



# **LESS NOISE CITIES**

**A RECOMMENDATION FOR NOISE AWARENESS CAMPAIGN  
IN MEGA-CITIES OF SOUTH EAST ASIA  
SEA FORUM FOR SOUND HEARING**

## **BACKGROUND**

### **Global Population and Megacities**

According to the “World Population Data Sheet,” global population will rise 46 percent between now and 2050 to about nine billion. While developed countries are losing population because of falling birth rates and carefully controlled immigration rates (only the U.S. reverses this trend, with 45 percent growth to 422 million predicted by 2050), population is exploding in the developing world. More than half of the world's population live in urban areas in Asia.

Megacities is a term coined by the UN to describe cities with at least 10 million inhabitants. Some definitions also set a minimum level for population density (at least 2,000 persons / square km). The 17 largest megacities in the world are: Tokyo, Mexico City, Seoul, New York, Sao Paulo, Mumbai, Delhi, Shanghai, Los Angeles, Beijing, Buenos Aires, Cairo, Dhaka, Istanbul, Jakarta, Karachi, Kolkata.

**But by 2015 this list will change, with Tokyo remaining the largest city (then with 27.2 million), followed by Dhaka (Bangladesh), Mumbai, Sao Paulo, New Delhi (at the 5th place) and Mexico City (each with more than 20 million).** New York will have moved down to seventh place, followed by Jakarta, Calcutta, Karachi and Lagos (all with more than 16 million). There will be a total of 33 mega-cities, 27 of them in the developing world. Five of them are in the South East Asia region. In addition, Bangkok has a population of more than 9 million and could soon be included.

### **Environmental Noise**

Noise is unwanted sound. More and more people living in densely populated areas live in noisy environments. This has its consequences for the general level of health. The rise of mega-cities, poses formidable challenges in health care and the environment, in both the developed and developing world.

The urban poor in developing countries live in squalor unlike anything they left behind. Mega-cities suffer from a catalog of environmental ills. **In the last decades, noise levels have risen tremendously in major cities all over the world, especially in the developing countries, including cities of the South East Asia countries.** The increase of modern conveniences in the densely populated cities brought with it a lot of noise. **The cumulative effect of traffic, factories, audio equipment, cell phones, airplanes, are all adding to unwanted noise to the city's environment.**

Excessive motorcycle noise due to bypassing the mufflers is a most common problem in developing countries, especially for the youth. Jet engine noise comes predominately from two sources. An approaching jet creates a high-pitched whine as the fan pulls air into the engine. As the jet passes by, a low-pitched rumble is created by exhaust leaving the engine. Freeways are a ubiquitous source of noise pollution.

Modern city noise poses a serious threat to city dwellers' hearing ability. Excessive noise exposures threatens not only hearing, but also the physical and mental well-being

### **Noise Induced Hearing Loss**

**Noise is one of the leading causes of hearing loss** in the 28 million people with impaired hearing in the United States alone, and health statistics suggest a trend that the incidence of hearing loss is occurring at younger and younger ages. **Noise-induced hearing loss, though preventable, is permanent.** The unit used to measure environmental sound intensity is the decibel (dBA). Zero decibels is approximately the softest sound the healthy human ear can hear. The scale increases logarithmically; that is, the level of perceived loudness doubles every 3 decibels. Experts agree that continued exposure to noise above 85 dBA, over time, will eventually harm hearing. In general, the louder the sound, the less time required before hearing will be affected.

Loud noise assaults the delicate hair cells of the inner ear. Noise-induced hearing loss typically occurs gradually and without pain. After exposure to loud noise, a person may experience ringing in the ears or difficulty hearing. This is called a "temporary threshold shift". After a few hours (or in some cases, a few days), this temporary shift in hearing returns to normal. With repeated exposure, however, this temporary shift in hearing can become permanent. **Once permanent hearing damage has occurred, it is not possible to restore hearing.**

Noise-induced hearing loss is cumulative across the life span. **Often, by the time a person realizes that there is hearing loss, it is already too late.** Early warning signs are: 1) a ringing or buzzing (tinnitus) in the ears immediately after exposure to noise.; 2) A slight muffling of sounds after exposure making it difficult to understand people when you leave a noisy area; 3) Difficulty understanding speech

### **Effect of Noise on Health**

Exposure to noise, or unwanted sound, however, is far more than just a threat to the ears and hearing function. **Studies have correlated noise with physiological changes in sleep, blood pressure and digestion.** Studies have also linked noise with a negative impact on the developing fetus. **Unwanted noise creates stress and makes people tense and angry.** Studies have found noise to be associated with increased aggression and violent behavior.

