Development with and beyond the market: in search of economically rational alternatives to neo-liberalism

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Chapter 8

‘Appropriate Developmentalism’ in Perspective

Introduction

Many rural development scholars, members of non-government organisations (NGOs) and writers on sustainable development argue that the key to a more equitable and sustainable growth in most developing countries is for governments to place a greater emphasis on the rural sector, especially the small-farm agricultural sector, as well as in small-scale labour-intensive activities in general. Such policies undoubtedly have an important role to play in encouraging a more satisfactory pattern of development. However, as shown in previous chapters, many socially and environmentally concerned academics and activists lack a realistic framework from which to examine the rural sector’s role in the overall development process. In fact, the attachment of some influential ‘appropriate developmentalists’ and ‘alternative developmentalists’ to the development strategies they favour is so great that they have simply rejected out of hand the possibility that other countries can learn important lessons from the experience of rapidly growing Asian economies such as South Korea and Taiwan.

This and the following chapter examines the merits of some of the strategies put forward in
the 'alternative developmentalist' (AD) literature from a more theoretically and empirically
critical frame of reference. The first part of this chapter looks at the arguments in the
literature promoting the widespread use of so-called 'appropriate technologies'. The aim of
this discussion is to further illustrate how even some of the more obvious deficiencies of the
strategies being proposed can be ignored once analysts are driven by a compelling
alternative vision of development. A more specific reason for examining this issue is that
many environmentalists and some sections of the NGO community (and their academic
supporters) have inherited from thinkers such as Mahatma Gandhi and E. F. Schumacher
the technologically deterministic view that the appropriateness of a development can be
judged by the scale of technology used.2

Following the discussion on 'appropriate technology', the remaining sections of the chapter
examine the potential for increased investment in the rural sector to set in motion a virtuous
cycle of decentralised labour-intensive growth. The emphasis is especially on agriculture.
The consumer and, to a lesser extent, the backward and forward linkages generated by
increased output in this sector are seen by many as having an particularly critical role to
play in encouraging a more satisfactory pattern of development.3 One reason for this is that

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2 For a discussion on this in the context of the Indian environmental movement see Crow, B.
1988. 'Environmentalism in India: Modernity and History’s Curses.' Science as Culture 4, Free
Association Books, pp. 129-140. Examples of works which fall into this trap include: The Centre
and the Environment: A Case Study of India. Oxford University Press, Delhi; Schumacher, E. F.
The Greening of Africa: Breaking the Battle for Land and Food. Paladin, London; Shiva, V. and
Bandyopadhyay, J. 1986. 'Environmental Science and Public Interest Science.' Economic and
Political Weekly 21 (2): 84-90.

3 On the non-farm growth and employment effects flowing from agricultural growth see,
Delgado, C. L., Hopkins, J., Kelly, V., with McKenna, P., Gruhn, B., Hojjati, B., Sil, J.,
‘Food Strategy and Development in Bangladesh.’ IFPRI Reprint 182. International Food Policy
Developing Economy with a Modernising Agricultural Sector: Implications for Employment and
Economic Growth in India - Cornell Agricultural Economic Occasional Paper No. 76. Cornell
University, Ithaca; Krishna, R. 1976. Rural Unemployment: A Survey of Concepts and
Rangarajan, C. 1982. Agricultural Growth and Industrial Performance in India - International
Food Policy Research Institute, Research Report No. 33. IFPRI, Washington, DC.; Byerlee, D.
1973. Indirect Employment and Income Distribution Effects of Agricultural Development
Strategies: A Simulation Approach Applied to Nigeria - Rural Economy Paper No. 9, Michigan
more direct attempts by governments to decentralise development have not met with much success, and only a small percentage of the growth in population that has occurred has been diverted away from major cities. In countries such as India, government policies such as incentives to set up in regional centres have often encouraged small industries to relocate away from major urban centres and remain small, when both their long-term development and the overall health of the economy would have been best served by them staying in these centres. In contrast, other government policies, including macro-economic disincentives against agriculture and a lack of investment in infrastructure, have worked against the development of many industries which often would have benefited from a rural location; these include agro-processing industries.

Part I - Case Study: The Appropriate Technology Debate

1. Background

One of the few advantages that late-industrialising countries have is that they can learn from the experiences of those who have gone before, and acquire technologies selectively, and relatively cheaply, that have already been developed elsewhere. One body of literature to examine this issue in some detail is the Appropriate Technology (AT) literature. This literature stresses the importance of choosing (or developing) those technologies that are the

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6 Ibid., op. cit., Ch's. 3 and 9.
Most appropriate to the needs of a particular developing country. In most cases, the suggestion is that these technologies should be small-scale, as they generate more employment per unit of capital invested.7

Many AT advocates influenced by the views of Mahatma Gandhi and Schumacher also claim that small-scale production technologies have a more positive impact on the environment and generally provide a more satisfying and less alienating work environment. Such naïve technologically deterministic views are not held only by well-meaning social activists - they can also be found expressed in the academic development literature, including in some recent publications on sustainable development. The following quote is taken from the conclusion of a book on India's environmental and social problems by economists Kartik Roy, Kumar Sen and Clem Tisdell:

This process [small-scale production] is also environment-friendly due to its decentralised character, is more non-violent in the Gandhian sense and will ultimately lead to self-sufficiency and freedom from exploitation although sustaining itself at a lower level of material consumption...The necessity of mechanisation has to be judged in the perspective of the prevailing relationship between labour and capital in a country. This will naturally lead to a voluntary limitation of one's wants and mutual concern among neighbours for the benefits of everyone's welfare. Schumacher and others point out further that in a development process depending on the nexus between agriculture, small and cottage industry and renewable resources, the relationship between development and the environment is one of harmony, co-operation, coexistence and hence non-violence. But where the exploitation of nature goes on in the spirit of dominance over nature, be it under capitalism or centralised state socialism, there will be conflict, exploitation, non-sustainability and hence violence.8

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As the following discussion illustrates, the logic behind such strong claims in support of the social and environmental benefits of small-scale technologies starts to quickly unravel once even the most basic of questions are asked about their viability.

2. Technological Determinism

Specially developed or adapted small-scale and inexpensive technologies have often proved to be of great benefit. In the Philippines, a cheap rice transplanter developed by the International Rice Research Institute (IRRI) reduced by a quarter the time that women farmers took to plant rice.9 However, as some leading AT advocates such as Frances Stewart acknowledge, not much progress has been made in replacing existing technologies with smaller-scale 'appropriate technologies', and where this has occurred their impact has often been far less positive than expected or claimed. Stewart gives the example of bread-making in Kenya. Of the technologies that were available, the medium-scale one seemed to fit the criteria for what constitutes an 'appropriate technology', since it produced the most nutritious bread and provided more jobs than the most advanced technology which was available. However, attempts to encourage the widespread use of this technology were unsuccessful because the bread did not stay fresh for very long and people did not like its taste.10

Witold Rybczynski, one of the founders of the 'appropriate technology' movement, comments that such failures were only to be expected, given that the driving force behind much AT advocacy has been an attachment to a utopian vision of what society should be, rather than any form of sophisticated political and economic analysis. Indeed, the success of Schumacher's famous book Small is Beautiful can largely be attributed to its deficiencies in this regard:

It did not attempt a reasoned argument but appealed directly to the emotions. Since it was a collection of essays on various subjects, it gave the impression of covering a lot of ground, and even some of the statements were contradictory...it offered simple

148-162.


