

Action Agenda For Doctors

Change
Begins With
YOU...

DOCTORS
FOR CLEAN AIR



www.dfca.org.in

Doctors are Effective Messengers

Air Pollution is a Public Health Emergency. The simple act of breathing is causing many diseases and is leading to over 7 million* premature deaths across the world. Dr. Tedros Adhanom, Director General of the World Health Organization, has called air pollution as the New Tobacco.

Air quality in India is no exception. Over 99.3% of India's population breathes polluted air that is above the standards set by WHO. According to Air Quality Life Index (AQLI), an average Indian could gain 4.3 years in life expectancy if the WHO standards are met.

Doctors experience the PAIN of health ill-effects of air pollution first hand when they see and manage these patients in their practice. Additionally, when Doctors talk to their patients and families, they are more likely to be able to motivate them as they talk from a position of strength. Thus, Doctors can be a "motivated motivator". They can translate the studies across the world which link air pollution and health into simple, understandable words for the common people. "Doctors for Clean Air" (DFCA) is a network of identified, passionate and informed Doctors who are leading the fight against air pollution in their respective regions across India.

*WHO, Social media toolkit for Air pollution and Child Health: Prescribing Clean Air Launch, Available from: <https://www.who.int/ceh/publications/Social-Media-Toolkit01-Air-Pollution-and-Childrens-Health-Report-Launch-V1.pdf>



4th December, 2018: Delhi Launch of Doctors for Clean Air

40 Senior Doctors (representing every state of India) and Leaders of 12 National Medical Associations (representing over 150,000 Doctors) joined hands to advocate for Clean Air

In spite of the significantly high levels of air pollution and efforts by government, media, and NGOs to raise awareness about ill-effects of air pollution, most of our population is unaware of the damage caused by air pollution to their health. Not only there is very little demand from people for actions to reduce air pollution, but also steps taken by the Government towards clean air are often criticized and not complied with by the people as it causes inconvenience to them. Lack of information about the severe health ill effects of air pollution, including the damage occurring to their children is the reason for people's opposition to any corrective measures to control air pollution. If people are made aware of the seriousness of the issue, they will not only accept the measures but will also contribute actively towards solutions.

- Since Air Pollution affects the health of the people, Doctors are in the best position to talk about it.
- Their talking will not only have immediate connect with the people but will also be far more convincing.
- This is the basis of “Doctors for Clean Air”, an initiative of Lung Care Foundation, supported by Health Care Without Harm, to engage and empower Doctors to become advocates for clean air.

WHY DOCTORS?

Why This Document?

The purpose of this document is to:

- Help Doctors educate and engage their patients, general public, members of the medical fraternity, policy makers and media on air pollution and its health ill-effects.

This will lead to:

- Greater demand for clean air and thus result in the formulation and implementation of policies and laws to reduce air pollution.

UNDERSTANDING AIR POLLUTION 101

Air pollution, by definition, refers to the presence of undesirable components (above the set limits) that contaminate the air and are detrimental to human health, ecosystem or planet as a whole. There are 2 kinds of Air Pollution:

AMBIENT OUTDOOR AIR POLLUTION

Refers to contamination of outside air due to toxic emissions from combustion of fuels, chemical industries, vehicles, construction activities etc

HOUSEHOLD INDOOR AIR POLLUTION

Refers to contamination of the air inside homes and buildings from compounds such as smoke, CO, dust, formaldehyde, asbestos, pesticides, lead, cleaning solvents, chloroform etc. Indoor air pollution is 5-10 times more harmful than outdoor air pollution

TYPES OF POLLUTANTS IN OUR AIR

There are 2 major types of pollutants in our Air:

Particulate Matter (PM)

Fine or ultrafine particles containing a mix of toxic metals, hydrocarbons & liquids suspended in the air that can penetrate deep into the airways, lungs and then enter the bloodstream to cause damage. The most commonly talked about pollutants are PM10 and PM2.5.

PM 10

- ▶ Particles with diameter of 10 micrometres or less.
- ▶ Primarily comes from Dust Pollution
- ▶ Can pass through the nose, throat and enter the lungs
- ▶ Includes airborne particles like pollen, mold etc.

