GLOBAL ENVIRONMENT FACILITY
INVESTING IN OUR PLANET

CEO Approval (CEO) entry – Medium Sized Project – GEF - 7

Part I: Project Information

GEF ID
10936

Project Type
MSP

Type of Trust Fund
GET

CBIT/NGI
CBIT **No**
NGI **No**

Project Title
Accelerate implementation of dental amalgam provisions and strengthen country capacities in the environmental sound management of associated wastes under the Minamata Convention

Countries
Global, Senegal, Thailand, Uruguay

Agency(ies)
UNEP

Other Executing Partner(s)
World Health Organization (WHO)

Executing Partner Type
Others

GEF Focal Area
Chemicals and Waste

Sector

Taxonomy
Focal Areas, Chemicals and Waste, Waste Management, Hazardous Waste Management, Mercury, Sound Management of chemicals and waste, Influencing models, Demonstrate innovative approache, Strengthen institutional capacity and decision-making, Transform policy and regulatory environments, Stakeholders, Beneficiaries, Private Sector, Individuals/Entrepreneurs, SMEs, Type of Engagement, Partnership, Consultation, Participation, Information Dissemination, Local Communities, Civil Society, Non-Governmental Organization, Academia, Community Based Organization, Trade Unions and Workers Unions, Communications, Public Campaigns, Awareness Raising, Education, Behavior change, Gender Equality, Gender Mainstreaming, Women groups, Gender-sensitive indicators, Sex-disaggregated indicators, Capacity, Knowledge and Research, Knowledge Exchange, Capacity Development, Targeted Research, Knowledge Generation

Rio Markers
Climate Change Mitigation
No Contribution 0

Climate Change Adaptation
No Contribution 0

Biodiversity

Land Degradation

Submission Date
2/28/2022

Expected Implementation Start

7/4/2022

Expected Completion Date

7/3/2025

Duration

36In Months

Agency Fee($)

190,000.00

A. FOCAL/NON-FOCAL AREA ELEMENTS

Objectives/Programs	Focal Area Outcomes	Trust Fund	GEF Amount($)	Co-Fin Amount($)
CW-1-1	Strengthen the sound management of industrial chemicals and their waste through better control, and reduction and/or elimination	GET	2,000,000.00	11,334,280.00
		Total Project Cost($)	2,000,000.00	11,334,280.00

B. Project description summary

Project Objective

To protect human health and the environment from harmful effects of mercury through implementation of policies and improved practices to phase down the use of dental amalgams

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)
1. Phase down of dental amalgam use through improved policies and technical capacity	Technical Assistance	Outcome 1.1: Policies and standards for sound management of dental amalgam in accordance with Minamata Convention provisions are approved by strengthened government agencies and stakeholders from participating countries	Output 1.1.1: Project countries develop standards and tools to improve dental materials supply management and dental insurance programmes	GET	679,075.00	3,559,715.00
2. Improve management of mercury and hazardous waste from dental use	Technical Assistance	Outcome 2.1: Sound management practices to handle dental amalgam and their wastes adopted by selected dental facilities in target countries through demonstration of different disposal schemes	Output 2.1.1: Feasibility on the application of sound management and disposal schemes for dental amalgam are tested and dental wastes transported and disposed	GET	674,854.00	3,742,955.00

3. Knowledge management and global awareness	Technical Assistance	Outcome 3.1: Global awareness increased through enhanced knowledge sharing and facilitated information exchange on dental amalgam management	Output 3.1.1: Guidance materials updated on future use of dental restoration materials and global database established to inform project outputs, COP and reporting	GET	426,494.00	3,042,715.00
			Output 3.1.2: Lesson learned collected, systematized and distributed by the knowledge hub through Global Mercury Partnership			
4. Monitoring and evaluation	Technical Assistance	Outcome 4.1 Project achieves its objective through proper M&E system	Output 4.1.1 Project successfully monitored and evaluated	GET	40,000.00	44,715.00
				Sub Total ($)	**1,820,423.00**	**10,390,100.00**

Project Management Cost (PMC)

	GET	179,577.00	944,180.00
	Sub Total($)	**179,577.00**	**944,180.00**
	Total Project Cost($)	**2,000,000.00**	**11,334,280.00**

Please provide justification

C. Sources of Co-financing for the Project by name and by type

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount($)
Other	University of Sheffield	In-kind	Recurrent expenditures	276,000.00
Private Sector	Solmetex	Grant	Investment mobilized	17,000.00
Private Sector	Separatory Amalgamatu	Grant	Investment mobilized	25,000.00
Private Sector	Metasys	Grant	Investment mobilized	15,000.00
Private Sector	SDI Limited	In-kind	Recurrent expenditures	4,500,000.00
Private Sector	Ecocycle	Grant	Investment mobilized	15,000.00
Private Sector	Enretec	In-kind	Recurrent expenditures	100,000.00
Other	FDI World Dental Federation	In-kind	Recurrent expenditures	1,137,000.00
Other	International Association for Dental Research	In-kind	Recurrent expenditures	412,000.00
Private Sector	Dental Recycling International (DRI)	Grant	Investment mobilized	29,950.00
Private Sector	Batrec	In-kind	Recurrent expenditures	105,290.00
Other	Aide Odontologique International	In-kind	Recurrent expenditures	250,000.00
Other	Association for Dental Education, Asia Pacific (ADEAP)	In-kind	Recurrent expenditures	10,000.00
Other	Charite University	In-kind	Recurrent expenditures	59,000.00
Other	Kings College London	In-kind	Recurrent expenditures	2,600,000.00

Other	WHO	In-kind	Recurrent expenditures	1,325,550.00
GEF Agency	UNEP	In-kind	Recurrent expenditures	250,000.00
Recipient Country Government	Ministry of Health (Senegal)	In-kind	Recurrent expenditures	101,360.00
Recipient Country Government	Ministry of Public Health (Thailand)	In-kind	Recurrent expenditures	16,130.00
Recipient Country Government	Ministry of Health (Uruguay)	In-kind	Recurrent expenditures	90,000.00
			Total Co-Financing($)	**11,334,280.00**

Describe how any "Investment Mobilized" was identified

Private co-financing partners: Solmetex, Separatory Amalgamatu, Ecocycle, Metasys and DRI will be purchasing separators and providing them to the project.

D. Trust Fund Resources Requested by Agency(ies), Country(ies), Focal Area and the Programming of Funds

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount($)	Fee($)	Total($)
UNEP	GET	Senegal	Chemicals and Waste	Mercury	517,000	49,115	566,115.00
UNEP	GET	Thailand	Chemicals and Waste	Mercury	517,000	49,115	566,115.00
UNEP	GET	Uruguay	Chemicals and Waste	Mercury	517,000	49,115	566,115.00
UNEP	GET	Global	Chemicals and Waste	Mercury	449,000	42,655	491,655.00
				Total Grant Resources($)	**2,000,000.00**	**190,000.00**	**2,190,000.00**

E. Non Grant Instrument

NON-GRANT INSTRUMENT at CEO Endorsement

Includes Non grant instruments? **No**

Includes reflow to GEF? **No**

F. Project Preparation Grant (PPG)

PPG Required **true**

PPG Amount ($)	PPG Agency Fee ($)
50,000	4,750

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount($)	Fee($)	Total($)
UNEP	GET	Global	Chemicals and Waste	Mercury	50,000	4,750	**54,750.00**
				Total Project Costs($)	**50,000.00**	**4,750.00**	**54,750.00**

Core Indicators

Indicator 9 Chemicals of global concern and their waste reduced

Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)
0.00	11.60	0.00	0.00

Indicator 9.1 Solid and liquid Persistent Organic Pollutants (POPs) removed or disposed (POPs type)

POPs type	Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)

Indicator 9.2 Quantity of mercury reduced (metric tons)

Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)
	11.60		

Indicator 9.3 Hydrochloroflurocarbons (HCFC) Reduced/Phased out (metric tons)

Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)

Indicator 9.4 Number of countries with legislation and policy implemented to control chemicals and waste (Use this sub-indicator in addition to one of the sub-indicators 9.1, 9.2 and 9.3 if applicable)

Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)

Indicator 9.5 Number of low-chemical/non-chemical systems implemented, particularly in food production, manufacturing and cities (Use this sub-indicator in addition to one of the sub-indicators 9.1, 9.2 and 9.3 if applicable)

Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)

Indicator 9.6 POPs/Mercury containing materials and products directly avoided

Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)

Indicator 9.7 Highly Hazardous Pesticides eliminated

Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)

Indicator 9.8 Avoided residual plastic waste

Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)

Indicator 11 People benefiting from GEF-financed investments

	Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
Female		14,750,043		
Male		14,750,043		
Total	0	29500086	0	0

Provide additional explanation on targets, other methodologies used, and other focal area specifics (i.e., Aichi targets in BD) including justification where core indicator targets are not provided

Part II. Project Justification

1a. Project Description

1) Global environmental and/or adaptation problems, root causes and barriers that need to be addressed

1.1 Problem Overview

Mercury (Hg) is a toxic substance and a global pollutant that poses adverse effects to human health and the environment. Mercury pollution exposes populations, regardless of proximity to source, to its harmful effects.

The proposed project focuses on the phase down of dental amalgam and management of its associated mercury and hazardous wastes based on the risks they post to people around the world who are exposed to them and to the environment. With the entry into force of the Minamata Convention on Mercury, parties to the Convention are required to take measures to phase down the use of dental amalgam, as per the provisions of Article 4. In particular, Parties must select two or more of the measures listed under Part II of Annex A for phasing down the use of dental amalgam. The measures implemented shall take into account the Party's domestic circumstances and relevant international guidance. Other provisions of the Convention may be of relevance to the issue, including Article 8 (emissions), Article 9 (releases), article 11 (mercury waste), Article 16 (health aspects), Article 17 (information exchange), and Article 18 (public information, awareness and education). The Minamata Convention has been an important catalyst and driver for a coordinated phase down of the use of dental amalgam in many countries, and at the same time supporting the shift towards a preventive people-centered model of oral health integrated and mainstreamed within the Sustainable Development Goals.

Dental amalgam could be described as an outlier among the issues that the Convention addresses. This is due to the fact that when placed, it becomes an integral part of the human body. Efforts to phase down the use of dental amalgam will need to take into account the consequences for human health, as oral health is a major contributing factor in good general health and well being.

Oral health has been prioritized as a global health issue by WHO with adoption of an oral health resolution at WHO Executive Board meeting, January 2021. The resolution highlighted the Minamata Convention on Mercury (2013), noting that the phase-down of the use of dental amalgam should take into account domestic circumstances and relevant international guidance; and recognizing that a viable replacement material should be developed through focused research. The resolution frames oral health policies, plans and projects for the management of oral health care according to the vision and political agendas in health projected for 2030, in which oral health is considered as an integral part of general health, responding to the needs and demands of the public for good oral health. It emphasizes the need to reorient the traditional curative approach which is basically pathogenic, and move towards a preventive promotional approach. The resolution calls for the development of technical guidance on environmentally friendly and less-invasive dentistry to support countries with their implementation of the Minamata Convention on Mercury, including supporting preventative programmes.

The proposed project will enable and strengthen multisectoral action to implement the phase down of dental amalgam, and builds on existing collaboration between UN agencies (WHO and UNEP) and key stakeholder groups.

The World Health Organization (WHO) report on the 'Future Use of Materials for Dental Restoration' (2009) notes that globally dental caries affects 60-90% of school-aged children and the vast majority of adults. The 2017 report on the global burden of disease shows that this continues to be the case. More than 3.5 billion people (45% of the global population) suffer from oral diseases; according to the Global Burden of Disease Study, without notable improvement of the situation between 1990 and 2017.[i] [ii] Untreated dental caries in permanent (adult) teeth is the single most prevalent condition globally, affecting 2.3 billion people.

Dental amalgam has been the mainstay of dental restorative care for over a century and this continues to be the fact in the majority of health systems worldwide. A shift away from the restorative model and the widespread use of dental amalgam was perhaps unimaginable even a decade ago, despite WHO calling for oral health to be incorporated into policies for the integrated prevention and treatment of chronic noncommunicable and communicable diseases, and into maternal and child health policies.[iii] Hence, WHO has concluded that a “complete ban (of dental amalgam) may not be realistic, practical and achievable” and recommends "a multi-pronged approach with short, medium and long term strategies should be considered".[iv]

Approximately 50% of dental amalgam is elemental mercury by weight.[v] While dental amalgam separator technology significantly reduces the release of dental amalgam waste into land and water, their use and the implementation of best environmental practice is not widespread (more information on dental separators in Appendix 11). Currently there are no globally recognized figures for the amount of dental amalgam waste released to air, land and water per year, the scale of the issue can be estimated by the fact that mercury in dental application accounted globally for 226-322 metric tons in 2015, of which 90 –130 tonnes (i.e. 30–40%) likely enters the solid waste stream. And to break it down regionally, the estimated mercury consumption in dental applications (2015) on average in East, Southeast and South Asia is 124 tons; Africa is 11 tons, Central America, Carribean and South America is 18 tons.[vi] This creates a significant risk to both human health and the environment worldwide. It also highlights the necessity for robust dental waste management practices to be put in place as part of a comprehensive global strategy for environmentally sound lifecycle management of dental amalgam. Measures to control releases to land and water from dental facilities and dental surgeries as well as emissions to air through crematoria will need to be kept in place for a considerable length of time possibly up to 30 years to account for the long tail of dental amalgams currently in situ in fillings in people.

It was reported in 2010 that as much as 1,000 tons of mercury might be “stored” in the mouths of people in the European Union 27 countries.[vii] There are no other comparable studies that contain data on the global dental amalgam reservoir. However, based on:

-The EU study
-Assumption of widespread dental amalgam use in the global population (6 billion)
-Historical use of dental amalgam for over 150 years
-UNEP Global Mercury Supply, Trade and Demand Report (showed a level of dental mercury consumption that varies from less than 10 mg of mercury per capita in sub-Saharan Africa to 90 mg or more in Australia, the EU and the US. Except for sub-Saharan Africa and East and Southeast Asia, the average amount of mercury used per inhabitant per year is generally within the default range of 50-200 mg suggested by the mercury inventory toolkit)

[viii]

It is safe to assume that up to 3,000 -5,000 tons of mercury are held in dentition of people globally.

The business model in developed countries for collection and disposal of dental amalgam waste is based on recovering the precious metals that are present in dental waste captured in amalgam separators. Gold, paladium and platinum are precious metals used in the production of dental bridges and crowns. The removal of dental bridges and crowns and capture by suction units during dental procedures is captured by dental amalgam separators. In some instances, companies that collect dental amalgam waste from dental facilities and dental surguries sell the refine dental amalgam sludge to operators that specialise in further refinement and separation of the precious metals. The increasing use of resin based composites and ceramic materials is leading to a decline in the amounts of these precious metals that can be recovered from dental amalgam waste. This business model, while successful in developed countries, will not be viable model for many low and middle income countries. In these developing countries settings, there are substantially less complex treatments including placement of dental bridges and crowns, so less precious metals to be recovered from dental amalgam waste.
Implementing the Minamata Convention's provisions for dental amalgam will need to be matched with thorough understanding of the their quality mercury free alternatives. Article 17 of the Convention on Information Exchange in that regard requests each Party to facilitate the exchange of scientific, technical, economic and legal information concerning mercury and mercury compounds, including toxicological, ecotoxicological and safety information and of information on technically and economically viable alternatives to mercury-added products including information on the health and environmental risks and economic and social costs and benefits of such alternatives (paragraphs 1a and 1c). The rationale for this comprehensive review is strengthened by the Strategic Approach to Integrated Chemicals Management emerging policy issues and other issues of concern.[ix] Several issues are hence of relevance to the quality of mercury-free alternatives to dental amalgam and should be considered to include chemical in products, nanotechnology and in manufactured nano-materials and endocrine-disrupting chemicals.

In summary, in addition to the implementation of the Minamata Convention's provisions on the phase down of dental amalgam, the project will consider i. technical options and business models for dental waste management over the long term, ii. potential environmental issues related to quality mercury free alternatives to dental amalgam, iii. relevant waste issues concerned with Article 12, and iv. adequate oral care coverage in health systems. The design of this project is based on a holistic approach, placing health and environmental equity as central aspects to the objective with its proposed interventions.

1.2 Why dental amalgam is still in use

Oral Health Systems

To understand the range of complex problems to be solved in phasing down dental amalgam it is important to recognise that phase down efforts will need to be considered more broadly within oral health systems.

A significant driver of the use of dental amalgam is the predominence of the restorative model for managing dental caries. Conventional caries lesion classification – Greene Vardiman (G.V.) Blacks Classification - describes the current state of a lesion that needs to be restored based on visual and radiological inspection of the lesion's site and size. It does not record nonactivated lesions, and as a result orients care toward the restoration of cavities

/'holes'. Caries management founded on this disease centric (restorative) approach influences oral health policy and planning, the education and training of dental professionals (curricula, competences and skills) and the financing of dental services and reimbursement models for dental care. Whereas caries as a disease is largely preventable, from a management perspective it involves many factors that influence health outcomes at both individual and societal levels.

Caries management founded solely on this disease centric (restorative) approach has encouraged the continued use of dental amalgam due to its cost effectiveness as a dental restorative in many countries, due to its shorter time to place in a tooth compared to other dental restorative materials as it has a fixed setting time, and as it requires less chair-side equipment (many alternatives are light-cured and require refrigeration).

The restorative approach is a major contributing factor to the high cost of dental services and care in many countries. This can act as a disincentive to governments to invest in dental services. WHO Oral Health resolution (2007) notes "in most low- and middle-income countries, investment in oral health care is low and resources are primarily allocated to emergency oral care and pain relief".

A consequence of dialogue around the phase down of dental amalgam is often confined to discussions around the relative merits of one dental restorative filling material over another without taking into account the interconnected and interdependent nature of the change 'phase down' process.

G.V. Black's caries lesion classification and disease management system is more than 100 years old. Although many of its principles still hold true, in order to meet the needs and demands of modern oral health care, it may be relevant to consider a system that assesses and quantifies the risk of progression of the disease; which would provide a more sensitive guide to care management than does a system based solely on visual inspection of the lesion's site and size. And act as a springboard for a dynamic and integrated process in which experts can assess consistency and parallels between different systems.

The absence of a recognized global consensus on the selection and use materials for dental restoration across the full spectrum of dental caries – ie noncavitated and cavitated carious lesions - is a gap both in terms of the quality and relevance of dental professional education and training, and the delivery of oral health services and quality care.

The lack of science based guidelines or global consensus in this area prevents dental professionals from maximizing the use of evidence to ensure consistent, high quality science based care for patients, and compromises information exchange on public health and the environment. And this also extends to the ecotoxicology of dental amalgam and other dental restorative materials.

Lack of Training and Awareness

The WHO-UNEP report Future Use of Materials for Dental Restoration (2009) highlighted the paucity of science around the toxicology and ecotoxicology of materials for dental restoration, and the fact that the study of environmental and occupational health is not a requirement in dental professional undergraduate education and training and continuing professional development, nor is dental materials research a priority. As a consequence, dental professionals are disadvantaged in terms of having knowledge and training to provide science-based information on the human health and environmental effects of dental amalgam and its quality mercury free alternatives both to the members of their team and to their patients. This knowledge gap also impacts the ability of the public to make informed health choices in consultation with their dental professional with regard to restorative dental care. There is significant gaps in data and evidence around both dental amalgam and its quality mercury-free alternatives.

Lack of awareness of the public health and environmental impacts of mercury leads to situations where there is improper dental waste disposal, including open burning, increasing the risk of mercury and other toxic exposure for populations at risk, particularly vulnerable populations in nearby communities.

Poorly integrated or inadequate national legislation and regulation regarding the management and disposal of dental waste leads to situations where dental facilities and dental surgeries do not consider dental waste and its potential impact on facility and municipal waste water pipelines, and further downstream the pollution of municipal and community land, as well as communal drinking water supplies. While in some parts of the world, such as the EU, regulations require the installation of dental amalgam separators, their use remain non-existent in a vast majority of countries.

The provision for the phase down of dental amalgam under the Minamata Convention includes a list of 9 measures in Annex A Part II (listed below) and all of which the project has taken into consideration in a coherent and mutually reinforcing manner. The Convention states that Parties shall take two or more of the following measures, taking into account their domestic circumstances and relevant international guidance:

Measure (i): setting national objectives aiming at dental caries prevention and health promotion, thereby minimizing the need for dental restoration

Measure (ii): setting national objectives aiming at minimizing its use

Measure (iii): promoting the use of cost-effective and clinically effective mercury-free alternatives for dental restoration

Measure (iv): promoting research and development of quality mercury-free materials for dental restoration

Measure (v): encouraging representative professionals orgnizations and dental schools to educate and train dental professionals and students on the use of mercury-free dental restoration alternatives and on promoting best management practices

Measure (vi): discouraging insurance policies and programmes that favour dental amalgam use over mercury-free dental restoration

Measure (vii): encouraging insurance policies and programmes that favour the use quality alternatives to dental amalgam for dental restoration

Measure (viii): restricting the use of dental amalgam to its encapsulated form

Measure (ix): promoting the use of best environmental practices in dental facilities to reduce releases of mercury and mercury compounds to water and land

At its third meeting, the Conference of the Parties (COP) to the Minamata Convention, in its Decision MC-3/2, further encouraged Parties to take more than the two required measures in accordance with Annex A, Part II, of the Convention to phase down the use of dental amalgam.

