

Clean Air News

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Clean Cooking Campaign

By *Sujita Ghalan Tamang*

Use of solid biomass fuel such as firewood and dung in traditional stoves for cooking is a major source of indoor air pollution in Nepal. It is estimated that about two thirds of the houses in Nepal use such polluting fuels which results in significant health problems, particularly among women and children. According to WHO, 2016, 8,700 people die prematurely every year in Nepal due to indoor air pollution. In order to understand this problem better, raise awareness on this issue and promote solutions to indoor air pollution, Clean Energy Nepal and Nepal Youth for Climate Action (NYCA) are initiating a Clean Cooking Campaign in villages in Southern Lalitpur district, starting from the village of Dalchoki. The campaign will consist of research, awareness and action.

As a first step this campaign, I conducted a survey of cooking practices in 30 households in Dalchoki, which is a village in Konjyosom Rural Municipality – 3, Lalitpur district. It is just 23 Km far from Patan but still lacks access to basic facilities. According to the 2011 census, Dalchoki's population was 1167, of which 537 was male and 630 female. The high population of women is because many of the young men have left the village for employment

in Kathmandu or abroad. The main occupation of the villagers is farming and animal rearing. This village has different types of ethnic groups, including Tamang, Gurung, Magar, Brahmin, Chhetri, Nagarkoti and Sunwars. The village has one high school, Shree Goth Bhanjyang Secondary School, which has a total of 350 students in grades 1 to 12 class.

A rapid survey of 30 households in Dalchoki indicated that most of the families use Liquid Petroleum Gas (LPG) as



Jagannath Shrestha of Centre for Energy Studies, Institute of Engineering, Tribhuvan University on 29 December 2019,

Fuel used for cooking	Number of Households	% of households
Wood only	6	20
LPG only	5	17
Mainly LPG & occasionally wood	10	33
Mainly fuelwood occasionally LPG	7	23
Both LPG & fuelwood equally	2	7
TOTAL	30	100

well as firewood cooking, while 20 percent of the households depend only on fuelwood for cooking. This and other data from the survey will be used to design and implement the Clean Cooking Campaign for Dalchoki.

NYCA also organized an inter-action program with Prof. Dr. Amrit Nakarmi and Prof. Dr.

which was useful to understand various issues related to clean cooking in Nepal.

In the future CEN will use the survey findings and the knowledge provided by experts such as Dr. Nakarmi and Dr. Shrestha to raise awareness on clean cooking and promote solutions such as improved cook stoves and induction stoves.

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Prevalence of COPD Higher in Men

Poor air quality, smoking, dust, use of biomass fuels for cooking and heating are some of the causes for chronic obstructive pulmonary disease in the country, according to health practitioners.

A research conducted by Nepal Health Research Council with support from the Ministry of Health and Population revealed that chronic obstructive pulmonary disease was the most prevalent (11.7 per cent) non-communicable disease, followed by diabetes mellitus (8.5 per cent), chronic kidney disease (6 per cent) and coronary artery disease (2.9 per cent) among Nepalis.

“The primary cause of chronic obstructive pulmonary disease is smoking (including second-hand or passive exposure),” said Dr Phanindra Prasad Baral, chief of Non-communicable Diseases and Mental Health at Epidemiology and Disease Control Division.

Nepal Demographic Health Survey-2016 reported that 27 per cent of Nepali males and six per cent of females smoked tobacco. Higher level of indoor and outdoor pollution is another leading cause of COPD. The NHRC report revealed that the

prevalence of COPD was higher in men, 12.6 per cent compared to 11 per cent in women.

Biomass fuels used by women for cooking accounted for high prevalence of COPD among non-smoking women. “Though the prevalence of the disease is more in men, women are at higher risk of losing life of being disabled. Use of traditional cooking stoves, poorly ventilated homes, indoor air pollution, women spending more time in the kitchen for household chores and delayed hospital visits are some factors leading to death or disability,” said Tara Ballav Adhikari, a student at Aarhus University, Denmark, who is conducting research on community based management of COPD in Nepal.

According to Nepal Demographic Health Survey-2016, about two-thirds of households (66 per cent) use solid fuel for cooking, and this practice is more common in rural households (88 per cent) than urban households (52 per cent).

The prevalence of COPD varied considerably province-wise. It ranged from six per cent in Gandaki Province to 25.1 per cent in Karnali Province.

“People living in rural areas are more prone to COPD as they are exposed to smoke,” said Adhikari.

Thirty-one per cent households were exposed to tobacco smoke daily (34 per cent) in rural areas and 30 per cent in urban areas), according to NDHS.

“As the Nepali population ages, the burden of COPD is likely to increase because with increasing age, the incidence as well as death and disability increases,” added Adhikari.

