imports include many products which cannot be grown competitively in Uganda.

An important point to consider in relation to Uganda's growth potential is its relatively low market share for almost all horticultural products. Since buyers generally like to spread their supply base over several countries, this gives Uganda an automatic opportunity for rapid growth.

Other African producer countries, such as Kenya, Zimbabwe, Zambia are direct competitors in the production of small and medium-sized roses. However, Uganda has three specific advantages in abundant supplies of water; lower production cost per stem; and year-round, uniform production conditions. Ecuador and Colombia supply large varieties of roses, so are not direct competition, whilst Israel is no longer price competitive The split is shown below (by value, 2000):

Kenya-38%
Ecuador-19%
Zimbabwe-15%
Israel-8%
Zambia-6%
Colombia-4%
Uganda-4%
Tanzania-3%
Others-3%

Source: Eurostat

Uganda was ranked 21st on the list of ACP suppliers of fruits and vegetables into the EU by value in 2000. The export performance of a selection of other African countries is shown in Table 3. In general, the high volume markets for fresh beans and other bulk vegetables have been taken by these counties, where major private and puiblic sector investments have been made. Ugandan growers must therefore concentrate on other products such as tropical and "baby" vegetables, for which they have significant production advantages. Based on experiences in Kenya and Zimbabwe, this will require investment in integrated production and market systems by large-scale commercial growers, linked to organised groups of outgrowers.

Table 3. Exports of Fresh Fruuits and Vegetables to the EU, 2000

Position	Country	Exports, $ millions
1	Cote D'Ivoire	210
3	Kenya	130
4	Madagascar	51
8	Zimbabwe	38
9	Ghana	34
14	Senegal	14
16	Zambia	9
17	Ethiopia	5
21	Uganda	3

Source: Coleacp/Eurosta/IDEAt

The top producer countries have managed to attract multinational agribusiness investors, and fruit and vegetable crops are grown on large scale plantations. The businesses are vertically integrated with their own marketing companies in Europe. This is currently not the case in Uganda, where we rely on the most part for small holder production scattered over a very wide area. The exporters are mostly opportunistic traders, who do not have any investment in the production or packaging process themselves. There are no marketing contracts. Product supply is erratic and quality is variable.

Many of the top producer countries presently have advantages in terms of better infrastructure, experienced management, and cheaper airfreight (for example airfreight out of Ghana at $0.70/kg, is less than half that of Uganda). However, most of these advantages are related to economies of scale or past experience, and are not permanent. Uganda, on the other hand, has important natural resource, climatic and geographical advantages which could lead to permanent competitive advantages for selected products.

It is important to realise that Uganda cannot be a competitive producer of some of the major traded horticultural commodities, including fresh beans, banana, pineapple, mango and avocado. Climatic conditions are generally not favourable for green peas and beans, and some other disease-sensitive vegetables. Most tropical fruits are shipped to northern hemisphere markets by sea. Air freight costs are prohibitive for fruits such as banana, pineapple, avocado and mango. As a land-locked country, Uganda cannot develop competitive advantages for these fruits, except in certain small niche sectors.

- Fresh fruits and vegetables which can be produced competitively in Uganda include all types of chilli and hot pepper; passion fruit; okra and some other Asian vegetables; and possibly asparagus, although this needs more research. Baby vegetables including courgette, baby corn, squash, leek and some types of onion and bean are also possible. The export value of these and other specialist products could be increased to $50 million within ten years based on market research by the IDEA Project.

- *Barriers*
  There are few institutional or legal barriers to the main markets for Ugandan products. Such barriers as exist relate to inefficiencies in production systems, which impair the quality, consistency and reliability of products being offered. These barriers are being tackled with tools such as the National Code of Practice for horticultural exports, and can be overcome in the medium-term with sufficient investment in technology and training. It is hoped that this will help improve the quality and safety of products.

In product specific terms, there are virtually no barriers to flower exports, insofar as the Dutch auctions will almost always sell the product at some price. Fruits and vegetables suffer from Uganda's inability to supply consistently and guarantee quality. For example, only one of the vegetable exporters has cold chain facilities. There are only 2 professional packhouses, and a few rudimentary ones that do not meet international standards.

