

## Quiet Revolution in Rice Cultivation

This is a revolutionary experience quietly enjoyed by Bangladesh's rice cultivators. However, like other achievements such as population control and micro credit, the achievements in rice cultivation have not perhaps been receiving as much attention of the media and the nation at large. But the time has come to emulate the success stories of agriculture by other sectors.

by Dr Moazzem Hossain

In the decade of the 1960s, economists and agricultural scientists mainly in the US published numerous theoretical and empirical studies on transforming LDCs' (traditional) agriculture through technological change. An outstanding study published in 1964 was by Nobel laureate in economics T W Schultz, where he hypothesized that there are 'few significant inefficiencies in the allocation of factors of production in traditional agriculture'. This hypothesis has been widely tested by researchers and generally found to be true. It has been maintained so far by others that the most promising means of increasing the output and income of peasant farmers is the introduction of new technologies as extra factors of production. In real terms these technologies include high yielding variety seeds, better breeds of livestock, more efficient implements and machines, irrigation, chemical fertilisers, weedicides, insecticides and improved human resources in agriculture.

Coincidentally, during the decade of 1960s there were 12 international research institutions (such as IIRI and CYMMIT) established to develop high yielding variety seeds for grains and other cash crops. Numerous inorganic fertiliser factories were built to sustain the additional supply of fertilisers in demand in LDCs. Similarly, facilities of irrigation and credit availability to innovative farmers of modernised agriculture were provided either by encouraging them to form cooperatives or through individual contact with the supplying agencies.

Almost all developing countries have introduced modern technology in agricultural production during the last quarter of a century. There are two main reasons for this: one, to attain food self-sufficiency for the growing population and two, to increase the supply of raw materials for the newly established industrial sector. South Asia, Indonesia and the Philippines are commonly identified as the cases for the former; and South Korea, Taiwan, Thailand and Malaysia are regarded as the cases for the latter.

Agricultural technology, however, has been classified into two categories: mechanical technology and biological (or biological-chemical) technology. In general, the mechanical involves lumpy machinery capital which has labour saving effect. In contrast the biological technology depends on divisible inputs such as seeds and fertiliser, and is usually geared to increase output per unit of land.

Introduction of these technologies revolutionised agriculture in the 1970s and 1980s; and was regarded as the 'green revolution'. Numerous studies so far explained the impact of 'green revolution' in South Asian countries including Bangladesh. It has been claimed in the literature that additional production of food grains wheat and rice is the prime success for the 'green revolution' in South Asia. Following the footsteps of 'green revolution', Bangladesh is currently in a middle of a 'quiet' revolution in the area of food grain cultivation, particularly, Boro rice. This paper attempts to provide an outsider's view on this issue.

### Growth in Food Grain Production and Productivity

Cropping contributes more than 80 per cent of value-added in agriculture in Bangladesh. The cropping sub-sector's progress, particularly rice and wheat, account, for more than three quarters of value-added in cropping. Therefore, the increase in food grain production is the major source of agricultural growth in the nation. The growth in production of cereals and rice over 1991/92 and 1999/00 has been remarkable. The cereals' production growth over the past decade surpassed the population growth and rice production grew by more than 12 per cent over the same period. Out of the total rice pro-

duction a remarkable achievement has been made in Boro production with almost an annual growth rate of 7 per cent over the last decade. It has been estimated that 26 per cent of the total rice area was under Boro cultivation in 1991/92 and it reached to 37 per cent in 1999/00, an increase of 11 per cent over this period. The production share of Boro currently stands at almost half of the total rice production compared to 23 per cent in 1985/86 and 40 per cent in 1991/92. The recent estimate by the Ministry of Agriculture suggests that the production of Boro rice has increased from 68 lakh metric tons in 1991/92 to almost 110 lakh metric tons in 1999/00.

This is by all means a revolutionary outcome and has been taking place quietly in Bangladesh's Boro rice cultivation. Of course, it was not possible without support of the democratically elected governments since 1991. It appears that the governments of both Begum Zia (1991-96) and Sheikh Hasina (1996-present) has been giving all out efforts to sustain increased production of Boro rice. Recently, the Ministry of Agriculture has claimed that the present government has achieved a 'zero' food-gap with an estimated production of 243 lakh metric tons of cereals in 1999/00 against an annual requirement of 214 metric tons. All these were possible due to an adoption of modern technology in rice cultivation, particularly, in Boro rice by Bangladesh's peasant farmers. The following figures indicate that the farmers have been adopting appropriately to use modern technology on a sustainable basis. Taking irrigation as an example, while total irrigated area in the country has increased by 13.5 per cent between 1992/93 and 1996/97, for rice crops the increase was by 11.5 per cent and for Boro rice this was

more than 12 per cent. However, over the decade between 1987/88 and 1997/98, the irrigated area under Boro cultivation had increased by more than 40 per cent with an annual growth rate of 4 per cent. This proves various government's support to the farmers over the years.

