

# Development, Malaria and Public Health Policy

## A Case Study in Goa

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*In Goa, a small state in India, construction activity has been a major factor in the spread of malaria. While private builders, primarily to catering to tourist demand and speculative real estate transactions, the costs of the incidence are being borne by migrant labour, and the local population. The focus of intervention, it is argued here, is incorrectly placed on the migrant worker. Instead, the increased state expenditure on health, should be financed by taxing the builders who are responsible for creating breeding grounds at construction sites, which make vector control methods dysfunctional.*

IN popular perception, as well as in conventional development literature, poverty has often been considered the primary cause of environmental degradation. The consensus approach of the international developmental agencies, like the World Bank and the Asian Development Bank, and international commissions, including the Brundtland Commission, subscribe to the above view [Duraiappah 1993]. The central assumption underpinning this causality, is that large sections of the world's poor live in fragile environments and because of lack of resources, have little to invest in its protection. During crises, they further degrade the environment in the sheer race for survival, thereby jeopardising their own future well-being. According to this consensus, deforestation, land degradation, sanitation and clean water supply, air pollution and loss of biodiversity are the main areas of concern for analysing environmental degradation [World Bank 1992].

The conservative economic method of understanding well-being was considered to be the per capita national income, especially to rank economic progress of different nations. The United Nations Development Programme (UNDP) has formulated an alternate measure of development. It uses three items for calculating the Human Development Index (HDI): longevity (measured by life expectancy), knowledge (combination of adult literacy and mean years of schooling) and standard of living (purchasing power parity - real per capita GDP adjusted for the local cost of living) [UNDP 1994:91]. This is widely accepted as a more comprehensive index than the pure per capita national income as a measure of development.

Understandably, 'longevity' relates to health and hygiene. And, public health has a great degree of dependence on environment. Negative (positive) changes therein, account for spread (control) of communicable diseases among local populations. Malaria is a case in example.

In a recent contribution, Pai et al (1997) have argued that "migration malaria is an

important epidemiological sub-type... (and) it impacts on every other type of malaria." They suggest that migrant populations act as transmitters of malaria. In Goa, where our study is based, similar observations have been noted by Kumar (1991) and Kaliwal (1992) and, like Adak (1994) have found, construction labourers to be the target occupation group affected by malaria. This has resulted in the official opinion that construction labourers therefore have to be monitored to check the spread of the disease. It is the migrant construction labour who bears a pecuniary cost to prove that s/he is not infected or a carrier. The exact details of the Goa case study will be discussed in subsequent sections.

Pai et al (1997) also point out that public policy often in the name of controlling the disease attempts to monitor migratory labour primarily (one suspects) because of their complete lack of negotiating power for privileges as an organised occupational group. A similar attitude has been adopted by the state government in Goa which is made evident in this case, through the amendment to the Goa Public Health Act in March 1996, which has declared malaria as a notifiable disease.

While agreeing with Pai et al (1997) on the above, we further argue that malaria, which is categorised as a communicable disease, should really be classified as an occupational disease, especially from the point of view of public policy. When a disease is classified as just a communicable disease, the causality of incidence and spread, and therefore target intervention point is open to interpretation. The reason for the current status of malaria as a communicable disease is probably that there does not seem to be any direct link between any one category of work and malaria. Recent research, however, indicates that malaria needs to be re-classified as an occupational disease.<sup>1</sup> There is evidence, even from official sources, that construction has direct links with the spread of malaria [Kaliwal 1992 and Kumar et al 1991; 1992; 1995]. While in the case of other occupational diseases, the cost of

worker's disability due to occupational hazards is partly borne by the employer, but in the case of malaria the roles seem to have been reversed.

The state having abrogated for itself the responsibility of citizens' welfare, especially the most vulnerable section of the working population, has in the process veiled the role of the construction lobby. The additional financial strain put on the public health system due to the increased incidence of malaria is now being borne either individually by affected patients, or by tax payers as a whole, while those responsible (that is the construction lobby) for (a) bringing into the state, an already affected population, and (b) maintaining breeding sites (curing tanks) have been let off the hook. We will further argue below, that since a large section of the construction activity, is tourism related construction, a combination of factors have led to the current attitude towards control of the malaria vector and prevention of the spread of the disease.

