# SIMON BRAND MEMORIAL ADDRESS: AGRICULTURAL AND STRUCTURAL CHANGE: ARE THERE HISTORICAL LESSONS FOR SOUTH AFRICA?

Bruce F Johnston
*Food Research Institute, Stanford University, Stanford, USA*

It is a great honour and a formidable challenge to have been invited to give this first Simon Brand Memorial Address. During the past 38 years I have been privileged to get to know many first-rate graduate students in Stanford's Food Research Institute - but none as outstanding in every human dimension as Simon Brand.

## 1. Introduction

For more than four decades I have been seeking to understand the processes of agricultural development and structural change[1]. This began with a three year stint in General MacArthur's Occupation Headquarters in Japan, but since 1954 my main focus has been on the development problems of tropical Africa - Africa South of the Sahara and north of the Union, as we used to say. Just a year ago I began to pay more attention to South Africa when Simon Brand presented a seminar at Stanford. He also gave me a fascinating paper by Brand, Christodoulou, Van Rooyen and Vink (1990) which began my cram course for this first visit to South Africa.

In reading *Uprooting Poverty*, the summary report on the Carnegie Inquiry by Wilson and Ramphele (1988), I was struck by this passage: *Unfortunately, despite much effort, economists have not really been able to penetrate the mystery of that magic combination of circumstances which enables an economy to grow very rapidly.*

Having just arrived a few days ago from my sixth visit to Taiwan, an economy which has certainly grown very rapidly, I find that statement by Wilson and Ramphele much too pessimistic. Even between my first visit to Taiwan in 1948 and my second visit in 1969 sufficient growth had occurred to demonstrate that a well-conceived and effectively implemented development strategy can make a huge difference in just two decades[2].

I hasten to add that I consider the pessimism of Wilson and Ramphele preferable to excessive confidence in a 'thinking through' approach to the problems of development. One of the things that we have learned from the 'art and craft of policy analysis' is that social problem-solving requires a combination of 'intellectual cogitation' and 'social interaction'[3].

Social interaction, which seeks solutions through social processes such as voting, bargaining, or market mechanisms, is less ambitious and is likely to work better than cogitation. But better is not good enough; social interaction also has major shortcomings. For one thing, interaction that is parochial learns only from its own experience and is incapable of learning from the experience of others. For that reason, I have long been convinced that comparative historical analysis is of great value in policy analysis directed at the complex, ill-structured problems of agricultural development and structural transformation.

I do not intend to offer answers to the complex problems confronting a post-apartheid South Africa. They are in many ways unique and certainly very different from the problems faced by the countries of tropical Africa. Answers and their implementation will, of course, depend on those of you here in South Africa who are living - and will be living with the new and sometimes unprecedented problems and opportunities that will be unfolding. I intend first of all to review some advances that have been made in understanding the key ingredients of rapid economic growth. I then turn to a review of the historical experience of Japan, the US, Mexico and especially Taiwan.

## 2. Penetrating the 'mystery' of rapid economic growth

Accumulating experience and improved theoretical insights have greatly enhanced our understanding of the determinants of rapid economic growth. One significant advance has been the recognition that increases in conventional inputs of labour, land, and capital often account for only about half of increases in national output (Kuznets, 1971:73). And in virtually all countries that have achieved impressive progress in agricultural development, technological change leading to increases in total factor productivity - output per unit of all inputs has been a major source of the growth of agricultural production (Hayami & Ruttan, 1985; Johnston & Kilby, 1975).

That empirical finding underscores the importance of recognising that development does not depend entirely or even primarily on the supply of natural resources, accumulated capital in the form of plant and equipment, and labour and other conventional inputs. It depends at least as much on the capital embodied in human resources and capital in the form of effective institutions.

Investing in education and social service programmes related to health, nutrition, and family planning does more than contribute directly to the well-being of the people who benefit from those programmes. Such investments also make a significant contribution to development by augmenting the supply of human and institutional capital (and, by affecting the population denominator, they even increase the per capita supply of land and other resources). In South Africa, the process of capital accumulation has been extremely unbalanced. Because of prior policies, the white minority has had superior opportunities for human capital formation and preferential access to development institutions as well as resources.

**Table 1: Percentage of total labour force in agriculture in the US, Japan, Taiwan, Mexico, Kenya and Tanzania**

| Country | 1990 | 1930 | 1960 | 1970 | 1985 |
|---|---|---|---|---|---|
| US | 40 | 22 | 8 | 4 | 3 |
| Japan | 66 | 48 | 31 | 20 | 8 |
| Taiwan | 71 | 68 | 56 | 37 | 18 |
| Mexico | 67 | 69 | 54 | 44 | 33 |
| Kenya | | | | 85 | 79 |
| Tanzania | | | | 90 | 83 |

Note: In Japan, 75 per cent of the labour force worked in agriculture in 1880. For the US, agriculture's share of the labour force was 80 per cent in 1820 and 55 per cent in 1850.