PM 2.5

- ▶ Particles with diameter of 2.5 micrometers or less.
- ▶ Can penetrate deep into the lungs and enter the bloodstream.
- ▶ Includes emissions from combustion engines, organic compounds, metal industries etc

Gaseous Pollutants

Mixture of gases and hydrocarbons suspended in the air above permissible limits. These toxic gases released from combustion of fossil fuels, atmospheric reactions etc are harmful for human health when inhaled and are known to cause many respiratory ailments.

- ▶ Nitrogen Oxide
- ▶ Sulphur Dioxide
- ▶ Carbon Monoxide
- ▶ Volatile Organic Compounds (VOCs)
- ▶ Greenhouse Gases such as Methane
- ▶ Ground Level Ozone
- ▶ Black Carbon (Sooty Particles)

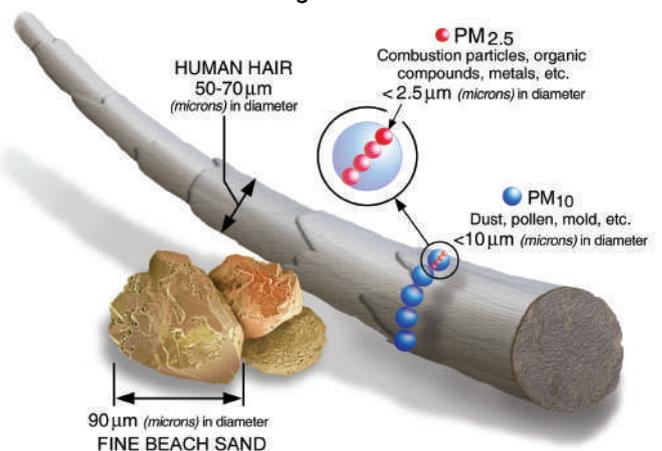
PRIMARY POLLUTANTS

Chemicals directly emitted into the air. Example: CO₂, CO, NO₂, CH₄, Particulate Matter etc

SECONDARY POLLUTANTS

Pollutants that are formed from atmospheric reactions between primary pollutants and other compounds in the air. Example: Ground Level Ozone, smog, Peroxyacetyl Nitrate (PAN) etc

Reference Diagram: PM10 & PM2.5 Size



Picture Credit:
United States Environmental Protection Agency

AIR POLLUTION THE INVISIBLE KILLER



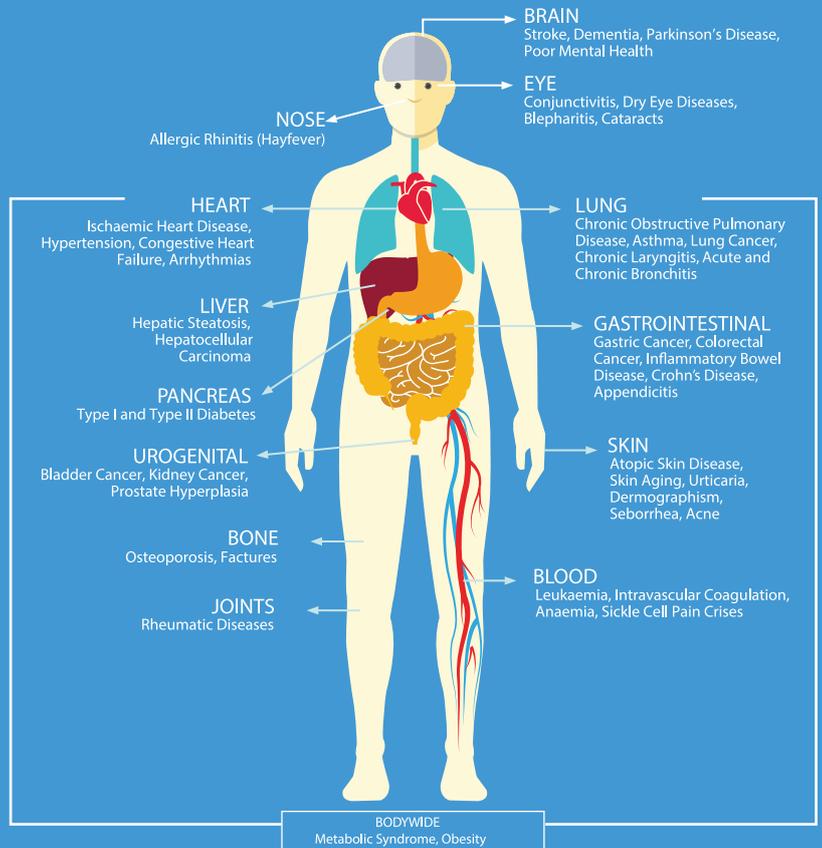
The tiny, invisible air pollutants penetrate deep into our lungs, enter the human system through skin, eyes, nose, bloodstream and pose a significant threat to human health from short-term health ill-effects to long-term chronic diseases and even premature death.