The recent interest in malaria and public health *in general*, may be attributed to the resurfacing of many diseases in chronic forms, malaria being one of them. From the colonial period, the spread of malaria was associated with expansion of modern irrigation systems [Whitcombe 1983,1996] and is now accepted as concomitant to the process of expansion of canal irrigation [Mankodi 1996], Vector-borne diseases like dengue fever, which were considered eradicated, have once again re-surfaced.

The worldwide fact sheet on malaria states that it is endemic in 91 countries. It accounts for more than 120 million clinical cases and over one million deaths each year of which, Tropical Africa alone has 80 per cent of the total cases. Malaria accounts for 10 per cent to 30 per cent of all hospital admissions. 8,00,000 children under the age of five (i.e., 15 per cent to 25 per cent) die from malaria every year, making it one of the major causes of infant and juvenile mortality [WHO 1997].

In terms of policy thinking on malaria, Bradley (1991) characterises the decade of the 1950s as the attack phase and the 1960s

as the consolidation phase of the eradication programme. The 1970s was the resurgence phase of the disease, and 1980s the decade of chaos. Optimism of the earlier years was largely due to the effectiveness of DDT spraying. However, the resurgence is attributed to the fact that mosquitoes have developed strains of DDT-resistance. While this was a worldwide phenomena, similar trends were noticed in India too. It might be useful at this point to recapitulate the struggle against malaria in India.

#### MALARIA CONTROL IN INDIA

The first comprehensive National Malaria Control Programme was launched between 1953-58. The success of the programme led to the initiation of the National Malaria Eradication Programme (NMEP) from 1958. In 1965 the lowest incidence was noted - 0.1 million cases per annum. The public health establishment at that time felt that because the disease was on its way out and it was only a matter of time before being completely eradicated, it should be merged with the basic health services. The resurgence phase saw the annual incidence going up to 6.4 million in 1976. A Modified Action Plan was introduced in 1977 and thereafter the incidence dropped to two million cases by 1984. However, within a decade there was once again a resurgence with malaria taking epidemic proportions. On the advice of an expert committee, a Malaria Action Plan (MAP) was launched in 1995 [Gol 1995]. In our study based in the state of Goa, we have focused on statewide trends and analysed consequences in one primary health centre located in Candolim, a census town in north Goa, which has a population of 45,294 as per the 1991 Census [DHS 1996].

#### MALARIA CONTROL IN GOA

Goa was under Portuguese colonial rule till 1961. The NMEP, which was in operation in the rest of the country, was also initiated in Goa in 1963. Malaria, is by no account, new to Goa. There are several medico historical accounts of malaria epidemics in the state. Records indicate a depopulation in some parts of Goa due to a malaria epidemic in the early 1900s [De Melo 1933; Gracias 1994 and Srivastava 1989]. The incidence was highest in the eastern and south-eastern, hilly regions of Sanguem, Satari, Canacona, Quepem and Sanquelim talukas. "No industry and agriculture could develop. Vast, fertile lands once cultivated were abandoned..." [Borcar et al 1967]. Nearly 14,261 persons suffered from malaria in 1878 [Gracias 1994],

In Sanguem taluka (in south-east Goa) where the disease was endemic, an estimated 6,000 people died during the period between 1900 and 1910, wiping out 15 villages from the map. Census records indicate that the population of Sanguem decreased from

26,118 to 17,128 between 1900 and 1929. Malaria was also responsible for the disappearance of four villages in Canacona (south Goa) [Srivastava 1989]. Regulations to prevent and control recurrent epidemics, including malaria epidemics, were initiated as early as in 1913 [Gracias 1994]. In keeping with the worldwide as well as the Indian trend, by the 1950s, malaria was almost under Control' in Goa. More concerted and organised efforts to control and eradicate the disease were made after the establishment of the NMEP in 1963. However, the current data indicates that the incidence of the disease kept fluctuating and has now reached epidemic proportions.

The current spurt in incidence of malaria has directly been linked to construction activity in Goa [Kaliwal 1992 and Kumar 1991] and in the last decade, the malaria incidence map shows a very strong co-relation to the construction map in the state. Graph 1 shows that there was an upturn in 1986 and a large proportion of the affected population came from the locality in Panaji where a number of public construction works had been undertaken in that year.