The burden of COPD will increase in the country if effective measures are not taken to identify the disease and provide effective treatment. “Use of improvised kitchen stoves, pollution control and quitting smoking will help prevent COPD,” Adhikari said. Shortness of breath, specially during physical activities, wheezing, chest tightness, chronic cough, which may produce sputum, are some of the symptoms of COPD.

Treatment will relieve symptoms, improve quality of life and reduce risk of death, Adhikari added.

Source: thehimalayantimes.com, 24 November, 2019

Westerly Wind Clears Kathmandu Air

Kathmanduites can take a respite from the winter pollution, at least for a few days. And the credit goes to the westerly wind that has blown away the dust particles eastward.

With the absence of fog, smoke and

dust from the valley, several mountains including Jugal, Dorje Lakpa and Ganesh among others were clearly visible Sunday.

“The strong westerly wind has brought down the Air Quality Index

(AQI) value to a “moderate” level, said Rajeshwar Poudel, environmental inspector at the Department of Environment, Ministry of forestry and Environment, adding, “The PM 2.5 which largely decides the AQI in Kathmandu was also lesser than the

the World Health Organization (WHO) standard Sunday.”

The PM 2.5 level stood at 19.7 microgram per cubic meter ($\mu\text{g}/\text{m}^3$) at Ratnapark Sunday noon, which is even lesser than the WHO standard of 25 $\mu\text{g}/\text{m}^3$ (24-hr mean). Nepal's National Ambient Air Quality Standard Guidelines of 2012 state that the PM 2.5 concentration should not exceed 40 micrograms per cubic meter of air, which is almost double the WHO standard.

PM 2.5 measures fine particles that are 2.5 micrometers (PM 2.5) in diameter or smaller, which can only be seen with an electronic microscope, and include particles produced from all types of combustion, including motor vehicles, residential wood-burning, forest fires, agricultural burning, and some industrial processes.

Of the seven Air Quality Monitoring Stations in the Kathmandu, two stations – both run by the US embassy – updated their AQI readings at 55 at 3 pm Sunday. The pollution level is considered “moderate” in terms of the health implications.

The AQI ranking is based on the degree of particulate matters (PM) present in the air, along with other pollutants – namely ground level ozone, carbon mon-

oxide, sulphur dioxide and nitrogen dioxide. “Everyone else: It’s a good day to be active outside.” reads an advisory from the US embassy, which runs these two stations in the Valley – one stationed on the US embassy premises and another at Phohara Durbar. Until last week, the AQI reading was above 150, which is considered “unhealthy” for everyone, and hazardous for children and asthma patients.

The accepted pollution level remained a good news for Kathmandu, which saw the inauguration of the South Asian Games (SAG) on Sunday. President Bidya Bhandari formally launched the 10-day games amidst a grand ceremony Sunday. The odd-even rule for vehicles also eased the vehicular traffic and contributed to reducing the pollution level, argued Poudel.

The Department of Hydrology and Meteorology is also buoyant with the arrival of the strong westerly wind. “The westerly wind, which entered Nepal three days ago caused increased snowing in high altitudes, rains in a few places in the western region and cleared the air in the Kathmandu Valley,” Shanti Kadel, senior meteorologist at the Meteorological Forecasting Division, said, adding, “The next three days would see fair and clear weather in the Valley”.

From December to February the westerly wind dominates the weather with the daytime seeing increased wind speed, added Kadel.

Each year Kathmandu winter welcomes strong westerly winds, said Professor Ram Prasad Regmi, from the Department of Physics, Tribhuvan University, “But this is not a permanent phenomenon, this happens once or twice during the winter. Once the effect of the westerly wind subsides, pollution in the Valley returns to the same unhealthy levels.”

Kathmandu witnesses a gradual increase in pollution from November and this reaches its peak in January. Thanks to the bowl-shaped topography of Kathmandu that restricts the movement of the wind causing the pollutants to linger in the Valley air.

Experts suggest introducing adaptive measures. “This can be done by better public transport management, stopping open burning, controlling emissions from brick kilns during winter and, most importantly increasing awareness among the public about pollution,” Professor Regmi added.

Source: myrepublica.nagariknetwork.com, 2 December, 2019

Pollution Checking Device Lay Idle for 3 Years

vehicles are regarded as the main polluters of Kathmandu valley. A study carried out by Nepal Health Research Council, a few years back, found vehicular emission the main contributor to the pollution in the valley. Among polluters, it holds a share of 38 percent.

Out of millions of the vehicles running in the streets all over the country hardly 50 get their pollution level checked.

The vehicle operations regulations hail

that each owner should get his vehicle tested every six months. The Department of Transport Management says that provided the vehicles tested do not meet the standard, they are allowed in operation only after maintenance.

“We have tested the four-wheelers four times a year,” says Gogan Bahadur Hamal, the Director-General of the Department. “But most of the vehicles run in the street without emission test.”

