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**Cotton in the Global Context:
Discussion Paper for the Governments of Central Asia**

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COTTON **in the** **GLOBAL CONTEXT**

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ACKNOWLEDGEMENTS

This report is designed to provide a backdrop for cotton producers, the private sector and policy makers in transition economies to enable them to assess their current position relative to the global cotton market. We seek to highlight the successful facets that constitute cotton production in countries that are considered to be "success stories". Adoption or rejection of these models will obviously depend on the specifics of the economies of the various readerships, but it is clear that there are valuable parallels and lessons to be drawn from international experience and practice.

Equally importantly, we have sought to show the trends in production and consumption throughout the world. With the increasing globalization of trade and improved access to markets, it is clear that events in the global economy and production changes in other growing countries have a direct impact even at the farm gate of a producer in Central Asia. While long term price forecasting is problematic due to the actions of technical speculators, we can see that cotton remains a crop directly affected by the market fundamentals of supply and demand. With a lack of directly accessible hedging markets, there is only one direction for cotton producers in Central Asia to go and that is to develop their competitive advantage through input supply efficiency, nurturing competition, maximizing yields, improving baled cotton quality and diversifying production.

This report was produced by Mr. Marc Sadler, (Consultant, World Bank). In the compiling of this report various source materials and data were used and the author would like to acknowledge the previous and ongoing work of the ICAC (International Cotton Advisory Committee) in the production of their World Cotton Statistics and study papers on cotton production and processing throughout the world. The author would also like to expressly acknowledge the help, advice and support provided to him by Mr. Patrick Labaste (Lead Agriculture Economist, World Bank). Special note should also be made of the research of Mr. John Baffes (Senior Agricultural Economist, World Bank) and the various papers and studies that provided a background to this report. Mr. Bekzod Shamsiev (ECSSD) was the Task Team Leader for this study.

PREFACE

This report was produced in an attempt to synthesize the common features of the most successful and competitive models in the cotton sector worldwide so those could be presented for consideration of the Governments of cotton growing countries which are concerned with their competitive position on a global cotton market. The report discusses the most successful arrangements which stood the test of time as well as covers the most recent developments which show a lot of promise. This is the first in the series of reports designed for the attention of the Governments and academia of the Central Asian Republics. The second report, currently under preparation, will review successful policy and investment instruments needed in support of agricultural mechanization in the current context of Central Asia.

The report has been prepared with the support from the International Cotton Advisory Committee as well as funding support from the World Bank Agriculture and Rural Development Department, with valuable guidance from members of the Rural Policies Thematic Group of the World Bank. Thematic Groups are informal communities of practice that exchange knowledge on areas of shared interest and belong to a broader Agriculture and Rural Development family of the World Bank which comprises rural specialists, economists, and other World Bank staff. The Rural Policies Thematic Group develops and disseminates good practice related to rural and agricultural policy and strategy formulation. Specifically the Thematic Group seeks to support knowledge acquisition, dissemination and advocacy by identifying, developing, sharing and disseminating information on new approaches, innovations and good practices, and support quality enhancement by deriving and disseminating lessons learned and by keeping abreast of current thinking.

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I. World production and consumption

Production of baled cotton has been steadily increasing in recent years, although the increase in that share has not been uniform throughout the cotton growing regions of the world. In the past 10 years the total world production has increased by 24% and in figure 1.1 we have presented the production statistics for this period.

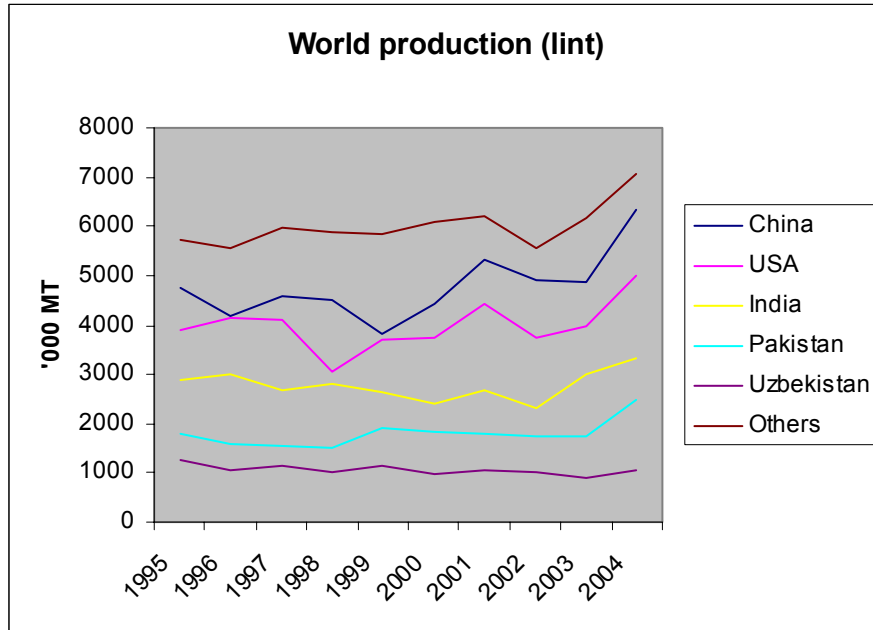


Figure 1.1 - World production

As we can see, there has been a general production increase in the major growing areas, although the most marked increase has been in mainland China (a 33% increase over the period). In fact, all the regions have seen production increases. The notable increase in production in 2004 was due to the high prices seen in 2003 and a reaction on the behalf of producers to this price hike. If one therefore considers the period only up until 2003, one can see that production increases have actually been rather modest, in general at around the 2% level for most countries. Notably, the amalgamation of countries not identified and grouped as “others” actually saw a production increase of 8% (whereas Uzbekistan saw a production decrease of 29% over the period).

Perhaps of equal interest is the market share taken by each country of total production and we have presented this in figure 1.2 (below). The biggest increases in market share have actually gone to Pakistan (11%) and China (7%). Notably, the market shares of India and “others” have dropped over the period by 7% and 1% respectively. The largest loss of market share has been suffered by Uzbekistan (32%), due to a decrease in their own production and an overall increase in world production.

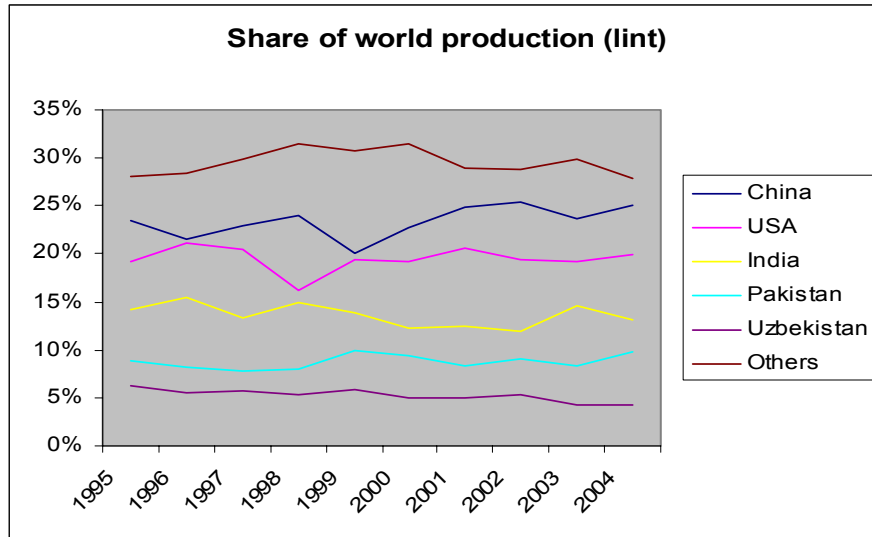


Figure 1.2 - Share of world production

As with production, consumption of baled cotton has also increased over the period 1995 to 2004, indeed almost matching production, at 23%. However, the increase in consumption has not been as evenly spread as in production, with certain countries expanding production and others contracting. The period statistics have been presented below, in figure 1.3.

