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# RESULTS OF THE UNDP-GEF PROJECT FROM A GENDER PERSPECTIVE



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This publication was prepared and published with the support of the UNDP-GEF “Protect human health and the environment from unintentional releases of POPs and mercury from the unsound disposal of healthcare waste in Kyrgyzstan” project, aimed at implementing and adopting Best Environmental Practices (BEP) and Best Available Technologies (BAT) in healthcare facilities in Bishkek to improve the management, treatment and destruction of healthcare waste, and the UNDP “Improving the institutionalization of gender approach in national policy” project.

# RESULTS OF THE UNDP-GEF PROJECT FROM A GENDER PERSPECTIVE

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## INTRODUCTION:

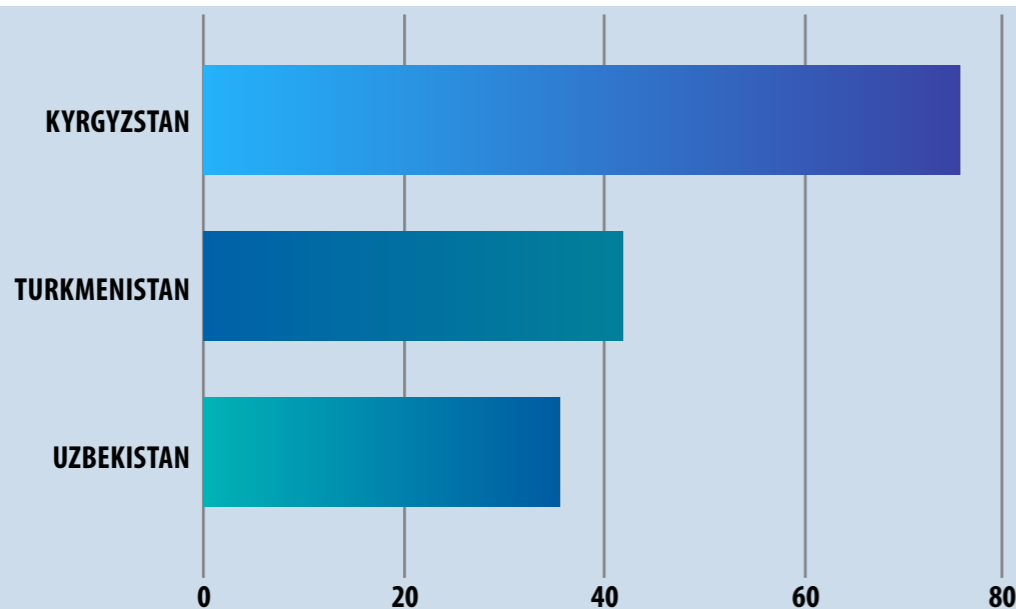
In February 2012, Brazil launched Gender & Waste project with aim to raise awareness of the need to empower women both economically and politically, including women working in waste management. The project focused not only on political issues, but also on women's rights to health. Gender equality cannot be achieved if exposure to hazardous chemicals causes cancer, chronic diseases, infertility in women.<sup>1</sup>

### FURTHERMORE, THE HEALTH OF GIRLS AND WOMEN IS CRITICAL TO REDUCING CHILDHOOD DISABILITY AND MORTALITY AND IMPROVING THE HEALTH OF FAMILIES AND SOCIETY IN GENERAL.

Gender mainstreaming is a powerful and important strategic tool to implement reforms, develop policy solutions, and in social projects. Therefore, gender mainstreaming at each stage of the waste management decision-making process at the national and international levels is crucial for achieving efficient outcome. A gender perspective should be mainstreamed when planning, designing, implementing, monitoring and evaluating projects to avoid inequality between women and men and to better explore ways to minimize chemical effects on people.

The Committee on the Elimination of Discrimination against Women, having considered the fourth periodic report of Kyrgyzstan at its 1289th and 1290th CEDAW sessions on February 25, 2015, expressed concern over high maternal and infant mortality rates, especially in rural areas, in the context of increasing number of women infected with HIV/AIDS. According to WHO statistics for 2016, Kyrgyzstan has the highest maternal mortality rate in Central Asia (76 per 100,000 live births), outstripping Turkmenistan and Uzbekistan (42 and 36 per 100,000 live births, respectively).<sup>2</sup>

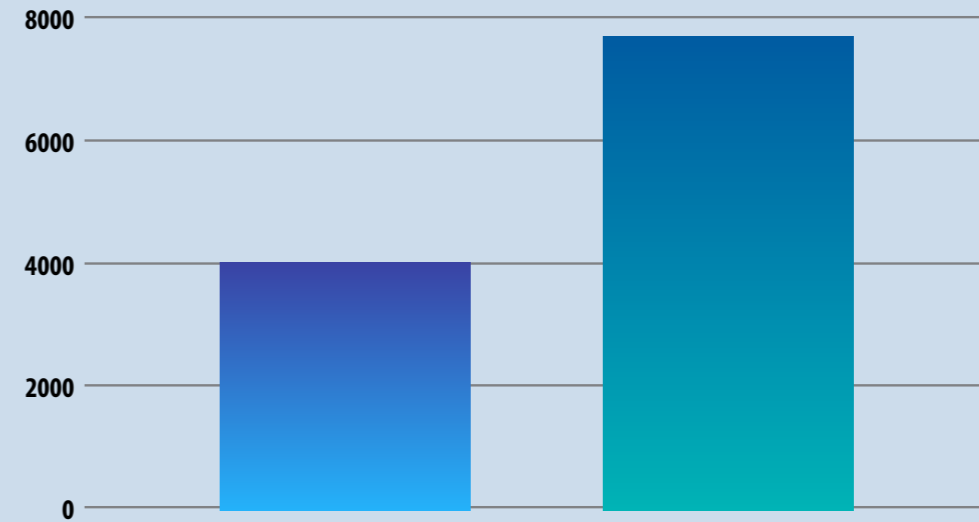
MATERNAL MORTALITY RATE IN CENTRAL ASIA PER 100,000 LIVE BIRTHS, 2016



<sup>1</sup> From Theory to Action: Gender and Waste Recycling A Toolkit for Teachers, Researchers and Practitioners Book 1: Theoretical Considerations on Gender, Empowerment and Waste

<sup>2</sup> Trends in maternal mortality: 1990 to 2015 Estimates by WHO, UNICEF, UNFPA, World Bank Group and the United Nations Population Division