10 Stewart, Technology and Underdevelopment, op. cit., ch. 9.
and understandable solutions.¹¹

In spite of such limitations, concepts such as 'Small is Beautiful' and 'Appropriate Technology' quickly became slogans which many people, including Prince Charles and the ex-governor of California Jerry Brown frequently espoused, with, at best, only a superficial understanding of the complexities of the issues involved.¹²

The utopianism and naivety of many such advocates aside, much of the AT literature is clearly technologically deterministic in that the assumption made is that complex social and economic problems can be solved by the introduction of a new technology. In this regard, one well-known example of a failed 'technological fix' is the attempt to introduce family or village-based gobar-gas plants into Indian villages. As they use cow-dung and produce both fertiliser and methane gas, these plants were proposed as an alternative to large-scale fertiliser production. However, even with government subsidies, the capital cost of the plants proved beyond the reach of most poor farmers, with the result that the technology and subsidies mainly benefited richer farmers, thus exacerbating existing rural inequalities.¹³

More 'intermediate technology' alternatives to large-scale fertiliser production also proved to be a costly and energy-intensive way of producing low quality fertiliser. In fact, the reality is that the production of fertiliser involves massive economies of scale and there is not much scope to vary capital-intensive input coefficients and still produce fertiliser efficiently.¹⁴ Consequently, for most developing countries, the most rational option is simply to relax restrictions on imports and purchase fertiliser on the world market more


¹² Ibid., p 13.


cheaply than it can be produced domestically.\textsuperscript{15} Despite this, many developing countries have continued to add to their capacity to produce fertiliser by modern capital-intensive methods.\textsuperscript{16}

**Table 8.1 Investment Cost Per Ton of Nitrogen Capacity, 1950-70**

<table>
<thead>
<tr>
<th>Investment Cost Per Ton of Nitrogen Capacity, 1950-70</th>
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</table>

\textsuperscript{a}Converted to U.S. dollars at official exchange rates. \textsuperscript{b}Investment cost when domestic content was revalued at shadow exchange rates. \textsuperscript{c}SER Investment cost adjusted for inflation and divided by tons of nitrogen capacity.


Many critics of comparative advantage theory argue (see chapters 3 and 4) that investment in capital-intensive industries, including fertiliser production, is often justified as it has a positive flow-on effect to the rest of the economy which is not captured by static neoclassical models.\textsuperscript{17} This argument seems particularly difficult to sustain in the context

\textsuperscript{15} Tomich, Kilby, and Johnston, *op. cit.*, pp. 223-251.

\textsuperscript{16} Ibid.

\textsuperscript{17} In South Korea, the fertiliser industry is claimed to have provided much of the human capital needed for the expansion of the petrochemical industry, which was a key sector in
of the fertiliser industry. As pointed out in chapter 4, even in Taiwan, where the state intervened in industry far more effectively than in the vast majority of other developing countries, the standard cost of producing fertiliser in the 1960s was at least 50 percent above the world market price. In other developing countries the differential has been significantly greater (see table 8.1).

3. The Impact of Scale on Employment and the Environment

A major assumption underpinning much of the AT literature is that small-scale units of production are generally more labour-intensive than large ones. The reality is that studies have found little correlation between scale and labour intensity. While one comparative study (of India and other countries) by I. M. D. Little, D. Mazumber, and J. M. Page found that medium-sized firms tended to be the most labour-intensive, deviations from the mean for the various sized groups were so large that it was not possible to make any strong generalisations. Consequently, while the labour-intensity of production does increase when more appropriate macroeconomic policies are introduced, and this can result in the more rapid growth of small industries (see the discussion in part 2 on Taiwan), it does not follow that more direct intervention by the state to stimulate the growth of these industries will result in an increase in employment.

The claims made about the environmental benefits of small-scale technologies also do not stand up to close scrutiny. In fact, as Stewart acknowledges, there is simply no evidence of any strong general relationship between the scale of a technology and its impact on the environment. As is the case with large-scale technologies, many examples can be cited of


19 Little, Mazumdar, Page, op. cit. See also the discussion on these findings in Cooper, C. 1990. 'Notes on Income Distribution, Growth and Demand.' In Stewart, Thomas, de Wilde, op. cit.

20 For a discussion on this see Cooper, op. cit.
environmentally destructive small-scale technologies. One example mentioned by Raphael Kaplinsky is the large areas of the Brazilian rainforests which have been cut down to provide charcoal for labour-intensive metal foundries.

4. The Similarities between AT Advocates and other Technological Determinists

The technological and scale determinism underpinning much of the AT literature has meant that the claims made by many AT advocates about the virtues of small-scale technologies have taken on a similar strident tone to those made by some supporters of large-scale technologies. In making this point, environmentalist Vaclav Smil compares the claims of soft energy advocates such as Lovens with those made by nuclear power advocates, while Rybeczyneski relates Schumacher's statements in support of the benefits of small-scale production with those of Henry Ford about the production line. To highlight the dangers of viewing technological choice in terms of scale, Rybeczyneski also draws attention to the fact that Ford's production line did produce a small-scale technology item - the car, which, while giving individuals freedom from large-scale transport systems, has also created more negative environmental and social consequences.

The Anand Dairy Co-operative in the Indian State of Gujarat, which has been successful in raising the income levels of landless peasants and small farmers, also provides another example of the dangers of getting fixated on scale when seeking to increase employment and improve living standards. The Anand Co-operative violated the central tenets of the 'appropriate technology' movement by relying on the most capital-intensive technology available for the processing and marketing of milk. This was complemented, however, by

22 Kaplinsky, op. cit., p. 16.
24 Rybeczyneski, op. cit., p. 19.
the fact that a large number of small households used basic, labour-intensive production processes to produce the milk in the first place.  

5. Economic Naivete

A good deal of the AT literature avoids the overt technological and scale determinism of the more naïve AT literature and recognises the importance of understanding how class, caste and other factors at the local level influence the impact a particular technology will have. However, as Stewart acknowledges, even much of the more sophisticated AT literature has been so obsessed with micro-level issues that the effect of macro-level policies on the intensity with which labour and capital are used has been ignored. As shown in chapter 4, Korea and Taiwan's early success in the export of labour-intensive manufactured goods was mainly the result of macro policies that came close to the neoclassical ideal, such as competitive exchange rates, as well as more interventionist policies such as export subsidies and the setting of export targets. In other words, it had little to do with the state directly intervening at the micro level to influence the capital/labour relationship of the production process.

