

Center for Public Health, and Environmental Development

Bridging people with science, and technology for healthy living, and environmental safety



A detailed Profile

CEPHED`s 17 years Journey in Environment Conservation, Chemical Safety, and Protection of Public Health

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जनस्वास्थ्य तथा वातावरण प्रवर्द्धन केन्द्र

Center for Public Health, and Environmental Development

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Background

Center for Public Health and Environment Development (CEPHED) is a non-governmental, non-secretariat, and non-profit making organization based in Kathmandu, Nepal. CEPHED was founded in October 2004 by, and through the contribution, and coordination of a consortium of Environment Scientists, Pharmacists, MBA, Chemical engineers, sociologists, economists, and public-spirited activists. The members of this organization are expanding from the people, and experts from agriculture, economics, engineering, environment, pharmaceuticals, chemistry, botany, ecology, microbiology, geology, medical doctors, etc. Its focus is to serve the Nepalese community in the field of public health and environmental development.

Goal: Improved environment management, and public health.

Vision: Bridging people with science, and technology for healthy living, and environmental safety

Mission: Acts as a bridging forum between people with science, and technologies to make access to new scientific knowledge, technologies, and safety measures for the environment, and public health sector through research, coordination, capacity building, and policy dialogue.

Approach: The increased impact on public health due to pollution, urbanization, industrialization, globalization, and unmanaged drug production, sales distribution, and administration aimed to be reduced through scientific ways to ensure healthy living, and environmental development. This could be achieved by carrying out research to develop new technologies, coordinating for developed technologies, implementing those developed technologies, and research finding up to the local villages, towns, and urban centers in the area of environment, and public health.

Members: 25 from different fields of expertise, Male, and Female

Objectives

CEPHED will carry out its activities to fulfill of following objectives.

- To carry out research for the development of new technology Coordinate with the other scientific institutes, and brings their developed technology, knowledge, and skills up to the grass-root level for healthy living, and environmental safety in the area of environment, and public health.
- Develop a suitable laboratory to assess environmental pollution and its study.
- Help government fulfills its objective by making access to new research results, and technologies to people up in villages, towns, and urban centers in the area of environmental development, and public health.
- Provide feedback, and technical support to the Government of Nepal, Local Authorities, and Donor Consortium in the environment, and public health-related matters.

- To enhance the capacities of local people, and grassroots organizations through awareness-raising, training, workshops, seminar, exhibition, and other easy means of information dissemination.

Focus Areas

- Science, and Technology in the area of public health, and the environment.
- Environment Management, and Environment Education
- Environmental Quality Standard, and Certification System
- Industrial Pollution, and Cleaner Production
- Solid waste Management includes medical waste and electronic waste.
- Develop, and promotion of Zero Waste Community, and Demonstration centers.
- Pesticides, POPs, and other hazardous chemicals.
- Natural Resource Management including Renewable Energy promotion
- Forest, Biodiversity, Wetland, Bio-piracy, IPR
- Drinking-Water Supply, and Sanitation
- Agriculture Development, and Extension
- Food Security, and Consumer Right Protection.
- Public health, and sanitation including HIV, Aids, and Hepatitis.
- Safety Drugs regulation: quality, proper sale, use, and abuse, and drug administration.
- Community Medicines, and reproductive health
- Production, promotion, and distribution of IEC materials in the field of public health, and Environment.
- Youth, Environment, and Environmental Governance

Major Project Completion

1. Production of IEC material on Incineration, and launching it through Organizing interaction program" in 2005, and 2008.
2. "National Level Awareness, and Training Workshop on Pesticide POPs in Nepal" in 2006.
3. "Bio-Medical Waste, and the POPs – Studying Current Practices in Kathmandu, Nepal"
4. Study on Mercury Import, use, and management in Katmandu.
5. Study on Electronic Waste in Nepal
6. Study on the Polythene Shopping bag, and associated issues.
7. Study on developing best Strategy for the Environmental Conflict Settlement of Nepal with help of UNEP/EPLC, 2008.
8. Completed project on Status, Management, and Awareness Raising about the Mercury Problem in Nepal with help of SSNC Sweden.
9. Energy-efficient lighting system, and bio-fuel plantation demonstration in Nepal with help of UNEP/EPLC 2009.
10. Participating in regional (South Asia) campaign on lead-free paints, and generating baseline information on mercury from Nepal with help of Toxics Link Delhi, India (First Phase, and Second phase), 2010

11. The study, Awareness Raising, and Capacity building about Electronic Waste in Nepal with help of IPEN Network.
 12. Developing Mercury-Free Health Care Strategy with help of the World Health Organization (WHO).
 13. Publication, and Distribution of "**A Community Guide to Environmental Health**" in the Nepali language with help of the Hesperian Foundation, USA.
 14. "**Public awareness, and participation for the elimination of POPs, and its sources from Nepal**". With help of UNDP/GEF-SGP.2009/11.
 15. Campaigning for Chemical Safety with help of Toxics Link, New Delhi.
 16. Develop Environmental Sound Management of Health Care Waste Management, and Mercury-free health care services in the Eastern Development Region of Nepal with WHO.
 17. Bio-monitoring of Mercury Contamination in Nepal with IPEN, Sweden.
 18. Study of Environmental Health Condition of Health Care Facilities of Nepal with WHO, 2012/13.
 19. Developing Chemical Safety Guideline with WHO, country officer for Nepal.
 20. "Research, Capacity Building, and Awareness Rising for Heavy metals (**Hg, Pb, Cd**) in Nepal" with help of SSNC, Sweden.
 21. Study of heavy metals in children's toys, and campaign for safe play, 2012, EPLC
 22. Asia Lead Paint Elimination Project with IPEN/ EU SWITCH ASIA project (IPEN/EU), 1012/15
 23. Awareness, and Capacity Building for Elimination of POPs, and Its Sources from Nepal, UNDP GEF SGP.
 24. Strengthening Mercury-Free Health Care Campaign in Nepal through National Level Public Awareness, IPEN
 25. Celebrating Lead Poisoning Prevention Week of Action 2013-19 with support of WHO, and IPEN.
 26. Reduction of POPs through developing ESM of Health Care Waste in Nepal, UNEP EPLC.
 27. Research, and Awareness on Asbestos with Takagi Fund for Citizen Science, and ABAN. 2016/17.
 28. Action for Mercury-Free Dentistry In Nepal" WAMFD USA
 29. Study of OSH Condition in Cement, Brick Kiln, and Stone Crushing Industries, and capacity building, AMRC, 2017/ 2018.
 30. Reduction of POPs & MERCURY from Health Sector of Nepal through Awareness Rising, Helping CTF Set up, and Policy Influences, with help of UNDP GEF SGP 2016/19...
 31. Study of Pesticide in Vegetable Produced and Consumed in Kathmandu Valley, UNEP EPLC, 2020
 32. Study of Lead in Instant Noodles marketed and consumed in Kathmandu Valley, 2020
 33. Study of Country OHS-related legislative framework, with help of AMRC, 2020.
 34. Prevention of Lead Exposure through effective implementation of Lead Paint standard in Nepal, ILPPW 2020 with WHO. Prevention of Lead Exposure through effective implementation of Lead Paint standard in Nepal, ILPPW 2020 with WHO.
 35. Environmental Health, and Safety (EHS) Research, and conference with AMRC 2020/21.
 36. Prevention of Occupational Exposure through Environmental Monitoring, and awareness-raising in Nepal with support of DWOI 2020/21
 37. Talc Double Standards, and Sustainable Development, with IPEN 2020
 38. Study of Occupational Exposure among mechanics working with Asbestos containing frictional materials with the support of DWOI 2020/21
 39. Celebrating ILPPW 2021 through Compliance Monitoring of Lead Paint Standard in Nepal with WHO support.
 40. Environmental Health, and Safety (EHS) campaign with AMRC 2021
 41. COVID Relief for Waste Workers with GAIA support 2021
 42. The study, and Awareness of EDCs in Nepal 2022, WEOEH Korea. 2022.
- Major Ongoing Programs**
1. Hosting ANROEV secretariat with the support of AMRC, Hong Kong.
 2. The study, Awareness, and Policy Advocacy for the prevention of occupational exposure to welding Fumes among Metal Fabricators in Nepal with DWOI, and Takagi Fund for Citizen Science.
- AWARDS**
1. GEF SGP Outstanding 2009, and First Prize 2012
 2. UN POPs Convention Secretariat PCB Elimination Network's PEN Award 2011.
 3. Grill Traders Association Award 2068 (2011)
 4. Environment Conservation Award 2069(2012)
 5. Environment Conservation Award 2073 (2016)
 6. WWF Nepal Conservation Award 2020
 7. FIRST IN ASIA Award 2022,
- 43. Membership, and Networking**
1. Global Alliance for Incinerator Alternative (GAIA)
 2. International POPs Elimination Network (IPEN),
 3. Collaborative on Health, and the Environment(CHE)
 4. Health Care Without Harm (HCWH), USA.
 5. Zero Mercury Working Group (ZMWG), UK.
 6. Toxics Link, New Delhi, India
 7. Environment Law Alliance Worldwide (ELAW), USA
 8. UN Global Alliance to Eliminate Lead Paint (GAELP)
 9. UNEP Mercury partnership
 10. International Ban Asbestos Secretariat (IBAS)
 11. Asia Ban Asbestos Network (ABAN)
 12. World Alliance for Mercury-Free Dentistry (WAMFD)
 13. Asian Center for Environmental Health, Bangladesh
 14. Member of Asian Network for the Rights of Occupational, and Environmental Victims (ANROEV)
 15. Member of GEF CSO Network



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Following are the major activities carried out by the Center for Public Health, and Environmental Development (CEPHED) since its beginning in October 2004.

Right after registration in October 2004, all the members started to develop proposals, and network with national, and international organizations having to save objective of protection of public health, and environmental conservation.

In this connection, the organization has been awarded the membership of the International POPs Elimination Network (IPEN). The International POPs Elimination Network (IPEN) is a global network of more than 700 public interest non-governmental organizations working together for the elimination of persistent organic pollutants, on an expedited yet socially equitable basis. This mission includes achieving a world in which all chemicals are produced and used in ways that eliminate significant adverse effects on human health, and the environment, and where persistent organic pollutants (POPs), and chemicals of equivalent concern no longer pollute our local, and global environments, and no longer contaminate our communities, our food, our bodies, or the bodies of our children, and future generations.

The organization also awarded the membership of another worldwide network working on incineration alternatives. This is known as Global Alliance for Incinerator Alternatives (GAIA). GAIA is a worldwide alliance of more than 500 grassroots groups, non-governmental organizations, and individuals in over 80 countries whose ultimate vision is a just, toxic-free world without incineration.

The organization has been awarded the membership of an international network called Health Care Without Harm (HCWH), a global network, and a coalition of doctors, nurses, and environmental activists of 473 organizations in more than 50 countries working to protect health by reducing pollution in the health care sector.

The organization further developed networking with Collaborative on Health, and the Environment (CHE) a network for scientists, and researchers of environment, and chemical issues. Similarly, we have extended the networking with Zero Mercury Working Group / European Environmental Bureau (ZMWG/EEB), and Partnership for Clean Air Pollution (PICA). Member of Networks for Rational Use of Medicine (NetRUM) is a free, non- funded, nonprofit, voluntary, cooperative, a discussion group of rationalists without any conflict of interest. CEPHED is also a member of the World Alliance for Mercury-Free Dentistry (WAMFD), Asian Center for Environmental Health, and GEF CSO Network.

In line with the organization's main motto is to bridge people with science, and technology for healthy leaving, and environmental development, our General Secretary Mr. Ram Charitra Sah in association with Khopa College, Golden Gate College Department of Environment Science, Tribhuvan University, and College of Applied Science, Lalitpur, Pokhara University has researched the different environmental new issues as described below.

Research Works, and Other Awareness Raising & Capacity building Activities

A. LEAD

1. Celebration of ILPPW 2021, Nepal with compliance monitoring of Lead Paint Standard towards its effective implementation

A compliance monitoring of lead paint standards in Nepal has been carried out in 2021 to generate the new compliance monitoring data on lead in paints, and share the results among all government agencies, business communities, and the general public towards eliminating leaded paint, and achieving full compliance with the lead paint standard had aimed to be achieved as the part of a larger project entitled " **Celebration of ILPPW 2021, Nepal with compliance monitoring of Lead Paint Standard towards its effective implementation**" This results in the prevention of children, and occupational exposure to lead in paint, also coherence with GAELP`s objectives.

(a) Compliance Monitoring of Lead Paint Standards in Nepal 2021

A total of 62 (24 % more than originally 50 targeted) enamel paints samples from 37 industries, and 41 different brands, 17 different shades grouped into 9 different colors were collected from some 20 different locations in all seven provinces of Nepal. Sample logs were prepared, and send for the total lead concentration testing in a pre-arranged Government of Nepal Accredited Lab namely Nepal Scientific Services (NESS) Pvt. Ltd. using AAS (Atomic Absorption Spectroscopy) method.



Figure 2. Paint samples collection cities, districts, and provinces.



Figure 1. Enamel Paint Samples studied

The result thus obtained of total lead concentrations was analyzed using MS Excel, and data were compared against the mandatory standards of lead paint of 90 ppm and labeling provisions of the Government of Nepal. The results were interpreted in a more meaningful format with the help of tables, graphs, and bars as well as pie chart diagrams.

Results: 30 out of 62 analyzed solvent-based paints (**48.39 percent of paints**) were not complying with the Government of Nepal`s lead paint standard, i.e., they contained lead concentrations above

90 parts per million (ppm, dry weight of paint). Moreover, 7 paints (11.29 percent of paints) contained dangerously high lead concentrations above 10,000 ppm. The highest lead concentration detected was 22850.17 ppm (254 times more than the Government of Nepal lead paint standard of 90 ppm).

On the other hand, 32 out of 62 solvent-based paints (51.61 percent of paints) contained lead concentrations at or below 90 ppm, suggesting that the technology that produces paint without lead ingredients exists in Nepal. 18 out of 62 (29 percent of paints) contain a Non-Detectable (ND) level of lead including many Nepalese brands.

Only 26 out of 62 paints (41.93 percent of paints) have Lead free or NO Added Lead..... labels. 6 out of 26 (23.91 percent) NO ADDED LEAD labeled paints contained lead concentration above 90 ppm to contain a dangerously high level of lead, ranking 3rd (15273.42 ppm) is single red color, and ranking 7th (11880.57 ppm) is the golden yellow color of Renew brand of Tara Paint Industry Parsa.

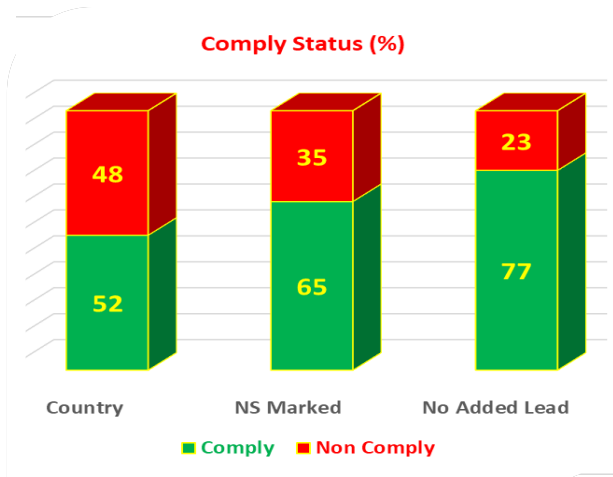


Figure 3. Compliance status of lead paint standard in Nepal

Only 17 out of 62 paints (27.42 percent of paints) have **Nepal Standard (NS) Mark.....** labels. However, paint cans labeled with NS Mark have also contained a very high level of lead up to 2223.96 ppm (24.7 times more than GON Lead paint standard), which needs to be immediately and strictly regulated. 6 out of 17 NS Marked (35.29 percent) paints did not comply with the lead paint standard. The lead content in the non-complying NS marked paints ranges from 94.14 ppm to 2223.96 ppm.

(b) Study of Lead in Spray Paints in Nepal 2021

A total of 21 enamel paint samples from 8 industries, and 8 different brands, and 7 different colors were collected from different major cities of Nepal. Sample logs were prepared, and total lead concentration testing NESS Pvt. Ltd. using the AAS method.

14 out of 21 analyzed aerosol spray paints (67 percent of paints) were complying with the Government of Nepal's lead paint standard, and 7 out of 21 analyzed spray paints (33 percent) were non complying with the lead paint standard.

The final report on **Compliance Monitoring of Lead paint standards, and the "Study of Lead in Spray Paints in Nepal"** was prepared, edited, designed, and printed with the support of the Ministry of Health, and Population (MOHP), the Government of Nepal, and World Health Organization (WHO) Country Office for Nepal, and released through organizing a



Figure 4. Spray Paints samples studied

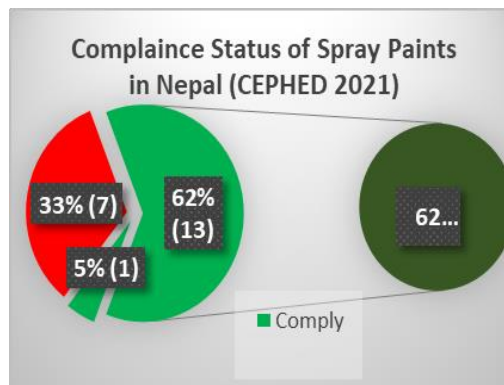


Figure 5. Compliance Status lead paint standard in Spray in Nepal

stakeholder workshop in Kathmandu, Nepal.



Figure 6 New lead paint studies reports on compliance monitoring of lead in paints, Study of lead in spray paints, brief on lead in paints and compliance status in Nepal

(c) Stakeholder Workshop on Effective Implementation of Lead Paint Standards in Nepal

CEPHED with the support of MOHP, the Government of Nepal, and WHO Country Office for Nepal successfully organized Stakeholder Workshop on Effective Implementation of Lead Paint Standards in Nepal on the occasion of celebrating International Lead Poisoning Prevention Week (ILPPW 2021) on October 24, 2021, participated by over 50 participants from Government (MOHP, MOFE, DoEnvnt, Custom, Internal revenue, Industry, Bureau of standard, custom, Chemical Convention’s DNA, NAST, NHRC, OSH Center, Metropolitan, and Municipalities, etc.) Non-government (CEPHED, New ERA, LEADER, CCDL, RESPHEC, Green Path Nepal, Hospitals (KMC, BPKMCH,) WHO, FNCSI, Paint Industries, Academia, Scientists, OSH Experts, Medical Doctors, Nurses, Laboratory expert, Consumer advocates, Students, and media personnel’s, etc.



Figure 7. Stakeholder Workshop on effective implementation of lead paint standard in Nepal, and releasing reports.



Figure 8. Group picture of participants, and guests of the stakeholder workshop

2. Research on Lead

Lead is important heavy metal massively used in decorative paints, and health care systems especially in the X-ray room, and apron. It has been imported to Nepal from different countries in different forms. We have studied the amount of lead in lipsticks, imitation jewelry, lead in paint, and lead-based products imported into Nepal, and its possible uses. As well as published publications on each of these issues, and organized a seminar, workshop, meeting, and interaction program to deliver the message about the hazardous effect of lead in products.

Lead-in cosmetics such as lipsticks, artificial jewelry, and lead-in paint are claimed to be lead-free. But from our study, these products still are contaminated with high lead. The next round of sampling for the study of lead in paints has been initiated under the new program funded under EU IPEN Switch Asia Project on Lead studied as the next phase of lead study of CEPHED.

Following the first phase study, in late 2010, and early 2011, a second phase study entitled "**Double Standard**" has been completed of 27 common brands of enamel samples (12 from Nepal, 9 from India, and 6 from Bangladesh) in association with the other countries of South Asia, and produced the report. According to the result of this double standard study, it has been proved that multinational companies such as Asian Paints, Berger Paints, Nerolac, and ICI Dulux have adopted double standard products in the region. The same company's products in India are much cleaner than the products produced and marketed in Nepal and Bangladesh. For example, Berger Paints (golden yellow shade) found in Nepal contains a maximum of 212700 ppm of lead (2363 times the US standard 90 ppm), Bangladesh sample contains 121900 ppm, and Indian sample contains just 17200 ppm of total lead concentration. Similarly, Asian Paints (Golden Yellow Shade) in Bangladesh were found to be contained 43600 ppm, Nepal contains 190 ppm, and India contains only 90 ppm.



Figure. Three Lead in Paint Study Reports of CEPHED

The second report is of international publication of a joint study report of CEPHED Nepal, Toxics Link India, and ESDO Bangladesh. The third report on Double Standard is the Nepali edition of the Double Standard Report to maximize the outreach and better understanding. This Double Standard Book has been translated into Nepali, reproduced into several copies, and distributed among all the concerned ministries, departments, and other stakeholders' meetings organized by CEPHED for addressing the issues of lead in Paints.

3. Research on Lead, and Campaign for required legislative, and institutional responses.

Lead is another important heavy metal massively used in decorative paints, and health care systems, especially in the X-ray room, apron, and many other daily consumable items such as cosmetics, jewelry, children's toys, etc. CEPHED researched lead contamination in various products for a decade and has continued the campaign for getting the required legislative and institutional framework.

- Study of Lead in Paint in Nepal 2010
- Lead in lipsticks 2012.
- Lead in imitation jewelry 2012.
- A study entitled "**Double Standard**" about lead in paint 2011.
- A study of Lead in Paint under the EU IPEN SWITH ASIA project 2013 found once again very high levels ranging from 8 to 130000 ppm.
- Heavy metals in Children Toys 2013
- Lead in Household, and School Dust 2014.



Figure. Decorative new Paints samples for lead

Based on our above studies, a rooted campaign, and continued advocacy has been done with concerned government, and private agencies, and have the following achievement so far.

- High-level government authorities have taken the issues seriously as OPMCM wrote back four times to different ministries (MOSTE, MOI, and MOSC) to formulate a standard soon.
- Regular pressure from OPMCM to the respective Ministry for required legislative, institutional, and monitoring mechanisms.
- The Ministry of Information Communication has issued a public notice to ban regulate toxic toys.
- Office of the Prime Minister, and Council of Ministers (OPMCM), MOSTE, MOI, MOSC, MOEdu, and MOWCSW have initiated the internal probes of addressing these issues.



- (e) Educational posters for schools, and the General public jointly with the Department of Education, PABSON, and Massively under dissemination. We have been successfully able to distribute our poster to the 72 out of 75 districts of Nepal resulting in massive awareness raised.

4. Launching of Study Report of Lead in New Enamel Paints in Nepal

On October 22, 2013, CEPHED formally, launched the National Report on Study Lead in Household Enamel Paints by organizing an Interaction, and Press Meet Program well participated by over 50 stakeholders.

High-level officials from different sectors like The Ministry of Environment Science, and Technology (MOST), EU delegation to Nepal, WHO representative, The Ministry of Industry, Department of Environment, Department of Education, Academic Institutes, Policy Makers, Doctors, representatives from INGO, and NGO, Federation of Grills (metals), and Steel Fabricators Nepal, Consumer forums, Chemical Society, Nepal Bureau of Standard, and Metrology, Boarding Schools Association, and Journalist were present in the meeting.



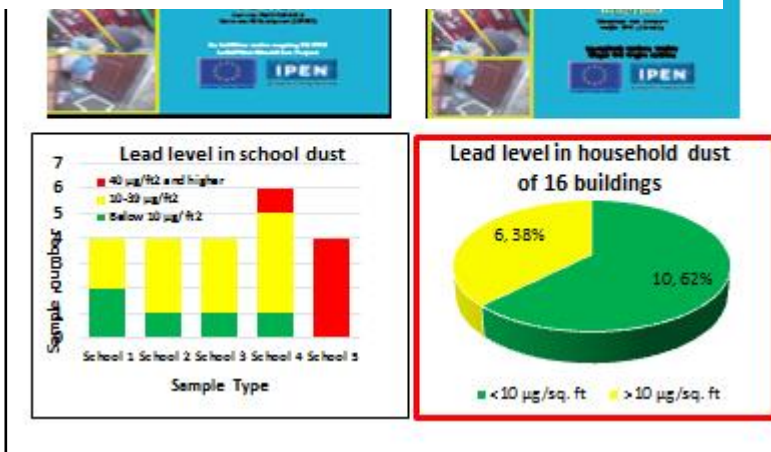
The chief guest of the report launching program Mr. Krishna Gayawali, Secretary at the Ministry of Industry has launched the report. Additionally, two educational posters have been also launched on that occasion.



Figure . From Left: Mr. Krishna Gyawali releasing study report, Mr. Lakshme Bdr. KC, and Mr. Lavdeo Awasthi releasing poster related to school children's health, and Mr. Dipak Thapaliya, and Mr. Eric Ugarte releasing poster for general public

5. Study of Lead in Household, and School dust

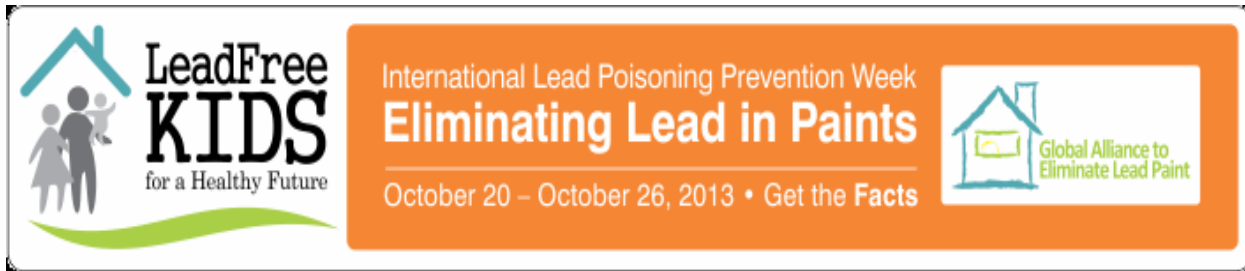
A study of Lead in Household and School dust in 2014 years also found very dangerous levels of lead, particularly in the school classrooms, and also a level of health concern at the individual



household level. The reports and results are shown alongside the diagram.

6. Celebrating Lead Poisoning Prevention Week of Actions, Oct 20-26, 2013, Nepal

With cooperation and support from WHO, GoN, NGOs, and media week-long International Week of Action on Prevention of Lead Poisoning was celebrated on October 20-26th 2013.



Joint Publications with Government (MOE and MOSTE) PABSON and WHO



7. Celebrating Lead Poisoning Prevention Week of Actions, Oct 19 to 25, 2014, Nepal



8. Dissemination of research findings, and program events through Mass Media (Print, and Electronic media –radio, television, social networking, etc.).

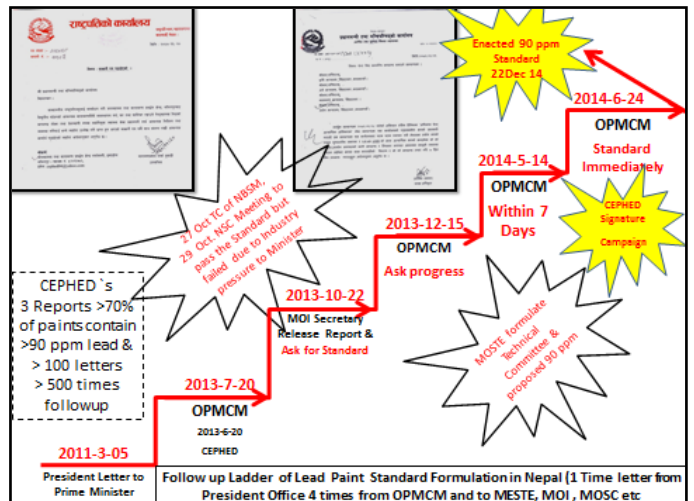
Various national, and international mass media, networks, social media, as well as web portal carries the news and events of the CEPHED`s works worldwide. Some of them are listed here In addition to the printed form of a fact sheet, posters, briefing papers, stickers, bookmarks, reports, and publications, the Radio Jingle on heavy metals (Lead, Mercury, and Cadmium), Video Documentary on Environment Sound Management of Health Care Waste, Mercury-free Health Care Services, and PCB Free Grill Workshops were broadcasted from various electronic media several times.

The different FM Radio such as Metro FM, Image FM, Citizen FM, Sagarmatha Radio, Ujyalo Network, NTV, Lumbini TV, Critical TV, Sagarmatha TV, Image TV, Hamro Kathmandu, Aankhi Jhayal program, and Naya Pusta program of NEFEJ from Image TV Channel, The Himalayan TV Chanel has been continuously covering the issues of Health Care Waste Management, POPs, Model Hospital, mercury-free health care services, electronic waste, CFL, Cosmetics, Lead in Paints, Artificial Jewelry, mercury in human bodies, and fish, etc.

Additionally, several live and recorded interviews on health care waste management, POPs, chemicals in products, chemicals in cosmetics, and artificial jewelry have been directly covered by several electronic media, and print media from the east to the west part of Nepal as we visited those areas during organizing our programs. This year, over 100 print media have covered the CEPHED news story in different fields of work and research.

9. Engagement of high profile office, officers towards a legislative framework for Lead in Nepal

CEPHED based on its three consecutive years of study of Lead in Paints produced, imported, and marketed in Nepal, rooted advocacy has been done with the high-level government officials from President Officer, Office of the Prime Minister, and Council of Ministers (OPMCM), Ministers, and Chief Secretaries to Secretaries, and Director General of all concerned ministries. In response to our advocacy letter, the Chief Secretary office, from the Prime Minister's office of Nepal wrote back a very strong letter in the name of the secretaries Secretary, The Ministry of Finance; Secretary, The Ministry of Industry; Secretary, The Ministry of Science, Technology, and Environment, and Secretary to enact required Acts, Regulation, and Standard as soon as possible recognizing the issues we from CEPHED has been raised about heavy lead contamination, and losses of economic value due to lead paint acquired losses in children that is outweighed the revenue government could generate from the whole paint import product and sales-related business in Nepal. Thus we are hopeful that some speedy process toward the formulation of the



standard will take place soon. As of today, four times letters from OPMCM have been written to the respective ministries to formulate a standard of Lead in Paints and the required legislative framework.

10. Stakeholder Meeting on Lead in Paints in November 2011, and April 2012

A stakeholder interaction program on "LEAD IN PAINT, NOT HERE, NOT ANYWHERE" has been organized on November 3rd 2011 to solicit a plan of action to address the lead-in paint issues in Nepal. The program was organized with the chief guest Honorable Environment Minister, Mr. Hem Raj Tated, The Ministry of Environment (MOE), Government of Nepal. Other Guests were Ms. Meena Khanal, Joint Secretary, The Ministry of Environment; Mr. Sita Ram Joshi, Director General, Nepal Bureau of Standard, and Metrology; Dr. Dhan Raj Aryal, Chief, Nepal Pediatrics Association; Mrs. Sarada Pandey, Sr. Health Administrative Officer (Environmental Health), MoHP; Mr. Khila Nath Dahal, President, Nepal Labor Foundation, and Former Co-President, Nepal Trade Union Congress Independent, etc. The participants are from the various stakeholders representatives including paint industries, painters, labor unions, consumer forums, NGOs, INGOs, GOs, academic institutes, scientific institutes, the federation of industries, and commerce, the department of commerce, and different journalists from several media houses.



Figure. Environment Minister Mr. Hem Raj Tated Inaugurated the Lead in Paint Stakeholder Interaction Meeting

The stakeholder's meeting on Lead was inaugurated by Honorable Environment Minister Mr. Hemraj Tated. During his inaugural speech, he highlighted the need of formulating the standards for lead in paints and also committed to forming suitable standards along with the monitoring mechanism. Other government officials also made remarkable speeches about the need to formulate the standards as well as appropriate legal frameworks. The ministry officials show their high commitment to addressing the issues and helping in our initiatives.

Two technical papers were presented on that occasion. Mr. Ram Charitra Sah, Executive Director, CEPHED, highlighted the overall global, regional, and national issues of lead in paint. He then highlighted the global moment of the lead in paint citing the restricted use of lead in China, and the USA, Lead in Paint resolution of IFCS, large impact testimony of Blacksmith institute, and WHO caution of "**No Safe Blood Lead Level**". Global Alliance to Eliminate Lead in Paints (GAELP), WSSD, and SAICM's provision related to lead-like emerging issues of chemicals in products. Highlight the standard available in the region but absent in Nepal.

The second technical paper on the Impact of Lead on Children's Health and Environment was presented by Dr. Dhan Raj Aryal, Chief Consultant, Pediatrics, Paropakar Maternity, and Women's Hospital, Thapathali, Kathmandu. He is also the President of the



Figure . Chief , Paediatrics Association of Nepal presented about impact of lead on public health

Nepal Pediatrics Association of Nepal. He highlighted the health and environmental impact of lead on children. He started with the simple introduction of lead, and its chemical, and physical properties, sources of lead poisoning, exposure paths, storage, and distribution, clinical features of lead poisoning, a symptom of lead poisoning, effects on the nervous system, lowering children's IQ, effects on the blood, and effect on growth. With all these, he also talks about the prevention of exposure, and thus lead poisoning. He also talked about the management of lead poisoning, treatment guidelines for children, etc. All participants were given the double standard book, a study of lead in paints book, and other IEC materials produced by CEPHED.

Group Work: To assess the sector-wise role of Paints with no added Lead, participants were divided into the following categories of the group to present their opinion. Industry, and Labor Group, Government Agencies, Lab, Health, and Scientific Research Group, Consumer, NGO, and Public Interest Group, and Media group share their commitments, and way forward in the stakeholder meeting. Industries groups especially adhere to their commitment to improve the quality of their products and produce lead-free products by multinational companies whereas Nepalese paint industries have also shown their commitment, and shared their information to be going for lead free paint within two years. Likewise, the Ministry of Environment and other government representatives also show their high commitment to addressing the issues.

Similar kinds of follow up interaction programs were organized on April 30, 2012, on the LEAD in Paint issues once again to accelerate the process of legal, and institutional framework to regulate lead in Paint.



Figure. Honourable Environment Minister Address the LEAD IN PAINT program

11. Interaction Program on Abatement of Blood Lead Level (BLL) among Nepalese Children, IOM TU, Maharajgunj, Kathmandu in October 2019

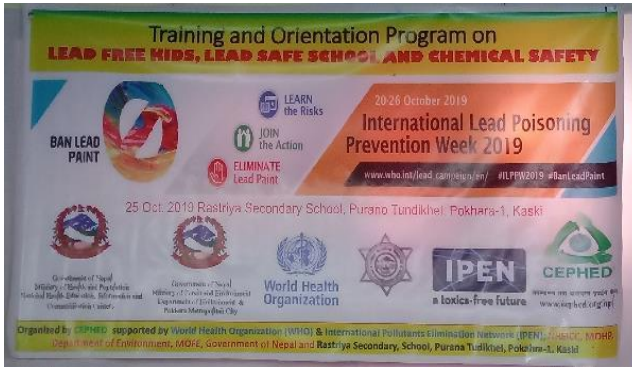
An Interaction Program on Abatement of Blood Lead Level (BLL) among Nepalese children was Organized by CEPHEd in close coordination with the National Health Education, Information, and Communication Center (NHEICC), The Ministry of Health, and Population (MOHP); Department of Environment, The Ministry of Forest, and Environment (MOFE), Government of Nepal, and Department of Community Medicine, MMC, Institute of Medicine (IOM), Kathmandu well participated by over 100 medical doctors, and faculties.



Figure. Participants of Interaction Program on Abatement of BLL among Nepalese Children at IOM, TU, Maharajgunj



Figure: Four Technical Paper Presentation By Mr. Ram Charitra Sah, Dr. Vivek Panta, Dr, Khem Karki, and Mr. Raja Ram Shrestha



B. Health Care Waste Management, Mercury, and POPs (Persistent Organic Pollutants)

1. Environmental Sound Management model development of Health Care Waste Management in different hospitals (Public, Private, and Community).

Along with developing Stupa Community Hospital into a Mercury-free Health Care Service model, CEPHED also took initiation for managing the waste generated within the hospital. Previously hospitals do not have any practice of waste separation. All the waste that used to be generated from different wards was kept in the same vessel i.e. the infectious waste, and noninfectious ones were mixed. Only the infectious waste from Laboratory and Operation Theater used to be autoclaved.

CEPHED provided a series of training programs to the doctors, nurses, and helpers of the hospital for hospital waste management. The colored dustbins with the stickers indicating the waste type to be kept on them were provided to the hospital by CEPHED in the training session. The participants were then practically taught how to separate the waste at the source. At the same time, they were informed about the benefits of separating, and managing the waste.

The hospital then took a step by forming the Hospital Waste Management Committee on September 13, 2011. It is a six-member committee including a Matron, Administration staff, Doctor, Lab Technologist, and hospital helpers. The committee by then took charge of waste management of the hospital.

At present, the infectious, and noninfectious wastes are placed in a different dustbin and collected separately. Set of colored dustbins are kept in different wards, laboratories, and operation theaters of the hospital for waste separation at the source.



Figure 2. Training on HCWM model development at Stupa Community Hospital



Figure 3. Coloured Bucket provided for waste separate at source

The wastes like paper and plastics are collected separately and sold. The non- infectious wastes are sent to the municipality vehicles. The sharp wastes are collected separately. Used needles are removed from the syringe, and collected in a dustbin that would be sealed, and dip buried once it is full. The hospital has even allocated separate autoclaves for waste management. The infectious wastes are planned to be autoclaved to make them disinfected, and sent to the final safe disposal. The Autoclave has been allocated, and is under validation to use, and make sure to the required level of disinfection.

The hospital then took a step by forming the Hospital Waste Management Committee on September 13, 2011. It is a six-member committee including Matron, Administration staff, Doctor, Lab Technologist, and hospital helpers. The committee by then took charge of waste management of the hospital.

CEPHED with help of UNDP GEF SGP, Toxics Link, and WHO, has been engaged in developing and establishing the environmentally sound management of the health care waste model hospital at Kanti Children Hospital (KCH), Kathmandu. KCH is only one public children's hospital operated in Nepal, and also the oldest hospital of this type, and scale. The system of onsite separation of the waste into infectious, and non-infectious within, and outside the wards along with the development of the proper collection, transportation, and treatment process with the non-burning mode of technology to curb the release of POPs chemicals like Dioxin, and Furan into the environment thus reducing the exposure of the public to these toxic persistent POPs. CEPHED has been regularly monitoring the progress.

The digital thermometers, needle cutters, and waste separation system buckets have been then handed over to the wards. The shed house has been constructed on the KCH premise for onsite storage under this project.

The model hospital has been developed and is still under close monitoring. Some more wards need to be developed to complete the entire hospital with full functionality of the onsite separation, safe collection, transportation, storage, treatment, and disposal.

The Autoclave has been agreed to procure from the hospital in the coming physical years, and hence with the availability of that, the complete model developed will be completed and would able to manage the health care waste management.

A similar model has been replicated in the hospitals in the Eastern Development Region of Nepal. These hospitals are Nobel Hospital, Biratnagar, BPKIHS, Dharan, and Sunsari under WHO support.

Along with developing Stupa Community Hospital, Maternity hospital, BPKIHS Hospital, Nobel Hospital, and Kanti Children Hospital works on sound health care waste management, and Mercury-free Health Care Service model development in previous years, CEPHED also took initiation for managing the waste generated within the hospitals into the three more hospitals under a current ongoing program called "**Awareness Raising, and Capacity Building for the elimination of POPs, and its sources from Nepal**" under UNDP GEF SGP program.