Enhanced information sharing on the characteristics of alternatives, their selection and use of materials for dental restoration across the full spectrum of dental caries – ie noncavitated and cavitated carious lesions - is a key step in the phase down of the use of dental amalgam. The 2009 WHO-UNEP Report on the 'Future Use of Materials for Dental Restoration' acknowledges that non-mercury alternatives' materials could be used to treat and manage caries and go beyond those conventionally classed as *tooth filling materials* i.e. dental amalgam, glass ionomer cement, and resin based composites. Such information sharing at global level could further support the implementation of Annex A Part II Measure (i) on setting national objectives aiming at dental caries prevention and health promotion, thereby minimizing the need for dental restoration, and support the adoption of integrated people-centred model of oral health services and care.

In sum, dental materials research is very costly and requires long term commitment, so is often confined to the domain of major universities and global medical device companies of developed countries. Research that addresses in-country needs of the different regions (which mirrors many other resource challenged and constrained countries) has not been recognized as a priority in dental materials research. The research agenda should extend to dental amalgam waste management solutions.

1.3 Economic and social benefits of phasing down dental amalgam use

The economic and social argument for health system strengthening for phasing down the use of dental amalgam exist in published literature.[x] WHO estimates that oral diseases are the fourth most expensive diseases to treat. The costs of dental care are considerable for individuals, communities and health systems. Worldwide, oral diseases accounted for $357 billion in direct, and $188 billion in indirect costs.[xi] Across the European Union, €90 billion was spent on the treatment of oral diseases, ranked the third-highest treatment cost behind diabetes and cardiovascular diseases.[xii] Dental care cost also plays a significant part in household medical expenditure. In WHO European region, among all households with catastrophic health spending, out-of-pocket payments are mainly due to medicines, followed by inpatient care and dental care. A Canadian study found that 3.5 working hours/year/person were lost due to oral diseases, translating to productivity losses of over CND$1 billion/year for Canada alone. Earlier findings from the USA indicate that 2.4 million days of work and 1.6 million days of school were lost due to oral disease in 1996. There are no published figures available for oral health expenditure in the Africa, Latin America and the Caribbean, and Asia regions, however data from the OECD countries above would indicate more significant challenges in low resource, resource constrained settings.

Large-scale systematic studies on the economic and social costs and benefits of quality mercury-free materials, such as resin-based composites or glass ionomer cements, are undertaken, however not yet been published. Lessons from Kenya, Uganda and United Republic of Tanzania in phasing down dental amalgam use note that low- and middle-income countries might face challenges in encouraging the use of such mercury-free materials. In rural settings, health facilities often lack a reliable supply of electricity and water, a necessary condition for the proper use of resin-based composites, which are more temperature sensitive and less tolerant to water during placement than dental amalgam.[xiii]

Dental caries have been with us for centuries and the recent global burden of disease emphasizes dental caries and the scale of the public health problem that it presents for Low and Middle Income Countries (LMICs), particularly in terms of social and economic costs. It is accepted that poor social and economic circumstances affect health throughout life, as described by the social gradient, which indicates that the poor, around the world, have the worst health and a

significantly increased risk of serious illness and premature death than wealthier people. The WHO Commission on the social determinants of health stated that people's lifestyles and the conditions in which they are born, grow, live, work and age strongly influence their health.

Most oral diseases can largely be prevented through simple, cost-effective measures that involve reducing exposure to recognized risks and strengthening healthy behaviours. Prevention and oral health promotion are highly cost-effective strategies to address the global burden of oral diseases. For instance, estimates from the USA show that every dollar spent on preventive dental care could save between US$8 and US$50 in restorative and emergency treatment, emphasizing the importance of increasing the focus on the prevention of oral disease.

Unfortunately, a preventive promotional approach to caries management is constrained by regulation which in turns defines a scope of practice for oral health care professionals. WHO oral health resolution (WHO EB 148, 2021) urges countries to promote the development and implementation of policies to promote efficient workforce models for oral health services. WHO states a universal truth that there is no health without a health workforce. In the African region some countries have fewer than 50 dentists. For example Kenya has 950 for population of 38.5 million. This is compounded by access to and the availability of dental education in the region.

Integrating oral health into and across health services and programmes, and in health workforce education could expand and extend oral health services and care. The Political Declaration of the High-level Meeting on Universal Health Coverage "Universal health coverage: moving together to build a healthier world" included oral health. It places oral health within Sustainable Development Goal (SDG) 3 on Health and specifically target SDG 3.8.

Within SDG 3 (Health) Universal Health Coverage (UHC) is central to better health and well-being for all, delivers gains across the 2030 Agenda for Sustainable Development. UHC can help frame policy dialogue to address weak and fragmented primary oral health services, and address substantial out-of pocket expenses associated with oral health care in many countries, which in turn would help to achieve UHC.[xiv] First, integrated essential oral health services and the basic package of oral care. Second, an oral health workforce geared towards population health needs and the social determinants of health. Third, financial protection and inclusion of dental care coverage in health insurance packages, as well as expanding fiscal space for oral health care.[xv] Such coordinated planning will help reorient oral health policy and planning away from a conventional model of restorative dentistry towards a preventive model of care that promotes oral health and is integrated into health systems at all levels.

1.4 Country Selection Critera:

The selection of countries for this project was based on multiple criteria, with an overarching interest in targeting one country in each of three regions that has extensive dental amalgam use: Africa, Latin America and the Caribbean, and Asia. The factors used for county selection included:

- -Party to the Minamata Convention on Mercury
- -Diverse country features – different regions, different levels of development on dental amalgam, language diversity
- -Level of mercury measured in dental amalgam from peer-reviewed papers, gray literature, and identified in countries from Minamata Initial Assessment (MIA) inventory

- -Nature of the dental amalgam market in the country
- -Education and training of dental professionals
- -Level of interest from the Government, especially Ministry of Health and Ministry of Environment

The 2009 WHO-UNEP Report 'Future Use of Materials for Dental Restoration' sets out the case for multi-pronged short, medium, and long term strategies for phasing down dental amalgam. It acknowledges that there is no one size fits all approach for the phase down of dental amalgam. This is reflected in the provisions on dental amalgam under the Minamata Convention which indicates that "measures to be taken by a Party to phase down the use of dental amalgam shall take into account the Party's domestic circumstances". This emphasizes that Parties will need the latitude and flexibility to implement phase down priorities, and as a result there will be variation in which of the nine measures they decide to implement.

In Latin America, Uruguay has reported significant progress in phasing down the use of dental amalgam, however, the government has expressed concerns over waste management. In a similar case in Asia, Thailand has also shown progress in phasing down dental amalgam, however, additional assistance is needed in policy setting, education of the health workforce, and waste management. In Africa, Senegal has shown interests and requested assistance as they have weak dental services with limited coverage and limited experience in oral health care improvements.

Selecting countries that represent a cross section of development status, as well as having different priorities will avoid a prescriptive approach which could impact the utility of the project in terms of future roll out / scale up and dissemination of lessons learned. Notwithstanding their identified priorities, each country will also, as part of the project, adopt a strategic approach for dental amalgam phase down. As described earlier, dental amalgam phase down should be framed by and positioned with national strategies for sustainable development, and within health policy for universal health coverage. This would ensure implementation plans are comprehensive and mutually reinforcing.

All three countries – Uruguay, Thailand Senegal have demonstrated interests and shown efforts to phase down dental amalgam. The inclusion of French and Spanish speaking countries strengthens the project engagement during its course, and allows for greater global reach of its deliverables.

WHO has conducted 2 pro-active surveys to assess current activities in the 3 countries that align with the project outputs and activities, as well as preliminary mapping of in-country stakeholders. The first has confirmed that the project activities are welcomed by Ministries of Health and Ministries of Environment, and there are already an enabling environment for the project within each of the 3 countries. The second was a more detailed survey through Chief Dental Officers focused on establishing baseline information on the project activities, and verification through national documentation. These surveys were conducted to sensitize key national actors on the need for a strategic approach to phase down dental amalgam, and provide a better understanding of available data and identify gaps.

In summary, root causes and barriers to be addressed in dental amalgam management are:

a) Lack of global consensus and guidelines on dental amalgam and associated waste management
b) Lack of data on dental amalgam usage and waste management methods
c) Lack of access to and use of dental amalgam separators, as well as subsequent waste management treatment facilities/options
d) Low level of awareness among the general public and dental care professionals about the health risks associated with dental amalgam

e) Lack of training for dental professionals on health implications of dental amalgam and quality mercury free alternatives for oral health care as well as sound management of waste from dental amalgam

f) Lack of national health programmes and insurance schemes that favor quality mercury free alternatives to dental amalgam

g) Lack of research and financial support related to dental materials across regions and business models for the sound management of waste from dental amalgam

Efforts to phase down the use of dental amalgam must be mindful of the causative factors and complex inter-sectoral challenges. In the absence of a coordinated strategy and approach as described and proposed in this project, there is a risk of 'vertical' and siloed decision-making processes in the selection of measures. The consequences would be increased environmental and health inequalities, particularly between urban and rural communities, most acutely felt in already vulnerable and disadvantages communities.

2) The baseline scenario and any associated baseline projects

2.1 Global/regional perspective

As noted in the sections above, much of policy dialogue, documentation and reporting has focused on replacement of dental amalgam with other mercury free alternatives. Insufficient attention have been paid across the world toward changes in other areas of the health system that would be needed to accommodate this shift, and deliver sustainable and equitable oral health services and provision of care to all populations.

In an effort to assist countries in the phase down process, the UNEP Chemicals and Health Branch commissioned the Mercury Policy Project, to develop a brochure based on specific steps taken and methods used by countries that have already significantly reduced or eliminated the use of dental amalgam. The report is largely based on higher income countries, nonetheless their experiences are equally valuable for LMICs that choose to move in the same direction. [xvi]

In the UN Agenda for Sustainable Development and specifically within SDG 3 Health, the priority to achieve Universal Health Coverage creates an enabling policy environment for a multi-sectoral approach to dental amalgam phase down. Adopting a whole government, whole society, health in all polices approach to public policies across sectors as proposed by the WHO would systematically take into account the health implications of dental amalgam phase down decisions, seek synergies across government ministries, and avoid harmful human health impacts in order to improve population health and health equity. A Health in All Policies approaches (HiAP) improves accountability of policymakers for health impacts at all levels of policy-making. It includes an emphasis on the consequences of public policies on health systems, determinants of health, and well-being.

EU and US

The 2009 WHO-UNEP report 'Future Use of Materials for Dental Restoration' provided a global review of the status of dental amalgam. There have been no further global updates since this report. However there have been reports at a regional level, most notably the European Union. Dental amalgam is the largest remaining use of mercury in the EU.[xvii] The Scientific Committee on Health and Environmental Risks SCHER Opinion on the environmental risks and indirect

health effects of mercury from dental amalgam (updated in 2014) provides a full account.[xviii] This report underlines the wide variation in domestic circumstances with regards to dental amalgam use, and preparedness for efforts to phase down its use.

In the EU, Article 10 of Regulation (EU) 2017/852 sets that from 1 July 2018, dental amalgam shall not be used in the treatment of deciduous teeth, children younger than 15 years and pregnant or breastfeeding women, except when strictly deemed necessary by the practitioner on the grounds of specific medical needs of the patient.[xix]

In follow up to the third meeting of the COP to the Minamata Convention, Parties and others were invited to provide information that related to the availability, technical and economic feasibility and environmental and health risks and benefits of none-mercury alternatives to dental amalgam. In response to this call for information, the EU submitted a study it had commissioned to gather information on the feasibility of phasing out dental amalgam.[xx] The study collected information on the use of dental amalgam and mercury-free alternatives, implications for the organisation of health services in EU Member States and dental amalgam phase down plans established by Member States under Article 10(3) of Regulation 2017/852 on mercury.

Several countries have implemented actions to phase down the use of dental amalgam. Norway began a process of phasing down amalgam use in the late 1990s and since 2008 has implemented a general ban on mercury products that includes dental amalgam. As a part of this process, the Norwegian government introduced legislation that allowed time for the industry and for dentists to adapt to the new restrictions and guidelines.[xxi]

In the United States, the Food and Drug Administration (FDA) is providing recommendations about the use of dental amalgam in certain groups of people who may be at greater risk to the potential adverse health effects of mercury exposure.[xxii]

Africa

The African region is particularly sensitive to the issue of dental amalgam use. Weak, limited or inadequate national legislation and regulation covering the supply, trade and commerce of mercury for dental use both fuels and increases the risk of diversion into others sectors, most notably that of artisanal and small scale artisanal gold mining (ASGM). As more developed countries reduce their use and reliance on dental amalgam, African countries who currently lack the capacity, technical expertise and appropriate technology to transition away from dental amalgam to quality mercury free alternatives are very likely to be burdened with the human health and environmental consequences of continued use of dental amalgam.

WHO African Region report 'Promoting Oral Health, Prevention and control of oral diseases and noma as part of essential noncommunicable disease interventions in Africa' recognizes that "due to the unequal distribution of oral health personnel and the lack of appropriate and functional facilities within the primary health care system, the majority of the population have only limited or no access to appropriate oral health care services.[xxiii] This results in a high proportion of untreated oral diseases and significant needs and demands for essential oral health care services, thus posing challenges to primary health care systems in the Region.

West African countries

The West African Summit on Phasing Out Amalgam was held in Abuja on 20 May 2014, and brought together NGO leaders from the ECOWAS nations of Benin, Ivory Coast, Ghana, Nigeria, Senegal and Tanzania. They adopted the Abuja Declaration, then invited NGO leaders from across Africa to join as signatories. [xxiv] Forty (40) civil society organizations signed onto the Abuja Declaration. In April 2015, Francophone NGOs convened in Abidjan to discuss the route to mercury free dentistry in Africa. The second NGO summit voted to create a road map that can be implemented in every African nation.

With the support of many civil society members, the Abuja Declaration supported a coordinated effort in moving towards dental amalgam phase down and even in some countries, a phase out.

Results from a combined West African countries study in 2018 (health component of the regional MIA project) showed that amalgam-based dental restorations, composite resin and ionomer glass cement were the three most commonly cited forms of dental restoration used in the surveyed dental facilities. Over 70% of the dental facilities across five of the studied countries (Benin, Mali, Niger, Senegal and Togo) used amalgam in dental restoration. [xxv] In Senegal, which signed the Minamata Convention in 11/10/2013 and ratified on 03/03/2016, it is worth highlighting that 33% of dental services are provided by the public sector and 67% by the private sector, and 3362 capsules of dental amalgam were used.

The report noted that patients, dental workers and general healthcare workers remain at risk of exposure through the ongoing use of dental amalgam and mercury-containing materials. This is due to the high use of these materials, poor waste handling and management, and limited knowledge of the sources of mercury and its effects on health.

The assessment showed that dental amalgam is still an important form of dental restoration. However, alternatives such as composite resin and ionomer glass cement were also commonly used, and could be used as replacements in the phasing down of amalgam. The supply of dental amalgam used in dental care entities was shown to be largely unregulated, which poses difficulties in regulating and limiting its import.

In the absence of mercury waste management procedures in place, most mercury wastes end up being incinerated or burnt with biomedical waste, or is sent to the landfill with general waste. All six countries in the assessment were lacking in wastewater treatment plants and most wastewater is disposed of in septic tanks or wells/sumps. These practices are a source of mercury contamination to air, land and
water. This requires legislation, development of standard operating procedures and training of all staff involved, as well as development of adequate treatment options and facilities.

East African countries

The 2012 - 2013 East Africa Dental Amalgam Phase-Down Project (EADAP) funded by Norway Overseas Development Assistance funds created a consortium, under the UNEP Global Mercury Partnership, to investigate the challenges faced by LMICs in implementing the ‘phase-down’ approach to dental amalgam. It provided valuable lessons learnt, and brought together a variety of stakeholders, who investigated the supply and trade patterns, created awareness of preventive dental care, encouraged the promotion of alternatives, and promoted environmentally sound waste management practices.

A total of 196 dental personnel in three countries, Kenya, Tanzania and Uganda benefitted from capacity building and training activities provided by UNEP, WHO, International Dental Manufacturers (IDM) and the FDI World Dental Federation (FDI). Training topics included hazards of mercury, oral health promotion and clinical preventive dentistry, promotion of alternatives, and environmentally sound management (ESM) of dental amalgam waste.

Awareness raising materials were developed by WHO and UNEP. Three dental amalgam separators were provided by IDM and the Dental Recycling North America (DRNA). DRNA separators were installed in one government health care facility in each participating country. DRNA has supported the collection and disposal and measurement of dental amalgam waste from 2 of the selected facilities in Tanzania and Uganda. While efforts to collect dental amalgam waste from facilities in all three of the countries are currently underway as a result of the project, collection and disposal have not extended to public health centres in the rural settings or to private dental clinics in and outside major urban areas.

Dental restorative materials are a significant part of a health science institutions budget in many African countries, many of which are publicly funded. By its very nature, the training of dental professionals involves greater quantities of materials than would be used by an experienced dental professional in a similar practice situation.

At present the costs of quality alternatives to dental amalgam notably resin composites are a barrier to wider selection and use in dental undergraduate education and training. The effective transition from teaching on dental amalgam to quality mercury free alternatives requires the coherent and sustainable faculty development and leadership programmes along with access to quality education and training. While EADAP has implemented demonstration projects the results have emphasized the need for a more systematic and country- wide approach.

The EADAP project has provided countries in the East African region with preliminary baseline data on the amount of dental amalgam waste that dentists and hospital providing restorative dental services / care generate and a clear assessment of the methods used in disposal of this hazardous waste. This quantified dental waste collected from the separators served as basis for the targeted amount of mercury that will be collected through the proposed project.

A summary of findings noted that: national trade and waste surveys showed that most of dental restoration materials are imported but exact importation data is not available; alternatives to dental amalgam are available but some dentists still demand dental amalgam; suppliers to East African region are from China, US, Australia, Turkey, Iran, Germany and India; dental amalgam is readily available in encapsulated form and most dentists use this form; national hazardous waste legislations are in place but enforcement is lacking; Kenya and Uganda have hazardous waste treatment facilities that could serve as temporary storage for dental amalgam and other mercury waste; Tanzania does not have hazardous waste facilities, it is currently mixing its hazardous wastes with general wastes. The proposed project will build on lessons learned and will expand results of EADAP.

The WHO African region report 'Promoting Oral Health' advocates for the use of atraumatic restorative treatment (ART) to enable integrating oral health within noncommunicable disease strategies at primary health care level. ART is an alternative approach for managing dental decay which involves removal of decayed tissues using hand instruments alone, without the use of electrical equipment. While there is limited data, studies from the Africa region would suggest both the acceptability and the cost effectiveness of ART.[xxvi]

Asia

A UNEP sponsored meeting held in Bangkok on 14-15 May 2018 provided the most recent overview of dental amalgam in the region.[xxvii] The meeting report emphasized the wide variation in dental amalgam use, preparedness and readiness for phase down, and weak consideration given to the health system analysis.

In addition, several Asian countries are leaders in the region in terms of dental amalgam phase down. For example, Indonesia stopped paying for amalgam in its public health program in 2014, switching entirely to composite and glass ionomers. Vietnam ended amalgam for children in April 2019, and is writing its road map for ending amalgam for all as of 2021. Bangladesh and India both ended amalgam use in their Armed Forces. Nepal's Ministry of Health announced in 2019 that amalgam use would end for children and then for all.

However, besides several country specific efforts, minimal regional studies, projects and assessments have been conducted on dental amalgam management in the Asian region.

Latin America

A mercury-free dentistry Declaration of Montevideo for Latin America was signed in 2018 among NGOs, dental societies, and dental schools throughout the region. However, there is minimal regional level data on dental amalgam. Country submission on dental amalgam to the intersessional work conducted in preparation for the fourth meeting of the COP to the Minamata Convention indicate broad similarities with the findings in other regions and also the lack of data on health system analysis with regards to a shift to mercury-free alternatives.

Similar to Asia, besides several country specific efforts, minimal regional studies, projects and assessments have been conducted on dental amalgam management in the Latin America region.

2.2 Main international and national organizations working on dental amalgam management (a selected few with expected greater role in the proposed project is listed below, please refer to the incremental costs reasoning section for additional organizations that are also co-financiers)

WHO Global Oral Health Programme (GOHP) is one of the technical programmes within the Department of Noncommunicable diseases, that has been reoriented according to a new roadmap for prevention and management of oral diseases. Greater emphasis is put on developing global policies in oral health promotion and oral disease prevention, coordinated more effectively with other priority programmes of PND and other clusters and with external partners.

The WHO Oral Health Programme works with building oral health policies towards effective control of risks to oral health, based on the common risk factors approach. The focus is on modifiable risk behaviours related to diet, nutrition, use of tobacco and excessive consumption of alcohol, and hygiene.

