
The Role of Employment in Promoting the Millennium Development Goals

S. R. Osmani

Paper prepared under the Joint ILO-UNDP Programme on Promoting Employment for Poverty Reduction

2005

**United Nations Development Programme
New York**

**International Labour Office
Geneva**

The Role of Employment in Promoting the Millennium Development Goals

S. R. Osmani

Contents

	<i>Page</i>
I. Introduction.....	1
II. Employment strategy for reducing poverty.....	2
Empirical evidence on the importance of the employment nexus.....	5
III. The MDGs related to women and children.....	8
Women’s employment, gender discrimination and maternal health.....	9
Universal access to primary education.....	10
Child mortality.....	14
HIV/AIDS and other infectious diseases.....	15
IV. Environmental sustainability through sustainable livelihood.....	16
V. Concluding observations.....	19
References.....	22

I. Introduction

Lack of satisfaction at the pace of human development in the 1980s inspired the United Nations to convene a series of global conferences in the 1990s to identify the problems involved and to commit the world community to addressing those problems. These so-called World Summits set a series of goals and targets that national leaders around the world pledged to achieve within specified time-frames.

In its Millennium Declaration of 2000, the General Assembly of the United Nations incorporated most of these goals and added some new ones. The resulting set of goals, called the Millennium Development Goals (MDGs), has become the anchor around which the United Nations and other international agencies have since tried to organize their developmental activities. At the same time, the developing countries are being increasingly encouraged to formulate their policies and programmes keeping the MDG targets in view.

The ongoing discussion on the modus operandi and the feasibility of achieving the MDG targets has focused largely on the lack of resources. This focus has inspired a massive exercise in the costing of MDGs. The objective of this exercise is to gauge the total resource requirement of achieving the MDGs, and to derive from this an estimate of the amount of resource transfer that the developed world would be called upon to make in order to meet the resource gap of developing countries (UN 2004).

While resources are no doubt important, it is equally important to adopt the right kind of policies and institutions in order to make the resources count. This paper will argue that a well-designed employment policy will go a long way towards speeding up the achievement of MDG targets. There are multiple pathways through which employment can contribute. The objective of this paper is to elucidate the major pathways – primarily in analytical terms, but supplemented by empirical evidence wherever possible.

The link between employment and poverty reduction (MDG 1) is explored in section II. Section III addresses the role of employment policy in relation to a cluster of MDGs. These include universal primary education (MDG 2), gender equality and empowerment of women (MDG 3), child mortality (MDG 4), maternal health (MDG 5) and HIV/AIDS and other diseases (MDG 6). The paper argues that for each of these goals policies aimed at improving the status of women will have to play a central role; as such, they are best treated within a common analytical framework. Section IV discusses the relationship between employment and environmental sustainability (MDG 7), and section V offers some concluding remarks.

II. Employment strategy for reducing poverty

The importance of employment in the context of poverty stems from the fact that poor people rely mainly on the use of their labour power – whether as wage-labour or in self-employment – to earn their livelihood.¹ How much labour power they are able to use – i.e. the quantity of employment – is an important determinant of their income. Also important, however, is the return to labour, which depends to a large extent on the portfolio of assets (including physical assets, human capital and social capital) with which they pursue their livelihood. If either the quantity of employment or the rate of return to labour is low, a worker is likely to live in poverty. Accordingly, two broad categories of proximate causes of poverty can be distinguished: *underemployment*² and *low returns to labour*.

Those who suffer from *low returns to labour* despite working full-time and at high intensity can be classified into three categories depending on the causes of low returns.

- Those who work for very low wages because they have to compete with potential entrants (comprising the unemployed and the underemployed and constituting a pool of surplus labour) who have very low reservation wages – the surplus labour syndrome.
- Those who work with little skill, or poor technology, or inadequate complementary factors – the low productivity syndrome.
- Those who suffer from adverse terms of trade, either because of low product prices or high input cost (including high cost of credit), or both – the adverse terms of trade syndrome.

For growth to be able to reduce poverty fast, the nature of the growth process must be such that the forces creating underemployment and low returns to labour are weakened. Whether

¹ The analytical framework presented here to explain the importance of employment for poverty reduction is discussed more fully in Osmani (2005).

² This category also includes open unemployment i.e., those who are not working at all. However, in most developing countries openly unemployed people happen to be relatively few in number simply because in the absence of a well-developed social security system very few can afford to remain unemployed for any length of time. Most of those who do remain openly unemployed happen to be educated young people from relatively well off families searching for jobs commensurate with their status and education. As a result, the link between open unemployment and poverty happens to be rather weak.

this will happen or not depends on three sets of underlying factors: namely, the growth factor, the elasticity factor and the integrability factor.

The growth factor: The rate at which the production potential of the economy expands, as represented by an upward shift of the production possibility frontier.

The elasticity factor: The extent to which an upward shift of the production possibility frontier enhances the employment potential – the latter being defined as the scope for improving the quality and quantity of employment. The concern here is with the elasticity of employment potential with respect to growth in production potential.

The integrability factor: The extent to which the poor are able to integrate into economic processes so that, when growth occurs and the employment potential expands, they can take advantage of the greater scope for improving the quality and quantity of employment.

The ‘growth factor’ i.e. expansion of an economy’s production potential, as determined by the growth of its labour force, accumulation of human and physical capital, and technological progress, must be an essential component of any programme of sustained poverty reduction. It is obvious that without the growth of production possibilities there can be no sustained expansion in employment potential. The only way employment can be expanded in a stagnant economy is either by depressing the returns to labour or by increasing the rate of underemployment. Neither route is good for the poor. Only a growth-induced shift in the employment potential will enable the poor to enjoy rising income either through reduced unemployment/underemployment or through higher returns to labour.

Given any shift in the production potential, the next parameter that has a bearing on the poor people’s income is the ‘elasticity factor’. The elasticity factor refers to the ability of any given growth of production to stimulate the growth of employment potential, as represented by upward shift of the marginal value product of labour curve.³ The idea behind this concept is that any given growth rate can be associated with different degrees of shift in employment potential depending on the nature of the growth process. And the growth process that is associated with a bigger shift – i.e., the one that is more employment-elastic – would be more helpful for the poor, other things remaining the same.

The degree of elasticity would depend on three features of the growth process:

- *Sectoral composition of output:* The extent to which the growth of output is concentrated in the more labour-intensive sectors.
- *Choice of technique:* The extent to which more labour-intensive techniques are used, especially in the growing sectors.
- *Terms of trade:* The extent to which the internal and external terms of trade improve for the labour-intensive sectors and for the products produced by the poor self-employed people.

The greater the expansion of employment potential, the greater the opportunity for reducing underemployment and raising the returns to labour – the two proximate causes of poverty mentioned earlier. The growth elasticity of employment potential is therefore an important intermediate variable that shapes the extent to which the growth of the overall economy translates into higher incomes of the poor.

High elasticity of employment does not, however, necessarily entail higher incomes of the poor. All it does is to allow the working population as a whole to reduce their unemployment and underemployment and raise their returns to labour. In short, it expands the opportunities, generally. There remains the question, however, whether the poor are able to take this

³ For the wage labour sector, this is simply the standard demand curve for labour. For the self-employed sector, however, the term demand curve does not strictly apply. Even so, the common feature of both cases is that an upward shift of the curve allows the workers to improve the quality and quantity of their employment.

opportunity or whether it is captured mainly by non-poor workers, or even whether the opportunities are seized at all. Much depends on whether the poor possess the necessary attributes that will enable them to integrate fully into the workings of an expanding economy. This is what is captured by the ‘integrability’ factor.

Rapid growth and high elasticity of the employment potential can together ensure that economic activities create greater opportunities for workers to increase their income through a combination of greater employment and higher returns to labour. However, workers do not necessarily mean ‘poor workers’, and opportunities are not necessarily seized. So, even a combination of rapid growth and high elasticity does not guarantee a rapid rate of poverty reduction. If the new opportunities are such that the capabilities they demand do not match the capabilities of the poor, then either non-poor workers will seize the opportunities or perhaps the opportunities will not be seized at all. Much, therefore, depends on the correspondence between the structure of opportunities that are opened up and the structure of capabilities possessed by the poor. The ‘integrability factor’ refers to the degree of this correspondence. The greater the degree of correspondence, the more extensively will the poor be able to integrate into the processes of economic expansion and the faster will be the rate of poverty reduction for any given rate of growth.

There are a variety of reasons, however, why the poor may not be able to integrate fully into economic processes so as to take advantage of any expansion in employment potential. Some have to do with the distribution of assets, others with market failures of various kinds, and some with social norms.

For instance, the failure of the credit market can pose a serious problem. It is well-known that because of informational asymmetries the formal credit market often tends to resort to credit rationing in such a way that the poor, because of their lack of assets, are left out or are at least severely discriminated against. The poor entrepreneurs are then compelled to turn to monopolistic informal moneylenders. But the exorbitant rates of interest they charge may render it impossible to expand the business even if there is an overall expansion of economic opportunities. Similarly, poor infrastructure, lack of information, market thinness, and other problems of living in remote areas may make the transaction costs so prohibitive that the poor entrepreneurs of those areas may not find it worthwhile to expand business or to undertake new business activities even if new opportunities open up in the overall economy.