Another example which illustrates the importance of macro-level policies as well as the dangers of romanticising small-scale technologies is that of the decline of the cotton textile industry in India. Because of the inward-looking nature of the policies followed in this country, important opportunities for taking advantage of an expanding world market in textiles and clothing were missed. As Isher Judge Ahluwalia points out, this was not the only negative factor at work, and concerns about employment, as well as the 'emotional mystique' created by Mahatma Gandhi about the handloom, ensured that this technology was given preference (by quotas, etc.) over more potentially dynamic production processes.


27 Stewart, Macro-Policies for Appropriate Technology: An introductory Classification, op. cit.

The AT literature also generally fails to adequately explore the secondary effects of the policies it advocates. While many modern technologies create less direct employment per unit of capital utilised than some of the alternatives available, they still frequently generate more overall employment. This can often be in the same industry if the demand for the product increases because of its lower cost and/or improved quality, or it can be elsewhere if the cheaper cost of the product creates extra employment among downstream user industries. Additional employment is also created in industries that benefit from the consumer spending which is released from the now cheaper or longer-lasting products of new technologies. One example already given, which illustrates the failure of many AT advocates to take into consideration such secondary effects, is that of fertiliser production. Any loss of employment resulting from a greater reliance on imports will generally be more than compensated for by the beneficial impact that cheaper fertiliser prices have on the agricultural sector and, via the linkages flowing from this sector, on the wider economy.29

6. The Open Pan Sulphitation (OPS) process

The AT literature generated by more sophisticated AT advocates such as Stewart and Kaplinsky avoids many of the above-mentioned failings. However, even in this literature, many of the claims made in support of particular technologies often do not stand up to close scrutiny. Take, for example, Kaplinsky’s book *The Economies of the Small*, which is viewed by many development analysts as one of the most systematic attempts to overcome the deficiencies of the past and to offer a more hard-headed analysis of AT’s potential.30 According to renowned development scholar Paul Streeton, this book is ‘the most thorough analytical and empirical treatment of appropriate technology that has yet been done, with revolutionary implications for policy.’ According to George McRobie it ‘should decisively move the subject of appropriate technology into the mainstream of academic study and public policy.’31

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29 On this see Tomich, Kilby, and Johnston, *op. cit.*

30 Kaplinsky, *The Economics of the Small, op. cit.*

31 These comments are from the sleeve of Kaplinsky’s book, *The Economies of the Small.*
In *The Economies of the Small* (and previous to this) Kaplinsky supports the use of the Open Pan Sulphitation (OPS) process as an alternative to the larger and more modern sugar mill which employs the Vacuum Pan Sulphation (VPS) process. In UNICEF's famous publication *Adjustment with a Human Face*, Kaplinsky's findings on the alleged success of the OPS process in India are cited as an example of what other countries such as Kenya can achieve if they make greater use of appropriate technologies. Other publications also make a similar point.

An extensive evaluation of the claims made for the OPS process in India has been undertaken by H. H. de Hann and associates for the Indon-Dutch Studies on Development Alternatives (IDSDA). The study was made up of two surveys that were undertaken in 1980/81 and in 1985/86. One finding is that the OPS mills were supported by more beneficial government regulations than the more modern mills, including lower-priced sugar and more favourable taxation arrangements. OPS mills also avoided tax on a large scale. Despite this, the OPS mills remained viable only because they operated for longer periods and used migrant labourers who were paid wages so low that labour regulations were being violated. The study also found that Kaplinsky (and others) had significantly exaggerated the total employment that was being generated by the OPS mills, and that the modern sugar mills had far greater beneficial spin-offs into the rest of the economy. Indeed, the value added in the latter was almost twice as much as the former, resulting in a higher level of forward multiplier linkages.

The modern mills also benefited the rural economy in other ways by investing in roads and paying higher prices for sugar. Both these factors contributed to increased agricultural

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32 Kaplinsky, *The Economics of the Small*, op. cit., ch. 5.

33 Cornia, Jolly, and Stewart, op. cit., p. 217.

34 See, for example, Stewart, F. & Ranis, G. 1990. 'Macro-Policies for Appropriate Technology: A Synthesis of Findings.' In Stewart, Thomas and de Wilde, op. cit., pp. 3-42.


productivity and therefore also to growth in the wider economy. As for the OPS mills, the study found that the owners belonged to the rural or small town power elite and that (for a variety of reasons) the main beneficiaries of this technology were the rich trading families and large landowners. According to the IDSDA study, modern mills also provided educational and health facilities which, while mainly being used by the workers, were in many cases also available for use by the local population. The conclusion reached by the study was that the modern sugar mills had a much greater potential to act as agents of rural transformation than the appropriate technology alternative. It suggested that the best way to promote growth and equity was to locate the former in the rural areas as this would serve as an effective instrument for capturing rural savings, since many more families can invest in a large-scale co-operative sugar factory than in an equivalent number of small-scale units. This has been shown in Maharashtra and Gujarat [the two main modern sugar mill states].

The study's finding that the OPS process is not a viable technology is supported by events that occurred between the two survey periods. When they returned in 1985/86, the researchers found that 21 out of the 67 units first sampled had disappeared and that most of the operators who were left were extremely pessimistic about their future.

**Part 2 – Agricultural-Led Growth**

1. **Background**

A large proportion of the developing world’s labour force is still employed in agriculture (see table 8.2). Despite this, and despite the positive impact that increased agricultural output has on the rest of the economy, many analysts and governments have, in the past, viewed agriculture as either to be exploited to support industrialisation or to keep the population in subsistence until the benefits of industrialisation trickled down to them. Governments indirectly discriminated against agriculture through overvalued exchange.

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38 Ibid.

39 Ibid., p. 165.

40 Ibid., p. 162.
rates and industrial protection. They also more directly discriminated against agriculture by paying farmers well below the world market price for their produce. In fact, in some countries, especially in Africa, the prices farmers were paid fell so far below the world market prices that the impact on the rural sector and the wider economy was disastrous.

Table 8.2: Agricultural and GNP Per Capita Statistics for Selected Countries

<table>
<thead>
<tr>
<th>Country</th>
<th>GNP Per Capita US$</th>
<th>Agricultural Growth Rates</th>
<th>Agriculture's GDP Share (%)</th>
<th>Ags. Share of Labour Force (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>530</td>
<td>5.9 4.1</td>
<td>30 21</td>
<td>74 72</td>
</tr>
<tr>
<td>India</td>
<td>320</td>
<td>3.1 2.9</td>
<td>38 30</td>
<td>70 64</td>
</tr>
<tr>
<td>Indonesia</td>
<td>880</td>
<td>3.4 3.0</td>
<td>24 17</td>
<td>58 55</td>
</tr>
<tr>
<td>Malaysia</td>
<td>3,480</td>
<td>3.8 2.8</td>
<td>22 14</td>
<td>41 27</td>
</tr>
<tr>
<td>Thailand</td>
<td>2,410</td>
<td>4.0 3.1</td>
<td>23 10</td>
<td>71 64</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>220</td>
<td>2.7 1.9</td>
<td>50 30</td>
<td>73 65</td>
</tr>
<tr>
<td>Kenya</td>
<td>250</td>
<td>3.3 1.5</td>
<td>33 29</td>
<td>82 80</td>
</tr>
<tr>
<td>Tanzania</td>
<td>140</td>
<td>4.9 5.8</td>
<td>46 57</td>
<td>86 84</td>
</tr>
<tr>
<td>Ghana</td>
<td>410</td>
<td>1.0 1.8</td>
<td>58 46</td>
<td>62 59</td>
</tr>
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One of the extreme examples of discrimination against agriculture in Africa occurred in Ghana between 1947-48 and 1978-79. In this period, the government’s share of cocoa revenue sales rose from 3 to 60 percent, resulting in a large drop in farmers’ living