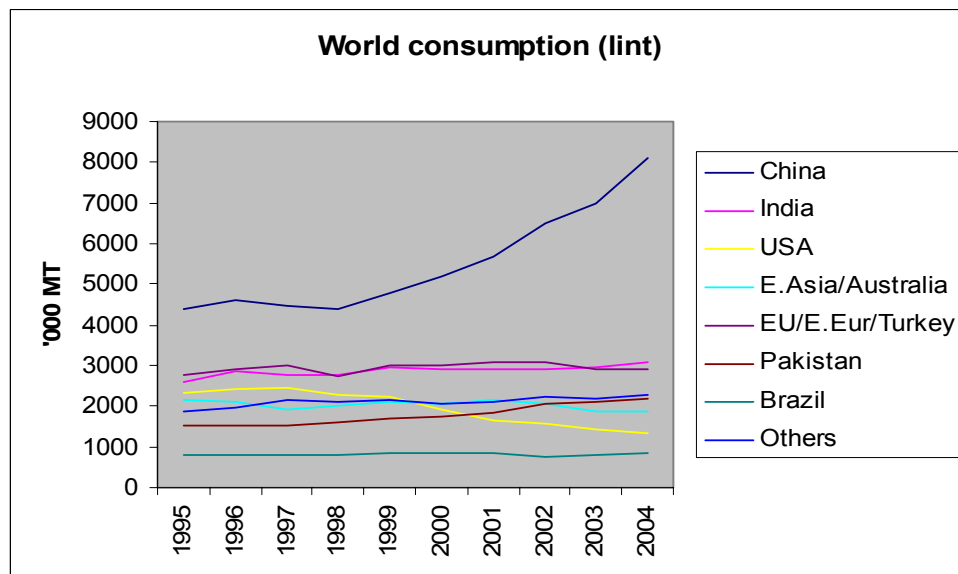


Figure 1.3 - World consumption

Clearly, there has been a dramatic increase in consumption in China in the past 10 years (84%), some of the reasons for which we shall discuss later in the section on textiles. Other countries which have expanded their consumption are Pakistan (43%), India (20%) and “others” (23%). Whilst total world consumption has increased, the above increases account for more than this and therefore there has been a decrease in consumption in some countries – USA (42%) and East Asia/Australia (14%). We shall mention the reasons for the decrease in production in USA in the section on textiles, but it should be

noted that the general downturn in the East Asian countries is largely due to the long term effects of the Asian currency crisis of 2000 in Korea, Thailand and Malaysia.

It is also interesting to note the shape of world consumption as it relates to the individual countries' shares of consumption (figure 1.4).

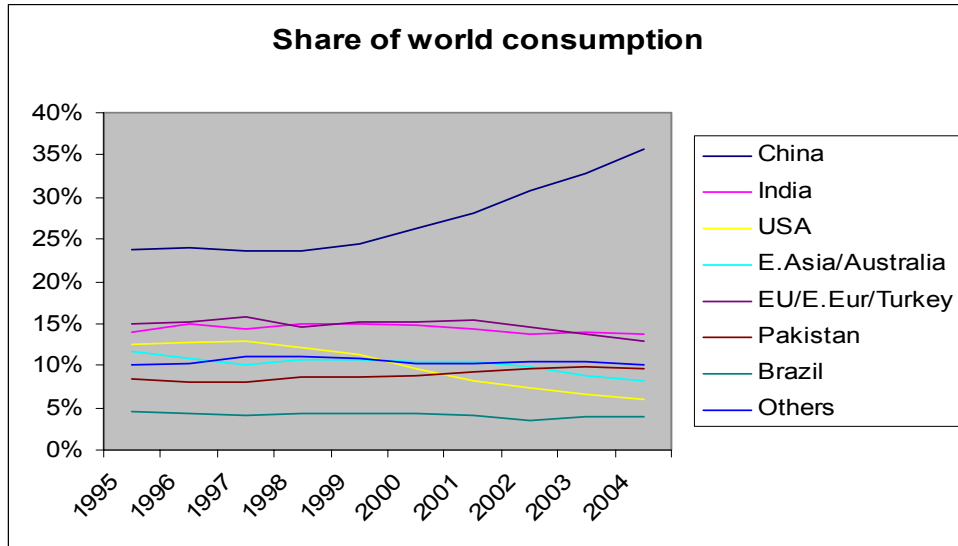


Figure 1.4 - Share of world consumption

We can quickly see is that world market share has only increased in 2 countries – China (50%) and Pakistan (16%). All other countries or regions have seen their market share of consumption decrease over the period, with the largest loss being suffered by USA at over 50%. The reason why some countries have seen their total consumption rise, yet market share decline is due to the phenomenal increase in consumption in mainland China. If we compare total production and consumption statistics (figure 1.5), we can see that production and consumption are largely keeping track with each other over the period.

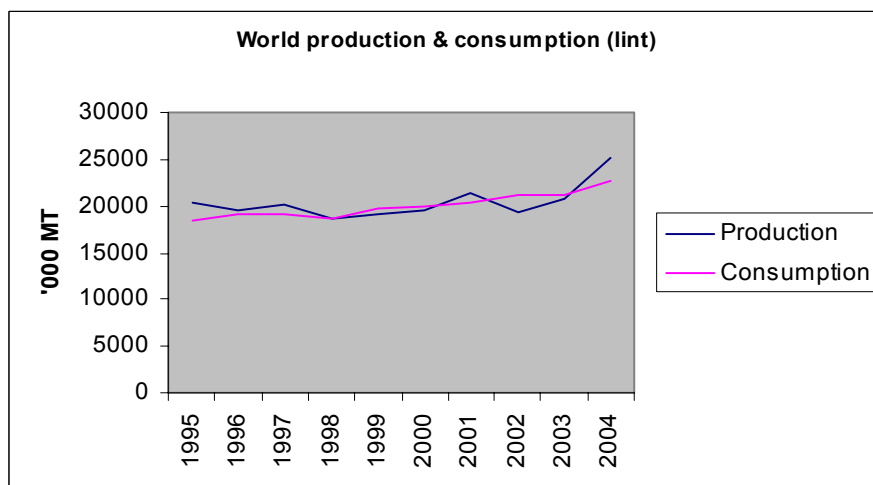


Figure 1.5 - World production and consumption

What we cannot see clearly in these statistics, is the fact that production was actually running higher than consumption prior to 1995 and this has caused the existence of a world surplus of baled cotton in the form of stocks in warehouse. It is the existence of these “ending stocks” that has a large effect on the international price of cotton. As we can see, consumption began to outpace production in 2001 to 2003 period and this, mixed with crop disasters in various regions, caused the international price to rise. The reaction from many countries was to increase production in reaction to this. However, as we can see, consumption failed to match this increase in production, causing a fall in prices and a renewal of the world’s ending stocks.

II. Inputs

In developed countries, input supply, technical services and technical innovation are provided by the private sector. The development of these sectors is based on demand from farmers, as opposed to supply driven factors. The infrastructure that provides inputs to the farming communities is normally centred on local, privately owned farm supply shops, which stock everything from seed, to chemicals and machinery spare parts. In many instances, these suppliers offer credit to their local farms (we shall discuss below other forms of supply credit). Where farms are of a larger size, they tend to purchase their inputs direct from whole sellers as they are able to benefit from discounts for larger sized orders.

Where a farm is of sufficient size, the farmer purchases his basic farming equipment (tractor, planters, rippers etc). Such purchases are normally based on leasing packages offered by machinery manufacturers through their local agents/dealers. One major advantage of leasing over an outright purchase, is that it gives the farmer the opportunity to continually upgrade his machinery without the complication of having to sell the older machinery (under the leasing package they give this old machinery back to the leasing company). The majority of leasing packages are based on the lessor maintaining a lien over the equipment during the life of the lease, as this enables the leasing company to solve collateral issues in its financing programme.

Unless a farm is very large, there are certain machinery operations that they do not own their equipment for, such as picking or aerial spraying. The capital cost of the equipment and the amount of use that the farm can make of the equipment in a growing season, means that it is more economical to hire contractors to undertake the necessary work. In countries such as America and Australia there are very active machinery contractor markets. Another reason for the existence of this type of service is that the farmer himself simply does not have enough time available to be able to undertake the work himself. There are several examples of the successful development of such independent machinery contracting operations in developing countries such as Benin, Ghana and Cote d'Ivoire.

In countries where farms are relatively small, there has been a strong tendency for farmers to join together at the input purchasing stage in order to benefit from economies of scale and collective bargaining arrangements. Quite often this is organised through the creation of a separate company (in which farmers own shares) that purchases, stores and then distributes inputs to its members (or shareholders). The reason for the creation of a legal entity to undertake such operations is that it will develop its own financing arrangements and enter into obligations that are not attached to the shareholders. The advantage for farmers is that the operations of their input purchasing company do not reduce their own ability to raise seasonal finance (because of pledge of part of their collateral base). The other advantage for shareholders is that they are able to offer inputs to non-shareholders and the profits from these sales can be used to reduce the unit costs of their own inputs.

Of course, the ability to make efficient use of machinery services is dependent on the nature of land holdings. For example, fields need to be of a certain layout and size for large farming equipment to be used in an efficient manner. Where land holdings are based on a large number of small fields, machinery services are often uneconomical because of the time spent travelling between fields and the inability of the equipment to make long passes of the field. In developing and transition economies, the nature of land privatisation means that there are a large number of small land holdings and, until such time as there is rationalisation of land ownership or some move to co-operative style farm operations, the use of machinery will continue to be inefficient. Of course, the main reasons for the development of machinery services in countries such as Australia and America centred on the cost and availability of labour. Neither of these considerations are currently major motivations in most developing and transition countries.

A leading example of private sector involvement in the seed industry is found in Australia, where development of new seed types and their commercialisation is undertaken by private sector companies. There is still a degree of public sector academic development, but the majority of the funding for this comes from the commercialisation of their research in the form of marketing agreements with private sector distributors.

III. Costs of Production

Obviously, the costs of growing cotton differ from country to country and from year to year. When attempting to compare costs of production between different countries (and therefore the impact on competitiveness), one must choose a standard that enables constructive comparison. The most comprehensive work done on collecting and analysing cost of production information is undertaken by the International Cotton Advisory Council (ICAC). The information in this section is based on their study of 2004.