Another source of limited integrability lies in a possible mismatch of skills – between the skills demanded by the expanding sectors and the skills possessed by the poor. A case in point is the current experience of many Latin American countries. As these countries try to open up their economies, they find that, unlike the countries in East and South East Asia which had opened up their economies earlier, their comparative advantage does not lie in the activities that are intensive in relatively unskilled labour. The emergence of the poor and populous countries such as China and India on the global scene has ensured that Latin America would not be able to compete in these types of products. Instead, it is in the relatively skill-intensive activities that most of the Latin American countries find their comparative advantage (Wood 1997). The opening up of these economies has therefore led predictably to an expansion of these skill-intensive activities, but the poor have benefited little from this expansion so far, as they do not possess the skills that are needed by the expanding sectors.⁴

A rather different kind of mismatch relates to the gender dimension of the integrability problem.⁵ The types of jobs for which demand rises may be culturally defined as men’s jobs, whereas poverty may be concentrated mostly among women. An example can be found from

⁴ Behrman *et al.* (2000) analyses the resulting phenomenon of widening wage differentials between skilled and unskilled workers.

⁵ The specific disadvantages faced by poor women are discussed, among others, by DAW/UN (1999, 2001) and World Bank (2001).

parts of Africa where crop production has acquired a gendered pattern – with cash crops being identified as men’s crops and subsistence food crops being identified as women’s crops. Trade liberalisation and greater commercialisation of agriculture may boost the employment potential in cash crop production, but to the extent that gendered pattern of crop production remains a constraint, poor women will find it hard to take advantage of the new opportunities.

How well these and other problems of integrability are addressed and how successfully policies can create a favourable elasticity factor, would determine the success of an employment strategy in raising the incomes of the poor, and thereby promoting the goal of halving income poverty by the year 2015.

Empirical evidence on the importance of the employment nexus

A growing body of empirical evidence is accumulating which demonstrates the importance of an employment-oriented growth process for poverty reduction. A case in point is a recent study on the employment nexus between growth and poverty in several Asian countries (Osmani 2004). The study covered three transition economies, viz. Armenia, Uzbekistan and Viet Nam and two traditional developing countries, viz. Bangladesh and Indonesia. The gist of the argument is presented in Table 1, which reports side by side the rates of poverty reduction between various data points for these countries and the rates of growth of per capita income during the same data points. The relationship between these two rates, called the growth elasticity of poverty, is also shown in the table. It shows how rapidly poverty declines in response to any given rate of growth – the higher the elasticity the stronger the poverty reducing effect of growth.

Table 1: Relationship between growth and poverty in selected Asian countries

Country	Period	Annual rate of decline of poverty	Per capita GDP growth rate	Growth elasticity of poverty
(1)	(2)	(3)	(4)	(5) = (3)/(4)
Armenia	1996-1998	5.3	7.9	0.67
Uzbekistan	1997-2001	9.0	2.7	3.33
Viet Nam	1993-1998	8.6	6.7	1.28
Indonesia	1976-1984	3.7	5.2	0.71
	1984-1996	3.7	5.5	0.67
Bangladesh	1983/84-1991/92	0.6	1.6	0.38
	1991/92-1999/00	2.4	3.2	0.80

Source: Osmani (2004)

The first point to note from Table 1 is that each episode of poverty reduction is associated with positive growth in per capita income. This reinforces the emerging consensus that economic growth is necessary for sustained reduction of poverty. More significantly, the table also reveals that there is a strong positive association between the rate of growth of per capita income and rate of poverty reduction. On the whole, more rapid growth of per capita income is associated with faster rate of poverty reduction. For instance, the observed growth rates are much higher for the transition economies of Armenia and Viet Nam as compared with the traditional developing economies of Indonesia and Bangladesh and their corresponding rates of poverty reduction are also much higher. The conspicuous exception is Uzbekistan, where a modest rate of growth has been associated with a very high rate of poverty reduction. Between

the two traditional developing economies, Indonesia has had a much higher rate of growth than Bangladesh and also a faster rate of poverty reduction.

Inter-temporal comparisons reveal a similar relationship between growth and poverty. Indonesia experienced an identical growth rate between the two phases of its growth, and also experienced a remarkably similar rate of poverty reduction. Bangladesh experienced a significantly higher rate of growth in the 1990s as compared with the 1980s; correspondingly poverty reduction was also much faster in the 1990s. These figures reveal the significant effect that growth has on poverty reduction and thereby corroborates the importance of the 'growth factor' discussed above.

However, the same table also shows that there is no one-to-one relationship between the rate of growth and the rate of poverty reduction. It is not only the exceptional experience of Uzbekistan, where relatively slow growth was associated with a very rapid rate of poverty reduction that destroys such a relationship. Even in the cases where faster growth was associated with faster poverty reduction, the impact of growth on poverty was by no means uniform. This is captured by the estimates of growth elasticity of poverty, which shows the extent to which poverty declined in response to one per cent growth in per capita income.

There is wide variation in the estimated growth elasticities of poverty, even leaving aside the exceptional case of Uzbekistan. Thus, compared to Armenia, Viet Nam not only had a higher rate of growth but also considerably higher responsiveness of poverty to growth. Between the two traditional developing economies, Indonesia not only had a faster rate of growth than Bangladesh but also higher elasticity during the overall periods under consideration. This shows that the better record of poverty reduction in Indonesia owes itself not just to faster growth but also to higher responsiveness of poverty to growth. Looking at Bangladesh's own experience over time, it may be noted that the decade of the 1990s saw not only faster growth but also a much higher elasticity compared with the 1980s. Thus the observed acceleration in poverty reduction in the 1990s owed itself not just to faster growth but also to increased responsiveness of poverty to growth.

These observations suggest that while it is important to understand, for the sake of poverty reduction, which factors cause rapid growth of per capita income, it is equally important to understand which factors cause poverty to respond differently to growth under different circumstances. This is where the importance of the elasticity factor and the integrability factor discussed above come into play.⁶ The poverty impact of growth was different because (a) the elasticity factor varied, creating more employment potential in some cases than in others, and (b) the integrability factor also varied, allowing the poor to seize the employment opportunities better in some cases than in others.

Thus, the fact that growth was considerably more pro-poor in Uzbekistan and Viet Nam than in Armenia was because of the differential employment generating capacity of their respective transition process. In Armenia, recovery in economic growth after the initial collapse of the early years of transition was not accompanied by any net employment creation. This is because whatever new employment was created in some areas was offset by the loss of employment in others as the discipline of market forces led to the shedding of excess labour that the erstwhile state enterprises had inherited from their socialist past. Nonetheless, the growth process in Armenia did have a moderately positive impact on the demand for labour, but it was manifested not in higher employment but in higher wages of those workers who

⁶ Another possible explanation of variable elasticity lies in the statistical properties of the initial distribution of income. It is well known that the rate of poverty reduction, as it is usually measured by the observed change in the head-count ratio, can be very sensitive to the nature of income distribution around the poverty line. If density is very high just below the poverty line i.e. if a disproportionately large number of poor people are concentrated just below the poverty line, then even a small growth in the per capita income of the poor may lead to a very large reduction in poverty, i.e. elasticity will be high. It is, therefore, important to use these elasticity measures with caution while trying to understand why growth affects poverty differently under different circumstances.

managed to retain their jobs. This helped in reducing poverty, but to a much smaller extent than in Uzbekistan and Viet Nam. These two transition economies experienced a much higher responsiveness of poverty to growth primarily because they managed to generate a very dynamic small-holder agriculture, which created new employment for the poor on the one hand and raised the return to their labour on the other. By contrast, agriculture in Armenia acted mainly as a shock absorber for the workers who lost their jobs in the industrial sector. This no doubt helped in mitigating some of the pain of transition, but as the agricultural sector remained moribund it was incapable of generating the kind of potential for productive employment that was observed in Viet Nam and Uzbekistan. In consequence, the poverty-reducing effect of growth was also much smaller in Armenia.

Indonesia was an exemplar among developing countries in terms of both growth and poverty reduction until the Asian financial crisis struck in 1997. For more than two decades since the mid-1970s Indonesia maintained a high rate of poverty reduction even as the structure of the economy changed significantly from a poor labour surplus economy to a rapidly modernising one facing increasing tightness in the labour market. The secret of sustained success in poverty reduction over a long period lies in the fact that the country was able to adapt its growth strategy to the changing structure of the economy in such a way that kept the demand for labour growing rapidly. In the early stage of development the strategy of import-substituting industrialisation was complemented by a major thrust in agriculture and rural development in general, supported by revenues from newfound oil wealth. This strategy of simultaneous heavy investment in all sectors may be seen as the Nurksean theory of balanced growth in action. The strategy paid rich dividends in terms of both growth and poverty reduction. In particular, it resulted in an all-round increase in the demand for labour leading to a rapid rate of poverty reduction in all sectors of the economy. Poverty came down through a combination of reduction in unemployment and increase in real wages.

