

Agricultural economists and world poverty: progress and prospects[†]

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New development paradigms come and go, seemingly with increasing rapidity, yet poverty remains the scourge of the developing nations. As we enter the new millennium, we fear that still more development fads and fancies will emerge, to be taken up and then dropped by the development community. These swings in fashion bring with them the danger that the ‘basics’ of effective development strategies for poverty reduction will be neglected. In this article, we advance some personal and perhaps controversial views about the virtues of getting agriculture moving as a means of reducing poverty, and about the role that agricultural economists can and should play in that endeavour.

1. Introduction

Poverty, hunger and environmental degradation are among the foremost challenges the world now faces. While these three are usually intricately related, from a humanitarian viewpoint, poverty is the key concern. Hunger is a consequence of poverty and poverty may be both a cause and a consequence of resource degradation.

Currently, there are an estimated 1.2 billion people living in absolute poverty, defined by the World Bank as those earning less than US\$1 per day.¹ This number increases to 2.8 billion if the poverty line is shifted to US\$2 per

[†] This is unashamedly an opinionated piece, spawned by our development experience and by our concern about the most important issue in development — the reduction in world poverty. Consequently we have not tried to cross every ‘t’ and dot every ‘i’ in the argument. Our aim, however, has been to provide what we hope will be food for thought for those agricultural development economists with open minds.

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¹ For convenience, a money measure is used here to quantify the extent of poverty. However, we agree with the argument of Sen (1999) that poverty should be seen as a deprivation of basic capabilities (caused by lack of entitlements) rather than merely as lowness of income.

day. Nearly 800 million of the world's poor are malnourished and some 70 per cent of them live in rural areas (TAC 2000; UNDP 2000; World Bank 2000a). The incidence of poverty varies considerably, with most of the world's poor located in South Asia, Sub-Saharan Africa, East Asia and the Pacific. The number of people in absolute poverty is also increasing. In Indonesia, for example, it is estimated that, since the 1997 financial crisis, the incidence has risen by 10 per cent, implying about 20 million new recruits to the ranks of the poor (World Bank 1999b). In other parts of East Asia such as in Thailand, Korea and Malaysia, the impact of the crisis on the less well-off has likewise been severe.

Recent population projections show that the rates of population growth are slowing with world population now expected to peak at around 8.5 billion in about 2050. This change in the projections is primarily a result of fertility declining more rapidly than previously expected in both more developed and less developing countries (MDCs and LDCs) (Eberstadt 2000). Nevertheless, the population explosion is still a concern. According to TAC (2000), between now and 2020, the world's population will increase by about one-quarter from 6 billion to 7.5 billion. About 98 per cent of the increase will occur in the LDCs (IFPRI 2000). Countries with high population growth rates are also those where poverty is the most prevalent and is likely to increase unless and until income growth, specifically of the poor, is fast enough to outstrip the growth in numbers.

In Sub-Saharan Africa, poverty levels remain disturbingly high. The World Bank (2000a) has estimated that, in 1998, about 75 per cent of the 630 million people in this region were living on less than US\$2 a day. Of these, about 45 per cent were existing on less than US\$1 per day. Some 70 per cent of the very poor are women (AfDB/AfDF 2000). Many parts of the developing world, particularly in Africa, have been and are currently ravaged by conflict. Many of these conflicts are propagated by loot-seeking warlords for whom the poor have no alternative but to serve as cannon fodder if their families are to be fed (de Soysa and Gleditsch 1999). The financial crisis of 1998 has also affected Africa, albeit to a lesser degree than Asia, with the impact reflected in lower prices for many export commodities, slower world-trade growth and increased competition from countries with depreciated exchange rates. These combined effects have slowed the growth of national incomes. Because these countries have high rates of population growth characteristic of poor countries, per capita incomes have declined, implying an increase in the incidence of poverty (World Bank 1999b).

A number of countries in Latin America, particularly Honduras and Nicaragua, have recently experienced devastating natural disasters. Brazil has also been recently rocked by financial crisis. Parts of Eastern Europe, mainly Russia, the Ukraine and Romania, are also expected to experience

sharp declines in growth and increases in poverty, while the Middle East and North Africa are expected to have negative GDP per capita growth and corresponding increases in poverty levels (World Bank 1999b).

While the numbers of people in absolute poverty have decreased in some countries in recent years, the scale of the problem remains alarmingly high. For example, in East Asia and the Pacific (including China), the number of poor people decreased significantly over the decade to 1998. However, absolute poverty is still high at 278 million. In South Asia (including India), absolute poverty was estimated to have increased from 474 million in 1987 to 522 million in 1998 (TAC 2000; World Bank 2000a).

Many countries are also currently experiencing water scarcity and increased water competition — problems which are expected to worsen in the coming decades. Seckler *et al.* (1998) predict that about one-third of the world's population will begin to experience severe water scarcity by 2025. Most of the increases in agricultural productivity attributed to the green revolution have been linked with improved water availability via irrigation. Impending problems of water scarcity are therefore expected to affect the agricultural sector adversely, with the potential to worsen poverty levels in rural areas.

Overall, the reality is that, despite fifty years or so of general economic growth (Maddison 2000), poverty is still a major problem. As the World Bank (1999a) has pointed out, the persistence of poverty remains the greatest challenge of our time — surely an outrageous outcome after so many years of effort.

The magnitude of the poverty problem is such that, as reported in the press, the recent millennium summit of world leaders agreed to make this one of the four priority areas for action. But making a commitment is one thing; putting words into practice is another. Hence a main challenge in the new millennium is to find the key to unlock the chains that imprison the poor in so many parts of the world.

2. Economic growth, poverty and agricultural development

In the past, it was believed that rapid economic growth would solve the poverty problem. However, experience has shown that, while economic growth is necessary, on its own, it is not sufficient to bring about substantial reduction in poverty. Moreover, similar rates of economic growth can result in quite different impacts on poverty, suggesting that factors other than growth are important. In this section, we shall discuss how agricultural development through broad-based economic growth can be harnessed to fight poverty.

2.1 Strategic issues in poverty reduction

Without doubt, economic growth in many LDCs over recent decades has brought substantial benefits. However, as the numbers in the previous section show, increased GDP has failed to lift large numbers of poor people above what is surely a very minimal standard of existence.

