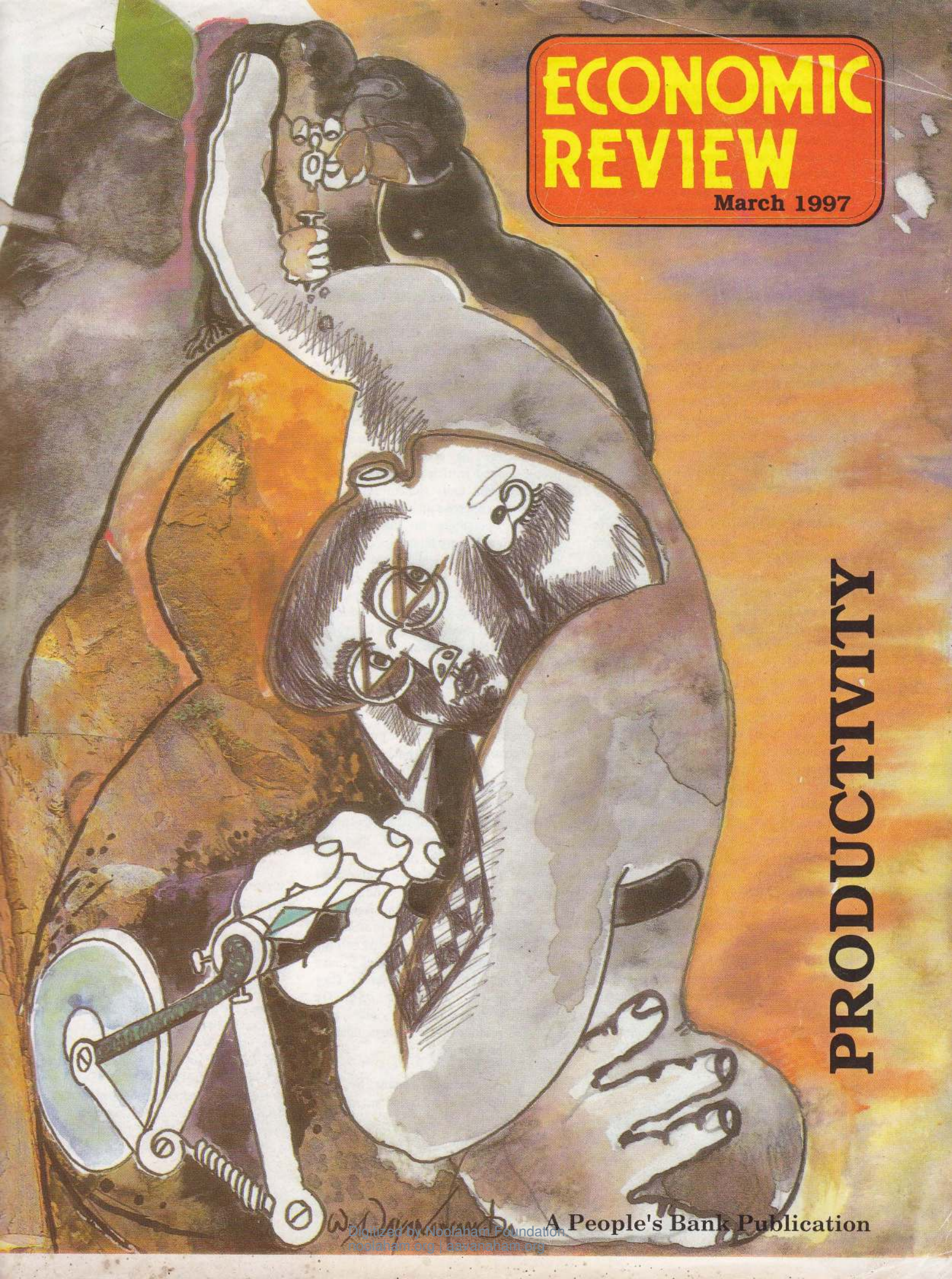


ECONOMIC REVIEW

March 1997

PRODUCTIVITY



OVERVIEW

Beginning from the early post World War II era and until the early 1970's most Third World countries had relied on large scale, corporate structures (mostly public) to serve as a dominant mode of service provision and production. Most planners and policy makers in these countries had, assumed that free markets could not provide adequate basic services and guarantee long term economic stability. Based on this interventionist orientation monopolistic public enterprises were established for the management of economic resources.

However, since the late 1970's there has been a growing acceptance that productivity and growth can be enhanced by the liberalisation of markets to enable individuals and firms to make more rational economic decisions. This acceptance has arisen from declining productivity and disillusionment with the performance of most Third World economies under insular policies of protection of domestic industries excessive regulations and centralized management which failed to improve living standards. Low productivity on the other hand, was a reflection of under utilisation or wasteful use of resources by many large scale state enterprises leading to retardation of economic growth. Hence, policies aimed at liberalisation of markets, de-regulation and re-structuring of centralised large scale structures were adopted as the basis for increasing the productivity. This process which began in the early 1980s developed into a world-wide productivity movement. Today the performance of any firm or organisation is assessed by productivity improvement which is the single most important factor in maintaining and developing a successful business enterprise. It was assumed that non-interventionist free market orientation creates competition and each enterprise invests the necessary resources more rationally to produce goods and services. Effective utilisation of human, material and financial resources brings about better output results. Productivity in this respect can be broadly defined as a constant growth in the ratio of human, material and financial resources input to output of

goods and services. Only productivity improvement enables enterprises to enhance competitiveness and make contribution for overall, social and economic growth. Competition and survival in a free market environment is a demonstration of the commitment to increase productivity. Hence, it is an attitude of mind which creates confidence among employees of an enterprise to do better today than yesterday. Productivity improvement depends on team work and the will to improve on the present level of performance. It is the constant adaptation of economic and social life to changing conditions by applying innovations, new techniques and technology. Therefore, "productivity" is conceptualized as a people-centred participatory process than a management tool. Human relations is more vital to improve productivity because business operations in the form of participation for productivity create new value through a systematic and efficient distribution of manpower, capital, equipment and other elements of production. New value can be achieved only when all members of the enterprise unite in problem solving and decision making. Productivity is a human-oriented concept and individual initiative is its most important pre-requisite.

Pre-requisites for successful productivity improvement are as follows:

- * Productivity improvement is a long range goal for the achievement of which the future is more important than the present or the past.
- * Productivity improvement must be promoted under the leadership of top management.
- * When formulating a productivity improvement programme managerial personnel must actively participate in it. They must assume specific responsibility for and play positive role in implementing the programme.
- * All techniques must be fully utilised in analysing and solving

problems related to productivity.

- * Because their participation is indispensable, employees must be made to fully understand through training that higher productivity is essential to the existence and survival of the enterprise.

Despite many efforts which are being made by every enterprise to increase productivity for competitive survival and sustainability, replacing human labour with computer technology and robotization of factory life, have created much more complex human issues than solving productivity problems. In measuring trends in labour productivity, for example, the basis is the number of hours worked. While this is the labour-productivity measure for assessing the average output produced per hours worked, it ignores the fact that unemployed workers producing no measured output.

Therefore, by using high tech machines or through management techniques only, productivity targets cannot be achieved over night. It is a gradual process. Firstly the creation of productivity awareness and making people productivity conscious is important for productivity promotion. It should embrace all the sectors of the economy.

In the following sections some conceptual issues, historical factors, practical implications related to productivity are presented. D.S. Theraseniyon presents a brief history of productivity development. Prof. Philip S. Thomas highlights some positive and negative environmental factors which influence the achievement of economic growth through productivity management in Sri Lanka. Franklin Amerasinghe examines some critical issues and constraints to increase national productivity through better employer-employee relations. Dr W.A. De Alwis presents some important factors related to occupational health, necessary for improving the quality of human resource to increase productivity.

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Productivity in Sri Lanka - the Macro Economic Environment

In connection with the 'Decade of Productivity', emphasis is being placed on two distinct aspects of efficiency. First, there are those issues having an impact on the internal success of each firm, its input-output relationships and the quality of its products. In this area, focus is being placed on programmes such as 'ISO 9000', '5S', 'quality circles', etc.

The second aspect includes those factors outside the firm, beyond its direct control, which constitute the overall business or economic climate within which each company operates. It is this **External Economic Environment** which is the focus of this article.

I. Many aspects of the economy are 'RIGHT'

There is a lot of 'good news' to report about the Sri Lanka economy. In spite of the internal military conflict, it is performing much better than the economies of many other countries at a similar level of development, even rivaling more advanced countries in some areas. Although one should be careful not to rely totally on any particular statistics (in the U.S. or in Sri Lanka), the data are so overwhelming they cannot be ignored.

- Since independence in 1948, life expectancy at birth has increased more than 50% to 72 years, compared to 67 in middle-income countries.
- Literacy here is among the highest in the developing world, estimated at 86.7% in 1991.
- Population growth is only 1.3% annually, similar to East Asia.
- Infant mortality is only 18 per 1000, compared to 40 in the middle-income countries.
- The primary school enrolment rate

is 99%, compared to an average of only 89% for the middle-income countries.

- The economy is substantially diversified, evidenced by the following facts: only 20% of GDP, 25% of exports and 45% of the labour force are related to agriculture.
- Exports have been expanding about 17% annually.
- Non-traditional exports have been growing annually at 20%.
- Unemployment has fallen from over 16% in 1982 to 12%.
- GDP has been increasing over 4% per year.

by
Prof. Philip S. Thomas

- Real per capita output has been increasing at 2.9% per year and
- Most important is the underlying commitment to an open, competitive economy, with growing reliance on a vibrant private sector as the engine of growth.

Twelve additional favourable characteristics could be added to this list, as there are many positive aspects in the overall economic environment.

II. Certain aspects of the economy are 'WRONG' and impact negatively on productivity

Of course, there is also plenty of 'bad news'. Many are well aware that Sri Lanka's average annual income, or GDP per person, is only about Rs. 40,000, or U.S. \$ 710, much less than that in certain neighbouring countries which may have been poorer than Sri Lanka 40-50 years ago. In 1991, average income was about U.S. \$ 880 in

Indonesia, \$3,180 in Malaysia, \$4,260 in Korea, and about \$23,000 in Singapore (which is 31 times the income level in Sri Lanka).

Some believe that in terms of 'quality of life' or 'purchasing power parity' (PPP) - that is, how much the rupee can really buy - the per capita GDP here is closer to \$3,400. Even using this PPP measurement, however, Singapore still has 7 times the standard of living of Sri Lanka.

Whether the per capita income is U.S. \$ 710 or U.S. \$ 3,400, it is considered unacceptably low. By most analyses, economic places Sri Lanka in the group of 31 'low income' countries ranked by the World Bank, and because an estimated 40% of the population live below the poverty line.

♦ What can be done to move Sri Lanka up to a 5% or higher growth path?

♦ What are the problems which need to be resolved?

During the past three months, I have been privileged to meet over 100 Sri Lankan leaders from government, commerce, banking, industry, agriculture and labour, with whom the above two questions were discussed in depth. Of course, there were differences of opinion expressed, but it seemed to me that to a large degree, a consensus emerged that the following are the most significant problem areas.

Inflation

Inflation is currently 16% per year in Sri Lanka, which is lower than the annual rate in the following countries during the past decade: Ukraine - 297%, Argentina - 317%, Peru - 492%, Brazil - 900% and Nicaragua - 1,311%.

So why wasn't low inflation added to the 'good news' reflecting RIGHT policies in Sri Lanka? Of course, the



answer is obvious: these countries are pathological cases which should not be models for Sri Lanka.

During the past decade, inflation has been only 10% on the average for all developing countries, 9.7% in India, 9% in Pakistan, 7% in Bangladesh, and under 4% for both Singapore and Malaysia. Compared to the countries which should serve as models, the 16% inflation here is much too high, so that inflation may well be the number one threat to the future growth of the Sri Lankan economy.

What's wrong with inflation? It raises costs and undermines the competitiveness of exports, and increases the attractiveness of imports, both of which hurt business output, profits, investment, and employment. Inflation distorts relative prices, changes incentives, and thus weakens the working of the market price system and its ability to facilitate the proper allocation of resources. The lack of macroeconomic policy to control inflation is one of the WRONG policies pursued in most low-income countries, and it appears prominently in every list of policies followed by the rapidly growing countries, such as those in East Asia.

In recent decades, the main cause of inflation in most countries most of the time has been an excessive fiscal deficit, with spending exceeding government revenue. Although "supply side" factors, such as the drought, power outage and labour unrest have contributed to recent inflation in Sri Lanka, it is believed that the underlying, longer-run cause is rooted in the budget shortfall. This fiscal deficit as a percent of GNP is 9% of GDP, compared to about 2% for developing countries, on the average. It is only 6% for India, but in the East Asian economies there have been budget surpluses during the past five years! (This is proof, should such be needed, that governments can balance their budgets if they put their minds to it.)

Because the conflict in the North and East may be the major cause of increased spending here, other areas of government spending must be reduced if inflation is to be controlled. Some governments elsewhere have succeeded in cutting spending, but did so by reducing the WRONG items, such

as infrastructure maintenance and expansion, so that roads, communications, trains, etc. were neglected, with a negative impact on their long term productivity and development. Obviously, budget cuts require a surgeon's scalpel, and not the axe.

Inflation is most likely when the budget deficit is financed by increases in the money supply. Although the annual rise in the money supply (M2) has fallen from over 16% in 1990-1994 to about 11% this year, the annual increase remains excessive. A specific target, such as 8% per annum should be enforced, with the principle being to increase the money supply in line with the targeted real rate of growth of GDP. One suggestion made in this regard is to make the Central Bank more autonomous, so that it can focus attention solely on maintaining stability in the macro-economy, free from day-to-day political pressures. New Zealand has recently introduced major reforms in this area which may merit consideration by Sri Lankan authorities.

The Ministry of Finance and the Central Bank fully understand the inflation problem, and both are doing their best to resolve it. They should be given widespread support so that there can develop the political consensus required to implement better fiscal and monetary policies.

Some of those with whom I have held discussions have argued that the exchange rate is out of line. They point out that the combination of lower inflation elsewhere and more rapid depreciation of competitors' currencies make it very difficult for exporters to match international prices. This is a point of view meriting careful consideration, but the Central Bank's managed floating exchange rate policy is working quite well. Emphasis should be placed on increasing productivity and lowering inflation (through fiscal discipline) as the soundest, most responsible approach for increasing Sri Lanka's competitiveness in the world economy.

Low saving and investment

One of the main causes of unemployment and sluggish growth is the lack of savings and investment, which are absolutely essential for capital for-

mation. Domestic saving in Sri Lanka is only 15% of GDP, less than the average for low, middle and high-income countries, less than half the average for East Asian countries as a whole, and less than one-third the 51% in Singapore.

The reasons for low savings are complex, but consideration needs to be given to improving the efficiency of the financial market, the expansion of which should be strongly encouraged. More rural savings should be generated and tapped, in part through the extension of services of existing banks (as Peoples Bank has done with 125 new branches) and an enhanced postal-savings system, already being implemented by the National Savings Bank. However, an alternative mechanism known as "micro-credit", which started with the "Grameen Bank" experiment in rural Bangladesh, but which has been successfully "transplanted" elsewhere, should be expanded here.

In the past, tax incentives for saving have been introduced, modified, and then changed again, so that the incentive effect is dulled. A consistent, pro-saving tax credit (or exemption) would probably reap high rewards. Increasing savings is so important that perhaps the private and public sectors should join forces in creating a massive national savings campaign, utilizing TV and other forms of media, as well as preparing materials for use in schools.

Equal effort must be placed on improving the incentives to investors, both domestic and foreign, by controlling inflation on the macro side, and by improving the functioning of markets (by reducing price distortions and increasing flexibility) on the micro side. Too often the emphasis is placed on creating new investment incentives (subsidies or tax credits), which worsen the budget deficit. Instead of more "incentives", it would be much better (and cheaper) to remove existing investment bottlenecks and barriers, such as those discussed below.

Investment is mainly financed from domestic savings, but these are supplemented by two sources, so that investment was 27% of GDP 12% above the domestic savings rate of 15%. About half (5%) of the difference comes from remittances sent by Sri Lankans



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working abroad with the remaining 7%, the result of foreign aid and investment. Both of these sources of investment funds should also be nurtured and expanded.

III. High interest rates and high capital costs

Although often mentioned as a separate problem, the shortage of credit and resulting high interest rates are an integral part of the two problems already stated, namely inflation and low savings. However, several people indicated that the "spread" in interest rates is substantially higher here than in the credit markets of other countries, with the result that the low interest rates paid to depositors discourage savings, while high interest rates charged to borrowers discourage investment.