- *Quality and health standards*
  Statutory health standards for horticultural products exist in all markets. In general these are not well understod by growers and exporters, although there have only been isolated cases of Ugandan produce being tested and found to be sub-standard. However, if quantities increase significantly, major improvements in chemical application techniques, water quality and packhouse hygiene will be needed.

  For both flower and produce sectors, non-statutory quality standards are very much determined by the buyers, whose standards are often higher than the minimum EU standards. Exact market specifications for each product are usually made available by reputable importers (for example to the nearest millimeter in grading vegetables such as beans).

- *Processing and packaging requirements*
  Processing of fruits and vegetables is almost non-existent in Uganda. However, there is good long-term potential for processing and exporting passion fruit juice and concentrate. Small market niches also exist for solar-dried banana, pineapple, mango, pawpaw and chilli. Uganda has no competitive advantages in the production of mushrooms and mushroom products. As for fresh produce, the buyers provide the specifications, and will sometimes even ship packaging into Uganda if it cannot be sourced locally and reclaim the cost from the selling price obtained.

- *Volume and delivery-time requirements*
  As Uganda is mainly dependent on air transport, this constraint has been addressed, and for the time being there is adequate capacity and up to 8 flights per week. There is good cooperation between fish, flower and vegetable exporters to fill charter flights, which are currently running at more than 90% capacity. The shippers have developed sufficient skill and contacts to attract more freight capacity in the future.

- *Product differentiation*
  Uganda is still too small a supplier to invest in the promotional efforts needed for product differentiation. However, as quantities increase and quality becomes more consistent, there will be a need to differentiate Ugandan products in the market place, to add value. In the produce business, the aim is always to "add value at source" and this means prepacking. Mairye Estates are already doing this for several UK supermarkets and it is going well.

C. Supply analysis: constraints facing production and post-harvest operations

Agronomic

There are no intrinsic agronomic barriers facing the production of the horticultural products identified above (i.e. small/intermediate roses, gerbera, tropical flowers and foliage, plant cuttings, fresh chilli, passion fruit, okra, baby vegetables, vanilla, sun-

dried tropical fruit and others). Results from agronomic observations and trials carried out by KARI and the private sector have been taken into account in their selection, and other crops will no doubt be identified in future. However, the mico-environment; soil category; type of grower; water availability; distance from the airport, and so on, are crucial factors which need to be considered for all new investments on a case-by-case basis.

General announcements encouraging all growers in Uganda to plant particular horticultural crops for export, are generally not a good idea, since intensive training is needed for growers to meet export standards. However, an important comparative advantage to bear in mind is that water is not a constraint in many parts of Uganda. This gives us a significant and sustainable long-term comparative advantage relative to many competitors.

Infrastructure
Public sector investment in good roads, competitively-priced power (electricity is a major cost component in commercial horticulture) and an efficient airport are all crucial factors affecting the level of private sector investment in horticulture (IDEA Project data). Progress has been made in these areas by GOU and the work needs to continue. As a result, private sector investment in commercial farms, irrigation systems, packhouses, refrigerated stores, pre-packing lines, packaging plants and other related facilities, has been accelerating in recent years. In 2001, the average export of horticultural produce through Entebbe was 201 tonnes/week

GOU should resist calls to intervene directly in infrastructure developments which would be better managed by the private sector. Rural packhouses, cold stores, processing plants and vehicles are all necessary, but are not suitable investments for the public sector. Most viable export companies now choose to buy their own trucks as a more reliable and cost-effective option than using transport firms.

Inputs
Since horticultural production is relatively low, the market for inputs is small. Consequently there is only limited competition between input suppliers and the cost of inputs is relatively high. For example, the cost of some chemicals used in floriculture are 10-30% higher than in Kenya and Zimbabwe. However, as the buying power of growers increases, prices can come down. This has recently been achieved by the Ugandan Flower Exporters Association (UFEA), who have forced local input suppliers to reduce prices by up to 20%, by threatening to import in bulk as an association.

Finance/credit
Finance and credit are perennial problems for agribusiness investors, due to the intrinsic risks involved. However, there are various financial instruments available to the horticulture sub-sector (APEX funds, ECGS, IDB etc), and interest rates of 12-15% are generally competitive with other African countries. However, the capacity of entrepreneurs to access these funds in still weak. The private consulting firms have little experience of this sector, and past success in obtaining loans has been largely dependent on foreign consultants or watertight guarantees. This problem is familiar to all banks and projects working in agriculture. Feasibility studies, business planning and financial management are all areas which will continue to need intensive technical assistance for years to come.