As the strategy of balanced growth became unviable with the decline in oil wealth in the mid-1980s, there occurred a strategic shift from import substitution to outward oriented industrialisation. By rapidly increasing the demand for labour in the industrial sector, the new strategy ushered in the process of Lewisian transition, drawing in surplus labour from agriculture in increasing numbers. So long as surplus labour existed, poverty reduction occurred primarily through growing employment in manufacturing where wages were higher than in agriculture. When the surplus labour got exhausted, in the early 1990s, poverty reduction occurred primarily through higher wages. Thus the precise manner in which the poor benefited from the growth process was different under different stages of development, but the important point is that in each stage a high and rising demand for labour was maintained throughout the period by suitably adjusting the growth strategy.

The contrasting experience of Bangladesh in the 1980s and the 1990s also points towards the importance of an employment-enhancing growth process. Bangladesh experienced some acceleration in growth rate in the 1990s compared to the preceding decade, but more importantly growth became more poverty reducing as manifested in the impressive rise in the growth elasticity of poverty from 0.38 to 0.80. As the combined result of higher rate of growth and greater pro-pooriness of growth, poverty declined considerably faster in the 1990s compared to the 1980s.

The reason for greater pro-pooriness of growth in the 1990s lies in the fact that growth acceleration occurred through a route that also made the growth process more rewarding for labour. The main source of growth acceleration lay in the non-farm non-tradable sector, which was boosted by enhanced domestic demand – emanating initially from the crop sector and increasingly also from the wages earned in the readymade garments sector and workers' remittances from abroad. Faster growth enabled the non-farm enterprises to increase their scale of operation, thus tilting the structure of the non-farm sector more towards the relatively larger enterprises.

This structural change in turn brought about a change in the nature of labour absorption in this sector. In the 1980s most of the surplus labour that got absorbed in the non-farm sector found

their way into low-productivity self-employment. By contrast, in the 1990s labour absorption occurred more into salaried employment in the relatively larger and more productive enterprises, as salaried wage employment became more plentiful with the increased prevalence of such enterprises. Since salaried employment was far more rewarding for the poor than the shift into self-employment that occurred in the 1980s, poverty declined faster in the 1990s. The success in poverty reduction was thus predicated on the fact that the growth process of the 1990s engendered a structural change in the non-farm sector that was more rewarding for poor labourers than before. In short, the growth process changed the ‘elasticity factor’ favourably by improving the rate of return to labour.

Other evidence on the importance of the employment nexus has been examined by Islam (2004) and Khan (2001, 2005), among others. Employing the technique of cross-country regression, Islam (2004) has demonstrated that for any given rate of growth of national income poverty declines faster when employment responds more to the growth of output. He regressed the rate of poverty reduction on growth in per capita GDP and employment elasticity with respect to output in the manufacturing sector. The latter variable was meant to act as a surrogate for responsiveness of employment to output in the overall economy since a meaningful measure for overall responsiveness was hard to find for most developing countries due to limitations of data. Despite the shortcoming of a surrogate measure, employment elasticity was found to have a significant poverty reducing effect independently of the effect of growth, which confirms the importance of an employment-oriented growth strategy for rapid poverty reduction.

Islam also looked at detailed country case studies covering Asia, Africa and Latin America to examine the relationship between growth, employment and poverty as concrete historical episodes. Similar analyses were carried out by Khan (2001, 2004). An important finding to emerge from these studies is that the cases where poverty declined rapidly were generally characterised by both rapid growth of national income and a growth pattern that was especially demanding of labour. These episodes include the classical case of the East Asian Tigers in the 1960s and 1970s, China and Viet Nam in the first decade of economic liberalisation, and to a lesser extent Uganda in the 1990s. These studies also show that when rapid growth failed to reduce poverty equally rapidly, as happened in China in the first half of the 1990s and in Thailand in the second half of the same decade, it was at least partly because the link between growth and employment weakened for some reason or another.

Thus the episodes of both success and failure to reduce poverty rapidly through rapid growth lend strong empirical support to the importance of the employment nexus for poverty reduction. The strategy for achieving the MDG of reducing poverty by half by the year 2015 will, therefore, have to take the employment orientation of growth and not just the rate of growth seriously.

III. The MDGs related to women and children

A cluster of MDGs relates to the well-being of women and children. These include removing gender discrimination, improving maternal health, ensuring universal access to primary education, and reducing child mortality. Even the MDG calling for a substantial reduction in the incidence of HIV/AIDS and other infectious diseases can be argued to be closely related to women and children, especially in the case of HIV/AIDS as it manifests itself in sub-Saharan Africa. These MDGs are best discussed within a common analytical framework because the well-being of women and children are closely related. Since it is women who bear children and in most societies still carry the primary responsibility for rearing them, women’s capabilities have a strong impact on the capabilities of children. Improvement in women’s capabilities, however, is highly contingent on their empowerment. If women are empowered, they would not only be better able to look after themselves but would also be able to do more for their children’s health and education. Anything that empowers women and improves their status in society is therefore likely to contribute significantly towards speedier fulfilment of

the cluster of MDGs related to women and children. Women's employment can play an important role here by contributing towards the empowerment of women.

The principal mechanism through which women's employment exerts its influence is by affecting the process through which decisions are taken within the household. Maternal health, children's education, and child nutrition are all outcomes of complex processes in which an important role is played by households' decisions about how to allocate the limited resources available to them to different members of the household and to different uses. The process through which these decisions are taken, and the extent to which different members of the households participate effectively in this process, may have a significant bearing on the nature of the decisions taken. The point being emphasized in this paper is that an employment strategy that seeks to redress female disadvantage in the labour market may affect the decision-making process in the household in a manner that will speed up the achievement of the cluster of MDGs related to women and children.

Women's employment, gender discrimination and maternal health

Broadly speaking, two different decision-making processes within the household have been identified in the emerging literature on the economics of the household – called respectively the unitary model and the collective model of the household.⁷ The unitary model depicts the traditional idea of a family in which the head of household takes all the decisions regarding the allocation of household activities as well as resources to the members of the household. By contrast, the collective model envisages a more pluralist process, in which the adult members of the household, especially the husband and the wife, collectively take decisions through implicit or explicit bargaining. One of the important empirical differences between these two models concerns the relationship between who controls household income and how it is used. In the unitary model, the household head controls the entire income and its use is determined by his own preferences, as modified by the extent to which he takes other members' preferences into account while taking his decisions. In the collective model, however, there may be different spheres of control, depending on who earns the income, and this may have a bearing on the manner in which the income is used. A growing body of empirical research suggests that the nature of control over income does make a difference to the nature of its use, and therefore the collective model is increasingly being accepted as being closer to the truth.⁸

One of the implications of the collective model is that household decisions, including decisions regarding allocation of resources among household members, depends on the bargaining power of the parties to the decision-making process. In particular, if women are empowered enough to participate more effectively in the decision-making process, they will ensure that allocational decisions are more respectful of their own preferences. Much empirical evidence shows that when women have their say in the allocation of household resources, they often tend to counter the sex bias that traditionally exists in many societies (e.g., Hallman 2000; Thomas 1990). Compared to the situation where men take all the decisions, they would allocate more resources to the children and among the children they would discriminate less against girls. The implication is that anything that strengthens women's bargaining power within the household will tend to counter discriminatory practices against children, and in particular against, girls within the household.⁹

⁷ For a comprehensive review of the literature on the theory of the household, see Bergstrom (1997).

⁸ See the evidence cited in Alderman *et al.* (1995) and Haddad *et al.* (1997).

⁹ Evidence from India shows that improvement in such instruments of women's empowerment as education and employment significantly reduces gender bias in survival chances. See, for example, Kishor (1993) and Murthy *et al.* (1995).

The important policy question then revolves around the issue of how to strengthen the bargaining power of women. In a pioneering work, Boserup (1970) had speculated that creating employment opportunities for women outside the household would be an effective way of improving their bargaining power. The argument is based on the premise that society attaches more value to working for cash than to working for subsistence. The work that women do in a traditional household – cooking, caring, engaging in subsistence production, and so on – may be intrinsically no less valuable for the well-being of the household than the income that men earn working outside. But the fact remains that it is working for cash outside the household that gives men a superior status in traditional societies. If women's status, and thus their bargaining power, is to be improved, they too must be given opportunities to earn income outside the household. Current research lends strong support to this hypothesis. For instance, evidence from Bangladesh shows that women's status improves and their bargaining power is strengthened when they acquire greater access to income-earning opportunities in the market through micro-credit (Hashemi *et al.* 1996; L. Osmani 1998) or through wage employment (Kabeer 1997).

The proposition that improvement in women's status will reduce gender discrimination in the allocation of household resources is still largely a hypothesis, but supportive evidence has begun to emerge. In a recent study, Smith *et al.* (2003) related maternal health to women's status in a large data set of household surveys carried out in 36 countries under the auspices of Demographic and Health Surveys. After controlling for other variables (such as household wealth), women's status within the household vis-à-vis men was found to have a significantly positive effect on their nutritional status and their general ability to take care of themselves. These findings were based on a measure of women's status derived by combining four indicators: whether a woman works for cash, her age at first marriage, the age difference between her and her husband, and the educational difference between them. Because of the composite nature of this index, it is impossible to disentangle the effect of employment from that of other indicators. But at least the evidence is strongly suggestive of a positive association between women's employment and their nutritional capability.