Further, borrowing by the government to finance the large fiscal deficit is "crowding out" the private sector, reducing access to essential investment funds, which have become more expensive. This lack of credit is a special problem for the small-scale and informal sectors and to those in rural areas, whose need for investment funds must be addressed both to increase productivity and to reduce income inequality. Once again, extension of existing bank services as well as "micro-credit" may be part of the answer.

IV. Human resources:

a. Labour unrest; Labour-management relations

The problem which is mentioned most frequently, and which is one of the most troubling aspects of the external environment, is labour unrest due to poor labour-management relations. Both employers and trade union leaders believe there is a gross lack of good faith in collective bargaining compounded by delayed decision-making, with each blaming the other side. Labour claims, with some justification, that employers' contributions to EPP and ETP are not being made, thus robbing some workers of their rightful savings and future pensions. Management claims, also with some justification, that it is virtually impossible to fire workers, even when they are incompetent, are grossly

negligent, or are regularly missing many days of work. These are just a few of the main areas of dispute.

Because of the high quality of managers and labour leaders, I believe that the many, genuine and complex labour relations problems can be resolved, and must be tackled soon if Sri Lanka is to increase productivity and join the ranks of the middle-income countries, and hopefully, earn its rightful place among the most economically advanced nations in the world.

While there are many specific problems which could be highlighted for analysis, perhaps one can be considered as representative: job security/irregularity and unemployment. Obviously, labour must be protected against whimsical firings, but it appears that the current Termination of Employment Act and the manner in which it is implemented produce a paradoxical result: while the law's intent is to

*"most troubling aspects
of the external environment
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poor labour-management
relations"*

protect employment and reduce unemployment, it has the opposite impact.

Managers are extremely reluctant to hire new workers because they fear that it will be too costly (in terms of time and money) to dismiss them later on, should that become necessary. Many managers with whom I have spoken emphasized that, wherever possible, they are attempting to substitute machines and automation for additional workers. Therefore, instead of increasing employment, this law is causing less employment opportunities to be created, and thus it is, ironically, a major contributor to unemployment.

The results of an OECD study completed a few years ago may be instructive, and might shed some light on the labour situation here. The study was carried out, which compared employment in the U.S. and Europe over a 15-year period from the mid-1970s to 1990. At the beginning of this period, unemployment in Europe was only 3% (at the end of this period (and still today) it is about 12%). Because virtually no net new jobs were created. The few newly created jobs just offset those that were being eliminated.

In the U.S., just the opposite occurred. In the mid-1970s, unemployment was over 12%, and during this 15-year period about 20 million net new jobs were created (that is, 20 million more than the jobs destroyed), with the result that unemployment fell to less than 6%, where it remains today. My own state of Michigan had the highest unemployment in the U.S. in the earlier period, about 20%, and today it has one of the lowest rates, less than 5% unemployment.



Wherever possible, they are attempting to substitute machines and automation for additional workers, instead of increasing employment.

The OECD economists concluded that the main explanation was the difference in the two labour markets. In Europe, the labour market is very rigid. Workers are highly protected and firing is difficult; fringe benefits are very extensive and expensive, making high wages even higher. As a result, the European system benefits existing employees, at the expense of the unemployed, whose numbers are steadily increasing.

In the U.S., the labour market in the 1970s was much more flexible, with a

Cont'd on page 24



Priorities for the Productivity Decade

After the Second World War the contemporary productivity concept emerged and gained wider recognition as there was an urgent need for economic reconstruction and rehabilitation to build war-ravaged countries from the ruins and ashes by developing modern industries.

The first productivity boom arose in Western European countries in the late 1940s with the introduction of the Marshall Plan to help rebuild the war-devastated industries. At that time Productivity Centres or Productivity Councils were established in almost all the Allied countries in Western Europe.

In 1955, Japan joined this movement obtaining technical and financial assistance from the USA. The Japan Productivity Centre (JPC) was established for this purpose. In 1961 the JPC collaborating with the Japanese Government took the initiative in establishing the Asian Productivity Organisation (APO) which plays a catalytic role in improving productivity in the countries of Asia and the Pacific region. APO serves as think tank, catalyst, regional advisor, institutional builder and clearing house for productivity information.

The immediate consequence of setting up of the APO, was the establishment of National Productivity Organisations (NPOs) in the member countries of the APO. Sri Lanka joined the APO in 1966 as a result of a bilateral agreement reached between the Governments of Sri Lanka and Japan. Singapore, considered as an "Economic Tiger" in East Asia joined the APO three years later in 1969. "Baby Tigers" such as Indonesia and Malaysia, which are much ahead in productivity improvement than Sri Lanka, joined the APO in 1968 and 1983 respectively.

As a result of the said agreement the Management Development and Productivity Centre (MDPC), the fore-

runner of the National Institute of Business Management (NIBM) was established in 1968, in collaboration with the UNDP with ILO as the executing agency, to play the role of the facilitator in improving productivity of Sri Lanka. At present the National Institute of Business Management (NIBM) is designated as the National Productivity Organisation (NPO) of Sri Lanka which maintains strong links with the APO and other NPOs in the Asian region.

A NPO maintains operational networking with the APO and acts as the national change agent for productivity promotion and implementing agency for APO programmes in the country. In all other member countries NPOs spearheaded their productivity campaigns, provided productivity policies, plans and guidelines becoming the productivity monitoring agency and Secretariat.

by
D. S. Thoradeniya

With the passage of time Management Training and Computer Education took the foremost positions among the activities of the NIBM and productivity became an occasional topic in one or two training programmes. As the NPO of Sri Lanka its contribution to Sri Lanka's productivity improvement was not worthy of consideration. As a result the NIBM was considered by the APO a "less developed NPO" and experts' visits were proposed by the APO to assist NIBM and to take it on the correct path.

The Productivity Campaign of Sri Lanka

The National Institute of Business Management (NIBM) in its capacity as the National Productivity Organisation (NPO) of Sri Lanka launched Sri Lanka's Productivity Campaign in 1993 by launching three programmes. These programmes were initiated as a sequel

to the high-powered delegation headed by the Secretary General of the APO, Mr. Kenichi Yanagi, who visited Sri Lanka in early 1993 to explore the possibility of commencing the Productivity Campaign of Sri Lanka.

The three programmes launched are the National Productivity Awards Scheme for the Manufacturing Sector, Productivity Awareness and Skills Development Programme for school children and the National Productivity Convention. These programmes were continued for four consecutive years in 1993, 1994, 1995 and 1996 respectively, adding many more productivity awareness and promotion programmes and productivity competitions, and the successful launching of the Model Companies Programme (MCP) for improving productivity. The Model Companies Programme has now been extended to cover nearly 20 organizations which includes a municipal council. Where implemented the MCP was instrumental in changing the so-called "garment culture" in the garment factories and in removing the colonial legacy in tea factories respectively.

Another landmark of Sri Lanka's Productivity Drive is the Round-Table Conference (RTC) held under the auspices of the APO in early 1995, to formulate strategies of productivity improvement for Sri Lanka.

National Productivity Year in Retrospect

At the Second National Productivity Convention held in December 1994, incorporating the Annual National Productivity Awards, the Minister of Industrial Development, on behalf of the Government of Sri Lanka, declared 1996 as the National Productivity Year (NPY). In the early part of 1995 an article entitled, "A Blueprint for Productivity Year", gave a detailed account of the areas that need the attention of the Government, industry, companies, industry associations and



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chambers, trade unions and the National Productivity Organization (NPO) for Productivity enhancement and facilitation. Now the Government has declared a Productivity Decade covering the period from 1997 to 2006. The objective of the paper is to highlight out productivity priorities and to show the importance of having productivity themes or slogans for a specified time period and defining the targets that have to be achieved.

Before the launching of the Productivity Campaign in 1993 the term productivity was confined to academic discussions of interest only to specialists and vaguely understood. Productivity practices may have taken place in some places, consciously or unconsciously, without giving emphasis to productivity concepts and practices, making employees' productivity conscious and bringing workers into the forefront as key players.

Since 1993, the NIBM conceived, planned, designed and conducted a number of productivity programmes that brought about an awareness of productivity from school children to practising managers and professionals. The NIBM took an initiative to practice productivity at firm-level and measure productivity and to make inter-firm comparisons for improving competitiveness of organizations. NIBM's experience in the three years prior to the NPY (1993, 1994 and 1995) showed that an organization not developed as a fully fledged NPO which has divergent objectives and diverse functions cannot cope with the activities of a national dimension and priority. Although the NIBM had handled a plethora of productivity activities of a national magnitude since 1993, productivity work at the NIBM was not institutionalised or formalised and the work was carried out by just four consultants voluntarily having limited facilities and resources.

Declaration of a National Productivity Year gave the Productivity Movement of Sri Lanka the much needed support of the Government or in other words direction at the national level. The Government provided funds for productivity enhancement and this will be continued throughout the Productivity Decade. When the Government provides support and plays a

leading role in productivity, the Productivity Movement has better chance of sustainability. A Productivity Steering Committee under the aegis of the Ministry of Industrial Development headed by the secretary, Ministry of Industrial Development, was set up to liaise with other ministries and organizations which have a stake in productivity improvement and to assist productivity improvement work of similar organizations and institutions. Different ministries and departments had designed their own productivity programmes. On the whole, a massive productivity awareness and promotion campaign was launched.

High commitment and dedication to productivity improvement. It needs collective efforts and participation of employers, workers and trade unions. It needs introduction of technology into the company, technology build up within the company and improvement of the management systems. Labour-Management Cooperation (LMC), worker motivation, upgrading of human resources or training of employees, promoting bipartism and a positive work environment are other prerequisites.

These prerequisites do not fall down as spring rain to fulfil our wishes to be



Productivity became one of the most talked about subjects in 1996. The NIBM continued to carry out its usual productivity programmes. The culmination of it was the National Productivity Convention held for the fourth successive year, under the distinguished patronage of President Chandrika Bandaranaike Kumaratunga. In presenting National Productivity Awards the NIBM gave national recognition to the organization which excelled in productivity improvement in 1996 too.

Government Support

The drive to productivity improvement in a developing country like Sri Lanka requires strategic support, direction, guidance, policies and incentives directed at national and industry levels. The policy makers should dis-

seminate a nation which has improved its productivity. The initial step towards this goal is creating productivity awareness and building the foundation for productivity improvement at shop-floor level.

The Round Table Conference (RTC) held in early 1996, with the participation of representatives of Government, trade unions, employers and academia provided a forum to formulate a National Productivity Policy and to decide the role of the Government, employers, workers and the unions in productivity improvement.

The present restructuring of organizations, investments, sectoral and infrastructure development should be coupled with productivity improvement. All these activities should be done in an effective and efficient manner.



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net, from resource allocation to implementation, improving productivity of all such activities, taking into account their productivity gains.

The Government should determine the content and direction of the Productivity Movement to suit present day needs and priorities having a country-specific productivity approach. Productivity priorities change according to the level of industrialisation of each country. The main focus of productivity of countries like Japan, Singapore and South Korea have changed. Japan has now shifted to a new paradigm of productivity i.e. Social Productivity.

The Government's leadership and commitment in the Productivity Drive are prerequisites to its success. A consensus should be reached among government, industry and employers, representatives and trade unions and others concerned on the way productivity should be improved and the direction it should take.

Curbing inflation, reforms in macro-economic policies, such as in taxation, investment and certain legislation which hinder productivity improvement, improving efficiency in the public sector, ending of bribery and corruption, upgrading of education and skills, stimulating technology absorption, environmental protection, improving physical and social infrastructure facilities and providing basic amenities, improving the quality of life of the people are needed as government interventions in productivity improvement.

One may argue that any government provides these facilities to its people. Facilities should be provided not for the sake of providing facilities and to please some interest groups in society or with parochial interests. Bribery, corruption, embezzlement or aggrandisement have no place in productivity improvement. In providing facilities, productivity improvement in all spheres of economic activities, whether it is in industries, agriculture, fisheries, forestry, transport, banking or any other service or sector should be the guiding principle.

Sri Lanka should determine the priority sectors and industries to enhance

productivity initially and commodities and services in which Sri Lanka has a competitive advantage and specialisation.

The Government should formulate a National Productivity Policy covering all sectors, including organised industrial, agricultural and services and the informal sectors, and a productivity improvement plan based on the country's stage of development and other characteristics. The Government should promote an integrated Productivity Drive related to the national development of Sri Lanka for increasing national wealth, GDP and the country's competitiveness.

Productivity initiatives should be in every sector such as agriculture, industries, fisheries, forestry, livestock, plantations, banking, transport, health care, hospitality trade, public sector, schools, universities and other services. Identify their productivity policies, plans, priorities and intended improvements. These can be integrated as national policy. This can be easily done by a Productivity Monitoring Organization or a Productivity Secretariat, housed at the NPO. For the Productivity Drive, there is a need for inter-sectoral, inter-ministerial, inter-group, inter-institutional cooperation in the field of productivity.

Recently launched development programmes, such as the 'Wage Sanctioning' and 'Southern Province Development Programme' must give due consideration to productivity improvement making all rich players of such programme productivity conscious and employing productivity as a useful strategy in the accomplishment of their objectives.

Productivity Priorities

It is well known that the war-devastated economies of Western Europe and Japan, soon after the Second World War, were rehabilitated and reconstructed using productivity concepts and practices and the key word at the time was improving productivity of all economic ventures. At a time when the Sri Lankan Government is engaged in the reconstruction of a war-devastated economy in the North, productivity concepts and techniques would play a crucial role and the Government should

give serious thought to this matter.

In the Productivity Decade we must establish our own productivity priorities. The following areas should receive our attention as priority areas in which the Government, NPO, Ministries and Institutions, Trade and Industry Chambers and Associations and Companies play the expected role in their respective fields. This is our country-specific approach which suits our present productivity needs.

Institutional Development

Strengthening and developing the NPO of Sri Lanka and networking is the initial step to implement productivity improvement assistance for industries and other sectors.

Institutional Development and Networking come as:

- (a) Development at micro-level at the NPO,
- (b) At national level, creating productivity cells at various other agencies and
- (c) At international level, networking with NPOs and other international agencies.

The NIBM amended its Act of Incorporation in 1991, providing for the setting up of a fully-fledged Productivity Centre at the NIBM for productivity promotion and enhancement. But still a Productivity Centre has not been set up except the establishment of a Productivity Division at the NIBM making Productivity enhancement and facilitation yet another function of the NIBM. With more recruitment, manpower capability of the Centre should be strengthened changing the present compensation system.

In strengthening the NPO, it needs a group of productivity specialists, support staff and other facilities. The NPO would provide productivity services, such as training and consultancy, generate a productivity data base and produce productivity literature. The NPO of Sri Lanka, as in any other country, would map out the key policies and direction governing the productivity drive and appropriate channels for the productivity driven in association with other agencies.

Exchange of information about eco-



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economic, technical and socio-cultural features of productivity with other countries, which are in the forefront of productivity improvement, and identifying factors which hinder productivity improvement would help in productivity promotion and formulating productivity policies.

National Productivity Organizations (NPOs)

All the NPOs of other member countries of APO carry the word 'productivity' in their organization names. Japan Productivity Centre (JPC), National Productivity Council (NPC) of India, National Iranian Productivity Organization (NIPO) of Iran, Productivity and Standards Board (PSB) of Singapore, National Productivity Corporation (NPC) of Malaysia, Korea Productivity Centre (KPC) of the Republic of Korea, China Productivity Centre (CPC) of the Republic of China, Hong Kong Productivity Centre, National Productivity Organization (NPO) of Bangladesh and National Productivity and Development Centre of Mongolia are some examples. Some other countries had strengthened their NPOs such as the Development Academy of the Philippines (DAP) by setting up two separate arms under the DAP, Productivity and Development Centre and Productivity Training Institute.

Thailand's NPO (Thailand Management Development and Productivity Centre) (TMDPC) was under the Ministry of Industrial Promotion and Ministry of Industry. Now they have set up the Thailand Productivity Institute (TPI). In Fiji, Fiji National Productivity Board and Fiji National Training Council function jointly. The Directorate of Manpower Productivity Development under the Department of Manpower of Indonesia has set up its own National Productivity Centre (NIPC) recently. Nepal has renamed its Economic Service Centre (ESC) its NPO, as National Productivity and Economic Development Centre (NPKDC).

Only in three member countries of APO, Sri Lanka, Pakistan and Vietnam, (which is the newest member) NPO activities are done by organizations which are not exclusively committed to productivity work, such as NIBM of Sri Lanka, Pakistan Indus-

trial Technical Assistance Corporation (PITAC) and Directorate of Standards and Quality (STAMPAQ) of Vietnam.

In setting up a Productivity Centre at the NIBM, there are models Sri Lanka can study from among the APO member countries such as the Development Academy of the Philippines (DAP), which has set up a Productivity and Development Centre under the purview of DAP recently.