HIV PREVALENCE (IN THOUSANDS), 2008 AND 2017



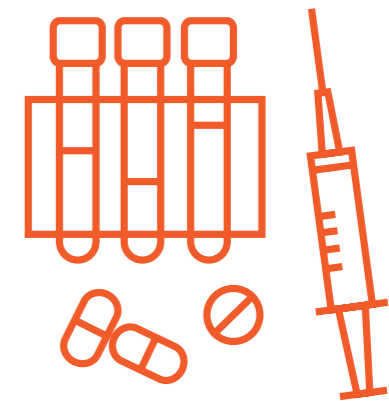
WHO ESTIMATES THAT 40% OF HEPATITIS CASES AND 12% OF HIV CASES WORLDWIDE ARE THE RESULT OF OCCUPATIONAL EXPOSURE TO INFECTIOUS OF MEDICAL WASTE. THE INCIDENCE OF HIV IN THE REPUBLIC HAS INCREASED FROM 4,100 IN 2008 TO 7,728 IN 2017, OF WHICH 2,144 (35%) ARE WOMEN<sup>3</sup>

In accordance with its general recommendation on women and health, the Committee encouraged Kyrgyzstan to strengthen the program for the reduction of maternal, infant and child mortality and ensure effective implementation and adequate funding of relevant government programs, as well as access to medical facilities and qualified medical personnel, and to increase access of all women and girls, in particular those living in rural areas, to basic health services.<sup>4</sup>

Specific significance should be attached to raising awareness of the link between healthcare waste management and public health, with particular emphasis on the effects of dioxins and mercury on the health of working women, pregnant women and children.

<sup>3</sup> Joint annual review of the National Health Reform Program of the Kyrgyz Republic «Den sooluk» for 2012-2018

HEALTHCARE WASTE INCLUDES A WIDE RANGE OF MATERIALS AND BIOLOGICAL ENTITIES, SUCH AS BLOOD, SYRINGES, USED NEEDLES, BODY PARTS, CONTAMINATED BANDAGES, MEDICINES, DIAGNOSTIC TOOLS, MEDICAL DEVICES AND RADIOACTIVE ISOTOPES.



The problem of healthcare waste is extremely acute not only in Kyrgyzstan, but in all countries of the world. In 1979, WHO classified healthcare waste as hazardous and pointed to the necessity of establishing special services to process it. In 1992, the Basel Convention identified 45 types of hazardous waste, with clinical waste in the top of the list.

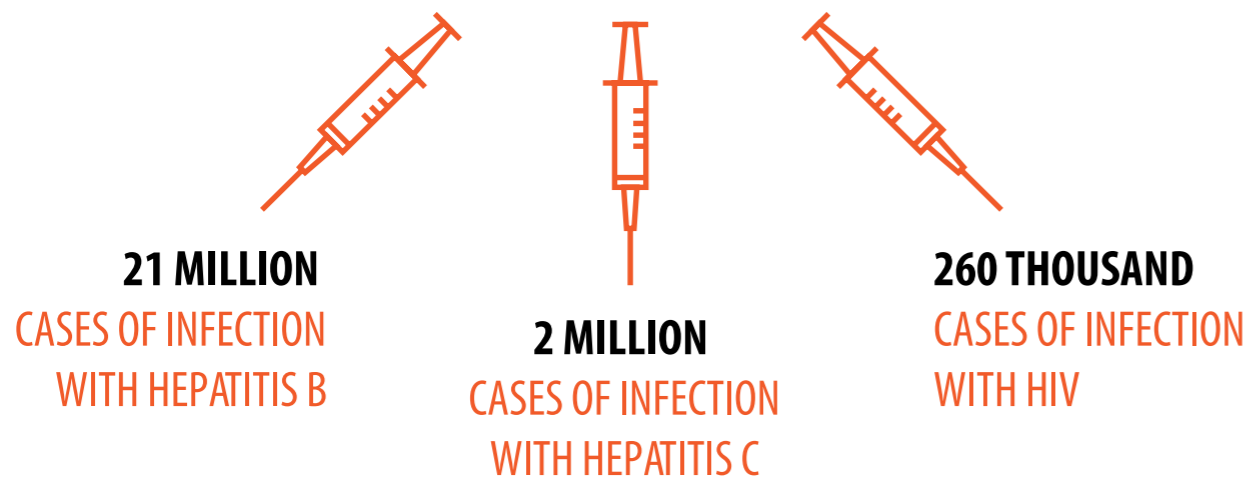
<sup>4</sup> Committee on the Elimination of Discrimination against Women. Concluding observations (2015) CEDAW / C / KGZ / CO / 4



Waste from healthcare facilities contains potentially dangerous infectious agents that can infect health workers and patients in hospitals. Other potential risks of infection may include the spread of drug-resistant microorganisms from health facilities into the environment. The World Health Organization estimates that 16 billion injections are administered annually in the world. Not all needles and syringes are properly disposed of, which creates the risk of injury and infection, as well as opportunities for reuse of the injection equipment.

WHO estimates that in 2000, as a result of injections with contaminated injection equipment, 21 million cases of infection with hepatitis B virus (HBV), two million cases of infection with hepatitis C virus and 260,000 cases of infection with HIV have occurred in the world. Many of these cases could have been avoided by introducing a safe healthcare waste management system in hospitals.