If we consider the cost of production on a per hectare basis, studies show that these range from less than USD 400/ha in a number of countries to around USD 4,000 in Israel. The average across 30 growing countries, however, was USD 1,139/ha (total expenses including picking and ginning). Included in this figure is a “cost of land” and the world average rent for a hectare of cotton was USD 241, which would imply that an owner of land’s actual costs of production per hectare would fall to USD 898/ha. On an average basis, the additional income from the sale of seed after ginning reduces the net cost to USD 732/ha. In figure 3.1 we have shown the regional comparisons for production of seed cotton on a per hectare basis.

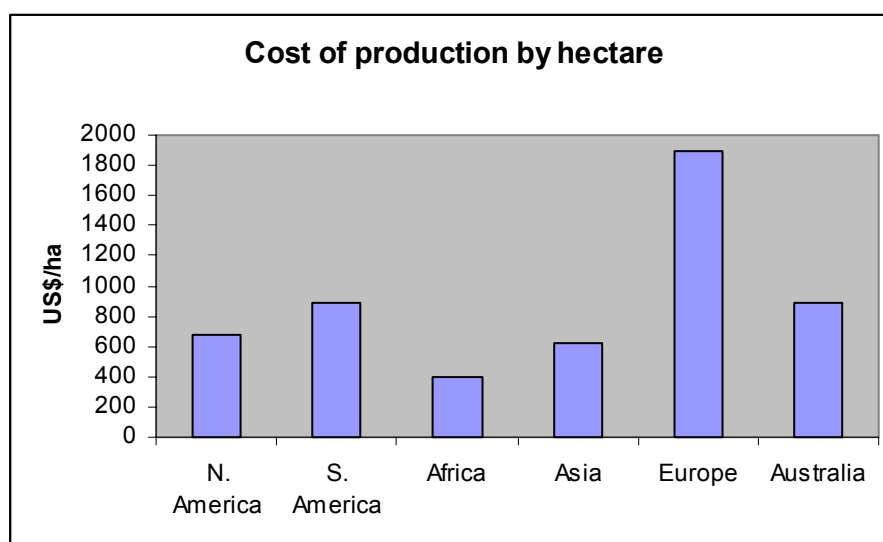


Figure 3.1 - Cost of seed cotton production by hectare

The largest difference between producing countries is in the yield differential between rain fed and irrigated cottons, as the yield per hectare in the latter is invariably far higher. Therefore, when one considers the costs of growing cotton in an international context, this should be done on a per MT of seed cotton basis. Equally, one should not necessarily consider that the lower the costs of production, the higher the profitability. The international price paid for cottons from different origins varies according to quality and general trade considerations (which we shall touch on below and in the marketing section of the report). In figure 3.2 we have translated the above costs per hectare into a cost per kilogramme of seed cotton.

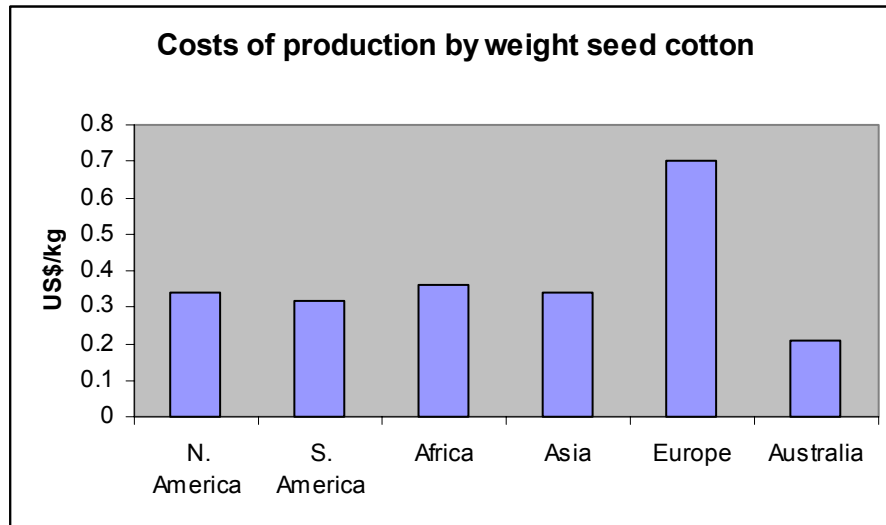


Figure 3.2 - Costs of production per kg of seed cotton

What we can immediately note is that the apparent differentials based on costs per hectare have now closed and this is due to the difference in yields in the different regions. In general, those regions with lower costs of production also tend to have far lower yields. Interestingly, one should note that Australia, which was amongst the most expensive regions on a per hectare basis is actually the lowest cost producer on the basis of a kilogramme of seed cotton. The reason for this is that the Australian farmers have some of the highest yields in the world, yet remain some of the most efficient in terms of minimising costs. It should be noted that they achieve this in the absence of any subsidies whatsoever – a strong argument that effective and sustainable agriculture can be achieved with protectionism or subsidy systems.

In figure 3.3, we have provided the cost of production data for individual countries that are included in the above graphs. As we have mentioned above, the costs based on a kilogramme of seed cotton basis show that there is not a large difference between the various countries in the graph.

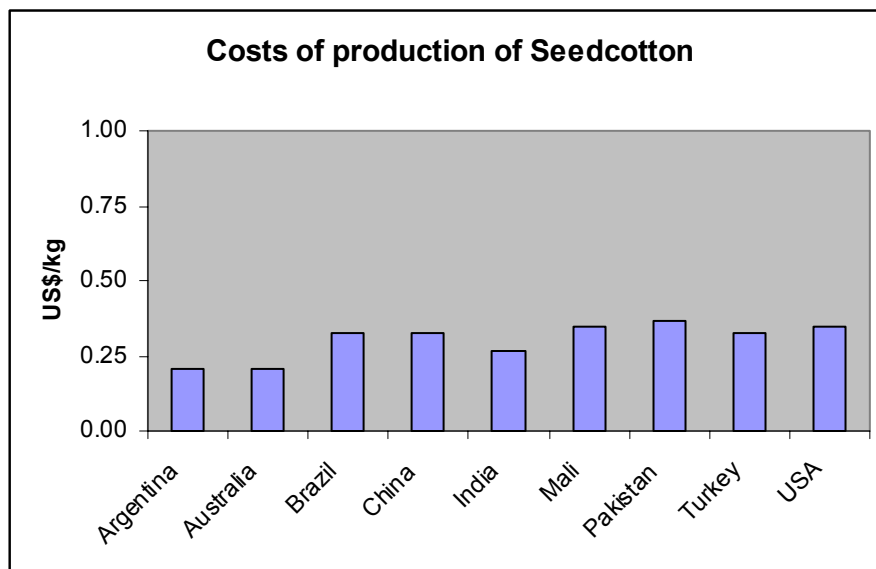


Figure 3.3 - Costs of production of seed cotton

This view of the costs of production would lead the reader to possibly conclude that there was little or no competitive advantage for any of the countries in relation to each other and therefore little need for such things as subsidy programmes etc. However, the most interesting data set to look at is the cost of production, based on baled cotton weights (figure 3.4).

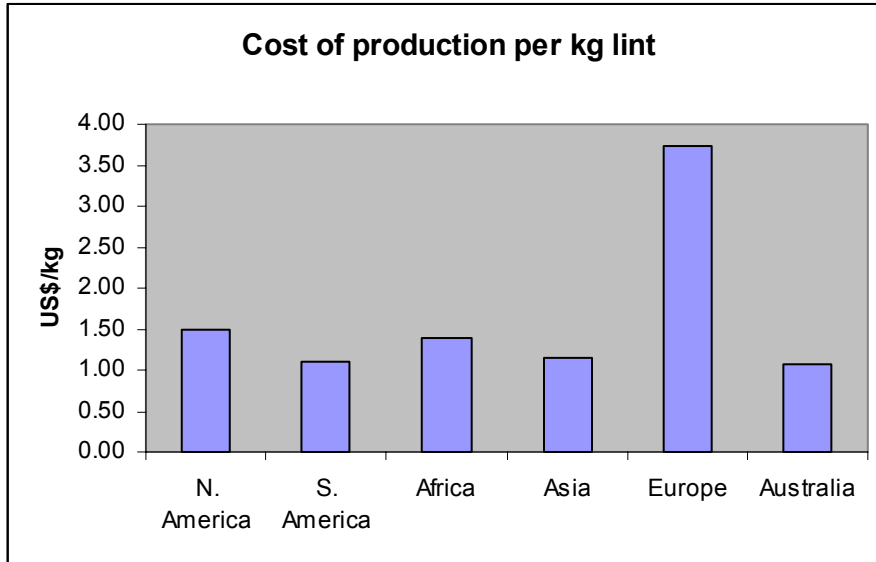


Figure 3.4 - Cost of production per kg lint

What can clearly be seen is that the issue of competitive advantage becomes more apparent once cotton is in its baled and tradeable format. There are several factors that determine the relationship between baled cotton and seed cotton costs. The most important factors are the ginning outturn rate for the cotton (the % of baled cotton to seed cotton) and the cost of ginning/handling. Here, once more, we can see that the Australians are still in the strongest position, despite the fact that their costs of labour and electricity are amongst the highest of the cotton producing countries. The reason that they still maintain their competitive advantage is that their ginning sector is extremely efficient, produces high outturns and is very competitive (keeping ginning charges low).