It was mentioned earlier that the NIBM was established as the Management Development and Productivity Centre (MDPC) in 1968. The change of name of National Institute of Management (NIM) and later to NIBM may have forced it to shift its emphasis and shift productivity improvement activities. Until 1993 the NIBM had only in the name of productivity the APO Liaison Officers post for Sri Lanka which was relegated to a position of sending and receiving applications for APO fellowships.

It is true that the NIBM since its inception assisted companies to streamline work operations through the application of industrial engineering tools and techniques, HRD, General Management and Management Information Systems. But these areas of assistance were of micro and firm level which have not created much impact in the industry and national level productivity improvement. Its contribution to productivity improvement was basically minimal.

For this study, missions of productivity teams, trade unionists, industrialists, productivity activists are also essential.

Productivity Secretariat

A Productivity Monitoring Agency should be set up to support and spearhead the Movement coordinating with various sectors, ministries and other agencies directly supporting the Movement. The best organization for this is the National Productivity Organization (NPO) of Sri Lanka which could act as the Secretariat and the hub of activities of the Productivity Campaign.

The National Productivity Organization of a country is the best organization to map out the key productivity

policies, priorities, strategies and directions governing the Productivity Drive. Various parties involved in wealth creation efforts, such as the Government, employers, employees, trade unions, tertiary education institutes, professional bodies, industrial, business and trade associations and chambers should share the productivity vision.

In Singapore the private sector took the leading role in the campaign since 1992. Thus, Singapore National Employers' Federation (SNEF), Singapore Manufacturers' Association (SMA), Singapore Retailers' Association (SRA) spearheaded the campaign at different times.

We must as well establish the targets we intend to achieve in a stipulated time period, appropriate productivity themes or slogans for each period of time may be on an yearly basis. We must be able to quantify our achievements in creating awareness, labour-management relations, training and skills upgrading, participation, quality assurance, productivity models and Productivity Improvement Programmes (PIPs) and Productivity Improvement Teams (PITs) etc. at the end of each period.

These productivity slogans or the themes should be appropriate to our current level of productivity, easily understood and practised by the whole nation and the improvements that will be made taking the themes or slogans as the duration call should be tangible and the accomplishments quantified.

Otherwise, having inappropriate themes or slogans may hamper the Movement rather than helping the people to rally round the drive. The results will be negative if the themes are inappropriate and not practical and do not serve the current productivity consciousness of the people. For example, Singapore in the 10th year of their Productivity Campaign had 'Quality Work, Quality Life' as its slogan. We must warn our productivity enthusiasts to build the foundation for productivity improvement at shop-floor and workplaces first before attempting to provide a 'Quality Life' for all people.





Creating Productivity Awareness and Promotion

Creating productivity awareness and productivity promotion will continue throughout the Productivity Decade and years beyond. The Productivity Campaign launched by the NIBM in 1993, had as its main objective the creation of productivity awareness and consciousness. Considering that we are still in the first phase of our Productivity Campaign, and the mammoth task ahead, we have to make a concerted effort to raise productivity awareness and consciousness among managers, workers, school children and the community at large, making all to understand the meaning and importance of productivity. Dissemination of productivity concepts, practices and techniques, inculcating productivity habits, right work attitudes in the work, pride in work, defining managers and workers roles in the Productivity Movement, and making productivity a way of life important tasks. In Singapore this phase took almost five years from 1981 to 1986. This is the attitudinal concept of productivity as opposed to the physical concept of productivity.

Many of these tasks at the inception may be small, tangible or intangible, not significant by themselves. But, taken as a whole their cumulative effect would be considerable.

This will help to harness the creativity and innovativeness of the workforce, establishing a productivity work culture, encouraging two-way

communication and team work, motivate the workers to make improvements converting awareness into a "productivity will" and formulating will into practice.

Just because there was an awareness campaign in the National Productivity year we cannot say that we have passed that phase as some "Productivity bureaucrats" think. As long as the Productivity Campaign continues, creating awareness continues. When new themes and slogans are set, new programmes established and there is a shift of emphasis of priorities, creating awareness plays a major role.

Sustaining Enthusiasm

Another important aspect is sustaining the enthusiasm of model companies and national Productivity Award winners. With the recognition of productivity efforts of organizations, teams and individuals, we have a critical mass of organizations and individuals who can play a catalytic role in productivity improvement. They should be proud to be associated with productivity improvement, willing and ready to exchange knowledge and expertise and help productivity habits to become a part of the work ethic.

School Children

Productivity concepts, practices and techniques must be included in the school and university curricula and syllabi. The Ministry of Education and Higher Education may introduce productivity concepts in the prescribed

text books at school level. Productivity practices may be brought into the school. For example, the concept of Japanese 6S (Seiri, Seiton, Seiso, Seikou and Shitsuke) inculcating the habits of effective and efficient utilization of schools resources, such as school buildings, land, furniture and equipment, free text books and students' time and efforts. This would enable the students to develop productivity habits and make productivity a way of life. In this way our universities will get a set of multi-intermediates and factories and offices will get a set of well disciplined work-ers.

The NIBM sponsored Awareness Programme designed for school children such as using the Pareto Law (1993 and 1994), Productivity Quiz (1995) and Productivity Poster Competition (1996) were unique examples which were hailed by other NPOs and were unprecedented in any other Productivity Movement.

Productivity seminars and workshops, Productivity conventions and competitions for school children and others, discussions, talks and articles on productivity play a major role in creating productivity awareness.

Advertising, preparation of productivity literature, brochures, posters, cartoons, leaflets, production of videos, filmstrips, documentaries on productivity, photographs, T.V. and Radio spots, angles and stories related to productivity, messages given by a productivity mascot, Productivity marches (walks) promote productivity at national and firm level.

The Government and government-owned media outlets can play a big role using the mass media, audio visual aids, publications, national conferences and issuance of policy statements on productivity.

Developing Manpower Capabilities for Productivity Training, Consultancy and Research

Developing productivity trainers and facilitators at various levels as well as Productivity Improvement Teams (PITs) and Productivity activists at firm-level to lead, organize and impact other members of the workforce



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through productivity development activities to serve as models for the rest of the industry to emulate and exchange experiences is another priority.

The developed personnel should be able to identify Productivity training needs, carry out productivity training, identify areas for improvement and implementation and areas for research.

Identifying Models for Productivity Improvement

The Second National Productivity Workshop organized by the NIIM in 1994 entitled, "KAIZEN Strategies for Productivity Improvement" paved the way to the successful implementation of the Model Companies programme (MCP) with the assistance of the APO. The Workshop introduced the KAIZEN concept and strategies which are regarded as the reason behind Japan's economic miracle.

MCP is the translation into action of the productivity awareness which was created earlier. Model Companies have to be developed through implementing various strategies to improve productivity at the workplace.

The objective of the MCP was to improve a few companies using productivity improvement techniques so as to have a multiplier effect for other companies to follow and emulate and to document the incremental changes that will take place in the Model Companies to exchange with others.

A Model Company stands out from among others in its productivity performance and overall success. It is one that has accomplished a series of successes in its productivity oriented objectives to upgrade the quality of human resources, increase effective utilization of capital, raw materials and energy, using the innovative production process to capture markets by increasing its competitiveness. A Model Company is also one whose operations have attained proven standards of excellence and notwithstanding this, endeavours incessantly for continuous improvement.

The Model Companies have made tangible productivity improvements through the implementation of the basic programme of 5 S or foundation

building, improving shop-floor management, practice of good housekeeping, keeping the workplace clean and in good order, reducing material waste and improved performance. The MCP had laid down the foundation through development of positive work attitudes and workplace oriented principles.

It has increased labour cost competitiveness, capital and material productivity and value-added. It has minimized defect rate and re-work, improved attendance rate, improved methods, processes and systems, obtaining high quality standards, implementation of suggestion schemes, involvement and participation, improved information system and communication, enhanced coordination between market research, design, production and distribution, improved work environment are some other tangible results so far obtained by MCP's.

For the first time in the history of Sri Lankan industry, gainsharing was introduced into these MCP's, a result of increasing the Value-added. Gainsharing enhances Labour-Management cooperation.

Productivity is the key for the making of a Model Company. This scheme has stimulated the creative attitudes of employees and cooperation, enhanced the interest in learning and self-development, all of which have encouraged a positive work culture and attitudes that are fundamental for productivity improvement. This work culture influences the company's decision making, commitment and the communication process.

Companywide Productivity Improvement

Companywide productivity improvement is practicing productivity at shop-floor level. Companies should be assisted to put productivity into practice. Many companies in Sri Lanka lack resources or expertise to implement productivity improvement schemes or practices. Thus, external assistance to those companies is needed. The external assistance comes in the form of training, consultancy, improvement, productivity measurements and financial assistance. In Singapore, financial assistance is given

by the Government through the Skill Development Fund (SDF).

Productivity Improvement Programmes

Industries can be selected for implementation taking into account their relative importance in the contribution to the GDP and employment generation. To have an effective Productivity Improvement Programme (PIP), productivity improvement work should be monitored and managed well.

Companies have to be assisted in implementing companywide productivity improvement, raising productivity awareness, identifying productivity training needs, working out a training plan and carrying out training.

Implementing employee participation programmes, improving shop-floor management, facilitating two way communication, team work and suggestion scheme will be included in this agenda. To spearhead the companywide productivity improvements, Productivity Committees should be established in organizations to organize productivity promotion programmes.

Many of these programmes, changes and improvements can be implemented quickly and easily without any addition to the existing budgetary provisions. They are not based on advanced systems and application of advanced technology. The Model Companies Programme is an example of this.

In assisting selected industries to upgrade their productivity, 'Productivity Improvement Teams' (PITs) should be set up to play the role of the catalyst and facilitator. Productivity Improvement Teams and Productivity Activists serve as models for the rest of the industry to emulate and exchange experiences.

The responsibility of such a team would be to analyse the micro-level productivity trends, labour utilization, work organization, worker participation, training needs, identify major problem areas, share information and make recommendations for improvements and networking. Training of workers and managers, preparing productivity indicators, using productivity measurement techniques, imple-



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mentation of the basic programme to improve shop-floor management, practices of good house keeping and keeping the workplace in good order, improving quality and work discipline, improving machine performance, standardizing machinery for low cost automation, reducing material wastage, ensuring safety and workplace organization and customer satisfaction would be the major activities of this team.

Organizations may emulate MCP activities in forming such Productivity Improvement Teams (PITs) in their organizations.

To have an effective productivity improvement programme, productivity improvement work should be managed and monitored well. Hence, the creation of a post of Productivity Manager in companies is proposed.

Efficient resource allocation and qualitative improvements are vital for productivity improvement. Sri Lanka will face intensified competition in this decade from developed countries and newly industrializing countries.

Technology and Method Changes

Technological changes and method changes are also necessary in the Productivity Drive. It is wrong to say that companies rely only on human resource development for productivity improvement, which is a gross misconception. It is wrong to say that a company improves its productivity by developing human resources alone. It is a misconception if one equates productivity only with labour productivity. Labour is only one type of input. We must have a total approach to improve Total Factor Productivity (TFP), which is a combination of productivity of capital, energy, materials and labour, not Partial Productivity (PP) as Labour Productivity.

Some companies boast of human resource development programmes they carry out or they have designed as it has become fashionable nowadays to say that they have shed all archaic and authoritarian management styles and practices. It is a fallacy to say that when you develop human resources, utilization of other resources like capital, material, energy, machinery

and land becomes efficient automatically, as it is people who handle these resources. All resources are valuable to the organization, not only the human resource. There are many human resource development strategies on improving productivity to which we have to focus our attention. Although a company develops human resources, there is managing capital, material handling, transportation, energy utilization and obsolete systems, methods and technology hinder productivity improvements. One cannot arrange resources on an hierarchical order.

Companies should not feel shy to talk and exchange information on improving productivity of all resources without confining themselves to human resource development interventions. HRD interventions are pleasant, somewhat vague and not specific as systems, methods or technology.

Inter-Firm Comparisons to Improve Competitiveness, Measuring Productivity and Establishing a Productivity Data Base for the Industry and the Country

Creating productivity awareness, practising productivity and measuring productivity are the three cornerstones of the Productivity Movement. Productivity performance of companies should be measured to gauge the growth and the level of productivity performance of the economy, sectors, industries and companies to compare Sri Lanka's competitiveness with other countries.

Higher productivity means producing better quality goods and services at competitive prices. This increases sales, attracts investments and expands business. Gains will be shared by all the stakeholders who contribute to increasing the value-added pie as well as by consumers.

At the national level, it enables the performance of the economy and its various sectors and industries to be quantified and monitored. At the company level in monitoring the performance of individual companies with other companies, their industrial averages must have inter-company and inter-country comparisons. Another important aspect of productivity measurement is generating information for

wage setting or to link wages with productivity. We cannot expect improved performance resulting from increased salaries. Productivity improvement and high performance come first.

One of the objectives of the NIBM sponsored National Productivity Awards scheme is to allow firms to have inter-company comparisons. At present the National Productivity Awards scheme measures and compares productivity performance of those companies which enter the competition.

This should be extended to gauge the level and growth of performance of the economy, various sectors and industries thus establishing a Productivity Data Base.

Giving National Recognition to Productivity Efforts

Inter-firm comparison and measuring productivity pave the way for giving national recognition to productivity efforts of organizations, Productivity Teams of companies and individuals.

National Productivity Awards recognize companies with outstanding productivity practices. This should be extended to cover productivity efforts of teams and individuals who have contributed significantly to productivity improvements at their workplaces. Team category will recognize outstanding groups who work together to achieve corporate objectives.

Since the launching of the National Productivity Awards scheme in 1993, twelve companies have received the National Productivity Award and 28 companies the Productivity Merit Awards. In the Productivity Awareness Programme, 88 school children and four schools received awards. In addition, five practitioners received individual awards.

Awards and study tours are given to award-winning companies and individuals. In addition, their productivity efforts and the incremental improvements may be documented through publications and production of productivity documentaries for exchange of experiences and for posterity.

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The writer is a Senior Management Consultant of the Productivity Division of the National Institute of Business Management (NIBM) and the Coordinator of the Annual Productivity Convention. Ideas expressed in this article are personal to the writer and do not represent the views of the NIBM.
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ORGANISATIONAL EXCELLENCE THROUGH PRODUCTIVITY AND QUALITY

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This article is intended to give a brief practical overview of how productivity and quality improvement should be tackled in an enterprise. It is only a brief introduction to the structure and some of the techniques which are useful for consideration.

The terms productivity and quality are still not correctly understood by a significant portion of our population, and this has been one of the major obstacles in the efforts to improve productivity and quality not only at enterprise level but also at national level. For many people the term productivity conjures up scenes of sweat shops, hard work, heavy fatiguing work and long working hours. This was true in the past with primitive technology and inefficient systems of work organisation before the modern type of industrial organisation came into being. Today the situation is quite different with productivity being raised by better technology, more efficient and effective use of resources and better organisational structures.

Today it is widely accepted that, productivity will enable a higher standard of living for everyone, that wealthy countries are countries which have used their resources very productively, and that higher wages could only come from higher productivity. Productivity is not an end in itself, it is a means to achieve a better quality of life for the workers of an enterprise. Productivity is not exploitation of workers. Today productivity is directly linked with co-operative labour management relations and a fair distribution of gains of productivity.

In Japan, a structured productivity movement was initiated in 1955 with the establishment of the Japan Productivity Centre. Its guiding principles were as follows:

1. Improved productivity will lead to increased employment opportunities and provide greater job security.

2. Methods of productivity improvement adopted should be discussed and agreed upon between labour and management.

3. The gains resulting from improved productivity should be evenly distributed between consumers, labour, and management.

This clearly shows that productivity was not to be at the expense of the workers.

The term quality is also widely misunderstood. It is associated with affluence, and there are many who believe that quality is only for the rich and poor countries such as Sri Lanka should not try to improve quality. In reality the modern concept of quality is a relative one where the level of quality depends on the requirements of the customer. It is also relevant to note that the desire to improve quality has been a journey of about a million years, because even the primitive man who hunted animals for his survival was desirous of improving the quality of the primitive tools he used. The concept of quality in a commercial product has changed considerably from the early approach of

- low quality (cheating customers and making money)

- standard quality (providing a quality level just at the industry or national standard)

- competitive quality (a quality level higher than the competitors and thereby gain competitive advantage)

- creative quality (a level of quality which surprises, and delights the customer and thereby become a market leader overall or in a particular segment or niche)

Today the concept of quality control has also changed from the narrow focus of product quality inspection to the much wider concept of "enterprise quality". This is based on the belief that if the enterprise - including its systems and culture - is of high quality then the products and services provided by it are naturally of high quality.

Due to the misunderstanding of the concepts of productivity and quality it was usual for many workers and middle level management personnel to insist that quality and productivity cannot be pursued at the same time. There are many who claim that higher productivity will be at the expense of quality and vice versa. However today the movement to integrate productivity and quality together and pursue them in an integrated programme is gaining ground.