Figure . Developing ESM of HCWM Model at Kanti Children Hospital, Kathmandu

Hospital has been selected, waste assessment has been made, and various training has been organized in different selected hospitals towards developing the model hospitals.

The digital thermometers, needle cutters, and waste separation system buckets have been then handed over to the wards. The model hospital has been under development at three hospitals are ongoing.

The Autoclave has been already installed in all three hospitals. The model developed at Blue Cross Hospital, and Alka Hospital has been completed, and successfully running were as Dhulikhel Hospital is undergoing.

Successes of these initiatives are capacity built, and a complete model developed able to manage the health care waste management environment sound manner.



Figure. Health Care Waste Assessment at Dhulikhel



Figure. Waste management Training Orientation at Alka Hospital



Figure. Orientation program at Blue Cross Hospital



Figure. Model Ward setting at Dhulikhel Hospital



Figure. Training Orientation at Dhulikhel Hospital during model ward development

A **Poster on Environment sound health care waste management, and Mercury-free health care services** including Mercury-free Dentistry has been published jointly with The Ministry of Health, and

Environmentally Sound Health Care Waste Management & Mercury Free Health Care Services

Separate at source, harness all possibilities of **Reduce, Reuse, Recycle, Recover** and be **Responsible** for Environmentally Sound Health Care Waste Management.

Mercury Free Health Care Services

Mercury Based Chemicals and Equipments

- Mercury Based Dental Amalgam Filling
- Mercury Thermometer
- Mercury Syringe
- Mercury Dental X-ray
- Mercury Based Instrument

Mercury Free Alternatives
(Safe, Reliable, Cost Effective, Durable & Environment and Public Health Friendly)

- Mercury Free Dental Amalgam Filling
- Digital Thermometer
- Digital and Manual Syringe
- LED X-ray Imaging Device
- Mercury Free Dental Instrument

Go for Mercury Free Dentistry

Government of Nepal, Ministry of Health and Population (MoHP), through a secretarial level decision on 2063/11/21 (March 04, 2013) decided to ban **Import, Purchase and Use** of Mercury based equipment at all government sectors and also urge to do same by private sectors from fiscal year 070/71 (July 16, 2013).

नेपाल सरकार, स्वास्थ्य तथा जनसंख्या मन्त्रालय (सचिवालय) बाट मिति २०६३/११/२१ मा जस्य २०७०/७१ देखि नेपाल सरकारले सरकारी तथा सार्वजनिक अस्पताल, क्लिनिक र स्वास्थ्य कक्ष गर्ने र निजी क्षेत्रलाई पनि सो गर्ने गराउन निर्णय गरेको छ।

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Population as well as several other international networks, and organizations.



Fig.5. Use of Mercury-free digital thermometer, Needle Cutters, Training & Orientation Program along with waste Separate at Source Practices towards Health Care Waste Management model development at Kanti Children Hospital by CEPHED (inside ward).



Fig. Health Care Waste Management model development at Kanti Children Hospital by CEPHED (Outside Ward)

2. Publication of briefing paper cum training manual on Health Care Waste Management, and POPs

A very comprehensive briefing paper cum training manual was developed and published. The training modules comprise the entire life cycle of the health care waste management right from its generation, collection, transportation, treatment, and disposal as well as related laws, policies, conventions, and guidelines. The module also has substantial portions dedicated to POPs convention, National Implementation Plans as well as other national, and international laws, and conventions related to health care waste, hazardous waste, and POPs. Additional descriptions of the global mercury movement were also included in the module. The overall course comprises 14 modules: Introduction of Medical Waste, and Persistent Organic Pollutants (POPs); Health Care Waste; Impact of Health Care Waste; Policies, and Legislation with Compliance Monitoring; Administrative Requirements; Communication, and Training; health care waste minimization; Waste handling, collection, storage, and transportation; waste treatment system; waste disposal; Liquid Health Care Waste, and Waste Water Management; Health safety, and Practices; planning for Regional Training on Medical Waste Management, and lastly Monitoring, and Evaluation followed by Closing Ceremony with certificate distribution.



Figure . HCWM, and POPs training manual, and Briefing paper

Each module is followed by a related case study, storytelling/study, group work discussion, field exercise, etc along with the wide scope of screening the relevant videos, and radio spots produced by CEPHED as well as made available to CEPHED from its international linkage from HCWH, GAIA, IPEN etc.

The briefing paper cum training manual thus developed has been improved, edited, and finalized for printing. To increase the applicability as well as the use of this training manual on health care waste management, POPs have been translated into the Nepali language, edited, and finalized. The training manual cum briefing paper on HCWM has been published (Fig), and is under wide dissemination.

3. Research on POPs, and Development of the Fact sheet on POPs, and publication.

Various research papers, reports as well as interactions with the national, and international experts on POPs as well as participation in the POP Convention Conference of Parties (COP), several documents were collected to become familiar with the POPs issues.

Under the POPs convention, earlier there were 12 Dirty dozen chemicals were listed, and from the last COP 4 in Geneva in May 2009, another Nasty 9 chemicals were added to the POPs list. Another new chemical **Endosulfan** has been added to the POPs list in the year 2010.

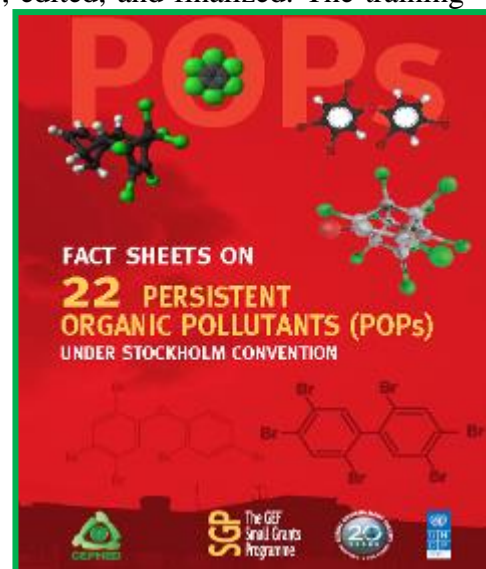


Figure . Fact Sheets of 22 POPs

There is very less awareness, and even know-how about these things among the concerned stakeholders as well as the general public, and hence very brief fact sheets on each POPs chemical were developed, and are being shared among all. The fact sheet thus developed has been improved, added description of one more listed chemical, edited, and finalized for printing. The fact sheet has been published and is under wide dissemination.

4. Awareness, and Capacity building Training on PCB Contaminated Transformer Oil, and Its Impacts.

In the last physical year 2069/70, two Public Awareness, and Capacity Building Training Programs on Impact of PCB Containing Transformer Oil on Public Health, and Environment 11th May 2013. Suryabinayak, Bhaktapur in association with Federation of Grill, and Steel Fabricators, Nepal, Grill, and Steel Fabricators Association of Bhaktapur of Nepal, and Butwal on June 1st, 2013 jointly with Department of Environment, MOSTE, Rupandehi Grill Association, and Federation under the ongoing project of Public Awareness, and Capacity Building for the elimination of POPs, and its Sources from Nepal with the support of United Nation Development Program (UNDP) / Global Environment Facility (GEF)-Small Grant Program (SGP) for Nepal



Figure. Dry welding machine provided to establish PCB free metal fabrication

In this physical year, 2070/71 Four Public Awareness, and Capacity Building Training Programs on Impact of PCB Containing Transformer Oil on Public Health, and Environment have been successfully organized at Damak (Jhapa), Pokhara (Kaski), Kohalput (Banke), and Surkhet (Surkhet) districts.

Figure. Participants of PCB Awareness, and Capacity Building Training Workshop at Pokhara, 24th September 2013





Figure . Participants at PCB Awareness, and Capacity Building Training at Surkeht, 15th February 2014



Figure . Participants at PCB Awareness, and Capacity Building Training at Kohalpur, Banke, 14th February 2014



Figure . Participants at PCB Awareness, and Capacity Building Training at Damak, Jhapa , 19th September 2013

5. PCB Free Model Metal Workshop Development

Model metal workshops using a Dry welding machine as an Alternative BAT to reduce POPs release. The process to select the two grill entrepreneurs one from eastern Nepal, and the other from western Nepal has been completed, and selected grill entrepreneurs from different development regions were provided with a Dry welding machine with the commitment to replace wet welding machines as model workshops.

This initiative will help in the prevention of direct exposure to PCB, PCB contaminated transformer oils used in wet welding machines, the demonstration of the use of provided DRY WELDING MACHINE for model metal workshop development, it has been considered that the generation of Dioxin, and Furan POPs can be reduced, and eliminated.

On the occasion of World Environment, during the first week of June 2013 (last physical year). CEPHED organized a workshop program on PCB, PCB contaminated transformer oil, and its impact on public health, and the environment in Butwal. CEPHED have provided a DRY WELDING machine to one of the Grill entrepreneurs named **Mr. Chabilal Bhandari, Sidartha Steel, and Grill, Devdah-2, Khairani , Rupandehi** in the program to develop as a model metal workshop.

Another Dry welding Machine was provided to **Mr. Tej Bahadur Bhandari, Bhandari Grill, Lakahanpur-4, and Jhapa** were given during the PCB Awareness, and Capacity building training workshop on September 19, 2013.



Another Dry welding machine has been given to **Mr. Tika Ram Pokhrel, Panas Solar Grill Industry, Pokhara Sub Metropolitan City, Ward No. 17, Kaski** was given during the PCB Awareness, and Capacity building training workshop on September 24, 2013.

Result: Program was successfully executed with wide media coverage as well as 3 model metal workshops were developed. During the first phase, one Dry welding machine was given, and during this phase of the POPs program 3, Dry Welding Machines are given to develop PCB Free Welding Workshops in different parts of Nepal.

6. Regional Training on Environment Sound Health Care Waste Management, POPs, and Mercury-free Health Care Services.

CEPHED in association with Solid Waste Management, and Technical Support Centre, The Ministry of Urban Development, Government of Nepal, Bharatpur Municipality, The Ministry of Local Development, Government of Nepal, and Private Hospitals Coordination Committee, Bharatpur, Chitwan, Regional, and Sub Regional Hospital, Nepal Dental Association, The Ministry of Health, and Population, Department of Health Services, Management Division, Oral Health Unit, Private

Hospitals, etc organized a two-day-long details training on Health Care Waste Management, POPs, and Mercury-free health care services, and Mercury-free dentistry at different locations in all development region of Nepal under the ongoing project of Public Awareness, and Capacity Building for the elimination of POPs, and its Sources from Nepal with the support of United Nation Development Program (UNDP) / Global Environment Facility (GEF)-Small Grant Program (SGP) for Nepal

The following table summarizes the training, and beneficiaries as well as collaborating partners.

S.No.	Events Name	Collaborating Partners	Place of Event, and Region	Date of Event	Number of Beneficiaries
1	Health Care Waste Management, POPs, and Mercury-free health care services	SWMTSC, MOUD,	Bharatpur Chitwan, Central Region	5-6 April 2013	73
2	Do	Amda Hospital	Damak, Jhapa, (Eastern)	17-18 Sep 2013	57
3	Do	Pokhara Sub Metropolian City	Pokhara, Kasti (Western)	29-30 Dec. 2013	37
4	Do	SWMTSC, MOUD,	Dhangadhi (Far Western)	11-12 February 2014	53
5	Do	DPHO Banke, and Bheri Zonal Hospital	Nepalgunj (Mid Western)	16-17 February 2014	58
6	Mercury-free Dentistry	NDA, and MOHP, DOHS	Kathmandu (National)	26-27 May 2014	56
7	PCB Awareness, and Capacity Building Program	FGSFN District Grill, and Steel Fabricators Association	Bhaktpur (Central)	11 th May 2013	102
8	Do	FGSFN District Grill, and Steel Fabricators Association	Butwal, (Western)	1 st June 2013	68
9	Do	FGSFN District Grill, and Steel Fabricators Association	Damak, Jhapa (Eastern)	19 th September 2013	61
10	Do	FGSFN District Grill, and Steel Fabricators Association	Pokhara Kaski (Western)	23 rd September 2013	104
11	Do	FGSFN District Grill, and Steel Fabricators Association	Kohalpur (Mid Western)	14 th February 2014	84
12	PCB Awareness, and Capacity Building Program	FGSFN District Grill, and Steel Fabricators Association	Kohalpur (Mid Western)	15 th February 2014	74

Representatives of the health manager, matron, health care waste management in-charge, nurses, doctors, governmental officers, municipalities, a representative from the district health office, District Development Committee (DDC), Grill Workers, and media person working in the area of public health, and environment participated in the program.



Figure . Participants of Two Days Training on Environment Sound Health Care Waste Management, and Mercury-free health care services, Damak, December 29-30, 2013



Figure . Participants of Two Days Training on Environment Sound Health Care Waste Management, and Mercury-free health care services, Nepalgunj, Banke, February 16-17, 2014



Figure . Participants of Two Days Training on Environment Sound Health Care Waste Management, and Mercury-free health care services, Pokhara, December 29-30, 2013



Figure. Participants of Two Days Training on Environment Sound Health Care Waste Management, and Mercury-free health care services, Dhangadhi, Kailali, February 11-12, 2014



Figure 19 Mr. Ganj Bahadur MC, CDO of Banke during his opening speech



Figure . Mr. Jiwan Kumar Malla, DPHO, Banke during the opening session

The overall course comprises 14 modules: Introduction of Medical Waste, and Persistent Organic Pollutants (POPs); Health Care Waste; Impact of Health Care Waste; Health Care Facilities of Nepal, and Waste Generation; Persistent Organic Pollutants (POPs); Inter-linkage between Health Care Waste Management, and POPs; National Policies, and Legislation related to general waste, health care waste, hazardous waste, and POPs in Nepal; International Convention related to POPs, and Other Chemicals; Waste Assessment, and Management Planning Steps; Health Care Waste Minimization, Collection, Transportation, Treatment, and Disposal, Environment Sound Management of Health Care Waste Management; and Waste Water/liquid Waste Management, and lastly Monitoring, and Evaluation followed by Closing Ceremony with certificate distribution. The program was widely covered by many media TV Channel, newspapers, and radio program

C. Mercury

1. Supporting Department of Health Services, The Ministry of Health, and Population (MOHP), Government of Nepal in conducting Orientation to Health Workers on Harmful Effects of Mercury.

CEPHED has been helping the government by providing technical support for awareness-raising, and capacity building as well as developing pilot projects in the area of health care waste management, and mercury-free health care services. Recently CEPHED provided technical support to the Management Division, Department of Health Services (DOHS/MOHP) for a district-level mercury-free health care services orientation program in various locations of Nepal.



2. Research on Mercury

Mercury, Mercury-based equipment, products, and chemicals are being massively imported, and used in various sectors in Nepal. Currently, CEPHED has been engaged in research regarding mercury in CFL, and cosmetic products, especially in skin whitening creams, bio-monitoring of mercury in fish, and human

hair, a study of total mercury release from the Health Care System of Nepal, as well as the development of more mercury-free health care services. Additionally, the estimation of the mercury use and release from the health care sector were estimated, and it was found to be about 500 Kg of Mercury based equipment were used in Nepal, and about 125 Kg of Mercury has been released each year just from the breakage of the thermometers only. Additional mercury is released massively into the environment from the sphygmomanometer, dental filling, and lighting systems such as mercury tube light, and CFL.

3. Feasibility Study, Strategy Development, and Launching of Mercury-free Health Care Services in Nepal.

CEPHED has researched a feasibility study of mercury-free health care services in Nepal and has also developed a strategy paper on Mercury-free health care services, and while doing so, a series of interaction programs on mercury-free health care services have been organized. In addition to this, the help of SSNC, Sweden, and the World Health Organization (WHO) have been successfully piloting **three mercury-free health care service** delivery is going on without any problem. In those hospitals, mercury-based equipment such as mercury thermometers, and mercury sphygmomanometers were replaced with more economic, and environmentally friendly safer alternative digital thermometers by CEPHED with the help of WHO, and SSNC.



Fig.. Poster on Mercury-free Health Care Services with WHO

In addition to this, a briefing paper on mercury-free health care services has been prepared, and disseminated to all interaction programs as well as a Poster on "**Launching of Mercury-free Health Care Services**" has been published, and dissemination widely.

In addition to that, the earlier Posters on **DON't TAKE MERCURY EASY !!!** in English language were developed, and disseminated throughout the country. The same posters of mercury have been later adopted by the Department of Health Services, The Ministry of Health, and Population (DOHS/MOHP), and reprinted, and disseminated throughout the country as well.



Figure. CEPHED Poster on Mercury Adapted by Management Division, DOHS/MOHP, Government of Nepal

As a result of CEPHED intervention, and support, three hospitals namely Propkar Maternity Hospital Thapathali, Stupa Community Hospital Jorpati, and Kanti Children Hospital, Marajgunj had become mercury-free hospitals, and delivering mercury-free health care services successfully. Following this,



Fig.. Collection of Mercury base equipment for replacement with mercury-free alternatives

Fig.. Launching of Mercury-free Health Care Facilities at Maternity Hospital

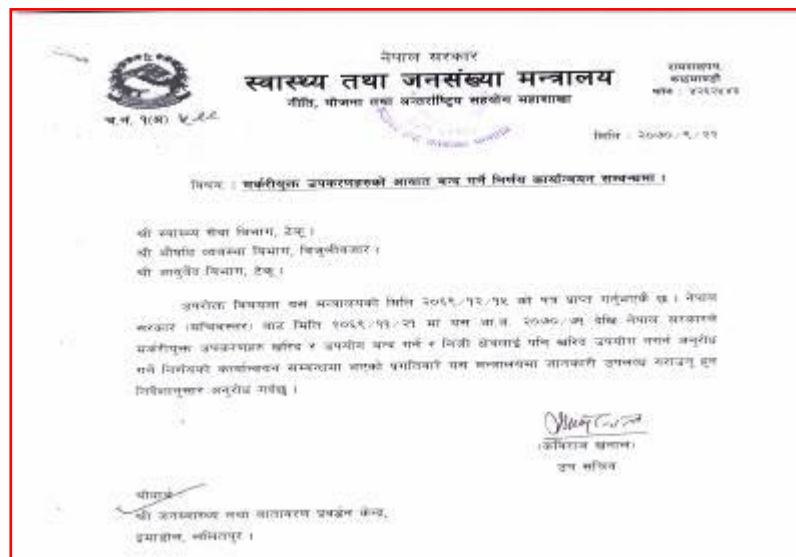
Fig.. Orientation program at Maternity hospital on mercury-free health care services.

in 2011, two more hospitals have been initiated mercury-free health care services from Nobel Hospital, Biratnagar, and BPKIHS Dharan where mercury thermometers have been replaced by digital ones in the latter months of the year 2011...

4. Mercury-free Health Care Services, and Mercury-free Dentistry in Nepal

Based on the successful model of mercury-free health care services at different hospitals, and continuous advocacy with the concerned government agencies of Nepal a detailed guideline of health care waste management including mercury has been developed by the Management Division, Department of Health Services, The Ministry of Health, and Population (MOHP), Government of Nepal.

Most importantly, The Ministry of Health and Population (MOHP) took a very progressive decision of making mercury-free health care services through imposing a blanket ban on the Import, Purchase, and Use of Mercury in health sector of Nepal in March 2013, and decision is effective from the first day of the new physical year 2070/71.



Before participating in the Diplomatic Conference of Minamata Convention on Mercury, a round table meeting on 16th August has been organized to solicit a concrete message to be conveyed to the global communiites for addressing the pressing problem of mercury in Nepal. Representatives of the governmental official, governmental hospitals, private hospitals, health representatives from

the Dentistry sector, nurses, doctors, governmental officers, and media people working in the area of public health, and the environment participated in the program. Altogether 50 participants from different sector, health workers, NGOs working in environment, and public health has been participated in the round table meeting Minamata Convention on Mercury Moving Towards Mercury-free Dentistry & Health Care Services in Nepal.



Figure. Group Picture of Participants of Program

Additionally, Government of Nepal, The Ministry of Science, Technology, and Environment (MOSTE) has also signed the upcoming **Minamata Convention on Mercury, the legal binding international treaty on mercury. Dr. Somlal Subedi, Secretary, MOSTE** sign the Convnetion on behalf of Government of Nepal, and deliver his remarks in the potentiopoetry Diplomatic Conference of Minimata Convention on Mercury .



Mr. Ram Charitra Sah, Executive Director of CEPHED had also participated in the Diplomatic Conference and intervened on behalf of affected communiites, and aquatic animals such as fish with mercury in Nepal to the same conference.

CEPHED kept advocating and following up on the issues of heavy metals, and chemicals in products, and due to our continued working on these issues, increased numbers of media responses as well as government responses toward taking progressive decisions, enacting required leagal framework, and instutitional framework in place has been taking places.

5. National Conference on Mercury-free Dentistry

With the aim to raise widespread awareness among dentists, healthcare workers, curriculum developers, and among public, plan for phase-out of mercury from health care service including dental sector, discuss about the regulatory framework about mercury use from health care service sector, and

discuss the alternatives in dental curriculum, **A two days national conference on Mercury-free Dentistry from May 26 to 27, 2014** has been organized by Center for Public Health, and Environmental Development (CEPHED), Nayabasti, Imadol-5, Lalitpur, Kathmandu, Nepal jointly with Nepal Dental Association (NDA), Sunrise Homes, Balkumari, Lalitpur, Nepal in close coordination with the Oral Health Focal Point, Management Division, Department of Health Services, The Ministry of Health, and Population, government of Nepal. The program was supported by WAMFD, Asian Center, and UNDP GEF SGP.



Figure . Participants of Two Days National Conference on Mercury-free Dentistry in Nepal

In total, 55 participants, and guests from all concerned stakeholders including the Government officials, developmental agencies, professional associations, academic universities, institutions providing dental education, dental doctors, NGOs, hospitals, and media personnel were actively participating in the 2-day National Conference on Mercury-free Dentistry. During these 2-days, participants broadly focused on three key issues such as **phase-out planning, regulatory framework, and inclusion of mercury alternatives in dental curriculum.**

The Outcomes of the Program:

- **Time bound Sectorial commitment** to address Mercury-free Dentistry from Government., Professional Organization, and Academic Institutions as **Kathmandu Declaration/Resolution on “Mercury-Free Dentistry”**
- **Awareness, and capacity building** about mercury amalgam, and impact abatements..
- **Effective implementation of MOHP decision** on ban of Import, Purchase, and Use of Mercury based equipment.
- **Push, and Support for the Minamata Convention on Mercury** ratification by Government.



Figure . Participants at the end of session group photograph with all the guests

Recommendations of National Conference on Mercury-free Dentistry

1. Comprehensive regulatory frameworks (Acts, and Regulation) to promote mercury-free health care services, and mercury-free dentistry in Nepal by 2015/2016
2. General Practitioners, and Professionals Associations have plan to phase down the use of mercury amalgam in children, and pregnant women by 2017, and phase down the use of mercury amalgam from dentistry sector by 2018.
3. Representative of Academic University, and Institutions have agreed to recommend, and support for the revision of dental curriculum by 2019.
4. Issues of awareness raising, capacity building,, and development of waste management facilities, and encourage of insurance policy, and tax exemption for mercury-free alternatives.
5. Ratification of the Minamata Convention on Mercury as soon as possible.

6. Awareness, and Capacity Building training workshop on Heavy Metals (Lead, Mercury, and Cadmium)

The Heavy metals- *Mercury, Lead, and Cadmium* are toxic to the environment, and public Health. They have known toxicants and using in various forms in the human community.

In Nepal, these three heavy metals, and associated compounds are categorized as hazardous chemicals but there is no policy or rule, or regulation to use, import, and manage. Therefore, *Center for Public Health and Environmental Development (CEPHED)* is taking initiative towards minimize or ban the uses of these toxics metals through different means, like research, awareness, and capacity building training workshop in 20 districts, preparation, production, and dissemination of IEC Materials such as fact sheets, and posters, communication with electronic media like, Radio, TV, and print media like various newspapers, and magazine.

20 districts level program on heavy metals in the year 2010, 12 district level programs have been carried out in the physical year 2011, and 1 District level program has been carried out in 23 January 2012 benefiting in Siraha District jointly with the Lahan Municipality in Lahan. Over 1150 people directly, and much more indirectly through mass media, and news publication outreach.



Table : Total beneficiaries of 20 District level programs on Heavy Metals (Lead , Mercury, Cadmium)

S.No.	District	Date	Total	Male	Female	Advance cast	Madeshi	Indigenous	Dalit
1	Bardiya	31-Aug-10	56	44	12	31	15	9	1
2	Baglung	09-Feb-11	63	52	11	52	5	6	
3	Rupandehi	23-Aug-10	54	43	11	41	6	7	
4	Dang	2 Sep 2010	51	44	7	37	7	4	3
5	Dhankuta	20-Jun-10	48	27	21	34	2	12	
6	Sunsari	01-May-10	62	53	9	20	32	9	1
7	Dhanusha	16-May-10	55	44	11	10	43	2	
8	Makwanpur	19 July 2010	43	37	6	28	8	5	2
9	Morang	22-Jun-10	65	43	22	33	20	8	4
10	Ilam	25-Apr-10	25	19	6	13	6	5	1
11	Kaski	3 Aug 2010	49	30	19	36	3	7	3
12	Kathmandu	07-Apr-11	104	37	67	75	6	22	1
13	Kanchanpur	18-May-11	75	45	30	68	3	4	
14	Doti	20-May-11	49	40	9	44	2	3	
15	Surkhet	29-Aug 11	65	49	16	58	1	2	4
16	Tanahu	07-Feb-11	52	40	12	43	1	5	3
17	Palpa	22-Aug-10	64	46	18	53	2	9	
18	Kavre	08-Apr-10	31	24	7	23	2	6	
19	Kailali	16-May-11	44	24	20	34	3	6	1
20	Siraha	23-Jan-12	98	69	29	11	84	1	2
Total Beneficiaries	20 Districts		1153	810	343	744	251	132	26
Percent of Total			100	70.25	29.75	64.53	21.77	11.45	2.25

7. Estimation of Mercury Usage, and Release from Healthcare Instruments in Nepal

The healthcare system is a key consuming sector of mercury's global demand, and also major sources of emissions. The healthcare sector is one of the major consumers of elemental mercury (Hg). In liquid state, Hg is used especially in instruments like thermometers, and sphygmomanometers in the health care sector that are still being imported, and used in very large numbers in all different level of health care facilities in the country. As the mercury columns of these instruments are made of glass, there are quite significant amount of mercury is found to be released from these up on often breakage. Mercury is also widely used in dental filling. Since mercury is liquid at room temperature, and pressure, spilled Hg, for example, from a broken thermometer, can vaporize into the surrounding air, and the concentration is largely subject to ventilation provision, uses, temperature of the locations, numbers,

and frequencies of breakage, and handling of the spilled mercury there after etc. Apart from breakage of these instruments, in-house calibration practices of mercury-containing sphygmomanometers can be the source of mercury in indoor air as large amount of liquid mercury has been seen stored in the repair, maintenance, and calibration department of certain health care facilities. Bad ventilation inside the room or wing can lead to acute exposure to mercury, not only to patients, patients care takers but also to healthcare staff at large including nurses, doctors, and ultimately waste handlers.

According to the study conducted by Center for Public Health, and Environmental Development (CEPHED) in 2010, thermometer breakage rate in the hospitals ranged from 0.48 to 3.44 per bed per year.

From the above estimation it can be resulted that Nepal has **501.75 kg** (125.15 kg +376.6 kg) of mercury usage in thermometers and sphygmomanometers used in health care sector. Total annual mercury release from thermometers can be 125.85 kg. Per capita mercury stored in thermometers and sphygmomanometers can be calculated by dividing mercury usage with total population (i.e. 501.75 kg /28, 58, 4975), which is equal to 17.55 mg. Similarly, total annual per capita mercury release from thermometers can be estimated to be 4.40 mg.

Results of Mercury Level in Indoor Air of Hospital showed very high concentrations (up to 3.92 microgram per cubic meter) in certain locations, and wards (CEPHED 2011) as compared to international standards by The Environmental Protection Agency (EPA), $0.3 \mu\text{g m}^{-3}$. However, over 90 per cent of the hospital locations, and wards are mercury-free. Even dental department of a mercury-free model hospital developed by CEPHED under WHO and SSNC support has been found zero level of mercury in the ambient, and ward environment. This is direct evidence of positive outcomes of the intervention made by CEPHED with the support of these funding agencies in Nepal.



Figure. 16. Mercury based measuring devices, and spills from broken

8. Stakeholder Meeting on Mercury-free Health Care Services

Stakeholder interaction program on **Mercury-free Health Care Services (Stakeholders Interaction Program)**, has been organized on December 6th, 2011 with the aim of soliciting the future stratgy to address the mercury in health care, and its related issues as well as an approach to making the health sector mercury-free in Nepal. Program were participated by



Figure. Mercury-free Health Care Services, Stakeholder Interaction Meeting

different distinguished international, and national **guests:** Ms. Ruth Stringer, HCWH; Ms. Srijana Shrestha DoHS; Ms. Sarada Pandey Sr. Public Health Administration, MoHP; Dr. Madhab Pd. Lamsal, Public Health Expert, KCH . Other concerned government officials from DoHS, MoHP, MoEnv., Media persons, representatives from different hospitals including dental hospitals, representatives from Nepal Dental Association were also participated into the program.

Ms. Ruth Stringer, International Science Coordinator, Health Care Without Harm (HCWH), UK presented the paper. She highlighted the WHO-HCWH Global Initiative for Mercury-free Health Care. She identified the Four Challenges in mercury-free health care: Accuracy, Quality, Affordability, Mercury Waste, and Shifting Production.

Ms. Srijana Shrestha, Sr. Public Health Administrator, Management Division, DoHS/MoHP addressed the government initiatives toward mercury-free health care. She said that government is towards the mercury-free health policy soon, and the Department of Health Service has conducted various district level orientations on mercury-free health care.



Figure. Participants of the Mercury-free Health Care Stakeholder Interaction Program

Mrs. Sarada Pandey, MoHP highlighted the CEPHED's contribution towards the government initiatives on mercury-free health care, and also discussed about the Chemical safety guideline in under preparation by The Ministry of Health, and Population (MoHP), Government of Nepal.

Ms. Shrawosti Karmacharya, HECAF presented the mercury study on health care environment in Nepal. She presented the results of mercury level in indoor air, waste, waste water of hospital, dumping site, and also in fishes of Phewa Lake.

Mr. Ram Charitra Sah, CEPHED presented about the general information about mercury, and its use in different sectors including health care, impacts of mercury, different mercury impact episodes, Mercury poisoning cases in Nepal, CEPHED's activities on mercury, import trend of mercury in Nepal, import trends of fluorescent lamps in Nepal, Fluorescent lamps, and environment, Handling of Mercury Spill in School, and Colleges, Evidence of Mercury Contamination, and Impacts in Nepal. All participants were provided with the Mercury-free Health Care Posters, and other IEC materials produced by CEPHED.

9. Mercury-free Health Care Strategy Discussion

Strategy Development Exercise was done by making three groups of participants. Strategy Development Exercise Module was distributed to three groups of participants. Recommendations were given by each group. Group discussion identified the following things needed to be carried out to make mercury-free health care services.

- Awareness/Advocacy, Interaction
- Capacity Building
- Supervision, and Monitoring
- Legal policy, strategy, and guideline
- Implementation of laws
- Research, Trainings
- Ban all mercury containing equipment



Figure. Mercury-free Health Care strategy development group discussion

Participants identified that MoHP should be leading agency for all above mentioned activities. For that, MoHP should coordinate with other concerned agencies like MoEnv., DoHS, The Ministry of Finance etc. As per the recommendations of the participants, a Mercury-free health care policy should be enacted by 2012. Similarly, NGOs, INGOs, Universities, Health Care Institutions should also carry out different research, and awareness activities. Participants identified the cost, level of awareness, lack of manpower, low priority, lack of monitoring etc. as the major constraints on the mercury-free health care system. To overcome these constraints, they recommended the following. Rule of Law, policy, awareness program, Amendment of existing laws, Put in government priority, Proper collection, and disposal, Advocacy at all levels, Make an action plan and implement, monitoring, awareness, training, capacity building, and Government support etc.

D. Journalist training on Quality environment Reporting

In order to boost the quality of environmental reporting, and provide in-depth understanding of environmental issues at the international, regional, national, and local level, a one day long training workshop on " **Quality Environment Reporting**" were organized on 2nd December 2011, well participated by about 30 Journalist from different electronic, and print media. The journalist training were inaugurated by **Honorable Environment Minister Mr Hem Raj Tated** along with the launching of the Fact Sheet on 22 POPs under Stockholm Convention produced by CEPHED.



Figure. Inaugural Session of Quality Environmental Journalism Training workshop, Honourable Environment Minister Inaugurate the event, and launched the POPs Fact Sheet book. Chief Information Commissioner Mr. Vinayak Kasajoo also shed light on importance, and launched the Environmental Health Book

As the training were also organized to enhance access to information, and hence other especial invitees guest for the inaugural ceremony were Mr. Binayak Kasaju, Chief Information Commissioner, Nepal Information Commission, Government of Nepal. He also joined the hand for inaugurating the training workshop as well as launched the Environmental Health Book in Nepali language produced by CEPHED. Other guests for inaugural session were Mr. Gopal Raj Serchan, National coordinator of UNDP GEF SGP Nepal program who has highlighted the importance of the environmental journalism towards conservation of the Environment, and Public Health, Mr.



Figure . Participants of Quality Environment Journalism with Guests

Rajesh Ghimire, Sr. Environment Journalist who share the importance of environmental journalist to protect environment, culture, and public health.

Mr. Bhairab Risal, a Senior Environmental Journalist was also presiding over the closing ceremony of the training program, shares the message of ups, and down on his journey of environmental journalism, boosting the morale of participants, and advocating for investigative, and quality journalism to bring the desired changes about. Altogether 32 media personnel were participated in the training program.

Four papers were presented during the training workshop. **Dr. Ram Krishna Timilsena, Rtd** presented the paper entitled “Venue, and Uses of Right to Information Act, and Regulation in Environmental Journalism”.

Mr. Keshab Raj Joshi, Ms. Sabina Silwal, and Mr. Ram Charitra Sah jointly highlighted the **Current, Emerging National, and International Environmental Issues, Challenges, and Perspective Solutions.**

Mr. Ram Charitra Sah, Executive Director, CEPHED in the third session presented “ **Metaphor Techniques in Environment Reporting /Journalism**”.

Mr. Tilak KC from NBSM presented his fourth paper on **“Scientific Measurement, and Unit, Its Conversion, and Interpretation”**

Mr. Rajesh Ghimire presented the fifth paper on topic **Investigative Environmental Journalism.**

All journalists, and other invitees were provided all the CEPHED`s publications on lead in paints, mercury-free health care services, electronic waste, safe school booklet, heavy metal fact sheets, health care waste management training manual cum briefing paper, PCB briefing paper, POPs fact sheets, and Environmental Health Book. There is increasing coverage of environmental issues in the media since then.

E. Environment Friendly, and Safe School programs

Based on our continuous awareness, and capacity building on heavy metals throughout the country involving all the stakeholders including science teachers, and students, there was increased demand of organizing the environment-friendly, and safety programs in the schools. In addition to that, there are increased numbers of chemicals, and equipment as well as other food items such as dry food like noodles, water bottles, and Tiffin carrier made of plastics, and numerous toxics colorful plastics toys as well as bench desk, and school room`s wall has been found to be painted with colorful paints etc are the potential source of exposure to the students, and hence an environmentally friendly, and safe school programs in selected 20 schools of Nepal along with advocacy with the concerned government officials to address this issues of chemical safety in the schools.

Towards that CEPHED has developed an informative booklet entitled "**Environmentally Friendly, and Safe School**" that briefly include the description of chemical safety, definition of the environment, and pollution. The booklet also include the description (issues, effects, and solution) of air pollution, water pollution, solid waste, noise pollution, heavy metals (lead, mercury, and cadmium), Persistent Organic Pollutants (POPs), plastic bags, mercury-free health, and education, electrical, and electronic waste, and lastly about Climate Change, and their impacts, and solutions.

With this publication, several nursing, and general schools were approached to organize an interaction programs for the students of class 7 to 10 together. Series of school programs thus organized in several schools ranging from nursing schools, private schools, and public schools as well as their teachers were also participated in the interaction programs. Students as well as teachers, and principals of these schools were highly appreciated the programs and committed to initiate immediate steps towards contributing to the chemical safety campaign objective such as banning of dry food like noodles, plastic bottles, and Tiffin carriers. They have also shown high concerned about the paints they have used in their schools, desks, and benches as well as also about the playing dolls, items they had kept in the play, and nursery groups. All students were provided with a booklet, other posters, and fact sheets on heavy metals.

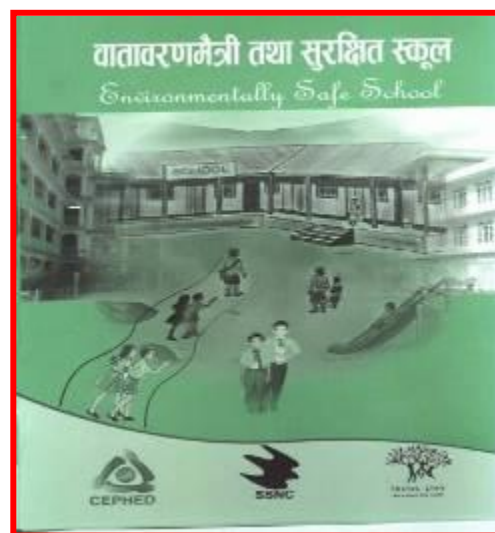


Figure. Booklet on Environment Friendly, and Safe School



Figure. . Snaps of Environment Friendly, and Safe School & Mercury-free Health School Programs

1. Bhanu Memorial Higher Secondary school- Biratnagar,
2. Nurshing Campus-Biratnagar,
3. College of Nursing, BPKIHS, Dharan Snsari
4. Radhakrishan Public School Biratnagar,
5. Janakpur Nursing Campus-Janakpur,
6. National Medical College, Nurshing Campus Birgunj
7. Kanaya Campus , Pokhara
8. Kantipur School –Lalitpur,
9. Genuine Hogh School-Bhaktpur,
10. Arubari School, Kathmandu
11. Kantipur English School-Lalitpur
12. Gandaki Boarding School, Pokhara
13. Rosebud English School-Kathmandu
14. Asian College-Lalitpur, Nursing Campus
15. Locus Academy School, Pokharra 9
16. Motherland Higher Secondary School-Pokhara,
17. Chitwan College of Medical Sciences, College of Nursing, Chitwan
18. National Academy of Medical Science- (NAMS), Kathmandu,
19. Sagarmatha Niketan School, Nayabazar Pokhara 9
20. Novel International Academy , Pokhara Ranipouwa
21. Bal Prabhat Boarding School, New Road Pokhara
22. SOS Children village Gandaki, Pokhara 15, Ram Bazar
23. Pokhara Kindergarten Higher School, Chauripatan, Pokhara
24. SOS – Hermann Gruneiner Higher Secondary School,
Chore Patan Pokhara,
25. Jyotikunj Education Foundation Pvt Ltd , Uttamchowk, Ram bazaar 10, Pokhara

F. Chemicals in Products (Cosmetics, Jewelry , CFL, Toys , Eraser, Thermal Papers etc.,)

1. Study of Lead in Cosmetics (Lead in Lipsticks)

Nepalese market has been flooded with several registered un registered cosmetics products shops. As there is low level of awareness, and a complete absence of any regulatory authority, as well as any regulatory legal framework, an indicative study of Lead in Lipsticks, has been conducted by laboratory testing of 8 several national, multinational, and international products of lipsticks. The branded included into the study were Revlon, Loreal Paris, Lakme, MAC, Schisciedo, Dily, Channel, and Midie. Certain brands of Lipstick found in the Nepalese market and mostly used by the general public have been found to be contained very high amounts of lead ranging from 30 to 145 ppm and are hazardous to the health of people, especially childbearing age, and lactating females.