There is clear evidence that growth in GDP per capita is associated with reductions in poverty, but there are big differences in country experience. Serageldin (1993) has examined the relationship between growth of GDP and percentage reduction in the number of people in poverty. He shows a strong positive association across the 13 countries for which data were available. However, he also showed large differences in poverty reduction between countries with similar levels of GDP growth. The results clearly point to the need for both pro-growth and anti-poverty policies. For poverty alleviation, growth alone is not enough if the benefits are concentrated in the hands of the few. In the words of Serageldin:

Undeniably, a sound *broad-based* development strategy is required to have a significant effect on the reduction of poverty. The comprehensive strategy, however, must be supplemented by special attention to the needs of the ultra-poor, those who are truly hungry, whose condition is beneath any definition of human decency. It is not just sensible economic and political and social policy; it is a moral imperative. (1995, p. 38)

Central to poverty alleviation is the concept of improving the well-being of people. It follows that human resource development is a critical ingredient in the fight against poverty — as Sen (1999) has eloquently argued, there is a nexus between development and economic growth of a country and the health and education of its people. While productivity is driven by technological progress, the pace of such progress is in turn largely driven by investments in physical and human capital. No country can develop without investing in its most important resource — its people.

Human resource development entails promoting good education, health care, nutrition and family planning. Provision of free health and education services is obviously a valuable direct benefit that is especially important to the poor. Because most of the poor are women, human resource development must encompass improving the status of women and girls. Moreover, education is a key to changing people's lives as it provides knowledge and skills. Knowledge is power — power to change lives.

Another key feature of a poverty-reduction strategy is that GDP growth must be broad-based. In predominantly agricultural countries, where the majority of the people are in agriculture, such broad-based growth must obviously include agricultural development. Indeed, we

argue below that, in many LDCs, agricultural development is crucial for broad-based growth and poverty reduction. However, alone it may not be enough. Issues of resource ownership, particularly inequities in land tenure, need to be addressed and rural infrastructures improved. According to Serageldin (1993), the value of such a broad-based approach to rural development is demonstrated by progress in Botswana, Kenya, Mauritius and Zimbabwe.

A poverty-reduction strategy must also account for the fact that, in most LDCs, the majority of the poor are landless or near-landless rural workers. Because their labour is all they have to sell, they can benefit most from measures to increase employment in rural areas and rural centres. We argue below that raising smallholder productivity and incomes does this via high multiplier effects.

2.2 Agricultural development and poverty

In our view, for most LDCs, agriculture-led development offers the best strategy for poverty alleviation through broad-based economic growth. Most LDCs are highly dependent on agriculture with production predominantly in the hands of large numbers of small-scale farmers (TAC 2000). In some countries in Africa, between 50 to 80 per cent of the population depend on agriculture for their main source of income. Moreover, most of the poor live in the countryside. Hence, rural development founded on growth of output and incomes of the many small-scale farmers can help the rural poor directly. Improving opportunities in the rural sector will also discourage too rapid migration to urban areas — currently an increasing problem in many LDCs.

Another argument is that, at least in the early stages of development, it is seldom realistic to raise the capital needed for industrial development at a pace consistent with the likely growth in the workforce. It follows that expanding productive rural employment offers the most efficacious, cheapest and perhaps only means of providing the poor with rewarding employment. In addition, the incremental capital-to-output ratio is usually much more favourable in agricultural development than in most forms of urban-based development. As pointed out by the World Bank (1997, p. 2), ‘sustained nonagricultural growth, particularly in the poorest countries, is not likely without first addressing agriculture’.

Agricultural production is more labour-intensive and is less import-intensive than manufacturing production. Increases in agricultural productivity can create demand for labour, resulting in income and employment expansion in rural areas. Importantly, it seems very likely that rural people spend a higher proportion of any increased income on labour-intensive,

locally-produced goods and services.² The direct and multiplier effects on poverty of growth in incomes of rural people are therefore likely to be more favourable than are those effects of income growth of the urban well-off. Multiplier effects of agricultural development were found to be about 70 to 80 per cent of the additional economic activity in the cases of Malaysia and of Sub-Saharan Africa (Bell *et al.* 1982; Haggblade *et al.* 1989). Similarly, Delgado *et al.* (1998) found that adding a dollar to farm income would increase the income of all local households by \$2.88 in Burkina Faso, \$1.96 in Niger, \$2.48 in Senegal and \$2.57 in Zambia.

The jobs created from higher farm incomes are the types of work that rural landless labourers can take up — the very people who typically make up the bulk of the poor. Moreover, the small, low-investment business opportunities that arise from increased demand for local goods and services can be the nursery for the industrial or service industry giants of the future.

In case there should be any misunderstanding, it is important to emphasise that advocacy of a broad-based, agriculture-led strategy is not some form of agricultural fundamentalism. The aim is not to develop agriculture at the expense of the rest of the economy. Rather, the reverse applies. Because of the favourable multiplier effect of agricultural income growth, the faster the agricultural sector grows, the faster will the non-agricultural sectors be stimulated to grow. In fact, this produces the seeming anomaly that the faster agriculture can be stimulated to grow, the faster the share of agriculture in total GDP will fall.

The idea that agriculture can be the engine of overall growth is not new. In fact, this strategy was vigorously advocated by Mellor (1966), supported by several development specialists in the early 1970s (Hayami and Ruttan 1971; McNamara 1973; Lele 1975). It has been tried, but does it work?