IV. Land

The issue of land tenure is not only emotive, it is the back bone of successful and sustainable agriculture. The main issue for a farmer is that his attitude to the management of his land is directly linked to his ownership of it. Ownership, of course, does not have to be based on freehold, it can be based on long term leases, so long as tenure of the lease is protected by law and is a legal asset (i.e. it can be conveyed or transferred and therefore has an intrinsic value). For example, land ownership in Australia (arguably the leading example of free market, non-subsidised farming in the world) is based on leasehold, not freehold. These leases, however, are able to be traded and pledged and are therefore considered to be an asset.

One of the most important facets of farm sustainability is rational use of the land and management of it (drainage, for example). In a situation where a farmer does not have secure tenure of his land, he has no real vested interest in managing his land on a sustainable basis. In this situation, he will farm the land on an annual basis, attempting to maximise profit in any given season, as opposed to maximising it over an extended period.

Land also forms a cornerstone of most rural credit systems, with pledge of the land as collateral for finance being a mainstay of a bank's willingness to lend money. The basis of the reliance on land as a pledge is that it has an economic value (the value of the crops that can be grown on it). Whilst immovable property (such as houses) does have a value, they are a less tradeable asset and are often actually attached to the farming land itself (which reduces a buyer's willingness to purchase them). Another advantage of taking farming land as a pledge is that it represents a farmer's main source of income and therefore they have a strong vested interest in ensuring that they repay their credits. If they lose their land, then they lose their ability to earn income and provide for their families.

A common problem in developing and transition economies is that the issue of land ownership has not been fully developed. This causes 2 major problems, firstly it is a major impediment to the development of rural finance programmes and secondly that sustainable land management systems are often not practised by the farmers.

V. Ginning

Ginning, the process for separating cotton fibre from cotton seed and removing foreign material, has changed little since its original invention the late 19th Century. Technological developments have concentrated on maximising the percentage of fibre separated and the efficiency of the equipment used (reducing operating costs). The ability to maximise the percentage of cotton fibre (outturn) is ultimately dependent on the actual fibre content of seed cotton by weight. There are 2 methods for separating the fibre – saw and roller ginning. The latter method is mainly used for the ginning of long and extra long staple (LS & ELS) varieties of cotton, which have a higher fibre percentage by weight and therefore outturns are higher (in the region of 40 to 42%). This is a gentle method of separating the fibre from the seed and this is necessary to maintain the length of the fibre (staple). The other method is saw ginning, which is used for the ginning of medium staple cotton. The process largely depends on a number of spinning discs which have serrated edges (saws). The fibre is caught by the serrations and basically pulled from the seed. This is a less gentle process than roller ginning, due to the fact that the saws spin at much higher speeds than the rollers in the other method. Average international outturns from saw ginning in developed countries are in the region of 36%.

Technical improvements in saw ginning focus on minimising the cost of running the machinery and other operational parameters. In developed countries, the main costs are those for electricity and labour. Electricity costs are minimised through making the electrical motors as efficient as possible and by conditioning the cotton prior to ginning to increase efficiency. Labour costs have been reduced by the automation of seed cotton and baled cotton handling. A typical modern western gin operates with only 3 staff processing staff.

The other major pressure on ginning operations actually comes from farmers, who need their cotton ginning as fast as possible in order to be able to sell it and therefore close their financing. This pressure has led to modern gins operating at very high capacities for only a few months a year, the rest of the time lying idle. Another reason for farmers wanting to have their cotton ginned as soon as possible is that they suffer quality losses whilst seed cotton is being stored, whereas the quality is stable once the cotton has been ginned. The main damage to stored seed cotton occurs at humidity levels in excess of 11%, where the colour of the cotton fibres can be affected. Any yellowness of the original seed cotton is dramatically worsened during storage at humidity levels in excess of 13-14%, especially where storage is in excess of 45 days.

It should be noted, however, that the degree of quality losses related to seed cotton storage in transition economies is less due to prevailing weather conditions and the seed cotton storage systems that are used in those countries. In developed countries, with the cost of labour and land being high, they are unable to store the seed cotton in manners that enable close control of the humidity of the picked cotton. In the other countries, however, these are not prevalent factors and therefore the method of storage is better and losses less.

However, there is one important factor that must be remembered with ginning outturns and that is that most cotton in developing and transition countries is hand picked. This generally means that the percentage of foreign matter is much lower than in developed countries (which use machine picking). This means that the ginning outturns in the former type of countries should be higher purely based on the fact that there is more cotton fibre in seed cotton by weight (because the percentage of foreign matter is lower).

A common misconception is that lower ginning outturn rates in developing and transition economies can be efficiently solved simply by the introduction of more modern ginning equipment. However, great care

must be taken in any such approach. Firstly, an assessment must be made of the suitability of domestic seed types to modern ginning. Although this is a complex question, the most important factor is the degree of fibre to seed coat attachment. Modern ginning machinery involves ginning cotton at very fast cyclical rates and, if the fibre attachment to the seed coat is strong, then the result of ginning this type of cotton will be that a large percentage of fibres will snap along their length or will lead to fibres pulling off seed coat (which will then pass into the baled cotton). The effect of either of these results will be the lowering of the price of the baled cotton.

Secondly, the increased operational efficiency of modern ginning equipment is reflected in its price. A modern 2 stand saw gin can cost up to USD 8 million once installed, whereas a gin manufactured locally may cost as little as USD 1 million. The savings to be gained from a modern gin are mainly in the use of labour and electricity and these are generally much cheaper in developing and transition economies and therefore this efficiency does not actually result in any major savings. In fact, the extra cost of capital (be that in finance or depreciation) invariably outweighs any savings that can be gained.

However, the efficient management and operation of gins in non-developed countries can often result in much higher outturns at very little extra cost. Perhaps the best example of this can be seen in Kazakhstan, where saw gin outturns average 36% and higher for local medium staple varieties. These outturns are achieved using old Soviet manufactured gins which have been renovated with relatively low capital investment. The reason for the high ginning outturns is that the gin operators are private and their profitability is linked directly to their ginning outturns in 2 ways. Firstly, as purchasers of seed cotton the higher the ginning outturn that they achieve the higher their profits. Secondly, the higher the gin outturn they can achieve, the higher the price that they are able to offer for seed cotton and therefore the greater amount of cotton that they are bale to buy in the competitive seed cotton market that exists in the country.

VI. Quality assessment

The international standard for assessing cotton quality (based on trade practice) is that used by USDA. Nearly all end users purchase on terms related to USDA classifications and HVI testing. HVI (high volume instrumentation) testing is basically a mechanical classification of cotton using a computer based system for the assessment of quality. Its accuracy is dependent on the operation of the equipment by highly trained professionals and extremely careful maintenance/calibrating of the machinery.

Where traders are purchasing from countries that use different classification systems, they sort the purchased cotton into shipment parcels based on the USDA and HVI classifications. Prior to 2000 many traders continued to trade on what were referred to as “private types” – effectively their own classification systems. These types were based on physical samples of cotton and were the basis for the quality of cotton transacted under the contract. However, due to the increasingly competitive nature of the textiles market and increasing sophistication of production, many end users have now switched to buying on USDA classifications and HVI results.

Whilst there is a problem for traders in purchasing and selling on different quality standards, there is also a potential financial advantage. If the purchasing standards enable a trader to purchase a spread of qualities within one classification (based on USDA classifications), then they are able to split the purchased cotton into the different qualities at a point before delivery (usually at the port). In splitting the consignments and selling at differentiated prices, they are effectively able to reduce their average purchase price. Of course, the process of splitting shipment parcels involves a large amount of time and expense and this affects the overall profitability of such operations. In a situation where the advantages of such operations are low, this will negatively affect the trader’s willingness to purchase the growth and this will be reflected in the price.

The main problem with this dichotomy in sales and purchase classifications is that it is a major barrier to end users purchasing direct from the country of origin. If they were able to purchase on classifications which they were used to using, then they would be much more prepared to purchase direct from origin. The current classification sales systems operated in developing and transition countries mean that this dichotomy continues to prevail and this is a major barrier to their further development in the international free trade of cotton.

However, the most important thing to note with classification issues is the nature of the quality certificate itself. As with the trade in other commodities, the importance of the quality certificate lies in the confidence of the buyer and seller (and financier) in the accuracy of the certificate itself. Part of the reason for the success in the use of USDA and HVI certification in America and Australia is the confidence that traders, farmers and end users have in the accuracy of the certificates. This confidence means that the basis of the trade actually becomes the certificate itself, as opposed to physical samples of the cotton that is being sold. Any quality claims that are then brought by purchasers are based on the difference between the cotton delivered and the USDA/HVI classification. With cottons from developing and transition economies, quality claims are based on the difference between the delivered cotton and the physical sample of the cotton that formed the basis of the sales contract. This is a far less accurate claims procedure and is yet another reason why end users are increasingly switching their procurement to being based on USDA/HVI classifications.