Universal Health Coverage, UHC can help frame policy dialogue to address weak and fragmented primary oral health services, and address substantial out-of-pocket expenses associated with oral health care in many countries, which in turn would help to achieve UHC. Implementation plans for UHC should take into account that oral diseases are comorbidity factors in Sustainable Development Goal 3 (SDG 3) targets, including non-communicable (NCDs) and

communicable diseases, sexual and reproductive health, and maternal and child health. Oral health data and evidence have broad application across a range of SDG 3 health issues— e.g., guidance on sugar intake for adults and children. Fit for school oral health initiatives can have an important role in the development and implementation of multisectoral Health in All Policies approaches, and advancing lifelong learning.

WHO promotes an essential oral health package for low-resource settings in Africa as part of the WHO package of essential NCD interventions. This package provides a framework for incorporating prevention and basic oral care activities into the primary health care package of services. Complementary essential packages of oral health interventions have been developed for school and community settings to improve people's control over their oral health. Sound systems of procurement and supply of medicines, and strategic purchasing, will help to ensure access to and the availability of safe, effective, quality, and affordable essential medicines and dental materials.

The Basic Package of Oral Health Care (BPOC) is an essential health package designed specifically for oral health. It was developed by the former WHO Collaborating Centre for Oral Health Care Planning and Future Scenarios at the Radboud University in Nijmegen, Netherlands. Designed for low-resource settings, the BPOC provides a framework for incorporating prevention and basic oral health care activities into the public health care package of services. The package also includes oral health promotion as a means of supporting BPOC components and improving people's control over their oral health.

Achievement of good oral health through UHC requires health financing schemes and dental insurance programmes that cover the costs of oral health care, with focused attention on integrated disease prevention and health promotion, and minimally invasive treatment. For example, WHO proposes a strategic intervention aligned with the Minamata Convention to encourage and support insurance companies to examine policy and programme options that favour a shift to quality mercury-free materials for dental restoration, including materials that re-mineralize tooth substance and inhibit dentine demineralization.

FDI World Dental Federation was established in Paris in 1900 as the Fédération Dentaire Internationale and is the world's leading organization representing the dental profession. One of the goals of FDI World Dental Federation is to develop and disseminate policies, standards and information related to all aspects of oral health care around the world. It does this through the publication of FDI Policy Statements; declarations that lay out the current thinking on various issues related to oral health, oral health policies and the dental profession.

FDI Policy Statements are put together through consultation, discussion and consensus amongst leading dental experts from around the world. Many statements are the result of projects carried out by the FDI Science Committee, whilst others are produced in collaboration with organizations such as the WHO. A number of policy statements relevant to the 9 measures (listed in Annex A, Part II of the Minamata Convention) to phase down dental amalgam have been developed and are available here: https://www.fdiworlddental.org/resources/policy-statements

FDI has recently published its Vision 2030 which identifies challenges that will confront dentistry and the oral health community over the next decade and it proposes strategies for how these can be turned into opportunities to improve oral health, reduce oral health inequalities, and contribute to reducing the global burden of oral diseases.[xxviii]

World Alliance of Mercury Free Dentistry is a coalition of consumer, dental, and environmental organizations working together to phase out amalgam use. With eleven regional offices throughout the world and technical expertise in dentistry, environment, and policy, the World Alliance for Mercury-Free Dentistry serves as a unique resource for nations working to implement the Minamata Convention's amalgam phase-down measures. The team embraces stakeholders from all fields – including dentists, environmentalists, patient advocates, physicians, and others. Under the Campaign for Mercury Free Dentistry, a project of Consumers for Dental Choice (an affiliated project founded in 1996), the mission is to phase out the use of dental amalgam worldwide through setting national objectives for minimizing amalgam use, raising public awareness of amalgam's mercury content, updating dental school curricula and empowering dental workers, modifying insurance and government programs, stopping dental mercury pollution, protecting consumers (pregnant women, children and other vulnerable populations) from exposure to dental mercury, and promoting access to mercury free alternatives to amalgam.

World Alliance for Mercury-Free Dentistry is working on projects around the world to promote environmentally-sustainable, mercury-free dental care, https://mercuryfreedentistry.net/about/our-projects/. It has also produced reports by its members and colleagues, https://mercuryfreedentistry.net/about/our-reports/

Kings College London Dental Dental Institute worked with UNEP and WHO in 2012 to host a meeting that helped establish a global action plan for dental materials. As a continuation of this work, Kings College Dental Institute has initiated a series of symposia aimed at a reduction of amalgam usage worldwide, which will make use of Kings College's extensive experience and expertise in designing and delivering global outreach campaigns. This work will also deliver a common information architecture and minimum data set that enables countries and key stakeholder to assess the effectiveness of measures for phasing down the use of dental amalgam under the Minamata Convention and identify the possible challenges in meeting the objectives of the Convention in a measurable and evidence based manner.

Basel, Rotterdam and Stockholm Convention Secretariat (BRS Secretariat) provides technical guidance and guidelines to countries that are building their capacity to manage waste in an environmentally and efficient way and in their development of detailed procedures, waste management or strategies. The shipment of dental waste outside of country of origin/use will need to follow Basel guidelines and procedures.

Global Mercury Partnership

Global Mercury Partnership is hosted by UNEP. Its mission is to protect human health and the environment from releases of mercury and its compounds by minimizing and, where feasible, ultimately eliminating global, anthropogenic mercury emissions to air and releases to water and land. With over 200 partners to-date from governments, IGOs, NGOs, industry and academia, the Partnership focuses on supporting timely and effective implementation of the Minamata Convention, providing state of the art knowledge and science and raising awareness towards global action on mercury. Initiated in 2005 by a decision of the UNEP Governing Council, the Partnership currently has eight (8) identified priorities for action – or partnership areas – that are reflective of the major source of mercury releases categories. The project will contribute to the activities of three Partnership Areas, namely on mercury in products as well as mercury waste management and mercury supply and storage. Existing publications and expertise from the Partnership will assist in different components of the project and the results of the project will improve the guidelines and create greater awareness in phasing down dental amalgam around the world.

Several members of the Global Mercury Partnership that work on different aspects of the dental amalgam issue around the world, some of which not previously mentioned are listed below. A number of them also participate as observers in the COP meetings and submitted information to the intersessional process on dental amalgam taking place in follow up to COP3.

- Zero Mercury Working Group/Mercury Policy Project
- Concorde East/West
- European Center for Environmental Medicine
- International Academy of Oral Medicine and Toxicology (IAOMT)
- Ban Toxics
- Center for Public Health and Environmental Development (CEPHED), Nepal
- Centre de Recherche et d'Education pour le Développement (CREPD), Cameroon
- Environment and Social Development Organization (ESDO), Bangladesh

Stakeholder mapping (national and international levels)

To date, there has been no systematic quantification and mapping of the manufacture, supply, trade and commerce of dental amalgam that includes data from dental industry other than information presented in the UNEP Global Mercury Supply, Trade and Demand Report. Preliminary efforts to gain access to data have been only partially successful due to industry concerns of commercial intelligence. The International Dental Manufacturers are continuing to encourage individual manufacturers to supply data to their national associations, which can be collated at a regional level. This process is on-going.

At the national level of target countries, as indicated in section 1.4, two surveys have been conducted to better understand the current situation to address gaps in data and knowledge the project. Information from stakeholder mapping conducted at national levels in the three target countries are included in Appendix 10 (formal response from Uruguay was not received).

Lists of national stakeholders from each country and their expected involvement in the project by outputs are presented below, however, this is only a preliminary list and their actual involvement in the project will be determined during the inception phase.

Senegal

Organizations	Function/Responsibilities by Components
Ministry of Health and Social Action (Oral Health Division) (MSAS)	Components 1,2,3
Institute of Dentistry and Stomatology (Faculty of Medicine, Pharmacy and Dentistry of University of Dakar) (IOS)	Component 1,2,3
National Order of Dental Surgeons of Senegal (ONCDS)	Components 1, 2
National Association of Senegalese Dental Surgeones (ANCDS)	Component 1
Ministry of Environment and Sustainable Development (Department of the Environment and Classified Establishments) (MEDD)	Components 1,2,3
National Syndicate of Private Dentists (SNCDP)	Component 1
Universal Health Coverage Agency (ACMU)	Component 1
Ministry of Higher Education and Scientific Research (MESRS)	Component 1
National Agency for Accreditation of the Quality of Higher Education (ANAQ SUP)	Component 1
Department of Commerce (MIN COM)	Components 1,2
Dental Material Suppliers	Components 1,2
Toxicology Laboratory	Components 1,2

Thailand

Organizations	Function/Responsibilities by Components
Food and Drug Administration	Components 1,2,3
Department of Public Health (DOH)	Components 1,2,3
Department of Pollution Control	Components 1,2,3
Department of Medical Services	Component 1
National Health Security Office (NHSO)	Component 1
Office of the Permanent Secretary	Component 1
Dental Faculty Consortium of Thailand	Component 1
Dental Association of Thailand	Component 1

Uruguay

Organizations	Function/Responsibilities by Components
Facultad de Odontologia de la Universitad de la Republic a (UDELAR}	Components 1,2,3
La Red de Acción en Plaguicidas y sus Alternativas para América Latina (RAP-AL) Uruguay	Component 1
Asociación Odontologica Uruguaya	Component 1
Cátedra de Materiales Dentales	Components 1,2
Carrera de Odontología de la Facultad de Ciencias de la Salud de la Universidad Católica del Uruguay	Components 1,2,3
ASSE (principal prestador de salud publico)	Components 1,2,3
IMM (Intendencia Municipal de Montevideo)	Components 1,2,3
Cámara de Comercio de Artículos Dentales	Components 1,2

2.3 Legislation and enforcement by region

EU and US

The final report by the European Union (EU) on assessment of the feasibility of phasing-out dental amalgam, noted that dental amalgam use is decreasing, and a general phase-out is both technically and economically feasible, but with some disruption of the insurance systems in the Member States that are currently using high amounts of dental amalgam and with reimbursement schemes that tend to favour dental amalgam restorations. [xxix] The report notes that from a legislative perspective, the continuation of dental amalgam use could hinder and perhaps reduce the effectiveness of other legislation and measures that target the impacts of mercury, most notably the Water Framework Directive 2000/60/EC which classifies mercury as a priority hazardous substance (requiring cessation or phasing out of discharges, emissions and losses) and also Directive 2008/105/EC that sets environmental quality standards for mercury. EU legislation has already set the basis for the ban of mercury on a number of products (e.g. thermometers, batteries and blood pressure monitors) where alternatives existed. From an international perspective, the phasing-out of dental amalgam would be a strong signal towards the implementation of the objectives of the Minamata Convention and perhaps gradually set the paradigm for a phase-out at international level. Given the transboundary nature of mercury, the latter would further decrease the risk of mercury pollution at the EU level.

The European Union has taken steps to prohibit the use of dental amalgam which is prohibited for dental treatment of (i) deciduous teeth, (ii) of children under 15 years and (iii) of pregnant or breastfeeding women. Dental practitioners in the EU are no longer allowed to use dental amalgam in bulk, but only in pre-dosed encapsulated form, and all dental facilities dealing with dental amalgam (use of amalgam and/or removing dental amalgam fillings) must be equipped with amalgam separators ensuring the retention and collection of amalgam particles with a view to preventing their release into wastewater systems.

In support of including data on caries prevention, the EU assessment of the feasibility of phasing-out dental amalgam –Final report also notes that in parallel to a phase-out of dental amalgam, efforts to prevent tooth decay should continue. Prevention is in general one of the key measures promoted in the National Action Plans and is regarded as effective in reducing the number of both dental amalgam and mercury-free fillings.

These initial legislative steps have been mirrored by similar decision in the United States where the US Food and Drug Administration (FDA) is providing recommendations about the use of dental amalgam in certain groups of people who may be at greater risk to the potential adverse health effects of mercury exposure.[xxx]

Assessments on regional legislation and enforcement measures in Africa, Asia and Latin America and the Caribbean have not been thoroughly conducted, therefore limited information is available.

2.4 Country specific baseline

The three target countries were provided by WHO with a template to collect baseline data on dental amalgam management. The Chief Dental Officer of each country assisted in this effort and detailed results are described below and provided in Appendix 10.

Senegal

Senegal has not taken any official actions in the direction of phasing down dental amalgam in the country. The government also have no information on the amount of dental amalgam used per year and number of dental restorations performed with dental amalgam per year in the country. There is also no monitoring and assessment of trade, supply and studies on the availability of dental amalgam, and of quality mercury free materials.

Public and private health insurances cover up to 100% of dental care costs. Private insurance policies do not specify, prefer, or promote types of materials used in the restoration. They reimburse based on quotes and as long as the total costs does not exceed the ceiling, they will pay for the cost of the care. No recommendations have been made at the national level to encourage insurance policies and programmes to favour the use of quality mercury free alternatives to dental amalgam, both materials are used in Senegal but no data available on the amount of usage.

The government also does not have any regulations restricting the use of mercury for dental care purposes. And no national strategies towards dental amalgam supply chain management to avoid its diversion into other sectors such as ASGM. Furthermore, there is no requirement for dental amalgam waste and disposal in an environmentally sound manner. However, there are regulations related to the management of medical wastes, without specifying the maximum allowable level of mercury discharges, as part of the Regional Disease Surveillance Systems Strengthening Program.

There are a few separators installed in private dental facilities, but there are no assessment tools and protocols for the selection and installation of separators.

In terms of training and knowledge in Senegal, there are still ongoing courses related to amalgam restorations and use of amalgam in the clinics. Dental professionals on average do not receive training and information on the toxicological, ecotoxicological and safety information of dental amalgam. And no sound waste and disposal awareness as well. Therefore, significant level of capacity building and training is needed for dental professionals to raise their awareness and emphasize the advantages of using mercury free alternatives. It is important for Senegal to learn from other countries and adopt best practices to phase down dental amalgam, including the development of an amalgam waste management policy.

In summary, through the completed MIA project, Senegal has identified that dental amalgam is a priority sector under the Convention and the government is at the beginning of the phase down period for dental amalgam. The government has not established best environmental practices to reduce and monitor emissions and releases of dental amalgam waste to air, land, soil, and water. And no technical report, guidance or guidelines are available on the selection and use of materials for dental restoration across the full spectrum of dental caries. The government needs a database to collect, monitor and manage information on the measures taken to phase down dental amalgam use.

Thailand

In Thailand, dental amalgam phase down is currently underway in moderation, meaning 4-6 measures outlined in the Convention text, Annex A, Part II, are implemented. Specifically, on measures (i) setting national objectives aiming at dental caries prevention and health promotion, (iii), promoting use of cost effective and clinically effective mercury free alternatives for dental restoration, (v) encouraging representative professional organizations and dental schools to educate and train dental professions and students on the use of mercury free dental restoration alternatives and promoting best practices, and (viii) restricting the use of dental amalgam to is encapsulated form.

The main challenges/barriers to phase down the use of dental amalgam are:

-Changing dental school curriculum of amalgam restoration to mercury free restoration in all schools is difficult
-Dental personnel are questioning the rigidity of using mercury free restoration instead of dental amalgam
-Technique of mercury free restoration is more complicated than dental amalgam
-Due to Universal Health Coverage in Thailand, dental restoration services for all Thai citizens are included, therefore, the use of mercury free restoration could increase the cost burden on the system

The Ministry of Public Health does not have information on the amount of dental amalgam used per year, however, it does collect the number of dental restoration performed with dental amalgam per year, which is published in the National Health Data Centre. In terms of monitoring and assessing trade, supply and availability of dental amalgam, and of quality mercury free materials, Thailand so far has not conducted any related studies, however, the government does manage an inventory with this information through the Controller General Department of the Ministry of Finance on the amount of all dental restorations in the public hospitals (detail amounts not disclosed).

All insurance policies (both public and private) in Thailand fully cover dental restoration services with dental amalgam and mercury free materials. The government has not undertaken any assessments of national insurance policies and programmes to encourage the favour of quality mercury free alternatives to dental amalgam.

Furthermore, Thailand currently does not have regulations to restrict the use of elemental/bulk mercury for dental care purposes. Nor does the government regulate dental amalgam supply chain management. However, the Food and Drug Administration has drafted a notification to the Ministry of Public Health on regulating the use of dental amalgam products to its encapsulated form. The Dental Health Bureau of Ministry of Public Health has developed a clinical

guideline for the use of dental amalgam, including measures related to waste and disposal in an environmentally sound manner. This is complementary to the Hazardous Substance Act of 1992 that regulates the management of hazardous waste (including mercury wastes) administered under the Department of Industrial Works, Ministry of Industry.

In terms of existing training and knowledge in Thailand, dental professionals and dental students are already trained on the toxicological, ecotoxicological and safety information related to dental amalgam, in addition to waste and disposal in an environmentally sound manner. Thailand has indicated that they still need assistance on obtaining and influencing the price of mercury free materials at the national and global levels, such as composite resin and glass ionomer resin, as the current prices are relatively high.

There are no dental amalgam separators installed at dental facilities in Thailand. However, the country has an excellent monitoring system for dental amalgam wastes. For example, in Phra Samutjedi hospital in Samutprakarn province and Phrompiram hospital in Phitsanulok province. The country is also currently developing a tracking and monitoring system for the transportation and management of mercury-contaminated waste from dental clinics.

The Thai Dental Council Association held a conference in 2019 and established an academic network on the impact of dental amalgam on health.

In summary, Thailand is an excellent example of a country which is in the process of phasing down dental amalgam. The efforts made so far and lessons learned will be documented in the country case studies to be delivered through the proposed project.

Uruguay

Uruguay has substantially phased down the use of dental amalgam since 2014. Dental amalgam materials are still available on the market, but the stock is very low. On official records, there has no imports of dental amalgam materials since 2013. Customs was unable to identify importation data of dental amalgam in the last years which could be explained due to the minor use of materials in the country. There is no monitoring and assessment of trade, supply, and studies on the availability of dental amalgam, and of quality mercury free materials. The government does not have regulations with regards to dental amalgam supply chain management and it does not have information on the number of dental restorations performed with dental amalgam per year in the country. As Uruguay is an importer country of dental materials, there is no industry in this area, therefore, focus on the project will be placed on fostering national policy in technical adequate, accessible, and environmentally sound substitutes.

The National Integrated Health System (SNIS, Sistema Nacional Integrado de Salud) regulates the right to healthcare for all Uruguayans through the National Insurance of Health (SNS, Seguro Nacional de Salud) which is funded by the National Health Fund (FONASA, Fondo Nacional de Salud). Under the SNIS, public dental care providers receive 100% reimbursement when using both dental amalgam and quality mercury-free alternatives. Private dental care providers that are part of the SNIS only use mercury free alternatives and dental amalgam in very few cases.

The government has also taken additional measures to favour the use of mercury-free alternatives over dental amalgam. In 2018, restorations with dental amalgam were labelled as an obsolete procedure and ordered, by Presidential Decree, to be removed from the catalogue of the Comprehensive Health Care Plan (PIAS, Plan Integral de Atencion a la Salud) of the SNIS; however, the materials still appear in the PIAS catalogue. Efforts are currently being made by the Oral Health Program (established in September 2020) of the Ministry of Public Health to completely phase out dental amalgam.

Although there are no specific regulations to restrict the use of dental amalgam to its encapsulated form, general measures have been established and disseminated by the government to discourage the use of dental amalgam (for both bulk mercury for dental use and dental amalgam capsules). One of the main challenges reported is the end-to-end environmentally sound management of dental amalgam waste. The government does not have specific regulations for the management of dental amalgam waste, but it does have regulations and guidelines for the environmentally sound management of industrial mercury waste and other mercury-added products waste (e.g., from fluorescent lamps, thermometers and sphygmomanometers). Therefore, mercury wastes remain in dispensers that have accumulated in different public and private oral health providers and facilities are the main problems of exposure in Uruguay.

There are no records tracking the installation of dental amalgam separators in the country and there are no assessment tools or protocols for the selection and installation of separators. The installation of suitable amalgam capture devices is the responsibility of each dental care provider. Health workers are not trained on dental amalgam separators; however, this is currently being assessed by the Oral Health Commission created by the Ministry of Public Health and the Ministry of Environment. To reduce and monitor emissions and releases of dental amalgam waste into the environment, the government has included dental amalgams in the Regulation of Sanitary Waste. Based on extensive bilateral discussions with Uruguay national counterparts, it has been determined that Uruguay will not receive any separators from the project but will focus its allocated resources on dental amalgam waste collection, management, and disposal.

In Uruguay, dental amalgam is no longer used in dental education and training (pre-clinical or clinical); however, dental students do learn about the material (theory only) such as its toxicological and ecotoxicological characteristics, safety information, and waste management. The oral health workforce education and training has strong focus on dental caries disease prevention. All public and private dental care providers have dental education programs to promote good oral health and provide preventive treatment to patients. The oral health workforce also has access to quality mercury-free restorative materials in the country. The Ministry of Public Health is currently creating continuing education courses for general dentists. In terms of assistance to strengthen the country population health needs approach, there is a need for a survey team to carry out and update the epidemiological survey of oral health.