SHORT TERM EFFECTS

- ▶ Headache
- ▶ Nausea
- ▶ Cough
- ▶ Breathlessness
- ▶ Dry Skin
- ▶ Acne
- ▶ Allergic Reactions
- ▶ Hairfall
- ▶ Poor Hair Texture
- ▶ Irritation in Eyes
- ▶ Nose & Throat

LONG TERM IMPACT

Organs Affected By Air Pollution



Picture Credit : <https://ncdalliance.org/resources/airpollution-policybrief>
Ref.: Air Pollution and Noncommunicable Diseases:
[https://journal.chestnet.org/article/S0012-3692\(18\)32722-3/fulltext](https://journal.chestnet.org/article/S0012-3692(18)32722-3/fulltext)



29%
OF DEATHS FROM
LUNG CANCER



24%
OF DEATHS FROM
STROKE



25%
OF DEATHS FROM
HEART DISEASE



43%
OF DEATHS FROM
LUNG DISEASE

Picture Credit:

BREATHELIFE

1. Engaging with the Patients

1.1 Increasing Awareness about Air Pollution among Patients

As members of the medical fraternity, our views about health ill-effects of air pollution will be taken seriously by patients and the public. Hence, we must educate our patients about the adverse health effects of the polluted air & measures to prevent the damage. Here are a few things that we can do at our end -

- Talk to the patients when they visit us for consultations on health issues related to air pollution.
 - Put up posters in clinics & hospitals highlighting the health impacts and preventive actions.
 - Display Air Quality Index (AQI) and a basic health advisory on screens in patient waiting rooms. This can help to start the conversation on air pollution with your patients.
 - Keep air-purifying plants in the patient waiting rooms with a simple message at the bottom of the pot like “Use these natural Air Purifiers at home” or “Plants are the best Air Purifiers”. This also can help in starting the conversation on air pollution with your patients.
- Use platforms like patient education programs and community camps to raise

1.2 Encouraging Lifestyle Changes among Patients

We should encourage our patients to make the changes in their daily life that are healthy for them, their families & the environment. around them. We can, for example, ask our patients to:

- Increase the use of public transport.
- Stop burning trash in the open.
- Keep air-purifying plants (Money Plant, Snake Plant, Areca Palms, Dwarf Date Palm, Aloe Vera etc.)
- Promote clean fuels for cooking and other domestic purposes. We must also spread awareness about the adverse health effects of open burning of wood fuel/fossil fuels for domestic or commercial use.

Public participation for individual solutions is necessary if we want to reduce the health ill-effects of polluted air.

2. Engaging with the Medical Fraternity

We as Doctors, should educate ourselves and also increase awareness among other health professionals on the scientific data showing the health impact of air pollution. We should form a network of trained and empowered Doctors who believe that air pollution is a health emergency and are capable of spreading the message and engaging with the public to make clean air a people's movement.

The various actions this group can take are:

- Organize and conduct regional training seminars & workshops on air pollution in India, its components, causes and landmark health studies.
- Request Doctors to include exposure to air pollution as an important component of patient history taking.
- Encourage and empower Doctors to conduct local (involving their own Hospital / Clinic) research studies to correlate air pollution and health.
- Actively reach out to members of medical fraternity & associations through mass mailing or WhatsApp groups to highlight the health emergency of air pollution and seek their support and commitment for actions towards clean air.
- Distribute posters, study materials, catalogues, online content containing information about the health impact of air pollution.