Subject to the proviso noted below, the answer is that it does work. It was an agriculture-led strategy that brought success in Taiwan, Japan, Malaysia, and South Korea. According to President Lee Teng-hui of Taiwan (Mellor 1995), the growth of agriculture in Taiwan laid a firm foundation for industrialisation, in turn leading to broader economic development. The People's Republic of China's remarkable annual economic growth rate of 9.5 per cent in the 1980s to 1990s was preceded by rural and agricultural policy reforms (World Bank 1997; Lin 1998). Indonesia and Thailand, likewise, experienced strong agricultural growth prior to the period of high non-

² While we have not come across any careful research that validates this important proposition, there is supporting evidence, mentioned in the main text, showing relatively high multipliers for rural income increases. Moreover, we argue that the proposition follows from the lower average incomes of rural vs urban dwellers and from the higher prices and more restricted availability of capital-intensive goods and services in rural areas.

agricultural growth (World Bank 1997). By giving initial priority to agriculture and the rural sector, these countries were able to stimulate growth and reduce poverty. Hence, we are persuaded that, in predominantly agricultural LDCs with reasonable potential for agricultural development, emphasising this sector in the early stages of development offers the best way to the attainment of overall growth and rapid poverty reduction. The main proviso is that the initial conditions need to be reasonably equitable if significant benefits are to flow to the poor. If this is not the case, as when land is concentrated in the hands of a few, some form of asset redistribution, such as land reform, may be a prerequisite for successful poverty reduction through agricultural development.

3. Getting agriculture moving

Not only is there evidence that agriculture-led development works, but there is also enough experience to state how to get agriculture moving. While the lists of priorities offered by different commentators vary in some detail, the following constitute the essentials:

1. Sound macroeconomic policy and management, conducive to growth and development, complemented by good general governance.
2. Investment in the development of improved farming technology that will enhance productivity, coupled with the provision of the necessary complementary inputs.
3. Development of improved rural infrastructure to reduce farmers' transaction costs for input acquisition and output marketing.
4. Institutional reforms to make markets work better and to deal effectively with important market failures (including missing markets).
5. Investment in health and education to create capable and healthy rural people.

We enlarge briefly on each of these strategic elements in turn below.

3.1 Adoption of a policy environment favourable for growth and development

Any purported support of agricultural development will only succeed if economic biases against the agricultural sector and its poorer members are largely removed and if land, monetary and trade policies are put in place that are conducive to economic growth, including growth in the agricultural sector. If the policy environment is right, productive activities will expand, productivity will increase, income levels will rise, capabilities will be enhanced and poverty will be reduced. Moreover, experience shows that the reverse is also true. Feudal land-tenure systems are not conducive to

agricultural growth. Macroeconomic policies that seriously discriminate against agriculture, whether intentionally or not, almost always mean that efforts to get agriculture moving fail. Among aspects needing careful attention are interest rate and exchange rate policies, progressive liberalising of domestic and international trade, and adoption of domestic policies that provide incentives for private initiative and investment (Rola-Rubzen and Hardaker 1999). A well-managed, honest and stable government is also very important not only in attracting foreign investment but also for general stability and effective administration.

The World Bank (1991, p. 82) related *ex post* average internal rates of return for a sample of development projects to the types of trade policies, foreign exchange premiums, real interest rates and fiscal deficits in the countries concerned. Policy distortions of these kinds were found to have the expected negative effects on project performance. While agricultural projects were particularly badly affected by high exchange rate premiums, they did about as well as all public projects when macro settings were sensible. In addition, public projects, including agricultural projects, generally returned more on average than all private projects.

A strategy of industrial fundamentalism and its related policies, such as manufacturing protectionism and an overvalued exchange rate, are counter-productive and will preclude agriculture-led development. For example, studies have shown that macroeconomic policies in the Philippines such as distorted trade arrangements and exchange rates have had substantial negative effects on the agricultural sector (David 1983; Bautista 1987; Balisacan 1991). The industrialisation strategy caused inefficient resource use, repressed employment generation, hurt the agricultural sector and did nothing to help the poor.

In China, the systematic correction of the over-valuation of the yuan during 1988–90 helped improve export prices in domestic terms and thereby farmer incentives. According to Moinuddin (1992), the depreciation of the yuan in real terms during this period benefited the rural sector by improving farmer incentives, leading him to conclude that trade policies have important policy implications for poverty alleviation.

Reasonable macroeconomic stability through prudent policy reforms was a critical element of the success of the so-called East Asian ‘miracle’ economies (World Bank 1993). In Sub-Saharan Africa, on the other hand, slow growth can be mainly attributed to bad macroeconomic policies exacerbated by political instability and bad government administration (Easterly and Levine 1995).

3.2 Ensuring access to productivity-enhancing technologies

For the agricultural sector to become the engine of overall growth, agri-

cultural productivity must increase on a broad scale. Only then can there be a widespread rise in farm incomes to 'prime the pump' for more general growth. Ensuring access to suitable productivity-enhancing technology will increase farm production and incomes and will therefore benefit both rural and urban people. Essentially this means investing in agricultural research, at least to the level where the national agricultural research capacity is strong enough to take up the results of work in international agricultural research centres and in national research programs of other countries and to adapt those findings to suit local conditions.

Investments in agricultural research for technology development have typically been found to show high rates of return. In the most comprehensive study to date, Alston *et al.* (2000) reviewed 292 studies reporting a total of 1,886 rate-of-return estimates for agricultural research and extension projects. While wide dispersion was evident, the average (median) rate of return was 100 (48) per cent for research, 85 (63) per cent for extension, 48 (37) per cent for studies of research and extension jointly and 81 (44) per cent for all studies combined. Furthermore, agricultural R&D can help reduce poverty. For example, for India, Fan *et al.* (1999) found that increasing investment in agricultural research and extension by 1 per cent raised productivity growth by 6.98 per cent and reduced rural poverty incidence by 0.48 per cent. Hazell and Ramasamy (1991) also showed that, in South India, absolute poverty declined in areas where the green revolution occurred. They found that landless labourers and small-scale farmers gained proportionally as much as large-scale farmers. This was as much a result of second-round growth effects in the local non-farm economy as of initial increases in income brought by increased productivity.

The evidence therefore supports the proposition that giving priority to development and uptake of improved farming technology represents good use of scarce investment funds. Of course, where technology needs complementary inputs such as irrigation, investments in appropriate public works may be needed before the increased productivity can be achieved. Input markets for other key inputs such as fertiliser and credit may also need to be developed. Again, such investments are likely to give good returns.