Report has been published, and formally launched by organizing the stakeholder meeting, and is under dissemination now.

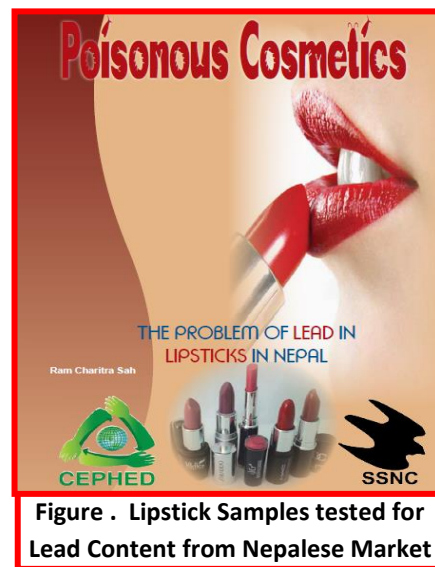


Figure . Lipstick Samples tested for Lead Content from Nepalese Market

2. Study of Mercury in Cosmetics (Mercury in Skin whitening Creams, and Lotions)

Nepalese market has been flooded with several registered un registered cosmetics products by authorized as well as authorized dealers, and retailers. As there is low level of awareness, and a complete absence of any regulatory authority, as well as any regulatory legal framework, an indicative study Mercury in Skin Whitening Cream, and Moisturizer Lotion, has been conducted by laboratory testing of seven selected national, multinational, and international products of skin whitening creams, and moisturizing lotion. The cream and lotion studied were; Papaya cold cream; Fair, and Lovely (Male, and Female), Touch & Glow, Revlon; 7 in 1 Antiaging cream OLAY, Lotus Herbal, and Garnier skin Natural. Certain brands of skin whitening creams, and moisturizing lotion found in the Nepalese market, and mostly used by the general public have been found to be contain ned some amount of mercury hazardous for health of people. Report has been published, and formally launched by organizing the stakeholder meeting, and is under dissemination now.

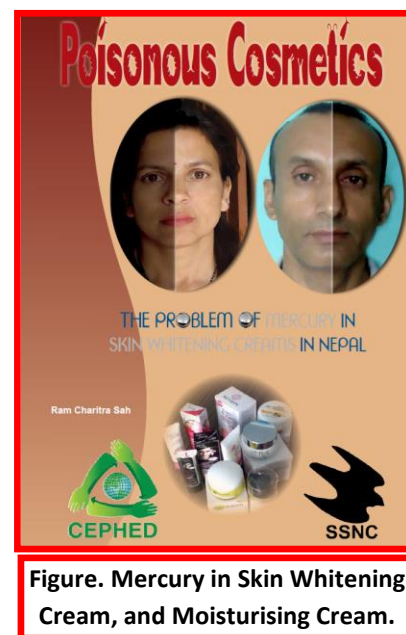


Figure. Mercury in Skin Whitening Cream, and Moisturising Cream.

3. Study of Lead in Trinkets / Jewelry

Nepalese market has been flooded with several registered un registered jewelry shops, and even street vendors sell different silver, gold plated jewelry, and cosmetics products. As there is low level of awareness, and a complete absence of any regulatory authority as well as any regulatory framework, an indicative study **Lead in Artificial Jewelry** has been conducted by conducting laboratory testing of several 17 types of Jewelry ranges from ear rings, finger rings, chains, tops, bangles with plastic, silver, and gold coated were included into the study. Certain types of Jewelry

found in the Nepalese market and mostly used by the general public have been found to be contained very high amounts of lead ranging from 28 to 775500 ppm hazardous for health of people, especially child bearing age, and lactating female. Report has been published, and formally launched by organizing the stakeholder meeting, and is under dissemination now.

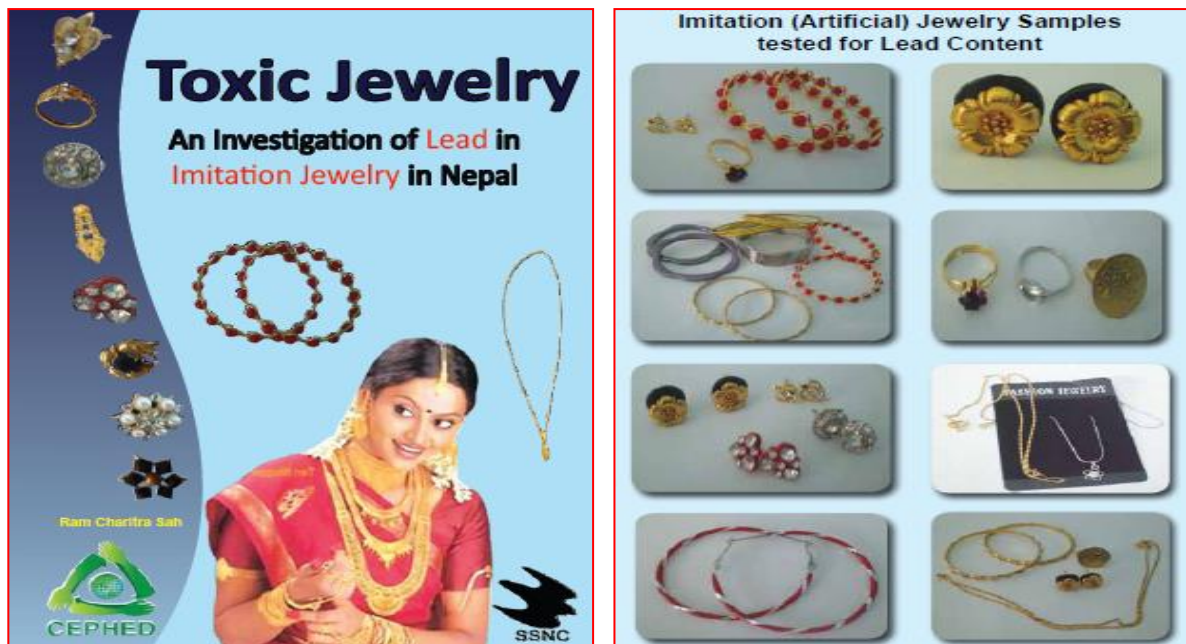


Figure. Study report, and Artificial Jewelry samples tested for lead content from Nepalese Market

4. Study of Mercury, and Power Factor of selected CFL Brands from Nepalese markets

Nepalese market has been flooded with several electrical, and electronic shops, as there is low level of awareness, and a complete absence of any regulatory authority as well as any regulatory legal framework for the end-of-life management of electrical, and electronic items. Additionally CFL has been promoted by all agencies like government, non government, business community, private sector, and even media houses. It became the gift item on the top of selling of several other products such as news papers, inverter, generators etc without any thought of their end-of-life management. As CFL contains mercury, there is a need of end of life management with environmentally sound manner. An indicative study of Mercury level in 11 different CFL units from Nepalese market of different wattage, and of different brands such as Him Star (9 W & 18W), GE (15 W & 11 W), Opplle (15 W & 5 W), Gold King (18 W & 5 W), Victor (15 W & 5 W), and Usha 15 W were examined. All these CFL companies claims to be 80 percent efficient, and hence we also tested the wattage of these CFL to assess whether the company claims are true or not?



Figure. Different brands CFL bulbs marketed in Nepal tested for Mercury content, and Wattage

Additionally we find that the mercury content in the CFL varies greatly across the brand and wattage.

5. Research on Pesticide Contamination in Vegetables Grown and Consumed in the Kathmandu Valley

Different kinds of pesticides have been used for crop protection for centuries. Pesticides are used to kill pests and insects that attack crops and harm them. This research was conducted to determine the prevalence of pesticide use in vegetable farming, effects of pesticide use on vegetables, and the environment along with on human health, attitudes of using personal protective equipment (PPE), and knowledge of pesticide residues in different vegetables.

Out of 20 vegetable samples, 45% (9) of the vegetables sample have detected pesticide residues whereas 55% (11) of vegetable samples contained no detectable level (NDL) of the monitored pesticides. The highest concentration of pesticide residue of cypermethrin was found in cauliflower (B02) bought from Kalimati market (0.072 mg/kg). Among all 20 vegetable samples, acephate was detected in 25% (5) vegetable samples, followed by cypermethrin in 15% (3) vegetable sample. Out of the 9 vegetable samples which contained pesticide residue of acephate, 55.56% (5) vegetable samples contained pesticide residues above the accepted Maximum Residue Level (MRL) of European Union (EU) (0.01 mg/kg). Multiple residues were present in 5% (1) of the samples in bitter gourd with two pesticides namely acephate (0.043 mg/kg), and cyfluthrin (0.033 mg/kg). This study detected organophosphates followed by synthetic pyrethroid and pyrethroid in the samples.

Vegetables	Site 1	Site 2	Site 3	Site 4	Market
Bitter guard	ND	ND	<0.010	ND	0.043 0.033
Cauliflower	0.028	0.072	0.155	ND	0.018
Brinjal	ND	ND	ND	ND	0.014
Beans	0.018	ND	ND	ND	0.018


6. Research on Assessment of Lead in Instant Noodles in Nepal

The amount of heavy metals like lead in instant noodles has been of concern because of its toxicity when their concentration even at low dose. The study was conducted with the aim of testing the content of lead in the instant noodles including in their seasoning powder of different Nepalese industries of different flavors, brands, and types. Noodles samples were collected from different parts of the Kathmandu Valley namely Bhaktapur, Kathmandu, and Lalitpur selecting different levels of shopping enterprises ranging from street shops, departmental stores, shopping malls, school canteens, and hospital canteens.

A total of 30 samples (15 noodles, and corresponding 15 seasoning powders) were analyzed for total lead content through Atomic Absorption Spectrophotometer (AAS) by acid digestion method mentioned in American Public Health Association (APHA), 23rd edition, 2017 in government certified laboratory.

The data analysis and interpretation were done using excel, and R-software. Among 15 noodle samples, the highest concentration (0.0093 mg/kg) was found in NPL-2 sample whereas the lowest concentration (0.0022 mg/kg) was found in the NPL-15

LEAD IN MOST POPULAR FOOD: NOODLES



S.N.	Noodle Code	Lead (mg/kg)	Seasoning Powder Code	Lead (mg/kg)	WHO Standard (mg/kg)	BSTI Standard (mg/kg)	FSSAI/Nepal Food Standard (mg/kg)
1.	NPL-1 (N)	0.0048	NPL-1 (S)	0.0086	0.025	2	2.5
2.	NPL-2 (N)	0.0093	NPL-2 (S)	0.0075	0.025	2	2.5
3.	NPL-3 (N)	0.0024	NPL-3 (S)	0.0025	0.025	2	2.5
4.	NPL-4 (N)	0.0046	NPL-4 (S)	0.2316	0.025	2	2.5
5.	NPL-5 (N)	0.0024	NPL-5 (S)	0.0088	0.025	2	2.5
6.	NPL-6 (N)	0.0073	NPL-6 (S)	1.6981	0.025	2	2.5
7.	NPL-7 (N)	0.0049	NPL-7 (S)	0.0023	0.025	2	2.5
8.	NPL-8 (N)	0.0023	NPL-8 (S)	0.0015	0.025	2	2.5
9.	NPL-9 (N)	0.0089	NPL-9 (S)	0.0051	0.025	2	2.5
10.	NPL-10 (N)	0.0025	NPL-10 (S)	0.0025	0.025v	2	2.5
11.	NPL-11 (N)	0.0025	NPL-11 (S)	0.0012	0.025	2	2.5
12.	NPL-12 (N)	0.0049	NPL-12 (S)	0.0051	0.025	2	2.5
13.	NPL-13 (N)	0.0024	NPL-13 (S)	0.0010	0.025	2	2.5
14.	NPL-14 (N)	0.0066	NPL-14 (S)	0.0067	0.025	2	2.5
15.	NPL-15 (N)	0.0022	NPL-15 (S)	0.0060	0.025	2	2.5

sample, and among 15 seasoning powder of the respective noodles, the highest concentration (1.6981 mg/kg) was found in NPL-6 (S) sample followed by NPL-4 (S) sample (0.2316 mg/kg) whereas the lowest concentration (0.0010 mg/kg) was found in NPL-13 (S) sample.

The compliance status of lead content in instant noodle samples, and their seasoning powder with international, and national standards of World Health Organization (WHO), Bangladesh Standards, and Testing Institution (BSTI), Food Safety, and Standards Authority of India (FSSAI), and Nepal Food Standard. 100% (15) of the noodle samples were found to be under compliance with the standards of WHO (0.025 mg/kg), BSTI (2 mg/kg), FSSAI (2.5 mg/kg), and Nepal Food Standard (2.5 mg/kg) whereas in case of seasoning powder 13.33% (2) samples namely NPL-4 (S), and NPL-6 (S) was found to be non-compliance with WHO standard (0.025 mg/kg) but complying with the standards of BSTI (2 mg/kg), FSSAI (2.5 mg/kg), and Nepal Food Standard (2.5 mg/kg).

The level of lead in the seasoning powder samples of to the NPL 4 (S) was 0.2316 mg/kg (9 times more), and NPL-6 (S) was 1.6981 mg/kg (68 times more) than that of the WHO standard, which is a serious threat for public health. The total lead content of NPL-6 sample from Bhat Bhateni Super Market (BBSM), and the NPL-4 sample from Multi store were found to be 1.7054 mg/kg (68 times more), and 0.2362 mg/kg (9.5 times more) than the WHO standard (0.025 mg/kg). 100% (15 out of 15) of the samples have clearly mentioned their date of manufacture but 6.67% (1 out of 15) sample did not mention expiry date.

Only 53.33% (8 out of 15) samples contained information about different allergic substances like wheat gluten, soya powder, milk solids, permitted natural color, and natural, and artificial flavoring agents. All samples (100%) mentioned information about the presence of monosodium glutamate. This study showed that there has been some heavy metals contamination in Nepalese commercial brands of noodles.

However, these might results adverse effects due to frequently consumption of the noodles despite of having low level of lead. The effective enforcement of the mandatory standard of lead in noodles, and their seasoning powder along with periodic monitoring program to check the compliance status of the quality of instant food products, and make results public was **highly recommended.**

7. Study of Phthalates in Eraser, and BPA in Thermal Paper in Nepal

The study of Phthalates in Erasers, and BPA in Thermal papers in Nepal as a part of Wonjin Institute of Occupational, and Environmental Health (WIOEH), South Korea larger study recently completed in 2022 among 9 Asian Countries. The study of Endocrine Disrupting Chemicals (EDCs) like Phthalates in school stationary ERASER, and BPA in THERMAL Papers samples from participating countries Viz: Nepal, India, Bangladesh, Sri Lanka, Vietnam, Philippines, South Korea, and Malaysia.

In this research, the total number of samples for phthalates in Asia was 400, and for BPA Thermal paper was 318. 9 brands of erasers were taken. Nepal's sample in phthalates was 53(13.25%), and BPA thermal paper was 42(31). The targeted compound DIBP, DBP, BBP, DEHP, DNOP, DINP, DIDP was tested For phthalates in erasers, and the targeted compound tested for BPH in thermal paper are BPA, BPS ,BPB, BPAF. PVC screening in erasers were done by using XRF method. Testing of phthalates in eraser were done by SOP: CPSC-CH-C1001-09.4 by using GC/MS, SIM mode., and for BPA in Thermal paper was done by LC-MS.

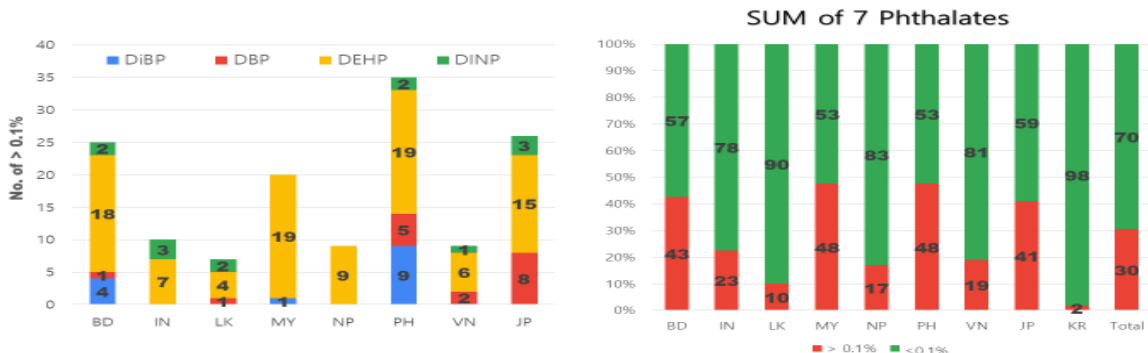


Results: Phthalates in Erasers, Nepal.

Out Of the 53 samples, 20(38%) were detected one or more phthalate including } DEHP (N=14, 26%), DBP (N=14, 26%), and DiBP (N=4, 7.8%). Sum of 7 Phthalates found in 17%(N=9) sample exceeded Korean safety limit (0.1%), 83% sample contain less than or equal to 0.1% Phthalates. 9 sample contain } >0.1% DEHP (Diethylhexyl phthalate). DEHP concentration range 42.4-256121.0 mg/kg } DBP (30.5-90.0mg/kg), and DiBP (9.1-50.5mg/kg). Rank of the Manufacture Countries in Phthalates content with respect to highest concentration: Korea } > India > China > Japan > Malaysia. **Nepalese industry produced ERASER did not found to be contained phthalates.** Thus, needs to be promoted over imported one.

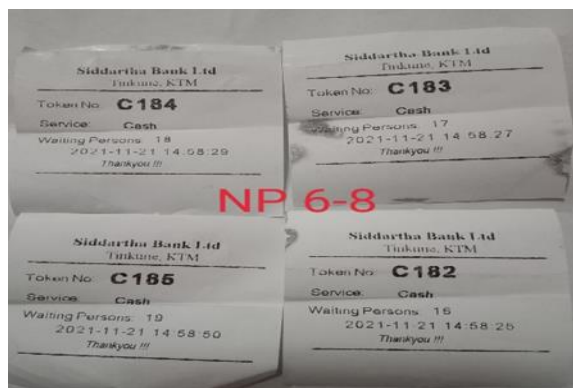
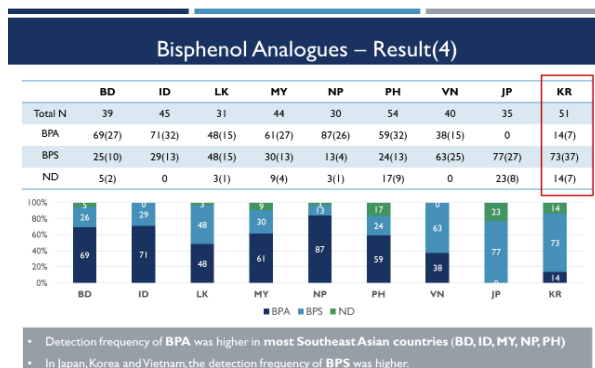
Results: BPA in Thermal Papers, Nepal

Frequency of exceeding 0.1% by country



BPA detection frequency was higher in most Southeast Asian countries including Nepal

- 94% (29 to 31) Nepalese Thermal papers found to contain BPA & BPS like EDCs.
- All samples detected BPA among Nepalese samples exceeded EU regulatory standards (EU BPA regulation < 0.02%)



Conclusion, and Recommendations

Public health especially children's health, and the environment are under serious threat by having 38% erased, school's stationary found highly contaminated with Phthalates, and 94% Thermal Paper contain BPA in Nepal. Therefore, it should be banned in children and daily products like in many developed countries. Enact Standers of Phthalates & BPA for Children's Products, and Thermal papers products & effectively implement them. All schools and academic institutions should be informed about stop using stationeries containing phthalates and shift to safer one. All institutions using BPA contained thermal paper should shift normal paper base paper for their billing, and other purposes which Regulate the import, and production of Phthalates & BPA contained products. Nepalese industry produced Eraser is found to be safer than the imported ones, and hence needs to be promoted. Countries and Manufacturers should stop adoption of DOUBLE STANDARDS of these products. Based on these results, CEPHED Nepal has already initiated awareness raising and policy advocacy with the concerned government, private, and media agencies for banning contaminated products, envisioning mandatory standards of Phthalates, and BPA along with robust regulating mechanisms in place. Also advocate for the regional (South Asia) level harmonized standard for Phthalates, and BPA in children, and other products.

8. Interaction Program & Launching of Study Report through high profile Government Officer.

Chemicals in Products (CiP)- Interaction Program & Launching of Study was organized on 3rd June, 2012 on the eve of World Environment Conservation Day 2012. The study about two very popular, and most used cosmetic products: lipsticks, skin whitening, and moisturizing creams, was the first ever study carried out by CEPHED in Nepal about chemicals in product especially in cosmetics to inform the wide users about the level of contamination, and associated health impacts. Similarly, the first ever studies and research issues of lead contamination in Artificial Jewelry were also launched on this occasion.

High level officials from Government, organizations, the Drug departments Health Care Sectors, the media, INGO, and NGOs were present in the program. Then the program was inaugurated by **Chief Guest, Mr. Krisna Gyanwali Sectary, MOEST, special guests Mr. Radha Raman Prasad Sah, Director General, Department of Drug Administration, and Dr. Sumitra Amtaya, Executive**

Director, SWMTSC, MOLD, GON by launching study reports "Poisonous Cosmetic, Mercury in Skin Whiening Cream", "Poisonous Cosmetics, lead in Lipsticks", and " Toxic Jewelry, An Investigation of Lead in Imitation Jewelry in Nepal" respectively.



Figure. Chemicals in Product Research Reports jointly Launched by Mr. Krishna Gyewali, Secretary , MOEST, Mr. Radha Raman Prashad, Director General of Department of Drug Administration, MOHP, and Dr. Sumitra Amatya, Executive Director of Solid Waste Management, and Technical support center, The Ministry of Urban Development.

Chief Guest Mr. Krishna Gyanwali, addressed the issues related to the heavy metals in cosmetics products, and other hazardous wastes. He said "Consumers may not know the contamination of hazardous chemicals in products and are facing the several health consequences from such chemicals, so manufacturers, and promoters must create an awareness campaign, and he also insists all the participants of the program be aware regarding heavy metals in cosmetics as well as in jewelry. **Special Guest Mr. Radha Raman Prasad Sah**, highlighted the need of national standards regarding such issues. Similarly, **special guests Dr. Sumitra Amtaya**, said that she was unaware about the chemicals in products, and their harmful effects so she thanked to the organizer for organizing such type of informative programs.

In following session of the program the winners of Mr., and Miss Rajdhani 2012 handover the Letter of Appeal to address the issues of Chemical in Products (CiP) to chief as well as special guests.

Mr. Handsome, Mr. Roshan KC, addresses that issues of heavy metals in cosmetics as well as imitation jewelry is very serious, and consumers are using without any information regarding the health effect so such products therefore there should be proper monitoring in the sector. Likewise, Ms. Rajdhani, Anny Kuwar, thank CEPHED for organizing such an effective, and informative

program, and she further said that to date she was unaware about the effect of heavy metals in cosmetics, also all the consumer are using such products without knowing, and facing various health problems, and it seems that cosmetics is killing the consumer. Therefore first of all consumers should be aware, and initiate the step against such products, and government should play an effective role, and provide information through advertisement, and an awareness program should be conducted. Similarly, Mr. Handsome, Rabin Pokherel expressed his happiness to know such new things regarding to heavy metal in cosmetics products.

At the end of the program Mr. Ram Charitra Sah, Executive Director from CEPHED, have made presentation about the lead in Lipsticks, and Mercury in Skin whitening Cream. After that another presentation about "Imitation Jewelry, An Investigation of Lead in Imitation Jewelry in Nepal" was given by Ms. Juna Giri, Program Officer CEPHED. Similarly last presentation on "Study of Compact Florescent Lamb with Reference to its Mercury Content, and Wattage Deferential in Nepal" was given by Mr. Manish Thapa , Program Officer, CEPHED.

In conclusion the interaction program was very well. All the participants have shown interest in lead, and mercury in cosmetics products as well as in Jewelry, and all of them appreciated the work done by CEPHED. Since then there are numerous media coverage on these issues in both electronic, and print media giving very high priority of the chemicals in cosmetics, and jewelry, and making the title page story of the issues in most sold monthly, fortnightly especial magazine for female, and health.



Figure. Chemical in Cosmetics in Cover Story of many magazines

G. Translation, Edition, and Publication of the Environmental Health Book , a community Guide in Nepali Language

It is our great pleasure to inform you that the Book Published " A Community Guide to Environmental Health" **Batabaraniya Swasth, Samudayik Margedarsan in Nepali** already proved as the bible of the Environment and Public Health related issues. This book comprises 23 chapters, over 650 page of greater importance from our daily life viewpoint, and is a very comprehensive book to address almost all issues of the Public Health, and the Environment.

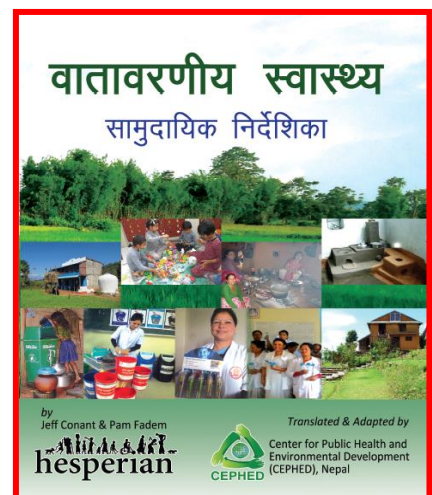


Figure . Published Book on Environment Health, a Community Guidelines

Important features of this book can be explained as it contains issues from water quality to social inequality, from toilet to toxic, from raising crops to rising temperature, how we use natural resources affects our health, and well being.

This book is highly illustrative guide that will help health promoters, development workers, educators, activists, and community leaders take charge of their communities, environmental health in a small village, and large cities, A Community Guide, to environmental Health can provides tools, knowledge, and inspirational to being transforming the global crisis in environmental health.

This book contains activities to stimulate critical thinking, and environmental change, dozens of stories of communities in action, and instructions for making simple technologies to purify water, clean without toxic, get rid of pests, health care waste management, lead in paints, chemicals safety, pesticides, mercury-free health care services, and many more. This book is under wide dissemination. **The book was launched by the Chief Information Commissioner of National Information Council of Nepal though organizing a training program for Journalists.**

H. Study of Environmental Health Condition of Health Care Facilities of Nepal

Effective functioning of health-care facilities depends on its Environmental Health condition. Environmental Health basically includes safe, and adequate water, good sanitation, cleanliness of the surrounding as well as hospital premises, beds, bed sheets (linen), and toilets, and at the same time, these should be properly disinfected too. Additionally, safe injection, environment sound health-care waste management, control, and substitute of hazards chemical like Mercury, and other disinfecting agents such as Cidex (Gluterdehyde) etc. In addition health facilities should be like a healthy workplace which depends on physical, environmental, psychological, and public relations.

In order to study the overall environmental health condition, mixture of predesigned strategically designed methodology consisting direct field survey, patient survey, focus group discussion, and direct observation of the health-care facilities of statistically drawn 13% sampled hospitals out of all 234 existing health-care facilities of Nepal representing geographical regions (East, central, west, and Mid to Far West), eco-regions (Himal, Hill, and Terai), and type (Government, community, and Private), and settings (urban, and rural);, and conditional selection process in consultation with WHO. Further methodology process includes a review of the relevant documents, and policies, development, and testing of different sets of questionnaires for the hospital, patients, and FGD, field survey, and observation, quantitative, and qualitative data analysis, and report writing, stakeholder consultation, and

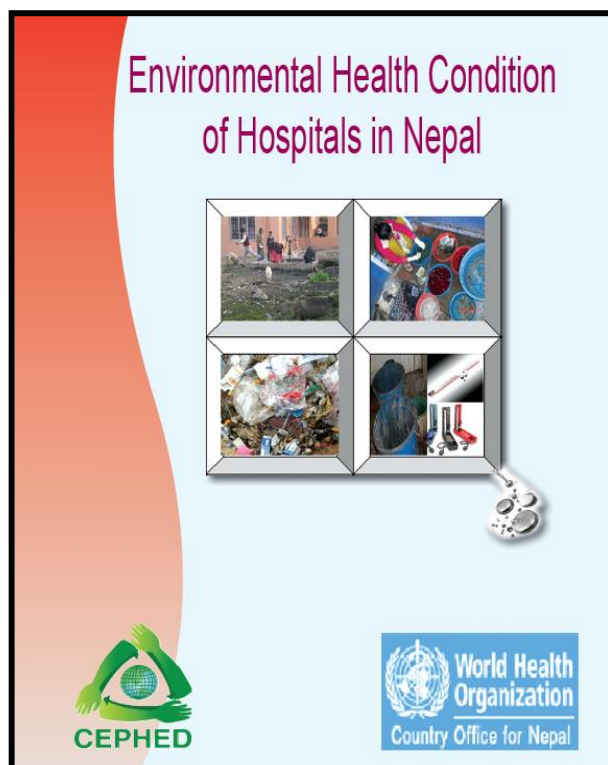
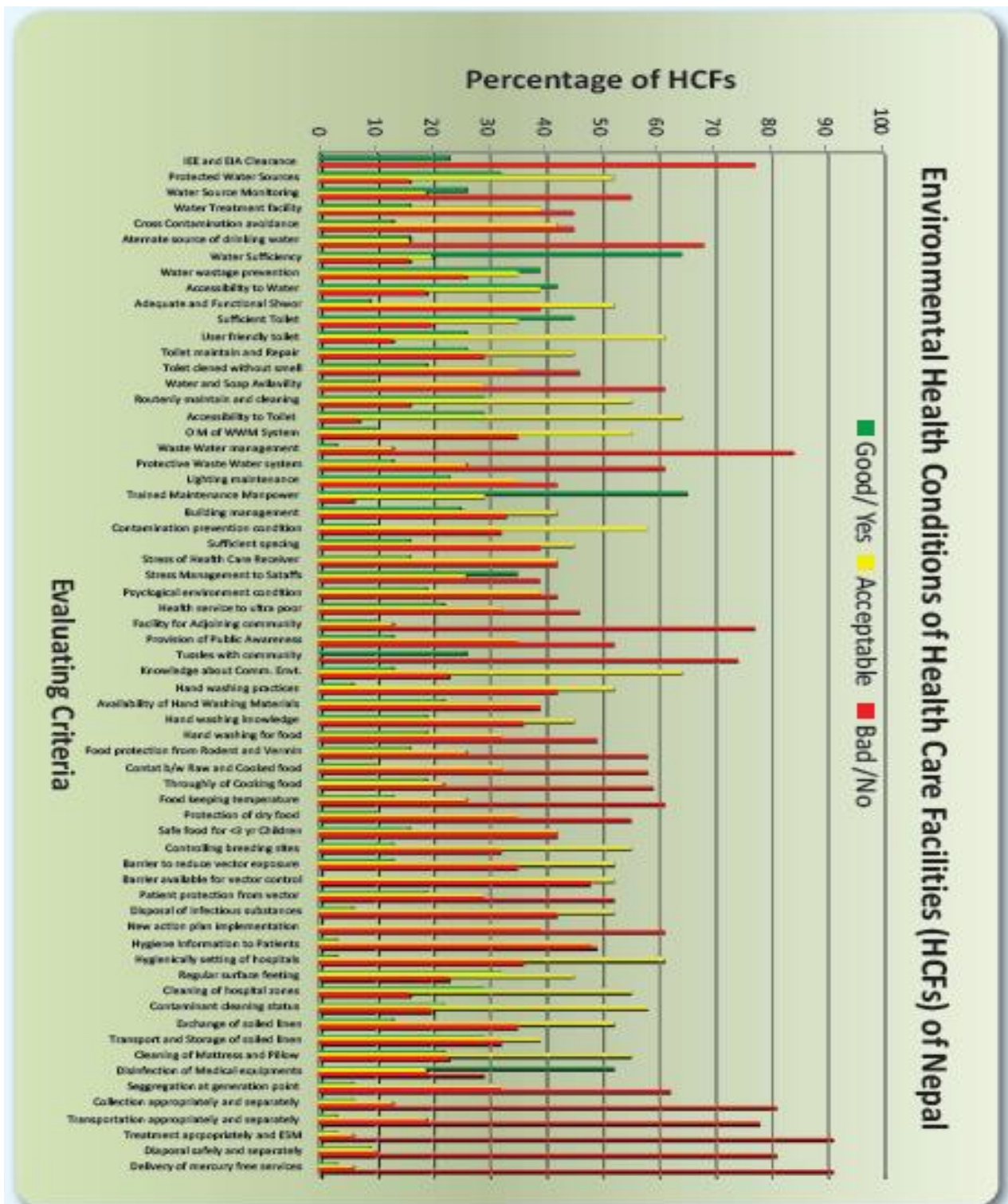


Figure. Study report on EH Condition of Hospitals

submission. Field survey was carried out by teaming up two experts (team leader, and investigators) assisted by a local facilitators as well as facilitators from the hospitals under study.

The main objectives of this study is to develop evidence based paper on overall Environmental Health Condition of selected hospitals of Nepal through review of existing legal, and institutional frameworks as well as investigating environmental health condition by employing detailed questionnaire survey, spot observation, and FGDs with communities members.

Reports has been prepared, are about to publish, and are disseminated shortly. It include analysis of some 63 reserach componnet associated with overall environmental health condition of the health care facilities ranges from water to waste management.



I. Chemical Safety Guideline Development for Nepal

Air we breathe is polluted, water we drink even bottled water has been contaminated, only one most reliable, and accessible ground water drinking water has been found heavily contaminated with Arsenic, food we eat is substandard, and contaminated, Paint with which we painted our dream home, school, furniture, desk, and the bench has been highly contaminated with lead, working environment like air, water, and soil even in the health care facilities/setting have been found to be highly unhygienic, and unhealthy, etc. Large amount of pesticides & fertilizers are being imported, and used, heavy metals like mercury, lead, cadmium, nitrates, and nitrite containing compound, chemicals used in the various industrial process, and products etc. clearly indicates the urgent need to envision a robust chemical safety guidelines with very high prioritized plan of action to address the chemical safety issues at a national level, and also follow the current global initiatives lead by UNEP, WHO, and other international organizations towards mercury-free health care, eliminate lead paints etc. If we do not become timely conscious, and become aware of this situation, then it will be beyond our control and will be a great threat to the human existence in this world.

Nepal being agriculture base least industrialized country, receive, and /or imports a sizable amount of different agricultural, industrial, and pharmaceutical chemicals in addition to numbers of naturally occurring chemicals such as Arsenic, Iron etc are of health concern at the moment.

Thus now that these safety issues began to be seriously addressed, it became clear that dealing with specific chemicals on a case by case basis would not be adequate to ensure chemicals safety in the long term. It is time to look at the cocktail effects of the chemicals we are dealing in our daily lives.

In this connection, a robust chemical safety policy should be in place in each, and every country disregard to its stage of development, and industrialization.

Since if one cannot produce is even flooded by foreign products heavily laced with many chemicals of health, and environmental concerns not even known to us.

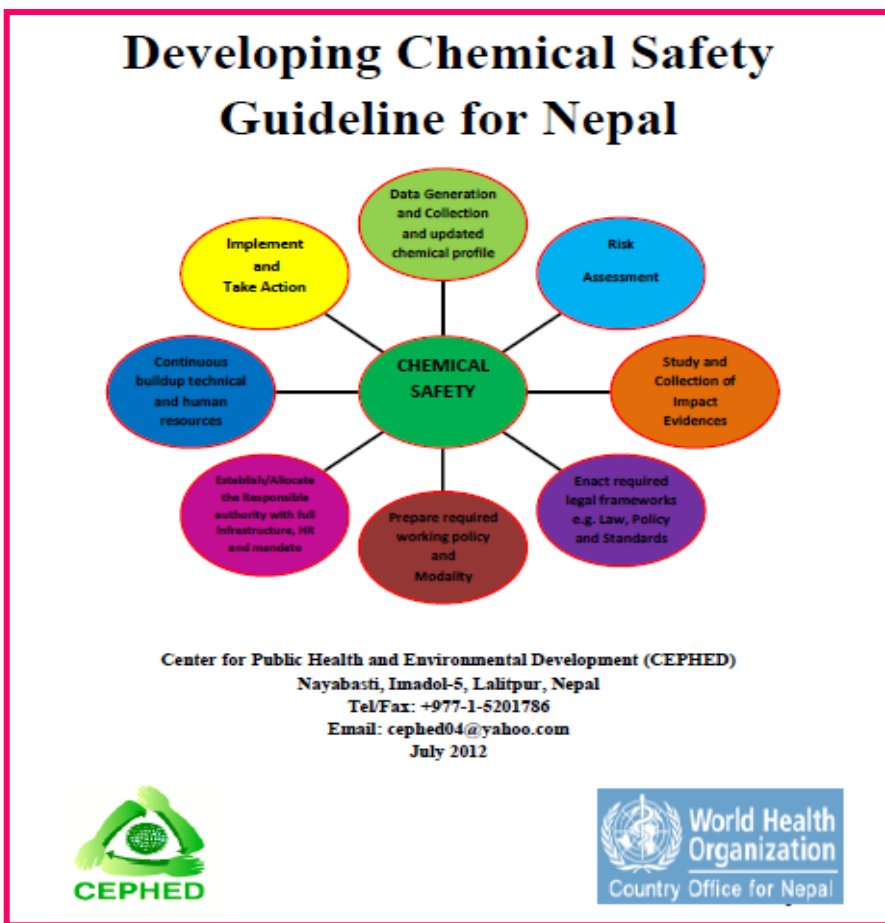


Figure. Proposed Chemical Safety Guideline for Nepal

J. .Biomonitoring of Mercury contamination in Fish, and Human Hair in Nepal

Mercury is a pollutant of global concerns. Mercury is a chemical element that occurs in nature and can be found almost everywhere in the environment. Mercury is only metal which is liquid at ordinary temperature; in fact it is liquid at 298 Kelvin. Mercury is sometimes called **quicksilver** because of its silvery-white appearance. It is naturally occurring heavy, odorless, lustrous liquid metal found mainly in three forms: metallic; inorganic, and organic. Organic form of mercury is highly toxic in comparison to other forms inorganic form, and elemental forms.

Humans become exposed to Hg, and methylmercury primarily through the consumption of fish. Many national, and international health organizations recognize the risks associated with a diet high in fish, and international guidelines for the maximum amount of Hg in fish have been established. However, adhering to, and enforcing these guidelines is very difficult, particularly in developing, and transition countries where data on Hg in fish are rare or unknown.

The primary goal of this reports prepared under the *Global Fish, and Community Mercury Monitoring* project is to generate new data, raise awareness about global Hg pollution, and identify specific hot spots, primarily from developing, and transition countries.

