

The 'Kerala model' of development: development and sustainability in the Third World

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If achieving radical reductions in infant mortality and population growth rates and eliminating acute poverty without significantly eroding the ecological balance are corroborating evidence for practising 'sustainable development', then the Indian state of Kerala should be counted as an early example of a state/society which practises 'sustainable development'. Although serious reflection on an idea called 'sustainable development' was in vogue earlier,¹ it was only after the publication in 1987 of the World Commission on Environment and Development (or Brundtland Commission) Report known as *Our Common Future* that the concept achieved programmatic shape and international recognition.² However, the definition of the concept was vague and it was couched in controversial concepts like economic growth borrowed from neoclassical economics. I will not attempt a critique of the received views of sustainable development in this paper.³ My objective, however, is to offer an alternative examination of the concept by arguing that, rather than following a metaphysical approach of postulating *a priori* how sustainable development ought to be practised, it is better to follow a practically reflexive approach of looking for a paradigmatic case of a state or society that has some characteristic features of what might be deemed sustainable development. The idea then is to propose ways to improve that prototype to bring it closer to the ideational content of the concept of sustainable development, and then explicate ways to replicate it elsewhere. I will argue that, despite its limitations, the 'Kerala model' of development should be counted as a possible idealisation of a sustainable development paradigm.

The Indian state of Kerala, with a population of 29 million (larger than Canada's), has become an enigma to analysts of international development, social progress and peaceful social change in the Third World. In less than 30 years, Kerala has made a transition from a society with high infant mortality rates, high fertility and population growth rates, and a high crude death rate to one with a low infant mortality rate, very low population growth,⁴ and a low crude death rate. According to recent estimates, Kerala has achieved average life expectancy of 74 years for women (Indian average, 60 years) and 71 years for men (Indian average, 59 years), an infant mortality rate of 16.5 per thousand

(Indian average, 91) and almost full literacy.⁵ While there are 1040 females per thousand males in Kerala, there are only 928 women per thousand males at the national level.⁶ While growth-based and planned development programmes did not make a dent in reducing poverty, population growth, inequalities in income and resource distribution, and ecological destruction in the Third World, Kerala has stood out in demonstrating through democratic means that radical improvements in the quality of life of ordinary citizens are possible without high economic growth and without consuming large quantities of energy and other natural resources.

Although the intellectual roots of the Kerala model of development may be traced to modernisation theory, its programmatic content and ideological basis, and the human and physical resources to carry out the project, were indigenously developed and mobilised. The project was carried out under great constraints; furthermore, the state had to manoeuvre within the limited autonomy guaranteed by the Indian federal structure for mobilising economic and political resources. In fact, the development work of the state was severely hampered by hostile Congress-led federal governments until recently. The roadblocks of development included non-disbursement of eligible central funds for development projects, and erection of bureaucratic barriers to implementing programmes like land reforms and food distribution to the needy through fair price shops.⁷ It is being argued that it is very much a new model of development that came about as a result of the unique historical experience and agency of the Third World. It bodes well for other states in India and many Third World nations to pay attention to the lessons from Kerala in order to follow a new development path that was charted within the South, especially given the lack of a credible alternative. As Samir Amin, reflecting on Kerala's achievements comments: 'it is incorrect to think that nothing can be done until revolution, and that until then "the worst is the best". On the contrary, there is room for progressive reforms ... which therefore has to be spelled out'⁸

A brief socioeconomic and political sketch of Kerala

Kerala is one of 25 constituent states of the Indian union. It occupies 1.18% of the total land area of India with a population of 29 million, which is 3.43% of the total population of India at the 1991 census.⁹ Kerala came into existence in 1956 by integrating the Malayalam-speaking former princely states of Travancore and Cochin and the Malabar district of the British constituted province of Madras. Kerala is a tropical land of some 38 850 square kilometres (about 15 000 square miles) in area, situated on the southwestern tip of the Indian subcontinent. The population distribution of Kerala, according to religious affiliations by birth is: 57% Hindus, 21.5% Christians, 21% Muslims, and the remaining 0.5% Buddhists, animists, and others.¹⁰ With a population density of 747 persons per square kilometres, Kerala has become one of the most densely populated regions in the world.

The population growth rate in Kerala during the 1950s was the highest in India, but by the 1970s the rate had become the lowest in the country.¹¹ The population growth rate fell from 44 per 1000 in the 1950s to 18 per 1000 in 1991

TABLE 1
Infant mortality rate (per 1000)

<i>Year</i>	<i>Kerala</i>	<i>India</i>
1951	128	140
1961	94	129
1971	61	114
1981	34	110
1991	16.5 ^a	91

^a16.5 is the average of 17 for male and 16 for female infants.

TABLE 2
Birth rate (per 1000)

<i>Year</i>	<i>Kerala</i>	<i>India</i>
1951	44	40
1961	39	41
1971	32	37
1981	26	34
1991	18	30

(lower than China's 19 per 1000), and Kerala's population as a percentage of India's fell from 3.88% in 1971 to 3.44% in 1991.¹² What is remarkable is that this reduction was achieved voluntarily and without any coercion. The success of Kerala in bringing about radical reductions in population growth rate, and improving other indicators of progressive social change, occurred because the policies that brought about these changes were implemented without coercion by democratically elected popular state governments. Amartya Sen argues that China could have achieved its population targets without resorting to draconian coercive measures, had its leadership followed non-coercive persuasion through the instruments of democracy by guaranteeing the political rights and freedom to choose of its people, as the case was in Kerala.¹³ By 1985, the population growth rate of Kerala stabilised to a demographic replacement level net reproduction rate (NRR) of 1.¹⁴ Kerala's female to male ratio is 1.04 to 1 as opposed to the Indian average of 0.93 to 1 and China's 0.94 to 1.¹⁵ Tables 1 to 5 highlight the indicators of social progress of Kerala contrasted with the Indian average during the past four decades.