## 16 BILLION INJECTIONS

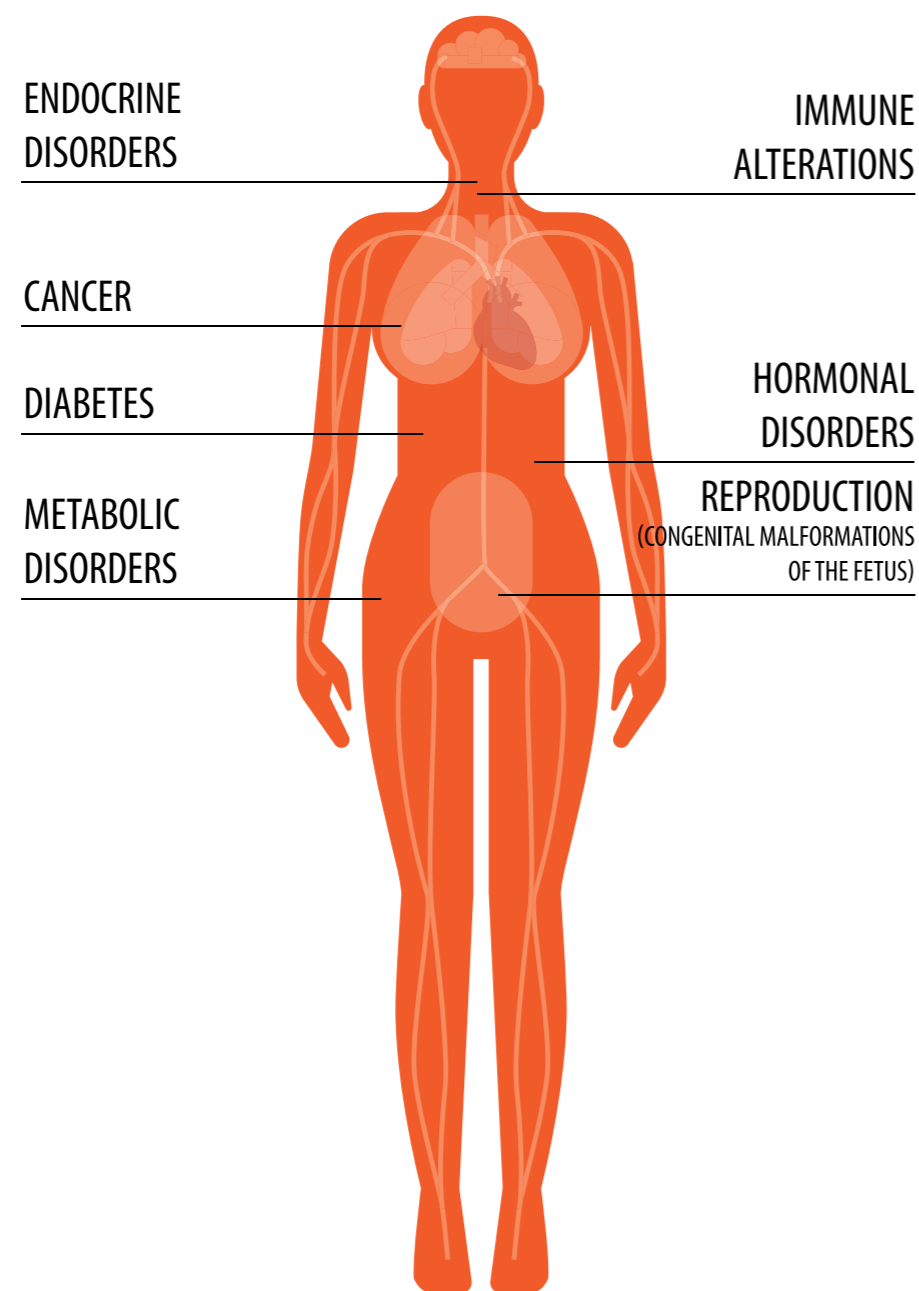


In the Kyrgyz Republic, additional risks still arise from the fact that not all rural health facilities, such as feldsher-midwife stations (FMS), have implemented the safe healthcare waste management system (HWM), which increases the risk of infection of health workers. The risk of unintentional release of persistent organic pollutants (POPs) into the environment also increases, since the produced healthcare waste is burned near FMSs. In low-income countries, as well as in the Kyrgyz Republic, a large amount of medical waste is produced, and as a negative side effect of this, the risk of unintentional release of POPs, such as dioxins and other toxic substances, and mercury into the environment increases. This is often the unintended result of the choice of materials (e.g. mercury and materials containing PVC) and methods of treatment (outdated incineration technologies and open burning).



photo by UNDP

Incineration and/or open burning of healthcare waste are the main sources of dioxins and mercury pollution in the health sector. Other polluting products resulting from incineration and/or open burning are acid gases, heavy metals and soot particles.



POPs accumulate in the adipose tissue of animals and humans. Even small concentrations of some persistent organic pollutants can cause significant harm, leading to the development of diseases of the immune and reproductive systems, congenital defects in children<sup>5</sup>, and cancer<sup>6</sup>. Particularly vulnerable to persistent organic pollutants are the fetus and infants. Affecting the mother's body, POPs are transmitted through placenta to the developing fetus, and through breast milk - to the newborn. The high incidence of stillbirths, miscarriages, congenital malformations, reproductive system diseases in women makes a non-exhaustive list of the effects of POPs exposure. Taylor KW and Zong G. have identified the relationship between exposure to POPs and the development of diabetes mellitus, obesity and metabolic disorders<sup>7,8</sup>

5 Park HY et al. Neurodevelopmental toxicity of prenatal polychlorinated biphenyls (PCBs) by chemical structure and activity: a birth cohort study. *Environ Health*. 2010 Aug 23;9:51

6 Lim J et al. Body concentrations of persistent organic pollutants and prostate cancer: a meta-analysis. *Environ Sci Pollut Res Int*. 2015 Aug;22(15):11275-84

7 Taylor KW et al. Evaluation of the association between persistent organic pollutants (POPs) and diabetes in epidemiological studies: a national toxicology program workshop review. *Environ Health Perspect*. 2013 Jul;121(7):774-83

8 Zong G. Persistent organic pollutants and risk of type 2 diabetes: A prospective investigation among middle-aged women in Nurses' Health Study II. *Environ Int*. 2018 Feb 21. pii: S0160-4120(17)31299-0



photo by UNDP

## DIOXINS ARE A CHEMICAL TIME BOMB. THEY DO NOT DECOMPOSE, HAVE A CUMULATIVE EFFECT AND ARE DANGEROUS IN ANY DOSE. A ZONE OF DIOXIN POLLUTION IS UP TO 24 KM.

These properties make them the greatest threat to the environment. Dioxins make their way into the human body with inhaled air or food (vegetables, milk, eggs) grown on dioxin-contaminated territory. An increased level of dioxin was found in the tissue of people living in close proximity to landfill sites. Dioxins are highly toxic and can cause problems in reproductive health and development, immune system damage, hormonal disorders and cancer.<sup>9,10</sup> In breast milk, women had high levels of hormones - cortisol and cortisone, which led to the development of endocrine disorders.<sup>11</sup> The most sensitive to the effects of dioxin is the developing fetus. Thus, research has identified the relationship between exposure to dioxin and premature childbirth, birth of underweight babies, with neurological disorders and cognitive disabilities.<sup>12,13</sup>

The Kyrgyz Republic ratified the Stockholm Convention on Persistent Organic Pollutants (POPs) on July 17, 2005. With the financial support of the GEF and UNEP, the National Implementation Plan (NIP) of the Convention and the National Action Plan (NAP) for POPs were developed.<sup>14</sup> The NIP was approved by Presidential Decree N-371 dated July 3, 2006 and submitted to the Stockholm Convention on February 4, 2009.

9 Bertazzi PA, Bernucci I, Brambilla G, Consonni D, Pesatori AC. (1998) The Seveso studies on early and long-term effects of dioxin exposure: a review. *Environ Health Perspect* 106 Suppl 2, 625-33.

10 Pesatori AC, Zocchetti C, Guercilena S, Consonni D, Turrini D, Bertazzi PA. (1998) Dioxin exposure and non-malignant health effects: a mortality study. *Occup Environ Med* 55, 126-31.

11 Kido T. et al. High cortisol and cortisone levels are associated with breast milk dioxin concentrations in Vietnamese women. *Eur J Endocrinol*. 2013 Nov 29;170(1):131-9. doi: 10.1530/EJE-13-0410. Print 2014 Jan.

12 Papadopoulou E. et al, Maternal diet, prenatal exposure to dioxin-like compounds and birth outcomes in a European prospective mother-child study (NewGeneris), *Sci Total Environ*. 2014 Jun 15;484:121-8.