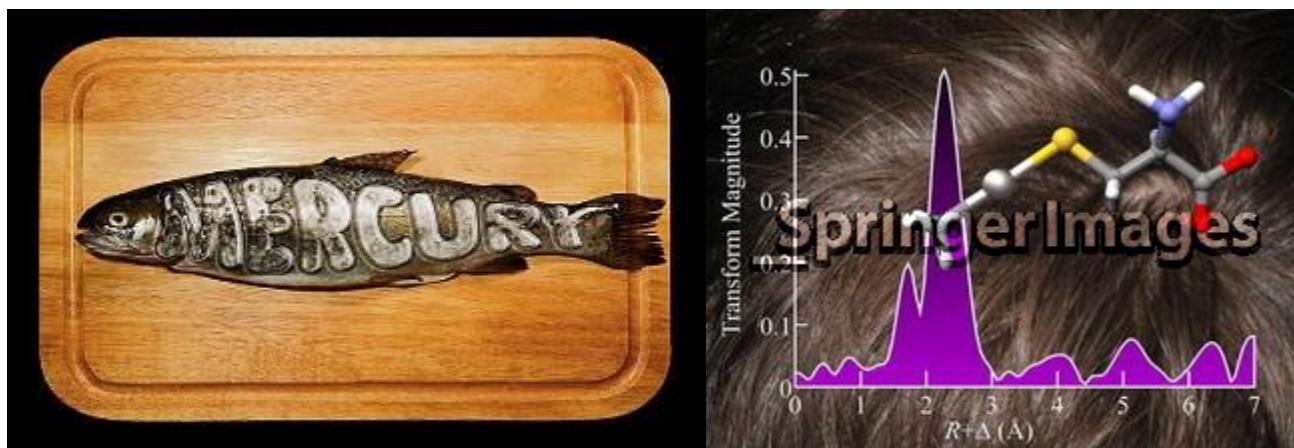


Figure. Mercury in our food, and in our body (hair) in Nepal

CEPHED contributed to Global Fish, and Community Mercury Monitoring by carrying out the biomonitoring of fish, and human hair about the presence of mercury in them from Nepal. For study of Hg concentration in Fish, and the Human body all together 20 human hair samples and 19 fish samples were collected. 15 fishes sample were collected from Fewa Lake whereas 4 fishes sample were from Kalimati market in Kathmandu suspected to be imported from India have been included. Include the common, and scientific names of the fish species we had collected. Similarly, 15 human hair samples were collected from the fishing community of Khapaudi, Sarangkot-2, Kaski, and 5 samples from nurses, and doctors working in the dentistry health care services at National Dental Hospital, Kathmandu were included in the study. Samples were collected and sent to Biodiversity Research Institute (BRI), Gorham, USA lab for mercury testing. Mercury has been found in fish found in Phewa Lake as well as sold in Kathmandu Market, and also in the human body including that of dentists doctors, and nurses.

K. Study of Heavy Metals in Children's Toys, and Campaign for Safe Play in Nepal

The project under 6th research fellowship to our Center for Public Health, and Environmental Development (CEPHED) on " **Study of Heavy Metals in Children`s Toys, and Campaign for Safe Play in Nepal**" has been completed under the fellowship program of UNEP Eco Peace Leadership Center (EPLC), Yuhan-Kimberly University, South Korea, and successfully released the report on 18th July 2013. The grand success of the project with massive media and advocacy campaigns trigger the various initiatives towards the enactment of the required institutional, and legislative framework to address the issues of chemicals in children toys in Nepal as our massive media, and advocacy campaign had draw the attention of high level government officials, and institution including Government of Nepal, Office of the Prime Minister, and Council of Ministers (OPMCM).

CEPHED tested 100 toys made of plastic, metals, clay, fibers, wood, foam, rubber, etc., and collected from street vendors in shopping malls, departmental stores, educational enterprises, and dedicated dealers supplying the children to most of the schools at Nepal Handicraft Testing Laboratory, A public Private Partnership model laboratory operated by Federation of Handicraft Associations of Nepal (FHAN), and Nepal Bureau of Standard, and Metrology, The Ministry of Industry, Government of Nepal., Balaju, Kathmandu with XRF (X-Ray Fluorescence) Spectroscopy.

According the research finding, 54% of the toys tested have found to be contaminated with several heavy metals like Lead, Mercury, Cadmium, Chromium, and Bromine. Out of positive results of chemical contaminated toys samples, 28 samples contain Lead, 1 Samples contains Mercury, 9 samples contain Cadmium, 14 samples contain Chromium, and 40 samples contain Bromine. Additionally, 54% samples have At Least ONE Chemical, 27 % have at least TWO chemicals, 11 % of samples have at least THREE chemicals, and 1 % samples have at least FOUR Chemicals in them. Only 29 % of the samples does have some labeling rest 71 % does not bears any labeling.

So situation is very serious about the fate of children. This issue has been totally ignored so far by all. Thus we did the massive media and advocated with all concerned to keep hazardous chemicals away from Children's toys and ensure their right to play safe through enacting policy, regulations, and standards as well as allocating the responsible government agencies. Compulsory provision of Chemical certification in import, sale, purchase and distribution with proper labeling will help to improve the situation. As of today in this 21st Century, children are getting exposed to toxic chemicals in absence of responsible government agencies and required acts, regulations, and standards



Figure . Study report of Heavy Metals in Children Toys in Nepal

despite the country being party to the Convention on Rights of the Children (CRC) since 1990 is quite disturbing factors for all of us.

Responding to our advocacy letter to the Prime Minister office along with other concerned ministries, on last 6th August 2013, Prime Minister Office called a high secretaries level meeting under the chairman ship of Mr. Udhab Prasad Devkota, Secretary, OPMCM including the representative from our CEPHED. The meeting precisely heard our presentation of the actual situation of the toxic toys problem on children health in Nepal, and immediately took a very progressive decision. The decision broadly includes following four points: Recognizing the problem of toxic toys with presence of toxic chemicals like Lead, Mercury, Cadmium, Chromium, and Bromine related based on our research report; immediate banning of toys without labeling at least about the manufacturing country, and manufacturers; market monitoring; formulation, and effective implementation of standard for all the chemicals possibly used in children toys; and also director all the concerned authorities to publish, and broadcasting of public notice, and advertisement for massive public awareness about the impact of toxic chemicals in children toys.

The screenshot shows the official website of the Office of the Prime Minister and Council of Ministers, Nepal. The header includes the national emblem and the text 'नेपाल सरकार प्रधानमन्त्री तथा मन्त्रिपरिषद्को कार्यालय'. The navigation menu contains 'गृह पृष्ठ', 'मन्त्रिपरिषद्', 'संगठन तालिका', 'सम्पर्क ठेगाना', and 'English | नेपाली'. A news ticker at the top reads: 'हाई लाईटस : १७०।३।२६) मन्त्रिपरिषद्का सम्माननीय अध्यक्ष श्री खिलराज रेग्मीज्यूले संविधानसभा निर्वाचन मिति घोषणा लगत्तै राष्ट्रका नाममा गर्नुभएको सम्बोधन(२०७० जेठ ३१ गते शुक्र)'. The main content area features a green sidebar with navigation options like 'मन्त्रिपरिषद्', 'मन्त्रिपरिषद्का निर्णयहरू', 'सम्माननीय अध्यक्ष, मन्त्रिपरिषद् तथा माननीय मन्त्रिहरूको सम्पत्ति विवरण', 'मुख्य सचिव', 'कर्मचारीहरू', 'नेपाल सरकारका सचिवहरूको सूची', 'ऐन तथा नियम', 'नेपाल सरकारको नीति तथा कार्यक्रम', 'निर्देशिकाहरू', 'प्रधानमन्त्री दैवी उद्धार कोष', and 'प्रेस बिज्ञप्ति'. The main content displays a press release titled 'बालबालिकाको स्वास्थ्यमा प्रतिकूल असर पार्नसक्ने हानिकारक रसायनको प्रयोग भई निर्मित विषाक्त खेलौनाहरूको विक्री वितरण र प्रयोग सम्बन्धमा बसेको बैठकको प्रेस बिज्ञप्ति'. The release text states: 'बालबालिकाको स्वास्थ्यमा प्रतिकूल असर पार्नसक्ने हानिकारक रसायनबाट विषाक्त खेलौनाहरूको विगविगी बढेको सम्बन्धमा प्रधानमन्त्री तथा मन्त्रिपरिषद्को कार्यालयका सचिव श्री उदुवप्रसाद बाँस्कोटाको अध्यक्षतामा नेपाल सरकारका सम्बन्धित निकायका प्रतिनिधि तथा जनस्वास्थ्य तथा वातावरण केन्द्रका विज्ञको उपस्थितिमा आज बैठक बस्यो । नेपाली बजारमा पाईने खेलौनाहरूमा स्वास्थ्यका हिसावले अत्यन्त हानिकारक मानिने गर्हाँ धातुहरू जस्तै लिड,मर्करी,क्रोमियम,क्याडामियम,ब्रोमिन लगायतका रसायनयुक्त खेलौनाहरू समेत भेटिएकाले त्यस्ता खेलौनाहरूमा उत्पादक मुलुक र व्यवसयीहरूको बारेका सम्बन्धमा समेत हुनुपर्ने लेवल नभएको भए आयातमा प्रचलित नियमवमोजिम रोक लगाउन,बजार अनुगमन गर्न,खेलौनामा प्रयुक्त हुनसक्ने रसायनको मापदण्ड निर्धारण गरी प्रभावकारी कार्यान्वयन गर्न तथा त्यस्ता हानिकारक रसायनहरू प्रयोग भई निर्मित खेलौनाहरूले बालबालिकाको स्वास्थ्यमा प्रतिकूल असर पार्नसक्ने भएकोले सचेत हुन जनचेतनामूलक सूचनाहरू लोक कल्याणकारी विज्ञापन स्वरुप प्रकाशन तथा प्रशारण गर्ने सम्बन्धित निकायहरूलाई लेखी पठाउने निर्णय गरेको व्यहोरा सबैको जानकारीको लागि सूचित गरिन्छ ।' The release is dated 'मिति २०७० साउन २२' and signed by 'प्रधानमन्त्री तथा मन्त्रिपरिषद्को कार्यालय सिंहदरवार'.

Figure. Response from Office of the Prime Minister, and Council of Ministers towards enacting legal, and institutional frameworks regulate the heavy metals in Children Toys in Nepal.



Figure . Response from media towards mass awareness raising about heavy metals in Children Toys in Nepal.

L. Asbestos

1. Campaign for Banning Carcinogenic Asbestos Import, Sale, uses, and waste management in Nepal

Regarding asbestos and asbestos-based products, it has been imported and used in the different rural to urban area for various purposes from roofing of school, garage, industrial units etc. to insulating materials. There might be some health, and environmental implications out of this decade-long use, and mishandling as well as waste of asbestos, and its products.



Figure. Asbestos use in Rural Nepal



Figure. School with asbestos sheet roofing in Janakpur, Nepal

Asbestos is one of the most important occupational carcinogens, causing about half of the death from occupational cancer. According to global estimates at least 90,000 people die each year from asbestos-related lung cancer, mesothelioma, and asbestosis resulting from occupational exposures.

Since last 2014, the Center for Public Health, and Environmental Development (CEPHED) has advocated addressing the related public health, and environmental problems possibly resulting from the unscientifically burying of asbestos wastes in Maitighar Mandala in Kathmandu to its massive import, and use in Terai region. Even with numerous health impacts in absence of any relevant plans, policies, laws, and regulations regarding the import, sales, distribution as well as use of asbestos has been recklessly happening

Many places of Nepal, and specifically in all Terai region, human health, and the environment were under high risk of getting impacted from these carcinogenic Asbestos sheets used massively due to the large import sale, advertisement, promotion, and uses

CEPHED raised this concern with the government agencies and in responding to these concerns, the decision by the Government of Nepal to **ban the Import, Sales, Distribution, and Use of Asbestos** on December 22, 2014 is praiseworthy, timely, and visionary toward health conscious, and environment friendly future. CEPHED has taken this decision of MOSTE as appropriate response to our raised concerns and hence would like to congratulate for this timely decision and advocate for its effective implementation.

2. National Asbestos Profile Preparation, Production, Launching, and Widely Dissemination

October 21, 2016, Kathmandu, Center for Public Health, and Environmental Development (CEPHED) stressed the needs of effective implementation of Government's decision of banning all form of asbestos except lining of brake shoes, and clutch plates, effective since 20 June 2015 for the protection of Public Health, especially of workers health, and environment.

Handle asbestos carefully: NGO

Himalayan News Service
Kathmandu, November 26

A non-government organisation has drawn the attention of the government towards the mismanagement of asbestos in the Kathmandu Valley.

The Centre for Public Health and Environmental Development, in a letter to the Ministry of Science, Technology and Environment, pointed at haphazard handling of the cancer-causing substance during the ongoing road construction work. According to the World Health Organisation, asbestos is one of the most important occupational carcinogens that causes about half of the deaths from occupational cancer, including lung cancer. Exposure to asbestos occurs through inhalation of fibres primarily from contaminated air in the environment, as well as from ambient air in the vicinity of point sources, or indoor air in housing and buildings containing friable asbestos materials.

The WHO and the International Agency for Research on Cancer have identified asbestos as a cancer-causing factor, prompting around 40 countries in the world to ban its export and import, it said.

"Records at the Department of Customs show that Nepal imported about 1,195 tonnes of asbestos for use in construction work in the fiscal year 2012-13. According to estimates, around 40,000 people are living with cancer in Nepal," the centre said, pointing that the exact causes are not known.

Exposure can also occur during installation and use of asbestos-containing products. Asbestos is used in a number of products for a number of applications, such as roofing, shingles, water supply lines, fire blankets, plastic fillers, medical packing as well as clutches and brake linings, gaskets and pads for automobiles.

"Asbestos is piled up in different parts of Kathmandu, including Maitighar, for use in road construction work. We request the ministry to manage such materials in a way that reduces potential risk to humans. It is equally important to take initiatives to gradually ban the use, import and export of such products," Ram Charitra Sah, the centre's executive director, said.

National Asbestos Profile of Nepal

(Based on the National Asbestos Profile by ILO and the WHO)

October 2016

The Takagi Fund for Citizen Science
高木三郎市民科学基金

IBAS

CEPHED

A research based document "National Asbestos Profile of Nepal" prepared by CEPHED under the project supported by **Takagi Fund for Citizen Science**, **Asia Ban Asbestos Network (ABAN)**, and **International Ban Asbestos Secretariat (IBAS)** has been released by the **Chief Guest Mr. Narayan Raj Timalisina**, Acting Secretary, The Ministry of Population, and Environment (MOPE) in an interaction program organized by CEPHED participated by some 50 personals from different concerned government agencies, development agencies, private agencies, consumers, professional associations like FCAN, FGSFN, PABSON, GEFONT, Trade Unions, Health professional, and media personnel's . Other special remarks has been made by, ILO, WHO representatives, NHRC, Department of Custom, several other professional organizations, OSH health professionals, and experts. Program were held under the chairmanship of Mr. Mohan Katuwal, Advisor of CEPHED, President of Federation of Grill, and Steel Fabricators Nepal, and Vice President (Objective), Small, and Cottage Industry , Nepal

Chief Guests, and other delegations from concerned government, and private agencies strongly believed that this country National Asbestos Profile will be very useful, and complement in many ways Government of Nepal, especially to The Ministry of Population, and Environment (MOPE) , The Ministry of Health (MOH), The Ministry of Home Affairs (MOHA), The Ministry of Labour, and Employment (MOLE), and The Ministry of Finance (MOF)`s work towards effective implementation of Government of Nepal`s Asbestos banning decision, market monitoring, and equally useful for other concerned stakeholders towards protection of the public health, workers health, and environment. This profile will be also very useful for Government of Nepal in realizing its national obligation under multiple chemicals Conventions such as Rotterdam Convention, Basel Convention, and SAICM etc. to which Nepal is party since decade ago.



3. Preparation, Production, and Dissemination of IEC Materials in ASBESTOS, and Organizing Stakeholder Meeting on Effective Implementation of Asbestos Ban in Nepal

After successful Asbestos Ban campaign in Nepal by CEPHED achieved in December 22, 2014 through getting Gazette notification from Government of Nepal that took effects on 20th June 2015. CEPHED continue its research, awareness raising, and capacity building as well as an advocacy campaign for effective implementation of the asbestos ban, and solving the post-ban challenges of asbestos in Nepal.

In 2015 to 2016, CEPHED with the help of Takagi Fund for Citizen Science, AMRC, ABAN, and IBAN had carried out research, published the National Asbestos Profile of Nepal, disseminate with organizing the workshop, and continued awareness rising through all possible means of media, newspaper, workshops, news articles, and publications of investigative field reports. Also carried out several advocacy campaigns towards effective implementation of the asbestos ban decision as well as address the post ban challenges such as exposure from existing uses, waste management, harmonizing the required act, regulation, and standard etc.

In 2017, with the support of World Health Organization (WHO), the Country Office for Nepal, and the International Ban Asbestos Secretariat (IBAS) CEPHED has prepared, produced, and disseminated the three most important IEC (Information, Education, and Communication) materials in the form of Poster, Fact Sheet, and A Handbook of Asbestos (House Owner`s, and Worker`s Guide) in Nepali Language followed by a planned stakeholder meeting on Effective Implementation of the ASBESTOS BAN in Nepal on 21st December 2017.

The three publications can be found **below, and** publications as attachment with this file.

Overall impression on the effective implementation of the Asbestos Ban in Nepal is getting better, and better, and achieving towards very progressive improvement in terms of reduction of asbestos import, and uses, there is growing interest, and address from the different government institutions towards addressing the associated health, waste, and environmental issues by all concerned agencies. Development of in-house asbestos testing mechanism as well as regular monitoring to regulate the import has resulted very good improvement.

The immediate needs for the post ban on Asbestos in Nepal are as follows, and need continued support from all national, and international agencies like ABAN, IBAS, ANROEV, AMRC as well as WHO, and ILO.

- a) Effective implantation of the Asbestos Ban decision by reducing zero imports as per the Ban Decision.
- b) Regular market monitoring, cease the existing asbestos in the market and manage them in sound manner.
- c) Air monitoring for Asbestos Exposure minimization
- d) Regular awareness raising, and capacity building of the people, and concerned agencies.
- e) Reduce post ban exposures from existing use
- f) Environment sound management of Asbestos Waste
- g) Incorporation of Asbestos Ban in Building Codes, and Green Building Guideline
- h) Development of Disposal Methods, Policy, and Sanitary landfill sites for Asbestos Waste
- i) Enact of exposure limits
- j) Ratify Asbestos Convention 162
- k) Institutional, Technical, and Legislative capacity buildings of the nation
- l) Certifying, Licensing trained manpower, contractors for Asbestos handlings, etc.

M. Successful research based Policy Influence by CEPHED

1. Enactment of Lead Paint Standard

Responding to the continuous research, advocacy, and follow-up with all concerned government agencies of Nepal to address the issue of the heavy contamination of lead in all decorative household paints imported, produced, sold, and used in Nepal, the Government of Nepal, The Ministry of Science Technology, and Environment (MOSTE) enacted LEAD PAINT STANDARD of 90 ppm to eliminate Leaded paint from Nepal through publishing a **Gazette Notification (Nepal Gazette, Khand 64, Number 30, dated 22 December 2014, Notice No. 3)**.

It will be effective from 181 days (i.e. 6 Month from now), regulate the import, and national production, be required to provide the label of lead content, and precautionary message to avoid occupational exposures etc. This is an outcome of year's long campaign to eliminate lead paint from Nepal as the part of EU IPEN Switch Asia Lead Paint Elimination project implementing in seven

90 ppm lead: new standard in paints

By A Staff Reporter
Kathmandu, Dec 25

A new standard of 90 ppm lead in paints to protect children's health by eliminating hazardous levels of lead in paints has been promulgated through notification in Nepal Gazette by Government of Nepal, Ministry of Science, Technology and Environment (MoSTE).

The new standard has been implemented as per the Rule 15 of Environment Protection Regulation 1997.

The new measure will ensure children of Nepal grow up to be healthy adults who can reach their full intellectual potential," The standard will take effect after 181 days (June 20, 2015), and will be implemented with the support of the all concerned ministries, departments and stakeholders.

The paint standard is the result, in part, of a 3 year campaign waged by Center for Public Health and Environmental Development (CEPHED) in coordination with the IPEN Asian Lead Paint Elimination Project, which is being implemented in seven different countries (Bangladesh, India, Indonesia, Nepal, Philippines, Sri Lanka, and Thailand) with a total European Union funding of EUR 1.4 million.

"The danger of lead exposure in Nepal is real and children are the most severely affected. Lead has impacts on brain development leading to lower IQ, mental retardation and kidney damage. These effects have a negative impact on school performance and are non-reversible.

In Nepal, CEPHED demonstrated that many companies still sell paint containing high levels of lead. The result is that schools, households, offices are contaminated with dust with high lead levels.

Lead is easy to replace since less harmful chemicals exist. Some brands produced in Asia have already adopted other formulas with no impact on production costs.

According to 2011 census data, 9.5 million Nepalese children (about 36 % of total population) are at their golden age of development. Recent studies by CEPHED demonstrated that most paint companies in Nepal, including some major brands, sell paint for household use that contains unsafe levels of lead that exceed recognized worldwide standards. In some cases, CEPHED found, schools also were contaminated with dust with high lead levels.

The new standard sets a mandatory limit of 90 parts per million (ppm) lead content for any paint imported, produced, sold or used in Nepal. The standard is consistent with other lead paint standards around the world.

Nepal is the 53rd country in the world to establish lead paint regulation and one of only a handful of low- and middle-income countries to set limits on lead in paint. Alliance to Eliminate Lead Paint (GAELP) has set a goal of eliminating lead in paint in all countries by the year 2020.

Asian countries funded by EU.

The support from UNDP GEF SGP, SSNC Sweden, WHO, Toxic Links, and InSLAR, is also highly acknowledged towards bringing this good news of mandatory standard of 90 ppm of lead in Paint in Nepal.

2. Government decision of Banning Import, Purchase, and Uses of all Mercury based equipment in Health Sectors

Responding to the bio monitoring research about mercury in fish, fisher folks, dental doctors, nurses, waste handlers, childbearing age females, and people with mercury dental filling, developing several mercury-free health care delivery systems in several hospital in Nepal, study of mercury in cosmetics, children toys, CFL etc., advocacy, and follow-up with all concerned government agencies of Nepal to address the issue of the heavy contamination of mercury in all these items, and even in the occupationally vulnerable group of people in



नेपाल सरकार
स्वास्थ्य तथा जनसंख्या मन्त्रालय
नीति, योजना तथा बेस्तराभिय सहयोग महाशाखा

रामशाहय,
काठमाडौं
फोन : ४२६२६६२,
फ्याक्स : ४२६२६६५

मिति : २०६९/१२/१५

विषय : मर्करीयुक्त उपकरणहरूको आयात बन्द गर्ने सम्बन्धमा ।

श्री स्वास्थ्य सेवा विभाग, टेकु ।
श्री औषधि व्यवस्था विभाग, विजुलीबजार ।
श्री आयुर्वेद विभाग, टेकु ।

नेपाल सरकार (सचिवस्तर) बाट २०६९/११/२१ मा आगामी आ.व. २०७०/७१ देखि नेपाल सरकारले मर्करीयुक्त उपकरणहरू खरिद र उपयोग बन्द गर्ने र निजी क्षेत्रलाई पनि खरिद उपयोग नगर्ने अनुरोध गर्ने निर्णय भएको हुँदा सोही अनुसार गर्न गराउनु हुन निर्देशानुसार अनुरोध गर्दछु ।

(Handwritten signature)
(कविराज खनाल)
उप सचिव

✓ जोडाष्टी
श्री ज्ञानलाल तन्ना कान्तालाई ज्ञानले केन्द्र
डिपार्टमेन्ट, काठमाडौं

Nepal, The Ministry of Health, and Population (MOHP) decided of making mercury-free health care services through imposing the blanket ban of Import, Purchase, and Use of Mercury in health sector of Nepal in March 2013, and a decision is effective from the first day of the new physical year 2070/71 (i.e. July 16, 2013).

Call to stop mercury use in dentistry

POST REPORT
KATHMANDU, JAN 13

Civil society representatives from Nepal, India, Bangladesh, Sri Lanka, Pakistan and Thailand have agreed to a declaration that calls to end the use of mercury in amalgam fillings in dental care in Asia.

More than 137 civil society organisations, individuals

environment. "The continuous use of mercury-filled dental amalgam in medical field is not justified when alternatives are now affordable, effective and available in the region," said a press statement issued by Center for Public Health and Environmental Development on Tuesday.

The organisations also urged the Asian countries to

therefore be more significant. "We are calling on Asia to end the use of mercury-based dentistry. Asia is the most densely populated continent on the planet and therefore risks incredible harm to human health and environment," the statement further reads.

Mercury-free dentistry is

growing in Asia. Recent studies in India and Pakistan show that, already, over 50 percent of dentists are using alternatives to dental amalgam in India, while in Pakistan 42.86 percent of dental professionals strongly recommend to phase down the use of mercury/dental mercury amalgam.

3. Decision on Mercury-free Dentistry in Nepal

Responding the research based campaign lead by Center for Public Health, and Environmental Development (CEPHED) in close coordination with all other concerned organizations, **Honorable Deputy Prime Minister, and Minister for Health, and Population Upendra Yadav** took very progressive decision to ban use of mercury dental amalgam in Nepal moving towards Mercury-free Dentistry and Health Care Services on **21st August 2019**.

21 August 2019, the Deputy Prime Minister, Minister of Health, and Population of Nepal have decided up on banning mercury dental amalgam moving towards Mercury-free Dentistry. Decision includes:

- A. Complete ban use of Mercury Dental Amalgam in Children (<15 Years), Pregnant, and Breastfeeding mothers.
- B. Ban the use of Mercury Dental Amalgam in other age group people within **FIVE YEARS** upon available of alternatives.
- C. Institution providing dental health education under Universities, Academies of Health Sciences should improve their curricula so as to remove mercury dental amalgam related course itself.
- D. Completely ban the uses of mercury dental amalgam filling restoration in their practical exercises.

Government of Nepal, MoHP has already previously taken decision of **banning Import, Purchase, and Use of all kinds of mercury based equipment's from health sectors of Nepal**, effective since July 17, 2013. As the result, all most all health care facilities has shifted to mercury-free equipment like digital thermometers for temperature, and an aneroid sphygmomanometer for blood pressure measurements.



Figure. Participants of Mercury-free Dentistry policy decision making interaction program at The Ministry of Health, and Population under the presidency of Dr. Dipendra Raman Shingh, Chief, Quality Regulation, and Standard Division, MOHP. Participated by representatives from different division of MOHP, Kathmandu University (KU), Nepal Dental Association(NDA), APHIN, ENT, and Oral Health Chief, NAMS, CEPHED, WHO Country Office for Nepal, Shingh Durbar Baidayakhana, and The Ministry of Forest, and Environment (Focal The Ministry of Minamata Convention on Mercury) etc..

नेपाल सरकार
स्वास्थ्य तथा जनसंख्या मन्त्रालय

गृहकार्यालय, काठमाडौं
गणस्तर मापन तथा नियन्त्रण महाशाखा (शाखा)

फोन नं. : ४२६२६००
४२६२६०२
४२६२७०६
४२६२९३४
४२६२६६२
४२२२५६००

प्राप्त पत्र संख्या :-
पत्र संख्या ०७६/६६
चलानी नं. :- ०२/६२

रामशाहपथ,
काठमाडौं, नेपाल ।
मिति :- २०७९/०९/१९

विषय :- मर्करीयुक्त उपकरणहरू र डेन्टल अमलगम सम्बन्धमा ।

श्री वन तथा बातावरण मन्त्रालय, सिंहदरवार, काठमाडौं ।
श्री सामाजिक विकास मन्त्रालय, साते वडा प्रदेशहरू ।
श्री स्वास्थ्य सेवा विभाग, टेकु ।
श्री औषधी व्यवस्था विभाग, विजुलिवजार ।
श्री आयुर्वेद तथा वैकलीक चिकित्सा विभाग, टेकु ।
श्री नेपाल डेन्टल एसोसिएसन, बालकुमारी, ललितपुर ।
श्री एनोसिएसन अफ प्राइभेट हेल्थ ईन्स्टिट्यूसन अफ नेपाल (अफिन), ज्वागल ललितपुर ।
श्री विभूवन विश्व विद्यालय, किर्तिपुर ।
श्री काठमाण्डौ विश्व विद्यालय, धुलिखेल ।
श्री पाटन स्वास्थ्य विज्ञान प्रतिष्ठान, ललितपुर ।
श्री वि.पि.कोईराला स्वास्थ्य विज्ञान प्रतिष्ठान, धरान ।
श्री प्राविधिक शिक्षा तथा व्यावसायिक तालिम परिषद (CTEVT) ।

उपरोक्त सम्बन्धमा मर्करीयुक्त उपकरण र डेन्टल अमलगम सम्बन्धमा तपशिल बमोजिमको गर्ने गराउने निर्णयहरू नेपाल सरकार (माननिय उपप्रधानमन्त्री एवं स्वास्थ्य तथा जनसंख्या मन्त्रीस्तर) को मिति २०७९/०९/०४ को निर्णयानुसार अनुरोध छ ।

- गर्भवती तथा स्तनपान गराई रहेको महिला तथा १५ वर्ष मुनिका बालबालिकाहरूमा मर्करी डेन्टल अमलगमको प्रयोग पूर्णतः प्रतिबन्ध लगाउने ।
- अन्य उमेरको हकमा विकल्प भएमा (मर्करी डेन्टल अमलगमको प्रयोगमा) पाँच वर्ष भित्र प्रतिबन्ध गर्ने ।
- दन्त चिकित्सा अध्ययन, अध्यापन गराउने विश्वविद्यालय तथा प्रतिष्ठानहरूलाई मर्करी डेन्टल अमलगमको प्रयोगबाटै पाठ्यक्रम परिमार्जन गर्ने ।
- प्रयोगात्मक अभ्यासमा मर्करी डेन्टल अमलगमको प्रयोग प्रतिबन्ध गर्ने ।

विजय कान्ति शाक्य
वरिष्ठ जनस्वास्थ्य अधिकृत

मर्करी प्रयोगमा प्रतिबन्ध

काठमाडौं: सरकारले मर्करीयुक्त उपकरण तथा डेन्टल अमलगमको प्रयोगमा प्रतिबन्ध लगाएको छ। गर्भवती र स्तनपान गराइरहेका महिला तथा १५ वर्षमुनिका बालबालिकामा मर्करी डेन्टल अमलगममा प्रतिबन्ध लगाउने निर्णय सरकारले गरेको हो। अन्य उमेर समूहमा विकल्प भए पाँच वर्ष भित्र प्रतिबन्ध लगाइने छ।

दन्त चिकित्सा अध्ययन अध्यापनका लागि सम्बन्धित विश्वविद्यालय, स्वास्थ्य विज्ञान प्रतिष्ठानलाई मर्करी डेन्टल अमलगमको प्रयोगबाटै पाठ्यक्रम परिमार्जन गर्ने र तपस्यो

२ असोज २०७९ THURSDAY, SEPTEMBER 19, 2019

Figure. Government of Nepal, MOHP decision on Mercury-free Health Care Services, and Mercury-free Dentistry

THE RISING NEPAL

THE FIRST & FOREMOST NATIONAL DAILY

Ban on dental amalgam

By A Staff Reporter
Kathmandu Sept. 16

The Ministry of Health and Population has imposed a ban on mercury dental amalgam.

The decision towards mercury-free dentistry was taken in response to a research-based campaign led by Centre for Public Health and Environmental Development (CEPHED) in close coordination with all other concerned organisations.

In line with different professional associations, national, regional and global initiatives, including UN Minamata Convention on Mercury taken towards Mercury Free Dentistry, the Ministry of Health and Population (MoHP) in consultation with all concerned professional associations like Nepal Dental Association (NDA), Nepal Medical Association (NMA), Universities (KU & TU), World Health Organisation (WHO) Country Office for Nepal, Academies of Health Sciences like PAHS, NGOs and all other concerned

stakeholder, has taken this environment and health friendly decision to ban the mercury dental amalgam in Nepal, said Ram Charitra Sah,

Executive Director of CEPHED and Environment Science. The ministerial level decision was taken on August 21 and the decision was made public on Sunday.

As per the decision, mercury dental amalgam was totally prohibited in children aged below 15 years, pregnant and breastfeeding mothers.

The ministry said that use of Mercury Dental Amalgam would also be banned in the people of other age group five years provided that there were alternatives. The above-mentioned institutions will be providing dental health education under Universities, Academies of Health Sciences to improve their curricula so as to omit the mercury dental amalgam related course itself.

Likewise, a complete ban on the use of mercury dental amalgam filling restoration will be imposed

See page 6

Ban on...

in their practical exercises. The MoHP had taken a decision to impose a ban on the import, purchase and use of all kinds of mercury based equipment from health sectors in Nepal effective since July 17, 2013.

As a result, almost all health care facilities have shifted to mercury free equipment like digital thermometers for body temperature measurement and aneroid sphygmomanometer for blood pressure measurements, he said.

According to the World Health Organisation (WHO), mercury is among the 10th most hazardous substance of global concern in public health and environment causing neurological, developmental, reproductive problems, impairing growing nervous system, damaging kidney, impaired vision and hearing loss, paralysis, insomnia, emotional instability, developmental deficits during fetal development, attention deficit and developmental delays during childhood.

"We urge one and all to ask for only mercury free dental filling while visiting the dentists," Sah said.

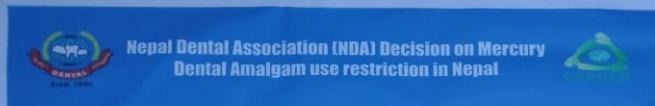
Decision to ban mercury dental amalgam lauded

KATHMANDU (REPUBLICA): The government has banned the use of mercury dental amalgam. The Ministry of Health and Population, through a minister-level decision on August 21, had issued a ban on the mercury dental amalgam last month to make the practice of dentistry free from the use of mercury. Issuing a statement, the Center for Public Health and Environment Development (CEPHED) welcomed the government's decision to ban the use of mercury. With this decision, almost all the health services have shifted to mercury free equipment, according to the statement. "This decision will enormously contribute in fulfilling the national obligation of reduction of use and release of mercury under Minamata Convention on Mercury aimed to protect human health and the environment from anthropogenic emission and release of mercury and mercury compounds," read the statement.

4.Nepal Dental Association (NDA) adopted Mercury-free Dentistry Policy in Nepal

March 2, 2019, Kathmandu, In line with different professional associations, national, regional, and global initiatives including UN Minamata Convention on Mercury taken towards Mercury-free Dentistry, Nepal Dental Association (NDA) in consultation with all concerned professional associations, societies, NGOs has declared and endorsed following public health, and environment-friendly decisions to be effective from today March 2, 2019.

Figure. NDA Nepal Decision, and Endorsement of Mercury-free Dentistry in Nepal (English)



In line with different professional associations, national, regional and global initiatives including UN Minamata Convention on Mercury taken towards Mercury Free Dentistry, Nepal Dental Association (NDA) in consultation with all concerned professional associations/societies/NGOs has taken following public health and environment friendly decisions to be effective from March 2, 2019.

1. Mercury Dental Amalgam should not be used for dental treatment of deciduous teeth, of children under 15 year and of pregnant or breastfeeding women.
2. For all other age and groups of people, Mercury Dental Amalgam should not be the first choice for dental restoration except when deemed strictly necessary by the dental practitioner based on the specific needs of the patient.
3. NDA will work with Universities, Colleges and Curriculum Development Board towards ensuring improvement in dental curriculum in line with international practices.

NDA is therefore duly inform all its District Chapters and members' dental practitioners to effectively implement these decision from their respective dental hospitals and clinics now onwards.

Dr. Pravindra Adhikari
President,
Nepal Dental Association (NDA)
Kathmandu, Nepal

Ram Charitra Sah
Executive Director
CEPHED,
Kathmandu, Nepal

Centre for Public Health and Environment Development (CEPHED), Imadol, Lalitpur, Kathmandu, Nepal
Phone/Fax: 977-1-5201786. Email: info@cephed.org.np Web: www.cephed.org.np

news

the kathmandu post | 02

Dentists commit to stopping mercury use in dental fillings

CHANDAN KUMAR MANDAL
KATHMANDU, MARCH 3

Dentists across the country have agreed to stop using mercury, a highly toxic heavy metal, for dental filling, in a step towards ensuring mercury-free dentistry.

Nepal Dental Association (NDA)—the umbrella organisation of dental surgeons in the country—together with other professional associations and non-governmental organisations working for making the health sector and environment mercury-free, has made a declaration to pursue mercury-free dentistry to protect public from its harmful effects.

As per the declaration made on Saturday the mercury dental amalgam should not be used for dental treatment of deciduous teeth of children under 15 years and of pregnant or breastfeeding women.

The dentists and other stakeholders have also agreed that for all other age groups, the mercury dental amalgam would not be taken as the first choice for dental restoration, except when deemed strictly necessary by the dental practitioners based on the specific needs of the patient, stated the declaration.

Use of dental amalgam, which is described as a dental filling for plugging cavities caused by tooth decay, is a

mixture of metals, consisting 50 percent mercury and a powdered alloy composed of silver, tin and copper.

Fillings made with amalgam also are known as 'silver fillings'.

Mercury has for long and widely been used in the country as dental filling. The toxic metal has been in use for as long as 150 years around the world. Many developed countries like Norway and Sweden have already phased out dental amalgam while others are in the process of discarding it.

Calling it a progressive movement in line with different national, regional and international dental federations as well as commitments of several other countries and dental societies for mercury-free environment and public health, Dr Pravindra Adhikari, president of the dental association, said stakeholders will be highly committed to its effective implementation.

"The Nepal Dental Association and other stakeholders have made the declaration in keeping up with different professional associations, national, regional and global initiatives including the UN Minamata Convention on Mercury taken towards Mercury Free Dentistry," he said.

According to the United Nations Environment

Programme (UNEP), the use of mercury in cavity fillings accounts for nearly 10 percent of global mercury consumption, making the dentistry sector among the largest users of mercury in the world.

UNEP estimates the global consumption of toxic mercury at between 300-400 metric tons per year.

Inaugurating the Mid-year Dental Conference 2019 with declaration and endorsement session on Mercury Free Dentistry, Dr Surendra Kumar Yadav, state minister for health and population, stressed the need for adopting mercury-free dentistry by shifting to safe dental restoration from hazardous dental amalgam.

"The government is committed to making health care services and dentistry mercury-free in its National Health Policy," said the minister.

Nepal's first ever inventory, released in January, which had measured the country's total mercury emissions, recorded that nearly 114 kgs of mercury was used by dentists in the country for dental filling. The inventory, which estimated that 6,790 kgs of mercury was released into the air in the fiscal year 2016-2017, said that an additional 28.5 kgs of mercury was released from dental colleges during academic exercises.

Besides, various studies

conducted in the past have also revealed massive consumption of mercury in various sectors of the country.

In March 2013, the Health Ministry imposed a ban on import, purchase and use of mercury-based equipment in order to make health care services safe. But the secretary-level decision failed to make any impact as the use of mercury continued for dental filling.

A mercury bio-monitoring study conducted by the Centre for Public Health and Environmental Development (CEPHED), had detected high levels of mercury exposure in 50 Nepali dentists and dental assistants.

Exposure to mercury can have adverse impact on human health such as memory loss, anxiety, hormonal disorder and mood swings.