Adoption of modern technology paid off. The table below taken from one of the studies of this writer (South Asian Economic Development, Routledge, London, 1999) shows the productivity comparisons in rice in four countries of South Asia over a decade. Out of these countries, Bangladesh has achieved the highest productivity growth in rice 29 per cent. This productivity growth is mainly the effect of seed-fertiliser-irrigation technology introduced in Bangladesh during the last quarter of a century.

### Self-Sufficiency in Food Grains

The shortages in food grains production made Bangladesh to spend huge foreign exchange on food imports and also dependent on the food aid mainly coordinated by the World Food Programme (WFP). It is in the wake of these developments that food self-sufficiency became a prime objective of the nation. The agenda of gaining food self-sufficiency at national level has been intensely pursued by adopting new technology in agriculture and as a result net cereal imports began to taper off since the 1990s.

Table: Yield of rice (Kg/Ha), 1985-94

Country	1985	1994
Bangladesh	2,196	2,796(29)
India	2,329	2,834(22)
Pakistan	2,350	2,500(6)
Sri Lanka	3,071	3,130(2)

Note: Figures in parentheses are change in per cent

Bangladesh although still remains import-dependent for wheat but rice import has dramatically declined in recent years. Bangladesh's deficit has been unpredictable due to the country's vulnerability to natural disaster, particularly flood. In some flood-free good years the country reached close to self-sufficiency, for example, in the years 1992/93 and 1996/97. In 1992/93 the average net imports were only 63 thousand metric tons but in 1994/95 (a flood affected year), the net imports climbed to 12.4 lakh metric tons. Last two years' bumper harvest (1995/97) brought the country close to a self-sufficiency level, once again. The country is also likely to enjoy self-sufficiency in rice in 2000/01 due to consecutive good harvest over 1999/00. The present management of rice cultivation both at farm and government levels has proved to be undaunted by the unprecedented flood of 1998 and the opposition's prolonged hartal campaign in 1999/00. This gives a positive sign towards sustainable growth and commitments to the sector by both farmers and the government. However, it does not mean that there is a room for complacency as maintained by the Minister for Agriculture, Motia Chowdhury. The present achievements are, however, outcomes of accountability of the democratically elected governments to the nation, in general and to the rural electorate, in particular. If efficient management and the political accountability can work side by side effectively, sustainability of rice production could be ensured for a long period to come.

### Investment Pays off

Bangladesh has witnessed a doubling of population over the last 40 years. Since the nation's staple diet is rice, the most agri-

cultural investments in the past have been made in increased rice production. During the 1990s the investment in modern technology brought more and more land under seed-fertiliser-irrigation technology. Moreover, the adoption of technology by the peasant farmers became more effective in recent years due to improved agricultural extension and other services to the farmers by the trained agricultural experts via scientific extension programme of the government.

As seen earlier the land under irrigation has increased, particularly the Irr-Boro cultivation increased by many folds over the last two decades. The use and availability of fertiliser have been increasing every year. Effective and expanded agricultural extension services have contributed towards these achievements within a reasonable time. By all means the credit goes to the farmers. Kudos also partly goes to the graduates of agricultural sciences and their mentors at the field level. The country has ultimately started reaping the benefits from its investment in improved training and research facilities in agricultural and allied sciences. This is another example of improved human resources' contribution to development. One must also acknowledge the relentless effort of the Minister Motia Chowdhury.

By all means this is a revolutionary experience quietly enjoyed by Bangladesh's rice cultivators. However, like other achievements such as population control and micro credit, the achievements in rice cultivation have not perhaps been receiving as much attention of the media and the nation at large. But the time has come to emulate the success stories of agriculture by other sectors. In our view, there are numerous lessons to be learnt from the peasant farm sector that must be made known to the public at large particularly to the urban dwellers through appropriate government and non-government apparatus.

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## Development's Last Frontier Eyes Global Market

Without a level playing field developing countries face enormous hardships when their businesses have to compete in an increasingly globalised world. African nations are developing small and medium businesses that could take up the new challenges.

Ivor Agyeman-Duah writes from Kumasi, Ashanti Province, Ghana

A business enterprise programme begun in Argentina 12 years ago is now a rip-roaring success in far-away Africa.

It is called Enterprise Africa, started 10 years ago on the heels of Latin America's Empretec Programme.

Argentina was followed by Ghana and Zimbabwe as Enterprise Africa aimed to stimulate the growth of small and medium scale enterprises by honing their business and management skills, helping them business plans, and giving on-site business advice and counselling.

"If Africa is to be considered as

Francophone countries yet to be picked.