The relevance of women's employment for gender bias does not, however, depend exclusively on its implications for women's status and its effect on decision-making within the household as exemplified by the collective model. Even within the framework of the more traditional unitary model, where the head of the household, usually a male patriarch, takes all the decisions, women's employment can tilt the allocational pattern in their favour. This is because when women become more employable, it becomes more worthwhile from the household's point of view to invest more in them. In a classic study of sex bias in India, Rosenzweig and Schultz (1982) provided evidence for the argument that parents invest less in their daughter's human capital because girls earn lower wages in the labour market. In other words, women's disadvantage in the labour market makes the parents reluctant to educate girls and to spend on their nutrition and healthcare to the same extent as boys. In so far as this diagnosis is valid, an employment strategy designed towards eliminating female disadvantage in the labour market should help counter the gender bias that becomes ingrained in the early lives of boys and girls. This will happen independent of any effect through improvement in women's status. To the extent that women's status does improve through employment, this effect will be reinforced even further for the reasons discussed above. A gender-sensitive employment strategy can thus be a prime force towards eliminating gender bias and improving women's well-being in general and maternal health in particular.

Universal access to primary education

The International Covenant on Economic, Social and Cultural Rights adopted by the international community nearly four decades ago, enshrined the right to education as a fundamental human right that must be enjoyed by every man and woman. While committing to fulfil the right to education for all, the nations recognised that universal access to the full cycle of education up to the tertiary level would have to be achieved progressively over time

because of resource constraints. But they agreed that universal access to at least primary education should be achievable in the shortest possible time – within a year or two – and committed themselves to achieving it. The implicit assumption was that the resource cost of achieving universal primary education would be modest enough even for the poorest of countries to be able afford it – the binding constraint was felt to be commitment not resources.

Unfortunately, four decades on, even this modest goal remains unachieved in the majority of countries in the developing world. Through the MDGs, the international community has reaffirmed its commitment to achieve universal primary education by the year 2015. But fears are being expressed that many countries would not be able to achieve the goal even by that date.

Contrary to the intuition that guided the human rights laws, however, the current discussion on the possible constraints has focused primarily on the issue of resources. Attempts have been made to estimate the resource cost of achieving universal primary education by the year 2015, as part of a general exercise in costing the MDGs. Resources are of course essential, but the assumption that they are the binding constraint is questionable at least in the case of universal primary education. The experience of a number of poor societies – such as Sri Lanka, Costa Rica, Jamaica and the Indian state of Kerala – demonstrates that in the presence of serious social commitment resources cannot stand in the way of achieving universal access to primary education.

A more likely constraint is the demand for education.¹⁰ For education to spread, parents must be willing to send their children to schools, but in many poor societies they are found to be more keen to utilise their children's labour for the benefit of the household economy than to educate them. At one level, it is plausible to argue that demand should not be a problem because most parents would desire to provide education to their children, provided proper facilities are available. 'Desire', however, needs to be distinguished from 'demand'. Sending children to school involves costs – both direct costs of clothes, books, fees, etc. and the indirect opportunity cost of forgone income as parents lose the contribution of children to the household economy. Only if the perceived benefits of education outweigh these costs would desire be transformed into effective demand. It will be argued in this paper that employment can play a crucial role in achieving this transformation.

There are a number of pathways through which expansion in employment opportunities can stimulate the demand for education. The first and the most obvious is by raising the returns to education. In an economy where employment opportunities are scarce, seasonal unemployment and chronic underemployment are rife, parents will understandably be loathe to invest in children's education – in terms of incurring the direct costs of schooling as well as foregoing the children's economic contribution to the household. Under such conditions, the perceived return from education may not be large enough to offset the costs. The cost-benefit calculation will, however, tilt in favour of schooling as the prospect for productive employment improves. This will raise the demand for education.¹¹

What is important to note here is the existence of a two-way causation between schooling and labour market outcomes. It is commonly understood that better education makes for better labour market outcomes for an individual, other things remaining the same. This happens either because education enhances the human capital of a person, making her more productive and hence more employable, or because education acts as a screening device to ration limited

¹⁰ For evidence that demand side interventions may be more effective than supply side interventions in improving access to education, see Coady and Parker (2002).

¹¹ There could be a problem, however, if improvement in the labour market results in higher wages for child labour as well as adult labour. In that case, the higher opportunity cost of children's time may discourage schooling. What will encourage schooling is higher employment and wages of adults, as this will raise the expected value of children's earnings when they become adults. For a discussion of the analytical issues as well as empirical evidence on these matters, see Ersado (2002).

number of employment opportunities to a much larger number of aspirants. But causation also runs the other way – better labour market condition induces more investment in education by raising the return to education. The best possible outcomes are achieved when both lines of causation are working simultaneously, thereby reinforcing each other.

It has been argued that one of the driving forces behind the spectacular success of East Asia was precisely this mutually reinforcing interaction between education and labour market outcomes (Birdsall *et al.* 1995). The East Asian countries were already well advanced in terms of basic education at the advent of their economic growth. But as they embarked on the path of economic expansion through export-oriented labour-intensive activities in the 1960s, the resulting increase in employment and wages gave further stimulus to the demand for education. This in turn raised human capital further and contributed to economic growth, and since the nature of this growth was labour-intensive it raised the demand for education even further, and so the process went on in a virtuous circle of prosperity for all.

The pathway described above relates expected rate of return to education in future to demand for education at present. One limitation of this pathway is that when parents are credit-constrained, as most poor people are, higher expected rate of return to education in future will not necessarily lead to higher investment in education today (Ranjan 1999). Prospects of better employment opportunities for their children will certainly make the parents want to invest more in their education, because they know that any investments made today will be more than paid for when the children grow up and get good jobs. The problem, however, is that the parents may be too poor today to bear the costs, while at the same time imperfections in the credit market do not allow them to borrow against future earnings of children.

Under such conditions of imperfect credit market, employment can still be a major determinant of the demand for education, but the relevant variable in this case is not the expected future earnings of children but the current employment prospects of the parents themselves. This proposition has close connections with the issues related to child labour. The emerging literature on child labour has come to recognise that, however odious child labour may be as a matter of principle, it is often unavoidable in practice as poor parents are obliged to depend on the earnings of their children because of their own poverty. This dependence is not immutable, however. Under circumstances where adult and child labour are close substitutes in production, any improvement in the employment conditions of adults will both enable and induce the parents to take their children out of the labour market (Basu and Van 1998). And it is only when child labour is not considered essential for the survival of the family would parents be able to send their children to school. Creation of productive employment opportunities for poor parents is, therefore, an important pathway through which the demand for education can be strengthened.

While a general expansion in employment opportunities will help achieve the education goal for the reasons explained above, it is arguable that expansion in women's employment would have an especially salutary effect. There are two distinct but related pathways through which this may happen. One of them operates through improvement in women's status and the other through fertility decisions.

In many countries, sex bias poses a serious problem in achieving universal access to primary education – girls are held back more than boys from going to school. This happens due to a variety of reasons. Religious beliefs play a role in some societies. The cultural practice of early marriage in patriarchal and patrilocal societies also acts as a deterrent to girls' education, as people realise that investing in their daughters' education will not yield any direct return to the parents' household. It can be argued, however, that even when religious and cultural practices are the major obstacle, a gender-conscious employment strategy will be of great help in countering sex bias in education. Whether to educate the girls, and if so how much, are decisions that are taken by parents within the household. Traditionally, fathers tend to take such decisions. But if women are able to influence the decision, they are likely to counter the existing sex bias in decision-making. Employment can help here by improving women's status

and thereby giving them greater influence over the decision-making process within the household.

The empirical evidence on the link between women's empowerment and girls' education is still rather scanty, but it is worth noting that the upsurge in women's involvement in micro-credit programmes has coincided with a remarkable upsurge in girls' enrolment in schools in Bangladesh. The gender difference in enrolment at the primary level has almost completely disappeared in Bangladesh and is fast disappearing at the secondary level as well. To a large extent, this has to do with special programmes (such as the Food for Education programme) that were designed to attract children – both boys and girls – to the school. The state of current research does not permit disentangling the effect of these programmes from the effect of women's empowerment that has evidently occurred through greater involvement in income-earning activities. But at least the experience adds credibility to the hypothesis that a gender-sensitive employment strategy would help combat girls' disadvantage in the access to education by moulding the decision-making process within the household. There is also some evidence from Mexico's PROGRESA programme that women's empowerment has resulted in greater investment in the education of children, especially of girls (Skoufias and McClafferty 2001).

There is an additional mechanism through which women's employment can help raise the demand for education – for both boys and girls. The crucial intervening variable here is fertility decisions. Employment is closely related to the reproductive behaviour of women, which in turn is related to the decisions to invest in children's education. Historically, one of the major determinants of women's decision to reduce fertility has been their increased participation in the labour force. As they spend more time outside home, the sheer constraint of time forces them to reduce the number of children they are willing to have because even when they work outside women still bear the major responsibility for caring for the children at home.