standards. This was in addition to the 20 percent already taken to cover the inflated running costs of the country's inefficient and corrupt marketing boards. Robert Bates cites evidence from a commission of inquiry into the cocoa marketing board that found that the profits from its cocoa monopoly were used to provide funds for the dance band, footballers, actors and actresses, and a whole host of satellite units and individuals...the State Cocoa Marketing Board itself is not free from...this type of practice. The CMB's area of operation...embraces activities and involves a staff which would have appeared absurd only ten years ago...Farmers often referred to the opulence of the Secretary Receiver [the official who operates the local buying station]. It was alleged that these officers, who earned G180 pounds per annum, owned cars, trucks, buildings, etc., and often supported as many as three wives. We saw some Secretary Receivers owning Mercedes Benz cars, Peugeot cars, and transport trucks.

Even though the price of cocoa on the international market had risen to historically high levels, the outcome of such disincentives to production was that agricultural output fell by approximately a half between 1960/62 and 1980/82 (see table 8.3). The income of farmers also halved and the volume of exports fell by 80 percent. In addition, an estimated 45,000 tons of cocoa were smuggled to neighbouring countries to take advantage of higher prices.

Table 8.3: Agricultural Production in Selected SSA countries

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>Ivory Coast</td>
<td>100</td>
<td>..</td>
<td>290</td>
</tr>
<tr>
<td>Kenya</td>
<td>100</td>
<td>..</td>
<td>332</td>
</tr>
<tr>
<td>Ghana</td>
<td>100</td>
<td>..</td>
<td>52</td>
</tr>
<tr>
<td>Tanzania</td>
<td>100</td>
<td>152</td>
<td>121</td>
</tr>
<tr>
<td>Uganda</td>
<td>100</td>
<td>192</td>
<td>89</td>
</tr>
</tbody>
</table>

..No figures available


43 Macbean, op. cit.
44 Ibid.
46 Macbean, op. cit.
2. Neoclassical Perspectives

According to neoclassical economists the solution to low agricultural productivity and other economic problems is economic liberalisation, as this allows more resources to flow into areas such as agriculture, where developing countries have a comparative advantage. If agricultural prices have been kept artificially low by governments, economic liberalisation should allow prices to rise, providing an incentive for farmers to expand production. Where agricultural inputs such as fertiliser have been priced too high because of protectionist policies, economic liberalisation will give farmers the opportunity to purchase inputs produced outside the country, and also put pressure on domestic producers to become more efficient and to lower their prices.\(^{47}\) To ensure that inputs are used in a more economically and environmentally rational manner, many economists also favour the greater application of a ‘user pays’ philosophy to areas such as irrigation and fertiliser consumption.\(^{48}\)

While these arguments have merit, neoclassical economists place too much emphasis on the importance of ‘getting the price right’ at the expense of other factors. In fact, as a general rule, low prices have been far more of a problem in Africa than they have elsewhere. As


Peter Timmer argues, those who stress price liberalisation above everything else ignore the fact that, while farmers in many countries were underpaid when world prices were high (as was the case in the mid-1970s), they have also often been subsidised when world prices were low (such as in the mid-1980s). This suggests that stabilisation was often the main policy goal.  

Neoclassical economists have also generally neglected the political consequences of an over-reliance on price policy. For, while the prices of agricultural commodities are more variable than those of industrial products, the political climate is not so flexible, and once the decision is taken to raise prices it is not easily reversed. Since the 1970s when international institutions such as the World Bank first strongly emphasised price policy, the prices of many agricultural commodities have weakened significantly.  

The need for caution in this area is supported by the discussions in chapter 2 on Zambia's copper industry and in chapter 4 on the 'resource curse' thesis, both of which illustrate how rising prices can set in motion dynamics which are difficult for governments to control and which have long-term, negative economic and political consequences. 

Farmers are also often unable to respond to price signals as easily as the neoclassical literature supposes. Neoclassical models assume that peasants are fully informed and rational and work within logical and efficient institutions. Other perspectives argue that peasants are tradition-bound, irrational and non-economic, or that they are rational in a non-neoclassical sense in that they are motivated by the rational desire (given their precarious position) to avoid risk. While agreeing with neoclassical economists that peasants are

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more rational and responsive to market signals than many critics of neoclassical theory believe, Stiglitz argues that they are not fully informed about the consequences of their own actions or the actions of the institutions through which they operate. As he suggests, it is heroic to expect them to be so, given that academics, who have spent their lives studying such issues, are themselves unclear about such factors.

Even if peasants are fully informed, a feature of developing societies is the absence of markets (credit markets, etc.), even in situations where their establishment would generate significant benefits. While institutions are developed to compensate for this, they are often inefficient and inequitable, as in the case of sharecropping. Under this system, workers receive less than the value of their marginal product, which appears to indicate an inefficiency, posing the question of how it can have survived for so long. The standard answer of economists has been that sharecropping provides a means of risk sharing. For obvious reasons, workers are more risk-averse than landlords, and in the absence of a complete set of risk markets in which the workers can insure against the many potential hazards they face, the sharecropping system will allow the landlord to absorb more of the risks. As Joseph Stiglitz has shown, this is an inadequate explanation as, from a neoclassical perspective, all the functions of risk sharing that sharecropping offers could be provided by a combination of wage and rental contracts.

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53 Stiglitz, Rational Peasants, op. cit.


55 Stiglitz, Rational Peasants, op. cit.
3. The Need for a more Multifaceted Approach

Governments and international development organisations need to support the move towards more rational pricing policies for agricultural goods and inputs by giving more emphasis to complementary initiatives such as increased spending on infrastructure and research. For, while the freeing up of prices will undoubtedly often provide an incentive for farmers to produce more, factors such as the availability of new technologies and infrastructure not only provide the means to do so but also help cut costs and keep prices in check. The expansion of rural road networks, for example, undermines local monopolies and reduces the delivery costs to farmers of equipment, construction materials and consumer goods. While all this might appear to be simply stating the obvious, there has, as Hans Binswanger suggests in relation to the World Bank, been a remarkable tendency both within and outside of the Bank to perceive price and investment strategies as being separate rather than complementary.

Among other studies that illustrate the benefit of increased investment in infrastructure is one by the International Food Policy Research Institute (IFPRI) which compared regions in Bangladesh. Regions with good infrastructure were found to have wages twelve percent higher, rice prices two percent higher, and fertiliser prices ten percent lower than similar regions with less advanced infrastructure. In the more advanced regions, the use of high-yielding varieties (HYVs) of seeds was also five percent greater and the use of fertiliser sixty-four percent higher.