Sources: Reproduced from Johnston and Kilby (1975:454) except 1970 and 1985 figures from FAO (1988, Table A.1) and Taiwan figures for 1970 and 1985 from Republic of Taiwan 1988. (In recent years the figures for Taiwan refer to the employed labour force age 15 and over instead of 12 and over; on that basis the 1960 share is reported as 50 rather than 56 per cent.

Much attention has been rightly given to the unequal access of South Africa's black population to agricultural land (eg. De Klerk, 1992). It is at least equally important that South Africa's impressive achievements in creating educational institutions at all levels, including a number of first-rate universities, has had its principal impact on the white minority.

Viewing development as a generalised process of capital accumulation is both hopeful and sobering. It offers hope that a well-conceived development strategy can foster rapid economic progress, more rapid that the rate of growth of a country's conventional inputs of capital, land, and labour. But since accelerated economic and social progress depends on balanced accumulation of capital in its various forms, the task of designing and implementing such a strategy is bound to be complex. Good decisions about public investment priorities and the time sequencing of programmes, including outlays for education, research, infrastructure, and health and family planning programmes are also crucial. Success in accelerating the growth of output and in reducing poverty and income inequalities depend on complementary investments and initiatives by the public and private sector.

Structural transformation, the process whereby an economy in which the majority of the population depends mainly on agriculture for a meagre livelihood is transformed into a diversified, highly productive, and predominantly industrial economy, is both cause and consequence of overall economic development. Table 1 summarises an important aspect of structural transformation for Japan and the US, two exemplars of the structural transformation process, and Mexico and Taiwan, relative latecomers where more than half of the population and labour force were still dependent on agriculture as late as 1960.

It seems clear, however, that structural transformation and the demographic transition have been anomalous in South Africa. It is reported that the share of agriculture in the country's labour force has declined to 32 per cent by 1965 and then fell sharply to only 17 per cent in 1980 (World Bank, 1987). Over a 15-year period in Taiwan, from 1970 to 1985, agriculture's share in the labour force fell even more sharply from 37 to 18 per cent. In Taiwan this rapid transformation was a response to the 'pull' of extremely rapid growth of non-farm employment opportunities. In the 1950s and 1960s, Taiwan's large and still growing farm population was able to seize a variety of opportunities for participating in rapid economic growth which transformed the rural economy while rapidly expanding the manufacturing and service sectors.

In contrast, it appears that in South Africa 'push' factors were dominant. The rapid reduction in the country's farm labour force meant a change in occupational status, but only a privileged minority obtained employment in enterprises characterised by high productivity and wages. In the 'white' agricultural areas which occupy some 87 per cent of the agricultural land, rapid mechanisation with tractors and combine harvesters displaced a sizeable fraction of the farm labour force.

Moreover, forced removals uprooted millions of blacks from 'white' areas and crowded them into homelands where even self-sufficiency is impossible. In addition to grossly inadequate access to land and capital, agricultural support services, if available at all, have not been geared to the needs of small-scale farm units. Indeed because of an excessive emphasis on economies of scale in agriculture, there has been little recognition of the fact that smallholders can make good use of divisible, capital-saving, labour- using innovations such as high yield varieties and increased application of fertilizers[4].

South Africa's structural transformation has not been associated with the sort of changes in the labour supply/demand situation that reflect a rise in the opportunity cost of labour leading to economy-wide increases in returns to labour. The upsurge in the population growth rate for the black population in the 1950s and 1960s, being mainly the result of declines in infant and child mortality, meant an upsurge in the growth of the population of working are in the 1970s and 1980s. Although a modest decline in fertility rates began in the 1970s, it will be some time before there is a significant decline in the rate of growth of the working age population. In the meantime, increasing capital intensity in production has been associated with a sharp decline in employment growth in the formal sector from a 2.6 per cent annual rate in the 1960s to only 0.6 per cent in the 1980s. As

a result of those supply and demand factors, in the late 1980s only 84 of every 1000 new workers seeking employment were able to find jobs in the formal economy compared to 809 out of every 1000 in the 1960s. Just over half of the labour force were without formal employment in 1990. The marginalization of disadvantaged communities is perhaps shown most clearly be estimates for 1985 of population and economic activity in the homelands. In that year the homelands accounted for 42 per cent of South Africa's population but only 4.8 per cent of the economy's GDP was generated within the homelands (Lewis 1990:43-44; see also Eckert 1991).