An emerging concern in the scientific community is the declining growth in productivity of the agricultural sector — see, e.g., Rosegrant and Pingali (1991), Pingali and Rajaram (1998). Coupled with growing population, stagnating productivity means lower per capita farm incomes and no stimulus to overall growth from agriculture. Worse, it may herald higher food prices and declining food security for poor households. Such a situation is the antithesis of what is needed. Governments need to be persuaded of the importance of promoting effective agricultural research that will boost productivity. That requires significant and sustained funding of agricultural research from both LDC governments and aid donors.

In particular, modern biotechnology offers great possibilities for developing countries. Recent developments in genetic engineering make possible the development of varieties that are insect- and weed-resistant and perhaps vitamin- and nutrient-enriched (CGIAR 2000; Serageldin and Persley 2000). For semi-arid regions, genetic engineering offers possibilities for the development of drought-tolerant varieties. While such developments raise questions about property rights, health and safety issues and environmental risks, their potential benefits to the world's poorest must not be ignored or discounted (Cohen *et al.* 1999; Juma and Gupta 1999; Lipton 1999; Pinstруп-Andersen 1999). Research and development in the area of biotechnology, as well as the related issues mentioned above, are therefore critical.

3.3 Developing rural infrastructure

In many LDCs, there is a marked paucity of well-developed rural infrastructure such as roads, bridges, storage and communication facilities and, in some rural areas, basic electric power. The lack of infrastructure impedes the proper functioning of rural markets, the flow of information and the efficient movement of commodities from the farm to the market. In the extreme, poor infrastructure may so add to transaction costs that no effective markets may exist for some products and inputs. In fact, as argued by Olson (2000), it is missing markets rather than market failure that distinguishes very poor countries from the rest. Investments in rural infrastructure may be a prerequisite for effective markets to develop.

Development projects for the provision of needed rural infrastructure typically show high rates of return, provided only that the infrastructure is of appropriate design and construction. The World Bank (1995) reported that the average economic rate of return on transport projects was 22 per cent. Fan *et al.* (1999) found that, in rural India, additional government spending on roads had a larger effect on poverty reduction than any other form of government spending. They found that every Rs 1 million increase in road investment would lift 165 poor people above the poverty line. That is, an increase of Rs 100 billion in government investment on roads would decrease the incidence of rural poverty by 0.87 per cent. Such investments were also found to have had significant impacts on productivity growth, representing what the authors call a 'win-win' strategy.

The impact on agricultural production of improvements in rural infrastructures that increase access to markets was illustrated in a study of 85 districts in 13 Indian states (World Bank 1994). It was found that lower transport costs led to substantial agricultural expansion by making it easier for farmers to bring their goods to markets. Such investments also facilitate

the development of the non-agricultural sector and are especially effective in reducing rural poverty because they have a direct effect on employment during the construction phase (IFPRI 1998; Fan *et al.* 1999).

It is not only hard infrastructures that have positive impacts. A study conducted by Wanmali (1992) of 535 villages in India showed that hard and soft rural infrastructures³ helped improve total production and productivity of agriculture and produced a more equitable distribution of the benefits of the green revolution. Again, such investments represent good use of scarce funds.

3.4 Institutional reform

Institutional reform has much to do with striking the right balance between private and public involvement in development, especially with regard to agriculture. Most LDC governments probably interfere too much in the operation of the economy with the result that administrative failure is common. Scarce government resources, especially scarce resources of competent and experienced personnel, are stretched too thinly. The prescription, in many cases, is to leave to the private sector those things that private enterprise can do well, concentrating government effort on doing well those things that are the proper domain of government. There are areas for which the private sector is well placed, such as input and output marketing, some research and technology development, and in some instances, knowledge-sharing services — see, e.g., World Bank (1999c). The private sector has been increasingly seen as a potential player in parastatal reform. However, as the World Bank (1997) hints, in nominally market economies there is also danger of replacing a relatively transparent and efficient parastatal with an opaque private monopoly. Deciding which things best fit in the private or public domains is not easy and will vary according to circumstances, such as the efficiency of the public service and the extent of development of the private sector.

The design of interventions to correct for failing or missing markets is central to institutional reform. Market development is an under-recognised need in promoting agricultural development. Farmers in LDCs are often cut off from needed inputs such as credit or from potentially lucrative markets for their produce. The reasons can include poor infrastructure, imperfections in information flow, an inadequate legal framework for trade, or government-imposed impediments to trade and investment. Marketing

³ Hard infrastructure includes roads and bridges, irrigation facilities and electricity. Soft infrastructure refers to the services sector including transport services, finance, input distribution and marketing services (Wanmali 1992).

systems research (Fleming and Hardaker 1993) can provide the means to identify and solve problems in market development.

Improved risk management can also be a part of institutional reform. Because the rural poor are heterogeneous in terms of their asset portfolios, their income-generating activities, their access to infrastructures, and their access to markets and support services, they are vulnerable to intra- and inter-seasonal changes. Better risk management can lead to improved growth and poverty reduction. There are three key players in risk management: the public sector, markets and civil society (Siegel 2000). As Siegel points out, the public sector has a critical role in allowing and facilitating markets and, equally importantly, civil society to function efficiently and equitably, thereby facilitating growth and reducing the vulnerability of the rural poor to the risks they face.

Similarly, many resource management and environmental problems are characterised by market failure — including market absence. The design of measures to deal with such forms of market failure as externalities and common property or open-access resources should be part of the toolkit of any well-trained agricultural and resource economist. Good progress has been made in devising effective measures for use in MDCs, with Australian agricultural and resource economists in the forefront. However, more work is needed to find solutions to such problems that will work in LDCs where administrative capacities are lower.

Finally, but most relevantly in the context of this discussion, poverty can be seen as a form of market failure requiring institutional change and government intervention. That is to say, if we start from the position that markets usually fix everything, and if social welfare maximisation is the objective, it follows that, if poverty persists in market economies, then the market is failing. This happens because of externalities or other forms of market failure. For example, the poor have little market power to bid for what they need to lift themselves out of poverty. Likewise, they often have curtailed property rights. Sen (1999) has argued convincingly that poverty is caused by lack of entitlements and should be seen as the deprivation of basic capabilities rather than merely as lowness of income.

