Women NGO Advocating for and Implementing Bicycle Use
5 Year Experience: Evaluation and Proposal for Further Use

Position Paper on Air Pollution Control & Prevention & Sustainable Transportation

Khadouja Mellouli, Co-Director, Tunisian Institute For Sustainable Development and NGO Management; Chief of The NGO Management Unit; General Secretary, Tunisian NGO "Women for Sustainable Development"
Esseghairi Kamel - Fayala Rym
The Afro-Mediterranean Movement for Sustainable Development
Tunisian Association Women For Sustainable Development

BP. 377 (7 rue Remada) - 2000 Bardo –Tunisia.
wfsd@netcourrier.com

1. Car-triggered troubles

In the automobile-free world of the beginning of the 20th century only, 16 per cent of the world's populations were living in urban areas. In the year 2000, this proportion will be over 50 per cent and more than 600 million cars will be circulating with a direct cost of no less than US$ 1 trillion. The indirect costs will be much more than this, since they comprise the infrastructure, taxes and most of all a tremendous toll of human suffering, misery, poverty, morbidity and mortality.

At the beginning, the automobile promised a dazzling world of speed, freedom and convenience, taking people wherever they wanted to go. Individuals all over the world embraced the dream and the prestige of car ownership, and societies and governors have built transport systems accordingly. All of them are now waking up to the harsh evidence that the once praised benefits are outweighed by the problems created by our over-reliance on the car. Apart from the death toll in road accidents, and the deleterious effects of noise, and job depletion, urban air pollution and traffic congestion are world-wild plagues and oil dependence increases the economic vulnerability of many countries.

2. Car-induced air pollution

Air pollution in large cities is the most threatening hazard of the automobile era. Cars and other motor vehicles create more air pollution than any other human activity. Into air which must be breathed, exhaust pipes eject carbon monoxide, hydrocarbons, oxides of nitrogen, airborne lead, sulfur dioxide SO2, particulate and a variety of other pollutants, some toxic, some carcinogenic, but almost all are harmful to health.

The first sentence of the French "Anti-Air Pollution Law" of April 3rd, 1996 states, "Each person has the right to breathe healthy and non-harmful air". This demonstrates that people's health and safety are of concern to law-makers as well as environmentalists, and illustrates the seriousness with which the threat to health caused by air pollution is being taken. Concern about air pollution is more than an eco-fad.

Car-induced air pollution causes damage far beyond large cities. Vehicles are the major source of nitrogen oxides and organic compounds that are precursors to ozone, which destroys up to 10 per cent of crops. In the atmosphere, nitrogen oxides are transformed into acid

deposits, which destroy aquatic life and damage forests. Motor vehicles contribute directly to global warming by emitting 17 per cent of all the carbon monoxide emitted in the world, and contribute indirectly to global warming by slowing down the removal of methane and ozone from lower atmosphere.

3. Prospect: a new vicious circle or a rational and sustainable transportation system?

Countries of the industrial world are under increasing pressure to make significant and rapid reductions in their carbon emissions as the evidence as to the likely effects of climate change over the next 50 years grow and as air pollution becomes a real threat to human health and welfare.

Experts on transport examine whether new and more efficient technology can provide a huge reduction in emissions necessary in the transport sector. They concentrate on analyzing the technical opportunities and prospects of realizing them, including both short-term and long-term prospects for cars, light trucks, freight trucks, railways, and air transportation, as well as the use of alternative fuels.

However, improving automotive technology can never completely solve the aforementioned troubles. Enhanced fuel efficiency and air pollution control are at least partly offset by the amount of additional driving as about 40 million new cars are produced each year.

Even in the USA where emission controls are the most effective in the world, air pollution is worsening. And no matter how clean or fuel-efficient automobiles become, they still cause traffic jams, human misery, poverty, deprivation, morbidity and mortality. Automotive dominance creates so many relentless problems that, in coming decades, societies will have no choice but to seek alternative forms of transport**.**

A new, more comprehensive and rational approach to transportation is needed, one that puts the automobile in its rightful place as one among many options for travelling. Mass transportation (buses, trains and bicycles) are more appropriate than private cars in many instances.

However, the widespread use of mass transportation, though a worthwhile goal at any stage of economic development, is difficult to achieve. Governments of the developing countries will not be able to provide adequate public transportation for the whole population can better afford investments in bicycle transportation.

In the industrial countries, where official efforts to encourage the use of mass transportation are often rejected by people who are used to individual transport, the bicycle is the only vehicle that addresses car-induced urban problems while providing convenient, private travel.