While Kerala has achieved almost full literacy, the average Indian literacy rate is little over half of Kerala's. Kerala boasts the largest consumption of newspapers, magazines and books per capita in India. Per capita spending on health care and education in Kerala is the highest among all the states, which translates into high indicators of social development. According to Franke & Chasin, by the late 1970s, Kerala ranked number one in 15 out of 21 selected infra-

TABLE 3
Life expectancy at birth: (in years)

Year	Kerala		India	
	Female	Male	Female	Male
1951	45	43	32	33
1961	50	48	41	42
1971	61	60	45	46
1981	68	64	50	51
1991	74	71	60	59

TABLE 4
Literacy rate (%)

Year	Kerala		India	
	Female	Male	Female	Male
1951	32	50	8	25
1961	46	65	13	34
1971	63	77	19	40
1981	76	88	30	56
1991	87	95	39	64

structural and basic services among all Indian states, as indicated in Table 6.

A significant facet of Kerala's high social development is that it came about despite very low per capita income. The meaninglessness of income and GDP per capita as measures of socioeconomic development become obvious when we compare these figures for different states within India. States with per capita income higher than that of Kerala fared very badly in social indicators of development (see Table 7), which clearly shows the inadequacy of income per capita as *the* measure of 'development'.¹⁶ Indicators of development, such as Physical Quality of Life Index (PQLI) and Human Development Index (HDI) measure 'development' relatively better than economic growth indicators like GDP per capita.¹⁷

In 1991-92, the state of Punjab, with more than twice the per capita income of Kerala, had 33 PQLI points less than that of Kerala. Kerala's PQLI was 53 points more than the all-India average, while the national income was about one-fifth more than Kerala's. Anthropologist Richard Franke calculated that, while Kerala had a PQLI of 82 in 1981, the USA index stood at 96.¹⁸ Also, the HDI of Kerala was more than twice the national average. While the HDI was 0.925 for the USA in 1994, Kerala stood at 0.775, with a per capita income about one-hundredth of the former.¹⁹

A very important facet of Kerala's development was that the achievements mentioned earlier were effected through peaceful and democratic means. Elections are held regularly and both leftists and centrists are elected to office. The leftist and socialist governments that governed the state were responsible for

TABLE 5
Sex ratio in population: (females/1000 males)

Year	Kerala	India
1951	1028	946
1961	1022	941
1971	1016	930
1981	1034	935
1991	1040	928

Sources for Tables 1 to 5: L Gulati, *Fisherwomen on the Kerala Coast: Demographic and Socio-economic Impact of a Fisheries Development Project*, Geneva: International Labour Office, 1994; B A Prakash, 'Demographic trends in Kerala'; Kannan, *et al.*, *Health and Development of Rural Kerala*; V K Ramachandran, 'A note on Kerala's development achievements'; A K Sen, 'Populations' and 'Freedoms and needs'; S N Agarwala (ed), *India's Population: Some Problems in Perspective Planning*, Westport, CT: Greenwood Publishers, 1975; B Ghosh, *The Indian Population Problem: A Household Approach*, New Delhi: Sage Publications; R H Cassen, *India: Population, Economy, Society*, New York: Meier Publishers; and World Bank, *World Development Report 1993*, New York: Oxford University Press.

implementing some of the most comprehensive land reform and other redistributive programmes outside the communist world. The elimination of absentee landlords and the return of land to the tiller was the key feature of the land reform programme. The most notable part of the land reform and redistributive programme was the right given to the tenants of the households to retain full ownership of their dwellings plus full title to one-tenth of an acre of the house-compound land.²⁰ Some surplus land, mostly rice fields, appropriated from large land-holders was distributed to the peasants as well. The land reforms were enacted despite ferocious opposition from reactionary landowners and religious groups, and a hostile Congress-led central government.²¹ The state government spent large amounts of the state budget for primary and secondary education, health care, immunisation, agricultural credits and housing targeted at poor citizens of the state. One of the most widely cited reasons for the improvements in the quality of life of poor Keralans is attributed to the establishment of

TABLE 6
Provision of selected basic services among all Indian states, by the late 1970s

<i>Feature</i>	<i>Kerala's rank</i>	<i>Percentage of villages covered</i>	
		<i>in Kerala</i>	<i>in all-India</i>
<i>Within two kilometres</i>			
All-weather roads	1	98	46
Bus stops	1	98	40
Post offices	1	100	53
Primary schools	1	100	90
Secondary schools	1	99	44
Fair-price shops	1	99	35
Health dispensaries	1	91	25
Health centres	1	47	12
<i>Within five kilometres</i>			
Higher education facilities	1	97	21
Hospitals	1	78	35
Fertiliser depots	1	93	44
Agricultural pump repair shops	1	65	19
Veterinary dispensaries	1	82	45
Credit cooperative banks	1	96	61
Commercial banks	1	96	40
Seed stores	2	63	40
Railway stations	8	23	18
<i>In the village</i>			
Drinking water	5	96	93
Electricity	3	97	33

Source: R W Franke & B H Chasin, *Kerala: Radical Reform as Development in an Indian State*, p 13.

fair-price or 'ration shops' through which essential staples were made available at subsidised rates. School lunch and feeding programmes have also helped to improve the nutritional standards of young children.²² As part of the land reform programmes, the state government introduced a comprehensive Agricultural Workers Reform Act in the 1970s that provided permanency for labourers attached to the farms, a provident fund and old age pensions, greatly reduced hours of work (between six and eight hours per day), scheduled breaks, tea and lunch, and a minimum wage which is the highest in India.²³ The evolution of a coalition of tenants, landless labourers and industrial workers into an active labour movement (which has staked a claim in the governance of the state) facilitated through democratic institutions has become an enduring feature of the radicalisation of the working class movement in Kerala.²⁴

Besides actively taking part in electoral politics, large number of Keralans have shown an interest in social movements and NGOs working in the areas of environmental protection, culture and education. The well-organised citizens movement may be a direct indication of the dialectical relationship between improved literacy (which again is a result of the active participation of social