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57 Tomich, Kilby, and Johnston, op. cit., p. 221.

58 Binswanger, op. cit.

4. The Mellor School

According to John Mellor and others of a similar view - hereafter referred to as the Mellor School - the benefits of increased spending on areas such as infrastructure and the development and dissemination of cost-cutting technologies are sufficiently large in many cases for agriculture, and not industry, to become the leading sector of the economy.60

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In Mellor's model, farmers are assumed to spend a large percentage of their increased income, which is a consequence of the additional investment in agriculture, on locally produced labour-intensive goods and services, including higher value agricultural commodities such as livestock products and vegetables. This then puts an upward pressure on both farm and non-farm incomes (see figure 8.1) which, because low income earners spend a high proportion of their income on food, results in increased demand for agricultural goods; in turn, this brings about an increased investment in agriculture and rural infrastructure, and so on up the virtuous cycle.61

There are major differences between the Agriculture-Led Growth model (ALG) proposed by Mellor and his associates at the International Food Policy Research Institute in Washington, and other agriculture-first or 'food-first' strategies which have been associated with self-sufficiency and closed economy ideologies, and which were strongly criticised in chapter 7. As Irma Adelman indicates:

This is not the ideology underlying the present proposal. This is not an argument for a closed development strategy. The last thirty years of development experience have clearly demonstrated the inferiority of import substitution strategies. It is rather a call for a shift in sectorial emphasis for public investment towards agriculture while maintaining or even, if necessary, switching to an open development strategy.62

5. The Lipton School

In Mellor's model, the needs of small farmers are not necessarily given priority. In fact, according to Mellor, the spending patterns of large farmers are more inclined towards the generation of labour-intensive local employment as, unlike small farmers, they do not spend most of their increased income on food.63 In contrast, Mellor, Michael Lipton and others of a similar view (the Lipton school) argue that the key to more equitable and sustainable development is for governments and international agencies to concentrate on initiatives which allow small farmers to play a much greater role in the development process. These initiatives include land and tenurial reforms and the allocation of more resources to the

61 Mellor, Food Production, op. cit., and Mellor, Determinants of Rural Poverty, op. cit.


63 Mellor, Food Production, op. cit. and Mellor, Determinants of Rural Poverty, op. cit.
dissemination of credit and new technologies to small farmers.\textsuperscript{64} He argues that this is often a more efficient way of redistributing income than other programs such as rural works projects that, apart from being an expensive way of generating employment, often produce rural works of questionable merit.\textsuperscript{65}

In support of his variation on the ALG theme, Lipton points to evidence that indicates that small farmers are more economically efficient than large farmers as they make greater use of family labour to, among other things, double crop, grow high value crops, improve land in the slack season and enhance yields by better agricultural practices.\textsuperscript{66} This 'inverse relationship' between farm size and annual net value added per acre was first identified about forty years ago in 'Indian Farm Management Studies', which featured an article on unimproved rainfed farming.\textsuperscript{67} According to A. J. Rayner and K. A. Ingersent, one problem with this line of argument is that much of the subsequent evidence on small farmer efficiency is also either from backward regions or predates the Green Revolution. The efficiency gains achieved by small farmers could disappear when the opportunity cost of labour rises as labour becomes scarcer, or as the costs rise due to increasing employment opportunities in non-farm areas.\textsuperscript{68} They conclude that insufficient evidence is available to reach any definite conclusion on this issue and suggest that in the absence of such evidence, there has been an unfortunate tendency to rely too heavily on theory.\textsuperscript{69}


\textsuperscript{65}On this see Lipton, M. 1990. 'Forward'. In Singh, \textit{op. cit.}, pp. ix – xiv.

\textsuperscript{66}See, for example, Lipton, 'Forward', \textit{op. cit.}; Lipton, \textit{Labour and Productivity, op. cit.}; Jazairy, Alamgir, and Panuccio, \textit{op. cit.}, pp. 129-131; Cornia, C. A. 1985. 'Farm Size, Land Yields and the Agricultural Production Function: An Analysis of Fifteen Developing Countries.' \textit{World Development} 13 (14): 513-534; Cornia, Jolly and Stewart, \textit{op. cit.}, pp. 184-86.


\textsuperscript{69}Rayner and Ingersent, \textit{op. cit.}
While the debate on the relationship between farm size and productivity has undoubtedly often been long on theory and short on evidence, sufficiently detailed studies now exist to draw some tentative conclusions. In the Indian context, it would appear that the inverse relationship between farm size and productivity that existed prior to the 1960s weakened significantly, and possibly even reversed, in the early stages of the Green Revolution. However, this productivity trend in favour of large farmers was apparently often a relatively short-term phenomenon relating to the relative speed of farmers in adopting new technologies. For, while small farmers initially lagged behind large farmers in adopting new technologies, studies indicate that they often did eventually take advantage of them. Studies in other regions of the world have reached similar conclusions.

70 The findings of these studies need to be approached with an above average degree of caution if one is proceeding on the assumption that 'big equals rich' and 'small equals poor'. For, as discussed in chapter 6, most studies that might have any relevance to this issue have failed to take into account the fact that the output of farms of a similar size varies greatly because of differences in land quality and the proportion of land under irrigation. While some studies have attempted to take the latter into account, differences in irrigation apparently only account for 5-15 percent of the variation in output between farms of a similar size. Apart from the discussion in chapter 7 see Bhalla, S. S. 1988. 'Does Land Quality Matter? Theory and Measurement.' Journal of Development Economics 29: 45-62; Bhalla, S. S. and Roy, P. 1988. 'Misspecification in Farm Productivity Analysis: The Role of Land Quality.' Oxford Economic Papers 40 (1): 53-73; Sampath, R. K. 1992. 'Farm Size and Land Use Intensity in Indian Agriculture.' Oxford Economic Papers 44: 494-501; Singh, op. cit. pp. 71-72; Rayner and Ingersent, op. cit.


6. Institutional Constraints

Another cause for optimism where agriculture is concerned is that the institutional barriers to increasing agricultural output, while often significant (see below and section 2), do not appear to be as critical as often assumed. One widely held view is that strong institutional barriers in many regions of the developing world prevent farmers from taking advantage of valuable new technologies which are 'standing on the shelf', as it were, waiting to be utilised. While institutions have often been ignored in the economic literature (see chapter 3), it is important, as Robert Evenson points out, to also not overcompensate for this. Evenson does not dispute that institutions matter and that improvements in this area bring productivity gains, expedite more effective responses and adjustments to new technology, contribute to poverty alleviation and facilitate labour mobility. However, he also suggests:

Institutions do not repeal the basic laws of supply and demand. Programs to reduce labour supply, to develop technology, to develop human skills, to invest in infrastructure, and in irrigation and in land improvements are important for poverty reduction regardless of the institutional settings.