### **Hearing protection**

To avoid noise-induced hearing loss, the exposure to loud noise around human beings has to be decreased whenever possible. Time spent in noisy sports events, rock concerts, listening to loud audio devices should be limited. Adequate hearing protection, such as foam ear plugs or ear muffs, should be used in a noisy environment, industry, noisy work places, or when using loud equipment.

New technologies are providing innovative ways to reduce sound levels. Aircraft engineers are finding ways to reduce the noise produced by jet engines.

Currently, barrier walls and earthen beams are the primary noise mitigation strategies, cutting the sound that reaches nearby homes by 10-15 dBA. However, these structures are expensive to build. In addition, because sound waves have a tendency to bend over and around objects and to spread out with distance, barrier walls are only effective in reducing sound at distances of less than 400 meters from the roadway. One of the more promising approaches to reducing road noise involves the use of rubberized asphalt pavement. Manufacturers of building components are also making exciting advances in the field of noise reduction. Traditionally, architects and builders have used two methods to reduce sound transmission through walls, floors, and ceilings. The first is to install materials with air pockets (e.g., insulation) that trap sound waves; the second is to increase wall thickness. These approaches may work for new construction, but they are difficult and costly to implement in existing buildings, where walls must be gutted and rebuilt. Recently, soundproofing materials are produced that can easily be added to new or existing walls to achieve remarkable reductions in sound transmission.

## **SOME FACTS AND FIGURES**

Sound levels are typically measured in decibels (dB). Humans hear sound within a limited frequency range, which is reflected in a value known as A-weighted dB, or dBA.

According to community noise guidelines published in 1999 by the World Health Organization, for a good night's sleep background sound levels should not exceed 30 dBA. In outdoor living areas, sounds above 50 dBA are annoying to humans. The Occupational Safety and Health Administration (OSHA) requires employers to provide workers with hearing protection if they are exposed to an 8-hour time-weighted average of 85 dBA or more. For those living or working near flight paths of major airports, the noise of aircraft taking off and landing can exceed 100 dBA.

## **THE SIZE OF THE PROBLEM**

According to the infrastructure study In the South East Asia region (2002), most countries have laws for prevention of deafness from noise, except in Nepal and Sri Lanka, but there is still a great need to strengthen the law enforcement mechanism. There is no mapping out noise in heavily populated areas. The authorities are still lacking behind in educating the population about noise, and develop plans of action on how to lower noise pollution from auto traffic, trains, airplanes and industry. In the developing countries, there is no directive by the city authorities to protect the city inhabitants against noise. On the other hand, the awareness of the public on hazards of excessive noise is very low.

## **SOUND HEARING 2030 INITIATIVE**

**SEA FORUM FOR SOUND HEARING** is a permanent organization, its General Body consisting of representatives of IFOS, SAARC ENT Society, ASEAN ORL HNS Society, ISA, CBM, IMPACT, HI, WHO, and national delegates from eleven countries: Bangladesh, Bhutan, DPR Korea, India, Indonesia, Maldives, Myanmar, Nepal, Sri Lanka, Thailand and Timor Leste. Its scope is to work towards elimination of avoidable hearing loss, in the South East Asia region. Key challenges include knowing how to establish partnerships with potential regional stakeholders, as well as to create a climate in which this collaboration can most effectively support the communities/ countries / areas it wishes to help. In the future it is hoped that **SOUND HEARING 2030** initiative can be a model for a global initiative.

Its “vision” is to improve health and well-being of people of South East Asia through better hearing. Its “mission” is to eliminate avoidable hearing impairment by the year 2030 through development of sustainable ear and hearing care systems. **The “goal” is to reduce avoidable hearing impairment to 50% by 2015 and 90% by 2030.** The activities of this newly formed initiative will be establishment of the organization, fundraising, and ongoing campaigns. In the near future, hopefully at least one model multi-country pilot project could

be selected every year in partnership an international NGO and the National Committees for ear and hearing health care in the countries.