In the past, employment in mining has accounted for an exceptionally large part of nonfarm employment in South Africa. Indeed, over much of the past century growing demand for mine workers has been met to a considerable extent by an influx of migrant workers from nearby countries. And presumably past land policies in South Africa were motivated in part by a desire to limit economic alternatives to the option of working as migrant labourers in the mines.

In the context of restructuring South Africa's economy to widen economic opportunities and to narrow income inequalities, I believe that the experience of Japan and Taiwan offers strong support to Simon Brand's views concerning the importance of agriculture's role. Realizing that potential will require policies that assure improved and wider access of South Africa's black population to infrastructure and agricultural support services. The sequence of technological innovations that will be appropriate for various agro-climatic regions in South Africa will be very different from those that were important in Taiwan. But that simply underscores the need for location-specific research to generate feasible and profitable innovations for smallholders who must depend initially on labour-using, capital-saving technologies.

## 3. Agricultural development and structural transformation in Japan, the USA, Taiwan and Mexico

Similarities and contrasts in the development of Taiwan and Mexico are of special interest, in part because they were the first developing countries to experience the rapid growth of population and labour force that has characterized LDCs during the decades since World War II. Because of the timing of their structural transformation and demographic transition, which made it possible for them to draw upon accumulated medical knowledge and improved public health techniques, Taiwan and Mexico experienced declines in mortality that were much more rapid than those realized in Japan, the US or the counties of western Europe during the first phase of their demographic transitions (Figure 1). Taiwan is also of special interest in being the first developing country to demonstrate that the very rapid decline of mortality in the first phase of the demographic transition can be followed by a similarly rapid decline in fertility has been late and limited (Eckert 1991:5).

### Summary comments on Japan and the US

Agricultural development in Japan and the US was a relatively slow, evolutionary process. Although not the first to establish a publicly supported agricultural research station, they were the pioneers in assigning an important role to that institutional innovation. They were also pioneers in promoting public education so that their rural as well as urban populations has access to schooling.

The patterns of agricultural development in the two countries were well suited to their very different resource endowments. Their rates of increase in agricultural productivity and output were surprisingly similar. Even the increase in agricultural labour productivity in the US at an annual rate of 2.4 per cent between 1880 and 1940 was only about 25 per cent higher than the rate of increase in Japan. In the US, a relative abundance of arable land and a sequence of mechanical innovations made possible large increases in the area cultivated per farm worker. In Japan, there was little scope for increasing the area cultivated, but the development and spread of high-yield, fertilizer-responsive crop varieties permitted substantial increases in output per worker as well as per hectare.

With the important exception of the American South, the pattern of agricultural development was essentially 'unimodal' -- with a great many average-sized farms, rather than a few large farms and the rest of the farm population on tiny units. In Japan the absolute size of the farm labour force did not begin to decline as early as 1916. That led to a rapid decline in the number of farm units which was associated with a large increase in the size of the average farm from 157 acres in 1930 to 374 acres in 1970. Labour inputs per farm changed very little - from 1.42 man-years of family labour and 0.49 years of hired labour in 1930 to 1.36 and 0.48 years of family and hired labour in 1970 - reflecting a rapid increase in use of power and machinery.

The South has been the most significant qualification to the essential unimodal pattern of agricultural development in the US. The effects of the plantation system and the legacy of slavery in that region have changed over time. After a long period of stagnation, the pace of technological change in agriculture in the South became more rapid than in the rest of the country following World War II. The rapid increase in labour-displacing innovations led to an exodus of farm labourers and their families that was especially rapid during the 1960s. That exodus has contributed to persistent problems of unemployment and unrest in the urban centres to which they migrated. The problems of absorbing those uprooted workers into nonfarm employment have been exacerbated because most of the migrants were blacks and disadvantaged in finding jobs because of poor educational opportunities and racial discrimination.

### Highlights of Agricultural Development and Structural Transformation in Taiwan, 1905-1970.[5]

### Distinctive features of Taiwan's agricultural development

A broadly based unimodal pattern of agricultural development was actively promoted by the Japanese colonial administration from almost the beginning of Japanese rule in 1895. Public health measures were also promoted so that Taiwan was perhaps the first of the developing countries to experience the rapid rates of growth of population and labour force that became commonplace in the post-World War II period. As a result, the farm labour force increased by over 15 per cent between 1930 and 1940 and by another 44 per cent between 1940 and 1964.

A remarkable feature of Taiwan's experience is that underemployment in agriculture actually decreased in spite of the rapid growth of the farm labour force and a considerable decline in the average farm size.