Balisacan (1993) found that the incidence of poverty is correlated with the size distribution of operational landholdings. Hence, it might be pointless to try to tackle poverty via agricultural development in situations where the distribution of land rights is highly inequitable. Some form of land reform is usually essential in such cases where market forces patently fail to correct unacceptable inequities. Redistributing land via land reform is, however, not an easy task. It is likely to be met with resistance by the landed elite, who are also usually politically powerful. Because there are different conditions in each country, there are no universally applicable rules about how to imple-

ment land reform. The best strategy will depend on the circumstances prevailing in individual countries, such as the magnitude of landlessness, the resources available to carry out reforms and the political will of the government of the day.

3.5 Developing healthy, capable people

We have already mentioned the importance of human development for poverty reduction. In the context of agriculture-led development, the potential benefits from improved farming technologies and rural infrastructure development can only be fully captured if people are capable of using them. That means giving reasonable priority to rural health and education services. Improving productivity and marketing in agriculture will increasingly require that farm people can at least read and write. There is also a need for a cadre of well-educated and able people to fill key specialist roles in agricultural and rural development agencies and the private sector.

In a wider context, human development is important for poverty alleviation. Their own labour is usually the most important and often the only asset of the poor. Therefore improving their skills and capacities is likely to have a positive impact on their ability to undertake productive work and increase their income. Investments in human capital such as education, health and nutrition, family planning and training are therefore critical and likely to bring about long-term reductions in poverty. A review conducted by Behrman (1990) showed that rates of return to schooling are fairly high, particularly for primary schooling, suggesting that expansion of such schooling should be given high priority in developing countries.

4. What went wrong in the fight against poverty?

If agriculture-led development is the key to poverty alleviation, why is it not happening in so many countries?

4.1 Urban bias

Thou source of all my bliss, and all my woe,
That found'st me poor at first, and keep'st me so.
(Goldsmith (1770), *The Deserted Village*)

Arguably, one of the reasons for the less than spectacular success to date in the fight to reduce poverty is the urban bias of most governments and their advisers. Most of the fruits of development are evident in urban areas — paved roads, good communication networks, schools, and health and general services.

But it is not uncommon to find rural areas lacking in even the basic services — all-weather roads, electricity, clean water, health services. Roads in many rural areas are often in bad shape, if they exist at all. Communication services such as telephones are often missing. As we have argued, poor infrastructure in rural areas decreases market opportunities and the terms of trade of farmers and thus limits their ability to improve their incomes.

But it is not only investments that are urban-biased. Policies are also often biased against the agricultural sector. While the industrial sector often benefits from subsidies and protection, this is usually at the expense of the agricultural sector. With limited resources, government expenditures strongly biased towards the industrial sector must imply an equally strong bias against agriculture. Other distortions, such as over-valued real exchange rates, maintained by various types of import control and export taxes, represent implicit taxes on export-oriented and import-competing sectors such as agriculture. Moreover, in many countries agriculture is also subject to statutory marketing arrangements often designed to keep food prices low, to the disadvantage of farmers. Because they are often granted monopoly powers, such statutory bodies often become more and more inefficient and sometimes seriously corrupt, imposing further costs on farmers.

Given the real politics of most developing countries, it is unrealistic to assume that urban bias can be eliminated. And, of course, it would not be sound policy to bias resource allocation too strongly to the rural areas to the neglect of the urban areas. However, it is clear that a too strong urban bias eliminates the chances of success of an agriculture-led strategy, whatever the politicians of that country may claim.

4.2 Ineffective aid

We promise according to our hopes,
And perform according to our fears.

(La Rochefoucauld, *Maxims* 38)

Aid is one of the ways by which rich countries can help LDCs. In theory, aid should be beneficial in redressing problems of capital shortage in poor countries. More investment should raise labour productivity and thence increase incomes and reduce poverty. There are also equity and humanitarian arguments why richer countries should help the poorer. The success of aid, however, is quite varied among different recipient countries. For example, the positive impact of aid is apparent in East Asia including Japan, Taiwan, Korea and Singapore. However, in some countries such as Zaire, Kenya and Bangladesh, aid has done little to lift the people out of poverty — see, e.g., Birdsall *et al.* (1995) and Easterly and Levine (1995). So why does aid fail in some countries and succeed in others?

Reasons why aid fails include poor project selection and preparation, inappropriate technology and management imposed by donors, lack of government commitment and ineffective management and implementation in recipient countries. In some cases, the time period of projects is too short. While the norm at the World Bank is about five years, drifting out to an average of seven years for investment projects (J.R. Anderson 2000, pers. comm.), most projects funded by aid agencies and multilateral/bilateral organisations run for about three years. That is often too short to achieve much, if anything. In some cases there is lack of recipient and donor commitment. Combined with incompetence and corruption in some recipient countries, aid in such countries is bound to be of limited success, if not doomed to failure.

Aid that fails is not just a waste of money — it is positively harmful. It causes macroeconomic distortions by contributing to an over-valued real exchange rate which, as noted, is effectively a tax on local primary producers. Aid can also lead to inappropriate incentives, especially for politicians and senior public servants. It often leads to rent seeking, even serious corruption. Even without that, it may seriously strain the limited capacities of local administrations and distort development efforts away from what is important to the latest fads or fancies of the donors.

For better or worse, the priorities of donors are seldom the same as the priorities of national governments, so donors often prefer to pick their own projects and seek to impose their own priorities. Because such actions are often undermined by the fungibility of aid dollars, major international donors nowadays often attach ‘conditionalities’ to soft loans or other aid, usually requiring recipient governments to follow ‘neo-liberal’ economic policies. The merits of particular conditions imposed can be debatable, as is the propriety of donors seeking to impose their own views on national governments. At worst, imposition of conditionalities can be seen as neo-colonialism; at best, it may be effective in changing policies and practices of recipient governments for the better. Too often we fear that conditionalities merely divert national administrations away from important business to the task of finding ways around the imposed rules.

4.3 Bad governance

He serves his party best
who serves the country best.
(R.B. Hayes, 1877)

We define governance as the way in which governments manage the country’s social and economic resources. It has social, economic, and political dimensions. Good governance, broadly speaking, includes sound

management of matters affecting the economic and social well-being of the people.