Quality is not something confined to a product or a particular unit it is a concept relevant everywhere and goes in a loop. It starts with the quality of the concept, the quality of translating customer requirements into a product or service concept and goes through quality of purchases, quality of production, quality of sales, to quality of after sales. A quality



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culture is necessary where everyone believes that 100% right is possible, that every prior process is your supplier, and every next process - even within your organisation - is your customer. Even the telephone operator therefore has internal customers who must receive a service more than just adequate. The drive for higher quality requires substantial analysis using the a data based approach where everyone could make a contribution in collecting, analysing, and finding solutions.

Productivity means getting more valuable output from every unit of resource, ie from every unit of money, from every unit of land, from every unit of time, from every unit of energy, from every unit of raw material, and so on. Productivity is not merely production it is production or output in relation to one or more of the resources used. According to the technical definition of productivity it is the ratio of output to input, or in other words $\text{productivity} = \text{output}/\text{input}$. Productivity can be measured either in terms of single factor productivity, where only one input factor is considered, or as multi-factor productivity where two or more factors of input are considered as a composite measure of input, or as total factor productivity where all input factors are considered. In a manufacturing concern it is usual to use single factor productivity. Labour productivity is a single factor productivity measure where labour is used as the input. Material productivity, energy productivity, and capital productivity use material, energy, and capital respectively as the input factors. Also outputs and inputs can be measured either in terms of physical units or in financial units. Physical units are such as output in terms of units produced, kilograms of output, litres of output, passenger kilometres run etc, and inputs in terms of man hours, weight of raw material used, kilowatt hours of energy etc. Financial measures of output are Rupee value of production or Added value of output, while inputs could be material cost, labour cost, energy cost and so on. The first step therefore is to have a good set of productivity ratios, because this is the only way you could know where you are in terms of productivity and perhaps you could benchmark. Productivity ratios could also be used to evaluate performance through cross sectional and trend comparisons.

In today's competitive environment

excellence of an enterprise can be achieved only by a good return on its investment and also by creating and sustaining a satisfied or a delighted customer base. This means that both productivity and quality have to be pursued with vigour. The productivity of every unit of raw material, every unit of labour, every unit of energy, and every unit of land or floor area should be improved. Outputs should be increased while inputs should be reduced.

The second step in a productivity improvement exercise is to analyse your revenues if you have more than one source and determine which source of revenue is more significant, and then give priority accordingly. This source could be further analysed to study the effect of changes in price/quality etc. This area usually concerns the increasing of the value of outputs.

Thereafter comes the area of input reduction. The costs of operation should be studied to determine the significant costs. This is where many industrialists go wrong. Once I came across a manager who complained that his labour productivity was low and when I further investigated I found that labour is only 5% of the total costs while direct material was 70%. So why worry so much about labour productivity and ignore the cost of material. The relative importance of costs vary from industry to industry. In some labour intensive industries labour may be more significant, while in kiln type industries energy cost may be the highest, in high tech industries it may be the depreciation cost of the equipment in which case the utilisation of the machinery is more important. I have also come across situations where the finance costs were very significant and in such a case higher stock productivity becomes more important.

Once the priorities have been selected they could be further analysed. For example if material is the most significant then investigations should be made on ways and means of reducing it. Can cheaper material be used, without affecting quality? Can substitute material be used? Can the design be changed which will require less material? This is an area for the technique of "value analysis". Can waste be reduced? Can rejects be reduced? Can the same material be sourced from a cheaper supplier?

For energy, finance cost, overhead costs, land and floor space costs, and machinery costs a similar type of investigation could be carried out. Tackling labour cost however is more complicated, and involves looking into the following methods.

Improving the working environment

This concerns lighting, temperature, ventilation, and noise. Although not very apparent, poor lighting reduces productivity and increases fatigue due to visual strain. For different tasks the lighting intensity required is different, and should be made available accordingly. Temperature also affects productivity. An environment which is too hot or too cold is bad. Hot environments are uncomfortable to work in, and increases fatigue, while an environment which is cold even though not uncomfortable may reduce productivity through reduced nimbleness. Studies have shown that typing and data entry speeds drop when temperature is lowered below a certain point. Poor ventilation too reduces productivity through lack of oxygen and the inhalation of poisonous fumes. Noise can be distracting and interfere with warning bells and alarms, and continued exposure to high levels of noise may even cause permanent damage to hearing.

Working times

The modern recommendation is to provide more frequent and shorter breaks during working periods rather than a longer break after a long period of work. Breaks are more effective when given at the onset of fatigue rather than after fatigue has set in, because recovery from fatigue may then take longer.

Use of appropriate tools

Although one of the pioneers of productivity Fredrick Taylor gave a good example to the world about 100 years ago on how productivity could be increased with appropriate tools. (in his "science of shovelling") we still see many examples of inappropriate tools being used in many places of work.

Ergonomics and better work station layout

Ergonomics is the science of fitting the task or machine to the man rather than fitting the man to the machine. It has a series of recommendations of reducing fatigue, and making the movements of a worker more natural and therefore more productive by taking into consideration the

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Productivity Improvement and Concomitant Quality Enhancement

Ensuring improvements in Productivity, whether it is in goods manufactured or services supplied, is currently very much an "issue in focus" - both globally and nationally. Within the last couple of years, productivity enhancement has become a matter of important concern to the Government of Sri Lanka (GOSL) - so much so, that "1996" has been declared the "Year of Productivity"; with the decade following termed the "Decade of Productivity". Since in the bottom

of a business activity is to achieve an acceptable level of profitability and to sustain/improve such profitability. Since businesses are necessarily conducted in a competitive environment, where customer expectations and demands are never static but ever increasing, sustaining profitability can only be through maintaining a competitive edge. This then requires a deliberate strategy of effective resource management being installed in place. Misconceptions regarding productivity (simplistic!) range from equating

(vii) FORMULATION OF BUSINESS POLICY

The 'productivity issue' when viewed from the conventional standpoint has also given rise to practical complexities - as for example in defining an organisation's output. Thus although the output of a manufacturing organization may be obvious, using the conventional definition, by the same yardstick what is 'output' for a bank or government agency? Non-manufacturing organisations have often failed to deal effectively with the 'productivity issue' because of the inability to relate the term to the nature of their business.

In evaluating the impact of productivity on organisations, a quantitative relationship exists between cost, productivity and prices (at which goods and services are sold). This is often not clearly comprehended.

This relationship must prevail if a business organisation is to maintain its level of profitability from a given period to the next. It is given by the expression:
 $\Delta \text{COSTS} - \Delta \text{PRODUCTIVITY} = \Delta \text{PRICES}$
 where Δ = Degree of change

An organisation must pass through to its customers, in the form of higher prices, the nett effect of increases in unit input costs offset by increases in the productivity of its inputs. A logical conclusion would then be that productivity improvement is the only weapon, the organization has, (other than price increases), to offset cost increases in the bottom line, and yet maintain profitability - a phenomenon of much significance in a competitive environment.

In the context of the foregoing we may now consider superiority in Productivity vis-a-vis superiority in Quality. Undoubtedly both are key elements of organisational competitiveness. A superior position in either can

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line, enhancement of Productivity, specifically refers to an increase in the output of goods/services per unit of input resources, the question arises, (if not consciously articulated) whether productivity enhancement and quality improvement (of outputs - specifically or in general) is contradictory or complementary. In more basic terms is superiority in quality compatible with superiority in productivity or do the two conflict?

Prior to attempting any answer to the above 'poser', it would be pertinent to focus attention on some misconceptions regarding the concept of productivity. Conceptually, productivity is a simple notion - it is a quantifiable relationship between the output from any activity to the required inputs, with the proviso that such a relationship is so managed as to optimize the effectiveness of output for a given level of input resources.

While accepting the superficial simplicity of the concept as stated above, it is necessary to appreciate that productivity is inexorably linked with business activity. The basic economic goal

of productivity with production (!), to inputs being considered exclusively as labour. All in all to circumvent these misconceptions/confusions it may be considered meaningful to modify the traditional definition of productivity to read as:

PRODUCTIVITY = Provision of Products and/or Services acceptable to the Customer (OUTPUT)

Utilisation of all relevant resources in an intelligent way (INPUT)

It would then necessarily follow that consideration needs to be given to PRODUCTIVITY (and PRODUCTIVITY Improvement) in each of the following areas:

- (i) TECHNOLOGY MANAGEMENT
- (ii) OPERATIONS MANAGEMENT TO LINK MARKETING WITH PRODUCTION
- (iii) MANAGEMENT OF WORKING CAPITAL CYCLE (i.e. STOCKS and DEBTORS)
- (iv) MARKETING
- (v) ACCOUNTING AND CONTROL
- (vi) FINANCIAL MANAGEMENT

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enhance profits and stakeholder value. They are therefore important strategic objectives. Superior productivity results in lower costs, while superior quality results in higher demand and customer loyalty. If the two are independent, a superior position in either can be a source of competitive advantage. What would be the scenario if there is a relationship (correlation) between the two? If positive firms with superiority in one will be additionally rewarded; if negative, firms will face trade-offs.

Although today's dominant opinion appears to be that productivity and quality are complementary, a survey of the literature (1954 - 1995) reveals little consensus on the nature of the 'quality and productivity relationship'. There is support for a positive, a negative or little or no relationship! This dilemma may well be due to two primary weaknesses in the literature. The first is that nearly all published research shows an emphasis on manufactured goods to the near exclusion of services. The second is an inconsistent (and possibly incomplete) definition of quality. The proponents of a negative relationship between productivity enhancement and quality improvement usually use a product-based approach wherein higher quality products have more / better ingredients / features. Those espousing a positive relationship almost always define quality as reliability or conformance to specifications - even acknowledging that customers ultimately determine quality.

In attempting to reconcile these differences, it becomes increasingly clear that there are two different dimensions of quality: (i) features that meet customer needs and (ii) reliability/freedom from deficiencies. Each influences perceived quality, and each has a different relationship with productivity.

This position is consistent with J. M. Juran's "fitness-for-use" concept as applied to quality. He maintains that customers' perceptions of quality derive from two rather different dimensions of quality; (i) freedom from deficiencies and (ii) product features that meet customer needs. He defines deficiencies as product failures, such as the inability to meet delivery dates, inoperative goods or blemished ap-

pearance. Product features, on the other hand, are properties of a product intended to meet customers' needs. The 'fitness-for use' concept succinctly integrates these two dominant, and somewhat disparate views on quality and would serve as a foundation for understanding a relationship between quality and productivity.

Efforts to achieve high levels of productivity and high levels of "features quality" may not always be compatible (Juran 1989) - while productivity typically increases with greater standardization, it will decrease with more customization (the latter being a requisite to obtain higher levels of 'features quality'). In contrast, freedom from deficiencies will be compatible with increases in productivity. Crosby (1979) contends that lowering the deficiency rate in the production process reduces net cost of quality. In addition the same factors that contribute to greater productivity - reduction of variation and standardization of product - do contribute to defect reduction.

One factor that should influence the relationship between productivity and quality is the relative contribution of each of the two basic dimensions of quality on overall perceived quality. The relationship should be positive where reliability/freedom from defects drives overall perceived quality. A negative relationship is more likely where features/product attributes (other than reliability) drive quality. Reliability will most likely drive overall perceived quality where there is a meaningful variation in defects between competing products, and customers are able to differentiate the variation. If customers do not perceive meaningful differences in reliability

they will most likely focus on other features to evaluate quality.

Another factor that should influence the relationship between productivity and quality is the nature of the production process. A positive relationship between productivity and quality largely depends on how easily the product can be standardized, how inputs can be specialized and how "high/new tech" capital equipment can substitute for labour without a disturbance of quality.

For an ideal analysis of the productivity/quality relationship it would be necessary to have a measure of overall perceived quality, together with measures of both dimensions of quality (freedom from deficiencies and 'features quality') and measures that would characterize a production process. These regrettably are not available in large, customer-based database.

Nevertheless propositions regarding the quality/productivity nexus, in respect of manufactured goods, services (the latter including those that require low-levels of customer interaction/customization) have been made and tested using a general linear model (Huff et al 1996). This study could be considered as a first step towards a quantitative understanding of the relationship between productivity enhancement and quality improvement.

Despite widespread interest in the subject and "across the table" statements often made in this area, an in-depth understanding is yet to be realized. Failure to realize this may lead to inappropriate strategic initiatives and consequently to weaker financial performance. ■

Cont'd from page 11

Productivity Surveys and Research

Carrying out Productivity Surveys and Research to understand factors that hinder or promote productivity improvements, reasons for low productivity, barriers to productivity improvement in various sectors and industries and socio-cultural aspects of productivity are imperative.

Participation of the Whole Nation

The Productivity Movement should get the active and widespread commitment and participation of the whole nation, particularly the Government, employees and workers in activities that will develop in them an attitude of mind that seeks and achieves constant improvement in their work. The attitude of mind that will be translated into action is the "Productivity Will".

Constraints to Increasing National Productivity

Joseph Prokopenko states: "The competitiveness and effectiveness of a nation are not the same as the simple sum of the productivity of its enterprises." It cannot be so and unless the Government manages the nation well the enterprises themselves are in danger of finally becoming unproductive. National productivity depends, after all, on a combination of political, cultural, social and, all importantly, economic forces, all of which are within the control of the Government.

The impact of the Government on productivity is both direct as well as indirect.

The direct interventions consist of consist of the responsibility it has for infrastructure including roads, communications and the bureaucracy. It would also include productivity incentives and schemes given to private enterprise. The indirect influence arises from popularisation and promotion of the concepts, the support of institutions promoting productivity and similar interventions.

All these modes of involvement and support for productivity, which could be termed macro-productivity factors, are vital if we are to see any improvements in national productivity. It has been identified that the Government alone could improve macro-level productivity by concentrating on the following areas:

- (a) Structural change.
- (b) Education and training policy
- (c) Research and development
- (d) Infrastructure and technology transfer
- (e) The environment
- (f) Energy
- (g) International business.
- (h) The political environment and
- (i) Supportive legislative reforms.

The document entitled 'Sri Lanka in the Year 2000 - An Agenda for Action' (which is a joint study with the

World Bank) has some valuable insights for us in our discussion. It is stated that:

"A review of Sri Lanka's economic performance suggests the most important policy areas: weak macro-economic management, rigid and distorted regulatory, legal and incentive environments for private sector development and inappropriate agricultural and financial sector policies. An emerging issue is the capacity of the public sector to build a supportive institutional framework". This statement appears to encapsulate the problem very effectively (Pg. vi).

I would like to concentrate on my area of expertise, which is industrial relations. Obviously, although indus-

by
Franklyn Amerasinghe
Secretary - General
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trial relations focus on the two main main players, i.e. the employers and workers, we need also look at what I call the total environment of industrial relations which brings into play forces such as families, the public, the bureaucracy or technocracy, organisations of employers and workers, international agencies, clients and, last but by no means the least, the media. The main players take their points of reference in any situation or take their decisions on any matter with views conditioned by the external pressures from these dominating forces, which many employers often do not comprehend.

I would first like to look at the bureaucracy and the politician. Too much interference in industrial relations by these forces has resulted in less collective bargaining at enterprise level. More dialogue and bargaining at enterprise level would have resulted in breaking down many barriers which affect enterprise level productivity.

The present system is such that terms are usually legislated. If one takes the Wages Boards which deal with most of the employees engaged in production in the country, you see that wages are fixed and also increased from time to time on the basis of cost of living factors and also taking the cue from the Government, which are not on measurements of productivity but purely for political reasons increases public sector wages regularly. The latest round of such increases has now commenced in the Wages Boards on the ground that the public servants will have their salaries increased soon.

In 1989 the Industrialisation Strategy of the Government promised to tie wages to productivity, and nothing happened. Political will and a committed bureaucracy have so far been absent. Take also the problem of lack of coordination of bureaucratic efforts, or political efforts, to increase productivity. The Year of Productivity which was 1988 saw no real co-operation between the key ministries, which are the Ministry of Labour and the Ministry of Industries. After the year got underway some effort was made to bring the Labour Ministry on board, but the co-operation lacked commitment to the cause.

In any case, very little effort was made to induce the social partners to work closely. On the contrary, confusing signals from persons in authority caused a further rift in the already adverse relationship between the social partners. The I. L. O. advocates tripartism for socio-economic development. For tripartism to work, paradoxically, the Government needs to step out of the picture and play a strong supporting role to enable the social partners to identify common objectives. If the Government takes one side or the other or takes a strong authoritarian role, nothing meaningful can happen in a democratic state.