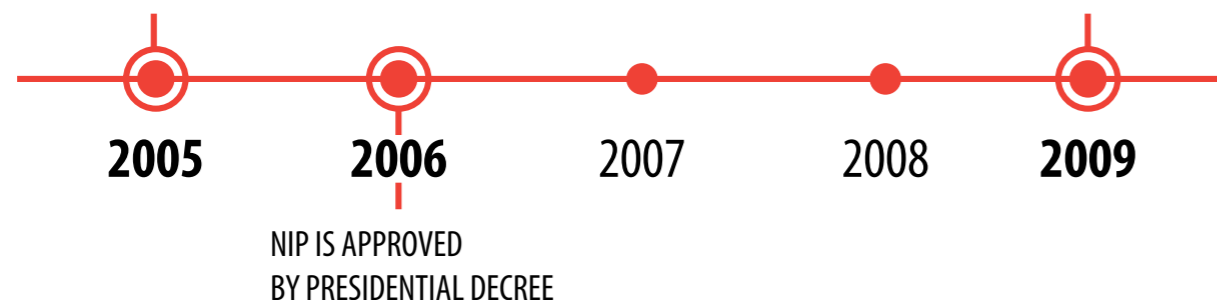
13 Vafeiadi M. et al. In utero exposure to compounds with dioxin-like activity and birth outcomes. *Epidemiology*. 2014 Mar;25(2):215-24.

14 GEF / UNEP Project: "Enabling activities for the Stockholm Convention on Persistent Organic Pollutants (POPs): National Implementation Plan for the Kyrgyz Republic"

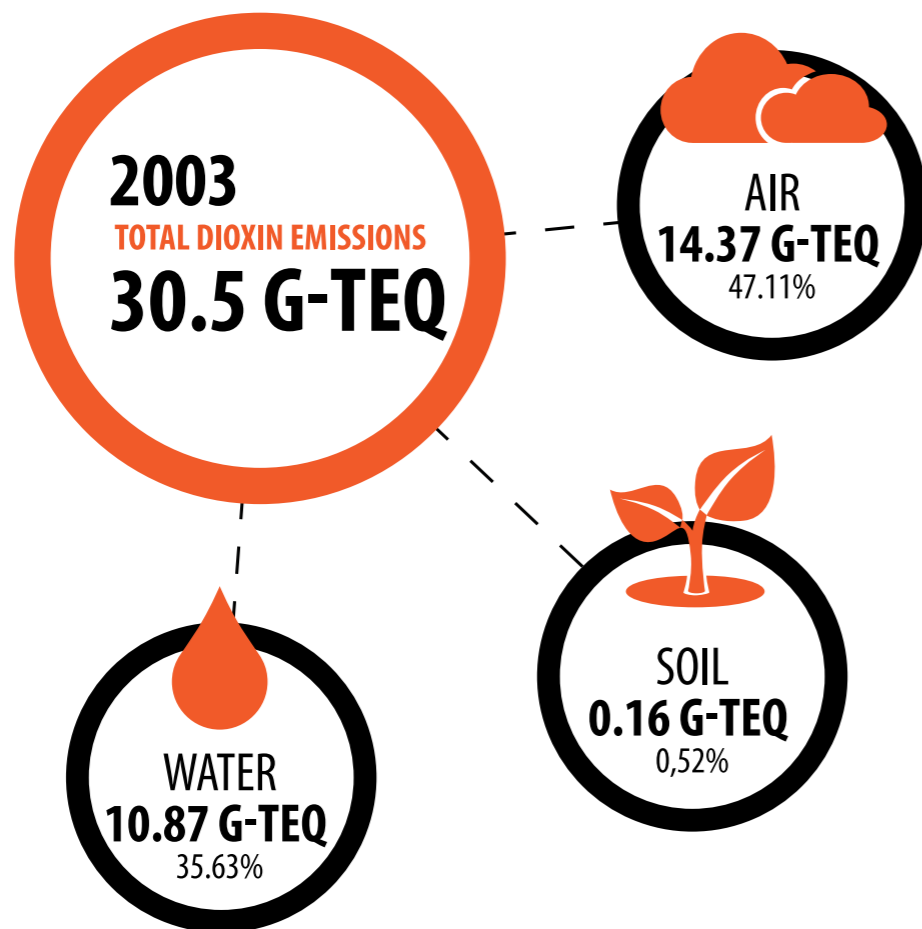


KYRGYZSTAN RATIFIES THE STOCKHOLM CONVENTION ON PERSISTENT ORGANIC POLLUTANTS (POPS)

NIP IS SUBMITTED TO THE STOCKHOLM CONVENTION



As part of preparing the NIP, unintentional releases of POPs (PCDD/PCDF) were measured. In 2003, total dioxin emissions were estimated 30.5 g-TEQ, of which emissions to air were 14.37 g-TEQ (47.11%), to water - 10.87 g-TEQ (35.63%), and to soil - 0.16 g-TEQ (0.52%). As indicated, most of the emissions occurred as a result of incineration of waste, including healthcare waste (7 g-TEQ).<sup>15</sup> The problem of unintentional releases of POPs was identified as a major priority for Kyrgyzstan in the NIP.



Unintentional releases from the unsound disposal of healthcare waste have increased significantly since 2003 due to population growth (by 1.5 times) and increased number of private clinics and clients, with the widespread use of disposable plastic medical products.

Due to the high concentration of healthcare facilities (HFs), 60% of all healthcare waste (HW) is produced in Bishkek with a presumably high share of unintentional POP emissions at the national level.

In the healthcare system of the Kyrgyz Republic, there are 142 organizations providing inpatient services (25,789 beds) with various forms of ownership, and 205 organizations providing outpatient medical services. Furthermore, 37 independent dental clinics, 900 feldsher-midwife stations (FMSs), over 40 sanatorium-type organizations, and 62 sanitary-epidemiological organizations provide medical assistance.

There are medical organizations providing various types of medical services at the Ministry of Internal Affairs of the Kyrgyz Republic (19), the State Service for Punishment Execution under the Government of the KR (19), the Ministry of Social Development (1), the Ministry of Education and Science of the KR (10), the Ministry of Defense of the KR (21), the State Committee for National Security of the KR (2), the National Guard of the KR (1), etc. Besides, medical care is provided in 13 boarding houses, 7 medical/resort facilities for children and 31 - for adults, 2,149 schools, 111 vocational lyceums, 80 specialized secondary schools, 47 higher educational institutions.

**IN KYRGYZSTAN,  
5,820 ORGANIZATIONS  
PROVIDE VARIOUS MEDICAL  
SERVICES.**

The private health sector is represented by both legal entities and individuals. In total, 1,923 licensees for private medical practice are licensed in the republic, including 589 legal entities and 1,334 individuals, of which 40% are in Bishkek.

Private medical practitioners and non-governmental medical organizations provide medical services in 37 types of medical specialties, including dental - 26%, massage and manual therapy - 9.7%, gynecology - 9%, therapy - 5.3%, dermatovenereology - 4.2%, acupuncture - 4%, and others. Dental care is provided by 121 business entities, including 12 dental clinics.