4. Bicycle And The Industrial Countries

Industrial countries have a surprising number of bicycles, most of which are off the streets. Pro-bicycle planning in the last 30 years has reached its most advanced level in truly “bicycle-friendly” countries such as Denmark and the Netherlands. Other countries, such as Switzerland and Germany, offer a degree of support for the bicycle. On the other hand, cyclists enjoy little support in the United Kingdom, France, Belgium, Spain, the United States, Australia, and other countries.

The European Federation of 200,000 cyclists, founded in 1983, works very hard to convince European countries’ transport ministries and the European Parliament to recognize the bicycle as a means of transportation. The Federation has contributed to the creation of the club of

"car-free cities" in Amsterdam in 1994 with full support of the European Commission's unit concerned with urban environment. The main idea of her proposal was creating new "car-free cities". The role of the bicycle as a means of transportation being central to the carrying out of the project. The Federation was also active alongside other European and North American cyclists' associations, the 1992 Montreal Conference entitled "International Perspectives on the Bicycle".

Even in the United States, where an estimated 200 million cars were circulating in mid-1996 and there is a ratio of bicycles/cars of 0.7, the bicycle is getting new adepts - beside cyclo-ecologists - among economists to whom the "little queen" is an economical vehicle in all respects, and likely to become more so in the future.

In 1995 the United States Department of Transport published a 2000-page document presenting the findings of serious studies about integrating cycling into a multimodal urban transportation system. The city of New York is planning the management and construction of 560 km of cycle-ways and walking paths. Meanwhile, the World Resources Institute proclaim "car trouble" with the Californian car population growing by two per cent annually. The United States pro-bicycle lobby has claim three per cent of the new transport budget for bicycle transport management and promotion.

In France there were 20 million bicycles in 1994; three million bicycles were sold in 1993, and 2.7 million in 1994. However, cycling share of daily passenger trips is less than two per cent in Paris, Marseille, Lyon, Toulon, Metz and Reims; between two and five per cent in Rennes, Bordeaux, Toulouse and Nantes; between five and ten per cent in Grenoble, Lille, Orleans, and Valence; and only 15 per cent in Strasbourg, the most cycle dominated city in the country.

Since 1982, Germany has implemented nation-wide comprehensive plan acting in favor of bicycle transportation. The country is being rewarded for its efforts. Cycling share of daily passenger trips increased from 15.9 billion passenger km in 1980 to 36.9 billion passenger km in 1990. In the same period car transportation's share stagnated at an almost constant level of 59.6 billion passenger km.

5. Bicycle And The Developing Countries

Transportation is not an end in itself but an important means to other ends: economic, educational, social and personal. Transportation is a link to opportunity. It links workers to places of employment, producers to users of goods and services, students to schools, patients to health care, and everyone to family and friends.

In the developing countries transportation alternatives are not as specialized or differentiated, hence efficient, as their counterparts in more industrialized countries. As a consequence, efforts to improve economic and social conditions, which have a transportation component, as most do, are less efficient and the breadth of opportunities is more restricted.

Limited access to transportation, whether it is physical or financial, restricts access to a better life. Conversely, improved access to transportation, especially for the poor, can improve employment prospects, reduce the money and time spent getting to jobs and schools or hauling fuel and water, reduce the costs of inputs for small-scale enterprise activities and increase access to markets for products. In short, constraints on mobility are constraints on development. Transportation must be considered as an element of development at the most basic level.

Yet not all transport is created equal. Urban areas around the world have demonstrated that while improving opportunities for private automobiles has a benefit to the newest driver, it has a cost tall other drivers, non-drivers, energy conservation, resource reserves, balance of payment and the environment. The solution is more complicated than just providing wider roads, expansive parking lots or giving everybody a motor vehicle.

The vast majority of the Third World populations have severe limitations on their mobility. Entire days can be spent « in travelling » either walking or waiting. World Bank surveys in Kenya show that more than 90% of rural trips are on foot. Most transport needs can be characterized as the movement of small loads (10-150 kg units) over relatively short distances (1-25 km). On the farm, 70% of the work involves transport (seed, fertilizer, water, produce). In the villages, the amounts of water and wood required daily for household use are 50 kg and 30 kg respectively. It is estimated that their collections take from 3 to 6 hour per day. While a few measurements have been made, very little additional attention has been paid to these aspects of transportation. In urban areas the explosion of traffic jams of private automobiles and taxis obscure the constraints on mobility that are being created by « development. ». Corridors, where urban labor force once walked and bicycled are now blocked by wide major arterial and high-speed highways and fouled with sooty pollution-laden air. For the majority of the poor, the « option » is to pay for standing room on a noisy, crowded, hot, uncomfortable bus, or not to travel.