Technical skills
Horticulture is relatively new to Uganda. So although the daily cost of labour is highly competitive, labour efficiency is low. This applies at all levels in horticulture, from

owners to managers, to supervisors and daily paid labour. Most investors have no understanding of the benefits and techniques of a permanent training policy. At national level, training is also weak. MU does not offer horticulture as a separate degree course, and has no adequate facilities or equipment to introduce it. The IDEA Project has focused intensively on horticultural training but this is only a beginning. Customised training in target crops is an area where joint private, public and donor activities can pay massive dividends. In the related area of horticultural research and technology transfer, there is minimal public sector capacity at present.

Quality control

Quality control in horticulture is generally a private sector issue. There is usually no time to send samples for inspection so, in simple terms, if a grower or exporter does not give the customer the agreed quality of product, they will not get paid. There is a big incentive to achieve the required standard. Conversely, if the market is short, exporters can often ship lower quality produce and obtain higher prices than in times of normal supply. This is a significant difference between perishables and manufactured goods. It means that official grades and standards cannot have the same relevance for horticultural produce as for industrial products.

However, national standards of phytosanitary inspection have been well-developed by MAAIF at Entebbe and meet export requirements. At a national level, UFEA and the Uganda National Vanilla Association (UNVA) have been active in introducing national codes of practice covering environmental, social and quality issues, and in setting voluntary minimum standards which will preserve the reputation of Uganda as an international supplier.

Real and relative returns

Horticultural exporters often blame high air freight costs or dishonest buyers for their lack of success. However, it is poor quality products; low volume/high overhead shipments; and inadequate communication between exporter and buyer which are more usual problems.

Many of the export companies attempting to develop horticultural exports have neither the capital, nor the experience, nor the communication skills, nor the selling talent to be in the business. Yet they are often receiving support from donor-funded projects. This issue needs to be addressed plainly, since the notion that "more companies means more exports" may not always apply!

As a very rough guide, horticultural export products must have an average *c&f* market value of at least $3 per kilo. If the product value is less than this, the real returns to growers and/or exporters may often be negative. Obviously, before real business starts, the potential return needs to be carefully calculated for each product and each customer.

This type of attention to detail is rare amongst small-scale growers and exporters. Their real returns, particularly for fresh fruits and vegetables, are often negative. Only in the floriculture industry have detailed profiles of costs and returns been developed, which show acceptable returns on investment. These are given in the report attached as Annex A.

Exceptional profits were achieved by several vanilla exporters in 2001, and prices will remain high for the first crop of 2002. Forward contracts negotiated for 2002 will allow a much greater proportion of the sale price to be passed back to growers.

D. Institutional and market barriers

Price information
Detailed price information on horticultural crops is readily available to anyone with access to the internet. In Uganda, it can also be obtained through IDEA, UEPB and other projects and institutions. Good market analysis, on the other hand is not being carried out on a regular basis for the major horticultural crops, except by the IDEA Project, which has a limited duration. Market surveys and analyses should be an important function of the merged UIA/UEPB.

Grades and standards
As indicated above, the role of official grades and standards is limited as far as perishable horticultural products are concerned. Essential controls on imports and export of products are in place under MAAIF and do not need major modifications. A working group on agricultural inputs, including methyl bromide, has recently been set up by MAAIF and includes private sector representatives from the horticulture industry as well as MAAIF and IDEA personnel.

Market linkages
Over the past few years, the image of Uganda as a supplier of horticultural products to the world market, has improved significantly. For example:

- Uganda is now the third largest supplier of small roses to the Dutch auctions. Major flower importers visit Uganda on a weekly basis.
- The quality of Ugandan chrysanthemum plant cuttings is now the best on the market.
- Uganda vanilla is selling for the same price as vanilla from Madagascar. It is bought by all the major processors in the USA, who now visit Uganda regularly.
- Uganda is the market leader for fresh hot pepper (Habanero chilli) in Europe. Orders for vegetables far exceed our ability to supply.