In order to handle infectious medical waste in an environmentally friendly way, the United Nations Development Program and the Global Environment Facility in Kyrgyzstan implemented the project "Protect human health and the environment from unintentional releases of POPs and mercury from the unsound disposal of healthcare waste in Kyrgyzstan". Within the framework of this project it was planned to implement and adopt the best environmental practices (BEP) and the best available technologies (BAT) in healthcare facilities of Bishkek to improve the management, treatment and disposal of healthcare waste, and to provide support to 100 FMSs in Chui and Issyk-Kul regions.



photo by UNDP

<sup>15</sup> There was great uncertainty in the calculations due to the lack of accurate data on incineration practices.

## THE PROJECT HAD 3 MAIN COMPONENTS:

### COMPONENT 1:

Strengthening national regulatory and policy frameworks for healthcare waste management (HWM)

### COMPONENT 2:

Application of Best Available Technologies (BAT) and Best Environmental Practices (BEP) in the healthcare waste management system.

### COMPONENT 3:

Implementation of measures to reduce mercury waste in Bishkek.

## COMPONENT 1: STRENGTHENING NATIONAL REGULATORY AND POLICY FRAMEWORKS FOR HEALTHCARE WASTE MANAGEMENT (\$ 165,000)

HWM is regulated by the local norms for municipal waste management and the orders/provisions regulating the work of medical institutions. The most significant regulation on HWM is the **Law on Production and Consumption Waste (2001)**. In accordance with Article 8 of the Law, **unauthorized disposal of waste that is a source of environmental pollution is prohibited**. Under the same law, **incineration and burning waste on the territory of enterprises, institutions, organizations and places of residence are also prohibited**. In accordance with this Law, **in 2005, the National Production and Consumption Waste Management Program was approved, which established an intersectoral system for collecting and processing medical waste**.

**The issues of healthcare waste management are also reflected in the Law “on Protection of Health of Citizens of the Kyrgyz Republic” (2005)**. In accordance with Article 39, the public authority responsible for public health must in an adequate manner prescribe the management and storage of biological material and healthcare waste.

The issues of healthcare waste management are included in the **National Health Reform Program “Den Sooluk” for the periods 2012-2016 and 2016-2020**.

In issues regarding HWM, health organizations were guided **by the order of the Ministry of Health of the Kyrgyz Republic No. 59** dated February 18, 2013 “On improving the safe healthcare waste management system in health organizations of the Kyrgyz Republic”. But, this document was developed only for state medical institutions and did not include monitoring tools. In this regard, within the framework of the project, legislation on HWM was revised and approved by the **Decree of the Government of the Kyrgyz Republic No. 94** dated 15.02.2018 “**Instruction on the Management of Healthcare Waste in the Territory of the Kyrgyz Republic**”, which will cover all medical institutions regardless of ownership. This Decree has the following objectives:

- establishing a system regulating responsibility, allocation of resources, management and disposal;
- raising awareness of the public and medical personnel about the risks associated with the waste of medical institutions, and about safe and reliable practices;
- selection of safe and environmen-

**THE GOVERNMENTAL DECREE “INSTRUCTION ON THE MANAGEMENT OF HEALTHCARE WASTE IN THE TERRITORY OF THE KYRGYZ REPUBLIC” WILL ALLOW TO MOVE AWAY FROM THE TRADITIONAL APPROACH TO WASTE HAZARDS AND WILL FACILITATE THE INTRODUCTION OF INSTITUTIONAL CONCEPT OF HEALTHCARE WASTE AND APPLICATION OF STRICT REQUIREMENTS FOR COLLECTION, TEMPORARY STORAGE, STORAGE, TRANSPORTATION AND DISPOSAL AT THE LEGISLATIVE LEVEL, AND WILL REDUCE THE NEGATIVE HEALTH AND ENVIRONMENTAL IMPACT ON THE POPULATION AND ENVIRONMENT, AND WILL PREVENT THE EMERGENCE OF EPIDEMIOLOGICAL OUTBREAKS.**

tally friendly management options to protect people from hazards during collection, handling, storage, transport, treatment or disposal of waste.

Moreover, according to the order of the Ministry of Health of the Kyrgyz Republic No. 214 dated March 26, 2018 “On the approval of standard operating procedures (SOP) for the management of healthcare waste in health organizations and guideline for monitoring and evaluation of HWM system in health organizations of the Kyrgyz Republic”, the following documents were revised and approved:

1. Guidance for monitoring and evaluation of the waste management system in health organizations
2. Standard operating procedures for the organization of medical waste management system in health organizations of the KR
3. Standard operating procedures for the autoclaving of medical waste at the decontamination (autoclaving) site
4. Standard operating procedures for actions of personnel of health organizations in the event of emergencies during the treatment of medical waste

Within the framework of the project, a unified National Strategy for HWM 2020 was developed, which was twice interdepartmentally reviewed, but was approved not at the governmental level, but by the order of the Ministry of Health of the Kyrgyz Republic No. 649 dated 20.07.17.

A draft standard for the management of vaccine wastes was developed and discussed in May 2017 with representatives of WHO and the Republican Center for Immunologic Prevention, including a ban on incineration of safe disposal boxes. At this meeting, it was decided to test the draft standards at 5 feldsher-midwife stations and 5 family medicine centers; the results of testing were positive. However, in the course of negotiations with Gavi (the Alliance for Vaccination), a response was received that the procedures for disposal after vaccination of medical items that were obtained as humanitarian aid will not be changed for one country. At the moment, the country is not ready to purchase vaccines, so the issue of incineration in safe disposal boxes remains open.

The draft document on the ban on the import of PVC medical items, for which there are cost-effective alternatives, was developed, where it was found that PVC syringes are not imported to the country, and PVC-free medical items cost 5 times as much as PVC containing analogues. However, based on the strategy of the Ministry of Health, which prioritizes protection of the health of children and pregnant women, a proposal was made for phased transition of the MoH to “green procurement”, with the first phase focusing on its implementation for children and pregnant women.

## COMPONENT 2: APPLICATION OF BEST AVAILABLE TECHNOLOGIES (BAT) AND BEST ENVIRONMENTAL PRACTICES (BEP) IN THE HEALTHCARE WASTE MANAGEMENT SYSTEM (\$ 970,500)

**Annually, about 1,700,000 preventive vaccinations are carried out in the republic, while about 543 tons of vaccine waste per year are generated at the primary level only (family medicine centers, groups of family doctors, feldsher-midwife stations)**. In the framework of the GEF/UNEP project, in 2012, a primary inventory of POPs was carried out, which showed that in Bishkek only, 357,600 one piece syringes and 61,900 one piece systems were used for medical services, which, based on the average weight of one product, makes up about 24 tons of polymer waste per month.