Analytically, these decisions are often explained in the framework of a trade-off between the quantity and quality of children. Given any set of constraints on time and resources, a couple can decide to have either more children and spend less on each of them, preferring quantity over quality, or they can decide to have fewer children and spend more on each of them, preferring quality over quantity. In this framework, fertility and investment in children are jointly determined, depending partly on the preferences of the couples and partly on their constraints. Women's employment can affect these decisions by altering both constraints and preferences. By intensifying their time constraint, employment outside home tilts the trade-off away from quantity and towards quality of children. As the time for caring and nursing gets squeezed, women want to have fewer children, which in turn allows them to spend more on each child, including spending on education. At the same time, entry into the world of work outside home often changes the worldview of women, changing their preferences towards more educated children, better suited to the modern world. For both reasons, working women are more likely to want fewer but more educated children.

There remains the question, however, of whether women are able to translate their desired fertility levels into reality given the fact that most household decisions, including those related to reproductive behaviour, may be outside the domain of wives in patriarchal societies. This is where the link described earlier between women's employment and their influence in the household decision-making process becomes important. Women's involvement in income-earning activities not only makes them want to have fewer and more educated children but also enables them to translate their desire into reality by empowering them and thereby enhancing their say in household decisions.¹² As a result, one is likely to see working women have more educated children, other things being equal.

¹² Schuler et al. (1997) provide evidence from Bangladesh that women whose access to productive employment opportunities improved as a result of micro-credit were better able to influence fertility

Child mortality

Achievement of the goal of reducing child mortality will be highly contingent on substantial reduction in child malnutrition, since by far the majority of child death in developing countries stems from diseases related to nutritional deprivation. Much research has been done in recent years to understand the determinants of child malnutrition. The most commonly accepted methodology is to divide the determinants into two broad groups – viz. the proximate determinants and the underlying determinants. In this framework, the role of employment can be best understood as belonging to the set of underlying determinants. Employment, especially women's employment, interact with other underlying determinants of child nutrition to affect the proximate determinants and through them affect the nutritional status of children. These interactions can generate multiple pathways through which employment can have an effect on child nutrition. An understanding of these pathways is essential for devising appropriate employment strategies as part of overall strategies for reducing child mortality.

The nutritional status of children is the outcome of what has come to be known as the nutrition-infection nexus. Poor nutritional status can be a consequence of either low level of nutritional intake through the food consumed or of frequent infections (of mainly gastro-intestinal and respiratory types) caused by the lack of hygiene and healthcare. Quite often these two factors go hand in hand, reinforcing each other's effect. Thus, low level of nutritional intake makes the children more vulnerable to infection, and the presence of infection prevents them from absorbing food. The consequence of an unfavourable nutrition-infection nexus is slow rate of physical and cognitive growth of children. The physical dimension of slow growth is reflected in 'stunting' (low height for age) if the problem remains chronic over a long period of time and in 'wasting' (low weight for height) if the problem becomes acute at a particular point in time. Together, stunting and wasting constitute what we mean by child malnutrition.

The causal role of the nutrition-infection nexus suggests that there are three major proximate determinants of child nutritional status – viz. food, hygiene and care. For policy purposes, it is important to identify the underlying socio-economic variables that shape these proximate determinants. Household income is obviously one such variable. Higher income will enable parents to provide better food consumption, a more hygienic living environment and better care for their children. Well-designed employment strategies can play an important role here by enabling households to earn higher incomes.

But the potential role of employment in combating child malnutrition goes far beyond the contribution it can make to household income. This wider role comes into play through women's employment in particular, in so far as employment can empower women and raise their status relative to men. This is because women's status happens to be one of the most powerful underlying variables that determine children's nutritional status.

Women's status affects child nutrition through a number of pathways. First, better status strengthens women's bargaining power within the household and enables them to take better care of themselves in terms of greater access to food and healthcare. The resulting improvement in the nutritional status of women has the potential to improve child nutrition as well. One of the reasons for persistent child malnutrition in the developing world is that malnourished mothers give birth to low birth-weight babies. As the immune systems of these babies are severely impaired, they tend to suffer from frequent bouts of infections, and through the nutrition-infection nexus they tend to get more malnourished than babies with normal weight. Indeed, one of the main reasons why South Asia has a much higher rate of child malnutrition than even sub-Saharan Africa is that the incidence of low birth-weight babies is much higher in South Asia (Osmani and Bhargava 1998).

decisions. On the general relationship between women's empowerment and their reproductive behaviour, see the studies in Presser and Sen (2000).

In a pioneering study, Rangaswamy *et al.* (1996) advanced the hypothesis that relatively low status of women in South Asia may be responsible for the higher incidence of low birth-weight and hence higher incidence of child malnutrition in this region. A number of recent empirical studies have found strong evidence in support of this hypothesis (Smith and Haddad 2000; Smith *et al.* 2003).

A second pathway consists in the link between improvement in women's status and their ability to take care of children after they are born. The hypothesis is that women tend to spend more on children's nutrition and healthcare than do men; therefore, if women's status within the household improves they will be able to bargain harder for allocating household's resources more towards children's well-being. Once again a spate of recent empirical evidence indicates that when women have greater control over the utilization of household resources, they do generally spend relatively more on children's food and healthcare than do men (Guyer 1980; Dwyer and Bruce 1988; Hoddinott and Haddad 1995; Kennedy and Peters 1992, Thomas 1994, 1997).

It is therefore a plausible hypothesis that women's status within the household and the society at large is a powerful determinant of child nutrition. This hypothesis was recently tested by Smith *et al.* (2003) by using a large data set covering over 100,000 children under three years of age in 36 developing countries. Variations in the nutritional status of children were explained through a regression analysis involving a large number of explanatory variables, one of which was women's status. After controlling for other underlying determinants of child nutrition, women's status was found to have a significantly positive effect on children's nutritional status in each of the developing regions of South Asia, sub-Saharan Africa and Latin America and the Caribbean. The implication of these findings is that anything that enhances women's status should help reduce child malnutrition. To the extent that women's employment enhances women's status, it too should help in improving child nutrition and reducing child mortality.

HIV/AIDS and other infectious diseases

The AIDS pandemic that has devastated much of sub-Saharan Africa has spread through two main channels – heterosexual intercourse and mother-to-child transmission. Either way, women belong at the very centre of the transmission mechanism, even though the consequences are being borne by men, women and children alike.¹³ This recognition requires that any strategy for combating the AIDS pandemic, including an employment strategy, would have to be appropriately gender-sensitive, though not focusing exclusively on women.

One of the important aspects of transmission through heterosexual intercourse is that women's subordinate status, combined with poverty, makes them particularly vulnerable to exposure to HIV. The subservient status of especially younger women seems to be a central feature of the risk environment in southern and eastern Africa. Older men, who are at a higher risk of being HIV positive, seem to be able to dictate terms of sexual contact with young women. This may explain the widely observed phenomenon that HIV infection among the 15-19 years olds is much higher in women than in men (Malawi 2001). The problem of status is compounded by livelihood insecurity, which forces many women to sell sex for food and other necessities of life, even when they are aware of possible risks of infection.¹⁴

¹³ The centrality of women in the AIDS pandemic has been emphasized in a recent report by UNAIDS (2004).

¹⁴ Loevinsohn and Gillespie (2003, p.16) quote a man from northern Tanzania telling a researcher: "If my wife goes out in the afternoon and comes back with a bowl of maize flour, I don't ask her where she got it." Similar stories abound in Uganda and Malawi. The authors also note that such acts may not

A gender-sensitive employment strategy can make a significant contribution towards containing this particular transmission mechanism in two ways. First, by improving women's livelihood security, it would reduce their compulsion to sell sex in a risky environment. Secondly, by strengthening their status vis-à-vis men, it would enable them to better resist pressure from men to engage in sex when men are liable to be in high risk of being infected.

The mother-to-child transmission mechanism is another case where women are at the centre of the problem. A salient aspect of this transmission mechanism that is especially relevant for policy intervention is that the likelihood of infected mothers passing on the infection to babies is neither fixed nor random – it depends systematically on the nutritional status of both mothers and their babies. Since the nutritional status of a new-born baby is primarily a function of the mother's own nutritional status, what really matters is mother's health. It has been observed that mothers with a relatively good immune status are far less likely to transmit the virus to their infants than mothers with a poor immune system (Leroy *et al.* 2002; Fawzi *et al.* 2002). Policies designed to improve mothers' overall nutritional status will, therefore, go a long way towards containing the transmission of AIDS from mothers to infants. A gender-sensitive employment programme can help in this task in the manner discussed earlier – directly by raising the household's ability buy more food and healthcare, and indirectly by improving women's status within the household, which would help reallocate household resources towards the well-being of women.