In support of his conclusions Evenson cites the findings of studies which indicate that while institutional differences are a major reason why farmers adopt technologies at different rates, the vast majority of new technologies are tested by at least some farmers in every community and those that prove useful are generally quickly adopted. In the case of new rice varieties, they are usually adopted quickly even when the increase in yields obtained is relatively small. Studies have also found that most of the supposedly valuable technologies lying on the shelf and waiting to be utilised are unsuited to the soil and climate conditions found in many areas of the developing world.

Evenson also points to the findings of studies that indicate that investment in areas such as

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75 Ibid.


77 Evenson, op. cit., and Barker and Herdt, op. cit.
infrastructure and research usually generate high returns in a wide range of institutional environments. In fact, of a total of 134 rates of return to research reported in the studies reviewed by Evenson, 60 reported rates of return of above 50 percent, while only 18 reported returns in the 0 – 20 percent range. As well as the point that investment in this area is generally far too low, these high returns stem from the fact that research and extension are cheap in developing countries compared to such factors as fertiliser and machinery. In addition to their low labour costs, this is also because much of their research effort is concentrated on adaptive invention and sub-invention. International Agricultural Research Centres (IARCs) and developed countries are generally relied upon for the more expensive pioneering research.

The Importance of Agricultural Research

The development of a highly productive and sustainable rice paddy system in China is one example of what can be achieved when sufficient funding is available for agricultural research. A large reduction in chemical fertiliser and pesticide input has been achieved by the growing of Azolla (a floating water plant) between the rice plants and by adding fish. The fish, which provide a large amount of extra protein, feed on both the Azolla and the insects that attack the rice. Also, the droppings of the fish fertilise the rice. This system has been made far more productive in recent years by the use of genetic engineering to produce more productive varieties of rice, fish and Azolla.

Apart from the consequences for general productivity and sustainability, the lack of resources available for agricultural research (as well as for infrastructure development and the improvement of existing infrastructure) makes it difficult for farmers to diversify into more profitable activities in areas such as horticulture, livestock rearing and aquaculture. In these areas (which are often very labour intensive) demand is expanding at a much faster rate than traditional agricultural crops. The experience of Taiwan (see below) illustrates the importance of such activities. In the early stages of its development push, the export of non-

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78 Evenson, op. cit.

79 Ibid.

80 On this see Crawford Fund for International Agricultural Research, op. cit.
traditional, high-value, labour-intensive agricultural commodities such as canned mushrooms and asparagus played a similar employment-generating role to that of labour-intensive manufacturing.81

7. Long Chains of Reasoning

Despite the positive factors mentioned above, agriculture and small-scale enterprises are unlikely to be able to play as extensive a role as that envisaged by analysts such as Lipton and Mellor. As with all rural-led and small-sector-led development strategies, their approaches involve relatively 'long chains of reasoning' which contain some weak or potentially weak links. One problem with agriculturally-led growth (ALG) development strategies is that they place too much dependence on increased investment in agriculture to stimulate the rural non-farm sector. Farmers often need alternative sources of income outside of agriculture (members of the family working elsewhere, etc.) before they will risk innovating in agriculture.82

The local employment linkages resulting from any increase in farmers' discretionary spending are also unlikely to be as large as Lipton, Mellor and others assume. One problematical assumption they make is that any small-scale enterprises that develop in response to the increased demand generated by either the growth in farmers' incomes or increased spending on rural infrastructure and support mechanisms to farmers will be generally fairly labour-intensive. As already discussed in part 1 of this chapter, this is not necessarily the case. In fact, little correlation appears to exist between scale and the relative intensity with which labour or capital is utilised.

Another factor to consider is that, historically, the experience of both developed and developing countries has been that low-priced goods for low-income consumers have often been produced by capital-intensive methods. In the industrial revolution in Europe, many


industries heavily dependent on the demand generated by low-income consumers were relatively capital-intensive. These included textile, dyestuff and basic organic and inorganic chemical industries. As Charles Cooper suggests, many examples exists where 'the existence of mass low-income markets has often been a spur to innovation, which is very frequently accompanied by increasing capital intensity.' Cooper also makes the point that whatever the reality of the past, new technologies are now causing accelerated change in traditional industries and are making them more capital-intensive.

Lipton and other like-minded scholars also arguably underestimate the practical difficulties of introducing extensive land reforms and ensuring that sufficient numbers of small farmers receive the technologies and other resources that their strategies envisage. Attempts to introduce land reforms on a large scale have generally been successful only in times of major social dislocation, such as that caused by war. Tenurial reforms do, nevertheless, have the potential to have a significant impact on rural poverty. Estimates for Thailand, Indonesia and the Philippines suggest that the numbers of squatters with no tenurial rights could range from 5 to 10 percent of all cultivated holdings. More secure or more equitable tenurial arrangements give small farmers a greater incentive to invest their energy and resources in the long-term development of their holdings.

**Credit Reform**

The availability of credit is another factor which has a major bearing on how successful a small-farmer and small-producer-oriented development strategy can be. In agriculture, new technologies, because they increase output per unit of land, can improve the viability of

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83 Cooper, *op. cit.*


85 *Ibid.* For a more positive view of the potential for land reform see Lipton, *Land Reform as Commenced Business, op. cit.*

86 On this see Jazairy, Alamgir, and Panuccio, *op. cit.,* ch. 5.


small farms. At the same time increased access to irrigation can make farmers less sensitive to the vagaries of nature, and lessen their chances of losing their land in periods of low rainfall. More negatively, imperfect capital markets in developing countries ensure that the access of small farmers to credit facilities is limited. Because technological change increases the value of land to those who have the capital to take advantage of it, the corresponding rise of land prices will induce some poor farmers to sell. In the long run, this can have a negative effect on wealth distribution.  

The formation of credit co-operatives is seen by many as one way of accentuating any positive distribution effects of new technologies and ameliorating any negative effects. However, while successful examples can be cited of such co-operatives, the general picture is not very encouraging, despite the large amount of resources that have been put into their development by the World Bank and by governments. The recent literature on co-operatives has provided insight into the policies needed to increase their likelihood of success. For this reason, sections of the development community are optimistic about the chances of significantly expanding the success rate of credit institutions. Other analysts remain pessimistic. In fact, according to Evenson, the harsh reality is that the main reason why the poor are often denied access to credit is not market failure but the lack the entrepreneurial skills needed to take advantage of it. Consequently, 'credit programs which offer credit at highly subsidised rates often encourage poor families to engage in high risk ventures for which their skills do not prepare them.'


90 Braverman and Stiglitz, op. cit.; Jazairy, Alamgir, and Panuccio, op. cit., ch. 7.

91 See Binswanger (op. cit.) for a review of several World Bank-supported studies on the effects of their attempts to develop credit institutions.

92 See, for example, Jazairy, Alamgir, and Panuccio, op. cit., pp. 191-210.

93 See, for example, Binswanger, op. cit.; Braverman and Guasch, op. cit.

94 Evenson, op. cit.
Microfinance

According to a surprising number of actors within the development community, NGOs which concentrate on providing credit to the poor, such as the Grameen Bank in Bangladesh, have a critical role to play in alleviating poverty and encouraging more equitable development. While the record of the Grameen Bank is impressive, supporters of such initiatives generally greatly overstate the potential role of such organisations. Important factors behind the success of the Grameen Bank have been a hands-on approach favoured by its hard-working and committed management team, and its ability to hire quality staff at very low wages. The downside of this management-intensive style of operation is that the rate of expansion has been slow. After eight years in operation, the bank's outstanding loans still only totalled US$9.8 million.