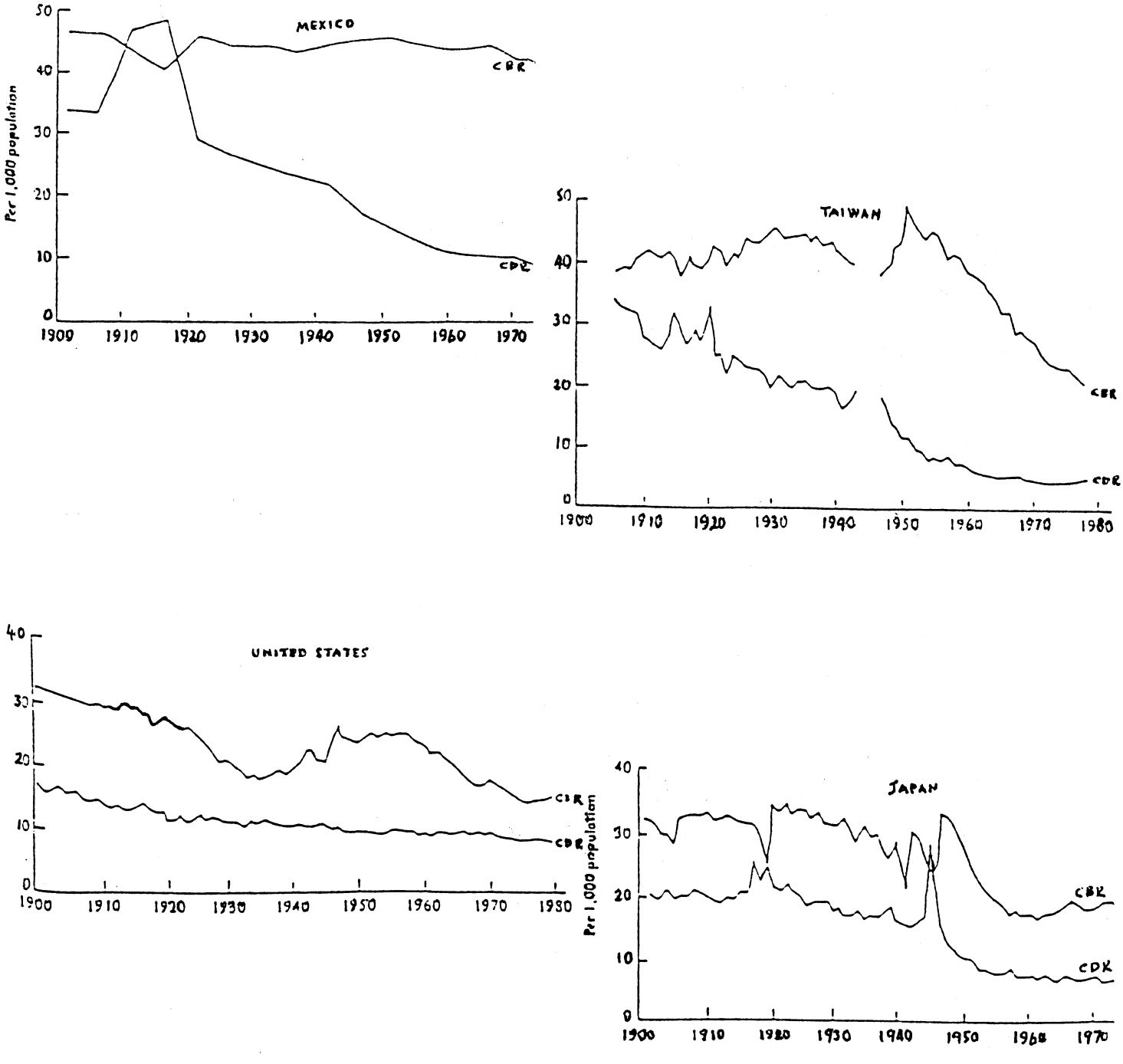


**Figure 1: Crude birth rates (CBRs) and Crude Death Rates (CDRs) for Taiwan, Mexico, the US, and Japan (1900 - 1980)**
Source: Johnston (1987:34-35)

This was a result of the labour-using, capital-saving technologies that characterized the country's agricultural development. By technology borrowing and adaptive research on improved biological and chemical technologies, Taiwan's farmers raised their crop yields dramatically, most notably for sugar cane and rice. Equally important, however, was the expansion and improvement of irrigation and drainage facilities. In addition to facilitating yield increases for individual crops, this permitted a large increase in multiple cropping, which was mainly responsible for fuller as well as more efficient utilization of the growing farm labour force. Thus, between 1911-1915 and 1956-1960, the flow of labour inputs measured in working days increased twice as fast as the total stock of farm labour. A 13-fold increase in fertilizer consumption over the same period played an important role in the increase in crop yields and multiple cropping. Because of the widespread impact of biological and chemical innovations in Taiwan, together with the fact that the innovations were land- and capital-saving, increases in total factor productivity made an even larger contribution to agricultural development in Taiwan than in the US or Japan.