3. Engaging with the Masses

One of the key objective of Doctors for Clean Air is to develop ourselves as a network of health professionals who will provide expert opinions (as Doctors) to patients, public, union & state-level policy makers and media as a knowledge body that understands and has also witnessed the health ill-effects of air pollution.

3.1 Engaging with the Media

- Organise media training programs on basics of air pollution and its health impacts for journalists particularly those reporting on health and environment. A well informed regional media will be able to report more effectively, in local language, thereby conveying the message to the masses.
- Use the media to build a public momentum. For example, writing articles and opinion pieces in local newspapers, awareness series/stories in newspapers, TV interviews, speaking at public events about the health impacts of air pollution will help to spread awareness among the public and the media alike.
- Be aware of the Air Quality Index (AQI) in your city and neighbourhood. Use the media to issue health advisories based on AQI levels. This can be a good start to start spreading awareness on the health ill-effects of air pollution. The advisories can be run as a news ticker on news channels or regular health advisories on FM-radio just like traffic advisories. It can be sent out to schools and colleges in the city to help them in planning their activities so as to reduce the exposure of children on high pollution days.

3.2 Engaging with the Schools

- Organize, conduct and address school/college seminars, workshops and events to spread awareness among the youth on air pollution and its impacts on health and how they can be a part of the solution & not pollution.
- Taking initiatives on starting a B.E.S.T. (Breathe Easy Stay Tough) Club, an initiative of LCF. BEST Club is a student led initiative to effectively empower our country's youth towards better Lung Health. It engages school students to conceptualise and implement an annual engagement plan involving activities to create awareness about air pollution. By highlighting the health ill-effects, it promotes individual actions for clean air. To know more, Visit: <http://lcf.org.in/bestclub/>
- Preparing schools in dealing with asthma related emergencies due to high levels of pollution by asking them to adopt the Asthma Manual for Schools compiled by LCF. To download, Visit: <http://lcf.org.in/asthma-management-manual-for-schools/>

3.3

Engaging with the Public

Videos by Doctors in regional languages talking about the health ill-effects of air pollution – some common symptoms to look out for, busting myths – including myths about air purifiers and masks, some common causes of air pollution, elicit commitment from public to focus on individual solutions and also waking them up to demand clean air as a human right.