Movement to the international standard for developing and transition countries can be achieved by a 2 stage approach. Firstly, the recognised standards authority of the country needs to officially adopt the USDA classification system and have this adoption registered with the various cotton quality arbitration authorities (such as the Liverpool Cotton Association and Bremen cotton exchange). The second stage is

the most important and that is either the creation of a separate cotton classification authority or the registration of international, independent quality assessment companies as being authorised to issue quality certificates in the country. In the first case (creation of a new authority) it is strongly advised that this should be based on the creation of a joint venture(s) with an international assessment company. The importance of the involvement of an independent assessment company is that it will ensure the confidence of traders and end users in the quality certificate that is issued. As we have mentioned above, it is this confidence that is paramount in the operation of a successful quality certification operation.

Another important facet of modern classification systems (and how they link to marketing) is that classification has to be undertaken on a bale by bale basis. Given that cotton is a natural fibre, it is subject to the vagaries of weather and its handling at picking and subsequent storage. As we shall note below, one of the most important factors for end users is the even running quality of cotton. Differences in running quality in a parcel of cotton that is being processed can negatively impact the efficiency of a mill. In most developing and transition countries, cotton is classed and sold in units determined by weight made up of consecutive bales from a gin. In order to maximise sales prices and stimulate demand from end users as a premium growth, quality assessment needs to be undertaken on a bale by bale basis, with each bale being given an individual identification number. This then enables the marketing of cotton based on the sale of units containing bales of the same quality.

VII. Finance

7.1 Crop financing

In USA and Australia, farmers finance their cotton growing operations from their own cash resources and through the operation of an overdraft facility with their local bank. An overdraft facility is a bank account that enables the farmer to have a negative balance on the account, because it is guaranteed through provision of a pledge or mortgage. Typically, the farmer will offer the bank a lien over his moveable (e.g. farming equipment) and immoveable (e.g. house) property. Based on a valuation of this property, the bank will offer the farmer a maximum amount of credit upon which they can draw. Drawdown against the overdraft facility is executed through the issuance of bank cheques or direct debit cards. The advantage of this type of financing is that interest is only paid on the overdraft for that period of time and for that amount of money for which the account is in debit.

In other countries, not operating overdraft facilities, the farmer borrows a specific amount of money against the value of his pledged property (the same types as above). The disadvantage for the farmer is that he is liable for interest on the total amount of the credit from the moment that it is granted. The problem here is that he may well not need the full amount of credit for the whole period, as his costs are cumulative during the season.

7.2 Supplier credits

Many input suppliers, in order to maximise their sales, offer farmers a non-bank form of credit – supplier credit. In this instance, they will deliver the inputs to the farmer at a given price, inclusive of the cost of finance for the goods for a given period. The majority of supplier credits are not backed by the provision of collateral and effectively leave the supplier with 100% repayment risk. Decisions to offer a supplier credit are based on the credit worthiness of the farmer and the repayment history that the farmer has with the supplier. Generally, the relationship will start with the supplier offering credit for only a certain percentage of the total value of inputs. Based on successful repayments and established credit history with the supplier, the percentage of the value of the inputs that the supplier is prepared to finance, increases over time.

The costs of supplier credits tend to be higher than credits from banking institutions. This is because the supplier has a higher risk of default (not having any collateral) and the interest rate charged has to include provisioning for bad debts. Of course, in the case of a default, the supplier has the option to recover his money through legal proceedings, but this involves costs and he will not be able to recover in all cases. The reason that farmers want this form of credit (and are prepared to pay a premium for it) is that their collateral may not be sufficient to be able to raise credit sufficient to cover all their farming operations.

7.3 Pre-export finance

Where a farmer (or group of farmers) has a relationship with a cotton buyer, they are sometimes able to raise pre-export finance. This is a credit that pays for their seasonal finance and is basically a payment from the buyer in advance of delivery of the physical cotton. The cost of the finance depends on the perceived re-payment risk and the country risk. The latter risk is not something within the control of the farmer and is an assessment that is made by the buyer or their own bank and mainly consists of the risk of the farmer not being able to export their cotton due to internal political risks. Generally this form of

finance is not used by farmers in the more sophisticated countries (as they are able to access finance domestically), as it is often more expensive and also often results in further discounting of the price of the cotton (or fixed pricing). An example of a successful operation of pre-export financing can be seen in the 1993 to 2000 period in Kazakhstan. However, due to an increase in the availability of domestic financing, the prevalence of this sort of financing has reduced there. This finance mechanism is the main input recovery scheme that is used in West African developing countries. It generally involves a financing institution or commercial bank, which registers farmers' debts and recovers the finance extended through payments made by the seed cotton off-taker, with this money being credited to the individual farmers' accounts upon delivery of the seed cotton.

7.4 Export finance

Export finance is a complicated area of structured financing and the benefit to farmers can be that they can access payment for their goods whilst their cotton is still in the country of origin. There are 2 main methods – collateralised warehouse financing and discounted letters of credit. In the former situation, the farmer delivers his cotton to a warehouse (preferably customs bonded) and ownership of the cotton effectively passes to the buyer, even though the term of delivery under the contract may provide for delivery at some destination outside of the country of origin. In this instance it should be noted that the transfer of ownership is effectively in the documentation – the warehouse receipt and the quality certificate. For the transaction to be successful, the warehouse receipt normally needs to be backed by some form of collateral guarantee from the warehouse operator and the quality certificate needs to be issued by an independent party acceptable to both buyer and seller.

Letters of credit are basically bank promissory notes, in that the issuing bank (the buyer's) undertakes to pay the recipient bank (the seller's) upon presentation of a number of documents. As long as these documents are presented by the recipient bank to the issuing bank in accordance with the terms of the letter of credit, the issuing bank is bound to pay against the presented documents. These operations are subject to international law under UCP 500 and the documents are subject to Incoterms 2000. Given that the transactions are bound by international provisions, certain banks are then prepared to “discount” issued letters of credit. This means that they are prepared to pay the recipient bank prior to delivery of the goods in return for assignment of the letter of credit. The discounting bank charges a fee for this service and this is dependent on their view of counter party risk (mainly the seller). However, in a situation where a seller is able to discount his incoming letter of credit, he is able to receive money for his goods in advance and therefore pay off his other outstanding financing arrangements. The decision to do this is dependent on his “financing spread”, i.e. the difference between the cost of his existing finance and the costs involved with discounting the letter of credit.

VIII. Pricing

The major international index for the price of cotton is determined by the New York Cotton Exchange (NYCE). Whilst it is actually only an exchange that provides for the sale of American medium staple cotton, it has become an indicator that clearly affects all other cotton growths in the world (see figure 8.1). The prices of cottons from other origins are based on the indices produced by Cotton Outlook, a company based in Liverpool, UK.

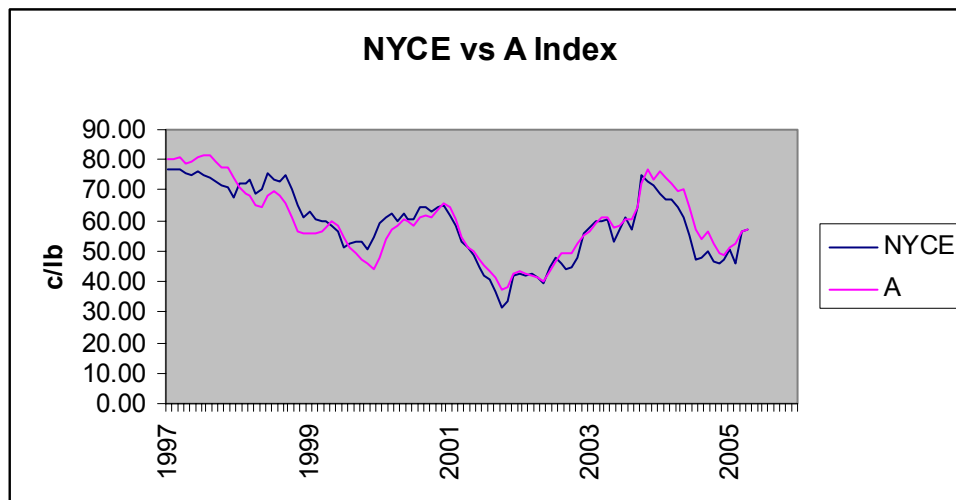


Figure 8.1 – NYCE versus “A” index

Although the methodology used by Cotton Outlook for compiling the indices is complicated, in general terms they receive information from cotton trading companies around the world on a daily basis indicating their sale price offers for various growths for that day. This “basket” of offers is then averaged and posted as the daily quote for each growth. The price is based CIF North European Port, although in reality it has come to be regarded as a delivered mill price by the trade.

There are 2 main indices that Cotlook produce - the “A” and the “B”. The difference is that they represent the offering prices for different qualities of cotton, with the “A” being for higher grades. The “A” is the average price of the five most expensive growth constituents that are being quoted at that time. As cotton is a seasonal crop and the harvesting seasons in various countries differ, at certain times of the year some growths are not available and therefore are not being offered. Similarly, on occasions, trading companies do not wish to quote a price for certain growths and if there are insufficient offers, then that growth will not be quoted in the Index.