A further point regarding state officials is that there has to be an appreciation of the need for skills and aptitude on their part and the Government

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needs to pay heed to the special requirements of departments such as labour where specialist skills are required. For example, one cannot entrust mediation and conciliation to an untrained person. When it comes to legal interpretation which is being done by the Labour Department the situation is even more grave.

Productivity is an issue which has to be bargained at enterprise level and the position of the Labour Department is going to interfere with the freedom parties have in negotiating for productivity increases in return for wage increases. It also bedevils industrial peace, with minority interests being able to destabilise by challenging agreements with majority unions.

Productivity in workplaces also suffers as a result of poor transport, housing difficulties and lack of proper educational institutions and medical services. Why would private sector employers be concerned with such issues? In the case of transport difficulties, it must be pointed out that late attendance at work is often attributed to this problem. Shifts during late hours are also not possible due to shortages in transport, especially at night time. Besides, employees who have to suffer inconvenience getting to work or getting back to their homes cannot give of their best at the workplace.

As a result of poor planning in relation to housing and the rent restriction laws which act as a disincentive for employers to provide housing to employees, many employees commute to work from far away. This inevitably leads to low productivity brought about by unpunctuality, absenteeism and even inefficiency when they are at work through exhaustion.

Due to employees having to seek private medical services as a routine practice and the costs of education escalating both directly and indirectly, more pressure is being put on employers to either increase benefits or wages to cover the increased expenditure on these accounts. It must be appreciated that the worker demands that he should be paid a living wage, i.e., a wage commensurate with standards of living which he is entitled to.

This leads us to the all important issue of wage structures and the lack of a linkage to the performance of the organisation which employs a person. In Singapore, and more recently in



Malaysia, flexible wage systems have been adopted. The employee has a fixed component of his wage and the balance fluctuates with the health of the organisation. Some organisations gear the fluctuating portion to productivity and some to profits, but the intention is to see that employees share in the wealth they create or the bad times which face the organisation.

The attitude of some employers who feel that productivity is a matter for workers and that the intrinsic drawback is the lack of a work ethic on the side of workers, is really unfair and indefensible as a general truth. The E. F. C. some years ago embarked on a project to enhance productivity in ten selected companies. The companies were selected on the footing that they would be committed to the programme and that their example could be replicated by others. The project did not yield meaningful results. In several of the companies, the initial enthusiasm gave way to inaction.


In some, the managements gave the excuse that the managers who were supposed to be the focal point had left employment or had moved to new positions and were not available to implement the required steps. The point is that although employers wish to improve productivity, the frontline managers who have to bear the brunt of such initiatives lack commitment. This is due to the lack of motivation, the lack of recognition and the lack of rewards.

-As mentioned earlier the Government needs to have supportive legislative reforms. A few months ago when the President appointed a Task Force for employment and a dialogue took place with Labour Ministry officials, one recurring argument was that since the laws were old and, therefore

ostensibly, tested, that they should not be changed. It did not seem to be appreciated that this was the very argument which had to be inverted and applied. Are the social and economic considerations the same as before? Is there no change at global level since these laws were enacted? Is there no need for assessing their relevance? Do these laws conform to the need for higher productivity?

On these parameters how relevant are the Termination of Employment (Special Provisions) Act, the Industrial Disputes Act and the Wages Boards Ordinance. The Government with I. L. O. assistance is now attempting to carry out what it calls a codification of the law, but despite our plea that a valuable code would be a socially relevant one, the Government merely wishes to have a restatement and consolidation of the existing anachronistic law.

Employers need to do their part, as well, by empowerment of workers. In Sri Lanka in the last decade there has been a dramatic change in the educational level of employees. Some establishments would have persons of the same educational level at blue collar, white collar and executive grades. The differentiation would, as in the past, be a knowledge of English or specialised on-the-job training.

For productivity to be increased it appears essential to address the important issue of two-way communication, team work and training for career progression. At national level, it is suggested that the Government adopts an educational strategy that includes within the school curriculum the elements of human resource development, such as motivation, leadership, communication and team work. 

National Productivity Awards for the Manufacturing Sector - 1996

The Awards

The National Productivity Awards are presented to outstanding manufacturing companies in the Australian industry by the Department of Industry, Science and Technology. The awards are presented to the winners of the competition.

The awards are presented to the winners of the competition. The awards are presented to the winners of the competition.

Objectives

The main objective of the Productivity Awards is to recognise and encourage the achievement of high productivity and quality in the manufacturing sector. The awards are presented to the winners of the competition.

Other Objectives of the Awards Scheme

- To promote productivity and quality in the manufacturing sector.
- To encourage innovation and research and development in the manufacturing sector.
- To encourage the use of modern manufacturing technology.
- To encourage the use of modern manufacturing technology.

The Scheme

The scheme is a national award for manufacturing companies. The awards are presented to the winners of the competition.

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Criteria

The Productivity Awards are presented to the winners of the competition.

Awarding Authority

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Definition

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The Challenge of Improving Productivity in the Public Sector

By Dr Sudatta Ranasinghe
(Senior Lecturer, Postgraduate Institute of Management)

Productivity Improvement: the Challenge

The role of the public sector in Sri Lanka's socio-economic milieu has undergone a significant change since independence. Over time the public service has evolved from a machinery of law and order maintenance and revenue collection into an agent of change and socio-economic transformation. Hence, the scope of activities carried out by the public sector as well as its size reckoned in terms of the number of institutions and the employees, have expanded over time. Today, the public service is perceived not only as a provider of essential services but also as a distributor of resources, investor in infrastructure development and a regulator of the socio-economic system through policy interventions.

At present the public sector encompasses several ministries and departments at the national and provincial levels, district and divisional secretariats, a number of commercial operations run in the form of public corporations, statutory boards, authorities, banks etc. as well as police and the armed forces. Since local government also come under the purview of public services one may include the urban local authorities and the Pradeshiya Sabhas within the broad category of the public sector.

The life of the average citizen is thus subject to the influence of the public services from the time of birth until the death. It is therefore clear that the level of efficiency in the delivery of public services as well as in resource utilization is likely to have a significant impact on the quality of life of the people. Against this background, the present paper intends to focus on some critical issues pertaining to productivity improvement in the public sector and present some ideas regarding change so as to provoke further discussion.

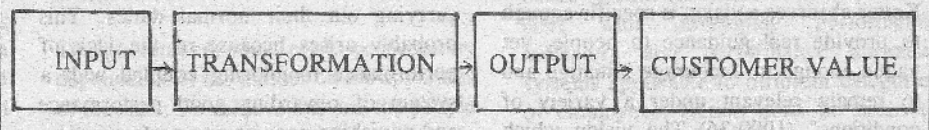
Productivity is a measure of the value of useful output in proportion to a given amount of resources or inputs utilized in the process of generating that output. Thus 'productivity' conveys the idea of generating value to the customer which is

identity card. Since this spelling mistake can cause further problems the customer value of the output (the National Identity Card) tends to decline further. Hence there is low productivity.

Traditionally productivity has been considered as the ratio of useful output to a given amount of inputs. Thus it is believed that productivity can be increased either by increasing the output while

Figure I

The Performance Process



According to Figure I, the achievement of high or low productivity is a factor that would depend on the extent of customer value generation through the output. In other words if the customer feels that the output (i.e. the product or the service) did not give him/her value for money, it could be argued that productivity (useful output) has been low. Let us take an example from the public sector to illustrate this point further.

If a citizen wants to obtain a National Identity Card he or she will have to obtain an application form from the relevant Grama Niladhari (GN) and forward the form duly completed along with the photograph and the stamps to the G.N. who in turn will forward same to the Divisional Secretariat. The document is further checked by a clerk at this point and forwarded to the office of the Commissioner of Registration of Persons from where the National Identity Card (output) will be sent by post to the applicant (customer) which may be after a lapse of several months. Due to the delay the customer will in the interim face several problems. Adding to customer's dissatisfaction there could be a mistake in the spelling of the applicant's name in the

keeping the input constant by reducing the inputs while obtaining the same level of output, by increasing the output at a higher rate than the increase in inputs, or by increasing the output while reducing the inputs. The last measure is obviously a difficult choice particularly for the public sector as experience shows that hardly any effort has been made in the public sector to reduce the inputs and increase the output.

Productivity could also be viewed as a consequence of several interacting factors in the process of transforming inputs into outputs. Most important among these is the relationship between different individuals and work processes that finally lead to the production of an output. In order to finalise an output that presents value to the customer there must be a synchronization or right blend of individual effort and the processes involved. Experience shows that in the public sector although a vast amount of resources is committed to the process of generating output, there is no right blend of human effort and the processes involved due to poor management. Hence one often witnesses negative comments from the



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public as well as politicians regarding inefficiency and poor service delivery in the public sector.

Factors Influencing Productivity in the Public Sector

In order to achieve high productivity the system of public administration must be geared to utilize the available resources efficiently (in the right manner) and effectively (for right purposes). There must also be a deep concern for customer value or meeting the needs of the public clientele to their satisfaction. There are several factors that seem to affect the level of efficiency and effectiveness as well as client orientation in the public sector.

A primary issue in the productivity debate centres around the purposes for which the resources are committed and the methods adopted in utilizing the resources. These issues can be addressed only if the organisations in the public sector have a clear vision and a mission. As John P. Kotter observes a vision is specific enough to provide real guidance to people, yet vague enough to encourage initiative and to remain relevant under a variety of conditions" (1990:36) The vision which comes from leadership is a factor that sets the direction for people to act in order to achieve the objectives. The mission on the other hand indicates the business in which the organization is engaged and thereby provide guidance to formulate goals and prepare plans for committing the resources. In most instances the public sector institutions appear to have chosen the path of survival without being guided by a vision and a mission. Hence, one cannot expect the decision makers in these organizations to raise fundamental questions like, "why are we doing what we are doing" and "why are we doing it the way we are doing". Thus it would be difficult to expect the public sector institutions to make any fundamental break through in the sphere of productivity improvement.

Another major factor that bear on productivity is the people who work in these organizations. It is estimated that over 600,000 people are employed in the public sector in Sri Lanka and the estimated recurrent expenditure in 1997 is around Rs 186 billion, of which salaries and emoluments constitute 17 per cent. The level of productivity of the public

sector employees would depend on their skills as well as the level of their motivation to perform. The public service in Sri Lanka still attracts qualified and experienced people despite comparatively low salaries probably due to reasons like job security, social power and social security. However, the level of motivation to perform appear to be at a low ebb among a majority of the public servants. This could be largely due to the absence of performance based reward systems.

Most public servants with whom the writer had discussed this issue were of the view that other than the intrinsic motivators such as job satisfaction, the public service does not provide performance related rewards with the exception of certain limited services. There is no performance based promotion system as the promotions are based on seniority. It should also be noted that in the context of public service work culture most employees are used to work without a sense of urgency in carrying out their normal duties. This probably arises because of the lack of performance monitoring coupled with a system of rewarding good performance and punishing poor or non-performance.

The non-application of performance indicators appropriate to different jobs and hence the lack of a performance appraisal system seem have contributed to the present level of low performance in the public sector. It has been argued that it is difficult to establish clear performance indicators in the public sector due to reasons such as,

- I. Non-existence of discrete units of output which arise due to (a) non-exclusion (no one is excluded from being benefitted from public services due to inability to pay for such services) and (b) non-rivalry (there is joint consumption by many of the same supply of public goods).
- II. Lack of clearly defined production function - difficulty in measuring inputs as well as outputs as in the case of a production process.
- III. Multiple objectives, and
- IV. Reciprocal externalities: Efficiency of one organization

may depend on the efficiency of another.

However, the above reasons should not be taken as justification for not developing performance indicators and performance appraisal systems because without assessment of performance an organization will be groping in the dark.

As observed by Osborne and Gaebler in their path breaking book "Reinventing Government (1992)", performance should be measured as it enables the management to get a job done, distinguish success from failure, reward successes and avoid rewarding failures, learn from successes, correct the failures and win public support.

Although the degree of customer satisfaction can be considered as an indicator of high productivity, where public services are concerned the concept of 'customer' seems to be a problematic. On the one hand there is no customer who "buys" public services, on the other the public servants do not look at the public clientele as their customers. Thus one could expect the public servants to treat their clientele rather indifferently. In this respect Sri Lanka can learn valuable lessons from countries like Singapore and Malaysia where the public service has been made highly customer oriented.

Another major factor that seems to have contributed to the present level of low productivity in the public sector is the lack of innovation and change in the processes involved. Several studies on the service delivery system of public sector institutions have revealed that some of the existing processes are archaic and hence do not serve the present day needs. It has been found that the processes that are being adopted to deliver public services such as issue of various certificates, licenses and permits consist of number of work steps which do not add value. Due to these weaknesses in the present work processes the members of the public experience undue delays which cause inconveniences and hardships.

It could be observed that in the public sector a greater importance has been attached to "structures" than the outcomes. Thus there is preference for tall hierarchical structures as well as various rules and regulations to dominate at the



expense of the end results. It is common knowledge that due to the prevalence of hierarchical structures as well as outdated regulations there are undue delays in decision making. These delays have often deprived the people of the benefits that should have been accrued to them. A case in point is the loss of benefits resulting from ineffective utilization of foreign aid and grants received during the past decades.

Further, irrational allocation of resources has affected the capability of public sector institutions to perform their functions effectively. In more developed urban areas one could find a surplus of human and physical resources while in less developed rural areas public sector institutions are forced to operate under severe resource constraints. Office space in many government buildings located in the Colombo city is found to be under-utilized due to poor office management, while in remote districts like Monaragala, Ampara and Badulla important government offices like Divisional Secretariats do not have adequate office space for the officers to carry out their normal duties. In most instances skilled human resources are in short-supply in the so-called "difficult areas", while there is a surplus of skilled man power such as teachers, doctors, engineers, technical grades etc. in the developed areas like the Western Province. One might argue that if differentiated compensation packages are offered to public servants who are prepared to work in the remote areas, the prevailing shortage of skilled human resources in these areas can be reduced considerably.

Approaches to Productivity Improvement in the Public Sector

Performance improvement in the public sector has been attempted in the past through various means. The recommendations of the Administrative Reforms Committee of 1988 and the current efforts towards introducing performance appraisal systems constitute some of the important steps taken in this direction. However, the citizen who is at the receiving end is still not convinced that any noticeable change has taken place in the system of public service delivery.

In order to make an impact on productivity the issue has to be addressed mainly from the view point of the

customer and not from that of the employees or the perpetuation of existing structure. In short, promotion of productivity improvement in the public sector demands fundamental and radical changes in the processes involved keeping customer value generation as a central focus. This exercise which is called re-engineering by Hammer and Champy (1994) involves raising fundamental questions like "why are we doing what we are doing" and "why are we doing it the way we are doing". Thus the starting point in the process of improving performance in the public sector is nothing but innovation and new thinking. The public sector institutions must be led by those who think new, particularly from the stand point of "what benefits are there for the customer". This type of new thinking give emphasis to outcomes rather than to inputs. Thus to ensure achievement of desired outcomes the leaders must be prepared to initiate radical changes in the processes, structures as well as systems and procedures.

The government must avoid perpetuating dependence of the masses on the apparatus of the state. To achieve this end the people must be empowered to do things on their own without having to go through the public bureaucracy all the time. One way of improving productivity (value for customer) of the services currently provided by the public sector is to out-source some of them to the private sector or the people's organizations. For instance, the local authorities can out-source the activity of garbage collection and disposal to the private sector as is being done very efficiently in some of the developed countries.

Avoiding delays in decision making is vital for achieving high productivity in the public sector. This issue could be addressed in two ways. Firstly, action can be taken to reduce the emphasis on structure by de-layering and moving towards flat organizations. Secondly, the employees at middle and lower levels in the hierarchy can be empowered by delegating decision making authority. The shift of decision making authority downwards can contribute not only to speedy decision making but also to employee motivation. The studies have indicated that empowered employees have a greater sense of responsibility and accountability than those who feel powerless.

Also, in introducing changes to the existing structures and processes adequate care must be taken to build greater integration of different parts of the system. At present what we have is a highly fragmented institutional frame-work where there is little or no coordination between different institutions as well as their parts (ie. Departments, Divisions, Units etc.). Although the processes are supposed to operate cross functionally, it does not happen efficiently due to lack of coordination among fragmented parts. Hence, there has been a difficulty in obtaining a right blend of individual efforts and the processes involved.

Productivity improvement efforts in the Public Sector will have to pay special attention to the people factor as it would not be possible to make a significant breakthrough in productivity improvement unless the employees are motivated to increase their performance. In this respect it is essential to introduce performance based reward schemes. Thus one has to start with developing performance indicators and performance appraisal systems applicable to different categories of employees. Action must be taken to reward good performance by granting salary increases, incentives, scholarships and merit promotions. Similarly it would be necessary to apply negative reinforcements with respect to those who do not meet the performance targets. Perhaps some re-thinking may be necessary in regard to the tenure of the office of public servants.