TABLE 7
PQLI, HDI and per capita state domestic product (SDP) for 15 major Indian states for the year 1991

<i>States</i>	<i>PQLI</i>	<i>HDI</i>	<i>SDP (Rupees)</i>
Andra Pradesh	42.70	0.3397	5570
Assam	44.03	0.2542	4230
Bihar	18.17	0.1334	2904
Gujarat	58.38	0.5453	6425
Haryana	55.68	0.5995	8690
Karnataka	39.55	0.4772	5555
Kerala	89.11	0.7749	4618
Madhya Pradesh	16.08	0.1863	4077
Maharashtra	53.27	0.6430	8180
Orissa	6.70	0.2132	4068
Punjab	66.28	0.7115	9643
Rajastan	28.41	0.2294	4361
Tamil Nadu	48.09	0.4873	5078
Uttar Pradesh	15.39	0.1095	4012
West Bengal	48.31	0.4176	5383
All-India	36.14	0.3974	5424

Source: EPW Research Foundation, 'Social indicators of development—II', *Economic and Political Weekly*, 21 May 1994, pp 1300–1308. The sdp values are at current prices for the year 1991–92.

movements like the Kerala Sastra Sahitya Parishad or KSSP (about which more later) and other NGOs engaged in literacy promotion, environmental protection and rural development campaigns among the population),²⁵ and the deepening of democratic traditions and values in the civil society of Kerala. Parallel lessons can be drawn between the development of civic traditions in postwar Northern Italy that Putnam describes,²⁶ and that of Kerala's. The role of social movements in Kerala's socioeconomic development needs to be emphasised in the description of the Kerala model. One of the most active social movements which organises environmental conservation, science and literacy popularisation campaigns is the KSSP, which may be loosely translated into English as Kerala Scientific Literacy Society.²⁷ Armed with a campaign theme of 'science for social revolution', the KSSP urges the government to adopt a 'prudent' application of science and technology for development. The measure of success the KSSP has had in influencing development policies to follow an environmentally sound development path is borne out by its ability to stop or modify numerous ecologically controversial industrial and energy projects.²⁸

Kerala, a model of sustainable development?

Although the development literature is replete with suggestions as to how sustainable development ought to be practised, no coherent articulation of the theory and no easily implementable method of achieving it can be found. Sustainable development may soon become another rhetorical flourish in the vast

development literature. Analysts of environment and development seem to have unreflexively developed their own criteria of sustainability. It is categorised as a condition to be achieved *ex ante* without realising that a state/society can be judged to be following a sustainable path only *ex post facto*. What is urgently needed is to look for a case where it is being practised (even in a minimalist sense) in order to make further improvements and a possible replication of the model elsewhere after making modifications based on particular contextual factors.

The most widely accepted definition of sustainable development is 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs'.²⁹ The obvious emphasis here is on intergenerational equity, while intragenerational equity becomes secondary in importance. This legitimates an interventionist, and thus, a global management thrust to addressing global development and environmental problems.³⁰ The World Commission on Environment and Development goes on to claim that 'We see ... the possibility of a new era of growth, one that must be based on policies that sustain and expand the environmental resource base. And we believe such growth to be absolutely essential to relieve the great poverty that is deepening in much of the world.'³¹ The over-emphasis on economic growth is implicit in the Commission's prescription for attaining sustainable development.³² It is not claimed that growth itself is bad, although it can be shown (e.g. in Brazil, Mexico and Venezuela) that countries which continue to promote policies for achieving growth by any means, without prioritising social development, tend to experience hyperinflation and other economic woes. This skewed development thus hurts the poor and those on constant wages because of structural problems like extreme inequalities in income and wealth distribution. Economic growth policies practised through export-led development are having a devastating effect on the environment, particularly the disappearance of rain forests in many countries. Growth policies that led to indiscriminate borrowing by the previous military regimes in Brazil and the Philippines forced these countries to turn to their tropical forests for timber and minerals as sources for earning export income to pay off huge debts owed to foreign banks.³³

Normative and methodological critiques of development economics are legion.³⁴ The development theory embedded in sustainable development models contains the same positivistic and metaphysical assumptions that neoclassical economics takes for granted, such as value-neutral market mechanisms, pollution as an unavoidable externality of industrialisation which is outside the cost function, private property as a natural category as opposed to a particular arrangement of social valuation, capital accumulation, and wealth and income inequalities as naturalised stimulants of economic activities and institutional legitimation. Instead of adjusting the economic models to fit the sociocultural and environmental realities of Third World societies, the people there are blamed for not achieving sustainable development because of 'population explosion' and consuming their 'ecological capital', supposedly without any concern for intergenerational equity.³⁵

A serious deficiency of the official development *qua* sustainable development policy is its neglect of the political-economic dimensions of the international

development debate. It should locate sustainable development within the locus of the global economic trajectories rooted in specific historically-based social and political formations of modern nation-states, and the adverse post-colonial economic relationship maintained between the states of the North and the South. A meaningful sustainable development policy should locate the international linkages between the transfer of capital, labour and natural resources, and should attempt to correct the unequal exchange practices between the two spheres. Formulating a sustainable development policy without paying attention to the structural rigidities and the exploitative relationship between economic agents with contradictory class interests within the Third World and between the Third World and the economic powers of the North leads only to the exacerbation of the iniquitous international economic order. Besides these political-economic considerations, sustainable development projects should pay attention to the crucial role of social movements in negotiating with the state and capital the rights and survival of indigenous populations and weaker social groups affected by the process of modernisation and the reorganisation of traditional modes of production.³⁶ In order to be a meaningful alternative development discourse, sustainable development should expose the ideological bankruptcy of economism in development.