Apart from the origin of the cottons, the major difference between NYCE and the Cotlook indices is that the former represents an open market traded price, whereas the latter are indicative prices. There is a fundamental problem with the Cotlook system in that those parties who are contributing price quotes have a vested interest in the prices that they supply. Traders who are long of cotton (i.e. have physical, fixed price stocks) will want to provide high quotes, whereas those that are short (i.e. do not have physical stocks or have them at unfixed prices) will want to provide low quotes. Whilst it could be argued that these counter posing pressures may well cancel each other out and lead to the production of an accurate

indicative average price, the seasonality of cotton sales and purchases means that this is often not the case. However, in the absence of other means of assessing traded prices for non-USA growths, the Cotlook system remains the best alternative.

With regard to the NYCE price, it must be noted that a fundamental distortion is caused by the existence of the American Government Farm Bill. This is a system of subsidies and discounts that disconnect farm gate prices and producer returns from the true potential price for cotton. Indeed, we can see in figure 1.1 that the NYCE has generally lagged behind the “A” index since 2001, the main reason for which has been the effects of the Step 3 (export subsidy programme) which has been very active in enabling the sale of the increase in production of cotton in USA in relation to the contraction in domestic demand over the period.

The importance of international pricing for governments in developing and transition economies is that, in order to stop capital flight and minimise export tax avoidance, they need to introduce minimum pricing policies. The problem with such policies is that they often result in effective fixed pricing, especially where marketing is undertaken by government agencies. The staff of such organisations has no active interest in maximising sales prices or avail themselves of the opportunity of rent seeking in regard to the price differentials. The only way to avoid such problems is to place the management on profit sharing contracts linked to price maximisation or to use a transparent, competitive sales mechanism (such as baled cotton auctions – discussed below).

Whilst there are an enormous number of factors that determine the international price as represented by the NYCE, it is important for governments and growers in transition and developing countries to at least have a basic understanding of what lies behind the price. In essence, cotton (like many other commodities markets) is mainly a “*sentiment*” market – which is to say that what moves prices are the feelings or sentiments of those parties that trade in cotton. However, it must be noted that sentiment moves the market in the short term and only represents changes to the medium to long term view of the market. The main basis for these medium to long term views are called market *fundamentals*. The most important fundamentals are supply and demand (production and consumption of baled cotton). Supply can be affected by the area of cotton planted, weather conditions during the season and weather at harvest time. Demand is affected by a number of factors, the main ones being economic growth, exchange rate fluctuations, prices of competing products (e.g. man made fibres) and political instability.

In the NYCE futures (as opposed to physicals spot) market, there is another group of factors that can affect the market price and these are referred to as “*technical*”. In simplest form, these are market movements that are due to trading decision made by parties (normally “*speculators*”) that may not be directly connected with market sentiment or a change in the fundamentals. These decisions are determined by moves in the market price quoted on the futures contract and are a result of the automated nature of the trading of options. Whilst the original move in the market may have been as a result of market sentiment or fundamentals, the effect of the technical trades can distort the movement. For example, when a party buys or sells an option, they often place a “*stop*” on that trade. A stop is an automated trade which means that, when an option reaches a certain price, it is automatically bought or sold at that price. This is a tool that speculators use to manage their open futures positions and means that they do not have to physically manage their positions on a permanent basis. The problem for the market and physicals’ traders is that a relatively small move in the market can be magnified by the action of these stops. If a sufficient number of speculators have stops in a similar range, the liquidity of their trades can force the market higher or lower than it would normally have traded based on the original market movement. The importance of understanding the “*shape*” (the volume of speculative positions) of the futures market for producers and governments in transition and developing countries is that they are able to analyse whether a market movement is short or long term. Generally, large market swings (“*volatility*”) caused by technicals re-adjust themselves over time to mirror the actual fundamentals.

Whilst it may appear that an understanding of NYCE is not important for countries or growers trading under the Cotlook indices, it must be remembered that Cotlook is affected by NYCE. NYCE is effectively in competition to Cotlook, in that a mill has the option to buy American cotton, as opposed to other growths (especially given the excess production in America). Even though a mill in a given country might be price disadvantaged in purchasing cotton from America (due to transport costs), his competitors in the textile market will not be and therefore the price for American cotton is relevant to him. Whilst there is no direct mathematical connection between the 2 pricing systems, we can see that they are connected in the international context.

On the basis of market indicators (e.g. price), many farmers make their cropping choices in advance of the season and their reactions tend to be predictable. For example, the world reaction to the price rises in the 2003/2004 season was to increase the area planted to cotton in order to benefit from the increased prices. However, this reaction was not based on a rationale decision process, mainly because it was not in line with the fundamentals. What the fundamentals of the time showed was that, whilst consumption is increasing at around 1% annually, production is largely keeping pace with this and also there are still large stocks of cotton being carried over at the end of each year. It was true that the price of oil had increased and that further instability in the Middle East was causing the price of oil to remain high (which directly affects the price of man made fibres). However, the market had already adjusted to take into account these fluctuations and the world stocks of man made fibres were of sufficient size to enable manufacturers to assume some of the extra replacement costs in the short term. The actual reason for the 2003/2004 price hike was bad weather during the season and at harvest – what we were effectively seeing was a “*weather market*”, not a move in price based on fundamentals. The net effect, of course, (in the absence of another weather market) was a drop in price for the 2004/2005 season, but this time based on the fundamentals (increase in supply in the face of relatively inelastic demand).

In the above example, we have shown how a market has reacted to changes in various parameters and how this has had a negative effect on producers (largely due to their own mistaken decision making process). This consideration of the various market parameters and assessment of the impact that it will have on the market is termed as having a “*market view*”. The importance of an informed market view is that it enables producers to take rational and educated decisions in advance of the growing season. The author’s long term market view at the moment is based on the following fundamentals:

- a) consumption of cotton is likely to increase over time
- b) that the world’s population will continue to increase
- c) that the cost of oil is likely to increase or stabilise around the USD 50/barrel level
- d) demand on agricultural land for the production of food stuffs will increase
- e) farm subsidy systems practised by Europe and the USA (amongst others) will be reduced

The market view that flows from these factors are that there is long term strength in the current market price, with a medium term tendency to the higher side. Market sentiment is tight at the moment based on supply and demand factors and therefore any short term change in supply (e.g. bad weather) or demand (e.g. economic slowdown in China or revaluation of their currency) would have a strong effect on the market price. What this means is that we are likely to see quite high price volatility on an annual basis. The main threat currently to medium term prices comes from a global recession and the unclear status of the international textile market so soon after the Multi Fibre Agreement.

Given this market view, producers in developing and transition countries would be best advised to concentrate on increasing the efficiency of their growing operations, maximising their yields on reduced hectareage, improving the quality of their baled cotton and methods of marketing, as opposed to increasing the size of their cotton planting. In fact, the best way to hedge their price risk in the face of potentially

volatile markets would be to reduce area (whilst increasing yield) and diversify into other non-related commodities.

IX. Marketing

Cotton is perhaps one of the most complicated commodities in the world to market successfully. In other commodity markets, the tendency in the past 50 years has been for end users to purchase increasingly from producers, with a subsequently decreasing role for traders. Examples of this can be seen in the development of supermarkets' outsourcing and extremely active metals exchanges (especially in Europe). In the cotton sector, however, traders still play a pivotal role, especially in the marketing of cotton from developing and transition economies. The reason for their continued role is the existence of high transaction costs – ones that end users are prepared to pay a premium to avoid. Of course, this is not to say that traders do not play an important role, but it highlights the necessity to minimise transaction costs and therefore strengthen the connection between end users and producers. Examples of transaction costs are uncertainty in delivery times, inaccuracy in quality certification, lack of bale by bale classing and sale, opaque marketing systems, transport difficulties and overly bureaucratic export procedures.

Firstly, let us explain the nature of the demand profile from the textile sector. Cotton has many quality parameters (the main ones being colour, trash content, strength and fineness) and they all affect the efficiency and therefore profitability of a spinning/textile mill. For example, if the strength of the cotton is low or variable there will be a high number of breaks on the spindles in the spinning room, reducing efficiency dramatically. The problem for end users is that the price of cotton which is of high quality is very high, which means that the resultant yarn is expensive. In order to minimise costs the vast majority of end users mix different types of cotton together to produce their yarn/textiles (trying to maximise the use of cheaper cottons). Given this use of different cottons, end users rely on traders to supply them from a number of origins. However, the advantage for producers of cheaper cottons is that end users tend to purchase these cottons in relatively large volumes and so there is the ability to supply them direct.

Within each different type of cotton, the most important factor for end users is uniformity, i.e. that each bale is of a consistent quality for each parameter. The reason for this is that the mill is adjusted to operate given certain parameters and if the cotton is not of even quality, then the operational efficiency of the mill will decrease (and costs will therefore rise). The role that traders play here is that they ensure that they deliver to the mills parcels of goods that are of even running quality. Cottons from developing and transition countries all suffer from one problem and that is that their cotton is not of even running quality. This is due to the way in which cotton is grown, handled in seed cotton form and ginned. If this problem can be overcome, then end users will start to purchase and source direct from origin.