In the developing countries, automobiles serve only a small elite. Less than one per cent of the people in the Third World can afford an automobile, but in many developing countries the car-owning elite seem to have imported a mind-set along with their cars. Western-trained engineers have oriented transport decisions toward the motorized sector. The result is that billions are left on foot, or queuing for disorganized and inefficient mass transportation, which limits their access to jobs, schools, markets, and vital services. One of the greatest ironies of the 20th century is that in the developing countries, vast amounts of such valuable things as land, petroleum, and clean air have been relinquished on behalf of motorized transportation, and yet over 99% of people do not own a car, and most of these will probably never do so.

Most of the world bicycles are in Asia (in 1988 China had 300 million, Japan had 60 million, India had 45 million and South Korea had six million). With 300 million bicycles and only 1.2 million cars (only one Chinese in 74,000 owns a car) China was achieving a ratio of 250 bicycles for every car. Cycling share of daily passenger trips is 48 per cent in Beijing, 65 per cent in Shenyang and 77 per cent in Tianjin. The last two of these are higher than any observed in either the most bicycle-friendly industrial countries, or other developing countries (compare them, for example, with 50 per cent in Groningen (Netherlands), 40 per cent in Dhaka (Bangladesh), 26 per cent in Erlangen (Germany), 25 per cent in Odense (Denmark) and Tokyo, 24 per cent in Moscow, 22 per cent in Delhi, and 20 per cent in Copenhagen and Basel (Switzerland)).

Even so, with the globalization of the world economy and its own economic liberalization and expansion, China is no longer a paradise for cyclo-ecologists. In 1987 China produced its first 4,045 automobiles. In addition, hundreds of thousands of cars were imported before then and many more have been imported since. The number of cars in the country is rising by about ten per cent per year. In 1995, 100 million Chinese earned US$ 1000 or more per year; their number will grow to 270 million by the year 2000. At present, one million Chinese earn US$ 120,000 or more a year; their number will treble by the year 2000. These figures will almost certainly be reflected in car sales and car ownership.

The rest of the developing world lies far behind Asia in bicycle transportation. In much of Africa and even more widely in Latin America, the prestige and power of automobile ownership has made governments ignore pedal power, and there is a popular perception that bicycles are vehicles for the poor, that cannot afford private cars. Nor can the very poor afford the small motorcycles that are now plentiful in many Asian cities. People who are economically, physically, and socially disadvantaged are harmed by transport policies that focus on economic efficiency (narrowly defined) and by automobile-focussed transport priorities that do nothing to meet their travel needs. They also tend to suffer a disproportionate share of external costs, since they can afford less protection against traffic impacts. Increased dependence on private motor vehicles tends to displace non-motorized transport and reduce the variety of public transport available to the poor.

Most African nations have abandoned the urban bicycle paths built by colonial administrations. Many African women do not ride bicycles for reasons of propriety or religion or because of encumbering clothing. Africa and Latin America lack Asia's widespread domestic bicycle industries. The few bicycles available are often of poor quality; spare parts are scarce, and maintenance skills are inadequate as well.

Despite these constraints, the bicycle's utility and the lack of other options have led to more intensive cycling in some African settings. Parts of Zimbabwe, Burkina Faso, Ghana and few other countries have heavy bicycle use.

In Latin America too, the bicycle's practicality transcends its low status. In Bogota (capital of Colombia), the city's largest bakery traded in most of its trucks in 1985 for 900 space-saving delivery tricycles that can still deliver goods to over 60,000 local shops. Nicaragua became perhaps the first Latin American government to promote cycling actively, pledging in 1987 to supplement its war-ravaged transport sector with some 50,000 bicycles, some purchased by the government and some donated by other nations. In March 1995, the World Bank approved funding for the construction of urban bicycle lanes and paths, which will help remedy congestion and other troubles.

6. Relevance of a program on increasing bicycle use in Tunisia as part of a sustainable national transportation system

6.1 Introduction

Tunisia is a developing country, which has been enjoying for the last ten years an economic boom and a rapid industrial development. Unfortunately, its transportation policy, certainly in so far as it advocates, plans for (and still less, implements) the bicycle, is lagging some way behind. As with France and other French Speaking African countries, the prestige and power of automobile ownership has made governments ignore - for four decades - pedal power. There is an unfortunate tendency everywhere that if any mode of transport comes to be seen as being for the poor, it tends to become stigmatized as being suitable ONLY for the poor. Thus in certain cities, walking, cycling and/or the use of public transport may all be considered to be beneath the dignity of a middle-class person. Some people are embarrassed to be seen on bicycles even though ironically, the very poor actually cannot afford bicycles.