The government does not have a database to collect, monitor and manage information on the measures taken to phase down dental amalgam use, but is currently working on establishing key performance indicators to measure the progress for phasing down its use. And this has been re-confirmed by the completed MIA that wastes associated with dental amalgam is a priority issue for the country.

In terms of baseline projects, a GEF-UNDP project (GEF ID 4998) focused on the environmentally sound lifecycle management of mercury containing products and wastes in Uruguay. This included medical devices, lamps, and dental amalgams. The project was executed by the Ministry of Housing, Land Management and Environment (MVOTMA) with the support of Ministry of Health. The project was divided into four main technical components: a) strengthen regulatory and policy framework for management of mercury containing products and their wastes, b) develop environmentally sound schemes and business models for collection, treatment and disposal of mercury wastes, c) strengthen technical capacity and infrastructure for pre-treatment, decontamination and storage of mercury containing wastes, and d) strengthen national and regional awareness on sound management of mercury containing products.

At the end of the project, the following achievements were made:

- With Decree 15/2019 the following inventories were reported and in the process of being processed: LATU 230 000 thermometers equivalent to 230 kg. UTE and Board the lamps recovered 65,000 lamps which was equivalent to 325 grs. Faculty of Dentistry report 2 kg. During 2018-2019, the import of 885,000 lamps (4,425 kg), 96,000 thermometers (96 kg) were avoided
- Population Study on the average mercury level in pregnant women, Uruguay 2016-2018 was concluded and published
- 3 of the model institutions have mercury management plans and its phase-out. Progress has been made in the other model institutions with the enactment of Decree 15/2019
- A report was developed by Dentistry Department of the Republic University (Universidad de la República) in support of the phase down of dental amalgam
- Identified Aborgama/ Ducelit, S.A./Ducelit, S.A. as a provider of mercury waste management services. Contract between MVOTMA and Aborgama/ Ducelit, S.A./Ducelit, S.A. were in the process of signing
- Official launching of operations of Aborgama/ Ducelit, S.A./Ducelit by MVOTMA planned for 2020 as a decontamination facility

Due to the current pandemic there has been some delays in progressing further work by Aborgama/ Ducelit, S.A. Arrangements are being made to organize the collection of dental amalgam waste with the support of the Ministry of Environment.

The proposed project will use and build on the momentum, facilities and experiences gained through the GEF-UNDP project to manage additional dental amalgam wastes that have already been collected or will be collected in Uruguay. The use of Aborgama/Ducelit as a service provider of mercury waste management for Uruguay will be determined during the inception phase of the project.

3) the proposed alternative scenario with a description of outcomes and components of the project

To address the above-mentioned barriers and ultimately phase down dental amalgam and better manage its associated mercury wastes in both global and national contexts, the following alternative scenario is proposed.

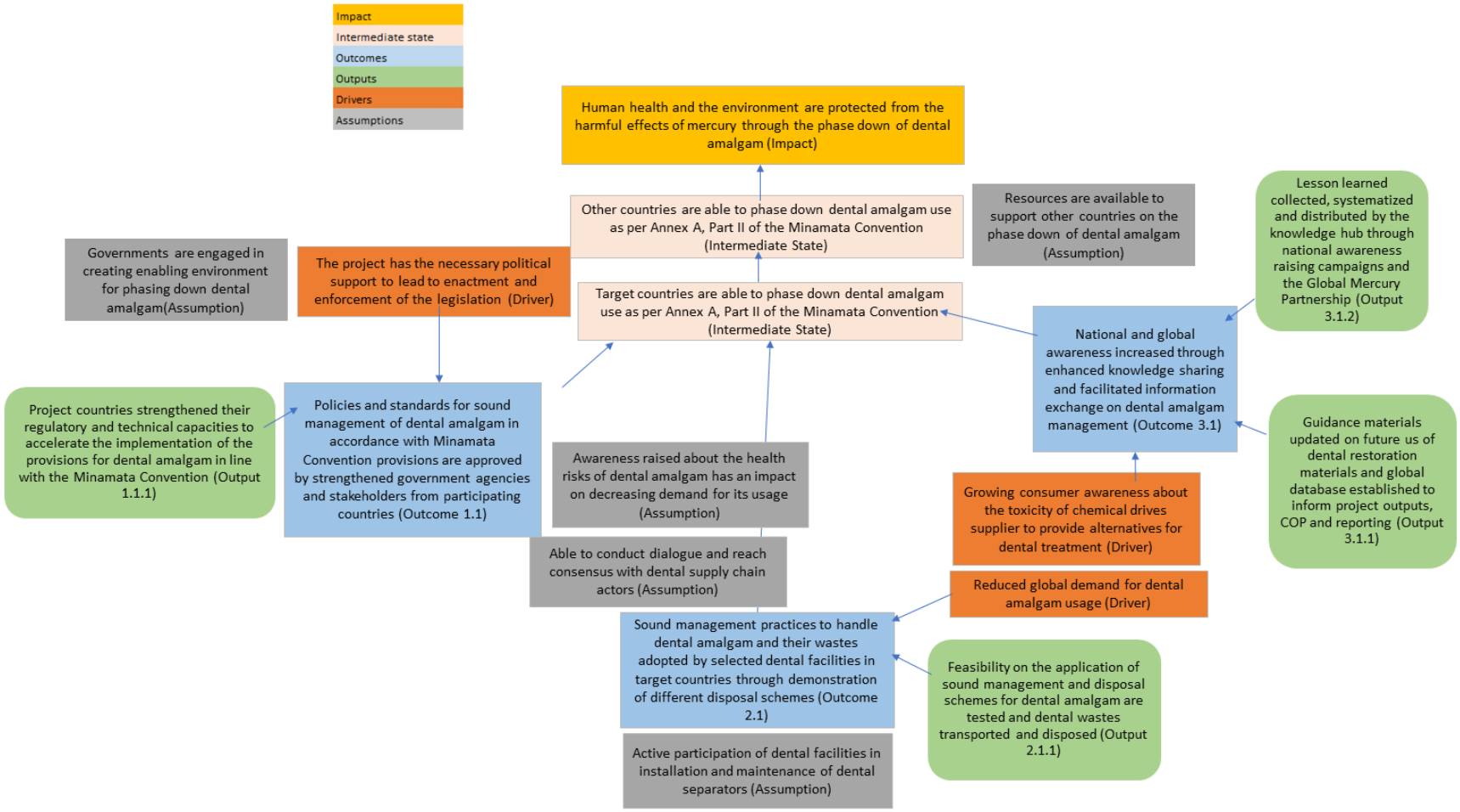

Diagram 1. Theory of Change

The project will establish a progressive and convergent framework for action that allows countries to select measures to phase down the use of dental amalgam that are guided and informed by cost effective, innovative and sustainable strategies whilst promoting health equity. Inherent in the project design is the engagement and active participation of key global and regional stakeholders to create an enabling environment for global roll out and scale up. Under the leadership of UNEP and WHO, the development of standardized guidance, resources and tools will ensure knowledge sharing at the global level within and across health and the environment domains.

A significant and new contribution will be a suite of tools that allows countries and key stakeholders to examine the economic and social costs and benefits, as well as the potential payback time for wide scale adoption and uptake of the phase down of the use of dental amalgam.

The project will both facilitate and promote the shift to a preventive model of caries management encouraging caries prevention at early carious lesion stages, as part of people centred care and integrated services. This is in line with the objectives of the WHO Global Oral Health Programme (WHO GOHP), which have been reoriented according to the new strategy of disease prevention and promotion of health. Greater emphasis is put on developing global policies in oral health promotion and oral disease prevention, coordinated more effectively with other priority programmes of Department of Prevention of Noncommunicable diseases and other clusters and with external partners.

The project will consider integration at various levels, meaning organize services so that they are focused on the overall health needs and expectations of people and communities. It also implies the need to prioritize and re-evaluate on a regular basis what is incorporated into any primary health care essential health package. An essential health package often consists of a limited list of public health and clinical interventions to be provided at primary and/or secondary level care. “Packaging” a number of health interventions together permits effective interventions to be focused on targeted priority health problems. Thus, essential health packages aim to concentrate scarce resources on effective interventions that provide the best “value for money”.

The dissemination of the standardized guidance and best practice, and resources and tools, as well as country experiences and lessons learnt during the project will provide a common basis and the architecture for ‘best practice, best buy’ interventions, constructive multi-stakeholder dialogue and inter-sectoral planning and investment. The framework will be supported by health policy and systems research, to improve and adapt strategies and activities through feedback, reflection and analysis in order to implement larger scale, sustained and more effective interventions.

Such a paradigm shift would reduce the need, demand and use of all dental restorative materials as stated in the FDI World Dental Federation policy statement (2010) “ensure the phase up of effective prevention for dental caries and associated health promotion programmes. This should be linked to preventive disease management, which will result in the phase down of use of current restorative materials, including dental amalgam.”

Specifically for Senegal, based on preliminary discussions with the Chief Dental Officer and a comparison with Thailand and Uruguay in terms of their respective dental amalgam phase down progress, an additional National Project Support Officer is needed and will be recruited through the project to provide support to the Chief Dental Officer and carry out project interventions.

FIRST COMPONENT

The first component will focus on technical guidance and regulatory strengthening in the three target countries. This output orients toward multi-sectoral collaboration around health equity and health systems improvements. The activities under this component will support the 'whole government, whole society' approach. Considerations on costs of waste management, costs of dental amalgam use, and the costs of use versus costs of non-use will be developed for countries to take further actions in their own national context. A key output will be national case studies, which can best express implementation process alongside challenges faced and solutions found. The case studies from the 3 countries can be reviewed and common drivers, enablers and barriers identified.

The technical guidance will also cover topics such as prevention of mercury diversion to non-dental use, such as ASGM. And under some circumstances, restricting the use dental amalgam to its encapsulated form since it guarantees proper composition of the dental filling materials, reduces generation of dental amalgam waste, ensures optimal quality, and reduces mercury releases and the chance of coming into contact with toxic materials by workers and patients.[xxxi]

In addition, members of the health workforce, national dental association and national dental council/accreditation authorities will be trained on the risks of using dental amalgam and insurance programmes will be reviewed and recommendations made to improve the quality of oral health care and maintain equity and accesibility for all members of society. This includes policies and programmes covering quality alternatives to dental amalgam. The project will also promote engagement with policy makers and insurance companies at the national level and ensure that insurance policies are supportive of other phase down measures (i.e. oral health promotion/prevention treatments).

The Global Mercury Partnership will be actively involved in the first component through development and review of information, case studies and awareness raising materials produced, leverage the Partnership's network in particular its areas of work on mercury waste management, mercury supply and storage and mercury in products to provide input. The Global Mercury Partnership will also assist in the analysis of existing regulations and policies and develop advice on possible improvements and recommendations.

Outcome 1.1: Policies and standards for sound management of dental amalgam in accordance with Minamata Convention provisions are approved by strengthened government agencies and stakeholders from participating countries

Output 1.1.1: Project countries strengthened their regulatory and technical capacities to accelerate the implementation of the provisions for dental amalgam in line with the Minamata Convention

Activity 1.1.1.1: Produce a global technical report drawing upon national assessments in project countries, on the inventory of trade (including possible diversion to non-dental use), supply, stockpiles, mercury releases, and of quality mercury free materials

Activity 1.1.1.2: Develop case studies and awareness raising materials, to include lessons learned and best practices, for the dental amalgam phase down and environmentally sound management of dental amalgam waste and other types of hazardous wastes

Activity 1.1.1.3: Assess insurance policies and programmes (both public and private) of the three project countries and provide recommendations to encourage insurance policies and programme that favour the use of quality alternatives to dental amalgam

Activity 1.1.1.4: Facilitate and support the process of establishing or improving regulations/policies in project countries, including recommendations to improve dental materials/devices management and supply chain management, and restricting the use of dental amalgam to its encapsulated form and ensure its environmentally sound management as waste

Activity 1.1.1.5: Organize and provide country specific assistance to reorient health workforce education and training in support of population health needs approach and use of quality mercury free alternatives to dental amalgam

SECOND COMPONENT

The second component will focus on the environmentally sound lifecycle management of dental amalgam wastes to reduce emissions to air and releases to land and water of mercury and mercury compounds in the 3 countries. Through co-financing support from the private sector, there will be more than 80 separators ready for distribution to Senegal and Thailand (Uruguay decided to focus on waste management only in this component). From some co-financing partners, shipping, installation and product training are also included. The selection of specific dental clinics/health centers and the number of separators to be distributed in each country will be determined during the inception phase. Selection criteria and protocol will be developed as part of this component referring to manufacturer products specifications and requirements. Selection process will be conducted in partnership with responsible national institutions to ensure a national separator strategy is in place with a long term sustainability plan and to avoid a fragmented approach. It is critical that the governments are aware of the specifications of the separators they choose. Considerations will include existing in-country dental amalgam waste management schemes, potential development of a multi-pollutant strategy that will address both dental amalgam waste and potential hazards from quality mercury-free alternatives, as separators capture all dental amalgam wastes, not just dental amalgam wastes. And the evaluation on health system wide approach for mercury waste management, not just for dental amalgam, in each of the target countries will be conducted.

As separators are currently installed mostly in low and middle income countries (LMICs), the expansion/investment of such technology in LMICs, where in some such as in Africa comparatively not many amalgams have been used, may not be always appropriate, as a direct phase down on the use could be more cost effective. This component will also build on the lessons learned under the EADAP.

The second component will also generate a technical report detailing best waste management practices of materials used in dental restoration, from selection of control equipment to procurement, usage and removal and environmentally sound disposal. A sustainability plan for each of the target countries will also be included, considering technical options as well as economic aspects of such best management practices (including evaluation of quantities and management approaches of other health sector related mercury wastes in each country). This component will also aim to improve organizational policies (tailored to health facilities) for environmentally sound management of dental amalgam wastes.

The Global Mercury Partnership will be a significant stakeholder in the second component as it will oversee and document, in cooperation with country teams, the environmental sound management of the waste (collection, storage, shipment, treatment and final disposal of dental amalgam wastes). The Partnership will leverage through its network, contribute to relevant sections of the technical report, particularly on waste management options, sustainability aspects and reduction of releases.

Outcome 2.1: Sound management practices to handle dental amalgam and their wastes adopted by selected dental facilities in target countries through demonstration of different disposal schemes

Output 2.1.1: Feasibility on the application of sound management and disposal schemes for dental amalgam are tested and dental wastes transported and disposed

Activity 2.1.1.1: Develop process and criteria for the selection and installation of dental amalgam separators (match separator suppliers with dental facilities in Senegal and Thailand)

Activity 2.1.1.2: Install dental amalgam separators and provide appropriate training

Activity 2.1.1.3: Manage and dispose of dental amalgam waste collected through the project in an environmentally friendly manner (evaluation of health system wide approach on mercury waste management will be conducted)

Activity 2.1.1.4: Produce a technical report, including lessons learned, identified waste management options, financial and sustainable considerations, on best environmental practices of alternative materials used in dental restoration

THIRD COMPONENT

The third component is on knowledge management and dissemination, to promote the phase down of dental amalgam through this project. Information gathered, guidance developed, and lessons learned will be collected and made available to the national and global audience through a “knowledge hub” established, within the Global Mercury Partnership platform. The project will also seize relevant opportunities to disseminate results and make recommendations on how to phase down dental amalgam and properly manage its associated wastes. The effectiveness of measures at country level and its relevance at the global level will be disseminated. The Partnership will also organize communication campaigns and information sharing events, including webinars, in coordination with WHO.

Under this component, the WHO/UNEP guidance “Future Use of Materials for Dental Restoration 2009” will be updated with the most recent information and findings from the project, through an expert group and subsequent consultations.

Another deliverable under this component will be the development of a global database that can support national decision making process to phase down dental amalgam. This database has already been planned by WHO first to focus on oral health and in the future to include other health aspects. The database will first use the data collected from this project to direct global efforts in phasing down dental amalgam. It will contain updated reports, project results and relevant decisions of the COPs and reporting requirements related to dental amalgam. It will be managed by WHO and with two distinctive platforms (one restrictive with sensitive data and the other will be publicly accessible). The global database will ensure the comparability and interoperability of data and the global guidance and tools will be available to all countries interested in phasing down dental amalgam.

Finally, the third component will include presentation of the project findings at relevant national, international and regional meetings. In addition to the national events to be organised by the respective target country governments, the Global Mercury Partnership will contribute to the awareness raising activities through the organization of side events or information sessions, in coordination with WHO, at relevant meetings such as those of the Conference of the Parties to the Minamata Convention, of the ICMGP, of relevant Partnership meetings etc.

Linkages and coordination with the Green Growth Knowledge Platform (GGKP, a global community of policy, business and finance professionals and organizations committed to collaboratively generate, manage and share knowledge on transition to an inclusive green economy) will be carried out because GGKP is currently the main knowledge platform collaborating partner for UNEP. The GGKP platform is designated to consolidate all information and knowledge generated/collected in UNEP's Chemicals and Waste Portfolio. GGKP will support information sharing and dissemination of lessons learned at global level.

Outcome 3.1: National and global awareness increased through enhanced knowledge sharing and facilitated information exchange on dental amalgam management

Output 3.1.1: Guidance materials updated on future us of dental restoration materials and global database established to inform project outputs, COP, and reporting

Activity 3.1.1.1: Update and enhance an existing WHO/UNEP guidance (Future Use of Materials for Dental Restoration, 2009) through an expert group and subsequent virtual consultations

Activity 3.1.1.2: Establish a global database to inform project outputs/results, relevant decisions of Conference of the Parties and reporting (Article 21)

Output 3.1.2: Lesson learned collected, systematized, and distributed by the knowledge hub through national awareness raising campaigns and the Global Mercury Partnership

Activity 3.1.2.1: Conduct national and sub-regional meetings (inception, midterm, and final meetings)

Activity 3.1.2.2: Establish a knowledge hub within the Global Mercury Partnership and through the GGKP platform for dissemination and exchange of information and expertise at the global level

Activity 3.1.2.3: Conduct national awareness raising events to disseminate project results

Activity 3.1.2.4: Present project findings at relevant international and regional meetings

The strategic approach to dental amalgam phase down as set out in section 1.4, is guided, and informed by data/leverage points shown in the schematic diagram below (Diagram 2). The diagram details common country level barriers to dental amalgam phase down that the project seeks to address in all three target countries. The diagram aims to emphasize the need for countries to adopt a consistent and coherent approach that addresses all potential leverage points in a mutually reinforcing manner. This will ensure a sustainable and equitable phase down of dental amalgam.

A set of common country level leverage points are listed below:

1A.	Manufacture and supply of dental amalgam and quality mercury-free alternatives
1B.	Trade and commerce of dental amalgam and elementary mercury for dental use. Quality mercury free alternatives to dental amalgam
2.	Import/ entry into country
3A.	Diversion to Artisanal and Small-Scale Gold Mining, ASGM sector
3B.	Supply chain management of dental amalgam, and its quality mercury free alternatives
4.	Health Workforce education and training
5.	Use of Dental Amalgam in health facility
6.	Best environmental practice
7.	Global reservoir of dental amalgam
8A-8C.	Environmentally Sound Management of Dental Amalgam Waste
9A.	Crematoria; (Emissions / point source)
9B.	Burial grounds / cemetery (Releases / diffuse source)

The proposal recognizes that a degree of compartmentalization is required, as some measures will likely fall under the mandate of specific Ministries. Component 1 addresses issues related to health systems; Component 2 addresses issues related to the environment and would most likely fall under the remit of the Ministries of Environment; and Component 3 improves coordination across agencies at national and global levels, as well as for a for key stakeholder groups to engage. The main activities under Components 1 and 2 will address key leverage points 1-8 as identified above.