SEA FORUM FOR SOUND HEARING has put Hearing Conservation Programs as part of the strategy in reaching its goal. Through the **LESS NOISE CITIES** program, it is hoped that committees or professional groups can promote policies, legislation and enforcement of these for noise control with special attention industrial noise and to youth and their risk at entertainment centers. For this purpose, all stake holders have to be taken on board.

### **LESS NOISE CITIES: STRATEGY**

1. Distribute recommendation to focal persons and groups
2. Take on board all stakeholders
3. Focus on Awareness building
4. Get funding and support from the private sectors /businesses
5. Promote community empowerment
6. Any other appropriate strategy

### **LESS NOISE CITIES: RECOMMENDATIONS FOR ACTIVITIES**

1. Promote LETTER-WRITING CAMPAIGNS.
2. Conduct ONLINE PETITION DRIVES.
3. LOBBY state administrators and elected officials
4. LOBBY City/Municipality administrators and elected officials
5. LOBBY the legislative body / council of state and city
6. LOBBY stores and corporations.
7. LOBBY manufacturers and engineers.
8. BILLBOARD campaign
9. Campaign through ADS ON CITY BUSES, CITY TRAIN OR TRAMS
10. Appear on TELEVISION PROGRAMS.
11. Appear on RADIO PROGRAMS.
12. Pitch stories to NEWSPAPERS AND MAGAZINES.
13. Write MAGAZINE ARTICLES.
14. Speak to SCHOOL STUDENTS

15. Speak to CIVIC GROUPS.
16. Produce and distribute BROCHURES / public service announcements.
17. Locate and promote a CELEBRITY SPOKESMAN for the anti-noise cause.
18. Work with other ANTI-NOISE ORGANIZATIONS.
19. Persuade the "ENVIRONMENTAL MOVEMENT" to join against noise pollution.
20. Form neighborhood, local, and campus chapters.
21. Issue "NOISY DOZEN" awards to major noise polluters.
22. Promote INTERNATIONAL NOISE AWARENESS DAY (sponsored by the Noise Center of the League for the Hard of Hearing).
23. Promote an ANNUAL NOISE FREE WEEK.
24. Take part in EARTH DAY ACTIVITIES.
25. Distribute "YOU'RE TOO LOUD" STICKERS and bumper stickers
26. Distribute T-SHIRTS.
27. Publish booklets on noise pollution.
28. Work with CONSUMER ADVOCACY groups. Create a directory of noise complaint information, so that individuals in specific cities will know whom to call to complain about noise.
29. Promote QUIET PRODUCTS AND BUSINESSES.
30. Issue "commentary" PRESS RELEASES.
31. File class action LAWSUITS against major noise polluters.

### **LESS NOISE CITIES: PROGRAM OUTLINE**

SOUTH EAST ASIA FORUM FOR SOUND HEARING 2030 recommends a LESS NOISE CITIES initiative for the development of awareness for the public as well as the policy makers of cities of South East Asia countries.

The cities that will be motivated are all the capital cities of the SEA countries (Dhaka, New Delhi, Jakarta, Bangkok, Colombo, Kathmandu, Yangon, Timpu), as well as other mega-cities in the region (Calcutta, Mumbai). Other cities may of



course be included, because noise pollution also occurs in small but overcrowded cities.

A CITY FORUM will have to be elected, consisting of focal persons National Committee for ear and hearing health, Professional groups, MOH, City Council, City Authorities, Ministry of Environment, WHO representative, NGOs, and consumers advocacy groups. This Forum will develop a broad outline of the action plan for the city.

Each CITY FORUM will have to propose their own budget according to their needs and cost, and define their available private institutions that will support this cause. The CITY FORUM has to work closely with these DONOR AGENCIES from the private sector.

THE DONOR AGENCIES from the private sectors (oil companies, cellular phone companies, telecommunication providers, audio equipment producers, recording producers) will support the funding for the LESS NOISE CITIES program.

SOCIETY FOR SOUND HEARING will act as motivator and resource center, provide advocacy, and promote networking among the CITY FORUMS for sharing the results and lesson learned from the program through Inter-Country meetings and other communication means.