"This decision will enormously contribute to fulfilling the national obligation of reduction in use and release of mercury under Minamata Convention on Mercury that came into effect globally on August 26, 2017," said Ram Charitra Sah, executive director and an environmental scientist at CEPHED. "We are hopeful of eliminating mercury dental amalgam use not only for children, pregnant and breastfeeding women but also among the general public and future generations."

NDA bans use of mercury dental amalgam

By A Staff Reporter

Kathmandu, Mar. 3

Nepal Dental Association (NDA) has put a restriction on the use of mercury dental amalgam in the nation, effective from March 2.

In line with different professional associations, national, regional and global initiatives including UN Minamata Convention on Mercury taken towards Mercury Free Dentistry, NDA in consultation with all concerned professional associations, societies, NGOs has declared and endorsed three public health and environment friendly

decisions to be effective from today.

The Mercury Dental Amalgam should not be used for dental treatment of deciduous teeth, of children under 15 year and of pregnant or breastfeeding women.

For all other age and groups of people, Mercury Dental Amalgam should not be the first choice for dental restoration except when deemed strictly necessary by the dental practitioner based on the specific needs of the patient.

Dr. Pravindra Adhikari, President of NDA endorsed the

aforementioned decision taken with high level commitment for its effective implementation through its all members and societies.

He also explained this as a progressive movement of NDA in line with different national, regional and international dental federation such as British Dental Association, EU Decision and FDI as well as several other countries/dental societies taken towards protection of environment and public health.

The decision came as a result of the Center for Public Health and Environmental Development

(CEPHED) campaigns to ban mercury dental amalgam use in the country from time and again and working together with several stakeholders especially with professional association like NDA, a network of over 1500 Dental Health Care Professional and practitioners all over Nepal.

This decisions that NDA and CEPHED brought together will enormously contribute in fulfilling the national obligation of reduction of use and release of mercury under Minamata Convention on Mercury that came into effect globally since

August 26, 2017, signed by 128 countries including Nepal, ratified by 102 countries (Nepal yet not ratified) and designed to protect human health and the environment from anthropogenic emission and release of mercury and mercury compounds, said, Ram Charitra Sah, Executive Director and Environment Scientist at CEPHED.

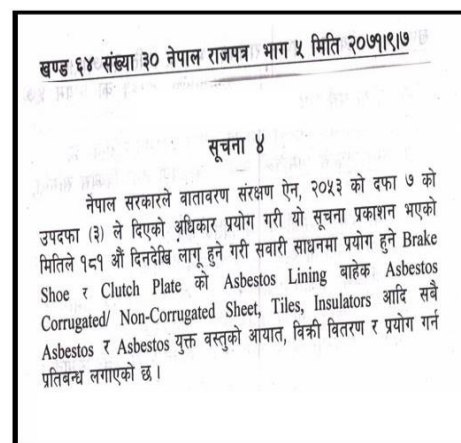
He appealed to the concerned government agencies Ministry of Health and Population (MOHP) to make robust legislation in this regard and strictly ban the use of not only mercury dental amalgams but

also other mercury based devices, products and practices.

According to the World Health Organization (WHO), Mercury is among 10th most hazardous substance of global concern to public health and environment causing neurological, developmental, reproductive problems, impairing growing nervous system, damage kidney, results tremors, impaired vision and hearing, paralysis, insomnia, emotional instability, developmental deficits during fetal development, and attention deficit and developmental delays during childhood.

5. Government Banned Import, Sale, Distribution, and Use of Asbestos

Responding our continuous research, advocacy, and follow-up to ban import, sale, distribution, and uses of the asbestos as well as environmentally sound management of the asbestos which are already in use, and becomes waste, Government of Nepal, The Ministry of Science Technology, and Environment (MOSTE) as per the provision of Environment Protection Act 1997 (Section 7, and Sub-section 3) decided to Ban of Import, Sale, Distribution, and Use of Asbestos (Corrugated , Non Corrugated Sheet, Tiles , Insulators) by publishing a notice in Nepal Gazette (Khand 64, Number 30, Part 5, Date December 22, 2014, Notice No. 4). This decision helps to protect human health as well as environment from negative consequences of Asbestos. This decision of will automatically come into effect on 181 days from the date of gazette notification.



Govt bans import, use of asbestos

POST REPORT

KATHMANDU, DEC 24

The government has banned the import, purchase and use of carcinogenic mineral fibre asbestos, which is used as construction material, saying that it is causing serious public health complications.

The Ministry of Science, Technology and Environment (MoSTE), as per the provision of Environment Protection Act 1997, published a notice in Nepal Gazette on Monday to ban the hazardous asbestos sheets and related products to protect human health as well as environment from harmful consequences due to its increasing use in the construction sector. This decision

WHO has identified that all forms of asbestos are carcinogenic and cause health complications

will automatically come into effect within 181 days after the date of notification.

A study conducted by the World Health Organization (WHO) has already identified that all forms of asbestos are carcinogenic to humans and cause various other health implications. Over 40 countries have banned the import, export and use of the material within their territories.

Human health and environment were under high risk of

getting impacted from these carcinogenic asbestos sheets used massively in many places in the country, especially in the Tarai region, according to the Centre for Public Health and Environmental Development (CEPHED).

"Since last year, civil society and experts have been advocating to address the related public health and environmental problems possibly resulted from unscientific burying of asbestos wastes in Maitighar Mandala in Kathmandu and its massive import and use in the Tarai region," said Ram Charitra Sah, executive director at CEPHED. "Now we need effective implementation of this decision," he said.

Government bans import, sale, use and distribution of asbestos

Himalayan News Service
Kathmandu, December 25

The Ministry of Science, Technology and Environment has decided to impose a ban on the import, sale, distribution and use of asbestos (in corrugated and non-corrugated sheets, tiles and insulators) as per a provision in the Environment Protection Act, 1999.

MoSTE announced the decision by publishing a notice in Section 64, Part 5 of the Nepal Gazette on December 22. The decision will automatically come into effect from the 181st day of the publication of the notice. It, however,

stated that the ban would not be applicable to asbestos lining of brake shoe and clutch plate used in motor vehicles.

According to Section 7 (3) of the Act, if it appears that the use of any type of substance, fuel, tool or device has caused or is likely to cause significant adverse impact on the environment, the MoSTE may, by a notification in the Nepal Gazette, forbid the use of such substance, fuel, tool or device.

"Using asbestos has been discouraged in Nepal, as the World Health Organisation has stated

that exposure to asbestos can cause cancer," said Jaya Ram Lamichhane, ex-president of the Federation of Contractors' Association of Nepal. "Asbestos is largely used in roofing in Nepal and is mostly used in traditional buildings."

The Centre for Public Health and Environmental Development, an NGO, which has been lobbying to ban asbestos, welcomed the government's move

the government to effectively implement the health and environment-friendly decision," Ram Charitra Sah, executive director, CEPHED said. WHO and the International Agency for Research on Cancer have identified asbestos as a cancer-causing factor, prompting around 40 countries in the world to ban its export and import.

According to WHO, asbestos causes about half of the deaths

attributed to occupational cancer, including lung cancer. Exposure to asbestos occurs through inhalation of fibres primarily from contaminated air, as well as from ambient air in the

World Health Organisation has stated that exposure to asbestos is linked to cancer

vicinity of point sources or air inside housing and buildings containing friable asbestos materials. Asbestos is used in roofing, shingles, water supply lines, fire blankets, plastic fillers, medical packing, as well as clutches, brake linings, gaskets and pads for automobiles.

and said it would help protect human health, as well as environment from negative consequences of asbestos. According to CEPHED, records at the Department of Customs show that Nepal imported about 1,195 tonnes of asbestos for use in construction work in the fiscal year 2012-13 itself.

Though it is said asbestos is also used in plastic materials, plastic manufacturers refute the claim. "Asbestos has never been used in plastic materials," said Sharad Sharma, president of the Nepal Plastic Manufacturers Association.

"We have taken the decision of the MoSTE as an appropriate response to our raised concerns and would like to appreciate this timely decision and acknowledge the efforts made by the government. We also urge

CEPHED welcomes this Government move to ban Import, Sale, Distribution, and Use of Asbestos Sheets, Tiles, and Insulating Materials in Nepal, and urges its effective implementation by all.

4. Regulating the Toxic Toys, and ensuring right to play safe of the Nepalese Children

Based on research finding CEPHED first ever conducted in Nepal, mass media campaign, advocacy, and follow up with all concerned government agencies were done. Responding to our advocacy letter to the Office of Prime Minister, and Council of Ministers (OPMCM) along with all other concerned ministries, on 6th August 2013, OPMCM called a high secretaries level meeting under the chairmanship of Mr. Udhab Prasad Devkota, Secretary, OPMCM including the representative from CEPHED. The meeting precisely heard our presentation of the actual situation of the toxic toys problem on children health in Nepal, and immediately took a very progressive decision. The decision broadly

includes following four points: Recognizing the problem of toxic toys with presence of toxic chemicals like Lead, Mercury, Cadmium, Chromium, and Bromine related based on our research report; immediate banning of toys without labeling at least about the manufacturing country, and manufacturers; market monitoring; formulation, and effective implementation of standard for all the chemicals possibly used in children toys with in 6 months, and also directed all the concerned authorities to publish, and broadcasting of public notice, and advertisement for massive public awareness about the impact of toxic chemicals in children toys.

7. Mandatory Standard of Children Toys enacted by the Government of Nepal

Responding the research based SAFE PLAY campaign of CEPHEd, Government of Nepal's Child Friendly, Health, and Environment-friendly decision by enacted mandatory **Toys Standard** through publishing a gazette notification on January 16, 2017 towards ensuring the Right to Play Safe, and Healthy of children, one third of total population of Nepal. In exercising the power conferred by the Sub Article (3) of Article 7 of Environment Protection Act 1997 shall come into effect from 181 days from the date of publication of the notice by the Government of Nepal, The Ministry of Population, and Environment (MOPE) has set the Mandatory Standard limiting the maximum value of some 12 toxic elements, and chemicals. Standard also includes broad definition of children toys, testing procedure, and mechanism of certification in case of importing toys as well as domestic toys from government accredited laboratories. This standard will take effects automatically after 181 days of date of publication of this gazette notice, and limit the maximum limit of the following chemicals in the Children Toys for all types of imported, produced, sold, distributed, and used in toys in Nepal.

खण्ड ६६) संख्या ४८ नेपाल राजपत्र भाग ५ मिति २०७३१०३

नेपाल सरकार
जनसङ्ख्या तथा वातावरण मन्त्रालयको सूचना

नेपाल सरकार, जनसङ्ख्या तथा वातावरण मन्त्रालयले वातावरण संरक्षण ऐन, २०५३ को दफा ७ को उपदफा (३) ले दिएको अधिकार प्रयोग गरी बालबालिकाहरूले प्रयोग गर्ने वा बालबालिकाहरूका लागि प्रयोग हुने खेलौनामा Heavy Metals (गह्रौं धातु) लगायतका तत्व तथा अन्य रासायनिक पदार्थहरूको मापदण्ड देहाय अनुसार रहने गरी तोकिएको यो सूचना नेपाल राजपत्रमा प्रकाशन भएको मितिले १८१ औं दिन देखि लागू हुने गरी तोकिएको मापदण्ड भन्दा बाहिरका खेलौनाहरूको नेपालभित्र आयात, भण्डारण, विक्री वितरण, उत्पादन र प्रयोगमा प्रतिबन्ध लगाएको छ :-

सि. नं.	रसायन/तत्वहरू	प्रस्तावित मापदण्ड PPM मा (अधिकतम)	प्रस्तावित मापदण्ड mg/kg मा (अधिकतम)
१	Cadmium (Cd)	७५	७५
२	Chromium (Cr)	६०	६०
३	Lead (Pb)	९०	९०
४	Mercury (Hg)	६०	६०
५	Zinc (Zn)	३७५	३७५
६	Antimony (Sb)	६०	६०
७	Arsenic (As)	२५	२५
८	Barium (Ba)	१०००	१०००
९	Selenium (Se)	५००	५००
१०	Bromine	< १००	< १००
११	Bis Phenol A	BPA Free (०)	BPA Free (०)
१२	Phthalates	< १००	< १००

यस प्रयोजनका लागि खेलौना भन्नाले बालबालिकाहरू (०-१६ वर्ष उमेर) को लागि प्रयोग हुने खेलौना तथा बालबालिकाहरूको प्रयोग गर्ने वा बालबालिकाहरूका लागि प्रयोग हुने खेलौनामा Heavy Metals (गह्रौं धातु) लगायतका तत्व तथा अन्य रासायनिक पदार्थहरूको मापदण्ड देहाय अनुसार रहने गरी तोकिएको यो सूचना नेपाल राजपत्रमा प्रकाशन भएको मितिले १८१ औं दिन देखि लागू हुने गरी तोकिएको मापदण्ड भन्दा बाहिरका खेलौनाहरूको नेपालभित्र आयात, भण्डारण, विक्री वितरण, उत्पादन र प्रयोगमा प्रतिबन्ध लगाएको छ :-

आधिकारिकता मुद्रण विभागबाट प्रमाणित गरिएको मात्र लागू हुने

5. Enactment of Cosmetic Standards

खण्ड ६६) संख्या ४८ नेपाल राजपत्र भाग ५ मिति २०७३१०३

- निर्माण गरी तथा बनाई खेल्ने (Construction Sets)
- पुतलीहरू तथा सघु स्वरूपमा निर्माण गरीएका (Dolls and miniatures)
- उड्ने, मुड्ने तथा चल्ने (Vehicles)
- पहेली समाधान गर्ने (Puzzles)

1. Nepal Standard 565: 2076, Requirement of LIPSTICK

Sl. No.	Characteristic	Requirement
i	Softening point, °C. Min	55
ii	Peroxide number, Max	10
iii	Breaking load value, Min	200
iv	Particle size of undispersed pigments, microns, Max	40
v	By Off Test	To pass the test
vi	Microbiological examination	Not more than 100 microorganism per g
vii	Lead (as Pb), mg/kg, Max	10.0
viii	Arsenic (as As), mg/kg, max	3.0
ix	Mercury (as Hg), mg/kg, max	1.0
x	Cadmium (as Cd), mg/kg, max	3.0

2. Nepal Standard 566: 2076, Requirements for SKIN CREAM

Sl. No.	Characteristic	Requirement	Requirement for baby cream:
i	Thermal Stability	To pass the test	To pass the test
ii	pH at 27°C ± 2 °C	4.0-8.0	5.5-8.0
iii	Total fatty substance content, percent, by mass, Min	5.0	5.0
iv	Total residues, percent by mass, Min	10.0	10.0
v	Lead (as Pb), mg/kg, Max	10.0	10.0
vi	Arsenic (as As), mg/kg, Max	3.0	3.0
vii	Mercury (as Hg), mg/kg, Max	1.0	1.0
viii	Cadmium (as Cd), mg/kg, Max	3.0	3.0
ix	Microbial content/limit		
(a)	Total viable count cfu/g	Not more than 1000	Not more than 100
(b)	Gram negative pathogens in 10 mL	Less than 10	Less than 10

For creams based on bee wax and borax, the pH shall be between 5.0 - 10.0

3. Nepal Standard 567: 2076, Requirement for SKIN LOTION

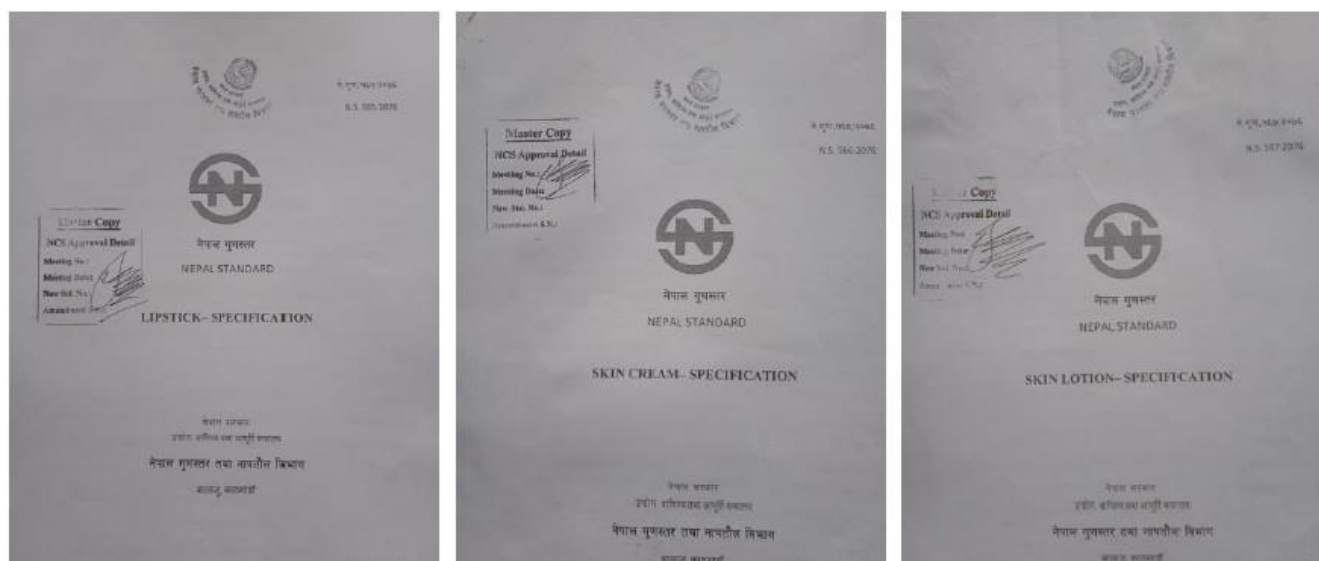
Sl. No.	Characteristic	Requirement	Requirement for baby cream:
i	Thermal Stability	To pass the test	To pass the test
ii	pH at 27°C ± 2 °C	4.0-8.0	5.5-8.0
iii	Total fatty substance content, percent, by mass, Min	5.0	5.0
iv	Non Volatile matter at 105°C, percent by mass, Min	10.0	10.0
v	Water content, percent by mass, Max	85.0	85.0
vi	Peroxide value, mg/kg, Max	10.0	10.0
vii	Lead (as Pb), mg/kg, Max	10.0	10.0
viii	Arsenic (as As), mg/kg, Max	3.0	3.0
ix	Mercury (as Hg), mg/kg, Max	1.0	1.0
x	Cadmium (as Cd), mg/kg, Max	3.0	3.0
xi	Microbial content/limit		
(a)	Total viable count cfu/g	Not more than 1000	Not more than 100
(b)	Gram negative pathogens in 10 mL	Less than 10	Less than 10

Additionally, Nepal Council for Standardization (NCS) also approved following cosmetic related standards:

- NS ISO/TR 17276:2014 Cosmetics- Analysis Approach for Screening and Quantification Method of Heavy Metals in Cosmetics
- Nepal Standards 568:2076- Microbiological Examination of Cosmetics and Cosmetics Raw Materials- Method of Test
- Nepal Standards 569:2076- Classification of Cosmetics Raw Materials and adjuncts

Responding the research based campaign lead by Center for Public Health, and Environmental Development (CEPHED), and the urgency of the issues, Nepal Bureau of Standard, and Metrology (NBSM), The Ministry of Industry, Commerce & Supplies (MoICS), Government of Nepal enacted three sets of standards for different groups of cosmetics. Honorable Minister for Industry, Commerce, and Supplies, Matrika Prasad Yadav, President of Nepal Council for Standardization (NCS) took very progressive decision, and approved Nepal Standards 2076 (2019) for Cosmetics recently on 101st Meeting of NCS, effective for all imported, produced, sale & distributed, and uses of cosmetics in Nepal. These standards serves as required guidelines for all related with Nepal Standards. Following cosmetics standards has been enacted (See pictures & details of the standard).

1. NS 565: 2076= LIPSTICK; 2. NS 566: 2076 = SKIN CREAM & 3.NS 567: 2076= SKIN LOTION



9. Protection of Lumbini World Heritage Site from environmental degradations, and Industrial Pollution.

A recent air quality study conducted at the Lumbini World Heritage Site, and in its vicinity by World Health Organization (WHO, 2013) through scientists from Indian Institute of Tropical Meteorology (IITM), Pune, India found the air quality in terms of PM_{2.5} (fine particles) to be 270 µg/m³, and in terms of PM₁₀ (bigger particles) to be 350 µg/m³ well above the National Ambient Air Quality Standard (NAAQS 2012) of Nepal, and World Health Organization's guidelines. Noise pollution and emission from heavy-duty generators are also on the rise.

Center for Public Health Environmental Development (CEPHED) raised this issue of increased environmental pollution in, and around Lumbini with the government by integrating science, and related laws.

Responding to the issues raised by CEPHED, a high level committee meeting was held at Office of the Prime Minister, and Council of Ministers (OPMCM), Government of Nepal to address pollution issues at the Lumbini Heritage Site, and surrounding area.

The meeting took the most suitable, and timely decisions, and directed all relevant ministries to act

Initiative to reduce air pollution

Himalayan News Service

Kathmandu, January 28

The Office of the Prime Minister and Council of Ministers is set to launch an initiative to reduce air pollution at the Lumbini World Heritage Site.

A high-level meeting held under Bhola Prasad Siwakoti, acting secretary of the OPMCM, has submitted a five-point strategy to tackle air pollution in the birthplace of Gautam Buddha, a source said. The move came after the Centre for Public Health and Environmental Development wrote to the

government, pointing at an alarming level of environmental pollution in the heritage site.

According to a study that Indian scientists had conducted in association with the World Health Organisation, air pollution in the heritage site exceeds the national standard. The PM25 (fine particle) at the Buddhist site is 270 µg/m³ against 40 µg/m³ set by the National Ambient Air Quality Standard of Nepal, 2012. Industrial activities and heavy and phased-out vehicles that transport raw materials and finished products of factories, especially cement

factories, are mainly blamed for air pollution around the area. Air pollution has also caused problems to domestic and foreign tourists visiting the site.

The government has directed ministries concerned to ensure that all industries operating around the heritage site implement the industrial commitment to conserving the environment around the site.

It has also assured to expedite road repair, lane expansion and construction of roads passing through the Lumbini Area, and manage traffic to curb environmental pollution.

immediately. The decisions are considered to be most welcome steps but are still awaiting full, and effective implementation. These decision are in implementation phase as a permanent air quality monitoring station has been schedule to be established in the Lumbini, the world heritage site.

N. Joint Initiatives of CEPHED with Government, Private Sector, and Community

With several government agencies (Ministries, and their respective departments), CEPHED has conducted several research, joint publication, training program as well as awareness programs. CEPHED IEC materials produced jointly with the government, and radio jingle produced by CEPHED on lead, and mercury has been adopted by the government and distributed more by multiplying their area, and scope. CEPHED has also developed medical waste management model in one of the government hospitals;

With private sector, CEPHED has been closely working with Private sectors such as paint industries, paint dealers, grill, and metal fabricating industries, and their association, private hospital, and have been successfully developed sound management system of health care waste management, mercury-free health care services, mercury-free dentistry as well as PCB free metal fabrications.

CEPHED has also worked with community level hospital where we developed the environmentally sound management of the health care waste management system at Dhulikhel and Stupa community Hospital. We also worked with Fisher folk's community to test mercury in their bodies, and fish species they reply up on. Also working with Dental health community, and have tested them for mercury contamination, and working for the mercury-free dentistry campaign.

CEPHED also has been working with several local, national, regional, and international networks working on public health, and environmental issues including the media sectors to maximize the outreaches of all the research, advocacy, and campaign we do.

Contributed many task force formed under the government agencies towards fixing several environmental quality standards, review of environmental impact assessment as well as other legislative, and institutional framework enactment, amendment, and improvements.

O. Dissemination of research findings, and program events through electronic media (radio & television, etc).

Various national, and international networks, media, as well as web portal carries the news and events of the CEPHED worldwide. Some of them are listed here In addition to printed form of fact sheet, reports, and publications, the Radio Jingle on heavy metals (Lead, Mercury, and Cadmium) were broadcasted from various electronic media.

The different FM Radio such as Metro FM, Image FM, Citizen FM, Sagarmatha Radio, Ujyalo Network, NTV, Lumbini TV, Crital TV, Sagarmatha TV, Image TV, Hamro Kathmandu, Aankhi Jhaya program, and Naya Pusta program of NEFEJ from Image TV Channel, The Himalayan TV Channel has been continuously covering the issues of Health Care Waste Management, POPs, Model Hospital, mercury-free health care services, electronic waste, CFL, Cosmetics, Lead in Paints, Artificial Jewelry, mercury in human bodies, and fish etc.

Additionally, several interviews on health care waste management, POPs, chemicals in products, chemicals in cosmetics, and artificial jewelry have been directly covered by several electronic media, and print media from the east to the west part of Nepal as we visited those areas during organizing our programs. This year, over 50 print media have covered the CEPHED news story on different field of work and research.

P. National Awareness Raising Workshop on Inclusion of High Mountain Plastic Pollution issues in UN Plastic Treaty, and Toxic lifecycle of Plastics in Nepal 2022

Successfully organised a one day National Awareness Workshop on " Inclusion of High Mountain

Plastic Pollution in upcoming UN Treaty, and Toxic Cycle of Plastic " organized by CEPHED jointly Doko Recyclers, Blue Waste to (BW2V), supported IPEN under the chairmanship of Mohan Katuwal , Advisor of CEPHED & Vice president of FNSCI,



issues Plastic Life

with and Value by

Mr.

and

Chief Guest, Honorable Minister, Mr. Ramsahay Yadav, The Ministry of Forest, and Environment (MOFE), GON. On this occasion, special guests Mr. Sanjiv Gurung from NMA, Dr. Rabindra Dhakal from NAST, Mr. Pradeep Amatya from LMC, and Mr. Gopal Prasad Aryal , DG, Department of Environment were also present and delivered their insightful remarks.

Four technical papers on different aspects of plastic pollutions including single use plastics, toxic plastic recycling, high mountain plastic pollution, status of recycling of plastic in Nepal, government initiatives, and associated challenges, and opportunities to address the issues raised were presented by Mr. Ram Charitra Sah, Mr. Nabin Bikash Maharjan, Mr. Keshab Raj Joshi, and Mr. Pankaj Panjiyar.



Q. Organized a Science Dialogue on Technological Invention for reducing Mercury exposure among the Metal Plating Workers in Nepal

A successful day long science dialogue organized by Nepal Academy of Science, and Technology (NAST) jointly with research-based organization CEPHED, and the most relevant stakeholder Federation of Handicraft Association of Nepal (FHAN) on "**Technological Invention for reducing Mercury exposure among the Metal Plating Workers in Nepal**" was turned to a very crucial, and urgently needed to fill the long standing gap of technological development to capture mercury that is being released into the environment so as to protect human health, and environment on the one hand, and protect the unique traditional practices of gold-plating on other hand. It also helps the government to implement the Minamata Convention on Mercury



6 ACTION POINTS DEMANDED BY MR. RAM CHARITRA SAH, Executive Director, and Environment Scientist of CEPHED.

1. Swift Ratification of Mercury Convention with NO EXEMPTION Hg based gold plating
2. Robust, and Efficient Technology Invention & Transfer for Mercury-free gold plating /Efficient Mercury Capture
3. Shifting to alternative plating work
4. Full PPE/OSHA to Gold plating workers

5. Larger Study on Environment. Contamination
6. Awareness raising & Capacity building

R. National, and International Recognition, and Awards

Grill Entrepreneur National Award, 2011

Recognizing the awareness activities of the CEPHED towards the PCB led oil contained transformer used in the grill industry, and its impacts to the grill workers, Grill Association have awarded Mr. Ram Charitra Sah, Executive Director of CEPHED with the National Award 2068.

On that occasion the message about the PCBs, and their use in the welding machine along with their impacts on health, and the environment were also talked by Mr. Sah. The National Coordinator Mr. Gopalraj Serchan from UNDP GEF SGP Nepal program were also present on that occasion. Several national, and international news media, and web portals had covered the news about this achievement.



Fig. Mr. Ram Charitra Sah, Executive Director, CEPHED receiving National Award 2068 of Grill Association.

2011 PEN (PCB Elimination Network) Award

Recognising the continuous hard work, and outstanding contribution of Center for Public Health, and Environmental Development (CEPHED) for raising awareness, and making access to information on POPs including PCBs, CEPHED has been awarded with the 2011 PEN (PCBs Elimination Network) award in the category of cross-cutting issues. Ram Charitra Sah, Executive Director for CEPHED, accepted the award at a ceremony at the Stockholm Convention's 5th Conference of the Parties, held in Geneva from 24 – 29 April, 2011.

The purpose of the awards is to honor outstanding achievements in the environmentally-sound management of polychlorinated biphenyls (PCBs). CEPHED has been working to minimize the use of PCB-contaminated transformer oil through research, information sharing, awareness-raising, model workshops, campaigning, and advocacy with the concerned government agencies, and others.



Fig. Mr. Ram Charitra Sah, Executive Director of CEPHED receiving UN POPs Convention's PEN AWARD 2011 from Dr. Carel Blah, President of the 5th Conference of Parties of the POPs Convention at Geneva, Switzerland on 28th April 2011.

Environment Conservation Award (2012)

June 5th 2012, On the occasion of World Environment Day 2012, Center for Public Health, and Environmental Development (CEPHED), Nepal have been awarded with Environment Conservation Award 2012 for its contribution on Environment Conservation through Research, Publications, Awareness raising, Capacity building in the area of heavy metals like Lead, Mercury, and Cadmium, POPs, PCBs. The Ministry of Environment also recognizes the pilot model projects of developing mercury-free health care services, PCB free metal fabricating (grill workshops), and environment sound health care waste management promoting non burning mode of treatment technology thus curbing the release of Persistent Organic Pollutants (POPs) to the environment. Ram Charitra Sah, Executive Director of CEPHED, received award from Honourable Prime Minister Dr. Babu Ram Bhattarai of Federal Democratic Republic of Nepal.



Figure. Mr. Ram Charitra Sah, Executive Director of CEPHED receiving Environment Conservation Award 2012 from Dr. Babu Ram Bhattarai, Honourable Prime of Federation Democratic

PCB Success Story Published in UN POPs Convention Success Story Book 2001-2011

The work carried out by CEPHED in the area of POPs, and PCBs has been well recognized nationally, and internationally. The work has been appraised at the national, and international levels by awarding the organization for its outstanding contribution on information generation awareness raising, and capacity building on POPs with concerned stakeholders. This success program of shifting from PCB POPs-based welding machine with Best Available Techniques (BAT) of Dry Welding Machines is a great shift to non-POPs sources, and hence people are saved from getting exposed to these toxic POPs chemicals. Thus this has been included in the recent UN POPs Convention's Success Story Book published by Convention Secretariat entitled "**The best way to reduce exposure to POPs is to raise awareness among unsuspecting users, and assist them with substitution: An example from Nepal**". Also can be seen, and download from.



Figure . Success Story book of UNEP /Stockholm Convention carry CEPHED success story on PCB written by Ram Charitra Sah, ED, CEPHED

<http://chm.pops.int/convention/media/publications/tabid/506/default.aspx>

UNDP GEF SGP AWARDS

CEPHED has presented the Project Concept, and program activities in the first Learning cum Review Training Workshop in December 2009, organized by Pragati Nepal, in July 2010 organized by IRDC, and also in January 2011. CEPHED had been given the Outstanding Award for Innovative Program for

the year 2009, and First Prize in the year 2010 for presenting, and displaying the project related activities.

Best paper Awards 2015:

CEPHED research based scientific paper on Bio-Monitoring of Mercury Contamination in Human Body, and Policy Influences in Nepal presented Mr. Ram Charitra Sah, Executive Director of CEPHED in First National Summit of Health, and Population Scientist of Nepal from April 11-12, 2015 received best paper award from Nepal Health Research Council, Government of Nepal



Figure. Best Paper Award 2015 from Nepal Health Research Council, Government of Nepal

Environmental Conservation Award 2016

On the occasion of World Environment Day, Mr. Ram Charitra Sah, Executive Director of CEPHED have been honored with Environment Conservation Award 2016 by K.P. Sharma Oli, Rt. Honorable Prime Minister of Federal Democratic Republic of Nepal, recognizing my works for environment conservation, chemical safety, and protection of public health.



Figure. Mr. Ram Charitra Sah, Executive Director of CEPHED received Environment Conservation Award on June 5th 2016

WWF Nepal Conservation Award 2020

CEPHED received " WWF Nepal Conservation Award 2020" for its work in the field of environment conservation and protection of public health. The organization has played a key role in reducing chemical pollution through elimination of Persistent Organic Pollutants (POP) and making mercury-free health care services, and mercury-free dentistry in Nepal. That would have otherwise loaded the environment, air, water, river which flows through biodiversity reached areas including national parks of Nepal inhabited by many endangered floras, and fauna. Thanks to WWF Nepal, a panel of esteemed judges, and all supporting individuals, organizations, regional, and global networks, and funding agencies. pls see details about the prize, and awardees announcement

https://www.wwfnepal.org/.../wwf_nepal_conservation.../



FIRST IN ASIA AWARD 2022



The World Alliance for Mercury-Free Dentistry proudly announces its "First in Asia" Award to Ram Charitra Sah of Kathmandu, head of the very vibrant, and effective NGO Center for Public Health, and Environmental Development (CEPHED) Nepal.

Nepal is the first country in all of Asia to achieve mercury-free dentistry! The World Alliance for Mercury-Free Dentistry, based in Washington with projects in 50 countries, provides this unique award that recognizes both the NGO leader who made it happen and the nation who came first.

"The quite challenging multi-year campaign to rid Nepal of toxic mercury win was engineered by Ram Sah." said Charlie Brown, president of the World Alliance. "Deeply appreciative of Mr. Ram, we give this award to recognize his years of service for the people, and environment of Nepal, and the Himalayas." "Ram Sah is recognized as one of the outstanding NGO leaders in Asia –, and indeed the world," said Siddika Sultana, director of the Asian Center for Environmental Health in Dhaka. "We are proud that our South Asian neighbor Nepal has gone to mercury-free dentistry, and we salute my friend Ram for leading the way."

S. Media Outreach

Various national, and international networks, media, as well as web portal carries the news and events of the CEPHED worldwide. Some of them are listed here.



T. Dissemination of the IEC materials, and other publications

Dissemination of the hard copy publications

All the hard copy publications (posters, briefing papers, books, etc), and their contents related to POPs have been under massive dissemination through mass media, workshops, training programs, interaction programs as well as also distributed in the suitable forum such as government organized program on chemicals, and waste topics.

Dissemination message about Health Care Waste Management, and POPs through electronic media (radio & television, etc).

In addition to printed form of fact sheet, reports, and publications, the Radio Jingle on heavy metals (Lead, Mercury, and Cadmium) were broadcasted from various electronic media.

The Metro FM Radio has been continuously covering the issues of Health Care Waste Management, POPs, and Model Hospital issues as well as electronic waste related issues.

Additionally, several interviews on health care waste management, POPs, chemicals in products, chemicals in cosmetics, and artificial jewelry have been directly covered by several electronic media, and print media from the east to the west part of Nepal as we visited those areas during organizing our programs.

Other electronic media such as NTV, Hamro Kathmandu, Ujyalo Network FM, British Gorkha Army FM etc have aired and broadcasted the special program, and interaction programs on chemicals in products.

U. National, and International Outreach

National Outreach

Various issues related to health care waste, POPs, PCBs, Heavy Metals, mercury, lead, and cadmium have been covered by Newspaper, magazine, radio, television program in the country,

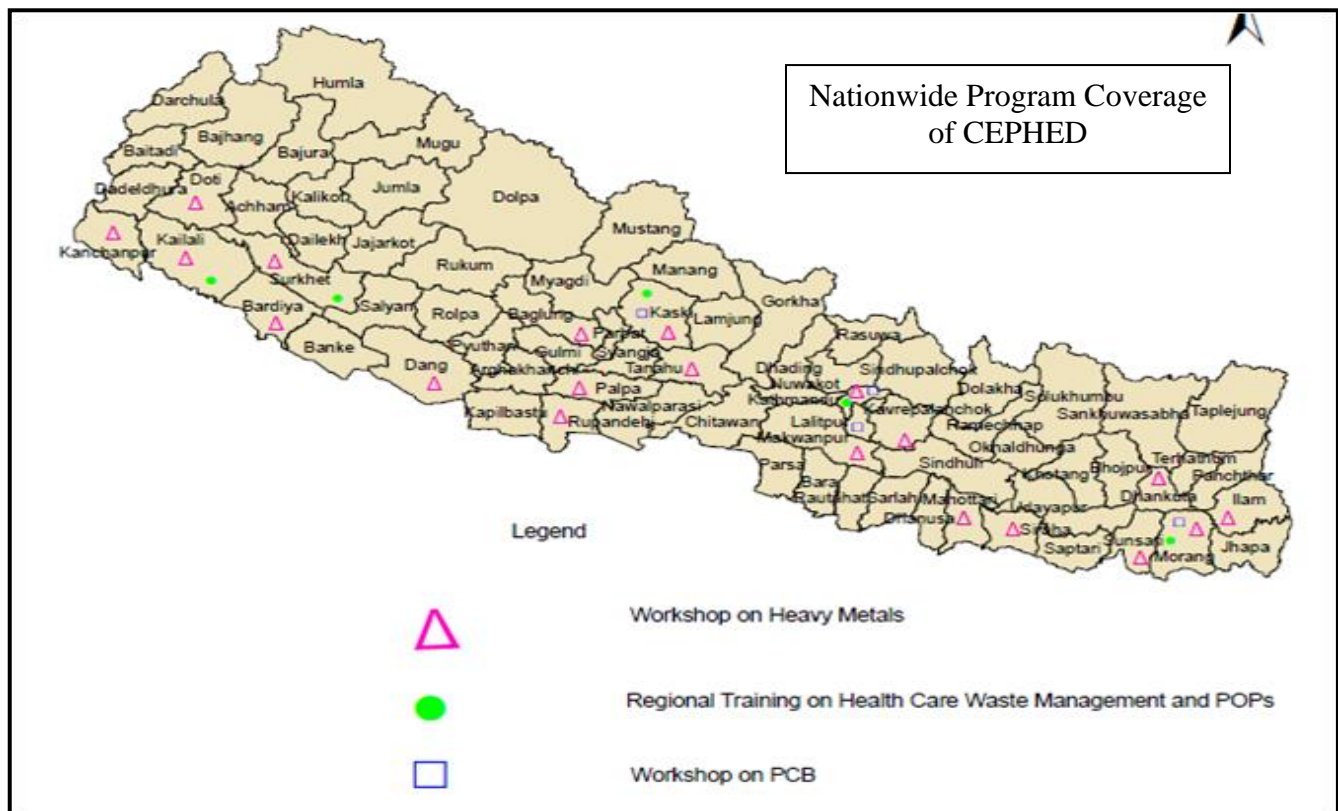
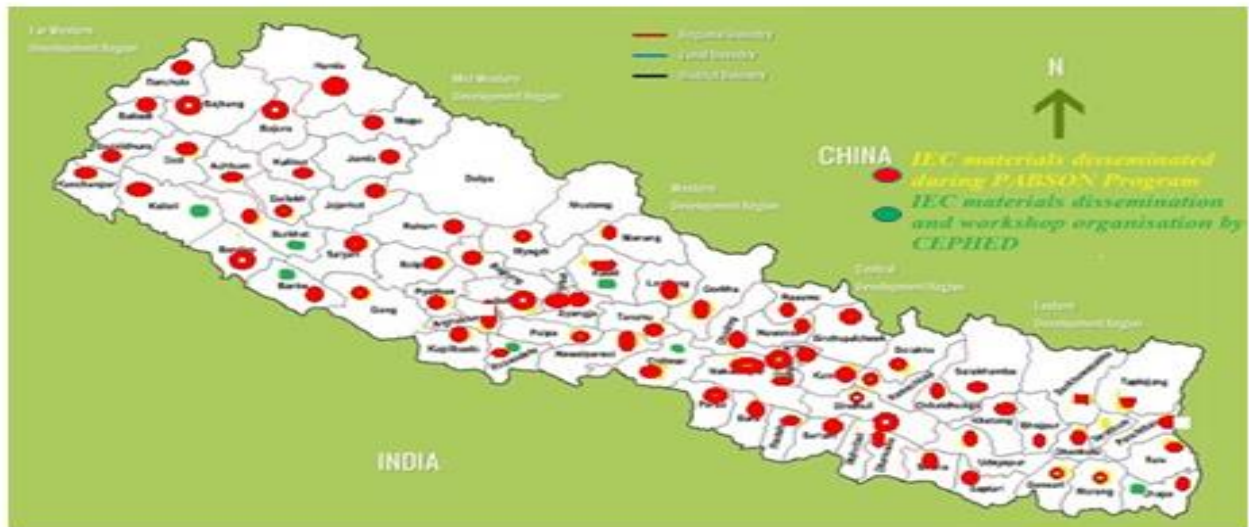
The program, and projects related to message, and information has been also carried by several National, and international web portals. Some of them are as follows.