Forms of bad governance include inequitable land rights, ineffective fiscal and trade policies, corruption, crony capitalism, inefficient administrative systems, and weak checks and balances in public–private relations (ADB 1998; Dollar and Pritchett 1998). According to Dollar and Pritchett, corruption and the inability to maintain minimum standards of civil peace have proved to be a great hindrance to poverty alleviation. Indeed, high poverty incidence is both a direct consequence and one of the causes of conflict and destruction wrought by loot-seeking warlords in war-torn countries such as Burundi, Congo, Liberia, Nicaragua, Rwanda and Sierra Leone (de Soysa and Gleditsch 1999).

Good governance can have a significant impact on domestic and foreign investments and on economic growth — see, e.g., Putnam (1994), Mauro (1995), and Wei (1997). The evidence is also clear that governance makes a difference to whether a development program will succeed or not (Dollar and Pritchett 1998). Success of aid in countries such as Botswana and Uganda has been attributed to a large extent to good governance and sound economic management. Dollar and Pritchett found that, in countries where economic management was sound, an increase of \$10 billion in aid would reduce the number of people suffering poverty by 25 million a year. On the other hand, in countries with weak management, the same increase in aid would lift only 7 million people per year out of poverty. Dollar and Pritchett show how much more could be done to reduce the global incidence of poverty by concentrating aid funds where they do most good.

The first prerequisite for aid to be successful is to identify good projects. That should really be a matter for national governments. We know what types of projects are more likely to succeed and what types often fail. For example, well-designed rural infrastructure projects often bring large benefits. So do well-planned and executed agricultural research and extension efforts, as discussed above. As also discussed above, such projects are not only efficient in the sense of yielding high rates of return; they can also bring benefits in the fight against poverty and suffering. The green revolution, together with good policies and infrastructure, led to agricultural productivity increases that helped avert famine in Asia.

On the other hand, there is evidence that projects to promote the uptake of ill-planned or inappropriate farming (or forestry) technologies seldom work (Donaldson 1991). For example, the Majjia Valley Windbreak Project in Niger, initially presented as a success (Harrison 1987), was later found to have had negative effects on participating farmers (Leach and Mearns 1988; Kerkhof 1990). Another example is alley cropping, which was initially pronounced to be a low-cost sustainable agro-forestry system. Pretty (1995)

pointed out that few farmers, if any, have adopted the system as designed. Success only occurred where farmers were able to take one or two components of alley cropping and adapt them to their own farming system.

For any aid project to succeed there must be a strong commitment on the part of governments to ensure that aid money is used appropriately where it was intended and that corruption is controlled. Similarly, aid will have more chance of success if there is proper monitoring by both donors and implementing agencies, with mechanisms in place to fix any problems identified.

4.4 Fads and fancies

The hardest thing to learn in life
is which bridge to cross and which to burn.

(L.J. Peter, in *Quotable Quotes*, 1998)

The search for the 'magic cure' has lured the development community to try different strategies and approaches to eliminate poverty. The result has been a succession of development fads and fancies. Enthusiasts have sometimes been too quick to jump onto passing bandwagons which, unfortunately, too often then carry them off in the wrong direction, wasting resources and dampening enthusiasm (Simmonds 1991). There are incentives for those in the development 'game' to try to make a name for themselves by devising new prescriptions, leading to an overzealous preoccupation with novelty and too many half-baked ideas that are ill-suited to LDC situations.

Historical reviews of development strategies and development projects reveal a sequence of approaches eagerly embraced and then discarded by the development community. The World Bank (1997, p. 33), for instance, lists a number of failed approaches. Among the list are integrated rural development, which failed by being excessively top-down; credit support programs to specific crops or sectors through agricultural banks, which suffered from low repayment rates and proved to be unsustainable; and frontier settlement to provide access to farmland for growing populations. The latter proved costly and some resettlement areas were later found to be unsuitable for farming (World Bank 1997).

Hyden (1990) has given one account of the many paradigm shifts among the development community working in Sub-Saharan Africa. The evolution of ideas started with growth via central government involvement leading to a focus on trickle-down effects and then on to integrated development with high input of public management. Next came decentralised administration, followed by 'small is beautiful' relying on community organisations, and leading to a focus on participation. Then came creating enabling environments

and use of intermediary organisations, leading finally back to a new focus on growth again. See also Delgado (1997) for a similar account. Such shifts in priorities clearly show the impact of fads and fancies.

Let it be clear that we are not against new ideas in development thinking. What we are cautioning against is the danger of too quickly adopting the latest new prescription without adequate examination of its validity. As Simmonds (1991) has argued, bandwagons are expensive and damaging because resources are diverted from genuinely useful endeavours to the pursuit of trendy irrelevance. Tackling poverty is never easy and if there were truly any 'quick fix' solutions, the problem would surely have been solved long ago.

In an effort to make projects and programs more effective, people participation is a current fashion. Participation of intended beneficiaries is no bad thing if it works. But we do need to be aware of its merits and limits. While increasingly considered in the development community as a critical factor in the success of a project (Robb 1999; Sutherland *et al.* 1999), 'participatory' projects are more difficult and significantly more expensive to run. They also carry the risk of being hijacked by a small group intent on advancing their own agenda. Moreover, 'participation' comes in many forms (Pretty 1995) and hence we must be wary of blindly adopting 'participation' in development projects without being clear about what it means and how it works. If participation is passive or manipulative or simply a pretence, it is unlikely to succeed. Likewise, participation for material incentives such as contributing labour in return for food, cash or other material benefits may well vanish as soon as project funds dry up. As Rahnema (1992) points out, projects that engender dependence are unlikely to have long-lasting positive effects on people's lives.

Likewise, following the success of the Grameen Bank, micro-credit schemes have become fashionable. Yet here too caution is needed. Such schemes require careful design, strict cost control and a high degree of commitment from borrower members. What works in one community under one set of economic and social circumstances may not work in another, so that it is not easy to 'wheel the bandwagon' around the developing world. Moreover, credit provision alone is not necessarily the solution to the problems of the rural poor. A number of studies have shown that low-income farm households are capable of generating savings (World Bank 1999c). For instance, when rural banking was extended effectively to rural areas in Indonesia before the recent crisis, savings heavily outweighed the demand for credit. Likewise, Kim (1982) found that most households in developing countries in Asia are able to generate savings. What was lacking were effective mechanisms for utilising savings that would enable accumulated capital to be productively invested. Hence, micro-finance schemes might be better organised as financial mechanisms for harnessing savings

rather than as mere conduits for the transfer of funds to small-scale borrowers, some of whom may not have the capacity to invest profitably.