One of the fallacies of development economics that the sustainable thesis still retains is the belief that, by maximising economic growth, poverty can be eliminated. And, doing that in an ‘environmentally prudent’ way would supposedly give us sustainable development. As Herman Daly persuasively argues, ‘it is precisely the nonsustainability of growth that gives urgency to the concept of sustainable development’.³⁷ The Kerala story tells just the opposite. Achieving growth should not be deemed as an end in itself, as Kerala shows. At most, achieving growth ought to be taken as a means to a social goal of increasing (or providing equal opportunity to the means of) the wealth of every citizen in society. Paying attention to the means is more important than aiming for the end (growth) in itself in achieving sustainable development. Kerala is criticised for its labour militancy, which discourages outside investors, or as financially inefficient, or dismissed as an anomaly, or explained away as a unique case that has nothing to offer for others to learn from.³⁸ In fact, Heller argues that the democratic mobilisation of the working class and its allies and their success in translating this into electoral politics and becoming part of the government has created an ideal investment climate, because of what Heller describes as the ‘class compromise’ pragmatism adopted by the working class movement. The reluctance of outside capital to move into the state was based on unfounded prejudice on the part of the capitalists against organised labour, while studies have shown that Kerala workers are the most productive and least prone to wildcat strikes in India.³⁹ Heller’s arguments are borne out by the recent influx into Kerala of outside investors in the information and engineering sectors to take advantage of its highly educated human resources. What slows outside investment in Kerala is the stagnation and lack of adequate investment in the electric power sector more than anything else.⁴⁰

The development project in Kerala has only just begun, and the Kerala model is far from perfect, despite the fact that Kerala has attained indicators of social

development on a par with European and North American levels. However, there are several groups of people, such as members of the large fishing community, female domestic helpers and some female agricultural workers, migrant workers from other states, and some tribal people, who have yet to benefit from the development programmes, despite the fact that 'Kerala's achievements have largely transcended caste, class, rural/urban and gender limitations'⁴¹

It should be reiterated that reducing social and economic inequalities through democratic and peaceful means is the best way to practice sustainable development. And to a large extent, Kerala has shown that, despite tremendous odds, it was able to eliminate acute poverty and deprivation without attaining rapid growth in per capita GNP as is 'expected' of all economic development models/theories. Kerala is a paradigmatic case because conventional development models legitimated through quantitative growth measures like GNP and income per capita fail to account for the indicators of social progress in the state, as is amply illustrated by the indicators of social development cited earlier. It is thus important to look for sustainability indicators not in quantitative measures alone, but in qualitative indices as well. If increasing per capita income is the ultimate measure of economic development, then Kerala should be categorised as an extremely poor state, poorer than several other Indian states. However, its population growth rate, infant mortality rate, crude death rate and literacy rate are on a par with many rich nations (in terms of per capita income), while these indicators remain very low in most other Indian states (whose per capita income is higher than that of Kerala). This inevitably leads one to conclude that growth-based per capita income as an indicator is probably a meaningless measure of development. The important question for industrialised nations and the rapidly industrialising nations of East Asia is, can the very high GDP per capita they enjoy be sustained (or increased at a secular rate) with rapidly rising throughput and environmental stress?

The factors responsible for Kerala's achievements can be attributed to: meaningful land reforms; 'food for all' schemes through fair-price shops and feeding programmes for school children, infants and mothers; providing easy access to primary and preventative healthcare; promoting high literacy, particularly among women, through free and universal primary and secondary education; high mandated agricultural and farm wages; cost-effective transportation facilities; rural electrification; engaging the poor and working people in democratic processes, such as in labour and civic organizations; fostering public dialogue on environmental conservation issues; and developing social movements through the establishment of a civil society to promote environmental conservation and other grassroots projects. Various analysts attribute either one or a combination of the following factors for Kerala's 'success': Kerala's ability to undertake public action through the mobilisation of peasant farmers, tenants and industrial workers by leftist parties;⁴² the spread of literacy, particularly among women;⁴³ maintaining women's rights (though these rights were mostly a result of historically contingent factors);⁴⁴ reducing social inequality and decreasing inequalities in income and consumption;⁴⁵ and indigenous evolution and popularisation of social movements concerned with

environment and development issues.⁴⁶ According to Franke & Chasin, the best description that can be ascribed to Kerala’s experience is a ‘social justice model’ of development.⁴⁷

It is being argued that the Kerala model may be taken as an early prototype of sustainable development because of the following factors: (1) improvements in the quality of life indicated by sustained and progressive improvements in the standard of living evidenced by the reductions in infant mortality and birth rates, substantial increases in life expectancy at birth and overall improvements in the status of women; (2) improvements in environmental stability indicated by the disappearance of irreversible ecological changes and frugal and efficient use of energy and natural resources; (3) improvements in relative social and economic inequality and the importance accorded to social justice as a prerequisite for development; and (4) decline in political strife orchestrated by the establishment of democratic institutions, and traditional communal harmony maintained between the three major religious groups.⁴⁸

These findings are based on the changes that have taken place in Kerala during the past three to four decades that Alexander, Amin, Ramachandran, Heller, Sen, Jeffrey, Ratcliffe, Franke & Chasin and numerous other analysts have pointed out. To support the sustainability thesis from the environmental point of view, findings from the author’s own field research in Kerala, and the natural resources accounting survey conducted by the KSSP and the comprehensive Peoples Resource Mapping Programme provide empirical support.⁴⁹ The People’s Resource Mapping Programme mobilises villagers and village-level institutions to develop detailed maps of their resources. These maps and information are combined with scientific data to form a geographical information system (GIS) to conduct micro-level planning for development. Environmental considerations, optimal use of local resources and long-term consequences of resource use form the basic thinking on achieving sustainable development. Electricity in Kerala is produced exclusively from small-to-medium-scale hydroelectric projects. Large-scale deforestation did not take place as a result of these projects.⁵⁰ The state government claims that almost all households (about 2.5 million) in Kerala are electrified. Energy for cooking comes, mostly, in the form of bioenergy which is derived from household plots and renewable marginal forests and hills. Coconut trees provide nearly 30% of cooking energy in the form of renewable palm fronds, coconut shells, husks, dried stems and shoots of coconut bunches. Cooking fuels like bottled gas and electricity are also being used by a growing segment of the population. Although the acreage of rain forests has declined from pre-independence figures, popular campaigns to preserve the existing forests seem to be successful. It appears that the energy use and consumption pattern is stable and sustainable.