Uganda is now well-known to private and public sector institutions involved in international horticulture, such as the Dutch flower auctions, COLEACP, major vanilla extractors and others. Improvements in codes of practice; quality assurance; airport handling and private sector research in floriculture, have had a positive impact on the image of Uganda, and fostered many new market linkages. The only real problem now is to increase production of products which can be shown through detailed market and production analysis, supported by applied research where necessary, to have long-term competitive advantage.

Private sector organisations
Three private sector trade associations operate in the horticulture sector:

- All flower companies have subscribed to UFEA for 2002. Their contributions amount to more than $4,000 per company. This support reflects the major achievements of UFEA over the past few years. It has a unique research and training centre, funded through sales of roses; contributions from European breeders in return for research results; and fees for consultancy. UFEA has also been active in reducing input prices; reducing costs of airport handling and freight; and developing training programmes in floriculture in conjunction with Makerere University. As a trade association, representing all growers, UFEA is an ideal for vehicle for GOU and donors to promote the flower industry. In addition to support from USAID, the Government of the Netherlands has also recently approved funding for an Executive Director.
- All major vanilla exporters are members of the Uganda National Vanilla Association (UNVA). Individual growers are represented through their local

associations. Donor funding has allowed UNVA to employ its own extension workers and conduct regular training at demonstration plots in 18 Districts. The association is now receiving significant funding from its exporter members, and recently purchased a pick-up to be used by extension workers. It has been extremely effective in controlling harvest dates to improve vanilla quality, and is currently working with District authorities to draft legislation which will protect vanilla growers from theft and fraud.

- The Horticultural Exporters Association (HORTEXA) represents fresh fruit and vegetable traders. It is a weak group which has suffered from a high turnover of companies and over-emphasis on seeking donor funds. It does not have a good record of managing its finances.

Government policies and trade barriers

Government policies with regard to horticulture are not specific. In general, investors in horticulture have benefited from the relatively favourable investment climate and financial incentives provided by government. On the other hand, public sector investment in research, education and training in horticulture is negligible. More positive and enthusiastic support from GOU in these areas would be instrumental in realising the potential of horticulture as a major export industry.

Uganda has duty-free access to all EU markets. It also benefits from AGOA and other special arrangements in non-EU European countries. New EU legislation on chemical residue levels may be a problem in future, but this will affect all countries exporting to the EU. The legislation has not yet been strictly applied, so it is too early to know if it will be a real barrier.

E The Way Forward

Development strategies

As indicated above, market demand exists so that current exports of flowers, vanilla and selected fruit and vegetable products could be increased up to a value of at least $200 million over the next ten years. Although circumstances can change, current qualitative and quantitative market indications are that there is no real need to find "new products and new markets". The strategy to achieve maximum growth of existing products should take account of the following points:

- Products to concentrate on are small/intermediate roses, gerbera, tropical flowers and foliage, plant cuttings, fresh chilli, passion fruit, okra, baby vegetables, vanilla, sun-dried tropical fruit and others such as papain from papaya. (Much papain previously reported as Ugandan, originated in the DRC).
- Marketing of these products will not be a problem for well-organised and properly-financed companies
- The technology to grow and process these products in Uganda is known although research to keep up with the competition will always be necessary. Intensive education of technicians, and training of growers is needed to expand production.
- Private sector investment in new farms and processing facilities is essential. The highest impact is likely to be achieved by ensuring close cooperation between proven business entrepreneurs, outgrowers and government.
- Research to keep up with new developments in the target crops must be funded, by both the private and the public sector.
- GOU must focus on encouraging new private sector investment; continuing to make the airport more efficient; reducing the cost of power; maintaining roads; removing counter-productive taxes and procedures. GOU should not intervene in

the supply chain by subsidising production either directly or indirectly by providing rural packhouses or similar facilities. GOU has a major role to play in education, training and research.

- If funding is to be provided by donors, it should be channeled through UFEA and UNVA as effective private sector trade associations.
- Continuation of temporary incentives could be considered by donors to "kick-start" several modern vegetable and fruit production operations, since this sub-sector is under-achieving. Cost-share grants on new technology (Government of the Netherlands), and provision of management support (USAID) have been particularly effective for the floriculture industry.

F. Priority government interventions

The role of government has been described above, but several points could be re-emphasised based on recent experience:

- Infrastructure development should concentrate on the airport, roads and power facilities.