## Interactions between agricultural and industrial development

Rapid expansion of farm output in Taiwan helped overall economic growth and rapid structural transformation in familiar ways: by releasing labour for industry; by supplying food for a growing nonfarm workforce; and through agricultural exports to finance imports of industrial equipment. Two other contributions were also noteworthy: the increases in agricultural output helped finance investments outside agriculture and the growth of farm cash income fostered rapid and decentralized growth of rural-based manufacturing firms.

The net capital outflow from agriculture was slightly more that 30 per cent of the value of agricultural production in 1911-1915 and was still 21 per cent in 1931-1935, by which time the real value of output had increased 150 per cent (Lee, 1971). The capital outflow consisted mainly of land rent, taxes, interest and a net transfer through financial institutions. A very large marketed share of output was one of two reasons why such large net outflows were possible. Rapid expansion of agricultural exports, which increased fourfold between 1911-1915 and 1936-1940, made possible the early rise in marketed output and the large net outflow of funds from agriculture. It was not until the late 1950s that domestic sales accounted for more than half of farm earnings.

The other reason the large net outflow of resources was possible is that big increases in farm output were achieved with small increases in purchased inputs. Until the 1950s, outlays for purchased inputs represented only 15 per cent of the value of farm production. Purchased farm inputs, which were roughly 35 per cent of all purchases by farm households, were mainly fertilizers and other variable inputs; spending on farm equipment and other fixed-capital was only around 10 per cent of off-farm inputs as late as 1961-65 (Lee, 1971; 1972). This judicious expansion of purchased inputs, long with technological change, and the fuller and more efficient use of the farm workforce, made possible substantial increases in total factor productivity. Despite the resource-transfer squeeze, high growth of agricultural output associated with substantial increases in total factor productivity, permitted a rise in per capital consumption at an annual rather close to one per cent.

It is also noteworthy that the pattern of rural demand for agricultural inputs, consumers goods, and rural services encouraged the geographically dispersed growth of small and medium-scale manufacturing firms using technologies that are labour-intensive and have a low content of imported inputs. Therefore, the expansion of output by such firms was less constrained by the scarcity of capital and foreign exchange than the growth of large-scale, urban firms catering to the demand of large-scale farm enterprises for more sophisticated consumer goods and labour-saving, capital-using farm inputs.

Rapid structural transformation meant that output in manufacturing and services was growing much more rapidly than agricultural output. Even so, farm cash receipts more than doubled between 1950-55 and 1966-69. In 1955, exports of farm products still accounted for 92 per cent of Taiwan's exports, and the traditional exports of sugar and rice still represented three-fourths of all exports. By 1970, industrial products accounted for 78 per cent of total exports which had increased more than 11-fold since 1955. Traditional exports of rice and sugar accounted for a mere 3 per cent of the total. Because of rapid expansion of new, more technically demanding products such as canned asparagus and mushrooms, the total value of farm products exports had increased substantially by 1970 but represented only 22 per cent of the value of all exports.

Members of farm households also seized opportunities for off-farm employment in the rapidly expanding rural-based industries. The increase in off-farm income of farm households between 1950-1955 and 1966-1969 was even more significant than the doubling of farm cash receipts. Thus the growth of farm income, expansion of rural nonfarm activities, and the multiplication of employment opportunities outside the rural economy combined to raise rural household incomes. Because the growth in demand for labour exceeded the rate of growth in the labour force, returns to labour increased rapidly, and farm wages increased especially fast.

A distinctive feature of the phenomenal growth of Taiwan's manufacturing sector is the extent to which that growth was due to rapid expansion of the number of firms rather than increases in the size of existing firms. Between 1966 and 1976, the number of firms increased 2.5 fold, while employees per firm rose by less than 30 per cent.

Among the macroeconomic policies that were crucial in fostering Taiwan's decentralized pattern of industrial expansion, credit policy is especially noteworthy. Policy makers set interest rates sufficiently high in real terms to stimulate saving and encourage capital-saving, labour-using technologies. By avoiding the credit rationing that is unavoidable with repressed interest rates, investment was a more effective engine of growth. Furthermore, policies that tolerated and even encouraged active lending by lenders in the informal curb market facilitated access to credit by small firms, including start-up firms.