According to the report of the national consultant Toktobaev N. on the current situation with healthcare waste management in selected medical institutions in Bishkek which was conducted in 2006 as part of preparation of the project document for the planned GEF/UNDP project “Protect human health and the environment from unintentional releases of POPs and mercury from the unsound disposal of healthcare waste in Kyrgyzstan” by type, weight and volume of generated waste in health organizations in Bishkek, the volume of production of infectious waste was determined at 0.156 kg per bed per day and 0.0029 kg per visit per day. **In terms of the number of beds (according to statistics for 2014) in the country, about 1,444,310 kg of infectious wastes are generated per year (class B)**.



These figures are the results of fragmentary studies and do not reflect the situation, either in general or in the classes of waste. At present, there is no mandatory system for recording and registration of waste, not only in the health sector, but also in other sectors of production and consumption. There is a lack of awareness of the problems associated with chemicals and waste in the country. There is a lack of sufficient analysis of the connection between toxic substances and gender. **Therefore, the project intensified efforts to address these gaps by providing greater access to information on the effects of harmful chemicals and hazardous waste on the health of women and children, and providing the healthcare waste management system with autoclaving method for treatment of infectious medical waste in 11 health organizations. Of the 334 specialists in these institutions, 246 are women, among them 169 (68%) are women of reproductive age.** Accordingly, over 200 women involved in the project, more than half of whom are women of childbearing age, got knowledge about harmful effects of incineration of medical waste and measures to protect their health.

Within the framework of the project, baseline assessment of unintentional releases of POPs and mercury was conducted for each healthcare facility, needs for HWM equipment and technical assistance were estimated.

At present, separate collection of infectious waste is carried out in health organizations. Infectious waste is divided into the following groups: anatomical, sharp and pointed, plastic (plastic part of the syringe) and other potentially infectious waste (tampons, bandages, etc.). Anatomical waste is collected separately, chemically disinfected and buried in specially designated areas, in cemeteries. Small anatomical waste (placenta, abortion material) is dumped in sanitary pits in territorial hospitals. In some regions, mothers take their placenta home following the cultural tradition for subsequent burial in cemeteries. Sharp and pointed plastic (plastic part of the syringe) and other potentially infectious waste (tampons, bandages, etc.) is processed by autoclaving. The autoclaved plastic and metal waste is then recycled by private companies. The remaining sterilized waste is discharged into the general stream of non-hazardous waste. This practice meets the requirements of the Stockholm and Basel conventions, ratified by the country. Introduction of disinfection of infectious medical waste by non-combustion technologies will reduce the formation of persistent organic pollutants in case of unintentional incineration in landfills.

HWM specialists conducted trainings on the use of non-combustion HWM technologies for 33 specialists (31 women and 2 men) from 11 health organizations in Bishkek and 100 specialists (100 women) from Chui and Issyk-Kul regions. Moreover, 20 teachers (3 men and 17 women) from medical universities and colleges passed the training. This module was integrated into 4 universities and 1 college. Based on the training modules, brochures on HWM were developed and shared with all health organizations of the Kyrgyz Republic. Considering that 10 institutions designed for 2,177 beds produce about 123,958 kg of medical waste per year, this measure will indirectly protect about 3,000 people from the harmful effects of dioxins and furans.

#### TRAINING ON THE USE OF NON-COMBUSTION HWM TECHNOLOGIES

**COVERAGE:** 33 SPECIALISTS (31 WOMEN AND 2 MEN)  
BISHKEK

100 SPECIALISTS (100 WOMEN)

FMSS IN CHUI AND ISSYK-KUL REGIONS

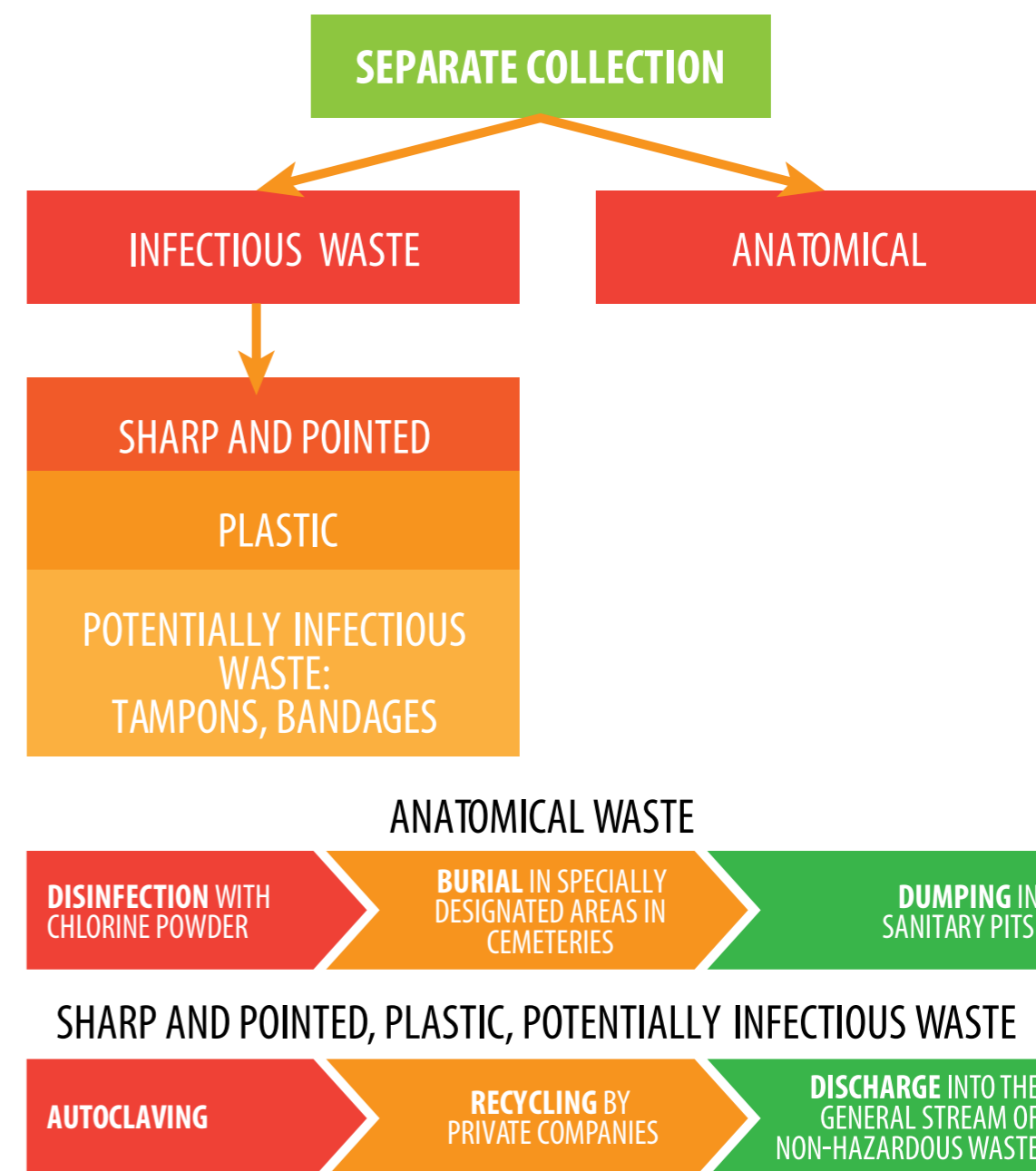
20 SPECIALISTS (3 MEN AND 17 WOMEN)

FROM MEDICAL UNIVERSITIES AND COLLEGES

**RESULT:** Brochures on HWM were shared with all health organizations of the Kyrgyz Republic.

Training modules were integrated into 4 universities and 1 college

## HEALTHCARE WASTE DISPOSAL SCHEME



Health organizations in Bishkek, Chui and Issyk-Kul regions have concluded agreements with local processing companies on the sale of the disinfected plastic part of syringes. Such transactions bring income to hospitals, as well as reduce the amount of waste that reaches the landfills of Bishkek and ayil aimaks (territorial units with local self-government), thereby minimizing dioxin and furan emissions in the health sector.