It is hoped that further studies will be able to corroborate the above claims. As Karl Popper eloquently pointed out, theories and hypotheses cannot be proved as true or false.⁵¹ They can only be corroborated as statements on the probable state of reality. There is no non-circular way of affirming a metatheoretical claim that the Kerala model of development has paradigmatic features of sustainable development based on the historical (empirical) observations enumerated here, given the radical contingency of all knowledge claims. The

historicist turn taken by social theorists like Marx, and most recently, Thomas Kuhn, among others, has weakened the divide between such dualism as theory–observation, fact–value, normative–empirical and prescriptive–descriptive. Nevertheless, the normative can be retained by resorting to a practically reflexive theorising; that is, theory should reflect or correspond to practice (praxis).⁵² The normative claim that the developmental trajectory charted by modern Kerala since the inception of the radical development programmes shows a resemblance to a possible ‘sustainable development model’ is very much in solidarity with this reflection.

Conclusion

As argued earlier, criteria for sustainability should include not only environmental stability and improvement, but social, political and economic justice, improvement in the quality of life of vulnerable sections of the population at low cost, and an improvement in the overall status of women. Though Kerala has a low throughput, the indicators of social progress have not suffered because of sustained efforts to limit population growth rate and social inequality, and to conserve resources frugally and use them on a shared basis. Environmental analysts like Hazel Henderson and Herman Daly argue that managing with low throughput itself is an indication of sustainability within a steady-state economic framework.⁵³ William Alexander argues that Kerala may be a prototype of sustainable development because of its low throughput and the high rate of sharing of resources among members of the extended family and community.⁵⁴ The test of practising sustainable development should be based upon a society’s ability to maintain and further improve upon the quality of life of its citizens by living within its own resource means. It is thus still debatable whether Kerala has entered a mature stage of self-sustaining development. It can only be hoped that the political leadership and the policy makers concerned will continue to implement policies to take it to the mature stage. We can only share the optimism of Samir Amin that ‘Kerala’ achievements are the best way to prepare for the next stage, if only because they result in strong popular organizations, and give reasons for hope, and something to guard’.⁵⁵

The objective here is not to romanticise and take out of context the Kerala model of development. As pointed out earlier, Kerala’s development has just begun, and a lot more has to be done to make it more enduring, and most importantly, to make it more inclusive of those who were left out of the earlier development programmes. The fact that industrial and agricultural growth has to be achieved to improve the material standards of living of all Keralans is undeniable. But the high indicators of social development and a highly literate populace are conducive to rapid industrialisation of the state, which is essential for creating more jobs and material outputs to meet local needs.⁵⁶ As E M S Namboodiripad—the veteran communist leader and the first democratically elected Chief Minister of Kerala whose administration initiated much of the land reform and other redistributive development programmes mentioned earlier—warns, a country or state cannot prosper without industrialisation, modernisation of agriculture and the ‘development of modern secular and scientific edu-

cation’.⁵⁷ P K Vasudevan Nair, a communist leader and a former Chief Minister, correctly points out that the Kerala model needs follow-up, while duly acknowledging the major positive indicators of development in the state, which he, among others, helped to bring about.⁵⁸

The case being made here is that the ‘Kerala-model’ is not based on any one of the existing theories or models of development and modernisation. Costa Rica (a nation with a fraction of Kerala’s population) or Sri Lanka or Cuba might have some interesting comparative features. However, the East Asian ‘tigers’ are special cases of export-led development, made special by their political and economic dependence on the industrialised West for specific historical reasons. The sustainability of the ‘spectacular’ growth and development of these nations is dependent on the economies of the West. Also, the ‘development’ of these nations and states is occurring at a very high cost, such as deteriorating environmental conditions and poor civil and democratic rights for workers and ordinary citizens.⁵⁹

Since the Third World is littered with failed development models, the Kerala model should be studied earnestly for improvements and possible replication. That Kerala has come closest to the sustainable development ideal in practice makes it more interesting to study. Thus, a normative claim can be made that a successful model which emerged from within the Third World might be more appropriate for other developing societies than models derived from a different historical and cultural tradition. It is, however, duly acknowledged that histories, cultures and economic systems should not be viewed through an essentialist lens, but taken merely as historically contingent and shaped entities. One must deconstruct any essentialist claims to any model of reality and the Kerala model is no exception. There is nothing essentially unique about Kerala that makes it *sui generis* and thus unsuitable as a model of development for other states or societies. Valuable lessons can be drawn from this case for applying the findings to other states and societies in the Third World in a shared sense of solidarity.

Notes

This is a modified and updated version of a paper presented at a seminar, ‘The “Kerala model” of sustainable development re-assessed’, which was jointly organised by the South Asia Program and the Department of Science & Technology Studies at Cornell University on 8 April 1994 while the author was Fellow in Science, Technology, and Global Environment in the Department of Science and Technology Studies during 1993–94. Thanks are due to Shelly Feldman, Sabu George, Ron Herring and Peter Taylor for their critical comments on my talk.

¹ For a critical genealogy of the concept of sustainable development, see S Lele, ‘Sustainable development: a critical review’, *World Development*, Vol 19, No 6, 1991, pp 607–621; P Ekins, ‘Making development sustainable’, in W Sachs (ed), *Global Ecology: A New Arena of Political Conflict*, London: Zed Books, 1993; and M Redclift, *Sustainable Development: Exploring the Contradictions*, London: Methuen, 1987.