In the 1950s Taiwan abandoned the more usual import-substituting industrialization strategy. As a result, policy makers avoided the macroeconomic distortions - an overvalued exchange rate, undervalued capital, government deficits, and inflation - that have such adverse effects on development.

However, this did not mean a shift to a laissez-faire industrial strategy. The government was determined to 'maintain the vigour of its guiding, pushing, and prod-

ding activities' (Wade, 1990:216). Policy instruments were used selectively and with limited reliance on discretionary authority. By limiting its reliance on discretionary techniques and direct interventions, the government saved its scarce administrative talent for activities in which the role of government is indispensable. Hence, it was able to fulfil its commitment to good performance by government agencies and development-oriented institutions such as farmers' associations and irrigation associations. Strategic policy decisions were made by a relatively few very able people. Moreover, Taiwan's universities, research institutions, and consultancy firms have been involved in the policy process.

## Social service programmes

The literature on agricultural development in Taiwan has rightly been given a great deal of attention to the role of a Sino-American Joint Commission on Rural Reconstruction (JCRR). The Chinese and American members who served on the Commission were extremely able. Because of their mutual respect and effective collaboration, the JCRR contributed a great deal as a coordinator and catalyst sponsoring policy research and pilot projects, monitoring ongoing programmes, and assessing emerging opportunities as well as problems. It is noteworthy that, being responsible for rural development which embraced more than agricultural development, the JCRR had an active Public Health Division. In the early 1960s the chief of that Division was one of the first to perceive that the sharp decline in child mortality had created a potential demand for family planning. A series of demographic surveys confirmed that there was considerable though uneven interest in limiting family size. A step-by-step programme of expanding family planning activities in rural as well as urban areas led to a rapid decline in fertility. The crude birth rate declined from 40 per thousand in 1960 to 23 per thousand in 1975 by which time the total fertility rate, which is adjusted for the age structure of the population, was already down to 2.8. That rate was just half of the estimated total fertility rate of South Africa in 1975 and less than half of the 6.1 average at that time for middle income developing countries (World Bank, 1978:105).

Taiwan's economic development and the decline in fertility were also fostered by rapid expansion of education, including broad coverage of the rural population. By the end of Japanese rule, some 70 per cent of children of primary school age were enrolled; by 1960, 95 per cent were enrolled. Between 1960 and 1977, enrolment in secondary schools increased from 33 to 76 per cent of the relevant age group. In higher education, enrolment of those aged 20-24 increased from 4 to 12 per cent. At all levels there was an emphasis on quality, and technical and vocational training received strong encouragement. Science and engineering students have accounted for more than one-third of the graduates from universities and other post-secondary institutions.

## Lessons from East Asian Experience

This summary of lessons to be derived from past experience focuses on Taiwan and Japan. Many of the lessons also pertain to experience in Mexico and the US, but space does not permit discussion of similarities and contrasts between their experience and that of the two East Asian countries. At this level of generalization, the only contrast between Taiwan and Japan that merits attention is the difference of timing of their demographic transition and periods of rapid economic growth. As noted earlier, Taiwan as a latecomer relative to Japan had to contend with rates of growth of population and labour force of 3 per cent and more whereas in Japan those rates did not exceed 1.5 per cent at their peak.

Successful development depends on the decisions made by many entrepreneurs - farm and non-farm, small and large, male and female. Government decision making cannot substitute for the myriad decentralized decisions required to perceive and seize emerging economic opportunities. The performance of individual farmers and other entrepreneurs is decisive, and their actions depend on incentives, capacity for hard work, knowledge and skills, and culture. Yet their behaviour, and the outcome of their efforts, also depends on the interacting effects of their individual choices and government initiatives.

Policy makers can and do make a difference, but it is mainly through preparing for strategic opportunities, discerning those opportunities, matching opportunities with action, and learning from experience. As the situation in South Africa demonstrates, changing conditions mean new challenges and new opportunities. Thus the ability to learn from experience is crucial to avoid repeating costly mistakes and to reallocate resources to seize new opportunities.

Experience in both countries demonstrates the importance of the 'strategic notions' that are held by the individuals who make or shape government decisions. Even with heroic efforts to quantify costs and benefits of alternative actions, policy makers can only have a notion of the policies and programmes that will be effective in promoting development. These strategic notions that shape their decisions are based on a combination of conjecture, personal perception of 'facts', and vaguely remembered ideas.

The beliefs underlying those notions derive from past personal experience and selective interpretations of the experience of others as well as more formal ideas influenced by education and policy analysis. Among the strategic notions that were crucial in shaping their development strategies, probably the most fundamental was that government and private initiatives can, and should, be complementary. Thus laissez faire and dirigisme (central direction) were both rejected as policy makers sought a balance between the role of government and private firms that reflected the comparative advantage of each.