The general view of the state health authorities is that the parasitic infection has been brought into the state by migrant labourers, who have migrated to Goa for work from endemic malaria areas and whose low socio-economic status has led to the widespread incidence of the disease. This is despite studies like Kumar et. al (1991) which found that in Panaji city in 1990, 1,494 labourers and 2,055 local residents were affected by malaria (Table I). Even in those municipal wards which saw accelerated construction in that year, malaria incidence among labourers was 1,327 and among local residents was 1,678 which suggests a view contrary to that of the state - that the disease is only a problem of the construction labourers. When the affected proportion indicates that labourers are the most vulnerable victims of the disease perpetuated by development projects.<sup>2</sup>

Goa as a state, has, suffered from a peculiar shortage of local labour, especially manual labour, since the 19th century, when the earliest out-migration to Africa from Goa took place. Sections of the population became non-residents, who hired labour and even caretakers to take care of traditional properties. Initially, there was intra-state migration from within Goa, and poorer sections of the population responded to higher wages paid by the non-resident owners [Srivastava 1989]. Being an agricultural economy till very recently, and pressures on land not being as high as in other parts of the economy, the wage rates in Goa tended to be higher than in other states. However, the propensity to use local labour, hindered inter-state migration into Goa.

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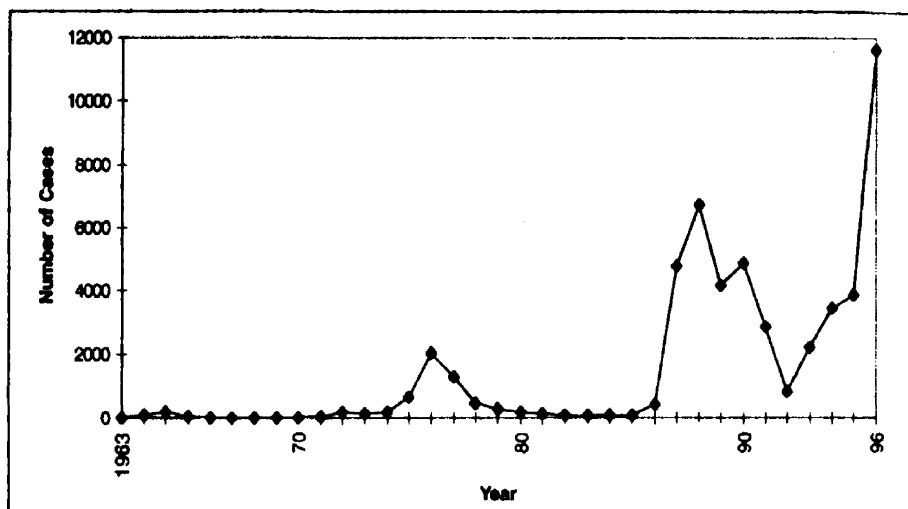
But with the boom in construction activity, the local supplies of labour fell short. Farther, the wages offered by construction companies were less than the deal that they got as hired labour in agriculture or as caretakers. Land owners preferred local labour to migrant labour in agricultural activity and caretaking of their estates, even at a higher wages, because of social institutional mechanisms and reasons of trust. The large inflow of migrant labour is, therefore, directly linked to the boom in construction activity.<sup>3</sup> And, the resurgence of malaria in Goa coincides with this boom in construction and in-migration of construction labour.

However, the current link between the disease and construction has led to an accusational attitude towards these migrant labourers. Policy-makers and public health experts in the state hold the migrant labourers responsible for the spread of the disease. This thinking has also influenced the government's intervention methods of control and planning for the eradication of the disease. Malaria has been declared a notifiable disease since March 1996 in Goa making the position of the labourer even more vulnerable, as it makes certain other sections under the Goa Public Health Act applicable to them too: (i) Prohibition of the exposure of other persons to infections (Item 54), (ii) Destruction of hut or shed to prevent spread of infections (Item 61),<sup>4</sup> (iii) Infected persons not to use public conveyance (Item 64), (iv) Prohibition of letting or subletting of a building occupied by an infected person (Item 65), and (v) Forbidding work in infected premises (Item 67).

These vulnerabilities only add to the existing network of causal and resulting vulnerabilities that malaria victims, and in particular the construction labourers are exposed to, setting in motion a vicious circle; loss of daily wage, poor nutritional status, low resistance to disease, high chances of relapse, deterioration of health, increased morbidity and mortality, etc. They are further inhibited by lack of knowledge of the local language or any other common language of communication making them incapable of understanding the treatment available, prevention methods, as well as their rights.