Those who have benefited from Enterprise Africa include caterers in secondary schools and universities, book publishers, hoteliers, the fishing industry, car-spares dealers and low-cost real estate managers.

The overall contribution of small and medium term enterprises to Gross Domestic Product exceeded 30 per cent between 1998-99 parts of West Africa, including Ghana and Mali.

But it has not been all smooth sailing. A recurrent complaint among some Ghanaian and Nige-

## Africa: doing business

The UNDP's Enterprise Africa Programme is based on the Empretec Programme, established in Latin America in 1988. Empretec operates in Argentina, Bolivia, Brazil, Chile, Colombia, Ghana, Morocco, Nigeria, Uruguay, Venezuela and Zimbabwe.

### Results of Empretec/Enterprise Africa so far:

- 50,000 entrepreneurs
- 10,000 selected, trained and received technical assistance (35% women)
- 80% of the enterprises recorded a sharp increase in productivity, turnover and market share.
- 500 new businesses established, mostly in non-traditional sectors
- 50,000 new jobs created by entrepreneurs who benefited from the programme.

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## Transfer of Technology in RMG Sector

## Overcoming Problems and Utilising Prospects

The international clothing industry is clearly undergoing changes that present both opportunities and threats to the Bangladeshi firms. With the approach of the year 2005 AD the current advantage will not be there. Thus for retaining the present position of Bangladeshi garments the present opportunity should consciously be used as a learning base to build up the sort of marketing, production and design skills it needs to eventually move up in what is an increasingly crowded, highly competitive market segment.

by A B M S Zahur

gies are United States, the United Kingdom, Japan, France, the Federal Republic of Germany, Sweden and the Republic of Korea.

Fundamental changes are taking place in international clothing markets. The clothing markets of advanced countries have become highly fragmented and more sophisticated. The market is now composed of many differentiated segments with consumers in each preferring individual choice, constant variation and higher style content. The retailers' strategy now is to target narrow market segments with a wide array of products. The cycle of fashion 'seasons' has also been speeded up. Seasons are now shorter.

These strategies are most pronounced in the upper and middle segments of women's and men's market. Benetton of Italy pioneered the new marketing strategy by targeting the youth segments of the market and by offering a wide variety of styles and colours that can be combined in many ways. This strategy has been copied by H&M in the United Kingdom. These strategies may be seen even in mass marketing/multi-outlet firms such as C&A and Marks & Spencers in the United Kingdom and Sears and K-Mart in the United States.

Leading clothing firms in the advanced countries have realised that the responsiveness and

competitiveness of the textile-clothing complex can be strengthened significantly by the attainment of closer links within the industry between its major actors. This is apparent in the following ways:

- \* The design relationship has altered substantially. In the past the design process was entirely separate from the manufacturing process. Now there is much more extensive consultation between retail dealers and clothing manufacturers on all aspects of product design and fabric selection;
- \* Better buyer-supplier relationship is sought to enable manufacturers to offer a greater variety of product lines; and
- \* Stability and trust is deliberately being sought in the contractual linkages tying buyers and sellers together. The retailers are now prepared to work with few suppliers on a longer term basis and the retailers expect the manufacturers themselves to become more independent than previously, with a more diversified customer base.

These changes in market demand and buyer-supplier relations have begun to erode the economic advantages of long-run garment manufacture by shifting the focus of competition from price to variety, style, flexibility and rapid response. This is having major implications for the way manufacturers organise their production. Rather than seeking

enhanced flexibility through the use of automation, the necessary response capacity is being sought in the redeployment and retaining of their assembly workforce, and in a basic reorganisation of their production line.

Bangladeshi firms act primarily as subcontractors for producers from India, the Republic of Korea and other East Asian producers who have already established themselves as independent players in the market. However, subcontracting can also be a valuable learning mechanism provided Bangladesh firms are willing to learn. Bangladesh clothing firms have proved to be fairly adept learners in the area of production technology. As the marketing, design and fashion elements are becoming just as important determinant of competitiveness as productive efficiency Bangladesh will have to acquire 'technology' skills and expertise. Bangladesh clothing firms can best upgrade their marketing and distribution technology through involvement with outside firms. Market access, expertise, publicity, research and design all present major barriers to entry can be alleviated somewhat through a close and stable relationship with parent firm or experienced local agent.

Bangladeshi firms must also seek to develop their capabilities and knowledge in this area. This can be done mainly in three ways:

(a) straight forward collection of market research and intelligence information on major and emerging market research and intelligence information on major and emerging markets. Bangladesh firms need to become familiar with the major distribution channels, the major buyers and the retail structure of the countries in which they hope to export; (b) through the promotion of trade missions and attendance at trade shows. Trade shows are useful, cost effective ways to create awareness among potential buyers of what the country's producers have to offer since most major buying firms, retailers, importers and manufacturers regularly attend such fairs; and (c) developing its own design and fashion capabilities. This may be done either in mainstream education or in specialized training institutions. Increase in supply of design skills must be matched by an increase in the demand for design skills among local clothing firms. State subsidies to encourage the hiring of designers and the underwriting of the costs of development and marketing of a range of own design garments are one means of supporting this evolution.