Comparisons of the Grameen Bank with larger rural credit institutions which have been less successful also suggest that these institutions enjoy their greatest success when they are still relatively marginal and don't have a major impact on the economy. As the experience of India's Integrated Rural Development Programme (IRDP) illustrates, when large numbers of poor people receive finance to engage in self-employment activities, they soon run up against constraints on the demand side for their products, as well as on the supply side for the inputs required. As Ammar Siamwalla points out:

The apparent initial profitability of the investments when the programme is small reflects some slack in the economy, which may be due to the market power of the incumbent and possibly richer producers. If the credit programme is ambitious, such slack would quickly disappear. Furthermore, ...once the slack is removed, these activities begin to affect the general equilibrium of the local economy. Thus, it is a project-constrained world [one with limited investment opportunities], and the poor will have to play a more entrepreneurial role of predicting the market, with its concomitant risks. Can the poor do so, and normatively, should they be encouraged


97 Siamwalla, op. cit.

98 On this see Siamwalla, op. cit., Osmani, op. cit.
to engage in risky activities (given their precarious standard of living) by a
government programme.?99

8. The Taiwanese Experience

'Appropriate developmentalists' such as Stewart have pointed to the development
experience of Taiwan to support their claims of the benefits of a decentralised pattern of
development largely based on small-scale producers. In this country, factors such as
appropriate pricing policies, a well-developed rural infrastructure and extensive land
reforms paved the way for rapid agricultural growth.100 The high levels of productivity
achieved in this sector were such that even as late as 1960, 60 percent of Taiwan's foreign
exchange earnings still came from agriculture.101 This success (and the well-developed
rural infrastructure that existed) provided, in turn, a conducive environment for a
flourishing non-farm sector to develop outside of the major urban centres. In 1971, 51
percent of manufacturing employment was situated in rural areas.102

Another unusual feature of the Taiwanese development experience is that a large proportion
of the workforce in manufacturing and other sectors has been employed by small or
medium enterprises (SMEs).103 According to government statistics cited by a World Bank

99 Siamwalla, op. cit.
100 For a discussion on the role played by agriculture and small scale producers in Taiwan see Ranis and Stewart, op. cit.; The World Bank. 1993. The East Asian Miracle: Economic Growth and Public Policy. Oxford University Press, Oxford, pp. 161-163; Moore, M. 1984. 'Agriculture in Taiwan and South Korea: The Minimalist State.' IDS Bulletin 15 (2); Institute of
103 For a discussion on the importance of small and medium enterprises in Taiwan compared
to South Korea see McKay, J. and Missen, G. 1994. The Problem of Being Big in Korea and
Small in Taiwan: Restructuring Firm and Institutional Networks' – Working Paper 94-1,
report on the East Asian economies, even as late as 1992 the SME sector still accounted for 97.16 percent of total enterprises (see table 8.4), and 60 percent of total exports.\textsuperscript{104} The report suggests that the dominance of small and medium industries in the Taiwanese economy is a major reason why income distribution is far more equitable than in the vast majority of other late-industrialising economies.\textsuperscript{105}

\begin{table}[h]
\centering
\textbf{Table 8.4: Small and Medium Size Businesses in Taiwan (1992)}

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While the SME sector did undoubtedly play a critical role in Taiwan’s economic success, care needs to be taken, as ‘statist’ writers such as Alice Amsden, Robert Wade, and John McKay and Geoff Missen caution, not to overstate this role.\textsuperscript{106} The way that census data is

\textsuperscript{104} The World Bank, The East Asian Miracle, \textit{op. cit.}, pp. 161-63.

\textsuperscript{105} \textit{Ibid.}

collected and presented in Taiwan tends to create a bias in favour of SME enterprises when comparing their efficiency with larger enterprises. Among other things, this is because comparisons of the performance of existing firms fail to take into account the fact that a higher percentage of small and medium enterprises go bankrupt, and therefore only the most successful firms are left to be counted.  

Furthermore, even if the data is taken at face value, government statistics still indicate that large firms with more than 500 employees have produced about half of the industrial value added since the early 1970s, while firms with fewer than 10 employees have produced only about 10 percent. Further support for the view that the World Bank and others have exaggerated the importance of the SME sector in Taiwan is provided by table 8.5 which compares United Nations and (in the case of Taiwan) government statistics on the distribution of manufacturing value-added by firm size for several countries. As shown, large firms with 500 workers or more produced 52.7 percent of manufactured output by value in 1973. According to government statistics cited by McKay and Missen, this proportion had declined to a still significant 47.3 percent by 1986.

Table 8.5: Percentage Distribution of Manufacturing Value-Added by Firm Size (1973)

<table>
<thead>
<tr>
<th>Firm Size</th>
<th>Value-Added</th>
</tr>
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<tbody>
<tr>
<td>500 workers or more</td>
<td>52.7%</td>
</tr>
<tr>
<td>Fewer than 10 employees</td>
<td>10%</td>
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108 Amsden, op. cit.; Wade, Industrial Policy in East Asia, op. cit.

109 McKay and Missen, op. cit., p. 11.
Another reason why policy makers in other countries should exercise caution before massively increasing their spending on the rural sector in the hope of setting in motion a virtuous cycle of decentralised growth, is that the evolution of the Taiwanese economy was influenced by a number of unusual factors. Taiwan's rural infrastructure was unusually well developed at the start of its development push, compared to the situation in other developing countries at a similar stage of development. In 1960, 70 percent of rural households in Taiwan had access to electricity. In contrast, the access rate in Korea was only 13 percent in 1964. The density of paved roads was also much higher in Taiwan than in Korea. In the former, the density of paved roads was 76/1000 sq. kms. in 1962, while in Korea in 1960 it was 10/1000 sq. kms. Fortunately for Korea, large amounts of food aid from the United States ensured that agriculture did not need to play as important a role in its development process as it did in Taiwan's, or is required to do in most other developing countries at the present time.

Taiwan's irrigation systems were also managed extremely efficiently by world standards. Rural development scholars such as Robert Chambers are relatively optimistic about the chances of significant improvements in the performance of irrigation systems in South Asia and elsewhere if the correct policies are pursued. However, given the institutional and other barriers that stand in the way of improving the performance of the irrigation sector in countries such as India, and given the differences of opinion on the


114 These barriers include the endemic corruption referred to in the following chapter. For a rather mind-boggling expose of the extent of corruption in a state irrigation department in India see Wade, R. 1982. 'The System of Administrative and Political Corruption: Canal Irrigation in South India.' Journal of Development Studies 18 (3): 287-328.
strategies that are needed, the rate of progress could be slower than hoped.