Selective government initiatives to build key public institutions and infrastructure were decisive in both countries. Building educational institutions, including rural schools, was motivated by strategic notions about the central importance of developing human resources. In the late 19th and early 20th century, Japan began building the public capacity for agricultural research essential for the development of the fertilizer-responsive seeds and other divisible innovations that provided the basis for its labour-using, land-saving agricultural development.

Strategic notions assist in seeking answers that 'good enough' while economising on a policy maker's time and attention, thereby making it possible to respond to a succession of policy and programme opportunities. But inappropriate strategic notions can be extremely harmful[6]. Taiwan's experience is of special interest in demonstrating how the catastrophic learning experience of the defeat of the Nationalist regime on the mainland

led to notable changes in strategic notions, for example, the importance of maintaining the support of the farm population, of relying on competent professional economists in determining macroeconomic policies, of controlling inflation, of strengthening the organizational system. The effective catalytic and coordinating role of the JCRR is an important example of an organizational innovation that contributed to the effective design and implementation of Taiwan's strategies for agricultural and rural development.

## 4. Implications for South Africa?

I have stressed that it for those of you here in the audience to judge whether the historical experience reviewed here has significant implications for South Africa. I believe that I am on firm ground, however, in emphasizing the importance of intense dialogue during this transition period, a theme that was often expressed by Simon Brand. Strategic notions are often influenced by similar backgrounds so that they are shared by many of a country's policy makers, thereby facilitating the degree of consensus required for effective action. Clearly, the influential individuals in a post-apartheid South Africa will come from very diverse backgrounds. Therefore, they are likely to hold strategic notions that are widely divergent, making consensus difficult. Hence the special need in South Africa for dialogue that can lead to greater convergence on strategic notions appropriate for coping with the problems and seizing the opportunities that are emerging.

In its March 1992 Newsletter, the Development Bank of Southern Africa presented a short essay describing the legacy of Dr Brand in setting the tone for development economists in South Africa. Let me recall some of his view as summarized in that statement:

*Dr Brand took the mission of the Development Bank into the corridors of government; the boardrooms of the business sector; to small farmers and to poor communities alike. He urged all sections of society to take up their responsibilities to help in redressing the inequalities of the past. He warned that the state would have to redirect its expenditure drastically towards achieving equity. By this he meant that there would be reductions in the levels of expenditure for the more affluent, and that the state would take responsibility for the release of resources to raise its levels of provision to the less affluent. The emphasis should be for government to spend differently rather than more, to ensure equitable provision of state services.*

*If public expenditure were to be redirected (with) freer mobility of labour, better training and consequent improved earnings among the poor ... this would lead to changed patterns of consumption. Such changes in the structure of demand would affect the production pattern of the economy and ... improve the longer term growth potential ... (H)e never say this to be a zero-sum game, but rather argued for a new economic growth path which optimised on all of the country's resources, including particularly its human potential.*

*In advocating these views he advocated neither extreme redistributionist policies nor a complete reliance on the invisible hand of the market. What he always did was to shake the complacency of those who believed that South Africa could carry on without fundamental structural change.*

*He saw the extension of opportunities to a larger number of people to participate in agriculture as one of the primary engines in the development of the economy ... Despite his roots in agriculture, he was always an advocate of balanced development, looking for the linkages between the different sectors of the economy ...*

In my opinion, the strategic notions that shaped those views of Dr Brand are remarkably consistent with the important lessons to be drawn from the East Asian success stories - in emphasising the need for a realistic appreciation of the importance of economic growth, efficiency, and equity; in recognizing the importance of a proper balance between the roles of the public and private sectors; and in urging fuller utilization of 'all of the country's resources, including particularly its human potential'.

### Notes

1. This paper draws heavily on a forthcoming book, Agriculture and structural Transformation : Opportunities Seized, Opportunities Missed, by Tomich, Kilby and Johnston.

2. With per capita GNP of $170 in 1962, Taiwan ranked 85th in the world just behind Zaire. In 1986 Taiwan's per capita GNP of $3 580 placed her just behind Greece, ranking 38 out of 135 countries (Wade 1990:35).

3. See William C Clark's chapter on 'Policy Analysis and the Development Process' in Johnston and Clark (1982).

4. SR Lewis (1990:174) notes that SH Frankel reports in his book, Capital Investment in Africa, that from 1910 to 1937 the South African government spent over £112 million on agriculture, but that included a mere £750,000 'for native agricultural needs'.