² It may be recalled that the ‘Earth Summit’ or the United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro in 1992 gave official blessing to the concept of sustainable development. How the future of the world can be shaped through sustainable development was amply illustrated in the UNCED report known as *Agenda 21*. See United Nations, *Agenda 21: Programme of Action for Sustainable Development*, New York: United Nations, 1993.

³ For a normative critique of sustainable development, see G Parayil, ‘Environment and development: a normative appraisal of sustainable development’, *Philosophy and Social Action*, Vol 22, No 2, 1996, pp 23–36; and, Redclift, *Sustainable Development*.

- ⁴ The fertility rate for Kerala in 1991, according to A K Sen, 'Population: delusion and reality', *New York Review of Books*, Vol 16, No 15, 22 September 1994, pp 62–71, was 1.8. The birth rate had fallen from a figure of 44 per thousand in the 1950s to 18 by 1991. A fertility rate of 1.8 and a demographic replacement net reproduction rate (NRR) of 1 (reached in 1985, see Kannan *et al*, note 10) may indicate a negative population growth trend.
- ⁵ V K Ramachandran, 'A note on Kerala's development achievements', *Monthly Review*, Vol 47, No 1, 1995, pp 19–24; and Sen, 'Population'.
- ⁶ Ramachandran, 'A note on Kerala's development achievements'.
- ⁷ T V Sathyamurthy, *India Since Independence: Studies in the Development of the Power of the State: Centre-State Relations, the Case of Kerala*, New Delhi: Ajantha Press, 1985; I S Gulati, 'Central funding agencies neglecting Kerala', *The Hindu*, 9 October 1995, p 5; R W Franke & B H Chasin, *Kerala: Radical Reform as Development in an Indian State*, Oakland, CA: Institute for Food and Development Policy, 1994.
- ⁸ Samir Amin, 'Four comments on Kerala', *Monthly Review*, Vol 42, No 8, 1991, p 28.
- ⁹ B A Prakash, 'Demographic trends in Kerala', in Prakash (ed), *Kerala's Economy: Performance, Problems, Prospects*, New Delhi: Sage Publications, 1994, pp 43–60.
- ¹⁰ K P Kannan, K R Thankappan, V R Kutty & K P Aravindan, *Health and Development of Rural Kerala*, Trivandrum, Kerala: Kerala Sastra Sahitya Parishad, 1991.
- ¹¹ *Ibid*.
- ¹² Sen, 'Population'; Sen, 'Indian state cuts population without coercion', *New York Times*, 4 January 1994; and Prakash, 'Demographic trends in Kerala'.
- ¹³ A K Sen, 'Freedoms and needs: an argument for the primacy of political rights', *The New Republic*, 10 January 1994, pp 31–38; and Sen 'Economic development and social change: India and China in comparative perspectives', Development Economics Research Programme Discussion Paper Series (DEP No 67), London: London School of Economics, December 1995.
- ¹⁴ Kannan *et al* *Health and Development of Rural Kerala*.
- ¹⁵ A K Sen, 'The economics of life and death', *Scientific American*, May 1993, pp 40–47.
- ¹⁶ For an excellent overview and analysis of the problems of measurement of development, see J Felipe & M Resende, 'A multivariate approach to the measurement of development: Asia and Latin America', *Journal of Developing Areas*, No 30, 1996, pp 183–210.
- ¹⁷ The Physical Quality of Life Index or PQLI was developed by the Overseas Development Council (see D M Morris, *Measuring the Condition of the World's Poor: The Physical Quality of Index*, New York: Pergamon Press, 1979) in order to show the hollowness of economic indicators as measures of (social) development. PQLI is a composite measure of three social indicators of development—infant mortality, life expectancy and literacy. Each component of the composite is converted into a scale of 0–100, and a linear combination is developed by giving equal weights to the three indicators, with the lowest performing country assigned the zero value and the highest performing country the hundred in each category. The Human Development Index or HDI is a deprivation measure which was constructed by the United Nations Development Programme, *Human Development Report 1990*, New York: Oxford University Press, 1990. Unlike PQLI, HDI includes per capita GDP as well. The HDI composite is constructed with three indicators—life expectancy at birth (longevity), adult literacy (knowledge) and the log of GDP per capita (standard of living) adjusted for purchasing power parity. First, a deprivation index is indicated on a scale of one to zero, with a minimum value (the maximum deprivation set equal to one) and a desirable value (no deprivation set equal to zero) specified for each of the three components. HDI is arrived at by subtracting this deprivation composite from 1. In 1991 the 'knowledge' indicator was amended to include mean years of schooling (one-third weight) along with adult literacy (two-thirds weight).
- ¹⁸ R W Franke, *Life Is a Little Better: Redistribution as a Development Strategy in Nadur Village, Kerala*, Boulder, CO: Westview Press, 1993, p 2.
- ¹⁹ EPW Research Foundation, 'Social indicators of development—II', *Economic and Political Weekly*, 21 May 1994, pp 1300–1308; and United Nations Development Programme, *Human Development Report 1994*, New York: Oxford University Press, 1994.
- ²⁰ House-compound land is of great economic value in Kerala, as Franke & Chasin, *Kerala* point out, because income-generating trees and food crops, such as coconuts, bananas, vegetables, cashews, mangoes, cassava and areca nut are grown on these lands.
- ²¹ See Sathyamurthy, *India since Independence*; and Franke & Chasin, *Kerala*. For a historical account of the land reform struggles in Kerala, see E M S Namboodiripad, *Kerala, Society and Politics: an Historical Survey*, New Delhi: National Book Centre, 1984; K K N Kurup, *Modern Kerala: Studies in Social and Agrarian Relations*, New Delhi: Mittal Publications, 1988; Kurup, *Agrarian Struggles in Kerala*, Trivandrum, Kerala: CBH Publications, 1989; T J Nossiter, *Marxist State Governments in India*, London: Pinter Publishers, 1988; and R J Herring, *Land to the Tiller: The Political Economy of Agrarian Reform in South Asia*, New Haven, CT: Yale University Press, 1983.
- ²² R W Franke & B H Chasin, 'Development without growth: the Kerala experience', *Technology Review*, No 93, 1990, pp 42–51.