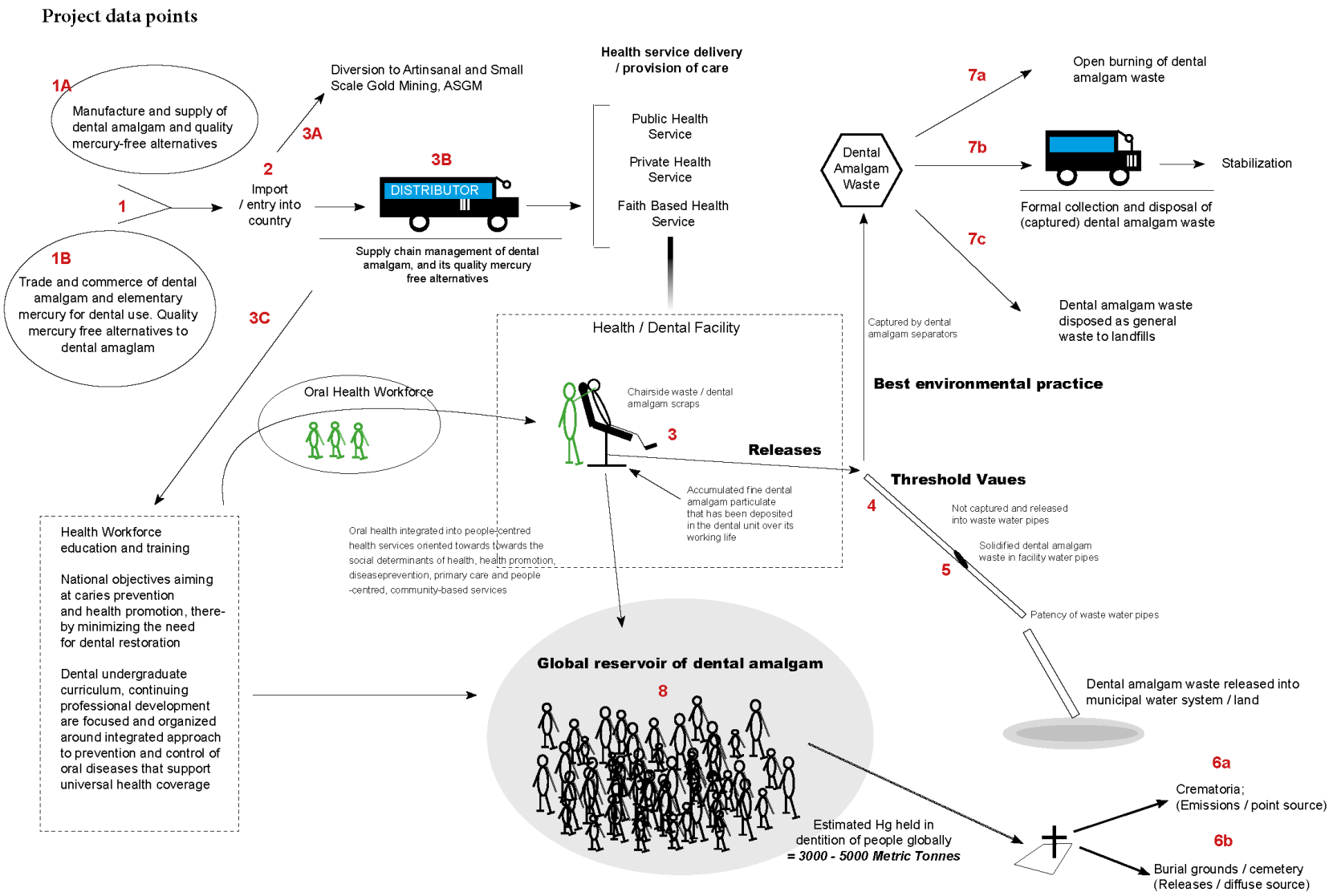

Diagram 2. Leverage points for phasing down the use of dental amalgam

4) alignment with GEF focal area and/or impact program strategies

The proposed project is fully aligned with the GEF7 Focal Area "Chemicals and Waste" and Programming Direction "CW-1-1 Strengthen the sound management of industrial chemicals and their waste through better control, and reduction and/or elimination," as it aims to accelerate the phase down of dental amalgam use and increase capacity in the management of associated mercury/hazardous wastes in both global and national contexts. Furthermore, the project supports the broader sound management of chemicals and waste with the Strategic Approach to International Chemicals Management (SAICM), the United Nations policy framework to promote chemical safety around the world. Finally, the project supports the overall goal of the UNEP Global Mercury Partnership ("the Partnership") to protect human health and the environment from releases of mercury and its compounds by minimizing and, where feasible, ultimately eliminating global, anthropogenic mercury emissions to air and releases to water and land. With over 200 partners to-date from governments, IGOs, NGOs, industry and academia, the Partnership focuses on supporting timely and effective implementation of the Minamata Convention, providing state of the art knowledge and science, and raising awareness towards global action on mercury. Initiated in 2005 by a decision of the UNEP Governing Council, the Partnership currently has eight (8) identified priorities for action – or partnership areas – that are reflective of the major source of mercury releases categories. The project will contribute to the activities of three Partnership Areas, namely on mercury in products as well as mercury waste management and mercury supply and storage. Existing publications and expertise from the Partnership will assist in different components of the project and the results of the project will improve the guidelines and create greater awareness in phasing down dental amalgam around the world.

5) incremental/additional cost reasoning and expected contributions from the baseline, the GEFTF, LDCF, SCCF, and co-financing

By integrating the activities of the proposed project with the existing work of WHO and its Global Chemicals and Health Network of health ministries, leverage of financial and knowledge resources will be maximized. Under Component 3 on knowledge management, this project will build on current efforts to collect, share, and create knowledge resources, such as case studies, guidance documents, and training materials. Building on this existing network is preferable to establishing a new network, and significantly increases the availability of co-financing.

The aim of the UNEP East Africa Dental Amalgam Phase Down project Phase 1 was to demonstrate the phase-down approach of dental amalgam use. Phase 1 has successfully established proof of concept and some core elements of baseline data, as well as establishing a network of committed regional partners. The proposed project will enable countries to scale up existing EADAP activities and adopt additional measures as part of a structured and coordinated regional approach.

The development of WHO and UNEP standardized guidance, resources and tools will both require and facilitate the engagement of a range of global and national partners including but not limited to dental associations, academia, research institutions, civil society, the dental industry as well as waste management company. This will have dual benefits of creating key materials of use for a number of countries, and establishing the principle and partnerships for a global strategy that aim to be supported by sustainable funding streams, technical expertise and in kind co-financing.

For all three outputs of the project, participation of public and private partners will be critical. Partners will provide significant co-financing in-kind support through existing research, network, and partnerships as well as technical knowledge and equipment, including through the installation of separators in countries (Senegal and Thailand), and the overall project will serve to tie together these activities and their associated public and private sector involvement and contributions at country level.

It should be noted that the global aspects of the project are designed to magnify the results and impacts of the national projects, as well as coordinating efforts among key actors, and collecting and sharing knowledge generated from each country project. This project will also create new knowledge where stakeholders identify gaps, and support solutions to close these gaps. Finally, the global aspects of the project will help increase the visibility of the dental amalgam problems and solutions, contribute to increased political awareness of the issue, and identify solutions.

The following is an interrelated and mutually supportive contribution strategy that the project will employ from the baseline:

• Multi-stakeholder engagement for industry, academic, government, and other stakeholders take part in activities to achieve the objectives of the project in countries;
• Rely and link with existing programmes and networks of overarching environmental and health protection initiatives and learn from them;
• Institutions and networks facilitating exchange of information, and assistance in the promotion of successes achieved under the project; and
• South-to-South exchange to facilitate knowledge transfer and capacity-building, as well as leveraging success among project countries.

Co-financing for this project will come from a broad range of partners, reflecting the wide interest generated by the project, the seriousness, widespread nature, and complexity of the issue. Co-financing will also come from NGOs actively working on the issue, to support work on legislation, national and global awareness-raising, and specific education for health professionals about the human health and environmental hazards of dental amalgam and broader environmental impacts, including aspects related to wastewater, open burning, and contaminated sites.

World Health Organization (WHO) is a lead agency for international health within the United Nations system, working under the guiding principle that all people should enjoy the highest standard of health.Through various projects and publications, WHO provides guidance and support to ministries of health in planning measures to implement the health-related articles of the Minamata Convention and to protect public health from exposure to mercury. WHO provides guidance to health ministries to plan not only obligatory measures under the Convention, but voluntary measures as well. In response to the health-related issues or activities and articles of the Minamata Convention on Mercury, the Sixty-seventh World Health Assembly adopted and approved Resolution WHA67.11 (2014): Public health impacts of exposure to mercury and mercury compounds: the role of World Health Organization (WHO) and ministries of public health in the implementation of the Minamata Convention. The Resolution calls on WHO Member States to address the public health aspects of mercury and mercury compounds in the context of the health sector by identifying measures and preparatory actions to be taken by their health ministries for implementation of the health-related articles of the Convention. The Resolution also calls upon the WHO Secretariat to create tools, offer guidance, and provide training materials to support Member States in managing the public health impacts of mercury and mercury compounds (WHO, 2014).

United Nations Environment Programme (UNEP) hosts the Global Mercury Partnership and will contribute to the efforts of the project by bringing its convening power and wide expertise on the mercury issue. The Global Mercury Partnership has been active for more than 10 years and has access to a wide range of experts, both within the Chemicals and Health Branch and outside who can contribute to the project. UNEP will continue to support the Secretariat and work of the Global Mercury Partnership, including organise and host the Annual Partnership Advisory Group meeting. UNEP also hosts the Secretariat of the Minamata Convention, which will be organizing meetings of the COP. Both meetings of the COP and Global Mercury Partnership will be important platforms for the dissemination of the results of this project.

FDI World Dental Federation

FDI World Dental Federation serves as the principal representative body for more than one million dentists worldwide, developing health policy and continuing education programmes, speaking as a unified voice for dentistry in international advocacy and supporting member associations in global oral health promotion activities.

FDI World Dental Federation is the largest membership-based dental organization in the world. It is the principal representative body for over one million dentists worldwide. FDI's membership comprises approximately 200 national member dental associations and specialist groups in some 130 countries.

In terms of co-financing, FDI will be able to:

-Leverage its science committee experts to provide input into specific aspects of the project as requested, including statements and toolkits on the availability of alternative materials and techniques to amalgam within WHO's mandate.
-Disseminate data to FDI's network of national dental associations and support implementation at country level
-Continue FDI'S Minamata Update Bulletin to inform FDI's national dental associations on the progress within the Minamata Convention as well as possible implications for their country and share best practices
-Leverage the engagement of FDI members in platforms managing dental amalgam at national/regional levels and with other bodies including the EU, Council of European Dentists, etc.
-Leverage the work of FDI's Vision 2020 and Vision 2030 Working Group on strengthening oral health for UHC
-Continue to promote the integration of oral health into UHC at WHO, UN, G7 and G20 high level events and meetings
-Engage with key stakeholders including World Health Professions Alliance to develop aligned messaging on UHC in advocating oral disease prevention

International Association for Dental Research (IADR)

The International Association for Dental Research (IADR) is a global nonprofit organization. IADR mission statement is to drive dental, oral and craniofacial research for health and well-being worldwide within a vision of oral health for the world through discovery and dissemination.

IADR Core Values include:
1. Scientific Excellence * Social Responsibility * Scientific Community

2. Scientific Excellence: IADR values science conducted at the highest possible levels of rigor, innovation, and ethics, across disciplines, from discovery science to clinical implementation to global population health.
3. Social Responsibility: IADR values the pursuit of science to improve health and well-being for all people, to reduce health inequalities and inequities, and proactively takes actions and positions to improve health.
4. Scientific Community: IADR values a diverse and inclusive scientific workforce, promotes work-life balance, and supports educational activities and mentoring networks to develop the next generation of scientists.

Co-financing from IADR will include:
-technical contribution from 32 scientific groups and networks, one of which is dental materials
-technical guidance on current dental restorative materials and identify research gaps to further improve mercury free alternatives
-technical assistance at the country level through divisions and sections of IADR
-technical assistance on healthcare financing implications of dental amalgam alternatives, including factoring in costs of materials, placement, storage and longevity
-clinicians with the latest research supporting the best dental restorative choice for a given clinical situation and setting
-liaise with international dental manufacturers and their member companies

International Odontological Aid (AOI)

AOI is an NGO that contributes to improving the oral health of disadvantaged populations. In the last 30 years the organization has evolved. It has acquired recognized know-how and expertise from experience in different countries (Haiti, Burkina Faso, Mali, Niger, Madagasgar, Cambodia, Laos) and in France. The association supports local dynamics and works in a network with various stakeholders involved: professionals, academics and institutions.

The AOI positions itself as a facilitator and provides technical and financial support to partners so that partners can carry out their projects.

AOI's cofinancing can help the project develop new partnerships to co-create new knowledge and expand networks. AOI supports programmes with dental schools and healthcare services in Laos and Madagascar in the field of infection control and waste management.

Association for Dental Education, Asia Pacific (ADEAP)

Dental Schools in the Asia Pacific region have come together to collaborate across the region, and have organized a new association entitled Association for Dental Education, Asia Pacific, ADEAP. ADEAP was founded in 2018 in Kaohsiung, Taiwan. Although it is in early development, founding members continue to promote the concept of ADEAP in various dental societies and build networks across the region. ADEAP liaises closely with other regional dental education associations and bodies.

ADEAP will be able to co-finance the project through coordination and synergy with existing programming and membership activities. It will help the project develop new partnerships to co-create new knowledge and expand networks. In addition, ADEAP joint activities will allow the project to develop synergies across stakeholder groups to improve the respective delivery of individual components as well as the project as a whole.

Charité University, Germany

Charité University in Berlin, Germany has a strong record of work in global health and development. The co-financing will help the project to develop new partnerships to co-create new knowledge and expand networks, as well as supporting global scale up. In addition, Charite University will help the project to develop synergies between academia, dental associations and government agencies at national level, as well as extend reach across geographical regions to improve the respective delivery of individual components as well as the project as a whole.

Charité University will develop the architecture of a database following requirements to be defined by WHO, allowing information from the three pilot countries (Uruguay, Senegal and Thailand) to be in compliance with the correspondent health authority at the WHO in order to encourage a "push" instead of a "pull" modality. The main work streams of the database will involve data science considerations (input, storage, transmission, and output) and software aspects (usability and user testing, frontend, and backend development).

It will undertake developing the conceptual and analytical framework, data science component and the software conceptualization. In a second project phase it will undertake the curation, storage, and representation of input data from the three project countries. In collaboration with WHO, priority data points will be identified. Based on these data points it will implement the necessary technical processes that will allow for the transparent comparison across project

outputs associated with the dental amalgam phase down. The database will support WHO in executing proposed project activities, as well as reporting to the Conference of the Parties through the Minamata Secretariat, and the effectiveness evaluation of measures of the provision (dental amalgam). The database will help WHO to inform governments with regard to policy and planning decision making on the alternatives to dental amalgam and their effectiveness and availability to actively contribute to the objective of Minamata convention.

King's College London / *Global Collaboratory for Caries Management, UK*

King's College London and its Dental Faculty has a long history in the areas of caries prevention, minimally invasive dentistry, dental materials science and dental public health. In 2012, King's College hosted a meeting bringing together IADR, WHO, UNEP, educators, and industry to explore optimal ways forward to deal with the amalgam challenge. The comprehensive networks and background links were to assist with measures i, iv, v, vi and vii of Annex A Part II in the Minamata Convention.

King's College London Faculty of Dental, Oral and Craniofacial Sciences is the largest Dental School in the UK and a major centre of excellence in both European and World University rankings. King's prides itself as having an international focus and a global footprint. In addition to its conventional University activities in this area King's is proud to host two International Caries implementation charities.

To help advance King's *Vision 2029* (*Making the world a better place)*, the Global Collaboratory for Caries Management (GCCM) has been developed over the last five years by King's and its partners. This Collaboratory is a virtual network bringing together organisations, groups and individuals who share a common vision to accelerate progress towards a "Cavity Free Future" in which primary, secondary and tertiary prevention of caries across the life course is delivered more effectively worldwide. The initial work coordinated by the ICDAS Foundation around caries detection and assessment has now been extended to encompass comprehensive caries management and the charity is now host to both ICCMS™ and CariesCare International (CCI, which has a focus on General Dental Practice). The Foundation is supported by university academics in >100 Universities in 20 countries.

A second King's-led caries implementation charity (also chaired by Prof Pitts) is the Alliance for a Cavity Free Future (ACFF), this expanded to have a truly Global footprint acting through 28 Chapters operating in over 50 Countries and now works together with both the ICDAS Foundation and across King's. The GCCM has been building international networks, further developing, and implementing standardized resources to help improve caries care and health across the world. It provides an excellent resource to bring ready-developed caries management tools to the three initial sites, as well as expanding Minamata implementation impact across many other Regions and Countries. King's College London already work with Ministries and Governments in many countries as well as with the FDI Group.

The co-financing can help to develop new partnerships and co-create new knowledge and expand networks, as well as support global scale up. It will also allow the project to develop synergies between academia and dental associations and government agencies at national level, as well as extend reach across geographical regions to improve the respective delivery of individual components, as well as of the project. The co-financing amount is derived from the costs of the global network under the Global Collaboratory for Caries Management acting through ACFF Chapters as well as the additional university network brought through the ICDAS foundation.

University of Sheffield, UK

The Envirodent research group based in the School of Clinical Dentistry is led by Professor Nicolas Martin as part of an active research sustainability programme. The work of the School of Clinical Dentistry is aligned with GEF / project objectives in areas of dental school curriculum, waste management and awareness-raising. Current research activities are in the following themes:

- Assessment and quantification of eluents and microparticles from resin-based composite dental materials.
- Circular economy of single-use plastics in health-care with a case study in dentistry
- Embedding and integrating sustainable health-care into the undergraduate dental curriculum.
- Provision of remote clinical consultations as a way of reducing carbon footprint from patient movement
- Assessment and remediation of Hg from amalgam in wastewater systems
- Creation of an 'Environmental Concern Index' specific to dentistry and medicine.

The University has obtained research funding to support the activities listed above that can serve as co-financing to the project.

SDI

SDI is primarily involved in the research and development, manufacturing and marketing of specialist dental materials. SDI's products are a combination of innovation and excellence to provide the ideal restorative materials for the dental profession. Founded in 1972, SDI has established itself as an innovator in specialist dental materials and in 1985, SDI was publicly listed on the Australian Stock Exchange.

SDI began as an amalgam manufacturer providing a comprehensive range of amalgam products globally. Dental amalgam continues to be manufactured and still contributes approximately 25% of the overall turnover. This is a significant decline in the amount of dental amalgam SDI was contributing to the global market only 10 years ago. Even 20 years ago, SDI identified the need for not only an aesthetic alternative to amalgam but a bio-functional one also. Resin based composites (RBC) and glass ionomer cements (GIC) are two main categories of dental materials currently used in routine dental practice around the world and represent quality alternatives to dental amalgam. SDI has launched several composite and GIC materials over the last 20 years and these brands and categories have been expanded and refined to meet the needs of both the dentist and patient today.

SDI manufactures its own glass to ensure the quality control is maintained for their RBC and GIC materials. SDI puts a significant emphasis on providing both high quality aesthetic and bio-functional materials, and the development of an amalgam alternative material that will enable countries to transition away from dental amalgam.

A major focus has been put on the shift from Atraumatic Restorative Treatment (ART) to Silver Modified Atraumatic Restorative Treatment (SMART). The SMART technique aims to halt decay and seal teeth using two products: Silver Diammine Fluoride (SDF) and glass ionomer cement (GIC) sealant/restoration in a single appointment. SDI has developed SMART products and techniques that use a combination of SDI Riva Star and the SDI Riva Self-Cure GIC.

SDI has a well-established awareness raising and educational programme delivered through lectures, Key Opinion Leader engagement, as well as advertising across print and electronic media globally. In many countries globally Riva Star is registered as an anti-caries product with several others as a desensitizer. SDI has also invested a significant amount of time and resources towards research support both locally and abroad to support the use of Riva Star as an anti caries product with significant reach especially in developing regions around the world. SDI continues its research into the SDF material, Riva Star, with developments on the next generation of product already well underway.

SDI is continually collaborating and gaining input from external agencies and industry bodies around the need for "greener dentistry". SDI is looking at how it's research and development, manufacturing and marketing messages can focus on stressing the environmental product development and focus on environmentally sound lifecycle management of its products. New environmentally friendly packaging, reduction of environmental waste from its manufacturing facility and even the rationalization of its product lines are all initiatives SDI is working towards.

The in-kind support from SDI can help the project develop new partnerships to co-create new knowledge and expand networks, as well as support global scale up. SDI's activities will also allow the project to develop synergies both across industry stakeholder groups as well as geographical regions to improve the respective delivery of individual components and the project.

BATREC

Batrec is a company in the Veolia Group which specializes in responsible recycling services. It is a globally active recycling company that specializes in the economical, environmentally-friendly and sustainable disposal of hazardous wastes.

A summary of areas where BATREC can support are:

-Share and provide know how, data and expertise in the management of mercury containing dental waste;
-Find and identify platforms for the temporary storage of mercury containing dental waste in the 3 selected countries;
-Support and prepare the application of the Basel Convention notifications to export the waste from the countries to their recycling facility in Switzerland;
-Organisation of waste shipments (transport costs to be covered by the project) from the 3 selected countries to Batrec's recycling facility in Switzerland; and
-Management and final disposal of the collected mercury containing dental waste, including stabilization of the recovered mercury and mercury sulfide.

Dental Recycling International, DRI

DRI was established in 2015 to duplicate the successfully model of DRNA in the U.S. DRNA was established 20 years ago and is one of two major US competitors in the amalgam separator and recycling sector. Towards this end, DRI partnered with the FDI and UNEP to place its amalgam separators in Uganda, Tanzania and Kenya.

Building upon activities in the UNEP East African Dental Amalgam Phase Down Project, partnerships were sought in South Africa. DRI has been involved in a successful pilot project with the South African Dental Association and are now actively pursuing our future expansion plans in the South African market. DRI hopes to reach international level on duplicating the success of DRNA in the public sector. Some of DRNA's leading public sector customers include the Cleveland Clinic, Staten Island University Hospital, SickKids, JFK Medical Center, the University of Alabama-Birmingham School of Dentistry, Rutgers School of Dental Medicine, and University of Mississippi Medical Center.

Also, DRI is endorsed by professional dental societies like the Academy of General Dentistry and other State Dental Associations accounting for over 65,000 dental practices in the U.S.