- <http://www.nepalresearch.com/health/index.htm> is taken from <http://www.thehimalayantimes.com/fullNews.php?headline=Mercury-free+Nepal+need+of+hour&NewsID=44181>
- <http://epaper.thehimalayantimes.com/HT/HT/2010/01/01/index.shtml>
- http://www.ngoforum.net/index.php?option=com_content&task=view&id=7935&Itemid=6
- <http://epaper.thehimalayantimes.com/HT/HT/2009/12/18/index.shtml>, Page no. 14.
- http://www.gorkhapatra.org.np/detail.gopa.php?article_id=5837&cat_id=7
- Source: <http://www.zeromercury.org/projects/Nepal.html>
- <http://www.ipen.org>
- <http://www.hcwh.org>
- Toxic Post (<http://toxicslink.org/toxicpost/>), and Earth News Bulletin (<http://www.iisd.ca/chemical/pops/cop5/compilation.pdf>)
- Toxic Post (<http://toxicslink.org/toxicpost/>), and Earth News Bulletin (<http://www.iisd.ca/chemical/pops/cop5/compilation.pdf>) also carrying our project related news, and events.
- www.elaw.org
- www.unep-eplc.org
- www.pops.int , POPs Social Network of POPs convention does carry the program news and research reports.
- <http://networking.pops.int>

- <http://chm.pops.int/convention/media/publications/tabid/506/default.aspx>

Spatial and Numerical Outreach of Lead Awareness

72 / 75 district, > 50 press coverage, and 20,00,000 people



b. International Outreach

IPEN's AGM report, and event

International POPs Elimination Network (IPEN) held its Annual General Meeting at Almaty , Khazakhstan in October 2010, and CEPHED has been invited to share the finding, and outcomes of the UNDP GEF SGP supported program of CEPHED on POPs issues (Health Care Waste related Dioxin, Furan, and PCB contaminated Transformer Oil) along with the special session allocated for the UNDP GEF. Mr. Ram Charitra Sah, Executive Director of CEPHED has presented the success of POPs project implementing under GEF in Nepal which has been highly appreciated, and also included in the IPEN's AGM report 2010.

SDC Conference Abstract Publication

Similarly, CEPHED technical paper on "**Capacity Building Program for Environment, and sound management of persistent organic pollutants, and heavy metals in Nepal**" had been accepted for the presentation in the 13th Sustainable Development Conference (SDC) from December 21 to 23 December 2010 at Islamabad, Pakistan. The abstract includes the initiation of the CEPHED to address the issue of POPs has been published in the SDC abstract publication that has been widely distributed among all the national, and international conference participants, and other

Project related outcomes presentation at international forums

- **South Asia regional capacity building on New POPs at Bangkok, November 2010**

UNDP GEF SGP funded program related activities with the success stories of CEPHED on POPs issues has been presented in the Regional Capacity Building Workshop on New POPs, the Process for reviewing, and Updating NIP, and Reporting Requirements under the Stockholm Convention for Asia, Bangkok, Thailand, 23 to 26 November 2010.



Fig. Mr. Ram Charitra Sah, Executive Director, CEPHED presenting CEPHED activities on POPs in Bangkok, Thailand

IPEN General Assembly Meeting at Kazakhstan October 2010, and China 2014.

UNDP GEF SGP funded program related activities with the success stories of CEPHED on POPs issues has been presented in the IPEN Annual General Assembly from October 19 to 23 , 2010 at Almaty, Khzakhstan.

IPEN inputs for the GAELP (Global Alliance for Eliminate Lead from Paint) progress report to UNEP (16.2.2011, and 2014) do contains CEPHED activities in very broad.



Fig. Ram Charitra Sah, Executive Director, CEPHED making presentation on POPs project activities in IPEN AGM , Kazakhstan along with other GEF National Coordinators.

v. List of Publications and Documentation prepared, published, and distributed

1. TOT Training Manual 2010
2. Report of TOT on Health Care Waste Management, and POPs.
3. Report on Interaction program towards developing model hospitals at Kanti Children Hospital (KCH)
4. Regional Training Manual on Health Care Waste Management, and Persistent Organic Pollutants (POPs),
5. Report on Eastern Regional Training on Health Care Waste Management, and Persistent Organic Pollutants (POPs)
6. Waste Assessment Report of Kanti Children Hospital
7. Report of PCB oil use in Grill Workshop, and its impact on public health, and environment.
8. Report on Western Regional Training on Health Care Waste Management, and Persistent Organic Pollutants (POPs).
9. Report on Mid-Western Regional Training on Health Care Waste Management, and Persistent Organic Pollutants (POPs).
10. Report on Awareness Raising Workshop for the Grill Workers on "PCB contaminated Transformer Oil, and Its Impacts on Public Health, and Environment" of Lalitpur.
11. Report on Awareness Raising Workshop for the Grill Workers on "PCB contaminated Transformer Oil, and Its Impacts on Public Health, and Environment" Biratnagar.
12. Report on Awareness Raising Workshop for the Grill Workers on "PCB contaminated Transformer Oil, and Its Impacts on Public Health, and Environment", Pokhara.
13. Report on Awareness Raising Workshop for the Grill Workers on "PCB contaminated Transformer Oil, and Its Impacts on Public Health, and Environment", Kathmandu.
14. Report of the National Health Care Waste Management, and Mercury-free Health care program on January 13, and 14, 2011.
15. Report on Far Western Regional Training on Health Care Waste Management, and Persistent Organic Pollutants (POPs), May 15-16, 2011.
16. Radio Program Produced and Aired on Health Care Waste Management, and POPs as well as Heavy Metals from Radio Sagarmatha 102.4 M Hz . Radio Jingles were also aired continuously
17. Letter for Nomination of CEPHED for PEN Award 2011
18. Report on Nomination Justification of CEPHED for PEN Award 2011
19. Newspaper clipping with English summary submitted to the PEN Secretariat
20. Toxics Post , Toxics Link India covering POPs program information
21. IPEN inputs for the GAELP progress report to UNEP
22. IPEN General Assembly Meeting Report covering CEPHED program on POPs.
23. Sustainable Development Conference Abstract Papers Publication covering CEPHED program on POPs.
24. E-law: Advocate covering CEPHED award winning message.
25. Study report of E-Waste
26. Study report of PCB, and Inventory report of the same
27. Study report of Lead in Paints in Nepal 2010

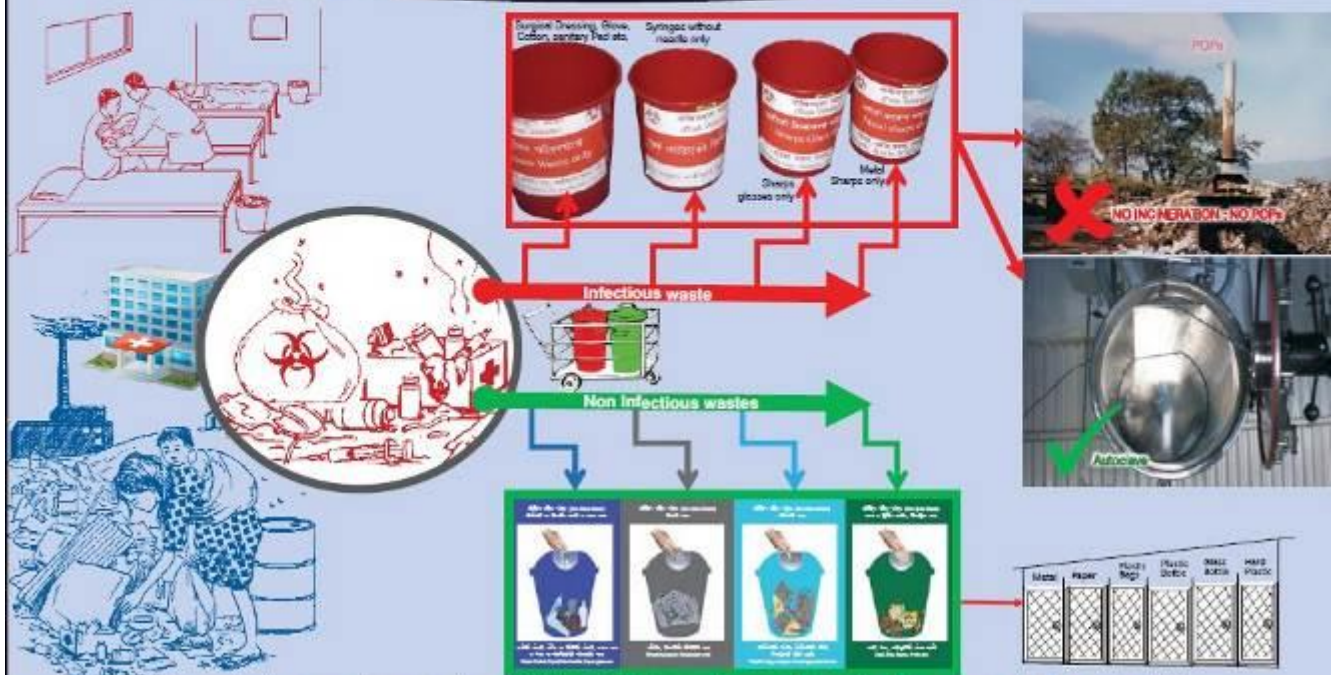
28. Double Standard " (investigating Lead (Pb) Content in Leading Enamel Paints Brands in South Asia 2011,
29. Feasibility study of Mercury-free health care services 2010
30. Strategy Paper for Mercury-free Health Care Services 2010
31. A Book o Environmental Health , a community guideline in Nepali language
32. Double Standards, Investigating Lead Content in Leading enamel Paints in South Asia Region in Nepali Language.
33. Health Care Waste Management, and POPs training cum briefing manual in Nepali language.
34. Fact Sheets on 22 POPs under Stockholm Convention in English Language
35. Study of Mercury Estimate from Health Care Sector of Nepal
36. Launching of Environment Friendly, and Safe School programs
37. Stakeholder Meeting on Lead in Paints
38. Stakeholder Meeting on Mercury-free Health Care Services
39. Journalist training on Quality environment Reporting
40. Study of Lead in Cosmetics (Lead in Lipsticks) 2012
41. study of Mercury in Cosmetics (Mercury in Skin whitening Creams, and Lotions) 2012
42. Study of Lead in Toxic Jewelry 2012
43. Study of Mercury, and wattage of selected CFL Brands from Nepalese markets 2012
44. Study of Lead in School, and household Dust 2014
45. National Report: Study of Lead in Enamel Paints in Nepal 2013
46. National Report: Study of Lead in Enamel Paints in Nepal 2015
47. Study of Hotspot of Pesticide Contamination in Pesticide Ware House (Post Disposal) 2014
48. Study of Quantification of PCB , PCB contaminated oil, and waste, Its impact on Public Health, and Environment 2014
49. Study of **Health, and Environment Hotspot for Asbestos in Terai Region** of Nepal, 2016
50. Published **National Profile of Asbestos**, October 2016.
51. **Bio Monitoring of Mercury in female of child bearing age among fisher folks, and metal plating workers**, 2016.
52. Carried out Factory Inspection System Action Research in Nepal with reference to OSH 2019
53. Study of Pesticides residues in vegetables grown, and consumed in, and around Kathmandu Valley 2020.
54. Study of Lead in Instant Noodles in Nepal 2020

IEC Materials (Electronic, and Printed format)

55. Radio Jingle on Mercury
56. Radio Jingle on Lead, and Cadmium
57. Environment Doubly on Health Care Waste Management
58. Environment Doubly on Persistent Organic Pollutants (POPs)
59. Environment Doubly on Heavy Metals (Mercury, Lead, and Cadmium)
60. Aajko Kura : CFL Management from Radio Sagarmatha
61. Khula Munch : Lead in Paints from Radio Sagarmatha
62. Big FM Pokhara on HCWM, POPs, and Heavy Metals.
63. Krishanasar FM , Bardia on heavy metals
64. Dinesh FM Dhangadhi on HCWM
65. Video Documentary on Heavy Metals including HCWM broadcasted from Nepal TV.
66. Poster on Lead in Paint (English, and Nepali)

67. Fact Sheet on Heavy Metals Lead, Mercury, and Cadmium (English, and Nepali)
68. Posters on E-Waste in Nepali
69. Posters on E-Waste in English
70. Posters on Emerging Electrical, and Electronic waste in English
71. Posters on Launching Mercury-free health Care Services in Nepali
72. Briefing paper on PCB, and Its Impact
73. Briefing paper on Mercury , an initiative towards mercury-free health care service, and mercury-free dentistry in Nepal 2015
74. Briefing paper on Electrical, and Electronic Waste Management
75. Environmental Friendly, and Safe School booklet
76. Radio Jingle on Asbestos
77. Radio Jingle on Lead paint standard
78. Radio jingle on Dental Amalagam
79. TV PSA on Lead paint Standard
80. Video Documentary on ESM of Health Care Waste management, and PCB Free Metal fabrication
81. Poster on Lead (2014, 2015) in Nepali
82. Briefing paper on Lead Paints GAELP IEC materials (Nepali)
83. Sticker, Book Markers on LEAD FREE KIDS
84. Fliers on Lead Paint Standard, and Lead-Free Kids
85. Poster on ESM of HCWM, and Mercury-free Health Care Services
86. Training Manual on Health Care Waste Management, POPs, and Mercury 2017
87. Briefing paper on Mercury (2014, and 2017)
88. Briefing paper on NEW POPs (2014, and 2017)
89. POPs & Mercury Elimination Initiatives of CEPHED documentary 2019
90. Mercury-free Health Care Service, and Mercury-free Dentistry 2019 Video
91. Radio PSA on Lead Paint Elimination 2020
92. OSH Right Newsletter , Issue 46, Jan to March, 2020
93. OSH Right Newsletter , Issue 47, April to June, 2020
94. OSH Right Newsletter , Issue 48, July to September , 2020
95. OSH Right Newsletter , Issue 49, October to December , 2020

Environmentally Sound Health Care Waste Management & Mercury Free Health Care Services



"Separate at source, harness all possibilities of **Reduce, Reuse, Recycle, Recover** and be **Responsible** for Environmentally Sound Health Care Waste Management."

Mercury Free Health Care Services

Mercury Based Chemicals and Equipments



Mercury Based Dental Amalgam Filling



Mercury Thermometer



Mercury Sphygmomanometer



Mercury Tubelight and CFLs



Mercury Based Batteries

Mercury Free Alternatives

(Safe, Reliable, Cost Effective, Durable & Environment and Public Health Friendly)



Go for composite filling and glass ionomers



Digital and Radiation Thermometer



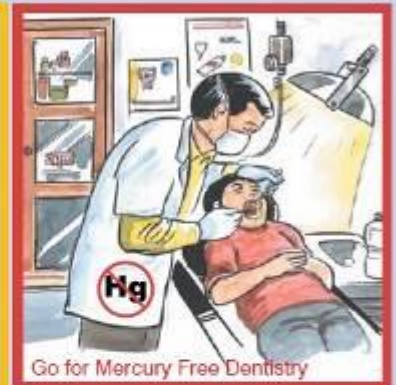
Digital and Aneroid Sphygmomanometer



LED (Light Emitting Diode) Bulb



Go for Zero Mercury Batteries



Government of Nepal, Ministry of Health and Population (MoHP), through a secretarial level decision on 2069/11/21 (March 04, 2013) decided to ban **Import, Purchase and Use** of Mercury based equipment at all government sectors and also urge to do same by private sectors from fiscal year 070/71 (July 16, 2013).

नेपाल सरकार, स्वास्थ्य तथा जनसंख्या मन्त्रालय (सचिवालय) बाट मिति २०६९/११/२१ मा आव २०७०/७१ देखि नेपाल सरकारले गर्भरीयुक्त उपकरणहरू **आयात, खरिद र उपयोग** बन्द गर्ने र निजी क्षेत्रलाई पनि सो गर्न गराउन निर्णय गरेको छ ।



Center for Public Health and Environmental Development (CEPHD)
Nayabasti, Imadol-5, Lalitpur, Nepal • Tel/Fax +977-1-5201786 • Email cephedo4@yahoo.com

Awareness and Capacity Building program on PCB Contaminated transformer oil and its impact on public health and environment in different parts of country jointly with Nepal Federation of Grill and Steel Fabricators and PCB Free Metal Fabricators Model Developments in Nepal



Lalitpur



Jhapa



Kaski

PCB Free Metal Fabrication Workshop developed in different part of country



Lalitpur



Rupandehi



Jhapa



Kaski

PCB Free Dry Welding Machine provided in different part of country



Lalitpur



Kathmandu



Bhaktapur



Kaski

Awareness and Capacity Building training on PCB in different part of country



Rupandehi



Jhapa



Surkhet



Banke



Center for Public Health and Environmental Development (CEPHED)
 Nayabasti, Imadol-5, Lalitpur, Kathmandu, Nepal
 Tel/Fax: 00977-1- 5201786,
 Mobile: 00977-9803047621
 Email: cephed04@yahoo.com, info@cephed.org.np
 Web: www.cephed.org.np



26. Reduction of POPs, and mercury from the Health Sector of Nepal through Awareness Raising, Helping CTF set up, and Policy Influence Program.

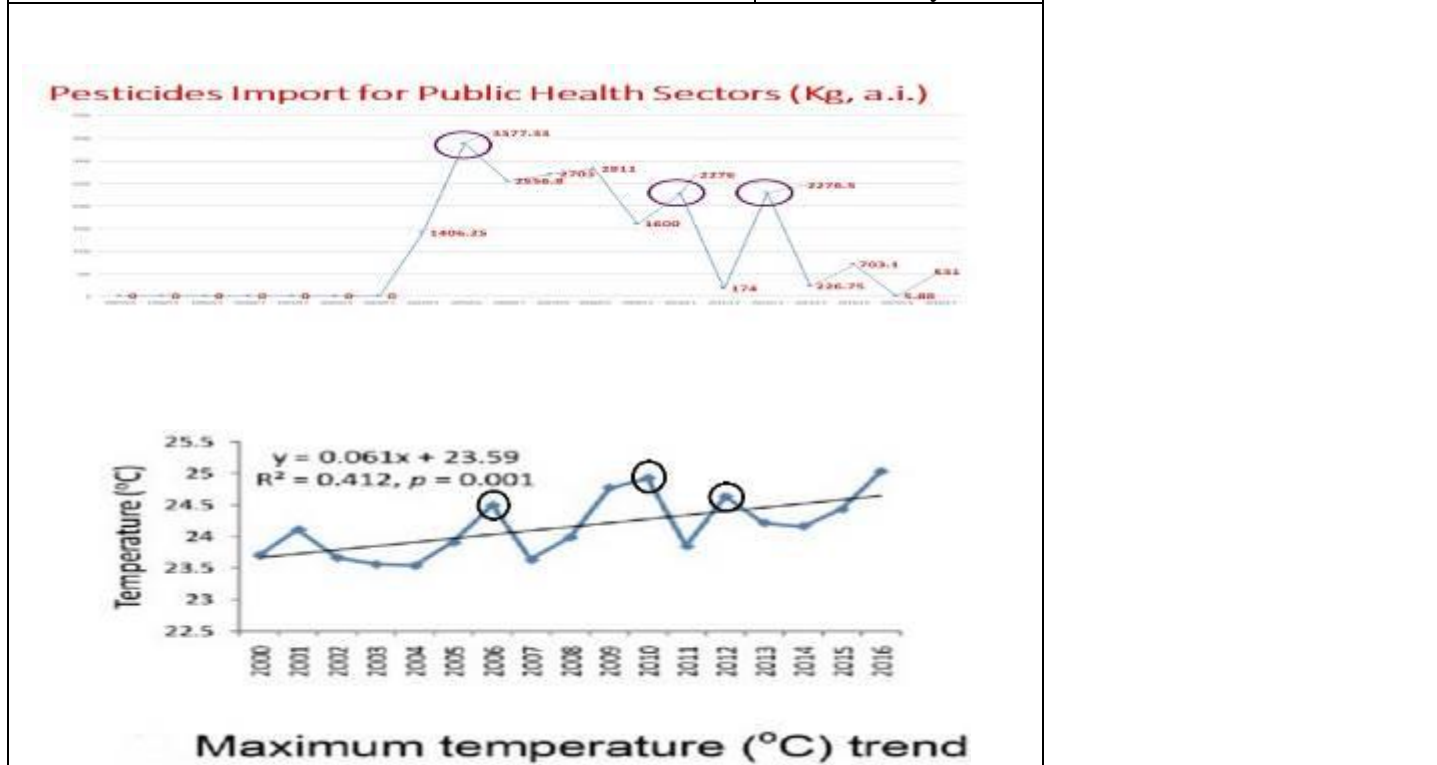
Program Area: Chitwan, and Kathmandu




Target group, intended beneficiaries, and project target

Activities	Targets	Accomplishment %	
Obj.1. The document, and disseminate information on POPs & Mercury.			
Production, and Dissemination on Poster on HCWM, and Mercury	2000	100%	
Production, and Dissemination of fact sheet on New NIP in Nepali	1000	100%	
Briefing Paper on Mercury, and Minamata Convention on Mercury	1000	100%	
Publication of Training Manual on HCWM, POPs, and Mercury	1000	100%	
Access to information through mass media(News articles)	50	>100 %	
Obj.2. Awareness Raising, and Capacity building of Health Care facilities.			
Training, and Capacity binding for Health Care Facilities	1000	1282 (128.2%)	
Training, Capacity Building, and convince for mercury-free dentistry	200+150	402(114.86%)	
Radio program on HCWM, POPs, NIP, CTFs, and Mercury	3	5 (166%)	
Video Documentary on HCWM, Mercury-free Dentistry (Production, and Broadcasting)	1	2(200 %)	
Waste Assessment towards helping CTF set up	20	20 (100%)	
Mercury-free Dentistry training in Dental College	2	2(100%)	
Mercury-free Bharatpur Rally on World Oral Health Day	500	1000 (200%)	
Obj.3. Helping setting up CTFs Model development for Best Available Technology (BAT), and Best Environmental Practices (BEP).			
Preparing /helping to join Centralized Treatment Facilities (CTFs) for medical waste management of Bharatpur, Chitwan Medical City	<ul style="list-style-type: none"> Waste Assessment and Training completed. Bharatpur Metropolitan City signed MOU with Korean Company to develop Master Plan for Solid Waste, and Health Care Waste. 		

<p>Develop one Model Hospital in Bharatpur, Chitwan for Environment Sound Management (ESM) of Health Care Waste (HCW).</p>		<p>Treatment Center constructed, Model developed at Manakamana hospital handed over formally to the hospital in May 2019</p> <p>Model Wards also developed in BPKMCH Baratpur, and formally handed over to Management system,</p>	
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<p>Obj.4. Research, and Data Generation</p> <p>Study of nexus between POPs, Chemicals, and Climate Change in context of Nepal</p>	<p>Completed, Large quantity of pesticides imported in the years of maximum heat measured years</p>	
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<p>Obj.5. Banning of Mercury, Mercury-based products, and practices, and changes medical curriculum.</p>	
<p>Banning of Mercury, Mercury-based products, and practices as well as changes in the medical curriculum.</p>   	<ul style="list-style-type: none"> •MOHP has banned import, purchase, and Use of mercury based equipment's & Mercury Dental Amalgam. •KU has already made improvement in dental curricula. •NDA has banned use of Dental Amalgam in children, pregnant, and breastfeeding mothers. •Bharatpur Metropolitan city has adopted policy & program of making metropolitan Mercury and Lead-Free •Increased number of Mercury-free hospitals, and dental clinics available.
<p>Obj.6. Advocate, and Follow-up Ratification, and Implementation of Mercury, and POPs Conventions</p>	
<p>Pursuing with the Government of Nepal to ratify the Minamata Convention on Mercury and its implementation.</p>	<ul style="list-style-type: none"> •MOFE complete MIA Report •Updated NIP for POPs Convention submitted
<p>• MOFE is preparing for Ratification of Minamata Convention on Mercury soon.</p> <p>• Second updated NIP is under implementation.</p>	

NDA bans use of mercury de

decisions to be effective from today.

The Mercury Dental Amalgam should not be used for dental treatment of deciduous teeth of children

aftermentioned decision taken with high level commitment for its effective implementation through its all members and societies.

(CEPHID) mercury dental amalgam the country from time and working together stakeholders especi

हानिकारक पारो प्रयोग नगर्न अस्पताल तयार

भरतपुर / भरतपुर महानगरपालिकाभित्रका स्वास्थ्य संस्थालाई मर्करी (पारो) मुक्त बनाउने अभियान सफलता उमुख छ । जसवास्थ्य तथा वातावरण प्रवर्द्धन केन्द्रले संयुक्त राष्ट्र संघीय विकास कार्यक्रम, विश्व वातावरण कोष, साना अनुदान कार्यक्रम नेपालको सहयोगमा सञ्चालित दुई वर्षे परियोजनाले विगत ११ महानगरपालिका गाविसमा सञ्चालन गर्दै

पुष्पाञ्जली अस्पताल र सलगाण्डकी अस्पतालले मर्करी पूर्णरूपमा प्रयोग नगर्ने प्रतिवद्धता जनाएको छ । यही भरतपुर अस्पताल, जयवृद्ध अस्पताल, मेन्स सिटी, एलाईभ अस्पताल, नारायणी सामुदायिक, मनकामना अस्पतालले दत्त धाममा पूर्णरूपमा मर्करी निषेधमा प्रतिवद्धता जनाए । यस्तै पदम डेप्टल, श्री डेप्टल लिस्मक, सम्राट्ज डेप्टल, हेलिथ स्माइल डेप्टल, फरदमर हेलिथ

भरतपुर मर्करी देशकै पहिलो स

मर्करीमुक्त देशकै पहिलो स

Dentists commit to stopping mercury use in dental fillings

dentists of central, establishing the mercury free dental fillings program in the country

Prevention (CEPHID), also been the decision to completely ban mercury dental amalgam in dental treatment of deciduous teeth of children

Additional Beneficiaries of Project:

- 300 Students benefitted from Oral Health Screening including Children with different ability
- 300 Dental Doctors in Mid-NDA conference in March 2, 2019
- 1000 Participants in World Oral Health Day Rally 2018 & 2019.
- 200 Dental Hygienist in NDHA Conference in 2018.
- 500 Dental Doctors in annual Conference of NDA November 15/16, 2019.
- 300000, and more public were benefitted from broadcasting of Documentary on Health Care

Waste Management, and Mercury-free Health Services & Dentistry from Nepal Television, Kathmandu, and Kalika Television Bharatpur, Chitawan.

- More than 1/3rd of Nepalese Population is children are getting benefitted from Children Toys Standards enacted during the project period.
- More than 50 percent of the Nepalese population (especially females, and children) are getting benefitted with enactment of Cosmetic Standards during the project.

New Publications under UNDP GEF SGP Nepal Program on POPs and Mercury





1. Training Manual
2. New POPs fact sheet
3. Mercury Briefing Paper
4. Poster on ESM of HCWM & Mercury

Released in the months of November 2017, during the TOT program on Environment Friendly Health Care Waste Management, Mercury Free Health Care Services and POPs in Nepal organized by CEPHEP.

news the kathmandu post | 02

Dentists commit to stopping mercury use in dental fillings

By A Staff Reporter
Kathmandu, Nov 11

Nepal Dental Association (NDA) has got a resolution on the use of mercury-based amalgam in dental fillings, effective from March 2.

Dr. Sunil Wadhvani, president of the association, said that the decision was taken after a meeting of all members of the association in Kathmandu on Nov 10.

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समाचार | काठमाडौं ५

भरतपुर मर्करीमुक्त घोषित देशकै पहिलो स्थानीय तह

मर्करीमुक्त महासम्मेलन
Mercury Free Metropolitan Region
भरतपुर मर्करीमुक्त घोषित
Mercury Free Health Care Services & Dentistry

भरतपुर महानगरपालिकाको स्वास्थ्य विभागले मर्करीमुक्त घोषित भएको जानकारी दिएको छ।

मर्करीमुक्त महासम्मेलनको अवसरमा भरतपुर महानगरपालिकाको स्वास्थ्य विभागले मर्करीमुक्त घोषित भएको जानकारी दिएको छ।

NDA bans use of mercury dental amalgam

According to the resolution, the use of mercury-based amalgam in dental fillings will be banned from March 2, 2018. The decision was taken after a meeting of all members of the association in Kathmandu on Nov 10.

The decision was taken after a meeting of all members of the association in Kathmandu on Nov 10.



Figure. Declaring of Mercury-free Bharatpur Metropolitan City by Chief of Health, Province No. 3, Mr. Kameshowar Chaurasia, District Public Health Office, Bharatpur, Chitwan



Figure. Signing of Declaring of Mercury-free Bharatpur Metropolitan City by Dr. Bishnu Maya Kharel, President, Nepal Dental Association Chitwan,



Figure. Participants of Dental Doctors in Mercury-free Dentistry Training workshops with Resource person Prof. Dr. Reema Joshi, 19th March 2019, Bharatpur , Chitwan



Figure. Participants supporting Mercury-free Dentistry declaration i, 19th March 2019, Bharatpur , Chitwan

चितवन पोस्ट

CHITWAN POST DAILY दैनिक समाचारपत्र

वर्ष २२ • अडक २३५ • पूर्णाङ्क ६३५६ • २०७५ वैत ६ गते बुधवार • (March 20, 2019) (Webst

भरतपुर नेपालकै पहिलो मर्करीमुक्त महानगर घोषणा

किशोर खनाल
भरतपुर। भरतपुर महानगरपालिकालाई मर्करी (पारो) मुक्त घोषणा गरिएको छ। महानगरका दुम्मा कलेज, निजी अस्पतालहरू, सरकारी अस्पताल, दौडाका चिकित्सक तथा स्वास्थ्य संस्थाहरूले मर्करीमुक्त रसायनहरूको प्रयोग रद्द गरेपछि महानगरलाई मर्करीमुक्त महानगर घोषणा गरिएको हो। घोषणासँगै भरतपुर नेपालकै पहिलो मर्करीमुक्त महानगर बनेको छ।

भरतपुर महानगर, भरतपुरका अस्पतालहरूको समन्वय र सहकार्यमा जनस्वास्थ्य तथा वातावरण प्रवर्द्धन केन्द्रद्वारा आयोजित मर्करीमुक्त स्वास्थ्य सेवा र मर्करीमुक्त इन्त चिकित्सा सेवासम्बन्धी कार्यशाला गोष्ठीमा मर्करीमुक्त महानगर घोषणा गरिएको हो।

'मर्करी स्वास्थ्यको लागि घातक रसायन हो, पहिले भरतपुरका अस्पतालहरू तथा इन्त चिकित्सकहरूमा प्रयोग गरिन्थ्यो, कहिले सधैँ स्वास्थ्य संस्थाबाट हटाइएको छ जनस्वास्थ्य तथा वातावरण प्रवर्द्धन केन्द्रका कार्यकारी निर्देशक रामचरित्र साहले भने। पछिल्लो समय भरतपुर कुनै अस्पतालहरूमा पनि मर्करीको प्रयोग नभैकोछ भन्ने भरतपुर महानगरलाई नेपालकै

पहिलो मर्करीमुक्त महानगर घोषणा गरिएको उनले बताए। कार्यशाला गोष्ठीका उन्मुख अतिथि जिन्ना स्वास्थ्य कल्याण भरतपुरका कामेन्चर नीरसिंहले मानव स्वास्थ्यलाई असर गर्ने १०

सुझाव दिएका थिए। विभिन्न अस्पतालका प्रतिनिधिक, इन्त चिकित्सक तथा स्वास्थ्यकर्मीहरूले घोषणा मञ्चिएको व्यानरमा हुलाकघर गरी मर्करीमुक्त स्वास्थ्य सेवा र

मर्करीमुक्त इन्त चिकित्सा सेवा प्रवाह गर्ने प्रतिबद्धता गरेका थिए। गोष्ठीमा निजी अस्पताल समन्वय समितिका सचिव विष्णु अधिकारीले महानगरका कुनै निजी अस्पतालहरूले घातक रसायन मर्करीको प्रयोग नगरिएको बताए।

उनले भने, 'केही समयअगाडिदेखि नै निजी अस्पतालहरूमा मर्करीको प्रयोग भएको छैन, अब पनि प्रयोग नगर्ने प्रतिबद्धता जनाउँछु।' मर्करीमुक्त रसायनहरू तापक्रम राख्ने सर्भोमिटर, रक्तचाप मापने

रुहेका रामचरित्र साहले बताए। कार्यक्रममा नेपाल डेप्टम एजोसिएसन चितवनको अध्यक्ष डा विद्यामाया खरेले भरतपुर महानगरका डेप्टम अस्पताल तथा चिकित्सकहरूले मर्करीमुक्त इन्त चिकित्सा सेवा प्रवाह गरिरहेको बताइन्।

उनले भनिन्, 'भरतपुरमाथि होइन, चितवनको इन्त सेवालाई मर्करीमुक्त बनाउने अभियानमा हामी सामेल छौं।' नेपाल डेप्टम एजोसिएसन चितवन शाखाले चिकित्सकलाई नै मर्करीमुक्त इन्त चिकित्सा बनाउने निर्णय गरेको छ।

नेपाल सरकार स्वास्थ्य तथा जनसंख्या मन्त्रालयबाट मर्करीमुक्त उपकरणहरूको आयात, खरिद तथा उपयोगमा बन्दोबस्त गर्ने दुरगामी निर्णय यसअघि नै गरिसकेको छ। सन् २०११ जेठबाटै ५० मा बेचिन बन्द तथा वातावरणमा फ्यासफले बेसाहस नै मर्करीमुक्त बनाउने बन्दोबस्त राष्ट्र सघीय मितमा मर्करी महासन्धिमा हुलाकघर गरेको छ।

मर्करी महासन्धि सन् २०१४ अक्टु २६ तारिखबाट अन्तर्राष्ट्रिय कानूनको मान्यता प्राप्त गरिसकेको छ। हालसम्म महासन्धिमा नेपालमाथि १२० वटा देशहरूले हस्ताक्षर गरेका छन् भने १०२ देशले अनुसन्धानसमेत गरिसकेको छ।



. Bharatpur, First Mercury-free Metropolitan City Declared

भरतपुर मर्करीमुक्त घोषित देशकै पहिलो स्थानीय तह

सविता श्रेष्ठ

सिंहदर, वैत ५

भरतपुर महानगरपालिकालाई मंगलवारदेखि मर्करी (पारो)मुक्त महानगर घोषणा गरिएको छ। महानगरपालिकामा रहेका स्वास्थ्य संस्था तथा डेन्टल क्लिनिकमा मर्करीको प्रयोग हटाएर महानगरपालिकालाई मर्करीमुक्त महानगर घोषणा गरिएको हो। भरतपुर महानगरमा स्वास्थ्य तथा दन्त चिकित्सा सेवा मर्करीमुक्त जनस्वास्थ्य तथा वातावरण प्रवर्द्धन केन्द्रले सन् २०१७ को जनवरीबाट महानगर क्षेत्रमा काम गर्दै आएको छ।

नेपाल सरकार, स्वास्थ्य तथा जनसंख्या मन्त्रालय सचिवालयबाट २०६९ फागुन २१ मा आर्थिक वर्ष २०७०/७१ देखि नेपाल सरकारले मर्करीमुक्त उपकरणहरू आयात, छुट्टाएर उपयोग गर्न र निजी क्षेत्रलाई पनि सो निर्णय पालना गराउने निर्णय गरेको थियो। भरतपुरलाई मर्करीमुक्त घोषणा गर्न विशेष कार्यक्रम आयोजना गरिएको थियो।

प्रदेश नम्बर ३ का स्वास्थ्य प्रमुख कामरेक चौरेसियाका अनुसार सरकारले पाँच वर्षअघि नै गरेको निर्णयलाई पालना गर्दै देशमै पहिलो स्थानीय तहको रूपमा भरतपुर महानगरपालिका मर्करीमुक्त घोषित भएको हो।

मानव स्वास्थ्यमा नकारात्मक असर पार्ने मर्करी स्वास्थ्य क्षेत्रमा मात्र नभई कुनै पनि क्षेत्रमा प्रयोग हुन नहुने उल्लेख गर्दै चौरेसिया भन्दछन्, 'मर्करी मानिसको शरीरमा प्रवेश गरेपछि स्मरण-शक्ति र हुने-बुझ्नुमा हास आउँछ भने बच्चाको विकासमा अग्रोप हुनुका साथै फोक्सो, मृगौला लगायत अंगमा प्रत्यक्ष प्रभाव पार्छ।'

स्वास्थ्य क्षेत्रमा मर्करी रसायन, मर्करीयुक्त उपकरणहरू प्रयोग गरिने प्रचलन रहेको स्वास्थ्य तथा वातावरण प्रवर्द्धन केन्द्रका कार्यकारी निर्देशक रामचन्द्र साह बताउँछन्। स्वास्थ्य संस्थामा प्रयोग गरिने मर्करीयुक्त तापक्रम नाप्ने थर्मिटर, रक्तचाप नाप्ने ब्लड-प्रेसर मिटरको प्रयोग गर्ने क्रममा उचित व्यवस्थापन नहुँदा स्वास्थ्यकर्मी, चिरामी र बिद्युतीयक कुरवालाहरू असर पर्ने उनले बताए। यस्तै, दन्त चिकित्सा सेवामा दूत धर्तको लागि मर्करीयुक्त अमल गमको प्रयोग



भरतपुर महानगरपालिकालाई मर्करीमुक्त महानगर घोषणा कार्यक्रममा हस्ताक्षर गर्दै प्रदेश ३ का स्वास्थ्य प्रमुख कामरेक चौरेसिया।
सविता श्रेष्ठ/नागरिक

हुँदै आएको छ। नेपालमा स्वास्थ्य संस्थामा सबैभन्दा बढी मर्करीको प्रयोग गरेको। त्यसैले स्वास्थ्य क्षेत्रलाई प्राथमिकता दिएर मर्करीमुक्त बनाउने काम गरिएको निर्देशक साहले बताए। यसबाहेक लाइट्स, मेकअपका सामग्री, खेलौना, टुलगायत मर्करीको प्रयोग हुने गरेको छ।

नेपालमा पनि पछिल्लो १० वर्षको अवधिमा मर्करीबाट 'पेइजन्टिड' भएर दुई सय मानिसको मृत्यु भएको तथ्यांक छ। साथी समुदायका मानिस, अस्पतालमा काम गर्ने डेन्टल डाक्टर, नर्स, मुर्तिमा मुनको जलप लगाउने काम गर्ने कालीगढमा मर्करीको मात्रा बढी पाइएको छ।

विश्व स्वास्थ्य संगठनका अनुसार मानव स्वास्थ्य र वातावरणमा असर पार्ने १० प्रमुख रसायनमा मर्करी पनि एक हो। मर्करी मानिसको शरीरमा एक पटक प्रवेश गरेपछि हटाउँदैन भने नयाँ पुस्तामा पनि वंशाणुगत रूपमा प्रभाव प्रसार हुँदै जान्छ।

वन तथा वातावरण मन्त्रालयले सन् २०१२ को अक्टोबर १० मा संयुक्त राष्ट्र सभामा मर्करी महासन्धिमा समेत हस्ताक्षर गरेको छ। महासन्धिले २०१७ को अगस्ट २६ बाट अन्तर्राष्ट्रिय कानुनको मान्यता पाएको छ। एक सय तीन देशले अनुमोदन

गरिसकेको सो महासन्धि नेपाल सरकारले तयारी गरिरहेको छ।

नेपाल डेन्टल एसोसिएसन चितवनकी अध्यक्ष डा. विष्णुमाया खरेल एसोसिएसनले गत फागुन १८ गतेबाट लागू हुनेगरी मर्करीमुक्त दन्त चिकित्सा सेवा बनाएर वातावरण र जनस्वास्थ्य मैत्री निर्णय गरेको बताउँछिन्। भरेर जाने दुधे दूधमा १५ वर्ष मुनिका बालबालिकाको दूधमा र गर्भवती महिला वा शिशुलाई दुध खुवाउँदै गरेका महिलाहरूको दूधको उपचारमा मर्करीमुक्त डेन्टल अमल गमको प्रयोग पूर्णतया बन्द गरिएको उनले बताइन्।

एसोसिएसनले विश्वविद्यालय, कलेज एवं पाठ्यक्रम विकास बोर्डसँग सरकार गरी अन्तर्राष्ट्रिय अन्वयसर्ग मेल खाने गरी दन्त चिकित्सा शिक्षाको पाठ्यक्रममा सुधार गर्न पहल पनि गरिएको छ। पछिल्लो तीन वर्षको प्रयासपछि निजी अस्पताललाई मर्करीमुक्त बनाउन सिकाएको निजी अस्पताल समन्वय समिति, चितवनका सचिव विक्रम अधिकारी बताउँछन्। 'अघिल्लो वर्षबाट अस्पतालमा मर्करीको प्रयोग गरिएको छैन,' उनले भने, 'आगामी दिनमा पनि निजी अस्पतालमा मर्करीको प्रयोग नहुने प्रतिवद्धता ल्याउ गर्छु।'

27. Celebrating International Lead Poisoning Prevention Week of Actions (ILPPWA 2019), October 21-27, 2019, Nepal

Effective implementation of Lead Paint Standard through celebrating International Lead Poisoning Prevention Week of Action in Nepal

Center for Public Health, and Environmental Development (CEPHED) Nepal celebrated the seventh International Lead Poisoning Prevention Week (ILPPW 2019) urges governments to effectively implement legislation, and envision for blood lead level abatement policy, and programs to protect children's health. Center for Public Health, and Environmental Development (CEPHED) jointly with the National Health Education, Information, and Communication Center (NHEICC), MOHP, Department of Environment, The Ministry of Forest, and Environment (MOFE), Pokhara Metropolitan City, Department of Community Medicine, MMC, IOM, Maharajgunj supported by WHO country Office for Nepal.