Tunisians certainly consider the bicycle as the vehicle for the poor.

Together with people in other developing countries, Tunisians borrow money and put years and years of their savings into buying a car because of the prestige and power a car confers upon its owner. They do not ride bicycles because of an anti-bicycle transportation mentality. In fact making non-motorized vehicles, especially bicycles, more available and safer to use

benefits the poor and has enormous potential in many countries. However, such policies are often ignored or trivialized. Several Asian countries have successfully pursued policies in the post -World War Two era that enabled a local bicycle manufacturing industry to flourish and for large numbers of affordable bicycles to be available on the local market.

6.2 Past and current use of bicycles in Tunisia

Over the five years 1989-1994, there has been, at first sight, a similar increase in bicycle and car ownership. The number of bicycles has increased from 154,000 to 286,000, and the number of cars from 160,000 to 266,000. However, we can safely assume that most of the bicycles are "owned" by children and the rest are owned by male adults as transport. The total cost of the bicycles used in Tunisia in 1994 was (at an average $100 per bicycle) $28.60 million, whereas the cost of the cars used in the country in the same year was (at an average $10,000 per car) $1,060 million.

In Tunisia in 1989, there were 0.019 bicycles per person. By 1994 there were 0.032. These figures compare with 0.79 in the Netherlands (1985) and 0.27 in China (1988). In Tunisia in 1989, there were 0.02 cars per person; by 1994 there were 0.03 cars per person. There were 0.963 cycles per person in 1989 and 1.075 in 1994, compared with 250 in China (1988) 30 in India (1985), three in Egypt (1985), and around two in Japan (1988).

Tunisia's six major urban areas (Greater Tunis, Sfax, Nabeul, Sousse, Monastir and Bizerte) cover no more than five per cent of the country's land. Their population numbers 3,497,814, accounting for 40 per cent of the total. Their people own 146,757 bicycles (51.2 per cent of the national figure), 132,376 motorcycles (45.2 per cent of the national figure), and 161,428 cars (60.1 per cent of the national figure). These figures constitute the basis for the pro-bicycle program implementation, and its monitoring and evaluation (see Table 1 for more detailed figures).

Table 1. Ownership of cars, motorcycles and bicycles in Tunisia's six most urbanized regions, 1994.

Region		Greater Tunis	Sfax	Nabeul	Sousse	Monastir	Bizerte
Population	Number	1,830,634	732,865	579,864	435,075	363,436	484,250
	% of national total	*20.8*	*8.3*	*6.6*	*5.0*	*4.1*	*5.5*
Cars	Number	90,581	30,390	17,510	15,808	12,311	10,647
	% of national total	*34.1*	*11.5*	*6.6*	*6.0*	*5.7*	*4.0*
Motorcycles	Number	35,773	48,619	23,661	20,266	19,506	14,878
	% of national total	*12.2*	*16.6*	*8.1*	*6.9*	*9.3*	*5.1*

Bicycles	Number	55,427	26,613	30,078	16,895	22,732	16,112
	% of national total	*19.3*	*9.3*	*10.5*	*5.9*	*9.9*	*5.5*

6.3 The use of bicycles by women.

To the limited extent that bicycles have been introduced into the structure of transportation in the Third world and Muslim countries, women generally have been excluded from access to the benefits. Third world tradition and Muslim culture put an inordinate burden on women as the primary hauliers of fuel, water, food and babies, and guardians of the health care of children. While traditional parameters for men have been allowed to evolve and incorporate cycling, carts and a wide variety of other changes, the arbiters of culture have denied such dynamism and access to women. In many places in Africa, it seems to be 'improper' for women to ride a bicycle. (In comparison, cycling is commonplace for their Asian sisters and 55% of the cyclists in the United States are women).

In Muslim countries where women often face legal obstacles and harassment as cyclists and public transit passengers. In these countries, women's cycling has been outlawed in many cities, and one district governor recently said, "Women cyclists cannot protect their chastity even if they are fully covered, so they should avoid this altogether or they will be dealt with." Some governors called on city police to stop offenders. Female cycling is a controversial issue in some Arabic countries.

A key issue is that women hardly use bicycles at all in Tunisia. The use of bicycles by women matters in the Tunisian context because of the good prospects for the wider participation of women, especially seen in comparison with those in other African and Muslim countries.