DRI focuses on environmentally sound lifecycle management of dental amalgam waste, and the amalgam separator units provide a range of regulatory compliance. The standard units have been successfully tested to the ISO 11043 :2000 standard and the more advanced mercury removal unit (MRU) is the only one in the market to have gone through the US EPA Environmental Testing Verification Program. The ETV Program was established to bring cutting-edge technology to the global market, and costs $100,000.

The MRU addresses the mercury in solution from dental offices and is the most advanced product on the market. Many of our clients, especially US military bases, have decided to go above and beyond state and local regulations for reducing mercury discharge by installing the MRU, including Naval Hospital Bremerton.

As co-financing, DRI will offer 10 standard amalgam separator units and 10 MRU units. All units can either be standard size – up to 8 chairs and those over 8 chairs. DRI will also cover transportation costs for these units. DRI is also open to develop educational programs on the issue of proper disposal of amalgam waste for both private and public sectors. This can include online education programs as well as in house seminars and speaking events. Going forward beyond 2024, DRI is looking to establish several regional/global recycling facilities.

DRI is also available to provide proper disposal and recycling services of all the amalgam separators installed in the target countries. This would include: transportation of all units to DRI's USEPA certified facility for recycling; proper disposal of amalgam waste at EPA certified facility; certificate of recycling for all the amalgam separators recycled. DRI can transport amalgam waste into the U.S. by common carrier since amalgam waste designated for recycling is not considered a hazardous waste being imported into U.S. However, for the purpose of the proposed project, should DRI be selected by the target countries, DRI will provide certificate of final disposal of the collected mercury as part of the dental waste.

Ecocycle

Ecocycle is Australia's leading mercury recycling facility and innovative leaders in recycling technologies across dental amalgam, lighting, batteries and all mercury bearing wastes.

Established in 1996, Ecocycle operates across Australia with offices and processing facilities in all the major cities. They have agency partnerships in the Pacific regions -Papua New Guinea, New Caledonia and New Zealand -and Indonesia. Their client base includes Government at both National and State levels, all the major Universities, local Councils, broader industry and the general public. They are constantly and actively interacting with Regulatory bodies

throughout the country such as Environment Protection, Sustainability and Waste Management Associations.

Ecocycle can provide 15 units of proprietary branded AS04 type separators including packing, transport based on CFR (Incoterms) destination country main port.

Enretec

Enretec has almost 4 decades of experience in dental business. It has created and successfully implemented a close-meshed and versatile concept for the collection and disposal of amalgam waste throughout Germany, building up an extensive network (industrial partners and retailers-throughout Germany and internationally)

Enretec evaluates and develops various concepts according to the needs of their customers to ensure that collecting and disposing amalgam is as trouble-free as possible for dentists. It is also market leader in collecting and disposing medical electrical appliances such as dental chairs and amalgam separators.

In short, the co-financing from Enretec will include long term experience and a valuable and extensive network, which are essential factors necessary to advance the proposed project effectively and sustainably.

Solmetex

Solmetex is a US based company and provides products, services, and product development that focus on the proper handling of dental waste. Solmetex can provide the 20 NXT amalgam separators as co-financing to the project. The company has agreed to ship them to the destination where they are needed. In addition, Solmetex would also be willing to ship additional amalgam separators to support this project as needs arise. Solmetex, located in Northborough Massachusetts, primarily serves the North American market.

Separatory Amalgamatu

Separatory Amalgamatu is a company which provides dental amalgam separators to many countries. Separatory Amalgamatu supply products mostly to all European countries, but especially after last International Dental Show (IDS) in Koeln/Germany it has partners all over the World including South Africa, USA, Israel, Colombia, Taiwan, Iran, Egypt etc. Examples of customers from universities and hospitals include Nowy Szpital Szczecin, Gdański Uniwesytet Medyczny(GUM - Poland), Medical University in Plovdiv (Bulgaria).

Separatory Amalgamatu can provide 9 of size 1, 3 of size 2 and 1 of size 1/Sink and FilterMax separators, including costs of shipment.

METASYS

METASYS is an international company with an extensive network, and has products, services and product developments focused on amalgam separation and amalgam recycling, becoming one of the world leading companies in these market segments. METASYS can provide 10 amalgam separators of different types. If requested this number could be increased. METASYS could cover transport costs to the selected country and give support during installation and product training.

6) global environmental benefits (GEFTF) and/or adaptation benefits (LDCF/SCCF)

The estimated global environmental benefits for this project have been framed by Article 1, the objective of the Minamata, “to protect the human health and the environment from anthropogenic emissions and releases of mercury and mercury compounds” and the 9 measures of the provision for dental amalgam in Annex A Part II.

The benefits have been calculated based on: i. stop use which is equivalent to avoidance, and ii. release when removed which is equivalent to reduction. This approach provides flexibility to revise global environmental benefits projections to take into account results of intersessional work and COP decisions made over the duration of the project. These may be incorporated into country level action plans and implementation activities. In addition, the **project will still be relevant and valid in case future COPs decides to phase out, instead of phase down, dental amalgam. As Parties would still need similar measures to strengthen national policies on their stop use and removal/waste management**.

GEB calculation is aligned with the project outcome, and has two parts;

i. stop use <avoidance> focusses on accelerating implementation of dental amalgam provisions,
ii. release when removed <reduction> addresses waste management and strengthening country capacities in the environmental sound management of dental amalgam and associated wastes when removed under the Minamata Convention

Stop use <avoidance> is closely related to measure ii. of the provision for dental amalgam “Setting national objectives aiming at minimizing its use” and the activities of Component 1.

Release when removed <reduction> relates to measure v., viii., and ix. and the activities of Component 2. For removel / waste management the global environmental benefits calculations are based on the EADAP project and the principle that similar equipment, methods and processes would be used in this project.

Additional / indirect leverage points

The project as several additional / indirect leverage points, which will contribute to
overall global environmental benefits. These are discussed in section 2.4 *Country specific baseline* and illustated in the Diagram 2. Leverage points for phasing down the use of dental amalgam.

Indirect benefits will result from the co-creation of knowledge through the project knowledge management activities. For example, through public information, awareness and education (Article 18), and information exchange (Article 17), dental education and training. These additional benefits will collectively reduce the need and demand for dental amalgam, as well as prevent increases in the amount of mercury held in the national dental amalgam / mercury reservoir. Another opportunity is dental amalgam waste that has accumulated in dental wastewater pipes, which would need to be disposed through environmental sound management of associated wastes.

Synergies that yield compound return on investment

Two out of three countries (Thailand and Uruguay) have existing mechanisms and processes that cover the measures for phasing down the use of dental amalgam. Maximizing synergies across the outputs is an important factor in the design of the project, which will enable compound return on investment. For example, it may not be possible to compartmentalize and quantify the project results from dental amalgam release when removed <reduction> from existing national dental waste management systems in Thailand and Uruguay. Similarly, Component 2 could help catalyze opportunities for improvements and efficiencies in national systems, increasing GEBs beyond lifetime of the project.

The project is expected to result in the reduction and avoidance of approximately 11.6 tons of mercury (11.3 tons avoidance and 0.3 tons of reduction). Due to the lack of data in all three countries, many educated estimates and assumptions were made in order to calculate the GEBs. The main estimates and assumptions are listed below:

- global average of 2 g of mercury in each dental amalgam was used
- no activity rates (frequency of replacement of dental amalgam) were included
- percentage of population with dental amalgam fillings were estimated based on EU data
- number of people receiving dental amalgam were based on available literature as country specific data were not available
- for female and males beneficiaries, an even split between the gender that received dental amalgam was used
- reduction target to be reached in each country are not national targets but project targets (the achievable reduction target for each country was determined based on amount of dental amalgam use and domestic circumstances)

Lessons learned through the EADAP project established proof of concept and also the viability of collecting, disposing and measuring dental amalgam waste from the African region.

Replication factors

11.6 tons include a replication factor of 2. The project has three principle that contribute toward the replication factor that deliver benefits beyond the scope and its 3 year timeline.

1. National Dental Amalgam / Mercury Reservoir

It is difficult to accurately assess of the amount of dental amalgam held in dental amalgam / mercury fillings in the population (National Dental Amalgam / Mercury Reservoir, NDAR). The EU estimates 1000 tonnes of mercury to be held in its population. Based on same calculation and population size, this would give NDARs for Senegal at 5 tonnes, Thailand at 83.9 tonnes, and for Uruguay 3.5 tonnes. Through the transition to alternatives from mercury amalgam, the project will reduce new contributions to the NDAR.

The NDAR is a significant legacy issue and adequate control mechanisms, and processes will need to be in place over the long term, potentially up to 30 years.

Intersessional work on releases (point sources) which include crematoria and discussions on open burning of mercury containing medical waste (diffuse sources), as well as future work on BAT BEP could be incorporated into project activities. This would strengthen environmental sound management of associated dental amalgam wastes in areas outside the scope of this project.

2. Information on non-mercury alternatives to dental amalgam

COP 3 has requested the Minamata Secretariat to collect from Parties and other partners information pursuant to paragraph 7, Article 4 of the Convention, i.e. information related to the availability, technical and economic feasibility and environmental and health risks and benefits of non-mercury alternatives to dental amalgam.

Component 2 seeks to enable the environmentally sound management of dental amalgam waste, including through the installation of dental amalgam separators. Data on the effectiveness of the different types of dental amalgam separators to capture waste from alternatives, such as resin-based composites and glass ionomer cements, is currently not available.

BAT BEP considerations at COP4 could create opportunities for innovation and multi-pollutant strategies that could address both dental amalgam waste and waste from non-mercury alternatives in a coherent and reinforcing manner. This could include input from SAICM emerging policy issues such as nanotechnology and manufactured nano-materials and chemicals in products.

3. Communication and knowledge management

Most Parties to the Convention will need to implement measure for the phase down of use of dental amalgam. Component 3 includes the development of a database and interactive dashboard, which will synergize with ongoing work of WHO Oral Health Programme and Global Oral Health Action Plan 2022, and Global Mercury Partnership knowledge management activities.

Interim results from the project can guide and inform accelerating the implementation of dental amalgam provisions and strengthen country capacities in the environmental sound management of associated wastes under the Minamata Convention during the lifetime of the project.

GEBs could accelerate dental amalgam phase down efforts globally (outside the project countries) through early adoption of project interventions by Parties to the Convention.

7) innovativeness, sustainability and potential for scaling up.

The proposed project provides both a catalytic and unifying framework for innovation in dentistry across a range of fields and disciplines. It will energize and give focus to align dental materials research agenda and shift towards a preventive system and integrated model of dental caries management. It also reinforces the need for education and training on best management practices for dental waste management, including those for dental restorative materials. Specifically, it will hasten coordinated planning around the development of methodologies to assist countries in setting national objectives for caries prevention and health promotion as called for in Minamata Convention, Annex A, Part II, Measure (i).

Innovation will also extend to data collection and analysis methodologies drawing upon the use of technology and social media to provide both qualitative and quantitative data. This will support and harmonize policy implementation (Minamata Convention) and its dialogue at country, regional and global level, as well as creating a common information architecture and the adoption of a minimum data set to enable comparable monitoring.

The development of open source global guidance, resources and tools to support dental amalgam phase down will be led by WHO and UNEP with the involvement of their respective network of collaborating centres and partnership networks. This builds on existing cooperation and collaborative funding agreements and ensures common ownership among key dental organizations and their constituents.

As learned through the EADAP project, successful installation and deployment of dental amalgam separators have created an enabling business incubation environment for public private partnerships in dental waste management. Further capacity building and technical assistance will enable and facilitate the development of in-country, for-country solutions for dental amalgam waste management.

The engagement and participation of key relevant partners of the UNEP Global Mercury Partnership indicates a commitment both to good governance and developing robust inclusive partnerships to support countries in implementing their dental amalgam phase down strategy as well as the subsequent dissemination of lessons learned and good practices.

A key design aspect of this proposal has been ensuring its utility and feasibility in terms of providing a tested, evidence based template that can be deployed as part of a global roll out and scale up of dental amalgam phase down. It achieves this by:

i. allowing Parties to take measures listed in Annex A, Part II in a consistent and coherent manner;
ii. building and strengthening national, regional and global stakeholder networks around a common communication and information architecture and accompanying minimum data set;
iii. establishing standardized guidance, resources and tools to reduce the need, demand and use of dental amalgam, and ensure the disposal of dental waste in an environmentally sound manner.

Countries seeking to plan for, develop and implement a phase down of the use of dental amalgam would have the confidence in the applicability, compatibility and quality assurance of the results of this project, as well as the opportunity to learn from the experiences.

To achieve the ultimate goal of the project, various interventions will be executed simultaneously at the national and global levels. The involvement of both Ministry of Health and Ministry of Environment in each project country is key to ensure national ownership and to emphasize the direct risks that dental amalgam and its associated wastes pose to humans and the environment. Appropriate national regulations on the management of dental amalgam and their

enforcement will ensure sustainability of project interventions. In addition, engagement from the private sector on supplying separators and providing associated trainings in countries, will contribute greatly toward waste management aspect of the project. As part of the national separators purchasing strategy, a sustainability plan will be in place to ensure financial and technical support are established after project ends. National awareness-raising and global advocacy to promote the phase down of dental amalgam use will catalyse innovative approaches in improving the quality of life for all prominent dental amalgam user countries. Experiences learned from the three target countries can be widely applied to other countries both regionally and globally.

Project cost effectiveness has been evaluated and the target countries carefully chosen for a variety of reasons. The three countries are at different stages of dental amalgam phase down and through the project, they will demonstrate to the rest of the global community the best approaches to achieve national goals related to this topic given the available resources.

Global replication can be further reinforced by involving and coordinating with GGKP. GGKP is UNEP's main knowledge management partner and has the network, ability, and potential to scale up activities with other UN agencies and private sector stakeholders. Collaboration with GGKP will ensure that global scale dissemination and long-term knowledge management are conducted.

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[xxvii] UN Environment, 2018. Report of the workshop, "Promoting Dental Amalgam Phase-Down Measures Under the Minamata Convention and Other Initiatives, For 'Especially Women, Children and, Through Them, Future Generations,'" held in Bangkok on 14-15 May 2018. United Nations Environment Programme, Chemicals and Health Branch. Geneva, Switzerland.
Available at https://mercuryfreedentistry.files.wordpress.com/2018/06/workshop-report.pdf

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[xxix] Dental Amalgam feasbility study - Final Report available at https://circabc.europa.eu/ui/group/19e66753-84ca-4e4e-a4a1-73befb368fc2/library/4fd46a0f-54aa-48c6-8483-288ad3c1c281/details

[xxx] Recommendations About the Use of Dental Amalgam in Certain High-Risk Populations: FDA Safety Communication, available at https://www.fda.gov/medical-devices/safety-communications/recommendations-about-use-dental-amalgam-certain-high-risk-populations-fda-safety-communication

[xxxi] UNEP (2016) Lessons from Countries Phasing Down Dental Amalgam Use. http://archive.zoinet.org/web/sites/default/files/publications/Dental_Amalgam_spreads.pdf

1b. Project Map and Coordinates

Please provide geo-referenced information and map where the project interventions will take place.

Accelerating early implementation of the phase down of the use of dental amalgam to achieve socio-economic, environmental and public health benefits

Map Sources: ESRI, UNCS.
The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations. Map created in Aug 2011.

Map Sources: UNCS, ESRI.
The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations. Map created in Aug 2013.

Map Sources: UNCS, ESRI, OCHA.
The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations. Map created in Sep 2013.

The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations

This map Is intended for illustrative purposes only, and should not be used to derive any information regarding the project's operations. All maps were downloaded from https://reliefweb.int/location-maps

1c. Child Project?

If this is a child project under a program, describe how the components contribute to the overall program impact.

Not applicable

2. Stakeholders

Please provide the Stakeholder Engagement Plan or equivalent assessment.

Ministry of Health (through WHO) and Ministry of Environment (through UNEP) were consulted directly during project development. These two ministries in the target countries liaised with other Ministries and organizations in country for national level consultations. In addition, international stakeholders, and experts, including co-financing partners, were consulted during project development to ensure that complementary initiatives and synergies were identified. Strong stakeholder participation of both public and private sector actors is critical for the achievement of the project objectives and implementation of project activities. In practical terms, stakeholders will be involved and consulted during project execution through activities under all outputs. Stakeholder consultation and buy-in is of utmost importance for the sustainability of the project and engagement will be done both informally and formally at all levels of project implementation and decision making. Stakeholder participation will be ensured through Project Steering Committee (PMC) meetings. The PSC will consist of stakeholders from key ministries, agencies and NGO representatives which will be decided at the inception workshop.
Stakeholder participation will be ensured by conducting consultative workshops under all components. The project team will ensure a gender balance and prioritize participation of women. The global awareness campaign through Component 3 and the Global Mercury Partnership will ensure that all technical reports, training materials and guidelines developed through the project will be readily available for all stakeholders as well as the public. The knowledge hub to be established within the Global Mercury Partnership will disseminate information and experience and promote exchange at the global level, including through meetings of the Partnership Advisory Group (PAG) and relevant Partnership Areas. Opportunities for outreach will be sought at various relevant events, at the meetings of the COPs to the Minamata Convention, which may include convening side events, or organizing booths at the COP venue to communicate about the project with relevant stakeholders.

The empowerment of women's groups and women-led groups can have very beneficial impacts in strengthening community response to the use of dental amalgams, therefore, they will be invited to participate in the project in each target country after consultation with other national stakeholders and the gender consultant to be hired by the project.

Stakeholder	Role in the project preparation	Proposed engagement in project
International Governmental Organizations		
Minamata Secretariat	Consulted during project development	Secretariat of the Minamata Convention on Mercury will provide available and updated information related Convention's relevant provisions and implementation thereof
BRS Secretariat	Consulted during project development	Secretariat of the BRS Conventions on providing guidelines and guidance related to management of hazardous wastes
UNEP	Led consultation with national project partners, discussing co-finance contributions, and seeking input into the project design. Host of the Global Mercury Partnership. Co-led consultation with national project partners for their country projects	UNEP Chemicals and Health Branch GEF Unit is the IA, responsible for implementing the project, in line with project budget and workplan, and overseeing monitoring and evaluation of the project. UNEP will also establish agreements with Executing Agencies to carry out project activities and manage all co-financing and involvement from the private sector
UNEP Global Mercury Pa	Provided input into the project design, attended the project formulation workshops. Pro	The Global Mercury Partnership will provide targeted technical assistance in all outputs and m

l Mercury Pa rtnership	ded the project formulation workshops. Pro vided information on baseline projects and co-financing partners. Already has an estab lished roster of experts through partners fro m governments, IGOs, NGOs, private sector and academia institutions	geted technical assistance in all outputs and m anage the knowledge platform developed by th e project on the Partnership website (under UN EP domain). The Global Mercury Partnership wi ll manage the partnership established with the private sector
WHO	Provided input into key health contact point s for each of the project countries and assi sted in the planning of the project. Lead pro ject design and execution arrangements	WHO is the EA. WHO, a UN specialized organiz ation, is the directing and coordinating authorit y on international health work. WHO will provid e support to ministries of health to promote reg ulatory action to phase down dental amalgam i n line with the Minamata Convention, support h ealth ministries to develop and conduct campa igns to raise awareness among the public and among health workers about the health and en vironmental hazards of dental amalgam; create a knowledge platform by developing a global c ampaign for advocacy about the health and en vironmental hazards of dental amalgam; create a public repository of materials for advocacy.
Governments		
Senegal	Consulted on project design	Lead the national project steering committee a nd oversee the execution of national activitie s. The experience and lessons learned from the country will feed into the global knowledge plat form and benefit other countries
Thailand	Consulted on project design	Lead the national project steering committee a nd oversee the execution of national activitie s. The experience and lessons learned from the country will feed into the global knowledge plat form and benefit other countries
Uruguay	Consulted on project design	Lead the national project steering committee a nd oversee the execution of national activitie s. The experience and lessons learned from the country will feed into the global knowledge plat form and benefit other countries
Non-Governmental Organizations		
FDI World D ental Federa tion	Complementary initiatives with the proposa l; co-financing partner to the project	To be determined during the inception phase
Internationa l Associatio n for Dental Research (I ADR)	Complementary initiatives with the proposa l; co-financing partner to the project	To be determined during the inception phase
Aide Odonto logique Inter national (AO l)	Complementary initiatives with the proposa l; co-financing partner to the project	To be determined during the inception phase

Association for Dental Education in Europe	Complementary initiatives with the proposal; co-financing partner to the project	To be determined during the inception phase
Association for Dental Education Asia Pacific	Complementary initiatives with the proposal; co-financing partner to the project	To be determined during the inception phase
Charite University, Germany	Complementary initiatives with the proposal; co-financing partner to the project	To be determined during the inception phase
King's College London/ Global Collaboratory for Caries Management, UK	Complementary initiatives with the proposal; co-financing partner to the project	To be determined during the inception phase
University of Sheffield, UK	Complementary initiatives with the proposal; co-financing partner to the project	To be determined during the inception phase
Green Growth Knowledge Platform (GGKP)	To be consulted during project implementation related to Component 3 on knowledge sharing and management at the global level	As UNEP Chemical and Waste Portfolio's designated knowledge platform partner, GGKP will liaise with the Global Mercury Partnership and vice versa related to knowledge management and information sharing
Private Sector		
SDI	Co-financing partner to the project	Dental products manufacturer
Batrec	Co-financing partner to the project through dental waste treatment and disposal	Dental waste treatment and disposal provider
Dental Recycling International, DRI	Co-financing partner to the project through separator contribution	Separator provider (shipping, installation and training); dental waste treatment and disposal provider
Ecocycle	Co-financing partner to the project through separator contribution	Separator provider (shipping, installation and training)
Enretec	Co-financing partner to the project through separator contribution	Separator provider (shipping, installation and training)
Solmetex	Co-financing partner to the project through separator contribution	Separator provider (shipping, installation and training)
Separatory Amalgamatu	Co-financing partner to the project through separator contribution	Separator provider (shipping, installation and training)
Metasys	Co-financing partners to the project through separator contribution	Separator provider (shipping, installation and training)
National Stakeholders (please refer to Appendix 10 for a full list of national stakeholders, their level of involvement will be determined during the inception workshop)		
Senegal Ministry of Health, Mini	To be consulted during project development and involved during project implementation	National stakeholders will be champions for the country, leading project activities and ensuring national ownership

Health, Ministry of Environment		
Thailand Ministry of Public Health, Ministry of Natural Resources and Environment	To be consulted during project development and involved during project implementation	National stakeholders will be champions for the country, leading project activities and ensuring national ownership
Uruguay Ministry of Health, Ministry of Environment	To be consulted during project development and involved during project implementation	National stakeholders will be champions for the country, leading project activities and ensuring national ownership

In addition, provide a summary on how stakeholders will be consulted in project execution, the means and timing of engagement, how information will be disseminated, and an explanation of any resource requirements throughout the project/program cycle to ensure proper and meaningful stakeholder engagement.