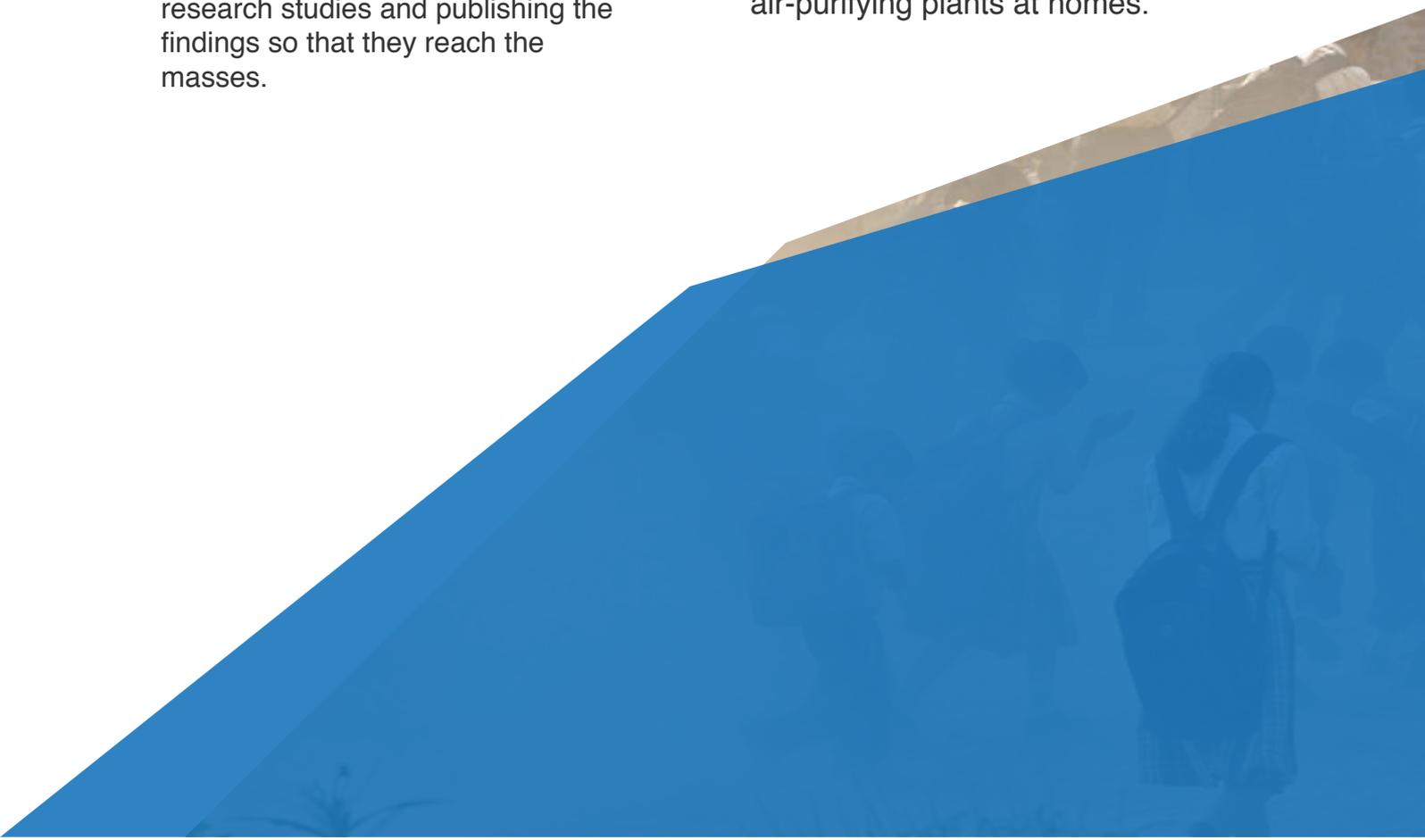
Setting up low-cost air monitoring systems in cities, clinics, schools, etc. to educate people about air quality and issue health advisories according to pollution levels.

Highlight deteriorating state of health, increase in diseases and correlation of air pollution and health to the general public by collating your medical data to form research studies and publishing the findings so that they reach the masses.

Spread awareness through active engagement on social media platforms such as Facebook, Instagram, YouTube, Blogs where content on air pollution, its health ill-effects and individual actions to help reduce air pollution can be shared among the masses effectively.

Initiate or join fun community movements to promote clean air and healthy living - such as tree plantation drives, sustainable living workshops, cycle rides, health camps. Use these opportunities to engage with the public about solutions that can be generated by a group of people especially - RWAs, student groups , etc.

Encourage planting of local variety of trees like Banyan, Neem, Peepal etc. to increase the green cover in your city / locality and promote the use of natural air-purifying plants at homes.



4. Engaging with the Policy Makers

Any policy change requires the support of state & union level policy makers which in turn requires strong support from the public. Doctors can play a powerful role in influencing public policy by educating the public, policy makers & administrators on air pollution. Public care about health & if Doctors can move public opinion on an issue then it is easy for them to convince policy makers.

- Engage with policy makers & decision makers with open letters, emails, phone calls and meetings, highlighting how a policy/law to control air pollution will have mass public support since it directly concerns their health and well-being.
- Collaborate with NGOs and other organizations that work on environmental issues including air pollution for policy change recommendations. It will be much more impactful to influence govt policies if a wide range of organizations & individuals corroborate facts about the health impact of air pollution

5. Engaging through Research

Air Pollution and Health dialogue is incomplete until we have significant research data to support what we see every day in our respective medical practices. Doctors for Clean Air also aims to address this gap in data and strengthen our voice. For this purpose, Doctors should undertake research studies on the health impact of air pollution in collaboration with other local Doctors through their clinics or hospitals. As DFCA Champions, we must lead these researches to assess the actual damage on the ground.