5. This section draws liberally on Johnston (1987) as well as the chapter on Taiwan and Mexico in the forthcoming Tomich-Kilby-Johnston book. There is a huge literature dealing with Taiwan's economic development. A forthcoming paper by Mao and Schive provides a detailed account of agricultural development. A 1983 book by Kuo, Fei, and Ranis gives a concise account of overall economic development, with emphasis on the policies that led to equitable as well as rapid growth.

6. The influence perspective emphasized by public choice theory can often help to explain governmental decisionmaking (Srinivasan, 1985; Bates, 1981; 1983). But it does not help us to understand why strategic choices are sometimes made that serve broader societal interests.

### References

BATES, RH. (1981). Markets and States in Tropical Africa. Berkeley, CA: University of California Press.

BATES, RH. (1983). Essays on the Political Economy of Rural Africa. Cambridge; New York: Cambridge University Press.

BRAND, SS, NT CHRISTODOULOU, CJ VAN ROOYEN AND N VINK. (1990). Agriculture and Redistribution: An Equity Approach. Development Bank of Southern Africa.

DEVELOPMENT BANK OF SOUTHERN AFRICA. (1992). A Frontrunner's Legacy. Headway, March.

DE KLERK, MICHAEL (ed). (1991). A harvest of discontent: The land question in South Africa. Cape Town: Institute for a Democratic Alternative for South Africa (IDASA).

ECKERT, JB. (1991). An evolving crisis: Income inequality in South Africa. Paper presented to the conference on: 'In search of alternative development solutions: Socio-political and economic challenges' sponsored by the South African Black Technical and Allied Careers Organization, Johannesburg, October 3-5.

FOOD AND AGRICULTURAL ORGANIZATION OF THE UNITED NATIONS (FAO). (1988). Production Yearbook, Vol 42, Rome.

JOHNSTON, BF. (1987). The implications of rural development for employment and welfare: Experience in the United States, Mexico, Japan and Taiwan'. In: US-Mexico Relations: Agriculture and Rural Development, edited by BF Johnston, C Luiselli, C Cartas Contreras and RD Norton. Stanford, Stanford University Press.

JOHNSTON, BF and WC CLARK. (1982). Redesigning Rural Development: A Strategic Perspective. Baltimore, MD: Johns Hopkins University Press.

JOHNSTON, BF and PETER KILBY. (1982). Redesigning rural development: A strategic perspective. Baltimore, MD: Johns Hopkins University Press.

KUO, SHIRLEY WY, GUSTAV RANIS and JCH FEI. (1981). The Taiwan success story: Rapid growth and improved distribution in the Republic of China, 1952-1979. Boulder, CO: Westview Press.

KUZNETS, SIMON. (1971). Economic growth of nations: Total output and production structure. Cambridge, MA: Harvard University Press.

LEE, TH. (1971). Intersectoral capital flows in the economic development of Taiwan, 1895-1960. Ithaca, NY: Cornell University Press.

LEE, TH. (1972). Strategies for transferring agricultural surplus under different agricultural situations in Taiwan'. In: Japan Economic Research Centre (JERC), Agriculture and Economic Development: Structural Readjustment in Asian Perspective. Proceedings of a Conference held by the JERC, September 6-10, 1971. Tokyo: The Japan Economic Research Center.

LEWIS, SR. (1990). The economics of apartheid. New York: Council on Foreign Relations Press.

MAO, YK and CHI SCHIVE. (1993). Agricultural and industrial development of the Republic of China. In: Agriculture on the road to industrialization, edited by J W Mellor. Baltimore: Johns Hopkins University Press, forthcoming.

REPUBLIC OF TAIWAN. (1988). Taiwan Statistical Data Book 1988. Taipei: Council for Economic Planning and Development.

SRINIVASAN, TN. (1985). Neoclassical political economy, the state, and economic development. Asian Economic Review, Vol 3, No 2: 38-58.

TOMICH, TP, PETER KILBY and BF JOHNSTON. Agriculture and structural transformation: Opportunities seized, opportunities missed. Forthcoming. (Book ms. prepared under the auspices of the World Banks's Economic Development Institute (EDI), the Harvard Institute for International Development (HIID), and the Stanford Food Research Institute (FRI).

WADE, ROVERT. (1990). Governing the market: Economic theory and the role of government in East Asian industrialization. Princeton: Princeton University Press.

WILSON, FRANCIS and MAMPHELA RAMPHELE. (1989). Uprooting poverty: The South African challenge. (Report for the Second Carnegie Inquiry into poverty and development in Southern Africa). New York and London:

WORLD BANK. (1988). World Development Report 1988. New York: Oxford University Press.

WORLD BANK. (1987). World Development Report 1987. New York: Oxford University Press.