In addition, a system of 'health cards' has been introduced with the 4th Amendment of the Goa Public Health Act of 1996 (October 30, 1996)<sup>5</sup> which makes essential a health card to be carried by all migrant construction labourers. As the act stipulates, "the responsibility of obtaining the health card shall rest entirely with the labourer." These individual health cards are to be obtained from the nearest PHC after a blood smear has been taken and the report of that smear is received. The testing for malaria has to be done every three months. This testing facility and preparation of cards is done three

GRAPH : MALARIA INCIDENCE IN GOA 1963-96



times a week for two hours every day and for which the labourer might even have to wait in queue, foregoing a day's wages. The health cards have to be paid for by the labourers (Rs 5 each), in addition to the cost of two passport size photographs.

This undivided responsibility thrust on to daily wage migrant labourers, whose jobs by their very nature are insecure and temporary, might force them to be hesitant to get tested when they are suspected to be suffering from malaria, because of the fear of not being hired for the job. Such institutions might also result in certain unfair bargains being made by contractors with labourers who are ill and in need of a job, like hiring them at even lower wages. Alternatively, the existing practice of collecting passive and active blood smears of persons with symptoms of malaria, seems more effective in locating the high risk areas for the state's malaria control programme.

#### HEALTH CARDS: How EFFECTIVE?

The efficiency of public policy in checking malaria *vis-a-vis* the health card is difficult to comprehend. It fails on at least two grounds. From the point of view of effectiveness, the labourers can contract malaria the day after the card has been issued and have a relapse before the next three monthly screening. From the point of view of justice and ethics, the health card singles out the most vulnerable section of the population that is affected by the disease, converting their status from victim to culprit. For our current study we have selected one primary health centre (PHC) in Goa, namely Candolim (north Goa). Since 1994, Candolim has had the highest incidence rate outpacing Panaji, the capital of Goa, which had the largest incidence of malaria and construction activity till 1993.

Candolim is one of the most popular tourist centres in Goa, and has witnessed large-scale construction activity since 1993 largely to cater to the tourist and real estate boom. A large number of time-share resorts have come

up in this area in response to both demands of tourism and inflow of speculative monies invested in real estate. These are not owner-occupied residences and therefore do not indicate a rise in economic activity in the state other than tourism during peak season. Since the construction of the Konkan railway link, real estate prices in Goa have gone up astronomically and made real estate investments, a profitable proposition.

Statistics collected from the Candolim PHC, suggests incidence of malaria among the local populace even prior to the start of large-scale construction activity. Currently, the incidence of malaria amongst locals has also increased. Interestingly, the difference in the number of locals and the number of labourers affected by malaria is not significant. Besides, while pre-monsoon victims of malaria are construction labourers, in the post-monsoon period the number of locals affected is as high as construction labourers. This may be because of the increased breeding sites during and after the monsoon rains.

A surface glance at gender statistics on malaria incidence in Goa reveals a deceptive

TABLE 1: MALARIA INCIDENCE IN PANAJI IN LABOUR CAMPS AND LOCAL RESIDENCES IN 1990

Municipal Ward	Labour		Locals	
	Malaria Cases	Total Popn	Malaria Cases	Total Popn
Accelerated construction (Zone 8-15)	1327	2338	1678	32891
All Wards	1494	2829	2055	54122

Source: Kumar et al (1991).

TABLE 2: TOTAL NO OF MALARIA CASES IN GOA

Year	Total No	Male	Female
1994	3456	2468	988
1995	3886	2884	1002
1996	11632	8589	3043

Source: National Malaria Eradication Programme, Directorate of Health Services, Panaji, Goa.

difference between the number of men and women effected by the disease (Table 2). The state health department attributes the difference in the incidence of malaria to dress habits: "High percentage of infection in males can be attributed to the habits of wearing half pants and half shirts and sometimes only with half pants at home and preferring to sleep outside" [Nadkarni et al 1990]. However, this explanation does not seem plausible because it is a known fact that women's complaints are the last to be tended to in the family and women often neglect their own health. The social inhibitions regarding a woman reporting illness to the doctor and preferring self-medication is quite possible. The likelihood of many cases of malaria going unreported and untreated seems very high, especially among women. If this hypothesis is true, then the malaria incidence figures would probably be an underestimate of the actual impact of the disease.