Some of the research areas include:

- Finding sources of pollution in your city and the simple steps that can be taken to reduce pollution from these sources.
- Tracking the number of patient visits and correlating it with the AQI on a particular day to see if the AQI increase leads to an increase in the number of patients visiting your clinic or hospital.
- Pulmonary Function Test (PFT) of people particularly vulnerable to air pollution due to their occupation for example traffic police, people working in mining, shopkeepers, auto-rickshaw drivers, etc. to assess the impact of their exposure to polluted environment affecting their lung function.

Air Pollution Fact Sheet

- 9 out of 10 people worldwide breathe polluted air. [i]
- 22 out of the 50 most polluted cities globally are in India. [ii]
- In 2016, Air Pollution was responsible for 7 million premature deaths globally, out of which 6,00,000 were children under 5 years age. [iii]
- In India, 6,27,000 premature deaths are attributable to ambient, or outdoor PM 2.5 exposure. When household or indoor pollution is added to this figure it rises to 16,00,000. [iv]
- According to the State of Global Air Report 2019: [v]
 - PM2.5 pollution contributed to nearly 3 million early deaths in 2017.
 - More than half of this disease burden fell on people living in China and India.
 - Most of the disease burden attributable to air pollution (82%) stems from chronic non communicable diseases.
 - Air pollution accounts for 41% of global deaths from chronic obstructive pulmonary disease (COPD), 20% of deaths from type 2 diabetes, 19% of deaths from lung cancer, 16% of deaths from ischemic heart disease, and 11% of deaths from stroke.
 - Air pollution also contributes to communicable diseases (e.g., 35% of deaths from lower-respiratory infection).
- According to the Global Burden of Disease Study 2017: [vi]
 - Of the total 480.7 million DALYs* in India in 2017, 38.7 million or 8.1% were attributable to air pollution.
 - Of the total DALYs attributable to air pollution in India in 2017, the largest proportions were from
 - Lower respiratory infections (29.3%),
 - Chronic obstructive pulmonary disease (29.2%),
 - Ischaemic heart disease (23.8%), followed by stroke (7.5%)
 - Diabetes (6.9%),
 - Lung cancer (1.8%),
 - Cataract (1.5%).

**The disability-adjusted life year (DALY) is a measure of overall disease burden, expressed as the number of years lost due to ill-health, disability or early death.*

References

[i] WHO, Available from: https://www.who.int/health-topics/air-pollution#tab=tab_1

[ii] WHO, Available from: https://www.who.int/health-topics/air-pollution#tab=tab_1

[iii] WHO, Social media toolkit for Air pollution and Child Health: Prescribing Clean Air Launch,

Available from: <https://www.who.int/ceh/publications/Social-Media-Toolkit01-Air-Pollution-and-Childrens-Health-Report-Launch-V1.pdf>

[iv] Kalpana Balakrishnan, Aaron Cohen and Kirk R. Smith. Addressing the Burden of Disease Attributable to Air Pollution in India: The Need to Integrate across Household and Ambient Air Pollution Exposures

Available from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3888581/>

[v] Health Effects Institute. 2019. State of Global Air 2019. Special Report. Boston, MA: Health Effects Institute.

Available from: https://www.stateofglobalair.org/sites/default/files/soga_2019_report.pdf

[vi] Balakrishnan K, Dey S, Gupta T, Dhaliwal RS, Brauer M, Cohen AJ, et al. The impact of air pollution on deaths, disease burden, and life expectancy across the states of India: the Global Burden of Disease Study 2017. The Lancet Planetary Health. 2019

Available from: <https://www.thelancet.com/action/showPdf?pii=S2542-5196%2818%2930261-4>

Making Sincere Efforts Towards
“Care & Cure of 2.6 Billion Lungs in India”



5003 Students of Delhi-NCR Create
Guinness World Record For Largest Human Image of An Organ
Against Air Pollution

DOCTORS
FOR CLEAN AIR



LUNG CARE
FOUNDATION

JOIN OUR INITIATIVE

 / foundation.lung.care  / icareforlungs

 / LungCareFoundation  www.lcf.org.in

Join Now

www.dfca.org.in

Order Copies: matrushri@LCF.org.in