Taiwan, and also Korea and Japan, were also fortunate in that their irrigation costs were significantly lower than they were in South Asia and other regions of the world. Because of factors such as the amount and distribution of their rainfall, the nature and spread of their rivers, and their temperature conditions, these three countries had a greater capacity to supplement their natural rainfall with relatively simple diversion-type works, small ponds, and lift irrigation. South Asian countries, in contrast, have been forced to rely more heavily on large storage systems.

9. Maximising the Positive Consequences of Investment

A fundamental problem with much of the agricultural-led and small-sector-led development literature and, indeed, with a good deal of the development literature in general, is that policy choices are often represented in far too stark terms (getting the prices right versus investment [see above], growth versus equity, urban versus rural [see the following chapter], etc.). In reality, many of the policies required to improve the performance of the agricultural sector also have a critical role to play in encouraging the development of labour-intensive industries, improving social wellbeing and increasing mobility between the rural and urban areas.

Initiatives that serve a variety of goals include: prudent macroeconomic policies such as positive real interest rates near the opportunity cost of capital, exchange rates near equilibrium, and sound fiscal policies, etc.. Subsidised interest rates and overvalued


exchange rates encourage the importation of capital-intensive technologies and the development of capital-intensive industries and farms in general, at the expense of more labour-intensive forms of industrial and agricultural production.\textsuperscript{117} Disciplined fiscal policies also ensure that governments (if they choose to) are able to sustain investments in areas such as rural infrastructure, agricultural research and development, and social programs such as rural primary education and health care.\textsuperscript{118}

A number of social programs also have a broader social and economic impact than many analysts assume. In fact, as Thomas Tomich, Peter Kilby, and Bruce Johnston point out, the development literature has generally overstated the mutual exclusivity of poverty-oriented and growth-oriented development strategies. As acknowledged in chapter 2, some poverty-oriented initiatives such as food subsidies have proved to be an expensive means of improving wellbeing. However, increased spending on other initiatives such as rural primary education and selective public health interventions, especially those targeted at women and small children, is not only an effective and cost-efficient way of improving well-being but is also beneficial to the overall growth of the economy and to the growth of the rural farm and non-farm sectors.\textsuperscript{119}

The availability of rural primary education is, for example, an important factor determining how quickly small farmers take up new technologies.\textsuperscript{120} Also, both increased spending on primary education and the selective health care initiatives just mentioned often result in a


\textsuperscript{118} Tomich, Kilby, and Johnston, \textit{op. cit.}, pp. 253-4 & 414-5.

\textsuperscript{119} For a review of the evidence see \textit{Ibid.}, pp. 260-76.

rapid reduction in fertility. This, in turn, as was the case in Hong Kong, Singapore, South Korea, and Taiwan speeds up the structural transformation of the economy. As discussed in chapter 4 (section 4.1), all four of these NICs experienced a rapid post-second world war decline in the birth rate. This was economically beneficial as it changed the dependency ratio and increased the female participation rate in the workforce.

Prudent macroeconomic policies and investment strategies that encourage the development of labour-intensive enterprises also allow developing countries to take greater advantage of knowledge spillovers and other phenomena associated with increasing returns to investment. As discussed in chapters 3 and 4, the increasing returns to investment phenomena identified in the new growth literature can even be utilised to mount a reasonably strong theoretical case in support of a 'big push' strategy. However, as Tomich et al. suggest, the economies of scale associated with 'big push' strategies are arguably far less critical to economic success in developing countries than the knowledge spillover externality. In their opinion, developing countries are more likely to obtain increasing returns from any investments they make when the development strategies pursued encourage the development of labour-intensive small and medium scale enterprises. This is because, among other things, less opportunity exists in more capital-intensive and technologically sophisticated enterprises for employees to take advantage of the knowledge they obtained to set up their own enterprises.

The Growth of the Bangladesh Garment Industry

The growth of the Bangladesh garment industry provides a good example of this process at work. Between 1980-81 and 1986-87 the garment industry's share in the total exports of the country grew from 0.5 percent to 28.3 percent. This was a growth rate of 106 percent a year. According to the World Bank economist Yung Whee Rhee, factors not normally considered

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121 Tomich, Kilby, and Johnston, op. cit., p. 415.

122 Given that small and medium-size enterprises are not necessarily more labour-intensive than larger ones (see above), a more valid statement would arguably be that developing countries are more likely to obtain increasing returns from any investments they make when the development strategies pursued encourage the development of labour-intensive enterprises.

123 Tomich, Kilby, and Johnston, op. cit., p. 220.
important by neoclassical economists played a critical role in this success. In 1978 the youngest Korean ‘Cheabol’ Daewoo, proposed a joint venture with the Bangladesh government in the areas of cement, tyre, leather goods, and garment production. The company's main interest was primarily in the first three areas; it included the garment factory mainly to gain the interest of the government in the project.124

As part of the project a collaboration agreement was signed between Daewoo and a domestic partner, the Desh Garment company. This resulted in one hundred and thirty members of the latter's workforce being trained at Daewoo's headquarters in Korea. The technical, marketing and managerial expertise obtained played a critical role in the success of the venture. The collaborative agreement was terminated early in 1981. Subsequently, 115 of the 130 workers who were originally trained in Korea (as well as other workers trained since) left the Desh garment company to either start up on their own or work in other firms. This provided a powerful medium for transferring expertise throughout the whole industry.125

Conclusion

As is apparent from the discussion in the previous two chapters, many ‘appropriate’ and ‘alternative developmentalists’ often demonstrate a remarkable unwillingness to consider empirical evidence and arguments that contradict their worldview. This unwillingness was further illustrated by the examination in the first section of this chapter of the literature advocating the widespread use of appropriate technologies. Much of this literature was shown to be naively technologically deterministic. Even the literature by more sophisticated AT advocates paid too little attention to the impact of macroeconomic policies on employment or, at least, made strong claims about the virtues of particular technologies which did not stand up to close scrutiny.

Following the discussion on appropriate technology, the remaining sections of this chapter examined the potential for increased investment in the rural sector to set in motion a


125 Ibid.
virtuous cycle of labour-intensive decentralised growth. For the reasons mentioned, the emphasis was especially on agriculture. One finding was that neoclassical economists generally placed too much stress on ‘getting the price right’ at the expense of other initiatives. For, while the freeing up of prices will undoubtedly often provide an incentive for farmers to produce more, factors such as the availability of new technologies and infrastructure not only provide the means to do so but also help cut costs and keep prices in check.

In many developing countries, such initiatives, combined with other initiatives such as prudent macroeconomic policies, increased spending on the needs of small farmers, rural primary education and the health needs of women and small children, were shown to have the potential to set in motion a more dynamic, equitable and decentralised pattern of development. Both the agricultural and SME sectors’ roles in the overall development process are unlikely, though, to be as profound as that envisaged by rural development scholars such as Mellor and Lipton. Both their approaches are underpinned by some relatively ‘long chains of reasoning’ which contain some potential weak links. This includes the assumptions they make about the spending patterns of low-income earners. As the following chapter shows, another problem with Lipton’s model, especially, is that it is based on some increasingly outdated notions about what constitutes a rural or an urban area.