Global Alliance to Eliminate Lead Paints (GAELP) is a global joint initiative of WHO, and UNEP with the goal of preventing children's exposure to lead via paints containing lead, and minimizing occupational exposure to lead in paint.

1. October 20, ILPPW 2019 KICK OFF PRESS MEET at Reporters Club of Kathmandu.

Successfully organized press meet Kick Off program of International Lead Poisoning Prevention Week -2019 with the support of WHO Country Office for Nepal. Well participated by some 30 representatives of different media (Newspaper, TV. Radio, Online, etc.) as well as concerned government agencies, paint industry, Nepalese Cottage, and Small industries, Consumer Forums, NGOs, etc.



Figure. Press Meeting on International Lead Poisoning Prevention Week (ILPPW 2019) in Nepal

October 24, 2019, Stakeholder Workshop on Effective Implementation of Lead Paint Standard in Nepal at Hotel Deep Sagar, Pokhara, Nepal

Successfully organized a day long Stakeholder Workshop on Effective Implementation of Lead Paint Standard in Pokhara, Nepal in line with International Lead Poisoning Prevention Week of Action 2019 were participated by 70 of senior policy level Officials from



different ministries of the Gandaki Province including The Ministry of Social Development, The Ministry of Finance, Pokhara Metropolitan City, Different Health Care, and Toxicologist professionals from different medical college, and hospitals, NGOs, and media houses were .



Figure. Group picture of participants

Interaction Program on Abatement of Blood Lead Level (BLL) among Nepalese Children, IOM TU, Maharajunj, Kathmandu

An Interaction Program on Abatement of Blood Lead Level (BLL) among Nepalese children were organized by Organized by CEPHED in close coordination with the National Health Education, Information, and Communication Center (NHEICC), The Ministry of Health, and Population (MOHP); Department of Environment, The Ministry of Forest, and Environment (MOFE), Government of Nepal, and Department of Community Medicine, MMC, Institute of Medicine (IOM), Kathmandu well participated by over 100 medical doctors, and faculties.



Figure. Participants of Interaction Program on Abatement of BLL among Nepalese Children at IOM, TU, Maharajunj



Figure: Four Technical Paper Presentation By Mr. Ram Charitra Sah, Dr. Vivek Panta, Dr, Khem Karki, and Mr. Raja Ram Shrestha



Figure. School Program Banner at Rastriya Secondary School, Pokhara, Kaski, Nepal, and Group picture with Participants of the School training, and orientation program at Rastriya Secondary School. Pokhara, Kaski, Nepal



Figure 20. Banner, and Participating student of the School Training, and Orientation Program at Subhkamna Academy, Kirtipur

Massive Media Coverage achieved helping mass public awareness

<https://myrepublica.nagariknetwork.com/amp/celebration-of-int-l-lead-poisoning-prevention-week-2019-begins-in-nepal/>

<https://www.nepal24hours.com/high-level-of-lead-paint-among-nepali-children-study/>

<http://www.setoghar.com/archives/56765/10/>

https://www.reportersnepal.com/2019/10/355964?fbclid=IwAR1M3dSOI-xgcd6v06SywKNHaafaq0Vm1HyvSBuyHwlypHRHqkwQ0E_CaQ

<https://www.facebook.com/ReportersNepal/videos/960910014266930/>

<https://www.facebook.com/100015321855431/videos/684386298748759/>

<http://therisingnepal.org.np/epaper/showimage?img=uploads/epaper/2019-11-17/7f398df12015c09b2cc65f1a6facfa21.jpg>

In addition, there are number of news coverage on TV, and on Radio

TV News from: Prime TV, Junta TV, New 24

Radio interviews, and news: Thana Sanchar, Radio Sagarmatha, Image FM, Rajdhani FM etc.

28.Reduction of POPs, and Mercury from Health Sector of Nepal through Awareness Raising, Helping CTF set up, and Policy Influences

Persistent Organic Pollutants (POPs) are chemical substances that persist in the environment, bio-accumulate, and bio-magnify through the food web, and pose a risk of causing adverse effects to human health, and the environment. Mercury is toxic heavy metal of global concern. The **Minamata Convention on Mercury** is an international treaty designed to protect human health, and the environment from anthropogenic emissions, and releases of mercury, and mercury compounds.

The project is aimed to reduce mainly the unintentional sources of pops from waste burning at health care setting as well as in open burning, and most toxic heavy metal chemicals like mercury (Hg), mercury based products, and practices earlier used massively in the health sector of Nepal.

Small thermometer, each containing mercury are enough to contaminate our lake, and water bodies, piled up in trash. Medical waste incineration throwing toxic fumes skywards. Dioxin, Furan also known as Persistent Organic Pollutants (POPs), and Mercury from waste incinerators fall to earth, entering into water we drink, fish & animal we eat, poisoning our bodies, bodies of professionally vulnerable community such as fisher folks, and health care professionals including dental doctors, nurses, waste handlers, and more of developing brains of our children, people are facing increased health, and environmental implications.

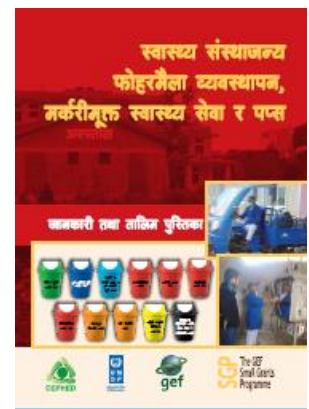
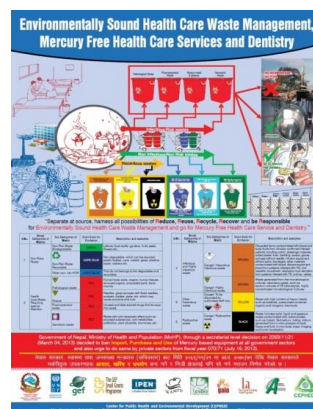
The problem of POPs is increasing with increase the number of listing of new POPs in the Stockholm Convention to which Nepal is party since 2007, and chemicals like Mercury in the Minamata Convention to which Nepal is signatory since 2013, preparing for ratification along with mounting evidence of impacts. The POPs and Mercury residues has been traced in soil, water, aquatic animals like lake fishes, and vegetables grown, and marketed into Nepal especially of the urban area including capital city Kathmandu. The recent bio-monitoring of Mercury in fish, fisher folks (male, and female), health professionals (Dental Doctors, Nurses, and Waste handlers), and people with mercury dental fillings confirmed 100 % of mercury contamination in their bodies (CEPHED 2012/13). Though there is some degree of awareness among the related stakeholders such as health communities, awareness rising among all the concerned need to be continued with additional new people, and stakeholders. The health sector of Nepal still dominant sources of use, release, and mishandling of mercury-based products, and practices as well as POPs release though adopted open burning to use of incinerators non complying the government standard. Thus there is a need for a sectoral shift to safer, and environmentally friendly alternative products, and practices to make substantial elimination of toxic chemicals like Mercury, and POPs. The proposed project area is Chitwan Medical City of Nepal (comprising of 2 Medical College, and **26 Health Care Facilities** (Private, Community, and Public with some 3108 Bed, 515 Doctors, 838 Nurses, 353 para-medics, and 1122 admin/support staffs (Bharatpur Metropolitan Town Profile 2014/15), and about 100 Dental hospitals/clinics etc. comprising about 85 Doctor, and 70 dental hygienist, and assistants) will be declared as the first Mercury-free Medical City of Nepal through shifting all (general, and specialized, public, community, and private) health care facilities including dental hospitals/clinics to mercury-free alternate measuring equipment's and practices. The additional realization of Centralized Treatment Facilities (CTFs) for all small, and large hospitals as model for environmentally sound management (ESM) health care waste (HCW) system development including development of one demonstration model hospital has proposed with the support of Metropolitan City, Private Hospital Co-ordination Committee, and Nepal Dental Association, Chitwan Branch. These important works has able to leverage additional international technical expertise support (ensured by IPEN, and WAMFD). This will also help in Government (MOH, and SWMTSC) prioritized plan of action towards developing CTFs in Bharatpur, Chitwan to address increased issues of health care waste management.

Thus generating new information on new POPs, Study of POPs, and Climate Change nexus, awareness raising, and capacity building on POPs, and Chemicals (mercury), declaring the Bharatpur as first Mercury-free Medical City, and helping for developing CTFs are very important yet specific activities proposed including a demonstration model of health care waste management development in one of the most interested hospital Manakamna Hospital Pvt. Ltd. to showcase the reduction of POPs, and Mercury in Bharatpur, Chitwan. **Summary of the project progress for the first year of implementation 2018/2019**

- Continue dissemination of all four types of publications
- Waste Assessment, and training program for the second year in 6 hospitals, and training in 8 Hospitals.
- Model development completed, and formally handover to Manakamna Hospital
- Mercury-free Dentistry decision has been made from professional association like Nepal Dental Association (central), and Nepal Dental Association Chitwan
- Celebration of world Oral Health Day as the part of Mercury-free Dentistry Week of Action
- Training programs on Health Care Waste Management and POPs have been conducted in all hospitals' schedules, and major Bharatpur Hospital, and PBKMCH Cancer Hospital.
- Training on Mercury-free Dentistry has been organized, and Bharatpur Metropolitan City has been declared the first Mercury-free Metropolitan City of Nepal.
- Research completed on Nexus between POPs and Climate Change has been completed and disseminated.
- The training program, and launching of Mercury-free dentistry in Province No. 1, and 2 have been also completed during the extended period of project till December 2020.

1. IEC Materials distributions, Documentation, Research Reports preparation, and Production

Since the beginning of the program, and even before, several news articles on Health Care Waste Management, POPs, POPs Convention, and Mercury issues related to medical waste management have been published on different newspapers. This had helped us to outreach the issues of the health care waste management with the wider people, and concerned government officials. IEC Materials (POPs Briefing paper, Mercury Briefing Paper, Poster, and Training manual on POPs) were widely distributed throughout the year in different program organized in Kathmandu, Pokhara, and Bharatpur.



2. Waste Assessment, Training , capacity building, and Model Development for Health Care Waste Management





Training modules were delivered comprising of entire life cycle of the health care waste right from its generation, collection, transportation, treatment, and disposal as per the Government of Nepal Health Care Waste Management Guideline 2014 as well as related laws, policies, conventions, and guidelines. An additional session on mercury-free health care facilities, mercury-free dentistry, liquid waste management, and waste management initiatives of all health care facilities of the Bharatpur Medical City was also delivered along with the screening of mercury spill management toolkits video.



29. Mercury-free Janakpur Dham, Province No. 2, Launched

Honorable Health Minister Nabal Kishor Sah, The Ministry of Social Development, Province No.2 with known reprotoxic impact of Mercury assured to make Janakpur Dham of Central Nepal Mercury-free. He emphasize the absolute needs of awareness raising about toxic effects of mercury so as to accelerate the Mercury-free Movement not only in Jankapurdham but also to make whole province no. 2 of Nepal Mercury-free. He assured that if needed even laws and bills can be made to address the problem of heavy metals including Mercury.

मर्करीमुक्त प्रदेश बनाउने प्रतिबद्धता



प्रदेश, भदौ १५ (काठमाडौं)- प्रदेश २ का सामाजिक विकासमन्त्री नवलकिशोर साहले प्रदेशलाई मर्करी (पारा) मुक्त मरी मेडिकलको 'जब' बनाउने बताएका छन्। मेडिकल मर्करीको प्रयोग निकाल्न भारतको जलवायुसहित प्रयोग २ लाख विभिन्न शोध संस्था र जनसंख्या तथा साक्षरता प्रवर्द्धन योजनाको सहयोगमा प्रदेश २ लाई मर्करीमुक्त बनाउने उनले बताएका हुन्। मर्करीमुक्त प्रदेश बनाउने प्रतिबद्धता राई उनले मर्करीमुक्त प्रविष्टिमा परमाणु हस्ताक्षरले गरेका छन्।

दुस्रो प्रतिबद्धता मर्करीमुक्त बनाउन विभिन्न चरणमा बजारमा र योजना ल्याउँछौं, उनले भने, 'मर्करीमुक्त मेडिकल क्षेत्र बनाउनुपर्छ। मर्करीको मुक्त हस्तान्तरण मर्करीमुक्त हुन सक्छ। जसले 'जसले' मर्करीमुक्त हुनुपर्छ।'

नेपाल सरकारले वि.सं. २०७१ मा नै मर्करीमुक्त पदार्थको उपयोग ठीक लाग्ने पनि मेडिकल क्षेत्र मर्करीमुक्त पदार्थ अर्को प्रयोग भएकोको उनले बताए। विभिन्न किसिमका विद्युतीय उपकरण तथा बजारको मेडिकल क्षेत्र मर्करीमुक्त पदार्थ मर्करीको भन्ने कुरा सार्वजनिक पनि सजक हुनुपर्ने उनले सुनाए।

उत्तम सुनार । पारी, मर्करीको बेवाहुराको चर्चा मर्करी मुक्त प्रदेश निर्माणका लागि मर्करीमुक्त प्रदेशलाई मर्करीमुक्त बनाउने प्रतिबद्धता प्रयोग भएकोको उनले बताए। 'मर्करीको मात्रा विद्युतीय बल विद्युतको क्षेत्रमा बढी छ, उनले भने, 'पाराली रोगमा मर्करीमुक्त रसायनको मर्करीको मात्रा बढी हुन्छ।'

मर्करीमुक्त प्रदेश बनाउन जनसंख्या तथा साक्षरता बढाउने क्षेत्रले विभिन्न विकासकारी सम्बन्ध

मरी बजारमा मुक्त गरेको छ। प्रदेश २ का विभिन्न स्वास्थ्य संस्थाका कार्यलयहरूले मर्करी प्रयोग नगर्ने प्रतिबद्धता जनाएका छन्। मर्करी मुक्त प्रदेश बनाउने प्रयोग मात्र मानव स्वास्थ्यका लागि हानिकारक छ। साक्षरता गर्ने धर्मोपदेश, रक्षापत्र जस्ता विद्युत विद्युत प्याकेज, औषधिहरूका मर्करीको मात्रा भएकोको छ। मर्करीको असार भएपछि हुन्छ। मानव स्वास्थ्यका सकारण मात्रा बढेमा मात्रै पनि हुन्छ। मर्करीले स्वास्थ्यमार्गी, पाचनमार्गी, सुधीय र शोथकाय असार गरेको विद्युतकाहरूको भनाय छ।



News coverage of Promotion of Mercury-free Dentistry, and Health Care Services in Province No. 1, and Province No.2 of Nepal program completed jointly with NDA Sunsari, and NDA Dhanusha in association with College of Dental surgery, BPKIHS Dharan, KARD Nepal, Health Directorate, and District Youth Network Dhaanusha with the support of UNDP GEF SGP, and WAMFD.

Also see <https://ekantipur.com/pradesh-1/.../02/156740031608983695.html>

30. Promotion of Mercury-free Dentistry, and Health Care Services in Province No. 1, Dharan Sunsari, Nepal

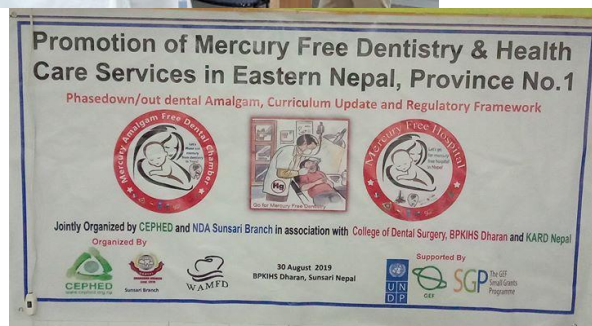
Day long workshop on Promotion of Mercury-free Dentistry, and Health Care Services in Province no, 1. had been completed in Dharan, Sunsari moved towards making Mercury-free Dharan Sub

Metropolitan City, Province No. 1, and Improving the Dental Curricula. Mercury-free Movement not only in BPKIHS Dharan, Dharan Sib metropolitan but also to make whole province no. 1 of Nepal Mercury-free. Participants, experts, and concerned stakeholders have assured to make a positive progress to realize these goals.

Program was conducted under the chairmanship of Dr. Jyotsna Rimal, President, NDA Sunsari Branch with the presence of distinguished guests Assistant Academic Dean of BPKIHS Dr. Ajit Kr. Yadav; Ms Priya Thapa from Health Directorate Dhankuta, Mr. Sunil Nepal ED KARD Nepal, Mr. Bhesha Raj Ghimire, Environment Section Chief, Dharan Sub Metropolitan City, and Mr. Ram Charitra Sah, Executive Director, CEPHED, and well participated by around 60 participants of Dental Health professional, different department heads of BPKIHS, representatives of College of Dental Surgery, sub metropolitan, medical College, school, university, private dental clinics, health directorate, NGOs, and Journalists etc.

Program has been jointly organized by CEPHED, and NDA Sunsari in association with College of Dental Surgery, BPKIHS, and KARD Nepal supported by UNDP GEF SGP Nepal, and WAMFD.

Technical paper on Mercury-free Dentistry and Health Care Services around the Globe has been presented. The panel discussion were moderated by Dr. Jyotsna Rimal and presented/discussed by Dr. Mannu Bikram, Dr. Sangita Shrestha, Dr. Bishal Babu Basnet, and Mr. Sunil Nepal, and Mr. Bhesha Raj Ghimire, Mr. Ram Charitra Sah, and representative of Waste Management Organisation working in sub metropolitan city.





31. Cosmetics Standards Enacted in Nepal

Responding the research based campaign lead by Center for Public Health, and Environmental Development (CEPHED), and the urgency of the issues, Nepal Bureau of Standard, and Metrology (NBSM), The Ministry of Industry, Commerce & Supplies (MoICS), Government of Nepal enacted three sets of standards for different groups of cosmetics. Honorable Minister for Industry, Commerce, and Supplies, Matrika Prasad Yadav, President of Nepal Council for Standardization (NCS) took very progressive decision, and approved Nepal Standards 2076 (2019) for Cosmetics recently on 101st Meeting of NCS, effective for all imported, produced, sale & distributed, and uses of cosmetics in Nepal. These standards serves as required guidelines for all related with Nepal Standards. Following cosmetics standards has been enacted (See pictures & details of the standard).

Figure. Mercury Hazards Reining for Dental Hygienists

1. NS 565: 2076= LIPSTICK; 2. NS 566: 2076 = SKIN CREAM & 3.NS 567: 2076= SKIN LOTION

By using the rights concurred by Nepal Standards (Certification Mark) Act 2037 (1980 AD), the Nepal Bureau of Standards, and Metrology (NBSM) through series of consultation meeting with all concerned stakeholders viz: The Ministry of Forest, and Environment (MoFE); The Ministry of Industry, Commerce, and Supplies (MoICS); Department of Customs (DoC); Central Department of Chemistry, Tribhuvan University; CEPHED; cosmetic industries like Dabur Nepal Pvt. Ltd., Unilever Nepal Limited, Blue Bell Herbal Products, and cosmetic enterprises like Rasmila Facial House etc. has formulated these cosmetic standards. CEPHED served as a committee members in both the Technical Committee and Sub-Technical Committee formed for formulation of these important & urgent cosmetics standards.

These standards are made very comprehensive, and broadly includes the General requirements (homogeneous emulsion); Specific requirements including limits of pH (4.0 to 8.0), microbial contamination (Total <1000 cfu/g, Gram Negative <10 cfu/g), and toxic heavy metals like Lead (Pb - Max 10 ppm), Arsenic (As- Max 3 ppm), Mercury (Hg- Max 1 ppm) & Cadmium (Cd- Max 3 ppm); packaging; labeling; samplings, and even testing procedures etc. These standards has been made in line with many international, and countries specific standardization practices, and most specifically referenced to International Organization for Standardization (ISO), Sri Lanka Standards Institutions (SLSI), Bureau of Indian Standards (BIS), and Bangladesh Standards, and Testing Institutions (BSTI) etc.

CEPHED praised the decision of NBSM/MoICS to enact these cosmetic standards as it protect public health , especially children, pregnant, and breastfeeding mothers from the ill effects of cosmetics.

Thank you all concerned for their active contribution to formulate these standards.

Finally, it is requested to one, and all ASK FOR HEAVY METALS (Lead, Arsenic, Mercury, and Cadmium) FREE COSMETICS, and read the labeling on your cosmetic package while purchasing your cosmetics

1. Nepal Standard 565: 2076, Requirement of LIPSTICK

Sl. No.	Characteristic	Requirements
i	Softening point, °C. Min	15
ii	Peroxide number. Max	10
iii	Breaking lead value. Min	200
iv	Particle size of undispersed pigment, micron. Max	40
v	Phy. Off Test	To pass the test
vi	Microbiological examination	Not more than 100 microorganisms per g
vii	Lead (as Pb), mg/kg. Max	10.0
viii	Arsenic (as As), mg/kg. max	3.0
ix	Mercury (as Hg), mg/kg. max	1.0
x	Cadmium (as Cd), mg/kg. max	3.0

2. Nepal Standard 566: 2076, Requirement for SKIN CREAM

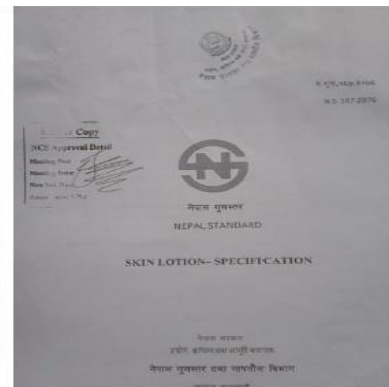
Sl. No.	Characteristic	Requirements	Requirement for baby cream:
i	Fluorimetry Solubility	To pass the test	To pass the test
ii	pH at 25°C ± 2 °C	4.0 to 9.0	5.5 to 8.0
iii	Total fatty substance content, percent, by mass, Min	7.0	7.0
iv	Total volatile matter at 105°C, percent by mass, Min	10.0	10.0
v	Lead (as Pb), mg/kg. Max	10.0	10.0
vi	Arsenic (as As), mg/kg. Max	3.0	3.0
vii	Mercury (as Hg), mg/kg. Max	1.0	1.0
viii	Cadmium (as Cd), mg/kg. Max	3.0	3.0
ix	Microbial count limit		
(a)	Total viable count cfu/g	Not more than 1000	Not more than 100
(b)	Gram negative pathogens in 10 ml.	Less than 10	Less than 10

For creams based on base wax and tallow, the pH shall be between 5.0 - 10.0

3. Nepal Standard 567: 2076, Requirement for SKIN LOTION

Sl. No.	Characteristic	Requirements	Requirement for baby cream:
i	Fluorimetry Solubility	To pass the test	To pass the test
ii	pH at 25°C ± 2 °C	4.0 to 9.0	5.5 to 8.0
iii	Total fatty substance content, percent, by mass, Min	7.0	7.0
iv	Total volatile matter at 105°C, percent by mass, Min	10.0	10.0
v	Water content, percent by mass, Max	85.0	85.0
vi	Peroxide value, mg/kg. Max	10.0	10.0
vii	Lead (as Pb), mg/kg. Max	10.0	10.0
viii	Arsenic (as As), mg/kg. Max	3.0	3.0
ix	Mercury (as Hg), mg/kg. Max	1.0	1.0
x	Cadmium (as Cd), mg/kg. Max	3.0	3.0
xi	Microbial count limit		
(a)	Total viable count cfu/g	Not more than 1000	Not more than 100
(b)	Gram negative pathogens in 10 ml.	Less than 10	Less than 10

- Additionally, Nepal Council for Standardization (NCS) also approved following cosmetic related standards:
- NCS 500-TK-1776/2014-Cosmetics-Analysis Approach for Screening and Quantification Method of Heavy Metals in Cosmetics
 - Nepal Standard 568:2076-Microbiological Examination of Cosmetics and Cosmetics Raw Materials-Method of Test
 - Nepal Standard 569:2076-Classification of Cosmetics Raw Materials and Adjuncts



32.Nexus between Climate Change, and POPs Pesticides

Presented our research paper entitled "Nexus between Climate Change, and POPs(Pesticides)" in National Conference on Pesticide, and Health, from January 9=10, 2020 organized by Nepal Public Health Foundation(NPHF) Kathmandu, Nepal. This research were undertaken by CEPHED under Reduction of POPs, and Mercury project funded by UNDP GEF SGP Nepal. Is a clear, and direct nexus between CC, and POPs (Pesticide) has been observed as maximum amount of pesticides for agriculture as well as public health sector uses were imported for each hottest years recorded in Nepal. There were many complicated nexus w.r.to other climatic variables. These NEXUS between CC, and POPs pesticides needs to be fully understood by further long-term research, and taken into consideration by the Health, Environment, Agriculture, etc. sectors related plans, and policies of Nepal.



Nexus Between Climate Change and POPs (Pesticides)
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National Conference on Pesticide and Health, January 9-10, 2020, NPHF, Kathmandu, Nepal



33. Research on Pesticide Contamination in Vegetables Grown and Consumed in the Kathmandu Valley

Different kinds of pesticides have been used for crop protection for centuries. Pesticides are

Pesticide Residues in Vegetable Grown and Consumed in and around Kathmandu Valley					
Acephate (EPA Possible Human Carcinogen), Cyfluthrin, Cypermethrin					
Vegetables	Site 1	Site 2	Site 3	Site 4	Market
Bitter guard	ND	ND	<0.010	ND	0.043 0.033
Cauliflower	0.028	0.072	0.155	ND	0.018
Brinjal	ND	ND	ND	ND	0.014
Beans	0.018	ND	ND	ND	0.018

used to kill pests and insects that attack crops and harm them. This research was conducted to determine the prevalence of pesticide use in vegetable farming, effects of pesticide use on vegetables, and the environment along with on human health, attitudes of using personal protective equipment (PPE), and knowledge of pesticide residues in different vegetables. The sample size for questionnaire to farmers was estimated from the formula given by Arkin, and Colton, 1963 as 76. Additionally, 44 questionnaire were done to consumers, and 8 retailers were taken as Key Informant Interview (KII). A total of 20 samples collected from four farms, and one market of different fresh vegetables like bittergourd (*Momordica charantia*), cauliflower (*Brassica oleracea var. botrytis*), brinjal (*Solanum melongena*), and yard long bean (*Vigna unguiculata ssp. Sesquipedalis*) from

Harisiddhi, Kalimati market, Kirtipur, Khokana, and Thimi were analyzed for pesticide residues of **organo chlorine, and organo phosphate groups** in them using the quick easy cheap effective rugged, and safe (QuEChERS) multi-residue extraction, followed by Gas Chromatography-Mass Spectrometry (GC-MS) targeting pesticides groups like organochlorine, carbamate, organophosphorous, and synthetic pyrethroid. Out of 19 farmers surveyed in each four selected study **farm** sites, 37% (7 of 19) in Kirtipur, 68.42% (13 of 19) in Thimi, 89.50% (17 of 19) in Harisiddhi, and 68.42% (13 of 19) in Khokana use pesticides as per the requirement (as, and when required).

On the time of preparing, and applying pesticides, in Harisiddhi, and Kirtipur 100% (19) of respondents used Personal Protective Equipment (PPE) followed by Thimi 89.5% (18), and Khokana 89.47% (17). Out of 20 vegetable samples, 45% (9) of the vegetables sample have detected pesticide residues whereas 55% (11) of vegetable samples contained no detectable level (NDL) of the monitored pesticides. The highest concentration of pesticide residue of cypermethrin was found in cauliflower (B02) bought from Kalimati market (0.072 mg/kg). Among all 20 vegetable samples, acephate was detected in 25% (5) vegetable samples, followed by cypermethrin in 15% (3) vegetable sample. Out of the 9 vegetable samples which contained pesticide residue of acephate, 55.56% (5) vegetable samples contained pesticide residues above the accepted Maximum Residue Level (MRL) of European Union (EU) (0.01 mg/kg). Multiple residues were present in 5% (1) of the samples in bitter gourd with two pesticides namely acephate (0.043 mg/kg), and cyfluthrin (0.033 mg/kg). This study detected organophosphates followed by synthetic pyrethroid and pyrethroid in the samples.

Two way ANOVA showed that there is no any significant difference between sites, and vegetables. The results indicated the occurrence of pesticide residues in commonly consumed vegetables inside Kathmandu valley and pointed to an urgent need to develop comprehensive intervention measures to reduce the potential health risk to consumers as well as farmers. Therefore, there is a need of regular monitoring of pesticide residues, and sensitization of farmers, and consumers to protect themselves, and consumers as a whole.

34. Research on Assessment of Lead in Instant Noodles Produced and Marketed in Nepal


The amount of heavy metals like lead in instant noodles has been of concern because of its toxicity when their concentration even at low dose. Instant noodle is one of the most popular food, and snack items in urban setting, especially among children's with developing brain, and busy parents. It may have contaminated by substances such as lead, most often attached to the ingredient materials, packaging, and other causes.

The study was conducted with the aim of testing the content of lead in the instant noodles including in their seasoning powder of different Nepalese industries of different flavors, brands, and types. Noodles samples were collected from different parts of the Kathmandu Valley namely Bhaktapur, Kathmandu, and Lalitpur selecting different levels of shopping enterprises ranging from street shops, departmental stores, shopping malls, school canteens, and hospital canteens.

A total of 30 samples (15 noodles, and corresponding 15 seasoning powders) were analyzed for total lead content through Atomic Absorption Spectrophotometer (AAS) by acid digestion method mentioned in American Public Health Association (APHA), 23rd edition, 2017 in government certified laboratory.

The data analysis and interpretation were done using excel, and R-software. Among 15 noodle samples, the highest concentration (0.0093 mg/kg) was found in NPL-2 sample whereas the lowest concentration (0.0022 mg/kg) was found in the NPL-15

LEAD IN MOST POPULAR FOOD: NOODLES



S.N.	Noodle Code	Lead (mg/kg)	Seasoning Powder Code	Lead (mg/kg)	WHO Standard (mg/kg)	BSTI Standard (mg/kg)	FSSAI/Nepal Food Standard (mg/kg)
1.	NPL-1 (N)	0.0048	NPL-1 (S)	0.0056	0.025	2	2.5
2.	NPL-2 (N)	0.0093	NPL-2 (S)	0.0075	0.025	2	2.5
3.	NPL-3 (N)	0.0024	NPL-3 (S)	0.0025	0.025	2	2.5
4.	NPL-4 (N)	0.0046	NPL-4 (S)	0.2316	0.025	2	2.5
5.	NPL-5 (N)	0.0024	NPL-5 (S)	0.0088	0.025	2	2.5
6.	NPL-6 (N)	0.0073	NPL-6 (S)	1.6981	0.025	2	2.5
7.	NPL-7 (N)	0.0049	NPL-7 (S)	0.0023	0.025	2	2.5
8.	NPL-8 (N)	0.0023	NPL-8 (S)	0.0015	0.025	2	2.5
9.	NPL-9 (N)	0.0089	NPL-9 (S)	0.0051	0.025	2	2.5
10.	NPL-10 (N)	0.0025	NPL-10 (S)	0.0025	0.025v	2	2.5
11.	NPL-11 (N)	0.0025	NPL-11 (S)	0.0012	0.025	2	2.5
12.	NPL-12 (N)	0.0049	NPL-12 (S)	0.0051	0.025	2	2.5
13.	NPL-13 (N)	0.0024	NPL-13 (S)	0.0010	0.025	2	2.5
14.	NPL-14 (N)	0.0066	NPL-14 (S)	0.0067	0.025	2	2.5
15.	NPL-15 (N)	0.0022	NPL-15 (S)	0.0060	0.025	2	2.5

sample, and among 15 seasoning powder of the respective noodles, the highest concentration (1.6981 mg/kg) was found in NPL-6 (S) sample followed by NPL-4 (S) sample (0.2316 mg/kg) whereas the lowest concentration (0.0010 mg/kg) was found in NPL-13 (S) sample.

Chi-square test was done for dependency test of lead content in the instant noodle samples and their seasoning powder on the manufacturing company. The correlation coefficient was found to be 0.3118 which signifies lead content in the instant noodle samples, and their seasoning powders have slightly positive relation. Single mean t-test was carried out to check the compliance status of lead content in instant noodle samples, and their seasoning powder with international, and national standards of World Health Organization (WHO), Bangladesh Standards, and Testing Institution (BSTI), Food Safety, and Standards Authority of India (FSSAI), and Nepal Food Standard. 100% (15) of the noodle samples were found to be under compliance with the standards of WHO (0.025 mg/kg), BSTI (2 mg/kg), FSSAI (2.5 mg/kg), and Nepal Food Standard (2.5 mg/kg) whereas in case of seasoning powder 13.33% (2) samples namely NPL-4 (S), and NPL-6 (S) was found to be non-compliance with WHO standard (0.025 mg/kg) but complying with the standards of BSTI (2 mg/kg), FSSAI (2.5 mg/kg), and Nepal Food Standard (2.5 mg/kg).

The level of lead in the seasoning powder samples of to the NPL 4 (S) was 0.2316 mg/kg (9 times more), and NPL-6 (S) was 1.6981 mg/kg (68 times more) than that of the WHO standard, which is a serious threat for public health. The total lead content of NPL-6 sample from Bhat Bhateni Super Market (BBSM), and the NPL-4 sample from Multi store were found to be 1.7054 mg/kg (68 times more), and 0.2362 mg/kg (9.5 times more) than the WHO standard (0.025 mg/kg). 100% (15 out of 15) of the samples have clearly mentioned their date of manufacture but 6.67% (1 out of 15) sample did not mention expiry date.

Only 53.33% (8 out of 15) samples contained information about different allergic substances like wheat gluten, soya powder, milk solids, permitted natural color, and natural, and artificial flavoring agents. All samples (100%) mentioned information about the presence of monosodium glutamate. This study showed that there has been some heavy metals contamination in Nepalese commercial brands of noodles.

However, these might results adverse effects due to frequently consumption of the noodles despite of having low level of lead. The effective enforcement of the mandatory standard of lead in noodles, and

their seasoning powder along with periodic monitoring program to check the compliance status of the quality of instant food products, and make results public was highly recommended.

35. Completion of Research on Factory Inspectors in South Asia (Case Study of Nepal)

Negambo, Sri Lanka- June 2018 ANROEV Sub Regional Meeting: Needs of the sub-regional research on the factory inspectorates system in South Asia was strongly felt. Based on this, research framework were developed by AMRC Hong Kong. Research were completed in 2019 in Nepal, Bangladesh, India, and Pakistan. Planed Regional Workshop to share in Kathmandu, Nepal on April 1 &2 , 2020 postponed due to COVID-19, and forced to do it through webinar, and has been completed on 12 June 2020.

The report, broadly covered details description of in four parts.

Part A - Country Context analysis

Part B - Legislation, and policies that cover the factory Inspectorate System

Part C - Assessment of the system, policies, and performance

Part D - Recommendations, and Vision for the Effective Inspectorate

The research on factory inspectorate in Nepal clearly revealed following findings

- The existing OSH/Labour Inspectors Supporting Staffs are absolutely insufficient to inspect all these establishment.
- MoELSS : overall policy framework, and oversee the effective implementation
- 13 Labour Offices including Labour Department, OSH Centre, and District Labour Offices absolutely insufficient.
- Area of inspection has been delineated rather the industries , so it is difficult to estimate how many industries to be inspected by /inspector
- Some industries/establishment get more frequent inspection over other never been inspected.
- The inspection report are seems to be only available as internal documents.
- Not accessible to any third party or public thus could not be analyzed, and produce case studies out of it.
- OSHC mainly engaged with training, awareness, coordination, and OSH interventions.
- The Government of Nepal does have long term vision to have Factory Inspectorate.
- Number of OSH, Labour Office, and Inspection provision include in details in many Act, Regulation especially even in the new Labour Act 2017, Labour Rule 2018, Social Security Act 2017, OSH Policy 2019 etc. These are not enough, new, and also yet to be effectively implemented.
- Despite of the new record of about 923,356 with over 3,228,457 workers of different level, there are some more sectors needs to be included. Thus the total establishment has not yet exactly known.
- Many other agencies have been known to develop some short of OSH related policies for their own working sector e.g. DOLIDAR project has made one for bridge, and road construction.
- Department of Health has developed for health related sector, especially the complementary policy for health insurance related policies, and programs.
- Procurement directives of Department of Urban Development has provision of 2% of total procurement of services should allocate for OSH related programs.