Select what role civil society will play in the project:

Consulted only;

Member of Advisory Body; Contractor; Yes

Co-financier; Yes

Member of project steering committee or equivalent decision-making body; Yes

Executor or co-executor;

Other (Please explain)

3. Gender Equality and Women's Empowerment

Provide the gender analysis or equivalent socio-economic assesment.

Gender Analysis

Both women and men are providers (dental care professionals) and receivers (dental patients) of dental amalgam and are, therefore, at great risk to exposure to toxic chemicals, in particular mercury, silver, tin and copper. Pregnant women are considered a particularly vulnerable group, because mercury exposure during pregnancy can cause serious and irreversible neurological impacts to the fetus. Evidence on reproductive effects in men is limited but exposure to mercury has been reported to decrease sperm count and quality, and has been linked to an increased risk of miscarriage. This fact adds additional importance to the use of a gender lens throughout the project, where information and materials designed for dissemination to the public address health risks to both men and women, in different ways.

It is important to note that sex differences in body burdens of chemicals include biological differences at different times in the lifespan, including biological factors such as the genetics; and includes characteristics associated with gender such as diet, lifestyle, personal hygiene. As such, the same exposure can result in different outcomes among men and women.

Because few studies are conducted on women's exposure to chemicals, the ways women's bodies can absorb and store chemicals differently from men's bodies is mostly overlooked in the published literature. Both sex and gender are important foundations to understand how chemical exposure may affect men and women differently (Wizemann and Pardue, 2001). Understanding the definitions of "sex" versus "gender" helps to reduce confusion and broaden understanding of the chemical exposure from a gender perspective. The Committee on Understanding the Biology of Sex and Gender Differences of the U.S. Institute of Medicines defines 'sex' as the "classification of living things generally as either male or female, according to their reproductive organs and functions assigned by the chromosomal complement," and 'gender' as "a person's self-representation as male or female, or how the person is responded to by social institutions based on the individual's gender representation."

From an equity perspective, it is important to define the sex and gender differences to prevent inaccurate or inequitable health promotion regulations and to highlight those known statistics on adverse health outcomes may be understatements of reality, since most regulations setting exposure limits are based on studies of men, while noting that there has been insufficient scientific study of the reproductive health risks to men from mercury exposure. The gender-based aspects and gender-related data on the use of dental amalgam will be an important factor in the awareness-raising parts of this project.

Additionally, the knowledge management activities will include a discussion of the social determinants of the use of dental amalgam. For the awareness campaign, the impact of social media on the use of dental amalgam will be important as an outlet for spreading evidence-based information, advocacy, and campaign materials.

In the experience of the UNEP Global Mercury Partnership, women often take an active role in civil society activities to reduce the health risks involved in their communities. The empowerment of women's groups and women-led groups can have very beneficial impacts in strengthening community response to the use of dental amalgam.

Information dissemination at both global and national level will provide the opportunity to raise awareness on gender-related issues and promote gender equality by developing materials in a gender sensitive manner to ensure that learning opportunities are available to and effective for both men and women. Dissemination of evidence of negative impacts on male and female reproductive health can be particularly powerful.

As note in early sections, directives in the EU and US addressing dental amalgam have prioritized action in women and children.

Insufficient resources were available to conduct a gender analysis exercise during project preparation. However, at the project inception stage, a gender expert will be recruited, funded with $10,000 of co-financing by WHO, to develop a gender action plan and provide advice and guidance on how to integrate gender considerations into project activities. In addition, WHO will develop a gender sensitive communication strategy at the inception of the project. The strategy will be presented at the first Steering Committee Meeting for adoption.

Draft Gender Action Plan –

The following conceptual framework will be used to structure the proposed gender measures. Please note that these are preliminary approaches which will be reviewed and modified, as appropriate and applicable, by the gender expert to be recruited during project inception. The project will pursue the following gender equality objectives:

- Enhance women's participation and role in dental amalgam phase down processes, with women as agents of change when applicable
- Increase access to and control of resources available for men and women and aim to achieve a balance between them
- Target both women and men as specific beneficiaries, and invest in improving their knowledge related to mercury and dental amalgam (as they will be both receivers as well as providers)
- Ensure project outputs mainstream gender issues
- Measure impact of gender balance and participation

Areas/Measures	Description
Informative	Lack of information and education on the risks of using dental amalgam should be improved. Therefore, national, and international awareness campaigns designed and targeted for both men and women are crucial. The communication strategy to be developed during project inception will include gender specific measures. During the gender focused session in the inception workshop any potential issues within line ministries or working groups will be discussed, for example not enough female technical experts attending training sessions. Possible solutions and workarounds will be agreed, including the possibility of making all training/workshop materials available online for future technical experts to avoid any current gender bias (e.g., access issues). Possible barriers for access to training/workshops will also be discussed during project inception, with flexible and remote working options made available.
Cultural	In many cases, even having the information and the environment, there is a reluctance to adopt for cultural or behavioral reasons. There is resistance to change, risk aversion, and little importance assigned to the topic (this can slow down dental amalgam phase down decisions). Behavioral change and different perception of dental alternatives and legacy dental amalgam will be very challenging and time consuming to alter, therefore, a gradual transition is expected through project interventions. This will be one of the main topics raised at the gender session of the inception workshop and to be addressed throughout and beyond the project.

Economic	Since the project will target to phase down dental amalgam use and import in the three target countries, and the introduction of dental separators to treat dental wastes, there will be economic impacts on the manufacturers, distributors and traders of dental amalgam and equipment supply chain stakeholders including both men and women. Positive outreach and information sharing with these stakeholders will be a series of crucial activities in the project.
Technical	The project will place a strong emphasis on educating the public in the target countries and worldwide based on using non-mercury dental restoration alternatives. Therefore, the technical aspects of the project will focus on methods of collecting, transporting, treating and final disposal of dental amalgam waste. Involvement of women in the processes will be included as part of the action plan.
Institutional and Regulatory	Absence of directives issued at the institutional level that specifically phase down dental amalgam will make it difficult for the overall effectiveness of the project. Therefore, component 1 will focus on these aspects and involve both men and women in the decision-making process, with women as the agents of change when appropriate. To ensure the project continually strives to address the areas that have an impact on gender considerations, the recruited gender expert will be part of the Project Management Unit to develop the Gender Action Plan and ensure its implementation through all applicable project activities. The gender expert will also introduce a monitoring framework that can be tracked throughout the project to ensure gender issues are being considered and addressed. A session on gender will be included during the inception workshop to discuss how to ensure a gender balanced project implementation including use of the monitoring framework. The Project Manager will be responsible to monitor the gender action plan using the monitoring measures. The gender monitoring framework will be tracked and reviewed through the project to ensure that equal access to capacity building and training is available for men and women. This could include, but not be limited to: · The gender representations among organizations in the proposed institutional arrangements; · Availability of training to project partners; · Access to the online data management platforms; · Access and operational knowledge of tools, templates and guidelines; and · Representation at workshops and webinars.

Sex-disaggregated data is not always sufficient to determine whether the project outputs have responded appropriately to the differentiated needs of women and men. Therefore, further qualitative information needs to be gathered on whether equality of opportunity has been provided. This includes conducting surveys/focus group discussions that assess the effectiveness of training/workshops provided through the project and analyses of gender barriers to appointed positions. The framework for gathering this information will be included in the Gender Monitoring Framework, tracked by the PEU and will be reviewed in Project Steering Committee meetings. Lessons learnt will be fed back into the development process.

Does the project expect to include any gender-responsive measures to address gender gaps or promote gender equality and women empowerment?

Yes

Closing gender gaps in access to and control over natural resources;

Improving women's participation and decision making Yes

Generating socio-economic benefits or services or women Yes

Will the project’s results framework or logical framework include gender-sensitive indicators?

Yes

4. Private sector engagement

Elaborate on private sector engagement in the project, if any

UNEP will be the agency in charge of the collaboration with private sector throughout the project duration. The private sector will be engaged throughout the project at country level, mainly in Component 2. where pilot testing of dental amalgam separators will take place. At least 8 private companies have already committed in contributing more than 80 separators to the project, including costs associated with shipping, installing and training on equipment. In addition, Batrec, a Swiss-based waste management company, has committed to assist in the organization of export and international transport of the dental amalgam wastes from project countries to Switzerland (excluding actual transport costs but including the handling of Basel Convention procedures) and final disposal of collected dental amalgam wastes. Strong support from the private sector is indicated through their generous co-financing.

In terms of final disposal, DRI has also generous offered to collect and recycle all dental separators and disposal of mercury from the project. The target countries will have the opportunity to evaluate different packages provided by the private co-financiers to make their final selection on the service provider.

In addition, SDI a industry co-financing partner can contribute knowledge and experience of dental industry shifting from manufacturing dental amalgam to alternative mercury-free dental restorative materials, including those for caries prevention. All private firms will support activities only at country level.

GGKP's Green Industry Platform will be useful and helpful towards outreach to the private sector.

5. Risks to Achieving Project Objectives

Elaborate on indicated risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and, if possible, the proposed measures that address these risks at the time of project implementation.(table format acceptable):

Risks	Level	Mitigation
COVID related		
Increased COVID-19 exposure risk to project staff	Medium	There is low risk to contract the virus during separator installation. To mitigate, the project will develop an installation protocol to include personal protective equipment requirements based on the actual guidelines of WHO and the country health authorities during implementation. Best practices about personal hygiene, PPE, social distancing and other measures will followed by project staff. Compliance will be monitored by the EA project manager
Limited mobility of project team due to the ongoing COVID-19 pandemic inhibits project execution	High	All meetings and awareness events can be conducted online. Although not as effective, the frequency and location of the meetings can and will be adjusted according to the development of the pandemic. The project envisages most of the field work and awareness raising events to begin in Year 2 (2022). In the event that current situation has not improved and movement is restricted (domestically and internationally) the project will be adjusted accordingly, including the utilization of remote guidance from international experts and an increased reliance on local expertise
Unavailability or lack of Ministry of Health staff due to change in responsibil	Medium to High	The consultants to be recruited by WHO through the project will be briefed,

ities caused by COVID-19 pandemic		prepared and expected to take greater coordinating and liaising responsibilities with the Ministry of Health in the respective countries in case of changing responsibilities of Ministry staff due to the pandemic
Politically related		
Change in the political and economic situation during the lifetime of the project impacts its implementation	Medium	All three target countries have ratified the Minamata Convention and are under the obligation to implement it. The project is in line with the requirements of Article 4 under the Convention. Project stakeholders have built a strong working relationship with the people directly involved in overseeing compliance to these obligations
Inability or lack of capacity for government to provide adequate support services	Medium	The project will assist government partners in 1) identifying gaps in the implementation of its mandate, especially in regulations of dental amalgam, and 2) creating avenues or programs that can address the gaps identified
Ensure capacity-building and knowledge transfer on management of dental amalgam	Medium	Capacity transfer and the integration of dental amalgam management and knowledge in local and national institutions are among the most challenging aspects of the project. However, the length and quality of the project interventions will allow for gradual and systematic training of the institutions
Climate change related		
Impact of climate change on project activities	Low	Given the nature of the project, climate change will have limited impact on planned project activities
Others		
Effective private sector involvement in countries is difficult to achieve	Low	For the long-term sustainability of the project in countries, continuous support from the private sector is necessa

		ort from the private sector is necessa ry. Based on great support from the pr ivate industry through their co-financi ng contributions, further cooperation and investment from the private secto r is expected in every country.
Rise in oral health inequalities (acces sibility and affordability)	Low	Changes to or new measures introduc ed to countries will be carried out to p revent increase in oral health care cos ts and extend coverage to all levels of society

6. Institutional Arrangement and Coordination

Describe the institutional arrangement for project implementation. Elaborate on the planned coordination with other relevant GEF-financed projects and other initiatives.

Implementing Agency (IA): This project will be implemented by UNEP. UNEP will be responsible for the overall project supervision, overseeing the project progress through the monitoring and evaluation of project activities and progress reports. It will be responsible for quality assurance procedures, organize contracting with the Executing Agency, approve progress reports and clear disbursement. The IA will also monitor progress to ensure the quality of outputs. It will report the project implementing progress to the GEF and will take part in the Project Steering Committee (PSC). UNEP will closely collaborate with the EA and provide them with administrative support in the implementation of the project.

Executing Agencies (EA): WHO will be the executing agency for this project, with targeted technical inputs from Global Mercury Partnership. As the EA, the key role of WHO include:

- Establish and house the project executing unit (PEU)
- Perform day-to-day tasks and monitoring of planned activities based on agreed workplan and budget. Report to the IA and provide narrative and financial updates
- Act as Secretariat for the Project Steering Committee (PSC)

Project Executing Unit: The PEU (housed at WHO HQ) will be staffed by a Project Coordinator. The role of the PEU is to:

- Ensure Project execution (all technical aspects of project execution)
- Ensure project governance and oversight of the financial resources from GEF investment
- Provide expertise in guiding and advancing the project
- Liaise with all project actors, including national focal points, and representatives from the national coordinating committees
- Sharing all achievements and project products/outputs with stakeholders
- Supervise respective consultants and project partner organizations to deliver against their contracts and in time
- Organize the PSC meetings and serve as Secretariat to the PSC
- Manage and implement the project results and output level M&E framework, to evaluate project performance
- Ensure gender mainstreaming throughout all project activities
- Manage the flow of information from the field and produce periodic monitoring reports

Project Steering Committee: The PSC's membership includes the IA, EA, country national coordinating committee, and other relevant national and international stakeholders (minimum two representatives from each target country). The PSC will be chaired by the three target countries on a rotational basis throughout the project, with WHO (EA) as the Secretariat. The PSC will meet four times over the course of the project. Where feasible and appropriate, meetings will be convened back-to-back with other relevant events or held via videoconference as needed and appropriate, to contain costs.

PSC meetings will be organized by WHO. The role of the PSC is to:

- Provide overall guidance and ensure coordination among all participating organizations
- Approve the annual work plan and budget
- Oversee gender mainstreaming activities in the project
- Oversee any corrective actions needed
- Enhance synergy between the GEF project and other on-going initiatives globally and nationally

National Project Steering Committee: The national project steering committees in each country will be co-led by the Ministry of Health and Ministry of Environment. The committee will also include civil society organizations, gender equality and/or women's empowerment/rights groups, research institutions and academics that work around dental amalgam and waste management, the National Support Project Officer (for Senegal only) and the private sector. The national project steering committee will meet every 6 months or on an as-needed basis to:

- -Provide overall guidance and ensure coordination among all participating organizations nationally
- -Approve the annual work plan and budget for the country grant received
- -Oversee any corrective actions needed
- -Enhance synergy between the GEF project and other on-going initiatives nationally