However, in 800 FMSs out of 900, that were not part of the project, chemical disinfection or incineration are the main methods for disinfection and destruction of infectious healthcare waste. These FMSs are usually situated in rural areas and dispose of their waste by burning it in pits located nearby. This practice of healthcare waste disposal is a source of unintentional releases of POPs. These FMSs often located in remote areas are often administered by nurses who, besides providing antenatal care, also receive patients, conduct vaccination and immunization, which are the main sources of their infectious waste. Frequent burning of even small amounts of waste can have a negative impact on the human body. In this regard, the project also implemented a decentralized HWM system with desktop autoclaves at 100 FMSs in Chui and Issyk-Kul regions. The use of autoclaving technology (rather than incineration) will allow to avoid the formation of any dioxins or furans, and therefore, to avoid the unintentional release of POPs. Taking into account the fact that only women work in the FMSs, in the future, this method will have positive effect on women's health and their reproductive system.

These technologies will reduce unintentional releases of POPs in the health sector and enable the country to fulfill effectively its obligations under the Stockholm Convention.



### COMPONENT 3: IMPLEMENTATION OF MEASURES TO REDUCE MERCURY WASTE IN BISHKEK (\$ 100,000)

Disposal of mercury-containing elements is crucial for reduction of the impact on the health of women and children. **Mercury is one of the most toxic substances, which, if released to the environment, can cause irreparable damage. Mercury can cause acute and chronic intoxication at low levels of exposure. Damage from mercury vapor mainly targets the brain, but cases of impaired function of peripheral nerves, kidneys, immune, endocrine and muscular system, and skin lesions are known.**<sup>16</sup> Acute poisoning with metallic mercury (vapor) causes inflammation of the respiratory tract with the development of interstitial pneumonitis, leading to respiratory failure accompanied by central nervous system disorders, such as tremor and erethism, acute renal necrosis. With chronic mercury poisoning, a person develops neurological disorders, as well as excessive salivation, loss of teeth, gingivitis and stomatitis, dermatitis, generalized rash, irritability, photophobia, hypertrichosis and profuse sweating.<sup>17 18</sup> With the intrauterine effect of mercury on the fetus, development of microcephaly, seizures, blindness, mental deficiency and other malformations is possible.<sup>19</sup>

**Representatives of over 140 countries signed the Minamata Convention, a document regulating the global use of mercury. All countries that signed the Convention undertake to ban the export of this heavy metal by 2020, reducing the release of toxic fumes into the atmosphere, etc. In Kyrgyzstan, the work relating to assessment of mercury emissions has not yet been carried out.**

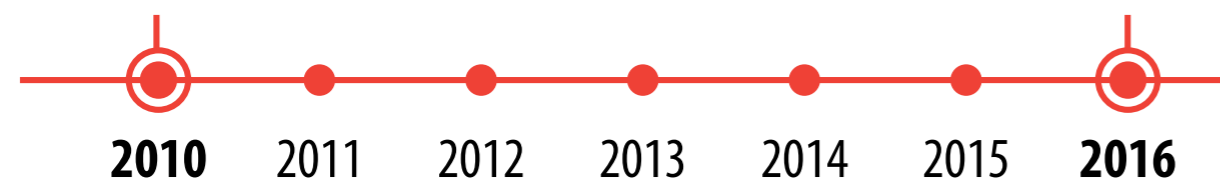
At the national level, legislation regulating issues of mercury-containing waste has been adopted. Thus, according to the Decree of the Government of the Kyrgyz Republic No. 9 dated 15.01.2010, mercury-containing waste was included in the classifier of hazardous waste and principles for determining the hazard class of the waste. The Ministry of Health approved Order No. 715 dated 20.09.2016 "On withdrawal of clinical mercury thermometers and their replacement by electronic thermometers in health organizations of Bishkek." In the national program for the management of chemicals for 2015-2017, improvement in the management of mercury-containing products and wastes is a priority.

**However, due to a lack of understanding of the seriousness of the problem, no instructions/provisions to ensure (temporary) storage, decontamination of mercury-containing materials have been developed so far at the national level, and there are no clear procedures for working with mercury spills, treatment, management and storage of such wastes at the level of healthcare facilities.**

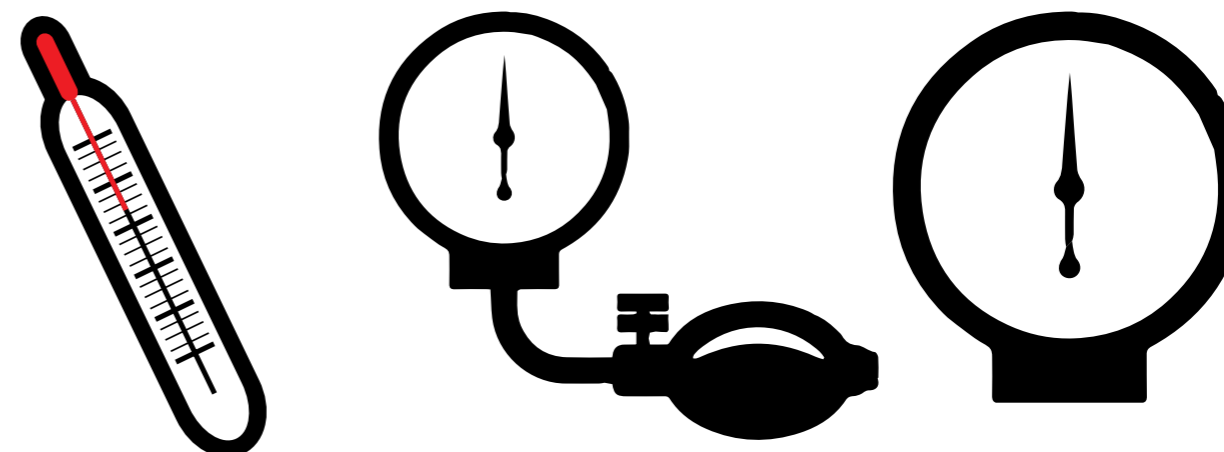
One of the sources of mercury in health care is the constant use of mercury-containing measuring devices, such as thermometers, sphygmomanometers, manometers. Therefore, the safest and preferred way to reduce mercury emissions and reduce its impact on medical personnel and patients is phasing-out mercury-containing medical devices, which will allow to avoid storage and treatment of unwanted waste.