Vehicles and Transport Management Act, 1993 and Vehicles and Transport Management Regulations, 1998 mention the provision of establishing a center to regulate and update the test, pollution and the change of parts in the vehicles.

The same provision led to the establishment of Vehicle Fitness Test Center, in 2013 in Teku, Kathmandu. The center came to formal operation 2 years

after its establishment.

Established to test the vehicle pollution caused by its machinery, the center is still unable to come into operation effectively. The equipment bought 'just' nine years before does not function well.

The center informed Khabarhub that the test of tempo, taxi, and microbus is conducted manually and using the equipment. Ram Chandra Poudel, a senior division engineer at the Center, told us that the center has been working in the area like setting the requirements in an electric bus, night bus, etc.

As the center executes the test of the e-vehicles, the Department of Transport Management provides the certificate. Although, in addition to public vehicles, private vehicles, the vehicles of the diplomatic mission, the government vehicles also pollute the environment, none of these except few public vehicles get their pollution tested.

Poudel, the senior official at the Center affirms that millions of vehicles run in the Bagmati zone alone, but citing the limited resources to execute the test he asks "Where are the test centers? They are never sufficient."

With the adoption of federalism as a system of governance, there should have been at such centers in each province; however, only 2 provinces have such centers.

If we just calculate from the record of the Transport Management Department, 80% of the vehicles registered in the Department are two-wheelers. Unfortunately, there is no equipment to test the two-wheelers.

Equipment lay idle for 3 years

As allocated in the budget in the fiscal year 2009/10, the department had managed to buy a few equipment in 2011. The equipment bought from a Chinese company named Zhuhai Tongli and arrived in Kathmandu before the test center came into operation remained un-

used for 6 years.

As they lay unused for a long time, now it is really hard to use them.

Poudel informed Khabarhub that owing to the long gap in arrival and use and also due to the lack of formal contact with the company afterward, there are complications. He said that the company is out of contact now and the government also has not taken any initiation to trace the company and contact it officially. "We have requested government many times, but are still unable to use that equipment," he added.

Obviously this has, sometimes, led to the crowd of vehicles willing to get tested at the center.

It is said that the tasks are done there are recorded in the computer system, but the test display does not function well.

Informing about the activities at the center, Poudel further said, "Testing the force of the brakes, measuring the headlight intensity, suspension (sight slip), technical test, horn are five things done at the center." "We work with hands as well," he added.

Province government set to establish test center

As per the constitutional provisions, the responsibility to arrange for transport management in the province lies in the province itself. The federal government has been acting the caretaker unless the provinces stand on their own.

Butwal of Province no.5 and Hetauda of Province no. 3 have launched their service from their newly established test centers which make the total number of such test centers three only. Realizing the importance of such centers in all provinces, the provincial governments are now taking initiations to have the test centers of their own.

Traffic police launches campaign against polluters



Expressing its concern towards the health hazards caused by vehicular emission, the Metropolitan Traffic Police, in coordination with the Department of Transportation has launched a campaign for the last few months.

According to the Metropolitan Traffic Police, the traffic police have started checking whether the emission test is regular or not.

"We have been checking to see if the vehicle owners have got their vehicles regularly checked or not." Bhim Prasad Dhakal, Senior Superintendent of Police of Metropolitan Traffic Office said to Khabarhub. "Most of the vehicles which have not undergone the emission test discharge more smoke, we take action against such vehicles," Dhakal added.

As the Transport Management Department does not have the devices required for pollution test, Vehicle Fitness Center has been executing the tasks so far.

"Everyday 35-40 vehicles are booked for pollution." Dhakal offered the details and adding, "Each vehicle thus booked is fined 500-1500 rupees."

Despite the Department's attempt, the test is of not much use as the laws are not enforced effectively as even the vehicles with green stickers are still fogging the environment.

Source: english.khabarhub.com, 4 December, 2019

High Pollution Level Taking Toll on Public Health, Says NHRC

Citizens were denied their fundamental rights to live in clean and healthy environment guaranteed by the constitution, but the government was not assessing its adverse impact on public health, said the National Human Rights Commission. According to the annual human rights report released by the rights body last week, air pollution is making people susceptible to skin, eye and respiratory diseases, it has equally impacted cognitive and psychological well-being of the people, specially in Kathmandu valley. The NHRC warned that unmanaged construction of physical infrastructure had contributed to the highest portion of PM2.5 concentration in the air with 53 per cent, followed by vehicle emission (30 per cent), brick kilns (9 per cent), indoor smoke (5 per cent) and factories and open burning of refuse, one per cent each.