The productivity and competitiveness of clothing firms can always be improved. Many of the Bangladeshi clothing firms are operating below the minimum level of technology and need,

therefore to upgrade the equipment they use. However, upgrading does not necessarily involve acquisition of computer based technologies. Yet there are strong strategic grounds for arguing that steps should be taken soon to develop a national CAD capability in the clothing sector.

Knowledge transfer through long term involvement of foreign technical experts is one method of upgrading indigenous technological capabilities only if the principle of the foreign expert is training and deliberate passing on of knowledge. Development of managerial capabilities is a more intractable problem. This can be overcome in the long run by investment in the education of new managers. Using skilled managers and unskilled operators is not suited to the production of higher quality and design-intensive clothing being sold into a differentiated and frequently changing market. Success in these markets demands semi-skilled and skilled labour as well as high-skilled managers and other technical experts.

The international clothing industry is clearly undergoing changes that present both opportunities and threats to the Bangladeshi firms. With the approach of the year 2005 AD the current advantage will not be there. Thus for retaining the present position of Bangladeshi garments the present opportunity should consciously be used as a learning base to build up the sort of marketing, production and design skills it needs to eventually move up in what is an increasingly crowded, highly competitive market segment.

The author is a retired Joint Secretary.

the last frontier of economic development then we have to take our small and medium enterprises seriously. It has been established that any country that has achieved sustained growth re-engineered the small and medium enterprise sector," says Alan Kyerematen, economist, lawyer and director of Enterprise Africa.

In the world of emerging markets, Africa is considered ripe for business promotion and development. So the United Nations Development Programme (UNDP) is promoting these markets with an Africa-wide initiative in entrepreneurship development.

African business, it is thought, would then be able to compete internationally.

Volunteers have been drawn from executive training services run by the governments of Britain, the United States, Netherlands and Canada.

"Our view is that entrepreneurs generally face many constraints that are inter-related," says Kyerematen.

But providing them with training or credit or technology or market access, independent of each other does not really help, unless these services are put into an integrated package. Enter the one-stop support programme which includes a wide range of development services as well as credit facilitation.

When the programme was first established in Ghana and Zimbabwe, it helped businesses to find sources of credit-financing, prepare the relevant documentation needed by financial institutions and negotiate suitable terms of credit for participants.

It also promoted business-to-business connections among Africans to strengthen regional trade and investment.

"The problem in Africa is that we are haunted by the fear of failure instead of being inspired by the challenge of success," says Kyerematen, praised by the US Time magazine in 1994 as one of 100 global leaders for the new millennium.

Nevertheless, the Ghana project took off so well that after two years it was extended to Botswana, South Africa, Namibia, Nigeria, Mauritius and Ethiopia.

The UNDP, elated by the African response, is planning to set up in six more East African and

rian entrepreneurs concerns micro-credit facilities. In most of West Africa, commercial bank interest rates from 40 to 50 per cent, which kills new business at birth.

"When the government borrows from the public through Treasury Bills at a high interest rate of 31.5 per cent, and from the banking system, then it is competing with both the public and the entrepreneurs for credit. This leads to high interest on commercial bank interest rates," complains Felicia Boohene, president of Ghana's Small and Medium Scale Enterprises Association.

An official of Ghana's Central Bank observes that commercial banks are reluctant to give credit or loans because of high defaults. Loans obtained are often used for projects other than the ones originally stated, he says.

"This is being tackled by not providing adequate long or medium term loans, high lending rates especially for those starting businesses and also against the depreciation of the Cedi the local currency on a daily basis."

To overcome this Enterprise Africa opened a credit window last year in some countries within its package of services, saving entrepreneurs the cost of huge bribes that have sometimes to be paid to bank officials for securing credit.

"In Ghana, for example, the rate of recovery with some help from the UNDP of a \$1 million credit has been over 90 per cent and the initial capital has been turned around four times. This confirms that you can lend profitably to small and medium enterprises," says Kyerematen.

"The spread of democracy in African has brought in new local and international businesses. We are in to satisfy the needs of the emerging but vast manufacturing small scale businesses," explains George Koshi, the bank's chief executive.

Ghana's deputy finance minister Victor Selormey exhorts banks to cut lending rates and encourage borrowing. "Banks should not perceive themselves as only money creators but also as the engine of growth of the economy," Gemini News

The author is a Ghanaian journalist, author and documentary filmmaker.

TOM & JERRY



By Hanna-Barbera