The public service work culture as well as the work ethic among the public servants have been influenced to some extent by the notion of "permanent jobs", where some tend to think that even deliberate negligence of one's duty is not a sufficient reason for taking action against an employee. On the contrary if the public servants are appointed on contract basis where the tenure of office is renewed periodically according to an appraisal of performance, one could expect the public servants to make greater efforts to improve performance voluntarily. The possibility of introducing higher salaries and fringe benefits for those who hold contract appointments should be considered as a way of attracting high performers into the public service. Also, the option could be made available for those in permanent employment to take up contract appointments. Cont'd on page 26



Effects of Occupational Health and Safety on Productivity

by

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Productivity is commonly defined as the relationship between units of output and the units of input. A common problem that arises, whether it is in a production or in a service-oriented organisation is that the input is an varied and wide that it is difficult to have an objective measure. Therefore, customarily what is measured is labour productivity, where the input is the number of workers or the number of man hours worked or the labour cost. Productivity therefore is directly dependent on human resources. There are many characteristics of the man that determines his efficiency. They are his education, experience and training and, of course, health. Invariably employment is always offered to healthy people.

Most people do not appreciate the positive effects of health in productivity. Consider what would happen if there is ill-health. There will be more absenteeism, late attendance, lowered output, more errors, poor quality of product or service and higher medical bills. Effect of these on the enterprise need not be elaborated, they are obvious. But unfortunately we usually do not calculate the cost of ill-health to industry.

The health of the worker may be affected by common diseases that afflict the community, its economic effect is felt at the workplace. Also an existing illness, at times may be aggravated by work causing disability which is referred to as work-related illnesses. For example, a worker who is astopic or prone to asthma and dermatitis may

have an attack due to some exposure at work. More important is that the worker's health may be affected by the very nature of work he performs, or by the substances he is handling or by adverse factors in the working environment causing what is called occupational diseases. Prevention of ill-health therefore in the long run will be beneficial to the workplace. At the same time promoting the health of the worker will be advantageous. Improving the nutrition, family health, better lifestyles, exercising, abuse of alcohol are some health promotional initiatives that can be looked into at the workplace.

On the other hand, accidents and ill-health will affect the profits of the enterprise. Most often employers consider only the direct cost of an accident. That is the cost of treatment and compensation. In fact, some employers are quite happy as long as the workers are insured. But what about the indirect cost? Have you ever thought of the cost of transport following an accident, cost of lost time, leave, loss of investment on the worker, cost of a new recruitment, cost of work stoppage following an accident, damage to products and machinery and the legal cost etc. The direct cost is like the tip of an iceberg, and the indirect cost like the hidden portion of an iceberg is enormous. This will add up to the labour cost and affect adversely the productivity and profits of the enterprise. It is in addition a strain on the national economy.

Providing a healthy and safe working environment will prevent ill-health and accidents. A comfortable work environment will also increase worker

morale, better industrial relations, reduce errors and increase output.

Occupational Hazards

What are the hazards in the workplace that affect the workers well-being? Any type of work will have some or other hazard. At the outset it is important to note that these hazards can be controlled. It is the risk or the probability that this hazard may cause ill-health under the given conditions that we are concerned with. For example, electricity is hazardous. Yet we use it extensively. The risk is only if it comes into contact with the human body, and it is that we need to control.

The hazards in the workplace can be broadly classified as:

- ◆ Physical
- ◆ Chemical
- ◆ Biological
- ◆ Psycho-social and
- ◆ Ergonomic

Physical Hazards

They are heat, light, noise, vibration, atmospheric pressure and radiation.

The thermal environment is important for worker comfort. Man maintains a heat balance. When he works he produces heat which could be easily released into the environment. The environment thermal conditions should facilitate this release. When the work is strenuous, more heat is produced and with unfavourable environmental conditions, the worker to maintain body



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temperature begins to sweat. Man could lose as much as 4 litres of water from the body as sweat during the shift. This if not replaced can have disastrous effects. At a lesser degree with loss of body water, salt fatigue sets in affecting work output. Maintaining the thermal environment, whether it is an office or factory, in a comfortable range will no doubt have significant effect on output and efficiency.

Adequate lighting is required to work as we receive almost 80% of information through our eyes. For most jobs, materials, objects and machinery should be seen clearly. Poor lighting will lead to reduced output, more errors, the worker adopting awkward postures leading to disorders such as pain in the neck, tiredness which will finally affect productivity. Studies have shown that by merely improving lighting, productivity was increased by 10% and the error rate reduced by 30%.

Good lighting does not mean more lights and higher electricity bills. Make full use of daylight by large high windows or skylight by replacing a roof sheet with translucent material. Glare can be very uncomfortable to the worker. Avoid glare by using blinds to the windows, by proper placing of light source and work surfaces, by deep shades etc. By choosing the appropriate background, visual acuity can be improved drastically. The light sources must be placed in the right place so as to avoid shadows and receive the best view. Regular maintenance of lighting equipment is essential. Correction of vision of the worker by lenses may be required sometimes.

Noise is a common problem in our workplaces. Intermittent low intensity noise may disturb work that involves use of mental faculties. On the other hand, high intensity noise in factories have a multitude of health effects. Noise levels above 85 to 90 decibels for exposure periods of 8 hours and above will cause deafness after many years. The morale of the workers in high noise environments is very poor. Such environments also contribute to accidents as warning shouts may be masked by background noise. High noise constricts blood vessels, thus increasing the blood pressure.

In the control of noise, the first line

of action is to reduce the noise at source by engineering control measures. Next, efforts should be made to prevent propagation of noise waves by use of barriers and sound absorbing materials on walls and ceilings. Use of personal protection like ear protectors and limitation of exposure time should be the last line of defence.

Radiation hazard may be of two types. Ionising radiation like X-rays and non-ionising radiation like infrared and ultra-violet radiation. Infrared radiation is emitted from red hot objects. Exposure to such radiation will cause lens opacities or cataracts in the eye leading to blindness early in life. Ultra-violet light is usually emitted during welding. It causes acute inflammation of the eye resulting in many days of absenteeism. It is therefore essential that workers who are exposed to these hazards wear the appropriate eye protection at all times.

Chemical Hazards

Many chemicals are used in varying quantities in all workplaces including offices, hospitals, schools, agriculture and factories. All chemicals are potentially harmful, the dose deciding whether it will be poison or a remedy. While chemicals have changed our lives for the better, they have to be used cautiously. Some chemicals are known to be more toxic than others and are usually described as hazardous chemicals. Chemicals can enter the human body through the skin, respiratory system or through the mouth. The ill-effects may be immediate or sometimes late as much as 25 to 30 years. The effects vary from simple irritation of skin to allergies, asphyxia, systemic effects and cancers etc.

Chemical accumulation in workplaces is also a fire hazard. It may adversely affect the machinery and the product.

In the control of hazards due to chemicals, the fundamental requirement is to identify the chemical first at the planning stages and act at that stage. If possible try to substitute toxic chemicals with a non-toxic or less toxic chemicals. Failing which, efforts should be made to prevent the chemical coming into contact with the worker by

totally enclosing the process. Provision of good ventilation is essential. Strict safety rules should be followed in the storage of chemicals. The workers handling chemicals should be trained and informed of the effects of the chemicals they handle. Personal protection should be the last line of defence and should be of the appropriate type. Being prepared for emergencies can reduce the consequences of accidents to a great extent.

Psycho-Social Hazards

Many factors at work can affect the mental well-being of the worker. One cannot expect good output from a worker who is unhappy. The nature of the job, the role of the person in the organisation, career development pressures, the climate and structure of the organisation can affect the mental well-being. It is therefore necessary to identify work factors that cause dissatisfaction and mental stress. Eliminate them. Make work more satisfying.

Ergonomic

This refers to matching the work and the machines to the worker. Machines and work have been changing rapidly over the years. But the model of the human being has remained the same for a very long period. All are not alike. Some are large and stronger physically and mentally than others. These differences must be taken into account when planning work. Ergonomic principles can be taken into account to increase human efficiency and cut down unwanted use of human energy.

Work Station Design

A well designed work station is important for productive work. Workers usually repeat similar operations a great many times. If they can do so quickly and easily, productivity will be higher and quality will be better. Since they repeat the same operations over hundred times, the benefit from small improvements are thus multiplied many times. Awkward work postures and movements mean greater fatigue, lower productivity and quality as well. Simple improvements such as use of work surfaces or

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highly mobile workforce, and during the 15-year period under review these factors became even more pronounced. It is easier to hire and fire in the U.S., and wages are more flexible, both upwards and downwards.

The lesson is a very simple: one of wages (including fringe benefits) are in many cases the largest single cost of production, so more employment depends directly on the cost of labour, including both wages and the costs associated with possible re-employment later on.

The lesson may be simple, but implementing change in Sri Lanka will be very challenging. Some have suggested that the problem would be substantially reduced, and possibly eliminated, by speeding up the process of decision-making by the Commissioner of Labour, whose office is under-staffed and who is now burdened with a backlog exceeding one year. Others believe that the difficulties are more basic, and that fundamental changes in the law are required.

A joint labour-management effort of heroic proportions is called for to examine and rewrite the labour laws, and to develop the administrative procedures for their efficient enforcement.

Of course, there are some firms in Sri Lanka where labour-management relations are excellent, and where strike activity is virtually unknown (at least in recent years). Institutional arrangements need to be improved through which the lessons from these model firms can more readily be absorbed with others.

Another suggestion made was to invite an outstanding and experienced foreign labour leader from a rapidly growing, productive economy to examine the problem of labour unrest in Sri Lanka. Such a consultant would undoubtedly have many relevant ideas, especially relating to a system of "gain sharing", which must be introduced as part of the program to increase productivity.

A final proposal relates to "human capital formation" and the importance of improving skills, not only to increase national productivity, but to raise income and living standards at the bot-

tom end of the income distribution (as has been done with some success in East Asia). Management and labour unions should join forces to develop training courses which would be programmatic and focused directly on skills which would be readily applicable on the job (which relates to the next point).

- b. Human resources: lack of trained manpower; educational system is not preparing graduates for the global economy

There is a critical shortage of trained manpower, such as managers, engineers, designers, etc., and school-leavers seem unprepared to become productive members of the labour force. In part, this is due to the lack of practical training. But, perhaps, more significantly, it may be due to an "attitude" which is not sympathetic to productivity and private business, and leads many students to prefer a career in government service.

V. Poor infrastructure: railroads, roads, power, etc.

Roads, ports, railroads, power, water and communications are all areas of great concern to both business and government leaders. The problems which come to my attention are similar to those facing public enterprises all over the world: lack of financial resources and political pressures which, while understandable, impact adversely on such business decisions as pricing and employment.

Railroads: For example, it appears that there are inadequate funds for the maintenance, renovation and expansion of the railroad system, in part due to pricing below cost for both passengers and freight. Surprisingly, it appears that relatively little freight is carried by rail. Even though the train line serves the airport, directly next to the Free Trade Zone (FTZ), all FTZ export (most of which are containerized) are shipped by lorry, in spite of extensive traffic congestion on the roads.

Upgrading is already underway, including the replacement of the wood sleepers with those made of concrete, and partial electrification is under consideration. More dramatic changes should be considered, however, if the

rail system is to play a major role in the 21st Century.

Harbours: There is a widespread consensus that the nature of privatization of bus transport needs to be re-examined, as buses are overcrowded, under-maintained, and driven too fast. This is, of course, a highly complex issue, but one vital aspect relates to the price controls on the fares.

It has been said that Sri Lanka is the only country in South and South-East Asia without one mile of superhighway! Plans for flyovers and highways are on the drawing board, and some construction has started, but higher priority needs to be given to this area to reduce traffic congestion, save transport time and lower costs, especially for export-related industries.

Ports: Delays in clearing the port have also been stressed in some of my meetings, but port modernization and expansion in both Colombo and Galle are under deliberation, with some privatization to be involved. The application of modern information technology in the port of Singapore has reduced turnaround time to less than one day for most ships, and to only a few hours in some cases.

Infrastructure studies are underway in virtually every area, with one of the most promising proposals relating to greater (though not complete) reliance on privatization under BOT and BOP. In some cases, such as the water sector, ownership may remain public with private management under consideration.

VI. Cumbersome bureaucratic procedures, delayed decision-making

There is a strong sense in the business community that "red-tape" (with accompanying delays and bribery), although it is much less than in other low-income countries, is steadily increasing. Recommendations which are being considered include further reduction in unnecessary regulations and controls in Customs (and port clearance), in utilities, in land acquisition, etc., with more consistency in the rules, and greater transparency in their administration. Internal accounting and auditing practices need to be strengthened.



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Further, the lack of decision-making must be addressed, as too many minor issues are passed along up through the bureaucracy, landing on the desk of senior officials (who are often the busiest and most overworked in the government). One business manager reported that he has been trying to acquire three acres of land from the government for over three years, for the expansion of his factory. A potential foreign investor has been working with government officials for over fifteen years, with no ratification of the agreement as yet. Obviously, BOI is not yet a "one-stop" centre, where all questions can be answered and all permits obtained. In these and many other cases, the absence of decision-making is preventing new investment, additional employment, greater output, and higher exports.

Much is being done in other countries, especially New Zealand and Britain, to "reinvent government" and to "banish bureaucracy". The underlying approach is rooted in the separation between the two parts of government, divorcing the top executive levels which set policy from the agencies that actually deliver services. Changes have included terminating lifetime tenure for civil servants, putting the service departments on performance contracts, making 20% of their pay dependent upon performance, and giving them broad discretion over budget and personnel.

In numerous public statements, both President Kumaratunga and the Minister of Justice and Constitutional Affairs, Prof. G. L. Peiris, have made it very clear that inefficiency and corruption will not be tolerated. Fortunately, reform of the civil service is now high on the agenda of the government.

VII. International trade liberalisation

Extensive "economic liberalisation" has already occurred in import and export licensing, foreign exchange controls, industrial licensing, privatization, price controls, and in the number and level of customs duties as well as the required paperwork. All of these actions are to be commended, and are part of the reason that the Sri Lankan economy has done so well during the past decade.

However, it is important that the momentum of liberalisation be maintained, and further reductions in import quotas (still covering about a half-dozen items), tariff categories (from three to two, and ideally to one), and lower tariff rates (from 35% maximum to 20% or less) should be implemented in the near future.

Conclusions

When these seven, perplexing economic problem areas (the "bad news") are listed as above (and undoubtedly another seven could be added), it is tempting to draw a depressing and very pessimistic picture regarding the economic prospects for Sri Lanka.

However, for many reasons, the opposite conclusion may be more valid.

- A. Sri Lanka faces the Century in a very strong position, evidenced by the twelve points of "good news" mentioned above. Most important is Sri Lanka's commitment to an open, competitive economy, in which the "magic of the market" is allowed to work.
- B. Based on my extensive interviewing, I know Sri Lanka has the most important resource essential for rapid development: an abundance of intelligent, literate and energetic people, including experienced and creative individuals in both the public and private sectors, and in both labour and management. Sri Lanka is very well endowed in human resources.
- C. The geographic location of Sri Lanka is ideal for the development of world-class facilities for shipping, communications, finance, conference centres, as well as a hub for particular industries such as textiles, oil refining, etc.
- D. The problems identified above are well known, and a few "solutions" have been proposed; during the past six months some have already been introduced. For example, commissions have been created to examine the ports, the electric power crisis, corruption the educational system, highways, and other similar problems. The President's budget last fall included a reduction in the

deficit and other tax changes favourable to the private sector. Constructive change is already underway and

- E. Finally, it can be argued that Sri Lanka really has no other option but to continue improving productivity and to move vigorously into the world marketplace. The daily newspapers are full of headlines such as the following:

- ❖ "Philippines to 'graduate' from IMF program"
- ❖ "Bulgaria celebrates after socialists quit"
- ❖ "Globalisation marches on despite critics"
- ❖ "Sharif pledges bold reforms for Pakistan economy"
- ❖ "Delegation to liberalise air travel"
- ❖ "Poland aims to catch an economic wave: privatization", and
- ❖ "North Korea plans to turn its economy towards West"

And every day there are more articles featuring privatization, liberalisation, greater reliance on private markets and open international trade. Because of these dynamic changes elsewhere, Sri Lanka is being propelled into an ever-expanding and increasingly competitive global economy. It is as if Sri Lanka is being hit by an "economic tidal wave". There is no turning back.

Because of solid achievements to date, the economy here is poised for a "take-off", and it will succeed! Evidence of the required excellence lies in the outstanding tourist potential (ranging from unmatched archaeological sites to stunning beaches, both lacking in Singapore), and in the production and export of Noritake china, first-class garments, the world's best tea, and 2,680 other items being successfully sold throughout the world by 3,840 different companies.