While women's employment will have to be form the core of an employment strategy for combating AIDS, attention must also be given to the employment prospects for men. The risk of HIV transmission is high when large number of young adults migrate seasonally in search of work. Workers moving as single males and lodging in single sex dormitories for a long period away from home and coming into contact with occasional or commercial sex workers near their work place is a common scenario through which HIV has spread through much of Africa (Ngwira *et al.* 2001; Kisamba *et al.* 2002).

At least a part of such seasonal movement of labour is explained by push factors, i.e., the inability of the local economy to generate sufficient employment opportunities throughout the year. What is needed is an employment strategy that aims at countering seasonal slumps in the demand for labour either by restructuring economic activities in a manner that would spread labour requirements more evenly throughout the year or by instituting special public works programmes during the off seasons.

IV. Environmental sustainability through sustainable livelihood

Ensuring environmentally sustainable development is a complex task. It requires interventions along multiple fronts, including appropriate economic policy, institutional reform and technological innovation. A judiciously designed employment policy can form an integral part such a comprehensive strategy.

A great deal of environmental degradation in the developing world has occurred due to rampant commercialisation associated with economic growth. Excessive deforestation due to commercial logging and destruction of local flora and fauna in mining regions are examples of this kind of degradation. There is, however, another type of degradation that occurs not so much because of growth-induced commercialisation but under the combined pressure of poverty and population growth – a process that has been characterised as the environment-population-poverty nexus. Employment policy has a potentially valuable role to play especially in the latter type of environmental degradation.

always be voluntary. They narrate a case from southern Malawi where young girls were sent out to find paraffin only after dark or before dawn during a food crisis.

The operation of the environment-population-poverty nexus is best exemplified by the well-known phenomenon of the 'tragedy of the commons', which refers to the depletion of common property resources, such as forests, fisheries, grazing land, and so on. The emergence of world-wide concern with environmental issues since the 1970s has helped to focus attention on the depletion of common property resources that has been going on for some time in the past. Initially, this depletion was seen primarily as a threat to environmental sustainability. But it was soon realised that this was not just an environmental issue - the depletion of common property resources posed a fatal threat to the livelihoods of millions of poor people around the world. Much of rural poverty in Latin America, for example, is now confined to the indigenous populations for whom common forestry resources are a fundamental economic basis for survival. In the deserts of Near East and North Africa, the depletion of pastures and water resources pose serious threats to the economic viability of the rural poor, especially those belonging to the nomadic tribes. Similarly, in the arid and semi-arid zones of Asia and sub-Saharan Africa, the livelihoods of the poor are being threatened by the rapid disappearance of forests, rangelands and water resources.¹⁵

Common property resources are inherently vulnerable to depletion because of an attribute that combines the features of public and private goods. They share with public good the feature of non-excludability – the fact that it is costly to exclude anyone from enjoying them. Unlike a public good, however, the enjoyment of these resources by one person leaves less for another, thereby creating a negative externality. In this respect, they are more like private goods. This curious mix of public-private characteristics implies that unless special measures are taken to regulate the use of common property resources, they would be vulnerable to overexploitation (Gardner *et al* 1990; Ostrom *et al.* 1994).

As population grows in an economically stagnant economy, more and more people become increasingly desperate to rely on the use of common property resources for their survival. This leads to faster depletion of resources, which makes it even harder for the poor people to survive, which makes them even more desperate to live off common property resources. The result is a vicious circle of increasing poverty and increasing depletion of resources, sparked off by population growth – this is the essence of the population-poverty-environment nexus.

Some institutional arrangements are, therefore, needed to regulate the access to and the use of common property resources. Economists have generally tended to favour two extreme solutions - either nationalise the resources and bring them under a centralised control, or convert them into private property. Either approach might seem to be a neat way of getting around the problem that arises from the public-private mix in the characteristics of common property resources, but there are problems with both. The centralised solution is likely to be inefficient because of informational problems; for example, a central authority is unlikely to have sufficient information about the nuances of ecological interdependencies that ought to be borne in mind while managing a physical resource. A privatised solution, on the other hand, is likely to be inequitable, as the poorest among the erstwhile users may find it difficult to pay for the privilege of using the resource.

Recent research has shown that there exists a third way – local-level institutions developed and managed by the users themselves. Many examples of such institutions from around the world have been brought to light by numerous studies in the last couple of decades.¹⁶ These findings have laid to rest a notion popularized by a famous paper by Hardin (1968) that as a result of population pressure common property resources are inexorably being destroyed all over the world. This notion was misleading in an important sense. What is inexorable is the eventual disappearance of 'open access' commons i. e., those common property resources to which access is not regulated one way or the other. But historically, most of the local

¹⁵ On the links between environmental degradation and poverty, see, *inter alia*, Dasgupta and Maler (1993), Jodha (1991, 1992), Leonard (1989), Parikh (1996), Reardon and Vosti (1995) and Vosti and Reardon (1997).

¹⁶ A fairly comprehensive bibliography can be found in Martin (1989, 1992).

commons (as distinct from global commons, such as the ozone layer) were subject to well-defined rules of access and use that evolved over many centuries of trial and error. There is no inevitability about the demise of these commons; it all depends on how well the age-old institutions can be adapted to the changed circumstances.

The possibility of creating and sustaining local institutions for managing local commons depends of course on the feasibility of co-operation among the users. Economists have traditionally been sceptical of the possibility of such co-operation in view of the scope of free riding that is inherent in this situation. But recent advances in institutional economics have demonstrated that it is possible for a group of self-interested individuals to find free-riding an unattractive option and to spontaneously devise institutions for co-operation, when they have to interact with each other repeatedly over a long period of time. Such institutions are self-enforcing in nature, in the sense that once in place their rules are adhered to by the users out of their own self-interest - no external enforcement is needed. There are also other types of institutions that are based on mutual enforcement and peer monitoring, and still others that are based on hierarchical enforcement i.e., those that are enforced by local leaders with the consent of all. There are thus a variety of mechanisms through which users can in principle overcome the free-rider problem and devise viable institutions for sustainable use of local commons.

The problem, however, is that all enforcement mechanisms – whether self-enforcing type or those based on external agencies – are liable to be undermined when too many people become too desperate to break them in order to survive. The poor who live at the edge of subsistence necessarily have a high rate of time discount, which implies that if conservation of natural resources comes into conflict with meeting the immediate need for survival, then they will disregard the concern for conservation. For instance, as reported by Van Den Breemer *et al.* (1995), in Northern and Western Senegal, immediate safeguarding of the food supply has become the first priority of ordinary peasants because of the low fertility of land, insufficient rainfall and incidental swarm of locusts. Long-term investment in soil or trees is not undertaken because they would in fact endanger the food supply.

The combination of population explosion and grinding poverty can thus have a highly corrosive effect on the institutions for managing environmental resources. In fact, this effect is precisely the reason why many age-old institutional arrangements for ensuring sustainable use of natural resources have broken down in modern times, leading to widespread degradation of the environment. Any attempt to devise new institutions more suited to the changed circumstances will have to confront the same basic problem.

For the poor to be interested in conservation, a mechanism has to be devised that creates a complementary relationship between conservation and the livelihood security of the poor. This is especially true in a differentiated society, where the poor might be tempted to free ride in the hope that the wealthier section would make the necessary investments for conservation. Of course, the wealthier section may not oblige, especially if increasing links with the external economy allow them alternative opportunities for investing their surplus. In that case, depletion of resources would become inevitable. The solution in this case is to take advantage of links with the external economy in a way that allows conservation with simultaneous improvement in the livelihood security of the poor.

An innovative example of linking conservation with livelihood security is the programme of Joint Forest Management (JFM) announced in 1988 in the Indian state of Madhya Pradesh. The policy accepts the basic premise that the biotic pressure from villagers seeking fuelwood, fodder and timber, both for their household needs and for generating cash income, is the main cause of forest degradation. But unlike previous policies, which tried to prevent degradation by depriving the villagers of their traditional right to forest produce, the new policy recognises that the life of tribals and other poor communities living within and near forests revolve around forests and that their domestic requirement of fuelwood, fodder, minor forest produce and construction timber should be the first charge on forest produce. The new key element of the policy is the recognition that the way to save forests is not to deprive the tribals of their

rights to forest produce but by reducing their dependence on forests for their livelihood. For this purpose, an integrated Village Resource Development Programme has been taken up as an important part of the activities under the JFM programme. This programme is based on the presumption that if resources outside forest lands become more productive, people will give up overexploiting the forests.

One success story is Karidongri, a forest village in Bilaspur district of Madhya Pradesh, in which all families were traditionally dependent on forests for their livelihood (GMP 1998). A Village Forest Committee was formed in 1995, with these families, who became actively involved along with government officials in the development of the village as well as of forest resources. They created a diversion channel, built a new dam, engaged in bunding of agricultural land and set up wells with electric pumps with the help of funds made available by government and other sources. They also started pisciculture and set up a general store as alternative sources of income and employment. Gradually, as a result of these activities, all the families began to supplement their income with earnings from sources other than forests. Emboldened by greater security of livelihood, the village committee then began to adopt measures to protect the forests assigned to them from illicit felling, grazing, fire and encroachment. At the same time, they also took active steps towards afforestation of the degraded forests.