MERCURY-CONTAINING WASTE IS INCLUDED IN THE CLASSIFIER OF HAZARDOUS WASTE AND PRINCIPLES FOR DETERMINING THE HAZARD CLASS OF THE WASTE

ORDER "ON WITHDRAWAL OF CLINICAL MERCURY THERMOMETERS AND THEIR REPLACEMENT BY ELECTRONIC THERMOMETERS IN HEALTH ORGANIZATIONS OF BISHKEK"



As part of the project, specialists conducted baseline assessment of mercury-containing materials in 11 pilot health organizations in Bishkek and developed management plans and plans for phased withdrawal of mercury-containing materials for these institutions.



- "Rules for working with mercury-containing medical products" were adopted by the Decree of the Government of the Kyrgyz Republic No. 94 dated February 15, 2018.
- Jogorku Kenesh is giving a reading to the draft law "On the introduction of amendments and changes to certain legislative acts of the Kyrgyz Republic regarding regulation of the importation of mercury-containing products".
- Training on emergency situations with mercury spills was conducted for 25 representatives of the Ministry of Emergency Situations (1 from each region and Bishkek), State Agency on Environmental Protection and Forestry, State Inspectorate for Environmental and Technical Safety under the Government of the Kyrgyz Republic, Ministry of Health of the Kyrgyz Republic.
- Animation "Do you know what to do if a mercury thermometer breaks?" was watched by over 1 million people on Facebook. Posters with the same title were distributed to all health organizations across the country.
- Analytical equipment for the State Sanitary and Epidemiological Surveillance Center in Bishkek (LUMEX analyzer - water, soil, air, biomonitoring) was purchased.
- Demercurization kits, personal protective equipment and portable analyzer for the determination of mercury in air were transferred to the Ministry of Emergency Situations in Bishkek.
- KTRK broadcasted a special report and a program for children "Gradusnik" (thermometer), Birinchi radio broadcasted a radio program about the dangers of mercury.
- 400 medical workers (12 men and 388 women) from 68 health organizations of Bishkek received training in clean-up, storage and transportation of mercury-containing waste.
- Training was conducted for the specialists of the Ministry of Emergency Situations (89 men and 11 women) on safe management of mercury-containing waste.
- As part of the project, 3,000 electronic thermometers were purchased for 11 medical institutions, as well as materials for the collection, transportation and temporary storage of 1,300 mercury-containing thermometers that were later disposed of at the Khaidarkan mercury combine.

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## CONCLUSION

Women make up about half of the world's population and potentially constitute half of the world's workforce. **As a population group, women work as much as men, if not more.** However, the types of work they do, as well as the conditions in which they work, and the opportunities for career advancement available to them are different from those of men. **Women are less likely than men to work in paid jobs, but they work in the household more than men, fulfilling family responsibilities. Their work is concentrated in sectors and professions characterized by low wages, long working hours and lack of social protection. Women across the world are less likely than men to hold managerial positions and are paid lower wages.** According to statistics, Kyrgyzstan continues to show a higher level of economic activity of men compared to women. In 2012, this indicator was 51.8% for women and 77.3% for men. Overall, the situation of women in labor market is deteriorating. **Economic opportunities of women are limited by the existing gender horizontal and vertical segregation in the labor market.** Women work in traditionally "female" spheres - education, health, culture and art, where wages are low. Over the past five years, the gap in the wages of women and men has narrowed. If in 2008 the female wages were 67.3% of male, in 2012 they make 74.3%. However, despite the narrowing of the gap between "female" and "male" wages, women employed in the public sector can be classified as a special category of the poor.<sup>20</sup>

The Beijing Platform for Action defines the role of women in the economy as one of the most important problem areas and calls attention to the need to promote and ensure their equal access to employment opportunities and resources, improve working conditions, and harmoniously combine productive activities and family responsibilities for women and men.

**Eliminating gender disparities in health empowers women and helps to achieve sustainable development goals, but this will not be possible if hazardous chemicals widely have a negative impact on the health of women.**

The project of the United Nations Development Program in Kyrgyzstan "Protect human health and the environment from unintentional releases of POPs and mercury from the unsound disposal of healthcare waste in Kyrgyzstan" has done extensive work on the development of legal and policy framework for both POPs and mercury, implementation of best available HWM technologies and training of specialists in management of healthcare waste. The results show that the project is sustainable and successful, and financially effective.

**Despite the fact that the project did not focus on women, it is known that 80% of health workers in pilot health facilities are women, so improving the HWM practice and phasing out mercury use will have a positive impact on women** (reduced impact of POPs, mercury and infections). Besides, potential adverse effects of POPs on the fetus and infants should be considered. Consequently, protection of women of reproductive age and pregnant women, in particular, will protect the future generation from the harmful effects of POPs and mercury.

Overall, given the conditions or opportunities, the project provided women with safety at the workplace through introduction of proper healthcare waste management in health organizations of the KR.

Introduction of non-combustion technologies, which contribute to minimization of the release of plastic products and to reduction of the volume of waste at landfills that may inadvertently ignite with the release of dioxins and furans, generally contributes to the better environment and better health of the population.

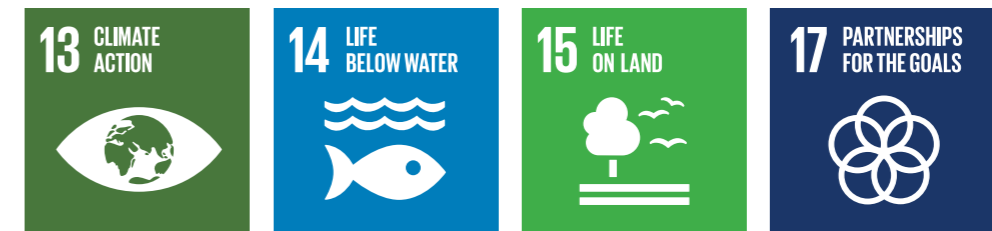
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**ACCORDING TO THE UN, WOMEN CARRY OUT 2/3 OF THE WORLD'S WORKLOAD AND RECEIVE 1/3 OF THE WAGES, 1/10 OF THE WORLD'S INCOME, CONSTITUTE 2/3 OF UNEDUCATED POPULATION, AND OUT OF THE 1.3 BILLION PEOPLE LIVING IN POVERTY, 70% ARE WOMEN.**



### GOAL OF THE GEF - PROTECTION OF THE EARTH'S LIFE SUPPORT SYSTEMS



### GEF - ADDITIONAL IMPACT



### GEF INVESTMENTS - SUPPORT OF TRANSFORMATIONAL CHANGES



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