And one of the most important exports is not even recorded in Customs or Central Bank data, namely the **1996 World Cup champions in one-day cricket!** 🏏

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body dimensions, structure, mutual vision area and so on. The arrangement of the working table and station could thereby be improved, using the principles of motion economy.

Layout - Incorrect layout causes unnecessary movement. Templates, String Diagrams, Travel charts and similar techniques could be used to improve layout.

Improving methods - Method study which uses several techniques of recording the present way of doing work and using the questioning technique of critical examination which the Japanese call the "5W 1H method") can considerably reduce the work content of a job by eliminating unwanted movements, eliminating unwanted activities, combining activities so that they could be done simultaneously, and rearranging the time, place and person responsible for activities. Using both hands for productive work is usually ignored in traditional work. A very common sight in Sri Lanka is a carpenter using one hand to hold a piece of timber and using the other hand to hold the saw. A jig could be used to hold the piece of timber and release both hands for useful work. Holding a work piece by hand is not productive.

Creating a productive worker - Another area often ignored is the nutritional level of the worker. Studies have revealed that even giving a cup of tea with milk or a biscuit during the mid morning and mid afternoon break can have a very positive

impact on the productivity of a worker. Some organisations have even given vitamins to their workforce and obtained beneficial results.

Motivation - Motivation through financial means such as performance based incentive schemes and non financial means such as providing a more enriched work environment perhaps through suggestion schemes and quality circles can significantly improve productivity and even create a co-operative working environment.

The 5S method - The Japanese 5S method of workplace organisation which is implemented in 5 steps and dealing with reducing clutter, creating orderliness, improving cleanliness, standardisation and discipline is recommended as the most important in a productivity improvement programme in an organisation, because it creates a good working environment conducive to the promotion of quality and productivity.

None of these techniques will work without a productivity and quality oriented culture established within an organisation. It is a culture where every single individual is seeking for better and more productive ways of doing work all the time. It is a culture where there is a continuous and relentless pursuit of improvement however small. It is a culture of delighting the customers all the time and taking pride in quality work. It is a belief that the present situation is not good enough and could be improved. It is only with such a culture that an

organisation could use all the techniques of analysis and fit the improvement techniques to create an excellent organisation. ■

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The point stressed here is that different options should be available for competent people to join the public service and make a contribution to productivity without having to go through the age old system of pensionable permanent employment which offer relatively low salaries.

Conclusion

The new millennium which will dawn in two years is going to be critical in terms of the development challenges. To meet the demands of the new age of information Sri Lanka's public service will have to be equipped with new knowledge and skills, new systems as well as a modern work ethic.

Hence, radical and fundamental changes in the system of public administration seems to be unavoidable. The approaches to productivity improvement outlined in this paper may raise the question whether the changes suggested are compatible with the present way of doing things in the public sector. The answer is that we cannot achieve a significant and qualitative change leading to greater results unless we break away from the past traditions and innovate new ways of doing things. ■

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placing tools and materials within easy reach can have large payoffs.

Work Postures

Work postures whether sitting or standing if not comfortable and flexible lead to fatigue, musculo-skeletal disorders and reduced output. To gain optimal output from the workers, the working height should match the person's height, and depend on the nature of the work and be comfortable. Special consideration is required regarding the work chair. In lifting heavy weights, adopting the correct posture and use of the strongest muscles will prevent muscular damage.

Welfare Facilities

Work-related welfare facilities must often be ignored. Most of them are health related. During each work day, workers need to drink water or tea, eat meals, wash their hands, visit the toilets, rest and recover from fatigue, and have a bath at the end of the work day, with a change of work clothes. They

are not something extra, or a luxury.

They improve the workers' health, morale, motivation, job-satisfaction and attendance. Provision of other welfare facilities like first aid or health services, transport facilities, recreational facilities, child care facilities and a factory family get-together will enhance worker satisfaction and productivity.

In this short paper, I have put down some of the important issues that affect the workers' health and comfort. Control of such hazards and improvement of working conditions will help to obtain optimum work output, thereby improving quality and productivity.

In setting about to improve working conditions, one should not set about haphazardly. It is important to have a laid down, indicating the top management commitment for the cause. In health and safety organisation, it is important to involve all the social partners in development - the employer, the worker and the government.



The "Urban" Definition and its Implications for Development

The Sri Lankan Perspective

by

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Sri Lanka is at a critical stage in the evolution of its society and economy. An effective urban policy is one instrument that can be used to overcome a number of the present difficulties and allow opportunities to be realised. The role of the urban sector in the national economy has thus become extremely crucial. Its contribution to the GDP has not only become significant, but may also need to be nurtured to alleviate the conditions of regional poverty and unemployment. The latter has been particularly effected by the deterioration of the ratio of cultivable land per head of population and by a low ranking of the agricultural productivity index. (vide attached Tables 1 & 2). The outcome of this will be the gradual decrease in the ability of the rural sector to substantially impact overall growth in the economy.

On the other hand it is imperative to frame a policy which will ensure the adequacy of primary produce in the country; especially of its staple food basket. The latter will however need to be complemented by its price competitiveness which should be reflected in the overall agricultural productivity index. It is in the latter context that the rural sector will find that the limitation of the extent of cultivable land and the surplus of labour as two factors to contend with. Its resolution will compel development planners to reform the approach to planning the rural sector and to place a greater focus than at present on the urban sector.

Years of research on urban functions in rural development have shown that urban areas in the form of rural service centres, market towns and regional centres, through the provision of

The HABITAT II "City Summit" has reminded all nations of the growing importance of the Urban Sector. Sri Lanka will be no exception to same. In such a context its current definition of "Urban" used purely for local administrative purposes will not be relevant for its use in development planning and for governance. Consequently, this issue has become a hot topic within the country's planning community. The Article herewith is a contribution to its debate.

services, facilities, infrastructure, and productive activities, can and do play important roles in facilitating rural development. Towns and cities that act as agricultural markets, that provide basic services and public facilities for rural people, and that are linked to each other and to their surrounding rural areas can serve as the physical base for rural and regional economic growth. Thus, government must begin to realise that rural development will not succeed without the successful development of the urban sector, linked as it is to the rural sector through forward marketing and pro-

duction linkages and backward service linkages.

The urban-rural complementarity required as above in the macro planning process has now necessitated an enquiry on the suitability of the traditional definition of "urban". The latter has been compounded by the intervention of statutes to designate areas as "urban development areas" without necessarily bringing into the ambit of urban by definition for purposes of Census data or for governance. Consequently, the analytical frame for development has been inconsistent to

Table 1

Relationship (Historical Projected) between Land Resources and Population in Sri Lanka			
Year	Population	Land area per head of population in Ha.	Cultivated area per head of population in Ha.
1830	962,155	6.73	0.17
1901	3,565,954	1.82	0.25
1950	7,647,000	0.85	0.18
1962	10,443,000	0.62	0.15
1971	12,711,143	0.51	0.16
1981	15,002,773	0.43	0.13
1991	17,134,000	0.38	0.10 (Considering only agricultural land)
			0.17 (Considering agricultural land and sparsely used crop land)
2001	20,105,000	0.32	(a)
2011	22,352,000	0.29	
2021	24,034,000	0.27	
2031	25,014,000	0.26	
2041	25,520,000	0.26	0.11 (Considering the land use figures at (a))

Sources: Based on data in the Department of Census and Statistics and the Survey Department. (Extracted from a Public Talk delivered at the Institute of Town Planners, Sri Lanka, by Mr. S. Berugoda).

Table 2

Agriculture: Sri Lanka compared with selected Countries

Countries	Cropped land as a percentage of the total land area (year 1992)	Cropped land per hectare for the rural area (year 1992)	General Index of Agricultural Production (1992/1974 = 100, year 1992)
Sri Lanka	28.9	0.11	97
Thailand	50.3	0.19	126
Myanmar	15.3	0.24	138
China	17.4	0.35	213
India	67.7	0.61	709
Indonesia	22.1	0.12	182
Rep. of Korea	21.3	0.45	121
Malaysia	11.8	0.25	231
Spain	19.4	0.14	152
Portugal	22.0	0.17	190
Philippines	10.5	0.13	123
Kenya	21.0	0.37	702

Sources: Economic and Social Statistics of Sri Lanka, Central Bank of Sri Lanka 1991, Table 4.1 (Extracted from a Public Talk delivered at the Institute of Town Planners, Sri Lanka, by Mr. S. Beragadda).

data, for purposes of planning and for shaping of policy. Hence, this Article discusses the issues of 'urban' definition within the perspective of Sri Lanka's specific situation to not only improve the co-ordination of urban investment at the local level, but stimulate Government to formulate an explicit urban policy which recognizes the necessity to develop the urban sector in order to realise the successful development of the rural sector.

Past and Present attempts to Rationalise the issues of Urban Definition

In Sri Lanka, 'urban' status is conferred on an area by the Minister in charge of Local Government purely for local administrative purposes. Ministerial discretion seems to have been based on 'the nature of the development... (of the locality) ... or its amenities and urban character.' Accordingly, the Municipal, Urban and Town Council areas were formed as urban and used in such a context for purposes of compiling Census data and for governance. In 1987, the Town Councils were absorbed in a new tier of local government called 'Pradeshiya Sabhas'. However, since there was no Census undertaken after 1981, the corresponding adjustments to accommodate the revised status of urban has not yet been determined. On the other hand the Pradeshiya Sabha Act No. 42 of 1987, refers to the Pradeshiya Sabhas

as rural entities. Consequently, there now exists a distortion of the extent of urbanisation and of the share of urban population.

The issue of definition of urban became more complex by the enactment of the Urban Development Authority Act No. 41 of 1978. The latter providing for the Minister to declare areas as being suitable for urban development, implying that such areas are either urban in character or being urbanised by the nature of the proposed development. On the other hand, its designation is not reflected in the compilation of Census data unless there have already been areas under the jurisdiction of either, Municipal Councils or Urban Councils.

In a situation similar to the above, the Townships created under the Accelerated Mahaweli Development Scheme are also not reflected as urban for purposes of compilation of Census data or for local governance. Consequently, they have remained classified as rural.

The foregoing had been pointed out in several major Urban Sector studies, including those undertaken by the World Bank, Asian Development Bank, (SAIL) and independent publications of Sri Lankan scholars.

The development of a definition for urban which can be suitably used in

formulating a policy for economic growth has been under discussion more intensely in the recent past. Thus the previously mentioned USAID report on 'the Framework for an Urban Action Strategy' (1990) has suggested a more realistic definition of 'urban' based on population in places over 5,000, densities, urban characteristics and per cent employed in non-agricultural activities. It is consistent with the definition used in several other countries. (vide attached Table 3) However, such a definition has been developed for monocentric cities. On the other hand some Sri Lankan scholars have proposed the definition to be based on an 'area-wide' concept suggesting a more strategic spatial consideration incorporating urban agglomerations. Consequently, a decision is awaited on the preferred choice which can be used for the compilation of data at the next Census. However, there does not appear to be an urgency for relating this a corresponding system of urban governance. Meanwhile, the currently devised proposals for devolution have incorporated a 'regional administration' under which purview will also serve the function of urban planning and development.

In the above context what remains disjointed is the connection between an explicit urban policy at the national level and its corresponding system at the regional level. Such a vacuum is likely to cause the interpretation of 'urban' in a diluted manner at all levels. Accordingly, it is imperative that an urban-rural linkage be included as a major consideration in the formulation of a definition for 'urban', which can steer development in terms of economic growth.

Relevance of the 'Urban' Definition for Investment, Growth & Population Settlement Strategies

The crux of the above mentioned framework will comprise a spatial strategy which will facilitate the distribution of population concentrations according to resource availability and its opportunities. Furthermore, it will serve to guide infrastructure providers with regard to such areas of population concentrations in which returns on investments can be expected viably or even profitably. It is in the latter con-

Table 3

Definition of 'urban' by individual ESCAP countries and areas

American Samoa: definition: places of 2,500 or more inhabitants and urbanized areas.	India: definition: towns (places with municipal corporation, municipal area committee, town committee, notified area committee or cantonment board), and all places having 5,000 or more inhabitants, a density of not less than 1,000 persons per square mile or 390 per square kilometre, pronounced urban characteristics and at least three fourths of the male population employed in pursuits other than agriculture.
Australia: definition: population clusters of 1,000 or more inhabitants, and some areas of lower population (e.g. holiday areas) if they contain 250 or more dwellings of which at least 100 are occupied.	Indonesia: definition: the 1990 census defines an administrative unit of <i>desa</i> as being urban according to the following characteristics: (a) Population density of 5,000 or more per sq. kilometre (b) Proportion of households in the agricultural sector of 25 per cent or less (c) Having eight or more urban facilities, e.g. public motorized transportation, theatres, elementary and secondary schools, health centres and maternity clinics, covered markets and shopping areas.
Bangladesh: definition: places having a municipality (<i>Pourashava</i>), a town committee (<i>Shahar committee</i>) or a cantonment board.	Japan: definition: city (<i>Shi</i>) having 50,000 or more inhabitants with 60 per cent or more of the houses located in the main built-up areas and 60 per cent or more of the population (including their dependants) engaged in manufacturing, trade or other urban type of business; alternatively, a <i>Shi</i> having urban facilities and conditions as defined by the prefectural order is considered urban.
China: definition: urban population referring to population living in areas under administration of cities and towns.	
France: definition: communes containing an agglomeration of more than 2,000 inhabitants living in contiguous houses or with not more than 200 metres between houses; communes of which the major portion of the population is part of a multicommunal agglomeration of this nature.	

communications and utilities.

Significance of an appropriate Urban definition in the context of an explicit Urban Policy

As previously stated, the appropriate definition of urban as recognised for use in development and for governance, will permit formulation of an explicit urban policy for the country. The latter will include the determination of the probable shares of future population which can be considered as urban. As per the current definition the share of the urban population in the national population is estimated at between 22% and 30%. It is an entity that has remained low. However, since the last Census of Population held in 1981, significant events have occurred which could have increased same. In particular, the high levels of regional poverty and unemployment are likely to push the population to seek alternatives in the urban sector. Consequently, the absence of a policy to create opportunities in the latter will result in the deteriorating conditions typically found in "third world cities".

On the other hand, the irreversible policies of free trade and competitiveness established for nearly two decades to stimulate economic growth, have prompted an urban - type shift in the structure of the economy; especially the expansion of the manufacturing and service sectors. It however requires to be matched with scale to ensure the characteristics of competitiveness. Hence populated settlements which act as urban agglomerations will serve as economic nodes to comply with same.

The increase in the urban share of the population will by itself need to be incorporated in an explicit urban policy, apart from the indication of its spatial distribution. In this connection, it has been argued that at least 50% of the national population should be living in urban environments by the year 2010; with more than 75% of it in urban agglomerations.

The spatial strategy for accommodating the urban agglomerations will comprise another component of an explicit urban policy. Its scale in investment and development will be provided by a strategic communication network between such agglomerations.

text that the concept of agglomerations become significant in the debate on the definition of "urban" with respect to its application for development purposes.

The traditional perception at the national and sub-national levels has been to consider "urban" as that relating to a monocentric centre. Consequently, the outcome for development became limited to the formulation of "projects" rather than an opportunity for spatially networking urban with rural hinterlands. It further led to arguments in support of investments in urban centres being considered as "consumption - based" rather than growth-oriented. In addition, the project based attitude brought no connection between urban centres and population settlements.

The partial variance in the above was visible only in the urban or metropolitan regions of Colombo. In the latter, urban planners sought to con-

struct spatial strategies which entwined settlement structures with growth and investment policies, transport, communications, and utility networks and land management. Nevertheless, such spatial strategies were never integrated with counterparts for economic development. Hence, there was a resulting vacuum in guiding private and public investment in the urban areas which could have supported urban - rural linkages.

Thus, there now exists a fundamental necessity to define "urban" and to effectively use same in the formulation of strategies for national, provincial/regional, or local development. In it, at the local level, while there will be a greater emphasis to relate urban development in terms of 'projects', at the other two levels the focus will be on formulating long-term, (but irreversible), spatial structures; especially of population settlements and of

Economic aspects of Big Onion Cold Storage in Sri Lanka

by T.A.Dharmaratne.

Big onion is an agricultural commodity of major importance in Sri Lanka. Recently it has become a popular high value commercial crop in the rural farming sector. The big onion also plays a significant role in the context of commercialization of the traditional domestic agriculture and self sufficiency of food production. Two decades ago, the crop was introduced in Sri Lanka and its cultivation is mainly concentrated in the Central and North Central Provinces of the country. Anuradhapura and Matale Districts were the major producing areas of these provinces. Generally, the big onions are cultivated during the Yala season, but there are some cultivation trials now being conducted during the Maha season in the major producing areas.