- Challenging of bringing all sector OSH policy under the umbrella OSH Policy 2019, and effectively implement them.

CONCLUSION:

There is numerous labor, and industries related legal frameworks (Acts, Regulation, Standards, Policy, Operational Procedures etc.) with inspection, and monitoring provisions along with some sectorial OSH Guideline (DoLIDAR, and BRICK industry) but completely lack Labour and Employment Offices with required number of Inspectors . All these Industry/Factory related legal, and institutional frameworks needs to be brought under a singly entity as FACTORY INSPECTORATE, and effectively implemented.

RECOMMENDATIONS

1. Overall factory/enterprises inspection status will expected to improved overtime in presence of OSH Policy & ILO C-081-Labour Inspection & C 155-OSH, and ratification soon.
2. Effective implementation of OSH related Acts, Regulations, and Policies
3. Enough Resources (Human, Technology, Legal) for Industrial Inspection
4. Due Deligience from all (workers, Industry Owners, and Government (MoLESS/DoLOS)
5. Exact, and updated data on establishments/industries /enterprises should be there.
6. Recruitment of enough OSH/Labour Inspectors with enhanced capacity, mechanism of the period, and regular inspection.
7. List of Occupational Diseases should be gazetted immediately, and COVID 19, and any other pandemic diseases can be enlisted.
8. The country`s long-term vision is to develop, an Industry/Factory Inspectorate with full capacity and a legislative framework should be realized soon.

36.Completion of Follow up to the results of the Research on Factory Inspectorate in South Asia

There is lack of PPEs especially among the frontline waste workers during the ongoing COVID pandemic, who needs to be protected from getting any unprecedented occupational risk of acquiring possible infection. The overall status of occupational safety, health (OSH), and environmental health in Nepal in industrial setting are found to be of very initial stage and required massive improvements. This is found to be mainly due to the enactment, and adoption of different new Laws, Acts, Regulations, policies, and Operation Procedures with various arrangements of the provisions of the industrial inspections, inspection of labour related issues as well as Occupational Safety, and Health (OSH) condition. The reporting system of the industrial accident seems to be very week thus there is lack of nationwide updated statistics of the industrial accidents. There has been absolute lacking of OSH/Labour inspectors as well as Labour, and Employment Offices.

1. PPE distribution to the Waste Management Workers (Health Care Waste, and Municipal Waste)

CEPHED Nepal with the support of Asia Monitor Resource Center (AMRC) has distributed PPEs (Personal Protective Equipment) to the frontline Waste Workers in Hospital, and Municipal engaged

into waste management work during the COVID pandemic. In first round 37 sets has been distributed in the three hospitals Viz: Patan Hospital (20), Kist Medical Collège & Hospital (15), and Sarbang Health Sadan (2).

CEPHED Nepal has distributed second round of PPEs (Personal Protective Equipment's) to the 13 Frontline Municipal Waste Workers engaged into waste collection, transportation, and management work during the COVID pandemic. PPEs has been distributed for waste management workers associated with Nepsemyak Private Limited, and Nepal Fulbari Sewa Pvt. Ltd. serving in Lalitpur.

CEPHED has distributed all together 50 Sets of PPEs for the front line waste management worker serving in different Hospitals, municipalities, and the Metropolitan City of Lalitpur.

50 Waste Management Workers working with Health Care Waste management at three hospitals (Patan COVID Hospital, Sarbang Health Sadan, and Kist Medical College, and Hospital), and Municipal Waste Management Workers working with two informal sectors organisation (Nepsemyak Sewa Private Limited, and Phulwari Sewa Pvt. Ltd.) of municipal waste management were benefitted and protected from getting infection otherwise.



An appreciation letter and an acknowledgment have been received by CEPHED from the PPE recipients workers and their respective institutions.



Figure. CEPHED prepared PPEs for the Health Care Waste, and Municipal Waste Management Workers

Massive media coverage on this events were achieved listed here.

1. <https://www.setoghar.com/archives/63692?>
2. <https://www.nawayug.com/?p=61382>
3. <https://gorkhapatraonline.com/open/2020-06-29-17483>
4. <https://www.khabarhub.com/2020/29/178858>
5. <https://www.loksambad.com/news/7407>
6. <https://shilapatra.com/detail/33366>
7. <https://yeskhabar.com/2020/6/10486?>
8. <https://sancharkarmi.com/news-details/29806/2020-06-29>
9. <https://www.setoghar.com/archives/64011?>





Figure. PPE distributed to the Municipal Waste Management Workers, and utilized by them



Figure. PPE handover program at Kist Medical College in presence of Trade Union Representative, and Housekeeping In charge (left), and group picture with the PPE recipients at Kist Medical College, and



Figure 21. PPE handover By Mr. Ram Charitra Sah, executive Director, CEPHED to the Patan Hospital Housekeeping In charge Ms. Baidehi Viidya

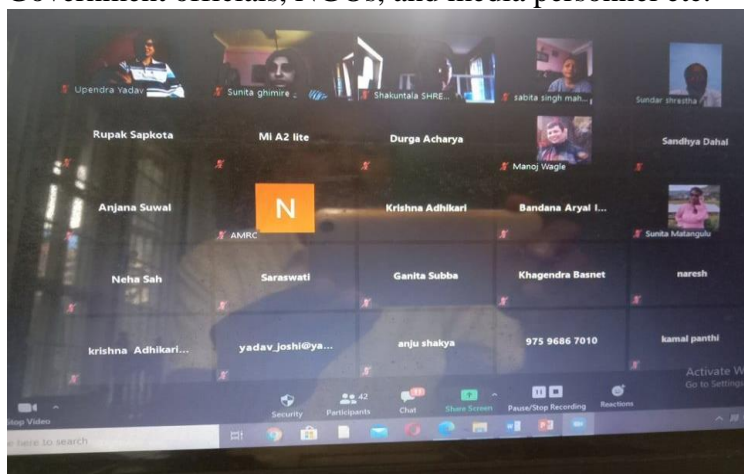


Figure. Receipt of the PPE from CEPHED from Patan Hospital Housekeeping In charge Ms. Baidehi Viidya, and Senior Officer Mr. Prakash Chandra Khadka, Mr. Keshav Khakurel

2. OSH, and Factory Inspection Training Program

A virtual training program on "**Occupational Safety, and Health (OSH), and Factory Inspections**" has been organized successfully by **Center for Public Health, and Environmental Development- CEPHEd** (ANROEV Secretariat

<http://www.anroev.org/>) in collaboration, and coordination with Government of Nepal (GON), Department of Labour, and Occupational Safety (DoLOS) <http://www.dol.gov.np/>, and OSH Center, and supported by the Asia Monitor Resource Center (AMRC) <https://www.amrc.org.hk> well participated by over 45 representatives from concerned Ministries, Labour, and Occupational Safety departments, Custom Department, Labour, and Employment Offices from all over the country, OSH centers, WHO country Office for Nepal, ILO Country Office for Nepal, Federation of Nepalese Chamber of Commerce, and Industries (FNCCI), Federation of Nepalese Cottage, and Small Industries (FNCSI), General Federation of Nepalese Trade Unions (GEFONT), Nepal Trade Union Congress (NTUC), Federation of Handicraft Association of Nepal (FHAN), Federation of Grill, and Steel Fabricators of Nepal (FGSFN), Nepal Open University (NOU), Industries, Tribhuvan University, OSH inspectors, Labour Inspectors, Engineers, Senior chemical experts, different Government officials, NGOs, and media personnel etc.



Conclusion: Based on the paper presentation, guest, sectorial remarks, and discussion, we came into conclusion as follows. All the guests and participants appreciated today's training program on "OSH, and Factory Inspection" as most timely, and relevant in the case of Nepal especially in the time of COVID, and OSH. Most of us are much aware of the most progressive, and best provisions related to OSH, and even the infection control in our laws. As of today the OSH issues has been even strongly felt very important due to

ongoing COVID pandemic. The biological hazards which were not given due recognition earlier has been emerged as very crucial and required high degree of attention now. Overall OSH condition can be improved by making collaborative, and coordinated efforts from all concerned. There is **numerous labor, and industries related legal framework (Acts, Regulation, Standards, Policy, and Operational Procedures etc.) with very good provisions of inspection, monitoring, and compensation mechanisms along with some sectorial OSH Guideline (DoLIDAR, and BRICK industry) but absolutely/critically lack of Labour, and Employment Offices with required number of OSH/Labour Inspectors with insufficient resource allocation were strongly felt, and needs to be urgently improved.**

Recommendations:

Based on the paper presentation, guest, and sectorial remarks, and discussion, we came into following recommends of number of things to be considered towards overall improvement of the OSH, and Labour inspection in Nepal during, and beyond the COVID 19.

1. There should be a public notice announce on “Due Diligence from all (workers, Industry Owners), and especially from the Government (MoLESS/DoLOS/OSHC) concerning OSH, and COVID.
2. Establishment of more Labour, and Employment Offices throughout the country
3. Recruitment of enough OSH/Labour Inspectors with enhanced capacity, mechanism of the period, and regular inspection.
4. Enough Resources allocation (Human, Technology, Legal) for Industrial/factory Inspection
5. Effective implementation of OSH related Acts, Regulations, Policies, procedures, and Standards.
6. Programs and Fund created for Employees, and Employers’ welfare should be operated and managed justifiable, transparent, and effective manner.
7. Integrated OSH Guideline with the provision of Sectorial guiding provisions (instead of sectorial guideline)
8. Exact and updated data on establishments/industries /enterprises should be published.
9. One door reporting and integrated database for the Accidents & Injuries should be published.
10. List of Occupational Diseases should be gazetted immediately, and COVID 19, and any other pandemic diseases should be included and enlisted.
11. Swift ratification of ILO C-081-Labour Inspection & C 155-OSH, and other conventions

12. Continue discussion among OSH professionals, and Stakeholders along with developing, and executing the plan of actions to realize our existing progressive OSH legislative frameworks.
13. The country’s long-term vision is to develop, an Industry/Factory Inspectorate with full capacity, and a legislative framework should be realized soon.



News Coverage of the Training Program

Number of paper, and electronic base media have covered the news on the training programs also shared well through social media.



The clipping is from 'THE RISING NEPAL', described as 'THE FIRST & FOREMOST NATIONAL DAILY'. The main headline is 'Training held on occupational safety and health'. The byline reads 'By A Staff Reporter, Kathmandu, June 18'. The article text is as follows:

The Centre for Public Health and Environment Development (DEPHED) organised a virtual training to highlight the needs of paying high degree of diligence with respect to Occupational Safety and Health (OSH) and COVID 19 before reopening of the industries/factories and businesses in the context of COVID-19 fears.

The training programme on "Occupational Safety and Health (OSH) and Factory Inspections" was organised in collaboration with the Department of Labour and Occupational Safety (DoLOS).

The COVID-19 pandemic has created miserable condition among workers worldwide, ruining each country's economic condition. Therefore, the first goal of training was to highlight the issues of respect to OSH and COVID-19 so as to avoid transmission of COVID-19 while reopening daily businesses, including human, social, industrial and economic activities, said Ram Charitra Sah, executive director of CEPHED, and environment scientist.

All the concerned government agencies, including Ministry of Labour, Department of Labour, national and international organisations, corporate sectors, trade unions and workers themselves need to pay a high degree of diligence with respect to OSH and COVID, he said.

He informed that two papers were presented at the programme on the issues of "Due Diligence with Respect to OSH and COVID-19" and "Status of OSH Condition and Ways Forward to Improvement."

The paper on "Due Diligence with respect to OSH and COVID 19" was presented by OSH expert Dinesh Prasad Sah, highlighting the risk factors of OSH with special focus on the biological factors in the context of coronavirus.

He suggested integrated efforts and solution like technical control, administrative control and proper use of PPEs as well as maintaining hygiene and sanitation.

Presenting his paper, Sah highlighted the role and responsibilities of all concerned, especially the workers, trade unions and, most importantly, the employers and government.

In his paper entitled "Status of OSH Condition and Ways Forward to Improvement", Ram Charitra Sah, executive director and environment scientist, diagnosed the strengths and weaknesses in exiting legal frameworks along with the provisions of inspection and provided list of recommendations towards the expected improvements.

He recommend due diligence for all workers, industry owners and government, establishment of more labour and employment offices, recruitment of enough OSH/Labour Inspectors with enhanced capacity and mechanism of period and regular inspection, enough resource allocation for industrial/factory inspection.

37. Hosting ANROEV Secretariat for Occupational, and Environmental Victim betterment

The Asian Network for the Rights Of Occupational, and Environmental Victims (ANROEV) <http://www.anroev.org/> formerly known as the Asian Network for Rights of Occupational, and Accident Victims (ANROAV) is a coalition of victims' groups, trade unions, and other labour groups across Asia, all committed to the rights of Victims, and for overall improvement of health, and safety at the workplace. The industrial disasters of Kader, and Zhili, that killed more than 250 workers led to a campaign by the labor, and victims groups in Asia towards better health, and safety rights of the workers, and the victims. ANROEV was formally constituted in 1997, and now has 42 members from 17 Asian Countries, and Territories including Japan, Korea, China, India, Pakistan, Thailand, Indonesia, Bangladesh, Hong Kong SAR, Taiwan, Nepal, Vietnam, Cambodia, Malaysia, Myanmar, Philippines, and Sri Lanka.

CEPHED has been elected to host the Secretariat for this Asian Network to facilitative the coordination work among the member's related EOSH issues.

Responsibilities for the ANROEV Coordinator and secretariat include:

1. Conduct research on Occupational Health, and Safety, and regularly inform the members with any new studies, and news
2. **Bring out the quarterly edition of Network newsletter “OSH Rights” (Three issues below)**
3. Update, and maintain the network website www.anroev.org including the domain name.
4. Increasing the network online presence (maintaining Facebook page, Twitter etc.)
5. Preparation, and conducting the ANROEV conference, and any other ANROEV meetings/programs, and preparing reports for any such meetings
6. Undertaken Campaigns, and Solidarity Actions / Action alerts as needed by the network members
7. Regular interaction with the members, and sharing of information among the members
8. Inviting new members to the network
9. Any other activity as recommended by the ANROEV members etc.



'Recognise COVID-19 as occupational disease'

By A Staff Reporter
Kathmandu, Apr. 17

The Centre for Public Health and Environment Development (CEPHED) Nepal has requested the government to recognise COVID-19 as an occupational disease.

Ram Charitra Sah, executive director of CEPHED and an

environment scientist, said that the countries like USA, Korea, the Philippines and Malaysia had already recognised COVID-19 as an occupational disease and had ensured availability of required security, Personal Protective Equipment (PPE) and relief packages to the health professionals.

Sah said that the Office of the Prime Minister

and Council of Ministers (OPMCM) and the Ministry of Labour, Employment, and Social Security were especially requested to enlist COVID-19 as an occupational disease.

He said that it was high time that occupational safety of the frontline workers was ensured.

"We lack the list of occupational diseases on the

whole, as the government has not published the list on Nepal Gazette as provisioned in Article 82 of Labour Act 2074 and Rule 2075," said Sah.

"Thus, we have requested the government to publish the list of occupational diseases by including COVID-19."

Sah, further, urged the government to adopt adequate security measures

for those working in the frontline.

The PPE sets and relief packages for the frontline health workers such as doctors, nurses, paramedics, cleaners and for those who have been ensuring availability of other essential services such as lab workers, ambulance services, cemetery services, distributors of food, medicines, water, fuel, media

persons and the security officials must be provided by the government, he said.

As the pandemic has claimed thousands of lives and has infected over 2 million people around the world, it is crucial for the government to ensure safety of the frontline workers as they are at higher risk of being infected with the virus, added Sah.

Published in Rising Nepal National Daily, dated 18th April 2020

1. Media clips representing the activities of CEPHED on heavy metals, health care waste, POPs etc.

- i. *Lurking Mercury Menace, news article in The Himalayan Times daily dated January 1st 2010.*
- ii. *"CFL, and Environment" news article published in National Daily called Gorkhapatra Daily on March 2010.*
- iii. *"Hazardous lead mixed in Paints" published in Chesta weekly on April 15, 2010.*
- iv. *"Environmental Pollution from heavy metal" published in Mithlanchal Vishesh Daily on May 17th 2010.*
- v. *"Hazardous of lead in Decorative Paint" Article in leading national daily news paper called Rising Nepal on May 21st 2010.*
- vi. *Spreading Mercury poison, published on Annapurna National Daily on May 12, 2010.*
- vii. *Heavy metals Awareness program published in Janakpur Express Daily, May 17, 2010.*
- viii. *"Unsafe Paints" Article published in Gorkhapatra National daily of July 4, 2010.*
- ix. *Workshop on Heavy Metals completed news published in Maithali Language in Mithilia.Com National Daily May 17, 2010*
- x. *" Be Aware While painting your house" Article published in Nepal Weekly Magazine, August 1, 2010.*
- xi. *Be Aware from harmful effects of Mercury, and Lead, published in Naya Yugbodh National Daily, September 3, 2010*
- xii. *Capacity building Training workshop completed, published in Goraksha National Daily, 3rd September 2010.*
- xiii. *Capacity building workshop completed published in Lokmanch Daily, August 30, 2010*
- xiv. *Increased mental illness due to haphazard use of Heavy Metals, published in Pokhara Patra, National daily of August 4, 2010.*

- xv. Mercury Containing Items are harmful to Public health, published in Gantantra National Daily, 3rd September 2010.
- xvi. Sailmar and Jasmin Paints are Harmful, published in Hamro Akhwar Daily, Surkhet 29 August 2010.
- xvii. Use of Mercury, and Lead May leads to death, published in Hamro Kalam National Daily, August 4, 2010.
- xviii. Cleaning of Kanti Children Hospital as Dhulikhel Hospital, published in Samacharpatra National Daily, September 22, 2010.
- xix. Haphazard disposed Health care Waste is harmful to health, published in Kankrebihar Daily, August 28, 2010.
- xx. Haphazard disposed waste is harmful for health, published in Yug Aahwan Daily, August 30, 2010.
- xxi. Negative Impact on Environment due to lack of Management of Health Care Waste, published in Hamro Kalam, National Daily, August 5, 2010.
- xxii. Start of health care Waste management training, published in Lokmanch Daily, August 28, 2010.
- xxiii. Starting of training Workshop on Health Care Waste Management, and POPs published in Hamro Naya Nepal Daily, August 28, 2010.
- xxiv. Stop Using of Mercury thermometer, published in Kantipur Daily News Paper, September 8, 2010.
- xxv. Training on Health Care Waste Management, and POPs published in Hamro Akhwar daily, 28 August 2010.
- xxvi. Paints are Dangerous, published in Samachar Patra especial paper on Saugat on 9th October 2010.
- xxvii. Oil Used in Grill Industries dangerous to health, report published on Rising Nepal daily on 30th December 2010.
- xxviii. Grill Factory Workers Suffering from Diseases, published in Rising Nepal Daily dated February 1, 2011.
- xxix. An Article on Health Hazards of Transformer Oil published in Gorkhapatra Daily, July 17, 2010, Written by Mr. Ram Charitra Sah, Executive Director, CEPHED.
- xxx. PCB contaminated Transformer Oil is Dangerous, published in Annapurna Post Daily Newspaper, July 18, 2010
- xxxi. Transformer Oils and Paints are Harmful, published in Kantipur Daily, 18th July 2010
- xxxii. Metal Grill Workers worries about their health, published in Samachar Patra National Daily 18th July, 2010.
- xxxiii. Transformer Oils is Harmful, Published in Udghos Daily News Paper, Biratnagar, 22 November 2010.
- xxxiv. PCB contaminated transformer oil is harmful to health published in Samadhan National Daily, Pokhara, 3rd December 2010.
- xxxv. PCB contaminated transformer oil is harmful to health published in Adharsha Samaj Daily Newspaper, Pokhara, 3 December 2010.
- xxxvi. Be aware, if you are using transformer oil containing PCB, news published in News Mart National Daily, Pokhara, December 3, 2010
- xxxvii. Interaction about Lead in Paints, and PCB published in Rajdhani Daily, dated 30th December 2010.
- xxxviii. Grill Enterprises are willing meet the Environment Quality Standard and use PCB free Technology, and Equipment, published in Karobar National Economic daily, dated 30th December 2010

- xxxix. Awareness Workshop about Public Health, and Environment Impact from PCB, published on Aarthik Daily, dated 30 December 2010.
- xl. Most of the Enamels Paints contains high lead in Arthik Daily dated January 5, 2011.
- xli. Transformer Oil is Harmful, published in Gorkhapatra dated January 9, 2011
- xl.ii. PCB Oil Hazards published in The Himalayan daily news paper dated 25th February 2011.
- xl.iii. Challenged of Electronic Waste Management published in Kantipur National Daily dated 1 February 2011.
- xl.iv. Growing Problem of Electronic waste Management published in Gorkhapatra National Daily dated 1 February 2011
- xl.v. Health Hazards from Electronic Waste published in Annapurna National Daily dated 1 February 2011.
- xl.vi. "Electronic waste can be fatal" published in Nepal Samachar Patra dated 1st February 2011.
- xl.vii. "Miss use of Mercury is harmful for Public Health "published in the Sadhana Health monthly Magazine March 2011.
- xl.viii. "Negative Impact of Human Being from Medical Waste" published in Pahura Daily News Paper in THARU Language , Dhangadhi, Kailali, May 17, 2011.
- xl.ix. "Need of Appropriate Health Care Waste Management" published in Subharambh Daily, Dhangadhi, May 17th , 2011.
- l. "Mercury Amalgam, and Silver feeling in Teeth are Harmful" published in Dhangadhi Post, on May 21 (news after one week of training program).
- li. "Leaded Classroom is Harmful". published in Gorkhapatra Daily on May 31, 2011.
- lii. "CEPHED AWARDED with PEN Award 2011 of Stockholm Convention" published in Gorkhapatra National Daily dated 3rd May 2011.
- liii. " Public Awareness Program Implementer Awarded PEN Award 2011" published in Nepal Samacharpatra Daily on May 9, 2011.
- liv. "Honoring The Best" published in Aviyan Daily about Awarding National Award 2068 to Mr Ram Charitra Sah, Executive Director, CEPHED for PCB work., May 11, 2011.
- lv. "Harmful lead found in paints" published from Kanchanpur in the Himalayan Times, 19th May 2011.
- lvi. "Hazardous E-waste" published on The Himalayan Time (Green Plus) on July 8, 2011.
- lvii. "Import of Leaded Paint did not stopped due to lack of the Regulation". Published in Gorkhapatra Daily on July 9, 2011.
- lviii. "Multinational Companies Paints are Dangerous". Published in Himalaya Times on July 9, 2011.
- lix. "Popular Paints cross Toxic Lead Limit: Report" published in The Kathmandu Post on July 9, 2011.
- lx. "Toxic leaded paints find rosy market in Nepal" published in The Rising Nepal National Daily .on July12,2011.
- lxi. "Pesticides to be removed; hazards to remain " published in Kathmandu Post National Daily, dated October 25, 2011.

- lxii. *"Government to regulate import of leaded enamel paints" published in The Kathmandu Post National Daily dated November 4, 2011.*
- lxiii. *"Nepalese Paint to be lead free in 2 years" published in Aarthik Daily on November4, 2011.*
- lxiv. *Urbanization rate highest in Nepal" published in The Rising Nepal dated 3rd December 2011 highlighting the Environmental Journalist Training program.*
- lxv. *"Environment pollution control today's main challenge–Minister Tated " published in <http://nepaleverestnews.com/eng/?p=203>, 3rd December 2011.*
- lxvi. *"Focus needed to control environmental pollution: Minister Tated" published in Republica Daily dated 3thd December 2011*
- lxvii. *Health Care Waste Becoming Increasingly Challenges for Health Care Institutions, Published in Annapurna Post Daily, dated Feb 1, 2012*
- lxviii. *Impact of Mercury on Health, Published in Gorkhapatra daily National Daily on February 6, 2012*
- lxix. **Abstract on " Mercury Usage, and Risks Involved in Academic Institutions in Nepal"** Archana Sah Center for Public Health, and Environment Development (CEPHED), Kathmandu, Nepal. Abstracts published in *Epidemiology* • Volume 22, Number 1, January Supplement 2011 (S178 www.epidem.com,)
- lxx. **"Children Health First, Eliminate Lead in Paint Campaign in Nepal"** Ram Charitra Sah^{1,2} ICEPHED, Kathmandu, Nepal, and ²Khownpa College, Bhaktapur, Nepal. Abstracts published in *Epidemiology* • Volume 22, Number 1, January Supplement 2011 (S277 www.epidem.com,)
- lxxi. **Poisonous Lipsticks:** Published on Gorkhapatra National Daily, Tuesday, May 8, 2012
- lxxii. **World Environmental Day 2012 Celebrated:** Published on Annapurna Post, Tuesday June 5, 2012 covering the news about CEPHED awarded with 2012 Environment Conservation Award
- lxxiii. **Use of Lead in Cosmetics Products causes Health Hazard:** Published on Arthik Dainik June 5, 2012
- lxxiv. **Hazardous Lipsticks, and skin whitening creams in Nepali Markets:** Published on Goarkhapatra, Monday, June 18 2012
- lxxv. **A Guide to Environment, and Health:** Published on The Rising Nepal, Friday, July 20, 2012
- lxxvi. **Skin Whitening Creams posses Health Hazard :** Published on Kantipur National Daily, Saturday, June 23, 2012
- lxxvii. **Campaign against lead-based paint launched:** Published on Himalayan Times, Tuesday, July 24, 2012.
- lxxviii. **Encouragement to Use lead free Paint:** Published on Annapurna Post; Friday July 27, 2012
- lxxix. **Lead containing paints are harmful to health:** Published on Paradarshi Khabar, Sunday, July 29, 2012
- lxxx. **EU to run lead-based paint elimination project:** Published on The Rising Nepal, Sunday July 29, 2012
- lxxxii. **Dangerous Lipsticks- Lipsticks found in Nepali market contains lead by 1450 times higher than that of US standard:** Published on Kantipur National Daily; Saturday, August 25, 2012.
- lxxxiii. **Colorful Paints Acts as a Poison, Published in Arthik Daily, Magh 6 , 2068 (December 20, 2011)**
- lxxxiv. **Cosmetics Makes people Sick:** Published on Health Magazine of August 2012
- lxxxv. **Fake Cosmetics Abundance in the Market:** Published on Nari in Bhadau 2069, page 73 (August 2012)

Media Outreach list of 2013, and 2014

S.No.	Title	Name of Media house	Date
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1.	Government not keen to curb plastic use, say experts	The Himalayan Times	28 Dec 2012
2.	NBSM mulls to ban chemical substances	The Himalayan Times	1 Jan 2013
3.	80 pc hospitals lack medical waste management: Report	Republica National Daily	26 Jan, 2013
4.	Hazardous CFL bulb:	Arthik Abhiyan Daily	Jan 2013
5.	Hospitals throughout the country to adapt to Mercury-free Hospitals	Rajdhani Daily	8 Feb, 2013
6.	13 Industries punished due to excessive environmental pollution	Kantipur National Daily	
7.	Negligence in POPs control	Gorkhapatra	15 Feb 2013
8.	Mercury poses a grave threat to health, and the environment: experts	Republica	23 Feb, 2013
9.	NDA, and CEPHED to push for mercury-free health sector	Republica	24 Feb, 2013
10.	Hospital waste can be dangerous in terms of human health	Chitwan Post	6 Apr, 2013
11.	Initiate mercury-free health care services		6 Apr 2013
12.	Hospital Waste can cause contamination	Pardarshi National Daily	6 Apr 2013
13.	Banning of mercury use in Health care sector	Gorkhapatra	Ashar 24
14.	Health Care Waste Management, and POPs	Tamakoshi Weekly	24 Apr 2013
15.	Implementation of Zero Waste Policy	Tamakoshi Weekly	21 Apr 2013
16.	PCB contaminated transformer oil, and its impact on Grill Workers health	Grill Buletin	May-June 2013
17.	Doctors committed not to use mercury containing instruments	Kantipur Daily	7 May 2013
18.	Banning of use in mercury containing instruments	Annapurna Post	8 May 2013
19.	Environmental Seminar completed	Rajdhani Daily	12 May 2013
20.	Completion of Grill Enterprises Workshop on PC	Dabab National Weekly	16 May 2013
21.	Security Training to Grill Enterpriser	Times	16 May 2013
22.	Demand to remove PCB containing Welding Machine	Nepalpatra	16 May 2013
23.	DoE asked to assess environmental impact of all hospital	Kantipur	20 May 2013
24.	Transformer Oil "Dangerous": NEA staff selling banned Oil	Dainik Patrika	2 June 2013
25.	PCB containing Oil hazardous to human	Arthik Daily	2 June 2013

	health		
26.	Need of Public Level Awareness in Hazardous Chemical	Seti Madi Daily	1 st July 2013
27.	Govt. bans mercury products	The Himalayan Times	17 July 2013
28.	Control on use of mercury containing instruments	Rajdhani Daily	17 July 2013
29.	Banning of mercury containing instruments	Kantipur	17 July 2013
30.	Banning of mercury use in Health	Nagarik National Daily	17 July 2013
31.	The Ministry of Health's effort to make mercury-free health care sector	Arthik Daily	19 July 2013
32.	Program to be launched to control the import of mercury containing instruments	Freeneal News Network	July 2013
33.	Endosulfan Banned Notice of Government	Kantipur Daily	21 st July 2013
34.	NEA to distribute 7, and half lac CFL bulb	Nepal Samacharpatra	9 Aug 2013
35.	Rising mercury use posing threat to health, environment	The Himalayan Times	17 Aug 2013
36.	Nepal likely to sign UN mercury convention	The Kathmandu Post	22 Aug 2013
37.	Minamata Convention on Round Table Discussion	Himalayan Times (Nepali)	25-Aug-13
38.	Awareness Raising, and Capacity Development Training	Adarsh Samaj	25 th Sept 2013
39.	Nepal Urged to ratify Mercury Convention	The Himalayan Times	9-Nov-13
40.	Promotion of Mercury-free Health Care Services in Nepal	Tamakoshi Weekly	27-Nov-13
41.	Initiative to make hospitals mercury-free	The Himalayan Times	7-Dec-13
42.	Hospitals will be penalized if found guilty over mismanagement of Hospital Waste	Kantipur Daily	13-Dec-13
43.	Administration locks the more than half dozen hospitals	Kantipur	18 th Dec 2013
44.	Role of Alka Hospital to reduce Mercury release	Tamakoshi Sandesh	18 th Dec 2013
45.	Training on Health Care Waste Management	Aarcee Times	30 th Dec 2013
46.	Training of hazardous waste management	RC Times	30 th Dec 2013
47.	Lumbini: Nepal's mining Industry	Kantipur	1 st Jan 2014

48.	Medicine in Burial Pit	Kantipur	13 th Jan 2014
49.	Medical waste under CIAA scanner	The Himalayan Times	19 th Jan 2014
50.	Hospital Waste Monitoring on	The Himalayan Times	26 th Jan 2014
51.	Use of Mercury-free Thermometer	Blast Times	Feb 2014
52.	Training on Health Care Waste Management	Dhangadhi Post	12 th Feb 2014
53.	Public Health Training to Grill Entrepreneurs	The Himalayan Times	15 th Feb 2014
54.	Increment in Medicine user in fiscal year	Kailali Times	10 th Feb 2014
55.	Training to Grill Entrepreneurs	Times	15 th Feb 2014
56.	Hospital may cause Cancer	Kaalpristha	17 th Feb 2014
57.	Hospital waste management problematic	Dainik Nepalgunj	17 th Feb 2014
58.	Lets make Hospitals Waste free zone	Sadbhaaw Dainik	17 th Feb 2014
59.	Health Care Waste Management, and POPs	Hamro Samachar	16 th Feb 2014
60.	Hospital Waste Management Stressed	Nepali express	17 th Feb 2014
61.	Pressure situation to promote mercury-free health care services in Nepal	Hamro Samachar	17 th Feb 2014
62.	Pressure situation in Hospital waste management	Hamro Samachar	17 th Feb 2014
63.	Necessity to make hospitals environment friendly	Prabhat Ghoshana	17 th Feb 2014
64.	Health Care waste in road side in Nepalgunj		17 th Feb 2014
65.	Mercury removal orientation	Dainik Nepalgunj	17 th Feb 2014
66.	Alternatives to Energy Crisis: CFL	Tamakoshi Sandesh	26 th Feb 2014
67.	Widespread Persistent Chemicals PCB Story	Himal Khabar Patrika	Feb- Mar 2014 issue
68.	Country wide training on PCB	Tamakoshi Sandesh	5 th March 2014
69.	300 animal dead due to toxic waste	Onlinekhabar	1 st April 2014
70.	Purification of more than 48k Litre Transformer oil	Online Based Magazine	2 nd April 2014
71.	More than 48000 L transformer oil is cleaned	Sajha Khabar	2 nd April 2014
72.	Cleaning of more than 48000 L transformer Oil	Hamro Yatayat	1 st April 2014
73.	Large quantity of hazardous transformer oil is purified	R.S.S	2 nd April 2014
74.	Mercury may cause unimagined death	Online (kalikafm.com.np)	7 th May 2014
75.	Health Experts Stress mercury-free Dental Filling	Kathmandu Post	27 th May 2014
76.	Mercury-free nation on offing	The Rising Nepal	27 th May 2014

77.	Municipality did not comply with Medical Waste Management Agreement	The Aarsee Times	June 6, 2014
78.	Experts lay stress on mercury-free dentistry	The Himalayan Times	8 th June 2014
79.	Initiate the Mercury-free Health care services	Arthik Abhiyan	15 July 2014
80.	Hazardous nature: Use of mercury needs to be curtailed, warn experts	http://tribune.com.pk/story/804929	11 th Dec 2014
81.	Role of Blue Cross Hospital elimination of POPs, and Mercury published in Dec 24, 2014	Sadvab National Daily	December 24, 2014
82.	Call to Stop Mercury use in dentistry	The Kathmandu Post	13 th Jan 2015
83.	Color of Health	The Kathmandu Post	20 th Jan 2015
84.	Mercury is harmful for human health	Pushpanjali National Weekly	1 st March 2015
85.	Health Care Service Provider avoiding MOHP's decision	Ratopati http://www.ratopati.com/2015/03/04/213865.html	4 th March 2015
86.	Hospitals don't want to follow Ministerial Decision	Narayani Online http://narayanionline.com/news/2015-03-03%2014:50:42/171399583454#.VQVjxOEieZQ	4 th March 2015
87.	Hospitals from Chitwan avoid following MOHP's decision	Khabar Chitwan http://www.khabarchitwan.com/16834	4 th March 2015
88.	Awareness, and Capacity Building Program on Mercury-free Dentistry, and Mercury-free Health Care Services in Nepal under WAMFD, and IPEN/IMEAP Program	Environmentalhealth.asia	4 th March 2015
89.	Majority of the health care services from Chitwan were found using mercury	DC Nepal	5 th March 2015
90.	Use of Mercury in majority of the hospitals in Chitwan	Radio Chitwan http://www.radiochitwan.com.np/2015/03/blog-post_88.html	4 th March 2015
91.	Program Coverage in Visual Format	DC Nepal http://www.dcnepallive.com/video/quick-video.php?nid=32098	4 th March 2015
92.	Program Coverage through Social Media	Ratopati	4 th March 2015
93.	Program Coverage through Social Media	Narayani Online	4 th March 2015
94.	Hospitals from Chitwan violates	Non Stop Khabar	5 th March 2015

	Ministerial Decision	http://nonstopkhabar.com/detail_page.php?id=3961	
95.	Program Coverage through Social Media	DC Nepal	5 th March 2015
96.	Public Awareness Program for Mercury-free Health Care Services	arthikdainik.com.np	18 th March 2015
97.	Public Awareness Program for Mercury-free Health Care Services	Arthik Daily	19 th March 2015
98.	One Day Workshop for Mercury-free Health Care Services	Don News	19 th March 2015
99.	Mercury containing instrument causing health care staff's health in danger	The Asia Week	21 st March 2015
100.	Use of Mercury must be banned	Internet Khabar	22 nd March 2015
101.	Use of Mercury in 90 percent of Ayurvedic Medicine	The Asia Week	23 rd March 2015
102.	Urge to ban the use of mercury	Gorkhapatra	23 rd March 2015
103.	Call to Phase out mercury in health care	The Himalayan Times	23 rd March 2015
104.	Call to phase out mercury in health care	Article.wn.com	23 rd March 2015
105.	Call to phase out mercury in health care	Thehimalayantimes.com	23 rd March 2015
106.	Experts stress on the banning of use of mercury	The Weekly Nepal	23 rd March 2015
107.	Government stated to control the use of Mercury	NEWS 24 Video https://www.youtube.com/watch?v=CNBFjIJKhGY	23 rd March 2015
108.	Government stated to control the use of Mercury	News24 Nepal	23 rd March 2015
109.	A High Level Policy Meeting on Mercury-free Dentistry and Health Care Services concluded in Capital city Kathmandu, Nepal organized by CEPHED on 22 March, 2015	Environmentalhealth.asia	23 rd March 2015
110.	Phase Down of Mercury Amalgam: Mercury-free Dentistry: National Regulation, and Revision of Dental Curriculum Demanded	RevoScience	27 th March 2015
111.	Workshop on "Mercury-free Dentistry, and Health Care Services in Nepal"	Asian Center for Health Website	18 th March 2015
112.	Celebrated Oral Health Day	ESDO Newsletter	Jan-March 2015
113.	Initiatives for Mercury-free Dentistry, and Health Care Sector in Nepal	ESDO Newsletter	Jan-March 2015
114.	Mercury-free Dentistry: National	IPEN Site, www.ipen.org	1 st April 2015

	Regulation, and Revision of Dental Curriculum Demanded		
115.	Consumer Should be Aware of Household Paints	Aarsee Times Weekly	20 th July 2015
116.	Silent Threat	The Kathmandu Post	03 Nov, 2015
117.	Overhead Hazards : Asbestos	The Kathmandu Post	20th March 2016
118.	Lumbini at Risks: Industrial Pollution	The Kathmandu Post	17 th May 2016
119.	Use of Asbestos is Invitation to Cancer News Article published in National Daily	Gorkhapatra daily	12 th March 2016
120.	Lumbini under Pollution Threat,	Gorkhapatra Daily	18th May 2016
121.	World Heritage Site Lumbini under Pollution Threat	Dainik Patra Daily , Butwal	21 May 2016
122.		Radio Interviews (30+)	
123.		TV Interviews (10+)	
124.		TV Coverage of the Program (30+)	
125.	Video documentary on Environment Sound Health Care Waste Management, Mercury-free Health Care Services, and PCB free Grill Workshops	TV Broadcasting (POPs) (Nepal Television)	May 26, and May 27, 2014
126.	Video documentary on Environment Sound Health Care Waste Management, Mercury-free Health Care Services, and PCB free Grill Workshops	TV Broadcasting (POPs) (Kantipur Television)	6 th June 2014