Evidently, the current policy orientation has placed the burden of vector control on the labourers, while construction companies, who are responsible for creating this demand for migrant labour are not penalised either by state or by society in pecuniary or non-pecuniary ways. While the labour bears the cost, construction companies make profits. Unwittingly, there is however, a third agent involved other than the migrant labour and the construction company- the state. While malaria incidence has increased rapidly in the last decade, the efficiency of the public health delivery systems has continuously eroded. And the increasingly large number of patients seeking treatment, has put severe strains on the public health system here.

Interestingly, between 1985-86 to 1995-96, the total expenditure on the malaria account" in the state has secularly increased from Rs 9, 16,959 to Rs 33, 39,000. While as a percentage of the total public health expenditure, it has remained constant at about 9 per cent, the per capita expenditure on each patient/case of malaria declined from Rs 11,462 to Rs 859. Evidently, with increasing pressures on the state's purses, it is the non-salary component of the expenditure that will be slashed and thereby make ineffectual any programme of control or eradication.

However, the construction companies, the nature of whose lucrative enterprise poses this stress on the state's health care system, do not bear part of the cost. The wrong emphasis in state policy of monitoring labour becomes even more glaring when seen in the light of the seemingly simple option to eliminate the breeding of the anopheles stephensi; the mosquito takes approximately 10-14 days from the egg to the adult stage [Park et al 1991]. The anopheles stephensi breeds in clean water and studies have found

curing tanks to be the biggest breeding zones [Kaliwal 1992 and Kumar et al 1992]. Therefore, a weekly sweeping and drying of the curing tanks would effectively cut down the breeding of mosquitoes and thereby the spread of malaria. However, this would mean that construction work would have to cease every week for a day, which no doubt implies a cost to the company in terms of extension of construction period. So instead, state policy and the public eye is wrongly focused on the voiceless victims, who not only pay the price of disease, but also face humiliation.

The construction companies and the tourism lobby in the state, together form the most powerful interest group in the state's dominant coalition. In the recent years, the fortunes of these two lobbies have been closely inter-linked. So, even though privately accepted, it is to be expected that public policy regarding malaria control would be constricted to take any step that would go against their interests,

It is now well established by various studies worldwide and in Goa, that among the many fallouts of tourism, are environmental and cultural degradation, and pollution [ISS 1989]. These consequently have their deleterious impact on public health too. There are two points we would like to emphasise here. First, in Candolim, which is a major tourist zone in Goa, a majority of the reported cases of construction labourers affected by malaria were from tourism-related construction projects. Second, in spite of the accessibility of protection from mosquitoes such as fans, mosquito nets, repellents, etc, the number of tourists affected over three years has gone up from nine in 1993 to 318 in 1996.<sup>7</sup>

However, official policy, once again reveals its class-bias in its attitude towards infected tourists, who are also non-locals technically (as much, if not more than the migrant labourer). Tourists are not expected to carry health cards, nor is it mandatory that they get themselves tested." In fact, information about the malaria epidemic is withheld from the tourist, so that they may not be deterred from holidaying in the state. The tourism lobby wields tremendous clout in Goa, and its ability to control the health information in the state demonstrates this.

International tourism flourishes in third world countries despite the severe distortion and imbalances that they characterise and the social costs that they entail, due to the very structure of the third world economies. This is a direct consequence of imperial domination of the third world during the past and the peculiar pattern of trading links and 'spheres of influence' established subsequently [Lea 1988]. Tourism is regarded as a non-polluting 'hard currency' earner. Because of the 'developmental' compulsions of third world countries, they are forced by

circumstances, to tolerate the goose that supposedly lays the golden egg, no matter what the cost.

#### CONCLUSION

Malaria as we have had occasion to point out above, is a disease that poses a major social cost in the developing countries. However, this cost is often borne to facilitate the accumulation of private profits. With increasing curbing of state finances all over the developing world, the scourge of malaria is likely to increase not decrease. As of today, the developing countries would have to cope with their own unique experiences of the incidence. However, state policy as and when it is formulated, should be properly targeted, otherwise the price that will have to be paid by society might far outstrip the private profits that accrue to some sections.