One of the reasons for decreasing participation of traders in developed countries has been the increasing size and sophistication of cotton farmers. Corporations such as Boswells in the USA now farm thousands of hectares of cotton and have entered into direct contracting relationships with major textile concerns throughout the world. Due to the size of their operations and their ability to control the timing and quality of their production, they are able to offer end users the type of service that enables direct relations.

Where the land holdings of farmers are smaller (for example in Australia) and therefore production lower, farmers tend to work together in marketing their cotton in what is termed a "pool". As opposed to selling their cotton to traders as a principal, these cotton pools enter into agency agreements with traders, who act as their sales agents. In this situation, the traders receive a percentage of the value of the final sale to an end user. The advantage of this form of marketing is that it enables farmers to enter into a reactive relationship with end users and they are therefore much better able to assess and reply to changes in demand. It should be noted that the farmers in the pool operate individually and therefore there is no shared responsibility either at production or marketing. Effectively they pool their production so that they have parcels of goods of sufficient volume that they are able to service one or a number of end users.

The most successful mass marketing tool that has developed for cotton is the baled cotton auction system. The best example of such a system is the NYCE, which is now a highly sophisticated market, involving the sale of not only physical bales, but also futures contracts, options, swaps and other cross market derivatives (which we shall discuss briefly below). In its simple form, a cotton auction is a place where a large number of sellers are able to access a large number of buyers in a transparent situation and where there the open competition amongst buyers ensures maximum sales prices. The advantage for buyers is that, whilst farmers may be fragmented by number and over a large geographical area, their production is brought to one point of sale – the auction. This means that buyers do not have to spend large amounts of time and money traveling around and sourcing cotton from a large number of sellers (a major transaction cost).

In order for an auction or exchange system to operate efficiently, it is crucial that the quality and availability of parcels of cotton that are offered for sale are dependable. Whilst this is ultimately the responsibility of the seller, the confidence of buyers in the auction system is dependent upon it. Therefore, any auction has to introduce stringent physical and monetary sanctions on parties using the auction that are applied if they are found to be in breach of a concluded auction contract.

Whilst NYCE is the leading example of a cotton auction system, the leading example of a developing one is the Commodities Exchange system in Turkey. Although this started out as merely a quotation forum (i.e. a place where the prices of cotton sales were reported, not concluded), its use as a marketing platform is increasing. Many traders and end users now purchase Turkish cotton from the exchange, as opposed to concluding contracts direct with farmers. The reason for this is that they have a higher degree of confidence in performance of the contract if they conclude it through the exchange (because the cotton clearly exists and they have financial protection through the exchange that they cannot achieve through the Turkish legal system).

Another advantage of an auction system is that it leads to the creation of a truly indicative price for cotton from the relevant origin. As we have discussed above, the problem for developing and transition countries is that the price for their cotton is based on reported offer and bid prices, which may or not be accurate. The further problem is that, in order to relate these prices back to non CIF delivery terms, they have to make theoretical deductions. This is a very inaccurate method of relating prices to the reported market price, where higher demand from certain points of delivery may actually mean that these deductions are not applicable. For example, the rough cost of transport to Russia for Central Asian cottons is in the region of USD 80/MT. However, the general sales price in the Russian market is USD 40/MT (or lower) off the “A” Index, which would indicate that the discounts at which the cotton is being sold may be in the region of USD 20 to 40/MT too high. Sale through an auction system would result in a price truly indicative of the demand in the Russian market.

As we have mentioned above, the trend in other commodities markets is for end users to enter into direct purchasing relations with producers. This is also true in cotton, but has only begun to develop in the past 5 years or so. Several major international textiles companies (for example IKEA) are trying to enter into production agreements with cotton producers in order to improve dependability of delivery and quality. There is no doubt that this will be an increasing trend and will involve production agreements and increased used of auctions (where they are available).

An area of marketing that is likely to develop for transition and developing countries is in the area of “Fair Trade” goods. These are marketing initiatives based on the procurement of produce direct from producers in such countries (at prices higher than they generally receive from the mass market) and then sold on this basis in developed countries. The transactions are generally handled by NGO and non-profit making organisations. Generally these products are more expensive than traditionally sourced goods (due to lack of economies of scale and higher transaction costs). However, consumers in developed countries

are prepared to pay these premiums as they believe that they are helping to benefit producers in developing and transition countries. To date, the main developments in fair trade products have centred on cocoa and coffee. With the help of the international development community, it is hoped that other commodities (such as cotton) could also be brought within this system.

X. Price Hedging/Risk Management

The ability of a farmer to manage his market risk (from planting to sale) is an integral part of his sustainability over the medium to long term. In its most simple terms, this is achieved by reserving profits in good years to cover cash shortages in the bad years – a simple approach to price stabilisation. Successful examples of such price stabilisation funds have been achieved through the operations of farmers' groups in Benin and Burkino Faso. In countries where there are stable land markets or sound banking institutions with low inflation, the farmer may decide to either invest in land or place such monies on deposit. Of course, where a farmer has a land parcel of suitable size, they are able to hedge their seasonal risk through diversification of crops and holding livestock.

However, the drive by farmers and end users to manage their related price risk has led to the creation of futures markets. Effectively, if a farmer knows his costs of production, he will seek to sell a volume of cotton equal to his costs (as a futures contract) in advance of delivery. In the absence of organised, traded futures markets (as discussed below) many producers attempt to achieve the same result through the forward sale of their crop at a determined price at the beginning of the season to a seed cotton or baled cotton off-taker. This practice of forward sales outside of a futures market is regularly practised throughout Western Africa.

With his price locked in, at least the farmer knows that he will not lose money in that season (his cost having already been covered). If the market rises or falls after this point, the market movements will merely affect the amount of profit that he makes. For an end user, they have to conclude long term sales contracts in advance of delivery of their cotton. This leaves them with a major risk in pricing their contracts and therefore they would prefer to lock in the cost of their cotton as soon as possible. Given this interest on the part of both parties, the practice of sales of futures contracts was introduced on NYCE. In modern exchanges, negative movements in the values of futures contracts are managed by the payment of what are referred to as margin calls. When a party buys a futures contract, he is not actually expected to pay for it until the date of maturity of the contract. However, if the value of the future falls over time, the loss in value needs to be covered by the buyer by the payment to the exchange of the difference in the 2 prices (the margin call).

Since its original inception, the futures market has become ever more complicated with the development of a large number of products now available at the exchange. The most notable of these are the use of options (calls and puts), which are basically the sale (or purchase) of the right to sell or buy a cotton contract at a given price. The best analogy for options is the insurance market, whereby people purchase insurance to cover their risk in the situation where a certain event occurs. In the case of options, there is a cost which is similar to an insurance premium, in that the cost of it is dependent on how likely a price move is. The advantage of options, as opposed to futures themselves is that all that a buyer (or seller) needs to do is to pay the premium and is not required to make margin calls (which can amount to several million dollars depending on the size of the transaction and the change in the market).

For buyers and sellers of American cotton, NYCE and its futures/options market is a “perfect” hedging tool. This means that the commodity which they are buying or selling is replicated by the contracts that are available at the NYCE. NYCE is also a viable management tool for Australian farmers, as their cotton is priced according to NYCE and based on the same quality standards. For parties involved with other growths, NYCE is an “imperfect” hedge in that their cotton is sold according to a different pricing structure and often according to different quality standards. The other problem for these parties is that the currency in which they trade the cotton or incur costs of production is not US Dollars. This latter problem can be overcome by the use of currency hedging markets or by cotton derivatives (which are futures contracts based not only on the change in the NYCE price, but also in relation to the base currency). This

latter option is only available to farmers or traders operating in freely convertible and internationally traded currencies.

For traders in non-US cottons, NYCE can be used as a price risk management tool and this is known as “basis trading”. The general principal here is that when a trader fixes the price of his sale or purchase, he takes a futures or options position to lock in his basis. In this situation, the basis is the differential between the price at which he bought the cotton and that which he has sold it for. Due to his position on NYCE, a rise or fall in the market will be countered by the option or future and he has therefore managed to guarantee his profit level, even though one part of the transaction may not have a price fixation (which would normally leave him with a market risk).

XI. Organic/GMO cotton

As a global growing phenomenon, the production of organic and GMO crops deserves consideration. The production of organic crops has its main concentration in the production of food stuffs. Its popularity with consumers is based on the perceived health benefits that come from eating food products that have not been treated with chemicals and that have been grown and harvested “naturally”. Whilst cotton is obviously not a foodstuff, the branding and marketing of organic cotton textiles and clothing is based on a niche market. Consumers who are prepared to pay a premium for the product, do so on the basis that they are consuming products that have a less harmful impact on the environment, not that they benefit from any intrinsic health or lifestyle changes themselves – the altruistic principle.