- ²³ R J Herring, 'Dilemmas of agrarian communism: peasant differentiation, sectoral and village politics', *Third World Quarterly*, Vol 11, 1989, pp 89–115.
- ²⁴ P Heller, 'From class struggle to class compromise: redistribution and growth in a South Indian state', *Journal of Development Studies*, Vol 31, No 5, 1995, pp 645–672.
- ²⁵ See G Parayil & W Shrum, 'Non-governmental research organizations in Kerala', *Science, Technology, and Development*, Vol 14, 1996, for an empirical study of the contribution of Kerala NGOs in the areas of agriculture and environment.
- ²⁶ See, R D Putnam, *Making Democracy Work: Civic Traditions in Modern Italy*, Princeton, NJ: Princeton University Press, 1993.
- ²⁷ G Parayil, 'Social movements, technology and development: a query and an instructive case from the Third World', *Dialectical Anthropology*, 17, 1992, pp 339–352; and M Zachariah & R Sooryamoorthy, *Science for Social Revolution? Achievements and Dilemmas of a Development Movement—The Kerala Sastra Sahitya Parishad*, London: Zed Books, 1994.
- ²⁸ G Parayil, "'Science for social revolution": science and culture in Kerala', *Impact of Science on Society*, Vol 39, No 155, 1989, pp 233–240; and Parayil, 'Social movements, technology and development'.
- ²⁹ World Commission on Environment and Development (WCED), *Our Common Future*, New York: Oxford University Press, 1987, p 43.
- ³⁰ For a critical view of the development of sustainable development discourse as a means to impose a global, that is a Western, solution to environmental problems in the Third World, see W Sachs (ed), *Global Ecology: A New Arena of Political Conflict*, London: Zed Books, 1993.
- ³¹ WCED, *Our Common Future*, p 1.
- ³² Herman Daly, 'Sustainable growth: an impossibility theorem', *Development*, Nos 3/4, 1990 pp 45–47, presents convincing arguments against economic growth as the solution to attaining sustainable development.
- ³³ See, 'What the Bank doesn't tell you', *The Ecologist*, Vol 24, No 1, 1994, p 2; S B Hecht, 'Logics of livestock and deforestation: the case of Amazonia', in T E Downing *et al*, (eds), *Development or Destruction: The Conversion of Tropical Forest to Pasture in Latin America*, Boulder, CO: Westview Press, 1992; G Monbiot, *Amazon Watershed: The New Environmental Investigation*, London: Abacus, 1992; G Parayil & F Tong, 'Pasture-led and logging-led deforestation in the Brazilian Amazon: the dynamics of socio-environmental change', working paper, Hong Kong, 1995; and R Pineda-Ofrenco, 'Debt and environment: the Philippine experience', in M C Howard (ed), *Asia's Environmental Crisis*, Boulder, CO: Westview Press, 1993, pp 221–233.
- ³⁴ For a normative critique of development economics within the neoclassical paradigm, see M Edwards, 'The irrelevance of development studies', *Third World Quarterly*, Vol 11, No 1, 1989, pp 116–135; D Seers, 'The birth, life and death of development economics', *Development and Change*, Vol 10, No 4, 1979, pp 707–719; and G Parayil, 'Development studies, a progressive research tradition', *Journal of Science Studies*, Vol 3, No 2, 1990, pp 47–56.
- ³⁵ Blaming the victims for the environmental problems in the Third World has become an accepted wisdom in the environment and development field. It has become a respectable position for environmental analysts in the West and some among the Third World elites to blame the poor people in the Third World for causing deforestation, desertification other environmental problems. See G Hardin, *Living Within Limits: Ecology, Economics, and Population Taboos*, Oxford: Oxford University Press, 1993; Hardin 'The tragedy of the commons', *Science*, No 162, 1968, pp 1243–1248; P R Ehrlich & A N Ehrlich, *The Population Explosion*, New York: Simon & Schuster, 1990; and G K Meffe & A N Ehrlich, 'Human population control: the missing agenda', *Conservation Biology*, 7, 1993, pp 1–3.
- ³⁶ For an excellent exposition of these issues, see Redclift, *Sustainable Development*; and G Parayil, 'Environment and development'.
- ³⁷ Daly, 'Sustainable growth', p 45.
- ³⁸ In fact, Heller, in 'From class struggle to class compromise', shows that labour mobilisation in the context of Kerala's electoral politics has facilitated the redistributive programmes of the state by being able to mediate the class conflicts, because the labour movement's voice was taken seriously by the elected governments. The fiscal problems the state government faces and the potential consequences they may have for Kerala was analysed by K K George, *Limits to Kerala Model of Development: An Analysis of Fiscal Crisis and its Implications*, Trivandrum, Kerala: Centre for Development Studies, 1993. Rachel Kumar, 'Development and women's work in Kerala: interactions and paradoxes', *Economic and Political Weekly*, No 241, 17–24 December 1994, pp 3249–3254, analyses both the gains and losses to women's participation in employment in Kerala. She argues that women's participation in the employment sector has gone down lately. Whether a causal relationship can be found between the developmental trajectory and this paradox would be an important finding.
- ³⁹ Heller, 'From class struggle to class compromise'. Former Kerala Chief Minister, A K Anthony, '“Kerala model” neglected productive aspect', *The Hindu*, 25 September 1995, p 5, also echoes the sentiment that industrialists still harbour the notion of labour militancy in Kerala without any basis, and asserts that Kerala is one of the most (industrially) peaceful states in India.