Enhancement of the individual integrity and the human dignity of women has a long history in Tunisia, beginning with the Code of Personal Status promulgated by the country's first post-independence president, Habib Bourguiba, in 1956. Since then a succession of measures have been enacted, aiming at recognizing and ensuring the status of women in the Tunisian society. In 1992, the Ministry of Women's and Family Affairs was created with an aim of promoting the wider integration of women into the process of national development.

Already women make up 34 per cent of the working population, and more than 1,500 women are heads of businesses. In September 1994, women made up 20 per cent of those enrolled in technical disciplines in higher education; in other disciplines the proportion of students who were female was even higher (33 per cent in the sciences, 53 per cent in medicine, 40 per cent in economic and legal studies and 55 per cent in social sciences and humanities.) More than half of all dental surgeon and pharmacists, and one-third of physicians are women.

Therefore, Tunisian women can easily ride bicycles as they can afford to buy and own them much more readily than many other African or Muslim women. In Tunisia, there are no religious restrictions concerning cycling; neither is encumbering clothing a problem. Since July 1956, women and men have had the same rights and duties as equal citizens: both have equal access to education, to job opportunities, and to career building and enhancement.

Tunisian women are present and well represented in all professions; they require no permission before travelling.

Therefore, there is no reason why Tunisia should not be a model for other developing countries in bicycle transportation advocacy, planning and implementation, and why the encouragement of cycling by women should not be a major policy aim.

THE BICYCLE FOR A HEALTHIER ENVIRONMENT PROGRAM (BHEP)

The Tunisian Bicycle for a Healthier Environment Program has been set up to increase the use of bicycles throughout the country. Besides, the obvious anti-pollution purpose of the Program, clearly touches on ecological, health, economic and behavioral issues. The Program has been set up under the auspices of the Tunisian Non-Governmental Organization called Women for Sustainable Development (WFSD).

The objectives of the Program are as follows:

(1) To disseminate in plain language information about the benefits and advantages of using the bicycle as a means of transport, and thereby to raise awareness and stimulate interest in the topic.

This objective will be achieved through games, theatre plays, paintings, rallies, awards and prizes, booklets, conferences, seminars and workshops.

Media has an important role. The target groups will be pre-primary and primary school children, secondary school pupils, university students, and different groups making up Tunisian society.

(2) To identify influential women and to establish with them activities addressing the first objective with specific reference to the use of bicycles by women.

(3) To create a non-governmental multidisciplinary national team, including sociologists, economists, ecologists, lawyers, and epidemiologists.

This team would implement all aspects of the Program.

The successful experiences of other countries (such as Denmark and Germany) can be studied and applied in the Tunisian context as appropriate.

(4) To identify in each of Greater Tunis, Sfax, Nabeul, Sousse, Monastir and Bizerte, a key person interested in the topic and ready to get involved in regional data collection.

This person will work closely with the national team and will consult regularly with it.

(5) To create both a Tunisian national and an international Afro-Mediterranean Center for documentation, information and applied research on the subject.

(6) To evaluate both the process and the impact of the Program.

(7) To disseminate the Tunisian approach, activities and findings to the national and international scientific and non-governmental organization (NGO) communities.

(8) To engage in fund-raising at both national and international levels.

Our vision in the next four years (2000 – 2004) with the recent elected key person who is our selected partner for work is to promote the use of bicycles as a means of transportation, that provide a combination of independence, versatility, and economy. They can be combined easily with other modes of transportation, as multi-modal transportation, they can take advantage of the efficiencies of other modes while retaining their own attributes of flexibility, self-sufficiency and independence.

7. Conclusion

The Tunisian Bicycle for a Healthier Environment Program aims at increasing the safe and sustainable use of the bicycle as a means of transport throughout the country. Apart from its anti-air pollution purpose, the Program touches on issues and considerations of ecology, health, economy and behavior. Most of all it advocates a change in attitudes towards vehicles.

The bicycle challenges a system of values, which condones dependency, wastage, inequality of mobility, and daily carnage on the roads.

The key to its success is probably whether or not it can begin to change our behavior, so that people place a greater priority on achieving sustainable development for our children, on freeing ourselves from slavery to the private car, and on freely and responsibly accepting the very fact that bicycle is a solution for a viable planet.

If attitudes and behavior can be changed with respect to this topic, then accepting other imposing behavior changes at the individual, group and community levels might prove easier to achieve. There is every reason why cycling should be helped to enjoy another “golden age”.