The morale of the story is that sustainable livelihood is the key to environmental sustainability. The strategy for sustainable livelihood will recognise and allow for poor people's dependence on natural resources but at the same time it must create productive employment opportunities that are not overly dependent on the use of such resources. Access to alternative employment opportunities will not only make them less desperate to degrade the environment but will also enable them to protect and regenerate it.

An additional mechanism through which pursuit of the employment objective can complement the goal of environmental sustainability is to undertake specific projects such as social forestry, improvement and conservation of water bodies, land development and protection, and so on. Since these activities are highly labour-intensive in nature, they can serve as an instrument of employment promotion and environmental sustainability at the same time. The experience with such projects, especially those in social forestry, has not been particularly impressive so far, mainly because of excessive bureaucratic control and top-down planning and implementation. With a genuinely participatory approach, however, they have a good potential to promote the twin objectives of employment expansion and sustainable environment.

V. Concluding observations

This paper has been of an exploratory nature. It has tried to identify the multiple pathways through which an employment-focused development strategy can contribute towards speedier achievement of the Millennium Development Goals. An attempt has been made to explore the analytics of these pathways, supported by empirical evidence wherever possible. Many of the causal connections we have explored are in the form of hypotheses, for which adequate empirical evidence has yet to emerge. But it is hoped that further clarification of the analytical issues involved will lay the foundations for more relevant empirical work.

The importance of an employment focus is immediately obvious in the context of the goal of reducing income poverty, since the only way out of poverty for most poor people is to raise the quantity and quality of their employment – either in the wage sector or in self-employed activities. The paper has argued that in order to achieve this goal it won't be enough to concentrate efforts on raising the rate of growth in per capita income. Growth rate will certainly have to be accelerated in most countries, but this will have to be accompanied by efforts to make the growth process more labour-demanding (raising the 'elasticity factor') and to remove the impediments the poor people often face in taking advantage of employment

opportunities (improving the ‘integrability’ factor). A growing body of empirical evidence testifies to the importance of an employment-oriented growth strategy for translating rapid growth into equally rapid poverty reduction.

The employment focus will have to be gender-sensitive as poor women face some additional disadvantages compared to men. Gender-sensitivity is especially important in the context of a whole range of MDGs in which women and children occupy a central place – viz. removing gender discrimination, improving maternal health, ensuring universal access to primary education, reducing child mortality, and combating HIV/AIDS and other infectious diseases. A central argument of the paper is that empowering women and improving their status vis-à-vis men within and outside the household is of critical importance for achieving all these goals. Empowered women would be better able to influence the decision-making processes within the household in a manner that would advance their own well-being and that of their children. A gender-sensitive employment strategy can play a significantly catalytic role here by contributing towards the empowerment of women.

The goal related to environmental sustainability can also benefit from an employment focus. An analysis of the well-known ‘population-poverty-environment’ nexus suggests that much of environmental degradation in the developing world occurs as a result of loss of common property resources under pressure of population growth and grinding poverty. The key to ensuring environmental sustainability is to ensure sustainable livelihoods of the poor, which would judiciously combine their use of natural resources with alternative opportunities for employment and income.

The analysis presented in this paper calls for extension of future research in this area in at least two directions. First, since many of the linkages between employment and poverty reduction suggested in this paper are little more than tentative hypotheses at this stage, a good deal of empirical research needs to be done to assess the validity and strength of these linkages.

Second, both analytical and empirical research are needed in order to clarify the issue of exactly how a growth strategy can be given the necessary employment orientation. To begin with, two different ways of expanding employment opportunities can be distinguished. These may be called ‘growth-mediated employment expansion’ and ‘employment expansion through labour market interventions’. The former refers to the expansion of employment that occurs through the growth process, while the latter refers to specific interventions in the labour market designed to create better employment outcomes.

Each of these categories can be further divided into two sub-categories. Growth-mediated employment expansion can occur in two ways. The first, which may be called the ‘scale effect’, refers to the additional demand for labour that would occur if national output increased in a balanced manner with unchanged techniques of production. The second, which may be called the ‘pattern effect’, refers to the new demand for labour that can be created by changing the composition of output, the technique of production and relative prices and also by eliminating various market failures (e.g. creating self-employment through micro-credit) as part of the growth process.

Employment expansion through labour market interventions can also be of two types, depending on the nature of interventions. One set of interventions, which may be called ‘incentive-focused interventions’, are meant to improve the incentive of employers to hire more labour on the one hand and the incentive of working age people to seek employment more actively on the other. These include policies to reduce labour market regulations that raise the real cost of labour, to improve the mobility of workers, and so on. The second set of interventions, which may be called ‘programme-based interventions’, are meant to create new employment opportunities, for specific target groups, through publicly funded programmes ((such as various public works programmes to be found almost everywhere or the Employment Guarantee Scheme as practised in India).

These alternative routes to employment expansion are very likely to have elements of both complementarity and trade-off with each other. How best to augment the complementarities on the one hand and soften the trade-offs on the other is an important challenge facing policy makers. There is no doubt that the ideal combination of these routes would vary depending on the particular circumstances of a country. Good deal of analytical and empirical research needs to be done before something more concrete can be said at a general level about the desirable details of an employment-oriented growth strategy.

References

- Alderman, H., Chaippori, P.-A., Haddad, L., Hoddinott, J. and Kanbur, R. (1995) “Unitary versus Collective Models of the Household: Time to Shift the Burden of Proof?”, *World Bank Research Observer*, Vol. 10.
- Basu, K. and Van, P. H. (1998) “The Economics of Child Labour”, *American Economic Review*, Vol. 88.
- Behrman, J. R., Birdsall, N. and Szekely, M. (2000) “Economic Reform and Wage Differentials in Latin America.” Research Working Paper No. 435. Inter-American Development Bank: Washington, D. C.
- Bergstrom, T. C. (1997) “A Survey of Theories of the Family”, in M. R. Rosenzweig and O. Stark (eds.) *Handbook of Population and Family Economics*. Elsevier: Amsterdam.
- Birdsall, N., Ross, D. and Sabot, R. (1995) “Inequality and Growth Reconsidered: Lessons from East Asia”, *World Bank Economic Review*, Vol. 9, No. 3.
- Boserup, E. (1970) *Women’s Role in Economic Development*. St. Martin’s Press: New York.
- Coady, D. P. and Parker, S. W. (2002) “A Cost-Effectiveness Analysis of Demand- and Supply-Side Education Interventions: The Case of *PROGRESA* in Mexico.” Discussion paper no. 127. Food Consumption and Nutrition Division. International Food Policy Research Institute: Washington, D. C.
- Dasgupta, P. and Maler, G. (1993) “Poverty and the Environmental Resource Base”, in J. Behrman and T. N. Srinivasan (eds.) *Handbook of Development Economics*, Vol. III. North-Holland: Amsterdam.
- DAW/UN (1999) *1999 World Survey on the Role of Women in Development: Globalization, Gender and Work*. Division for the Advancement of Women, Department of Economic and Social Affairs. United Nations: New York.
- DAW/UN(2001) *The Situation of Rural Women within the Context of Globalization*. Report of the Expert Group Meeting held in Ulaanbaatar, Mongolia during 4-8 June 2001. Division for the Advancement of Women, Department of Economic and Social Affairs. United Nations: New York.
- Dwyer, D. and Bruce, J. (eds.) (1988) *A Home Divided: Women and Income in the Third World*. Stanford University Press: Stanford.
- Ersado, L. (2002) “Child Labour and School Decisions in Urban and Rural Areas: Cross-Country Evidence.” Discussion paper no. 145. Food Consumption and Nutrition Division. International Food Policy Research Institute: Washington, D. C.
- Fawzi, W., Msamanga, G., Spiegelman, D., Renjifo, B., Bang, H., Kapiga, S., Coley, J. Hertzmark, E., Essex, M. and Hunter, D. (2002) “Transmission of HIV-1 Through Breastfeeding among Women in Dar es Salaam, Tanzania”, *Journal of Acquired Immune Deficiency Syndrome*, Vol. 31, No. 3.
- Garcia, M. (1991) “Impact of Female Sources of Income on Food Demand among Rural Households in the Philippines”, *Quarterly Journal of International Agriculture*, Vol. 30, No. 2.
- Gardner, R., Ostrom, E. and Walker, J. (1990) “The Nature of Common Pool Resource Problems”, *Rationality and Society* 2: 335-358.
- GMP (1998) *The Madhya Pradesh Human Development Report 1998*. Government of Madhya Pradesh, India: Bhopal.
- Guyer, J. (1980) “Household Budgets and Household Incomes.” African Studies Center Working Paper No. 28. Boston University: Boston.