- ⁴⁰ One of the major items in the election manifesto of the Left Front coalition which was returned to power in the 1996 general election was to mobilise capital within Kerala to invest in electric power projects. For more on Kerala's developmental bottlenecks, see Franke & Chasin, *Kerala* and Gulati, 'Central funding agencies neglecting Kerala'.
- ⁴¹ R W Franke & B H Chasin, 'Female-supported households: a continuing agenda for the Kerala model?', paper presented at the 'Seminar on Women in Kerala: Past and Present', Government College for Women, Thiruvananthapuram, Kerala, 11–15 February 1995, p 1. Franke & Chasin estimate the outlier to be about 15% of the total population. Significant though this number is, they emphasise that 85% beneficiaries is a 'remarkable achievement'.
- ⁴² Ramachandran, 'A note on Kerala's development achievements'; Heller, 'From class struggle to class compromise'; Franke & Chasin, *Kerala*; and T J Nossiter, *Communism in Kerala: A study in Political Adaptation*, Berkeley, CA: University of California Press, 1982.
- ⁴³ A K Sen, *Inequality Reexamined*, Cambridge, MA: Harvard University Press, 1992; and Sen, 'The economics of life and death'.
- ⁴⁴ Sen, 'Population'; Sen, 'Freedoms and needs'; R Jeffrey, *Politics, Women and Well-Being: How Kerala Became a Model*, London: MacMillan, 1992.
- ⁴⁵ J Ratcliffe, 'Social justice and the demographic transition: lessons from India's Kerala', *International Journal of Health Services*, Vol 8, 1978, pp 123–144; W Alexander, 'Prototype for sustainable development: Kerala', paper presented at the Conference on Varieties of Sustainability, Agriculture and Human Values Society, Pacific Grove, CA, 9–12 May 1991.
- ⁴⁶ Zachariah & Sooryamoorthy, *Science for Social Revolution?*
- ⁴⁷ R W Franke & B H Chasin, 'Kerala state: a social justice model', *Multinational Monitor*, Vol 16, Nos 7–8, 1995, pp 25–28.
- ⁴⁸ Critics and independent analysts argue that, as a result of the recent changes in Indian polity and economy, the drive to accelerate economic liberalisation and reduce welfare spending is cutting into Kerala's gains. Being only a sub-national entity, Kerala is not immune to national policy strictures and political realignments. However, my basic arguments stand. These new changes are not a result of the earlier policies that created the near sustainable development indicators that Kerala achieved. If the above-mentioned problems were caused because of the radical reform policies, that would be a different issue altogether.
- ⁴⁹ The author conducted field research in Kerala in 1988, 1992 and 1994. For details on Kerala's environmental, natural and social resource base, see Kerala Sastra Sahitya Parishad, *Keralathinde Ettam Paddhathi* [Kerala's Eighth Five Year Plan], Trivandrum, Kerala: Social Scientist Press, 1988; Centre for Earth Science Studies (CESS), *Project on Panchayat Level Resource Mapping for Decentralised Planning with People's Participation*, First Annual Report, Thiruvananthapuram: CESS, 1992. CESS is a state-government funded research institution. As part of an agriculture and environment field research project, CESS scientists were interviewed by the author in June 1994. According to the CESS scientists, creating 'land literacy' among the people of Kerala is one of their major resource mapping objectives.
- ⁵⁰ It may be taken as the power of the grassroots social movement NGOs like the KSSP that a major hydroelectric project planned by the government was blocked and later abandoned because of fear that the project might destroy a rainforest called the 'Silent Valley'. For more on this episode, see Parayil, 'Science for social revolution'; and D D' Monte, *Temples or Tombs? Industry versus Environment: Three Controversies*, New Delhi: Centre for Science and Environment, 1985.
- ⁵¹ As Karl Popper, *The Logic of Scientific Discovery*, London: Routledge, 1992, pointed out, theories or hypotheses cannot be proved true or false. All we can do is to corroborate them through better evidence. Thus, my claim is not that the hypothesis of the 'Kerala model' of development is the only true version of truth or reality gleaned through a method of induction or intuition, however self-evident it may appear to be. The objective, simply put, is to provide evidence to support a hypothesis and to withstand refutation.
- ⁵² For an expanded theoretical exposition of the concept of practical reflexivity, see R Gunn, 'Marxism and philosophy: a critique of critical realism', *Capital & Class*, No 37, 1988, pp 87–116. For an example of using the concept of practical reflexivity in social theory, see G Parayil, 'Practical reflexivity as a heuristic for theorizing technological change', *Technology in Society*, Vol 19, 1997 (forthcoming).
- ⁵³ See H Henderson, 'From economism to systems theory and new-indicators of development', *Technological Forecasting and Social Change*, No 37, 1990, pp 213–233; H E Daly, *Steady-State Economics: Second Edition with New Essays*, Washington, DC: Island press, 1991; and Daly 'Sustainable growth'.
- ⁵⁴ Alexander, 'Prototype for sustainable development'.
- ⁵⁵ S Amin, 'Four comments on Kerala', p 29.
- ⁵⁶ Kerala's per capita state domestic product (SDP) has been increasing since 1987, industrial growth has improved and agriculture has seen an annual growth of 7.5% recently. See, 'Growth with dignity: comment', *India Today*, 15 August 1996, p 5.
- ⁵⁷ E M S Nambodiripad, 'Kerala model is one of deindustrialisation', *The Hindu*, 11 September, 1995, p 5. Nambodiripad's claim that the Kerala model is one of 'deindustrialisation' may be a sign of exasperation on his part because of the lack of investment in the industrial sector and of its lacklustre performance in job creation. However, the situation is getting better as indicated above (see note 56).

⁵⁸ P K Vasudevan Nair, 'Kerala model needs follow up', *The Hindu*, 18 September 1995, p 5. Nair points out that the bottleneck for further progress comes from inadequate investments in agriculture, industry and electric power sectors.

⁵⁹ F C Deyo, (ed), *The Political Economy of the New Asian Industrialization*, Ithaca, NY: Cornell University Press, 1987. The continuing repression of the populace in several East Asian countries with the excuse of maintaining stability and economic growth is testimony to this fact.

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