#### Notes

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- 1 The World Bank (1993) lists the following as occupational (environment)-related diseases: Cancer, Neuropsychiatric, chronic respiratory, musculoskeletal and unintentional injury, which is based on WHO (1977) classification.
- 2 However, Kumar et al (1991) concluded 'that the labour was a major risk group, and 126 buildings under construction were the main problem areas. To prevent the spread of malaria, it would be essential to quarantine the immigrant labourers in three-four camps with proper sanitation facilities. This will also facilitate screening and treatment of malaria. Weekly foolproof vector control measures should be instituted in all construction sites...If these measures are not implemented, the immigrant labour will continue to spread malaria which might adversely affect tourism in Goa'
- 3 A rough guesstimate puts it as 5,000 net inflow annually in the last few years.
- 4 In 1995, two local residents of Perseraulim (a village in south Goa) died of Japanese Encephalitis. The next day all the surrounding hutments were burnt down. With this section of the Public Health Act such interventions will not only have the state's but social sanction too.
- 5 Goa Public Health Act; Section 75 A: "...the Directorate of Health Services shall then issue a health card with photograph certifying his present status of malaria. No labourer shall be engaged by the contractor at the construction sites unless he has a health card. Similar screening for malaria shall be done once in every three months. The responsibility of obtaining the health card shall rest entirely with the labourer." Further. "Whoever contravenes the provisions of Section 75A of the Act, shall be punishable with fine of Rs 1,000 per person each time and when the offence is a continuing one, with a daily fine not exceeding Rs 50 during the period of continuance of the offence."
- 6 The state has expenditures on malaria under three heads: Malaria Eradication Programme (Plan). MEP (Non-Plan) and the

NMEP (which is centrally-sponsored plan expenditure).

- 7 These figures indicate only those cases that reported to the PHC for testing and treatment. We do not have an estimate of the number who went to private doctors/hospitals. Assuming that tourists would belong to certain income category who prefer to go to private practitioners, this figure would probably again be an underestimate.
- 8 This should, however, not be misconstrued as being a recommendation for introduction of the health card system for tourists, but is just used here to indicate the differential attitude in the state's approach to the problem of malaria in Goa

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## DISCUSSION

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### India-Pakistan Relations: Beyond the Trivia

J V Deshpande

THE billion-odd people who "have saturated south Asia and who revel at quarrelling and squabbling with each other" will no doubt be deeply grateful to Bhabani Sengupta (*EPW*, October 18, p 2640) for applying a healing touch and a soothing balm to their perpetually quarrelling tempers. It was reassuring to learn from his article ('They Did Not Promise a Rose Garden') that there still exist Samaritans who, on their own, would save the lesser mortals of this subcontinent from themselves. It was indeed heart-warming to read about the assiduous efforts that Sengupta puts in at improving Indo-Pakistani relations. Why, in the past six months itself, according to his article, he has, totally disregarding his own corn-forts and conveniences, attended a conference in Calcutta, a seminar near London in a country manor, a workshop at Kandy in Sri Lanka and no doubt other gatherings at many other places abroad and perhaps in India too. It is not often that readers of *EPW* learn about how those in the higher echelons of policy-making circles go about bringing peace on earth and goodwill among men.

But the quarrelsome and squabbling Indians will never be satisfied. Instead of feeling properly grateful, they will persist with their carping and questioning. True, from Sengupta's note, the readers did learn about who he met at these meetings, about the night 'mushaira' devoted to Hindi 'filmi' songs, about how the courteous prime ministers of India and Pakistan "treated each

other with choice Urdu couplets at St Regis Hotel in Central New York", how a Pakistani high commissioner attended the unveiling of Mahatma Gandhi's statue in South Africa by Indian prime minister Gujral- each one in his view a significant step in cementing India-Pakistan friendship. Yet, the doubting readers will still keep asking about any concrete achievements that the much tomtommed Gujral doctrine can claim in respect of India-Pakistan relations in the past half year since it was unpacked.

As far as one can make out from his article, Sengupta considers the following as the achievements of the Gujral doctrine: (1) the two prime ministers meeting each other three times in the past seven months, (2) the Pak high commissioner attending the unveiling of the statue in South Africa, (3) controlling the cross-LOC firing, (4) the two governments talking with each other about selling surplus power by Pakistan to India and (5) Islamabad agreeing in principle to allow the Oman-India gas pipeline through Pakistan.

Although the record is not at hand, one may be fairly certain that Nehru and Liaquat Ali met in New Delhi in the early 1950s or Indira Gandhi and Bhutto met in Shimla in the 1970s more frequently than three times in seven months; more likely seven times in three days. In the past, a Pakistani president had even visited India to watch a cricket match. None of these steps changed Indo-Pak relations to any noticeable degree. As