- Detailed dialogue should be initiated and continued with UIA, trade associations and major investors on appropriate financial incentives and tax reforms which would encourage more private sector investment in horticulture. It is essential that the dialogue should involve all relevant government ministries.

- Similar discussions should take place on the best way to promote Uganda in the market place.

  Collection of export statistics is incomplete and inadequate. A new system is urgently needed to facilitate planning. This is an obvious area for donor-funded support for an initial period while capacity is developed. Current export documentation requirements are too general to provide useful analytical data.

- Targeted funding of education, training, research and technology transfer in horticulture would have major impact on future export development.

- Government should agree a limited list of target crops with all parties, for national development, and promote them.

EXAMPLES OF PUBLIC-PRIVATE SECTOR JOINT VENTURES IN HORTICULTURE

1. UFEA RESEARCH AND TRAINING CENTRE

Public sector	USAID/IDEA Project (grants, technical assistance)
Private sector	Flower growers through Uganda Flower Exporters Association ($4,000 each)
	European flower buyers in Europe (cash donations for infrastructure)
	European flower breeders and propagators (free plants without royalties)
	European input suppliers (greenhouses, irrigation etc at reduced cost)

Financial and technical analyses of the emerging rose industry in 1996-98 showed that only about 10% of the roses varieties being grown had a competitive advantage in the European market. There was therefore a need to identify additional rose varieties which could be grown competitively under Ugandan conditions, and other floriculture products to spread the risk. Several on-farm research activities were initiated immediately with private sector companies, funded by IDEA, to look for new products. Chrysanthemum cuttings were an immediate success, and there are now three major joint ventures with vertically-integrated international companies, producing chrysanthemum and other plant cuttings for export , valued at $5.5 million in 2001. Following discussions with rose breeders and buyers in Europe, a unique approach was taken to ensure a steady stream of new "Uganda-friendly" rose varieties. All parties agreed to provide start-up capital to establish a trial centre under the permanent management of the Uganda Flower Exporters Association. IDEA provided technical assistance and matching funds on a cost share basis. The centre now runs on a commercial basis with 1.2 hectares of research trials and a small on-site training facility. Fees are charged for most courses and some are run in conjunction with Makerere University. The Centre is managed by four Ugandan graduates trained by the IDEA team and private farms, and publishes a monthly newsletter which is distributed internationally on the UFEA web site. As well as providing valuable information and services to growers, this is a unique initiative which has projected Uganda as a forward-looking and innovative country within the international floriculture industry. It has been featured in international trade journals in Europe and the USA.

RECOMMENDATION
The GOU could "buy in" to this operation with an annual grant to UFEA. The grant would have certain conditions to meet the GOU's overall strategy. For example, it could be used to test new high value vegetable crops as well as flowers, and at least some of the trials should be with crops suitable for outgrower production. The best chance of attracting new vegetable investors is through the UFEA network.

2. FRESH HANDLING LTD

Public Sector	Civil Aviation Authority (rent-free land and facilities at Entebbe etc)
	USAID/IDEA Project (cold store, grants, technical assistance)
Private Sector	Growers (Investment capital, up to $10,000 each)
	UFEA (Minority shareholder to represent all flower growers)
	HORTEXA (Minority shareholder to protect vegetable exporters)

In January/February 2000 the quantity of flowers and vegetables for export through Entebbe Airport reached a level which could not be carried by scheduled passenger and cargo flights. As a result, freight rates increased and some rose growers missed out on the high market prices which precede Valentines Day. Following this crisis, the exporters carried out a feasibility study, assisted by IDEA, to take over an un-utilized cold store at Entebbe (provided by USAID), and form a new company for handling and transporting perishable products. The study was positive, and a new company, Fresh Handling, was formed using private capital raised by individual growers. The CAA were involved at an early stage to ensure that the company could be licensed as an aircraft handling agent. Since the new company supported CAA objectives of increasing freight and improving services at Entebbe, they were able to provide additional financial incentives and a regulatory framework which would benefit Fresh

handling over its first three years. Fresh Handling has been a major success. The company brought down freight rates, through cooperation with fish exporters, increased capacity and frequency of flights, and made a profit in its first full year of operation. In addition, because of dedicated handling systems and a reliable cold chain, the shelf life of Ugandan fresh products has improved tremendously.