-
- Haddad, L., Hoddinott, J. and Alderman, H. (eds.) (1997) *Intrahousehold Resource Allocation in Developing Countries: Models, Methods, and Policy*. The Johns Hopkins University Press: Baltimore.
 - Hallman, K. (2000) “Mother-Father Resource Control, Marriage Payments, and Girl-Boy Health in Rural Bangladesh.” Discussion paper no. 93 Food Consumption and Nutrition Division. International Food Policy Research Institute: Washington, D. C.
 - Hardin, G. J. (1968) “The Tragedy of the Commons”, *Science*, 162: 1243-48.
 - Hashemi, S. M., Schuler, S. R. and Riley, A. P. (1996) “Rural Credit Programs and Women’s Empowerment in Bangladesh”, *World Development*, 24(4): 635-53.
 - Hoddinott, J. and Haddad, L. (1995) “Does Female Income Share Influence Household Expenditure? Evidence from Cote d’Ivoire”, *Oxford Bulletin of Economics and Statistics* Vol. 57, No.1.
 - Islam, R. (2004) “The Nexus of Economic Growth, Employment and Poverty Reduction: An Empirical Analysis.” Issues in Employment and Poverty Discussion Paper No. 14. International Labour Office: Geneva.
 - Jodha, N. S. (1991) *Rural CPRs: A Growing Crisis*. Gatekeeper Series No. 24. International Institute for Environment and Development: London.
 - Jodha, N. S. (1992) *Rural Common Property Resources: The Missing Dimensions of Development Strategies*. World Bank Discussion Paper 169. World Bank: Washington, D. C.
 - Kabeer, N. (1997) “Women, Wages and Intra-Household Power Relations in Urban Bangladesh”, *Development and Change*, Vol. 28, No.2.
 - Kennedy, E. and Peters, P. (1992) “Household Food Security and Child Nutrition: The Interaction Between Income and Gender of Household Head”, *World Development*, Vol. 20. No. 8.
 - Khan, A. R. (2001) “Employment Policies for Poverty Reduction.” Issues in Employment and Poverty Discussion Paper No. 1. International Labour Office: Geneva.
 - Khan, A. R. (2005) “Growth, Employment and Poverty: An Analysis of the Vital Nexus Based on Some Recent UNDP and ILO/SIDA Studies.” Revised version of a paper presented at the ILO/UNDP Conference on Strengthening the Employment Nexus between Growth and Poverty Reduction held at the UNDP International Poverty Centre in Brasilia, Brazil on 11-12 January 2005.
 - Kisamba, Mugerwa, W. and Nduhura, D. (2002) “Background Paper on HIV/AIDS and Agriculture in Uganda.” RENEWAL Working Paper. International Service for National Agricultural Research: The Hague.
 - Kishor, S. (1993) “May God Give Sons to All: Gender and Child Mortality in India”, *American Sociological Review*, Vol. 58, No. 2.
 - Leonard H. J. (ed.) (1989) *Environment and the Poor: Development Strategies for a Common Agenda*. Transactions Book: New Brunswick, NJ.
 - Leroy, V., Karon, J. M., Alioum, A., Ekpini, E. R., Meda, N., Greenberg, A. E., Msellati, P., Hudgens, M., Dabis, F. and Wiktor, S. Z. (2002) “Twenty-Four Month Efficacy of a Maternal Short-Course Zidovudine Regimen to Prevent Mother-to-Child Transmission of HIV-1 in West Africa. West Africa PMTCT Study Group”, *AIDS*, Vol. 16, No. 4.
 - Loevinsohn, M. and Gillespie, S. (2003) “HIV/AIDS, Food Security and Rural Livelihoods: Understanding and Responding.” Discussion paper no. 157. Food Consumption and Nutrition Division. International Food Policy Research Institute: Washington, D. C.
 - Malawi (2001) *Sexual and Reproductive Health Behaviours in Malawi: A Literature Review to Support the Situational Analysis for the National Behaviour Change*
-

Intervention Strategy on HIV/AIDS and Sexual and Reproductive Health. Ministry of Health and Population: Lilongwe.

- Martin, F. (1989) *Common-Pool Resources and Collective Action: A Bibliography, Vol. 1*. Workshop in Political Theory and Policy Analysis. Indiana University: Bloomington.
- Martin, F. (1992) *Common-Pool Resources and Collective Action: A Bibliography, Vol. 2*. Workshop in Political Theory and Policy Analysis. Indiana University: Bloomington.
- Murthi, M., Guio, A.-C. and Dreze, J. (1995) "Mortality, Fertility, and Gender Bias in India: A District-Level Analysis", *Population and Development Review*, Vol. 21, No. 4.
- Ngwira, N., Bota, S. and Loevinsohn, M. (2001) "HIV/AIDS, Agriculture and Food Security in Malawi: Background to Action." RENEWAL Working Paper No. 1. International Service for National Agricultural Research: The Hague.
- Osmani, L. N. K (1998) "The Grameen Bank Experiment: Empowerment of Women Through Credit", in H. Afshar (ed.) *Women and Empowerment: Illustrations From the Third World*. Macmillan: London and St. Martin's Press: New York
- Osmani, S. R. (2004) "The Employment Nexus Between Growth and Poverty: An Asian Perspective." A Report prepared for the Swedish International Development Agency (SIDA), Stockholm and the United Nations Development Programme (UNDP), New York. (mimeo.)
- Osmani, S. R. (2005) "Exploring the Employment Nexus: Topics in Employment and Poverty", in R. Islam (ed.) *The Employment Route to Poverty Reduction*. ILO: Geneva. (forthcoming)
- Osmani, S. R. and Bhargava, A. (1998) "Health and Nutrition in Emerging Asia", *Asian Development Review*, Vol. 16, No. 1.
- Ostrom, E., Gardner, R. and Walker (1994) *Rules, Games and Common-Pool Resources*. University of Michigan Press: Ann Arbor.
- Parikh, J. (1996) "Poverty-Development-Environment Nexus." (mimeo.) Background paper for *Human Development Report 1997*. UNDP: New York.
- Presser, H. and Sen, G. (eds.) *Women's Empowerment and Demographic Processes*. Oxford University Press: Oxford.
- Ramalingaswami, V., Jonsson, U. and Rohde, J (1996) "The Asian Enigma" in UNICEF, *The Progress of Nations 1996*, New York.
- Ranjan, P. (1999) "An Economic Analysis of Child Labour", *Economic Letters*, Vol. 64.
- Reardon, T. and Vosti, S. (1995) "Links Between Rural Poverty and the Environment in Developing Countries: Asset Categories and Investment Strategy", *World Development*, 23(9): 1495-1506.
- Rosenzweig, M. R. and Schultz, T. P. (1982) "Market Opportunities, Genetic Endowments, and Intrafamily Resource Distribution: Child Survival in Rural India", *American Economic Review*, Vol. 72.
- Schuler, S. R., Hashemi, S. M. and Riley, A. P. (1997) "The Influence of Women's Changing Roles and Status in Bangladesh's Fertility Transition: Evidence from a Study of Credit Programs and Contraceptive Use", *World Development*, Vol. 25, No. 4.
- Skoufias, E. and McClafferty, B. (2001) "Is PROGRESA Working? A Summary of the Results of an Evaluation by IFPRI." Discussion paper no. 118. Food Consumption and Nutrition Division. International Food Policy Research Institute: Washington, D. C.
- Smith, L. C. and Haddad, L. (2000) *Explaining Child Nutrition in Developing Countries: A Cross-Country Analysis*. Research Report no. 111. International Food Policy Research Institute: Washington, D. C.

-
- Smith, L. C., Ramakrisnan, U., Ndiaye, A., Haddad, L. and Martorrel, R. (2003) *The Importance of Women's Status for Child Nutrition in Developing Countries*. Research Report no. 131. International Food Policy Research Institute: Washington, D. C.
 - Thomas, D. (1990) "Intrahousehold Resource Allocation: An Inferential Approach", *Journal of Human Resources*, Vol. 25, No. 4.
 - Thomas, D. (1994) "Like Father, Like Son, or Like Mother, Like Daughter: Parental Education and Child Health", *Journal of Human Resources*, Vol. 29, No. 4.
 - Thomas, D. (1997) "Incomes, Expenditures, and Health Outcomes: Evidence on Intrahousehold Resource Allocation", in Haddad et al. (1997).
 - UN (2004) *Investing in Development*. UN Millennium Project: New York.
 - UNAIDS (2004) *AIDS Epidemic Update 2004*. December.
 - Van Den Beemer, H. P. M., Berg, R. R. and Hesselting, G. (1995) "Towards Local Management of Natural Resources in Senegal", in H. P. M. Van Den Beemer, C. A. Drijver and L. B. Venema (eds.) *Local Resource Management in Africa*. John Wiley and Sons: New York.
 - Vosti, S. A. and Reardon, T. (1997) "Poverty and Environmental Change: Preliminary Evidence and a Framework for Assessing the Links", in M. W. Rosegrant, J. Witcover, R. V. Gerpacio and C. Ringle (eds.) *Agricultural Sustainability, Growth and Poverty Alleviation in East and Southeast Asia: Issues and Policies*. DSE: Feldafing, Germany.
 - Wood, A. (1997) "Openness and Wage Inequality in Developing Countries: The Latin American Challenge to East Asian Wisdom." *World Bank Economic Review* 11(1):33-57.
 - World Bank (2001) *Engendering Development: Through Gender Equality in Rights, Resources and Voice*. World Bank: Washington, DC.