“Outdoor and indoor emission sources are major reasons behind deteriorating pollution level. Therefore, the government and concerned stakeholders need to be more sensitive towards tackling the pollution menace,” the report said, urging the authorities to implement the recommendations it made to the government from time to time in line with the Supreme Court order.

Earlier, the rights body had recommended that the government mitigate adverse impacts of environmental pollution in public health and promote cleanliness in valley to ensure that the citizen’s rights live in clean environment is not violated. Article 35 (4) of the constitution establishes each citizen’s right to safe drinking water and sanitation as fundamental rights. Article 30 (1) says each citizen shall have the right to live in clean and healthy environment and enjoy compensation for the harm caused by pollution.

According to the NHRC, unplanned digging of roads, poor implementation of development projects, unsafe disposal of hospital and industrial wastes, air pollution due to dust and smoke emitted by brick kilns, vehicular emission, irregular collection and disposal of household wastes, delay in blacktopping roads and haphazard dumping of construction materials, among others, were responsible for increasing

environmental pollution in the valley.

The NHRC has recommended the government to develop a schedule comprising the date of commencement and completion of construction work before implementing development activities, and press concerned contractor to abide by pollution control measures as set forth in the laws. It also asked the government to formulate a law which empowers the authorities concerned to impose on-the-spot fine on vehicles not meeting emission standards.

It has also urged the government to set up vehicular emission testing facilities at entry points of the valley and make the green sticker mandatory for vehicles in Kathmandu, Lalitpur and Bhaktapur. The NHRC has recommended the government to bring motorcycles and scooters under the provision of regular exhaust emission, besides increasing number of vehicular emission testing facilities.

The rights body reminded that it had directed the government to segregate wastes at their sources, rid the valley of visual pollution, determine time schedule for collection of waste in every area, control stray cattle, manage chemical wastes produced by hospitals and factories, enforce emission standards set for brick kilns, and make a provision of regular check-up of persons and children working in brick kilns. The NHRC had also recom-



mended the government to formulate necessary law which required polluters to pay compensation to pollution victim as per Article 30 (2) of the constitution.

Source: thehimalayantimes.com, 13 December, 2019

Iran's Capital Extends Closure of Schools Over Heavy Pollution

The governor of Tehran Province on Sunday extended the closure of schools and kindergartens in Iran's capital Tehran until Dec. 28, citing the alarming air pollution. The schools and kindergartens in the capital have been shut down because of poor air quality in the past days.

Anoushiravan Mohseni Bandpay, governor general of Tehran Province, told official IRNA news agency that the Air Pollution Exigency Committee has also imposed restrictions on the movement of cars in Tehran's streets.

Besides, long vehicles and trucks are banned outright in Tehran Province, Bandpay was quoted as saying. He urged the residents of the capital to postpone their unnecessary trips in the city or to use public transportation for their daily activities. The police will stop the smok-

ing vehicles moving on the streets, the governor added.

Over the past days, Iranian officials have repeatedly warned the young, elderly and people with respiratory illnesses to stay indoors and suspend sporting activities.

Air pollution is expected to linger for another five days "unless the helping hand of nature brings a strong gust of wind to help Tehran's residents," according to Iran Meteorological Organization, Eghtesadonline news website reported Sunday. Mohammad Taqizadeh, a member of Tehran City Council, said the odd-even traffic plan will be re-imposed in the next days to alleviate the volume of commutation in the city.

As per the odd-even rule, cars would ply the streets on alternate days, de-

pending on the odd and even numbers of the license plate. Heavy traffic, factory pollution and lack of wind and rain in recent days have worsened the air quality in Tehran.

Pollutants measured to determine air quality include carbon monoxide, nitrogen dioxide, sulfur dioxide, ground-level ozone and particulate matter (PM 2.5 and PM 10), according to Eghtesadonline.

Earlier this month, Pirouz Hanachi, mayor of Tehran, said the burning of fossil fuels, excessive use of private cars and the growing number of low-quality motorcycles are the main culprits behind the air pollution in the megacity.

Source: xinhuanet.com, 22 December, 2019

Good Reads

1. [Smoke emitted from factories affecting human health](#), Shalik Bhatta/Amish Regmi, www.hakahakionline.com, 26 November, 2019
2. [Australia Burns Again](#), Damien Cave, www.nytimes.com, 6 December, 2019
3. [Brick kiln workers' health at risk](#), Sabitri Dhakal, www.thehimalayantimes.com, 8 December, 2019

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Clean Air Network Nepal (CANN) is a network of organizations and professionals involved in air quality management in Nepal. The goal of CANN is to increase the ability of professionals and other interested stakeholders to effectively address the problems of air pollution in Nepal. We encourage you to join hands with us to expand our campaign for clean and better Air. CANN is a country network of Clean Air Asia and hosted by Clean Energy Nepal. For more information: www.cen.org.np; www.cleanairinitiative.org

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