RECOMMENDATION
The GOU should continue to assist exporters to improve their facilities at Entebbe, by making land available, providing financial incentives for a limited period, and ensuring that efficient customs and phytosanitary services are available.

3. UGANDA NATIONAL VANILLA ASSOCIATION

Public Sector USAID/IDEA Project
Mukono District Local Government Authorities

Private sector Vanilla processors and exporters through the Uganda National Vanilla Association (UNVA)

Vanilla is an important cash crop for many small farmers. Since 2000, world prices have increased and Ugandan vanilla is in demand. There is an urgent need to increase production and to protect the interests of growers whose crops are in danger of being stolen or harvested prematurely to meet demand. The six main processors formed a sub-group of the Uganda National Vanilla Association, to work with the Mukono District authorities to draft by-laws relevant to the vanilla industry. These will be tested in 2002. With a grant from IDEA, the UNVA has been able to employ and train extension workers and introduce vanilla to growers in 18 Districts. As a result, vanilla production doubled in 2001 and should continue to rise. A national campaign will be launched by UNVA in 2002 to promote vanilla as a cash crop throughout Uganda.

RECOMMENDATION
The GOU should promote vanilla as a valuable cash crop for small-scale farmers, and could buy in to the UNVA initiative with a grant to increase the number of extension workers. This could have conditions, such as a requirement to introduce other spice crops such as cardamom. A similar rational exists for buying in to the Uganda Cocoa Association, and it might be possible to combine the extension services. In some Disticts, particularly the major production areas of Mukono and Bundibugyo, many growers have both vanilla and cocoa.

Estimates of Potential exports of Horticultural Crops 2002 - 2012

1. The GOU report recommends additional investment of Ush 4.1 billion in 2001. Assuming that this is an annual figure, and it is used effectively, horticulture exports could increase to 200 million over the next ten years.

2. For floriculture, the main requirement is for training and research, and it is recommended that this is carried out in joint venture with UFEA. The planned improvements to Entebbe Airport will also help, as would making available land at Entebbe for mor cold stores and packhouses etc. Elimination of all taxes on agricultural inputs for export would also be a major incentive.

3. Fresh produce training and extension should also be implemented through UFEA. The best way to attract new private sector investment in fresh fruits and vegetables is through the UFEA network. The feasibility of direct GOU involvement in packhouses etc is not clear, and this area needs to be studied carefully. With good tax incentives and research results, the private sector would make these investments.

4. For vanilla and cocoa the main cost will be in extension and training in rural areas. The GOU should consider buying in to private sector initiatives already in progress through UNVA and UCA.

5. The projections take account of the lead times involved in investments in new vanilla and cocoa. The response time in floriculture and fresh vegetables is faster and more continuous.

Flowers

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
No investment	17.49	19.24	21.16	23.28	25.61	28.17	30.98	34.08	37.49	41.24	45.36	Growth(10%)
With investment	19.08	22.9	27.48	32.97	39.56	47.48	56.97	68.37	82.04	98.45	118.14	Growth (20%)

Vanilla

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
No investment	7.24	7.97	8.77	9.64	10.61	11.67	12.84	14.12	15.53	17.09	18.8	Growth (10%)
With investment	7.57	8.72	10.46	15.68	23.53	25.88	28.47	31.32	34.45	37.9	41.68	Growth(15%)

Fresh Produce

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
No investment	3.22	3.38	3.55	3.73	3.92	4.11	4.32	4.54	4.76	5	5.25	Growth (5%)
With investment	3.53	4.24	5.08	6.1	7.32	8.78	10.54	12.65	15.18	18.21	21.86	Growth (15%)

Cocoa

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
No investment	3.01	3.16	3.32	3.49	3.66	3.85	4.04	4.24	4.45	4.67	4.91	Growth (5%)
With investment	3.16	3.47	3.82	4.2	5.46	7.1	9.23	12	14.4	17.28	20.73	Growth (10%)

Total Horticulture

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
No investment	30.96	33.75	36.8	40.14	43.8	47.8	52.18	56.98	62.23	68	74.32
With investment	33.34	39.33	46.84	58.95	75.87	89.24	105.21	124.34	146.07	171.84	202.41

Estimates of Potential exports of Horticultural Crops 2002 - 2012