Similarly, the currently fashionable issue of sustainable development must be approached prudently. Much of modern concern for the environment can be seen to be a privilege of the rich rather than a concern of the poor. It seems unreasonable for the rich, who use most of the resources of the world and cause most of the pollution, to impose their concerns about the environment on the poor. For instance, blindly extending practices such as the adoption of sustainable technologies that do not require fertilisers and improved varieties to small-scale semi-subsistence farmers in Africa may harm them rather than help them. As Borlaug (1992) points out, future food requirements in LDCs cannot be met through reliance on new and complex low input-low output technologies that are impractical for farmers to adopt. Similarly, Paarlberg (1994) has argued that, in Africa and in dry or upland Asia, the only way to boost production in pace with consumption needs is through higher input use and increased yields. Citing the case of India, he argued that, if India used traditional low-yield farming techniques, an additional 36 million ha of cropland would have been needed, resulting in further deforestation, substantial habitat destruction and soil erosion.

Projects based on the latest fashions and fads in development thinking can serve as distractions from tackling the basic elements of the development strategy that we know works. According to the World Bank, one of the reasons for the waning international commitment to agriculture and rural development is the diversion of funds to environmental projects:

[D]evelopment assistance increasingly diverted finance to projects in environmental protection and natural resource management. Unfortunately, the link between environmental protection and increases in agricultural productivity has been neglected. Farmers who increase yields per unit of land have less reason to push into marginal, environmentally sensitive land to meet food needs. (1997, p. 33)

It seems that environmentalists vigorously pushing their own bandwagon have effectively relegated the needs of the poor to second place.

5. What happened to agricultural economists?

There is a time of speaking,
And a time of being still.

(W. Caxton, *Charles the Great*, 1485)

If broad-based agricultural development is the key to poverty alleviation, why is it not happening in so many countries? Surely, our profession has an

important role to play in advocating and devising such a strategy, as well as in its implementation. Why have we not been more effective in the development debate?

For instance, it seems to us that our profession has been increasingly sidelined in the agricultural research area — having largely vacated the farm management field, which is now mostly occupied by agronomists and other agricultural scientists. Likewise, the mainstream of our profession seems to be increasingly seen as irrelevant in the discussion of environmental issues in LDCs. We seem to have been somewhat gazumped by the growing power and influence of ‘greenies’ of all types. In a similar way, issues relating to the relief of poverty have been largely commandeered by a range of interest groups who mainly work at the micro-level without giving much thought to the bigger policy issues that form the foundation of sound development strategy.

A case in point is that cited by Loevinsohn and Rola (2000) who bemoaned the ‘flash-in-the-pan’ quality of NGO involvement. According to them, after securing easy victories in the regulation of the most toxic pesticides, the NGOs had no stomach for the longer and more difficult struggle to improve the policy process. While the valuable work of NGOs in developing countries cannot be denied, their continuing participation in policy reforms is too seldom assured. As Loevinsohn and Rola (2000, p. 23) put it, ‘their interest has waned because other exciting ventures and highly visible policy concerns need attention’. While they may have their own reasons, such cases represent lost opportunities for achieving greater impact on related policy issues such as putting in place risk assessment procedures for the use of chemicals.

Most agricultural development economists probably agree that subsidised credit is a bad idea, first, because it seldom works and, second, because it contributes to financial repression. Yet there has been an upsurge in micro-credit projects, many subsidised by foreign aid donors. It seems that our professional advice is not being heard or is being ignored.

However praiseworthy many small-scale poverty-reducing projects may be individually, collectively they fail to address the scope of the poverty problem in many LDCs. Unless a widespread upward shift can be induced in agricultural incomes and capabilities, such small-scale efforts can amount to little more than sharing almost the same-sized cake in a different way. In other words, while these projects may not necessarily be bad individually, collectively their impact is likely to be small, yet the same scarce resources could be better used for broader-based poverty reduction.

Agricultural project appraisal used to be a major role of agricultural economists in development agencies. Because economics is in such bad odour, increasingly such appraisals are not being done (or are being done

very badly). ‘Other’ criteria rather than ‘economic’ ones are increasingly given prominence to the point where some aid agencies do not do economic appraisals for some of their aid projects. The use of multi-criteria analysis is currently very fashionable (in Australia too), usually done by natural scientists who apparently are blithely unaware of the underlying assumptions about the nature of preference functions — an aspect of theory that, till recently, economists considered their own.

Why have agricultural economists been sidelined in development work? One reason, we suggest, is the move in economics generally towards ‘rational’ or ‘neo-liberal’ economics. Policies based on that thinking, such as the structural adjustments imposed by the IMF and the World Bank on countries with serious debt problems, are increasingly seen to have failed (World Bank 2000b). Certainly, in some cases such policies have been implemented with too little concern for the impact on the poor. Because our profession seems to have been doing less microeconomic work, it has become more difficult for outsiders to distinguish us from general economists who have increasingly been getting a bad press (as witnessed by the demonstrations at recent economic summits).

We conclude that our profession has not done a good job of selling our wares in relation to the design of development policies and projects. Agricultural economists seem to have largely convinced each other that we know what to do to get agriculture moving and poverty reduced, but we have apparently failed to convince the rest of the development community that this is so.

6. The challenge for agricultural development economists

If the above diagnosis is correct, this seems to be a time to think afresh about the role of our profession in development. In the past, it was commonly held that the distinguishing feature of agricultural economists was that we were willing to get our boots muddy. Unlike general economists, our specific focus on agriculture engendered a pragmatic approach to real-world problems. But time has brought some changes to that orientation. Fewer agricultural economists now work at the farm level, more at the policy level. In this latter work, there is less to distinguish what we do from what other economists do. This is the more so in Australia where many of the specific policy interventions in agriculture, the analysis of which was the bread and butter of many agricultural economists, have now been dismantled.