Production Trend

The highest big onion production recorded was 84,726 mt in 1994 Yala season. Recently, its cultivation has been expanding rapidly in many parts of the country. The extent cultivated has increased by twofold during the period of 1980-95. The production in 1994 had increased by 118 per cent compared to that of 1980, while during the period of 1980-95 the production had increased only by 87 per cent (Tables 1 & 2). According to the farmers in the area and the HARTI reports, the production growth rate has been 35 per cent per year in major producing areas. According to these production statistics, it is clear, that the big onion production momentum has rather stagnated after 1994. The estimated production of big onion is 20,000 mt in 1996 Yala season. The total cultivated land area in the Mahaweli area was 1,655 hectares in 85 Yala and it has decreased to 451 hectares in the 96 Yala season. Compared to the last season it has decreased by 73 per cent and this was mainly due to the controlling of onion seed in last season.

Rapid production increase during last decade is attributed to the increased extent cultivated. Available

Table 1

Big Onion Extent & Production in Sri Lanka 1980 - 1995						
Year	Big Onion Extent (Hectares)			Production (mt)		
	Extent	Total	Per Hectare	Extent	Total	Per Hectare
1980	13	1,005	1,540	25	15,356	76,004
1981	16	1,358	1,940	29	17,514	115,000
1982	17	1,460	2,324	40	27,825	77,000
1983	17	2,307	2,974	27	22,000	22,000
1984	216	1,961	3,761	1,000	15,943	14,724
1985	31	1,560	3,850	808	20,119	20,119

Table 2

Red Onion Extent & Production in Sri Lanka 1980 - 1995						
Year	Red Onion Extent (Hectares)			Production (mt)		
	Extent	Total	Per Hectare	Extent	Total	Per Hectare
1980	1,812	3,607	5,300	17,000	45,000	25,000
1981	2,000	5,100	8,100	20,000	16,700	11,000
1982	2,100	5,500	7,120	25,000	26,500	14,000
1983	2,100	5,500	6,760	25,000	24,000	17,000
1984	1,400	2,700	1,000	31,000	11,800	4,000
1985	2,151	1,440	6,800	20,500	24,000	13,000

Source: Department of Census and Statistics.

statistics have shown that the extent cultivated was 1,350 hectares in 1980 and it had increased to 3,687 hectares in 1985. The growth rate in the extent is 188 per cent over this period. The production of red onion has also shown a similar trend during this period.

The percentage contribution of production by provinces is as follows -

- 90 per cent from Matale District in Central Province;
- 18 per cent from the North Central
- 13 per cent from the Mahaweli areas
- 9 per cent from other areas.

As far as the Mahaweli areas are concerned, Kalawewa and Tambuththegama were the important producing areas. The production and extent of these areas have also shown a similar trend. HARTI observations also conclude, 80 per cent of the production comes from Matulu and Kalawewa areas.

Planting and Harvesting Periods

Both planting and harvesting in

major producing areas take place before the onset of South West and North-East monsoon rains. Therefore, main cultivation period extends from April to June. Hence over 80 per cent of the cultivation activities are completed by the end of June. The average seed rate is 7.5 kg/ha. The main harvesting period is August to September. More than 90 per cent of the crop is harvested by the end of September as the early Maha rains commence in mid September. Particularly in Kalawewa, majority of the big onion planting takes place in May, while harvesting takes place in August. As a result of early harvesting in Kalawewa, marketing problem does not arise for farmers in Kalawewa.

Average Yield

The average yield is 15,000 kg/ha in 1980 as reported by the HARTI field staff and also according to the farmers of the Matale district. This was mainly due to the use of high quality seeds. However, the yield recorded in the last few seasons was ranging from 4,000



FEATURE

12,000 kg/ac. Average yield varies from highland to lowland. It ranges from 5,000-7,000 kg/ac in Lowlands. The Yield recorded in Sigiriya, a major producing area, is 6,000 kg/ac. About 1,104 hectares have been cultivated in this Yala season in Dambulla area. The expected average yield is 4,000 kg/ac. Accordingly, 7,500 mt of big onion is expected to be available in the market during the September.

Cost of Production

Cost of production differs from highland to lowland due to the mode of water supply. The highland farmers use water pumps to water the fields, while irrigated water is being used by the lowland farmers. The total cost of production including family labour is in the range of Rs. 40,000-50,000 per acre for highland farming and Rs. 20,000-30,000 on lowlands. Family labour is being widely used by the farmers who cultivate less than one acre. In addition, hired labour is required for the activities such as planting, weeding, harvesting and processing when the land extent increases above 1 acre.

According to the observation of the HARTI, the cost of production of big onion in 1996 Yala season in the Dambulla area is as follows:-

1996 Yala season: Cost of Production per acre

1. Land preparation	Rs. 11,000
2. Fertilizer	Rs. 12,960
3. Weeding, pesticide, etc.	Rs. 4,340
4. Labour	Rs. 1,500
5. Water supplies	Rs. 12,000
6. Harvesting and processing	Rs. 9,000
Total	Rs. 51,300

The above statistics indicate that the cost of production per acre of big onion has rapidly increased during this season. The unit cost of production of big onion has increased to Rs. 8.55/kg.

Consumption Patterns

The consumer finance survey carried out by the Central Bank in 1986/87 has indicated that the per capita consumption of big onions was 1.5/kg per person per year in Sri Lanka.

Therefore the monthly consumption is 126.3 grams per person. Per capita consumption in urban sector is 2.7/kg, rural sector it is 1.3/kg and in estate sector 0.85/kg. Further the above survey has indicated that there was positive relationship between the income groups and big onion consumption levels (for details see Table 3).

Table 3

Average quantities of Food consumed per person for One Month by Income Groups - All Sectors		
Income Group		Bombay Onions (Gram)
0	100	155.2
101	200	139.7
201	400	94.6
401	600	63.1
601	800	50.4
801	1,000	59.8
1,001	1,500	73.4
1,501	2,000	39.6
2,001	3,000	125.5
3,001	5,000	189.8
5,001	10,000	279.5
Over 10,000		357.3
Overall Average		126.3

National Requirements

The national requirement of big onion is 64,000 mt per year, which is based on an estimation made by the Agricultural Implementing Programme in 1994-95. Thereby, the monthly requirement of the total population is estimated to be 5,300 mt. According to the Census and statistics Department, the per capita availability of the big onion was 4.20 kilogram per year in 1994. Based on per capita availability, the national requirement was 73,000 mt (local production and imports). Therefore, the monthly requirement was 6,000 mt (see Table 4).

Based on these estimates, the monthly requirement of big onion in Sri Lanka is in the range of 4,000-6,000 mt. In this context, the local production of the year, which is about 30,000 mt, is sufficient to meet the requirement for nearly 4-5 months. Imports are required for the balance period of 7-8 months.

Big Onion Imports and Import Policy

"Imports" is one major factor affecting the future production of big onion in Sri Lanka. The local cost of production and prices of big onions are well above the cost and prices in the international markets; especially compared to India. Therefore, one can argue that the imports of big onions is much more profitable than cultivation of big onions in Sri Lanka, considering the opportunity cost of resources.

Restrictions on import of big onions is an essential policy decision that has to be implementing, when the local production is reaching the markets. During this time, market situation enable the farmers to get a reasonable farmgate price. This is a very crucial issue during the time of the local production is in the market. If there is correct information on the supply and demand situation of big onions, implementing of the import regulations is easy.

The total annual imports of big onions is in the range of 60,000-40,000 mt in Sri Lanka. The highest quantities of imports are recorded during last 8 months.

During this period, about 77,000 mt of big onions were imported. The CIF value of it is nearly Rs. 625 million (Table).

Table 4

Onion availabilities in Sri Lanka (1990 - 1994) (Unit: '000 mt.)							
Year	Production	Imports	Available supply	Seed	Waste	Food (net)	Per capita availability kg / per year
1990	60.00	31.45	92.63	2.47	27.79	62.37	3.67
1991	65.39	48.69	114.07	6.42	34.22	73.43	4.26
1992	82.34	33.51	119.89	7.72	35.97	76.20	4.38
1993	76.93	34.23	110.62	7.12	33.18	70.32	4.04
1994	82.95	50.21	133.17	20.18	39.95	73.04	4.20

Source: Food Balance Sheet, Department of Census & Statistics.



Table 5

Big Onion Imports 1980 - 1986			
Year	Quantity (mt)	Value (Rs. Million)	Unit Price (Rs./kg)
1980	27,271.61	221.47	8.12
1981	35,101.22	328.36	9.38
1982	28,463.16	339.80	11.93
1983	34,865.76	380.73	11.00
1984	27,058.76	329.95	12.19
1985	33,693.10	400.00	11.87
1986*		425.65	12.64

* up to July

Source: Department of Sri Lanka customs.

The import price of big onions much lower than price of locally produced big onions.

Market Supply and Price Behaviour

The big onion market is functioning at different levels such as farmgate, middle men, wholesale and retail. According to a study carried out by the Ministry for Ethnic Affairs and National Integration, farmgate prices are fluctuating from Rs 30.00 to 20.00/kg and during the harvesting time this ranges from Rs. 20.00 to Rs. 10.00/kg. This study points out that 70 per cent of the harvest is sold by farmers at the farmgate and the balance is either stored or sold at higher prices prevailing in urban areas. The total market supply during the past few years is given in Table 6.

makers also have accepted this conclusion. In this manner over production should not be allowed to go waste and along with it action should be taken to stabilize farmgate price as well. Since the country has not achieved self-sufficiency in big onions, it is not possible to control over production either through limiting the extent of cultivation or discouraging cultivation. Therefore it is possible to cite three primary policy strategies to manage the over production of big onions. These are:

1. Storing of excess production in storages and releasing them to the market, when there is a deficiency. There are several ways to do this:
 - (i) Storing in cold storages.
 - (ii) Storing in household storage systems that are currently being used.

Table 6

Big Onion Supply (mt) 1980 - 85			
Year	Local Production	Import	Total Supply
1980	10,640	27,077	37,717
1981	11,806	23,376	35,182
1982	21,625	23,883	45,508
1983	22,836	24,229	47,065
1984	24,798	12,388	37,186
1985	33,710	24,607	58,317

Although the market supply shows a gradual increase, the prices are subjected to extreme fluctuations over the years. This fluctuation entirely depends on the quantities of local onion supply and imports.

Big Onion Storage

Several studies have pointed out that storing of big onions in cold storages is most appropriate. The policy

2. Spreading out big onion cultivation period and preparation of appropriate technical plans for it.
3. Imposition of periodic limitations for importation of big onion stocks.

There could be implemented either jointly or individually. Thereby the excess supply of big onions to the market could be controlled and the total demand could be satisfied as well. This

why is stable and increased farmgate price could be provided to the big onion farmer and thereby the much needed security, and on the other hand consumers could be provided with big onions at a reasonable price.

However this is not a panacea for breakdown of the market and for upliftment of the farmers suffered as a result. Each of these strategies may contain its own limitations and problems. In this study we consider only the first strategy cited here i.e. storing of big onions in cold storages.

Economic Factors of storing Big Onion in Cold Storages

It is necessary to eliminate the gap between over supply and demand. The main reason for this is that big onions are produced only once a year (within a period of few months). In this manner over supply could be contained while a fair farmgate price could be maintained and thereby the consumer price also could be stabilized. Yet the following limitation should be taken into consideration in controlling over supply.

1. Since big onion cultivation is the sole income source of many farmers, they tend to market the production soon after the harvest at the highest price possible.
2. Most of the farmers do their big onion cultivation with loans obtained through banks or other sources. They have to repay the loan if they are to obtain fresh loan facility to start the next season's cultivation. Thus their attitude is lukewarm to store production.
3. Generally, cultivation loans are given for period of 6 months. By August these loans should be paid and banks should be prepared for Maha cultivation. They have concluded Yala cultivation early and thereby obtain an immediate income.
4. These farmers do not have sufficient storage facilities. Therefore they tend to market their produce soon after the harvest. If they are to store them, they need sufficient land and they have to get ready in advance. But they do not have sufficient space for this purpose.



5. Farmers do not have facilities for storing onions from harvesting time till it is brought for storing in cold storage. Factors such as Maha rains and poor ventilation could make things difficult for farmers at this stage.
6. Non availability of varieties suitable for storage. Existing varieties, fertilizer, inefficient irrigation, excessive rain and harvesting prior to maturity makes produce unsuitable for storage. According to findings of the HARTI, big onion farmers generally decide whether or not to store onions only at the last moment depending on the favourable or unfavourable prices at the market. The majority of the farmers do not act according to a prior decision.

Economic Factor affecting storing in Cold Storage

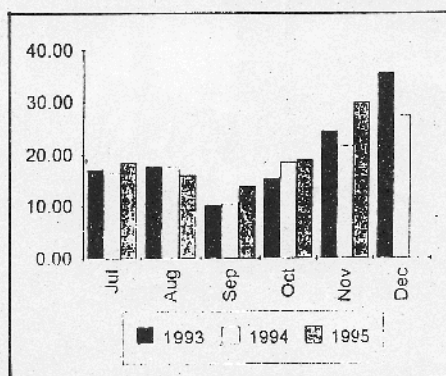
As mentioned earlier in this report, although the over production of big onion in Sri Lanka is not that large to store in cold storages, the excess production should be stored. Even now these can be stored in an inexpensive storage system for 4-5 months. However, it could be stored for further 4-5 months in cold storages (Tables 1 & 2). Over production situation exists only in August and September. Hence instead of storing excessive production in cold storages and releasing them to the market, it also could be managed by systematic import control method. Further it appears that in Sri Lanka big onion consumption is on the increase according to the income levels. In view of the increasing trend of big onion consumption, according to corresponding increase of income, it is doubtful whether the attempt to control over production through stock management utilizing storages is a prudent one.

The benefits expected from storing of local big onion production in cold storages and later releasing them are:

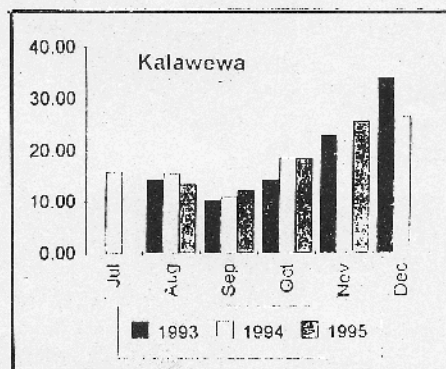
1. Protection of consumers through stabilization of local prices.
2. Saving foreign exchange through import restriction and or thereby finding solution to the trade deficit.
3. Stabilization and promotion of farmer income.

1. Sale price determination after storage (including storage charges and other costs). This should be less than or equal to the market price of the day. If it is above the market price, storage becomes meaningless in economic sense. If it is quite low or less than the farmgate price, farmers may not agree to store their produce. It could be observed that this situation is currently existing in Sri Lanka. Through this cold storage system it is not possible to purchase a kilo of big onions at the existing price and sell it in the off season for less than the off season price along with the attendant storage charges and other costs. The reason is the current farmgate price, retail price and wholesale price in Sri Lanka prevails at a very high level and therefore storing them is meaningless and it is doubtful whether farmers could be induced for the purposes (Fig. 1).

Matale



Kalawewa



2. One could argue that as per annexures given above and as the prices after storage remain above the import prices, it is cheaper to import. Import prices are much lower than the local prices. As indicated there, both CIF or FOB price are lower than local price. Thus it may be possible to state that impor-

tation of this is much cheaper. However, if the protection of the local farmer and saving of foreign exchange are concerned, importation may be not that important. However, when decisions are taken to store big onions in cold storages, these facts have to be taken into account.

3. Other opinion is that if import prices are less than the prices after storage, the effort is to economically storage unprofitable. However, it is determined by the fact that how far the government policy would allow import of big onions. If limitations are imposed on big onion imports and local product becomes sufficient, the above arguments are not valid.
4. Present government policy allows for free import of several food items. big onion is one of them. Thus a big onion storage project is not economically fruitful at present.

5. Sri Lanka is rapidly subjected to globalization. This country is also can active member of the SAARC region. These countries have agreed to a South Asian Preferential Trade Area (SAPTA) which provides for removal of all tariff and taxes for products of these countries by the year 2000. Within such a background, where free import of big onion could become possible without any restrictions, encouragement of long-term projects such as storage of big onions in cold storage is not very prudent.

Furthermore, according to the GATT's Uruguay agreements most of the countries in the world have agreed to remove taxes and tariffs during the next 10 year period. Their assumption is that international trade has to be developed based on "Comparative advantage" and therefore countries should embark on producing goods for which they have the greatest advantage. As such they are of the view that countries like Sri Lanka should produce low cost agricultural products, while importing high cost agricultural products at comparatively lower prices. Thus it is extremely difficult to hypothesize the conditions that could prevail for Sri Lanka's agriculture products in future and therefore the economic benefits of projects of this nature is debatable.



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