Whilst farmers can benefit from an increased price for organically grown cotton, they do face a very large number of problems in attempting to do this. Firstly, to be able to obtain organic certification for their land (and hence for their cotton), a period of at least 5 years must pass without the farmer using any chemicals or pesticides on his crop. The negative impact on yields is dramatic and the farmer also faces much higher risks of total crop failure (possibly due to pest infestation). The main problem for the farmer is that, during this 5 year period, he suffers from low yields, yet cannot benefit from a price premium because his land has not received organic certification. Secondly, once a farmer has achieved organic certification, he is only able to sell to a very limited market in order to achieve his price premium – a market where his bargaining power is very low. Of course, he can sell to the general market, but will only receive a normal price and will therefore suffer losses (due to the decreased yields). Thirdly, whilst a farmer may receive a price premium at the farm gate, the total profit in the value chain is clearly not spread evenly amongst the various participants in the supply chain. Typically, a farmer may be able to sell his organic cotton at a 100 to 150% price premium, but the final textile is generally sold at a 600 to 800% premium.

Despite the above problems, growing organic cotton in developing and transition countries may well be a viable and attractive option. The reason for this is that, in many countries, for economic or financing reasons, chemicals and pesticides may well have not been used for several years (although there are potential pollutants still existing in the soil, e.g. DDT). In such a situation, soil sampling will clearly demonstrate this and therefore the registration period may be lessened from 5 years. Added to this, due to the current existence of low yields, the introduction of organic practices may well not lead to large falls in yield. The price premiums available, therefore, would not be heavily discounted against yield losses.

The use of GMO seeds has been the cause of enormous controversy throughout the world. To date, there is no clear evidence whether there are any adverse effects to health from the use of GMO seeds in the food chain. However, the valid counter argument to this is that insufficient time has passed for such negative impacts to become evident. There is little doubt that the yield potential of GMO seeds is much higher in many crops and the use of GMO pest resistant strains can have clear impacts on crop losses due to pests.

As we have mentioned above, cotton is not a food product and therefore many would argue that the potential danger of using GMO seeds is therefore negligible. In fact, many countries have started to introduce GMO cotton seeds and have seen enormous increases in yields. It is estimated that 26% of the world cotton area will be sown to GMO or biotech cotton varieties in 2005/06, which will account for about 35% of total world production (figure 11.1) . In Brazil, they have seen almost a 200% increase in yields in the past 10 years, the majority of which is due to the introduction of GMO seeds types. India has seen yield increases in field trials of up to 400% and currently 5% of their cotton area is sown to GMO (although this is expected to double in the 2005/06 season up to 1 million hectares).

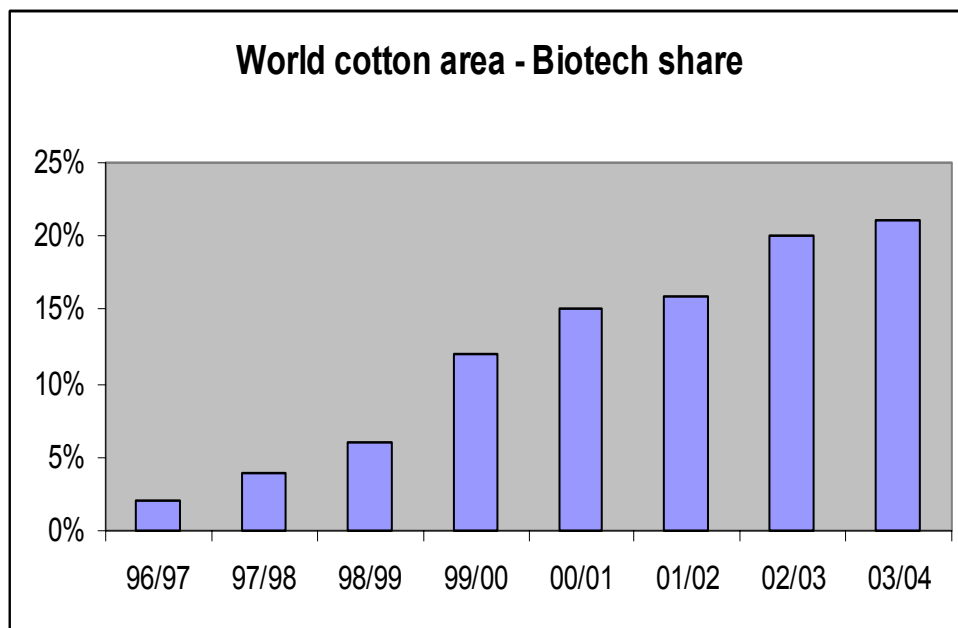


Figure 11.1 - Biotech cotton share of total world area

However, despite the potential benefits from GMO cotton, caution is clearly necessary. It is clear that the potential ecological imbalance that might result from GMO crops cannot yet be assessed. The impact of possible cross-pollination with other crops in agriculture is a real threat, even when one is considering non-food crops such as cotton. More importantly, by-products from cotton seeds are used as a major source of protein and feed stuffs, especially in the livestock sector. In areas of the world such as Central Asia, it should also be noted that it is still common practice to use cotton seed oil as an additive in traditional dishes and therefore GMO cotton is intrinsically linked with the food chain.

XII. Textiles

The development of domestic textile industries throughout the world over the past 50 years has seen a general trend of production swinging its concentration to the Far East and Asia, away from the traditional manufacturers in the European and Western markets (its traditional centre from the times of the Industrial Revolution). This swing in production and processing has largely been due to rising labour costs and the strengthening of labour trade union movements (which used political pressure to improve workers' conditions and therefore the increasing the costs of manufacturing). Up until the 1980's, the major increase of production in the Far East and Asia was in low to medium quality textiles, with high quality processing and textile finishing remaining in the west. However, since the 1980's high end production has also moved to the Far East, normally accompanied by foreign direct investment (FDI), with western manufacturers creating offshore subsidiary companies in the new manufacturing markets. It should be noted that this manufacturing is not only differentiated between high and medium/low quality, but also specifically between the yarn/textiles and finished garment markets. The former market is the most competitive, with processing occurring throughout the Asian region and the latter having started to become more competitive in the last 10 years, as quality control has improved.

The most important thing to note about the development of domestic textile industries throughout Asia is that they were often not simply based on simple competitive advantage. The existence of international trade quotas and bi-lateral trade agreements (based on political considerations) has been at the very heart of the development of many textile sectors. For example, the dramatic increase of textiles production in Vietnam and Cambodia in the past 20 years, whilst partly due to the cheap cost of labour, was mainly connected with the interest of various countries with the economic strengthening of these economies. It should be further noted that, whilst textile quotas could be regarded as trade protectionism, for those countries which had quotas, it effectively gave them guaranteed sales markets and volumes. Therefore, one can argue, their development of textile industries was not necessarily based on sustainability or competitive advantage.

Some countries, on the other hand have been very successful in developing their textile sectors on relatively sustainable principles. For example, India and Bangladesh have managed to create strong textiles sectors based on domestic and imported cotton processing. Here they have managed to build on their domestic advantage of being cotton producers, but also benefited from their strategic freight position (on the west to east container routes). Whilst it is true that they initially introduced tax incentives and preferential rates for some inputs (such as electricity), the continued existence of these incentives has not been integral to their continued competitiveness.

However, the fundamental nature of the international trade in textiles has now dramatically changed. In January 2005, the system of textile quotas was removed by the EU and the USA and now trade is considered to be "free". Whilst many herald this as a breakthrough for free trade, countries currently considering development of a domestic textiles industry should be extremely wary. If a country like Cambodia (which has a well established textile sector) is worried about losing up to a million jobs in the textile sector because of the removal of quotas, there is clearly cause for concern.

The basis of this concern is multi-faceted, but there are 2 main contributing factors. Firstly, manufacturers, in those countries that have already developed their textile sectors, have already made their capital investment and, in large part, have depreciated their assets already. This means that their basic costs of production will be much lower than any new entrant. For example, a modern spinning mill costs in the region of a minimum of USD 10 million. Based on a 10 year depreciation of the asset, this means that the processor has fixed costs of USD 1 million per year based solely on depreciation.

Processors in the other markets, whilst they will have to undertake slightly higher costs in repair and maintenance of their older assets, do not have to cope with such depreciation.

Secondly, the question remains as to how “flat the playing field is” and to what extent the post January 2005 situation is actually based on free trade. Whilst there is total disagreement about whether China is subsidising cotton, one thing that has to be borne in mind is the relative undervaluing of their currency versus the US Dollar. It is clear that this enables them to literally swamp export markets and this is can be noted in the expansion of their textile sector. Despite negotiations between China and various international institutions and governments, it is not clear whether this apparent advantage will be negated by a revaluation of the Chinese currency in the immediate future. Another matter that has to be considered is that there is unlikely to be any change in the American Farm Bill at least until 2007 (when it is next due for review). Due to the structure of the Farm Bill and the export (step 3) programme, the practice of cheap American cotton being exported on preferential credit terms is likely to continue for the foreseeable future. The net effect of this is that countries benefiting from such exports will have an arguably “unfair” competitive advantage over those who are attempting to develop domestic textile industries based on their perceived competitive advantages (such as domestically produced cotton).

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