It seems clear to us that the main reason why economists, including agricultural economists, are being increasingly marginalised in important policy debates is the widespread perception that the pro-market stance of most economists is people- and environment-unfriendly. Economists are

widely misperceived as the advocates and agents of big business, interested only in profit maximisation. We suggest that it is this disaffection with economics and economists that has led to the burgeoning of fads and fancies in development economics.

However attractive is the notion from economic theory that the free operation of competitive markets will optimise social welfare, the reality is very far from this idealised construct. There is not a free market internationally for labour so long as rich countries take steps to keep out migrants from poor countries. Nor is there an effective market in agricultural produce so long as rich countries heavily subsidise their agricultures, driving down commodity prices to the disadvantage of farmers in LDCs. It is no wonder that economists who urge the merits of globalisation on the poorer nations are viewed with deep suspicion.

We suggest that there is a need for us to rethink our position in the debate to recognise that market solutions are not always welfare-maximising or politically acceptable. Certainly, as a profession we need to show more clearly that we understand the potential negative effects of unfettered operation of markets. Problems of poverty and lack of sustainability are essentially problems of market failure (including absence). The poor, especially the unborn poor, have little or no market power, so market solutions alone will not work for them (Sen 1999). Rather than constantly emphasising the merits of market-based solutions, we suggest that our profession needs to give much more attention to problems of market failure and missing markets, at least in the context of agricultural development. While it is true that resource economists, including some Australian ones, have done a good job in finding solutions to market failure in resource and environmental management in MDCs, the same cannot be said of agricultural development in LDCs.

As a profession we have, or should have, a comparative advantage in work with a practical orientation within the rural sector. Agricultural economists traditionally have had the ability to work well with both farmers and natural scientists. Agricultural development economists, at least, need to strive to exploit their comparative advantage more effectively. That means working in both a 'bottom-up' and a 'top-down' way, i.e., using our skills in micro-level work to identify important constraints on and opportunities for rural development, and then using our policy analysis and planning skills to identify solutions to those problems. We need to work closely with agrobiological scientists in designing projects/experiments, identifying technologies that need further improvement, collecting relevant data, and analysing them. We need to pay attention to constraints analysis and to *ex ante* and *ex post* evaluations. In particular, we need to interact closely with stakeholders (such as farmers, local communities, extension workers, university

researchers, local and national governments, and aid agencies). Then it is a matter of effectively communicating devised solutions and their rationale to decision-makers in national governments, development agencies and the micro-level.

We therefore see a need for more effective communication and dissemination of the results of our work. By this we mean not only presenting papers at professional conferences and publishing in professional journals, but also wider dissemination to those working in development, especially those in LDCs, i.e., to relevant international agencies, NGOs, government central ministries of the countries in question, local governments, farmers and rural people. Effecting policy changes may be more easily done at the national level but the sustainability of development initiatives will be more of a concern at the local level.

Identifying research priorities is also important. Agricultural research should be geared towards solving problems that will make a difference, directly or indirectly, to the life of the poor.⁴ Agricultural economists should be well placed to investigate and analyse such issues. In doing so they need to recognise the contributions and influence of people from other disciplines. As social scientists, we see it as the responsibility of our profession to work alongside biological scientists in this enterprise because, as Lipton (1999) puts it, there is a limit to technical cures for social pathologies. We should also be doing all we can to persuade decision-makers to restore levels of funding for scientific endeavours to raise agricultural productivity in the areas of the world where poverty remains widespread. We must ensure that efficiency objectives are part of the agenda (Alston *et al.* 1995, pp. 14–16). Yet we also need to acknowledge the concerns and viewpoints of other disciplines including environmentalists. While it may not be easy, we should encourage and participate in interdisciplinary work so that the different viewpoints and skills of people from different backgrounds can be brought together to find widely acceptable solutions to pressing environmental issues.

At the risk of being accused of starting the next bandwagon, we suggest that we are entering a new phase of agricultural development, one where we need to make difficult trade-offs between greater farm productivity, sustainability and equity if we are to enhance poverty alleviation (Hazell 1999). To that end, research and development efforts will have to embrace a widening

⁴ Agricultural research is, however, not the only relevant instrument of social policy. As mentioned above, efforts to reduce poverty are more likely to succeed if other important ingredients of rural development such as a sound macro-economic policy environment, rural infrastructure development, institutional reforms and human development are also pursued, as well as land reform if need be.

span of disciplines across the natural and social sciences, including new methods of interdisciplinary analysis. There is a need for more and different interdisciplinary work, not only in name, but also in thinking. As agricultural economists, we see it as the responsibility of our profession to inject the needs of the poor into both agricultural research programs and into policy-making and planning for rural and general development. Moreover, it is our role to ensure that these priorities remain high on the agendas of the relevant instrumentalities.

Finally, agricultural development economists need to show that agricultural development is good economics — that it enhances capabilities and reduces poverty, that it is sustainable and self-sustaining, and can be the engine to transform poor agricultural economies into post-industrial economies. Then, and only then, can we expect to have the ears of top policy-makers and their economic advisers so that there is a better chance of alleviating poverty in the world and of providing poor people with the resources to tackle the many looming environmental challenges.

In the past, Australia's role in poverty alleviation and famine reduction was given prominence by the work of distinguished visionaries such as Sir John Crawford. His efforts in getting international agricultural research going are well recognised. The challenge is to continue the work he started. As we enter the new millennium, the task before the agricultural and resource economics profession is clear. We have an important role to play and a right to be heard in the debate. There are three main areas where we can assert our role — as empiricists working in the field, as intermediaries between rural people and policy-makers, and as advocates for agricultural development. We should exercise more strongly our right to be heard and ensure that we contribute to the key area of poverty reduction.

Browning (2000), in reviewing Amartya Sen's *Development as Freedom*, asserts that:

Sen's contribution to restoring decency to public policy has been to argue logically, unabrasively but persuasively that elite policy makers need to think differently about why we seek national wealth . . . Sen applies the simple value criterion that the economy exists for man, not man for the economy.

We suggest that it is also time for agricultural development economists to rethink how our work can make a real difference to the poor.

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