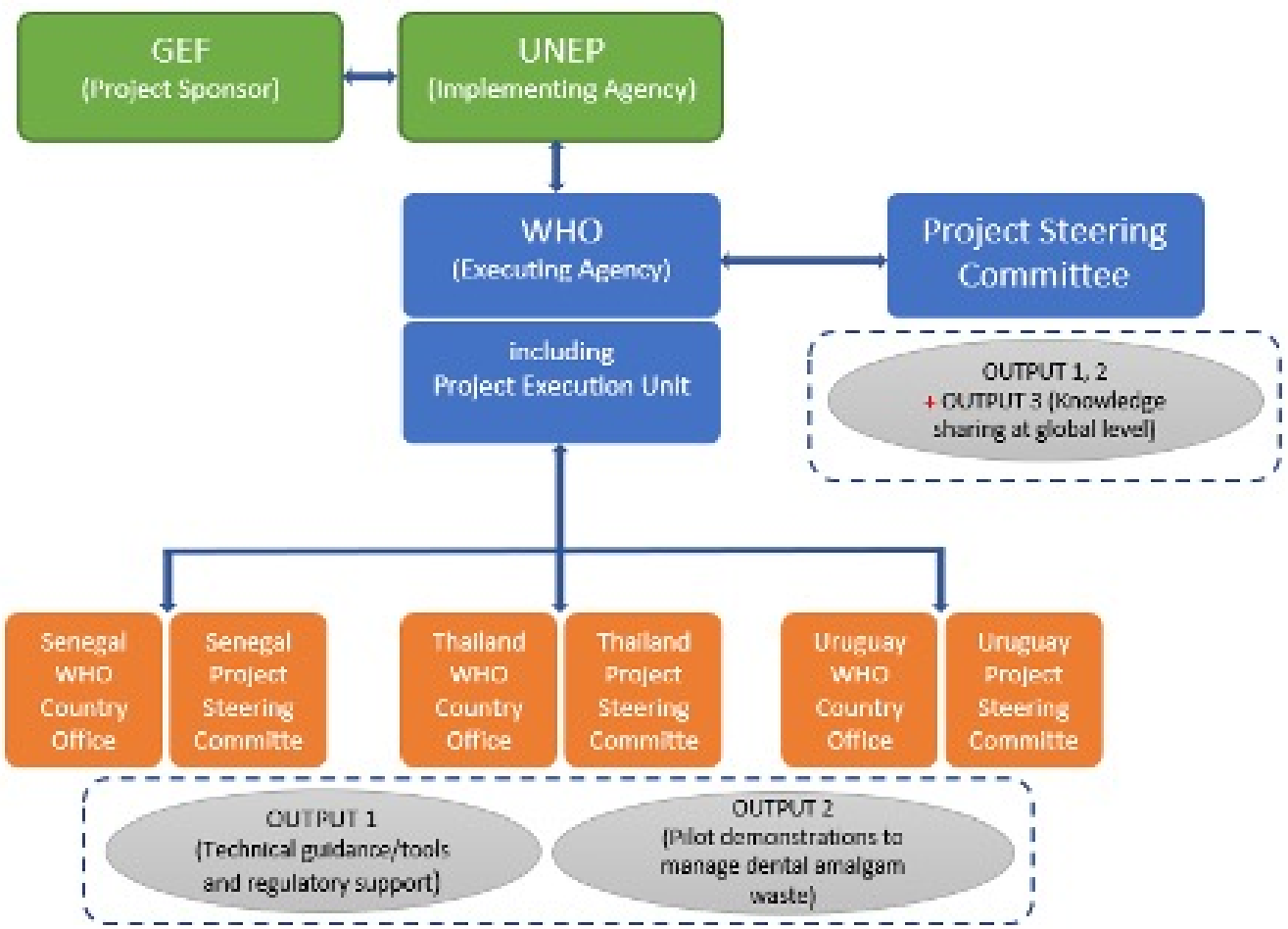


Diagram 3. Executing Arrangement

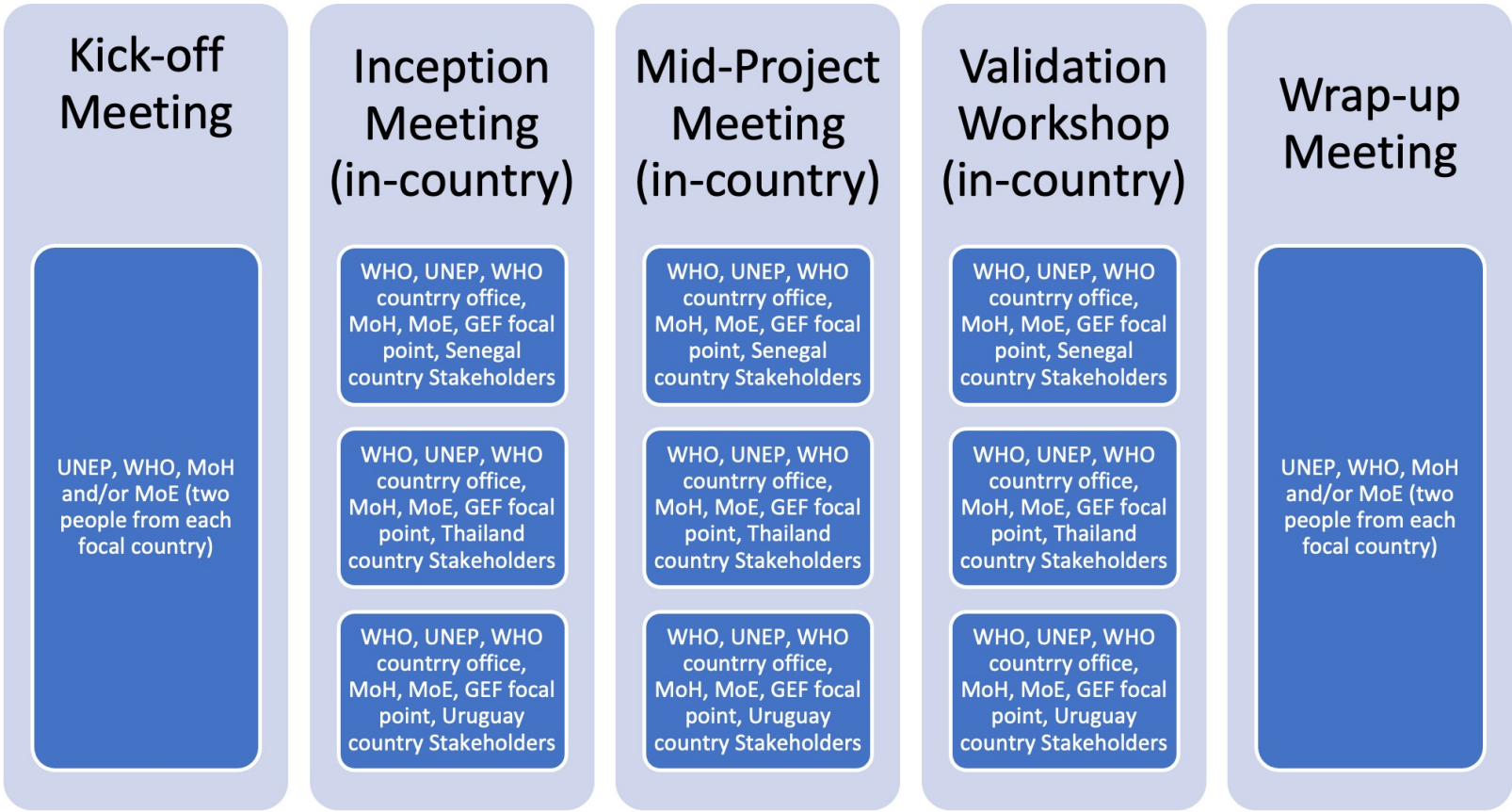


Diagram 4. Meeting Structure

Based on COVID19 travel restrictions and country specific guidance from health authorities, the national inception meetings are planned via virtual channels. And the mid-project visits (in country) will be planned as targeted stakeholder consultations by the WHO Project Executing Unit .

For the sub-regional workshop (in country), regional presence from 4 neighboring countries (2 representatives per country) will be supported through the project. Selection criteria for the countries to participate in the 3 validation workshops will be determined during the inception phase of the project. The purpose to broaden participation of these meetings is to ensure that there is a regional approach towards waste management of dental amalgam wastes where experiences and lessons learned by project countries are shared. And a clear understanding of the phase down strategy for countries facing similar situations and challenges. The project will not financially support Non-Parties to the Minamata Convention.

For coordination with relevant GEF financed projects and other bilateral and multilateral initiatives in the project countries, UN resident coordinators in each country will be notified and informed of project progress and results and vice versa on related ongoing projects in target countries. In addition, since WHO has the health mandate under the Minamata Convention and the Global Mercury Partnership has an extensive network of experts and organizations working on the topic,

coordination, finding synergies and dissemination of project progress and results are expected to be transparent, consistent and readily accessible to all interested parties.

7. Consistency with National Priorities

Describe the consistency of the project with national strategies and plans or reports and assesments under relevant conventions from below:

NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, INDCs, etc.

Minamata Initial Assessment (MIA) under Minamata Convention

As Parties of the Minamata Convention on Mercury, Senegal, Thailand, and Uruguay committed to the requests of the Minamata Convention described below:

- To undertake, subject to the availability of resources, capacity-building, and training activities to support Parties in order to facilitate the development, review and constant updating of obligations to the Minamata Convention in a harmonized manner with the reporting,
- Development of effective strategies to phase down mercury dental amalgam by supporting activities such as education, outreach, and capacity-building initiatives; provision of technical and financial assistance; and partnerships to assist in the implementation of their commitments.

Senegal and Uruguay have completed their Minamata Initial Assessments and Thailand is still in progress to complete theirs. An MIA provides an opportunity for a country to undertake a mercury inventory, determine and agree upon the measures it will take to implement the Convention, estimate associated costs, and communicate this information in a concise and clear manner to government partners, national stakeholders, national and international experts, and consultants. MIAs developed in the three countries will be updated and improved regularly following feedback and sharing of experiences from this project. It is important to note that the inventory prepared, and information gathered under MIAs for mercury-added products will provide a baseline for the design of specific intervention in each country.

In terms of national priorities, the three project countries have identified mercury-added products, particularly the management of dental amalgam, as an area that requires delicate and sensitive interventions since the usage of dental amalgam is closely associated with health risks. Each country has varying degrees of controls in place to regulate the use of dental amalgam. Furthermore, all three governments have indicated strong interest to improve the management of their dental amalgam use by fully supporting the objectives of this project. Finally, the project will assist the countries in fulfilling their legal obligation as a Party to the Minamata Convention to phase down dental amalgam.

Beyond the environmental dimension, the socio-economic baseline information the project requires will assist each participating country's government in developing strategies and solutions to mitigate the exposure of vulnerable populations to mercury pollution through awareness raising and development of alternatives and viable solutions. The project also contributes to participating countries' UNDAF (United Nations Development Assistance Framework):

(i) Senegal (2019-2023): The project will assist to the Senegalese government in the formulation of an educational curriculum to better consider essential family practices. There are currently 16 practices covering six major themes, namely: (i) maternal and child health; (ii) nutrition, (iii) hygiene; (iv) care for the elderly, (v) children's education and (vi) civil status. The project will contribute towards national efforts in increasing employability and integrability of women into inclusive and sustainable industrialization policy involving the private sector.

(ii) Thailand (2017-2022): The project will contribute towards strategy 1 to collaborate at national and subnational levels to strengthen systems, structures and processes for effective, inclusive, and sustainable policymaking and implementation and strategy 4 to collaborate at national and subnational levels to build systems, structures, and processes that expand the methodical exchange of expertise and technology available regionally/globally to support social, political and economic development.

(iii) Uruguay (2021-2026): The project will contribute towards developing or improving institutions, legal frameworks and policies for social protection and promoting better quality of life for Uruguayans. Also, to raise social awareness about gender inequalities and improve environmental protection especially for vulnerable populations. The project will contribute towards one of the six milestones is to reduce gender inequalities and combat against gender-based violence through improved social climate that allows condemnation of this type of attitudes and situations.

The project, through the PEU, will notify and coordinate with the UN resident coordinator in each target country as appropriate. In addition to information sharing, invitation to project meetings will be assessed as well.

Sub-programme 5 Chemicals and waste

The implementation of the project has a direct link to the objective of sub-program 5 of the UNEP proposed biennial program of work, which states promoting a transition among countries to the sound management of chemicals and waste to minimize impacts on the environment and human health. This program of work will expect that involved countries increasingly have the necessary institutional capacity and policy instruments to manage chemicals and waste soundly, including the implementation of related provisions in the multilateral environmental agreements.

8. Knowledge Management

Elaborate the "Knowledge Management Approach" for the project, including a budget, key deliverables and a timeline, and explain how it will contribute to the project's overall impact.

The project will provide grants to each country (modality for different activities in the project to be determined during project inception either through direct recruitment of national consultants or an agreement with Ministries of Health, or a mixed approach depending on country context), and focus on:

- developing case studies, including best practices in the implementation of measures in line with the provisions of the Minamata Convention for dental amalgam phase down and environmentally sound mercury/hazardous waste management at the project country level
- supporting the process to select, procure, install, train, maintain of dental amalgam separators and strengthen capacity in managing dental amalgam wastes and other hazardous wastes

These grants will be managed by WHO directly, either through headquarters in Geneva or country offices in each target country. The modality of cooperation between WHO, as the executing agency, and the target countries will vary depending on specific circumstances and preferences of the countries.

An explicit aim of the project is to collate, connect, and make available evidence, knowledge, experiences, and good practice examples from countries to stimulate the phase down of dental amalgam, and to catalyze broader action by countries needing to meet their health-related obligations under the Minamata Convention.

WHO, with relevant contributions from the UNEP's Global Mercury Partnership, will develop a global knowledge platform. This will include the creation of a variety of knowledge products, such as factsheets, fliers, use of social media, school and clinic/hospital-based educational initiatives, etc. Advocacy materials and guidance for Ministries of Health will be translated into other UN languages. Knowledge materials will be housed in a newly created web-based knowledge repository within the Global Mercury Partnership for dissemination and exchange of information and expertise at the global level, as outlined in Component 3. In addition, WHO will develop a gender sensitive communication strategy at the inception of the project. The strategy will be presented at the first Steering Committee Meeting for adoption. Gender sensitive communications and knowledge management will be considered in all processes and products produced through the project.

A global database focusing on oral health will be developed under the management of WHO. The database will first use the information collected through this project and globally inform other countries that are interested in phasing down dental amalgam. The database will also contain the most updated information on COP decisions and all reporting requirements under the Convention related to dental amalgam. It will help national decision-making process on the subject. One of two envisaged platforms of the database will be public accessible, while the other containing sensitive data with restricted access.

Knowledge generated by this project will also be disseminated through the GGKP. GGKP is the executing agency for several UNEP's GEF supported Chemicals and Waste projects, therefore, data collection, synchronization and dissemination will be effectively managed.

The project will also send representatives to relevant meetings, in particular of the Minamata Conventionand the Global Mercury Partnership, and present project status, lessons learned and experiences. The aim is to use project activities to promote a global phase down of dental amalgam use and demonstrate different scenarios in associated waste management.

9. Monitoring and Evaluation

Describe the budgeted M and E plan

The project will follow UN Environment standard monitoring, reporting and evaluation process procedures. Reporting requirements and templates are an integral part of the UN Environment legal instrument to be signed by the executing agency and UN Environment.

Project M&E will be conducted in accordance with established UN Environment and GEF procedures and will be provided by the EA. The M&E plan includes inception report, annual review and final evaluations. The Project Management Unit (PMU) will be responsible for stakeholder engagement, gender monitoring, and outreach to the broader community in the country. The M&E plan will be reviewed and revised as necessary during the project inception workshop to ensure project stakeholders understand their roles and responsibilities vis-à-vis project monitoring and evaluation. Indicators and their means of verification may also be fine-tuned at the inception workshop. Day-to-day project monitoring is the responsibility of the PMU but other project partners will have responsibilities to collect specific information to track the indicators. It is the responsibility of the PMU to inform UN Environment of any delays or difficulties faced during implementation so that the appropriate support or correlative measures can be adopted in a timely fashion.

The Project Steering Committee (PSC) will receive periodic reports on progress and will make recommendations to UN Environment concerning the need to revise any aspects of the Results Framework or the M&E plan. Project oversight to ensure that the project meets UN Environment and GEF policies and procedures is the responsibility of the Task Manager of the Implementing Agency. The Task Manager will also review the quality of draft projects outputs, provide feedback to the project partners, and establish peer review procedures to ensure adequate quality of scientific and technical outputs and publications.
Project supervision will take an adaptive management approach. The Task Manager will develop a project supervision plan at the inception of the project which will be communicated to the project partners during the inception workshop. The emphasis of the Task Manager supervision will be on outcome monitoring but without neglecting project financial management and implementation monitoring. Progress vis-a-vis delivering the agreed project global environmental benefits will be assessed with the Steering Committee at agreed intervals. Project risks and assumptions will be regularly monitored both by project partners and UN Environment. Risk assessment and rating is an integral part of the Project Implementation Review (PIR). The quality of the project monitoring and evaluation will also be reviewed and rated as part of the PIR. Key financial parameters will be monitored quarterly to ensure cost-effective use of financial resources.

In line with the GEF Evaluation requirements and UNEP's Evaluation Policy, GEF Full-Sized Projects and any project with a duration of 4 years or more will be subject to an independent Terminal Evaluation. All GEF funded projects are subject to a performance assessment when they reach operational completion.

For an independent Terminal Evaluation (TE) of the project, the Evaluation Office will be responsible for the entire evaluation process and will liaise with the Task Manager and the project implementing partners at key points during the evaluation. The TE will provide an independent assessment of project performance (in terms of relevance, effectiveness and efficiency), and determine the likelihood of impact and sustainability. It will have two primary purposes: (i) to provide evidence of results to meet accountability requirements, and (ii) to promote learning, feedback, and knowledge sharing through results and lessons learned among UNEP staff and implementing partners. The direct costs of the evaluation (or the management-led review) will be charged against the project evaluation budget. The TE will typically be initiated after the project's operational completion If a follow-on phase of the project is envisaged, the timing of the evaluation will be discussed with the Evaluation Office in relation to the submission of the follow-on proposal.

The draft TE report will be sent by the Evaluation Office to project stakeholders for comment. Formal comments on the report will be shared by the Evaluation Office in an open and transparent manner. The project performance will be assessed against standard evaluation criteria using a six-point rating scheme. The final determination of project ratings will be made by the Evaluation Office when the report is finalized. The evaluation report will be publicly disclosed and will be followed by a recommendation compliance process. The evaluation recommendations will be entered into a Recommendations Implementation Plan template by the Evaluation Office. Formal submission of the completed Recommendations Implementation Plan by the Project Manager is required within one month of its delivery to the project team. The Evaluation Office will monitor compliance with this plan every six months for a total period of 12 months from the finalisation of the Recommendations Implementation Plan. The compliance performance against the recommendations is then reported to senior management on a six-monthly basis and to member States in the Biennial Evaluation Synthesis Report.

Type of M&E activity	Responsible Parties	Budget from GEF	Budget co-finance	Time Frame
Inception Meeting	EA	Part of Component 3		Within 2 months of project start-up
Inception Report	EA	Part of Component 3		1 month after project inception meeting
Measurement of project progress and performance indicators	EA			Annually
Baseline measurement of project outcome indicators, GEF Core indicators (Tracking tools?)	EA (Tracking Tools not applicable in C&W focal area)			Project inception
Mid-point measurement of project outcome indicators, GEF Core indicators (Tracking tools?)	EA			Mid Point
End-point measurement of project outcome indicators, GEF Core indicators (Tracking tools?)	EA			End Point
Quarterly Progress/ Operational Reports to UNEP	EA			Within 1 month of the end of reporting period (quarterly)
Project Steering Committee (PSC) meetings and National Steering Committee meetings	EA	Part of Component 3		Once a year minimum
Reports of PSC meetings	EA			Annually
Project Implementation Review (PIR) report	EA and IA			Annually, part of reporting routine
Monitoring visits to fie	EA			As appropriate

ld sites				
Mid Term Review/Evaluation	Not applicable			At mid-point of project implementation
Terminal Review/Evaluation *(whether a project requires a management-led review or an independent evaluation is determined annually by UNEP's Evaluation Office)*	IA	40,000		Typically initiated after the project's operational completion
Audit	Not applicable			Typically initiated after the project's operational completion
Project Operational Completion Report	EA			Within 2 months of the project completion date
Co-financing report (including supporting evidence for in-kind co-finance)	EA			Within 1 month of the PIR reporting period, i.e., on or before 31 July
Publication of Lessons Learnt and other project documents	EA			Annually, part of quarterly reports & Project Final Report

10. Benefits

Describe the socioeconomic benefits to be delivered by the project at the national and local levels, as appropriate. How do these benefits translate in supporting the achievement of global environment benefits (GEF Trust Fund) or adaptation benefits (LDCF/SCCF)?

The project will have direct socioeconomic benefits to the public in the three target countries as the interventions aim to increase the quality, accessibility, and affordability of oral health care. In addition, the project will increase the knowledge and education of health workforce and to various levels of stakeholders in the three target countries and globally. Consumers will be exposed to high level of awareness on the harmful effects of chemicals present in dental amalgam and its associated wastes through advocacy campaigns. Healthy individuals will contribute toward a more harmonized, fair, and progressive society.

Furthermore, this project is framed around Article 4 and Annex A Part II of the Minamata Convention delivering an evidence based transformative framework, which will mobilize and enable the phase down of the use of dental amalgam, recognising that this action is the most effective strategy to achieve the objective of the Convention. The project and its outputs are aligned with the 2030 Agenda for Sustainable Development, specific linkages to SDG 3 (Targets 8 and 9). Under SDG 3 (Good health and wellbeing): Target 9 (By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination), as well as supporting and contributing to Target 8 (Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all).

In addition, the design of the project is oriented towards SDG 12 (Ensure sustainable consumption and production patterns), and SDG 6 (Water and Sanitation) through the environmentally sound management of dental amalgam and all its wastes throughout their life cycle. Priority in the project is given to ensuring that management and disposal of dental waste is conducted in an environmentally sound manner in line with the provisions of the Minamata Convention, the Basel technical guidelines on the environmentally sound management of mercury waste, and the transboundary transport requirements of the Basel Convention.

The activities of this proposal reflect and include all nine measures of Annex A Part II of the Minamata Convention and have been designed to enable countries to phase down dental amalgam in a measureable, equitable and sustainable manner. The project will enhance and support intersectoral dialogue and cooperation and provide social and economic information/data that will help guide and support financing and investment, including health system strengthening for phasing down the use of dental amalgam.

The shift to integrated people centred health services, which will encourage dialogue and intersectoral planning between ministries of health, environment, education, finance and labour will be an integral part of the project. The principle of integrated people centred services is embedded in the WHO Global Action Plan for the Prevention and Control of Noncommunicable Diseases NCDs 2013-2020 and WHO World Health Assembly resolution WHA60.17 Oral health: action plan for promotion and integrated disease prevention .

From the health perspective, the 2016 UN High Level Commission report on Health Employment and Economic Growth (HEEG) notes that 'investing in the health workforce' was a major opportunity to foster political commitments and to make gains across several SDGs, including SDG 1 (poverty elimination), SDG 4 (quality education), SDG 5 (gender equality) and SDG 8 (decent work and economic growth).

The 2017 UN High-level Commission on Health Employment and Economic Growth report also called for a fit for purpose health workforce; the right number, with the right competenceis and skills, the right skills mix, in the right place and with right conditions for decent work and lifelong learning. The report's recommendations to transform the health workforce for the SDGs were based in part on the health workforce; six recommendations relate to what needs to be changed in health employment, health education and health service delivery to maximize future returns on investments, with a further four recommendations on how to enable the necessary changes.

There is good evidence indicating that investing in the health workforce to deliver integrated people centred health services with: 1) care that is focused and organized around the health needs and expectations of people and communities, rather than on diseases; and 2) such that people receive a continuum of health promotion, disease prevention, diagnosis, treatment, disease management, rehabillitation and pallative services, through different levels and sites of care within the health system and according to their needs throughout the life course, will yield co-benefits in terms of improved dental health.

11. Environmental and Social Safeguard (ESS) Risks

Provide information on the identified environmental and social risks and potential impacts associated with the project/program based on your organization's ESS systems and procedures

Overall Project/Program Risk Classification*

PIF	CEO Endorsement/Approval	MTR	TE
	Low		

Measures to address identified risks and impacts

Elaborate on the types and risk classifications/ratings of any identified environmental and social risks and impacts (considering the GEF ESS Minimum Standards) and any measures undertaken as well as planned management measures to address these risks during implementation.

Section 1: Project Overview

Section 2: Safeguards Risk Summary

A. Summary of the Safeguards Risk Triggered

Identification	
Project Title	*Accelerate early implementation of the provision for dental amalgam and sound management of associated mercury/hazardous wastes to increase socio-economic, environmental and public health benefits*
Managing Division	*Economy Division*
Type/Location	*Global*
Region	*Africa, Asia and LAC*
List Countries	*Senegal, Thailand and Uruguay*
Project Description	*The project plans to: a) develop technical guidance/tools to provide support to accelerate the implementation of the provision for dental amalgam in line with the Minamata Convention, b) conduct pilot demonstrations to increase capacity in managing mercury/hazardous wastes from amalgam use, and c) enhance knowledge sharing and facilitate information exchange at the global level on dental amalgam management*
Relevant Subprogrammes	*N/A*
Estimated duration of project	*36 months*
Estimated cost of the project	*USD$2,000,000*
Name of the UNEP project ma	Mr. Ludovic Bernaudat

nager responsible	
Funding Source(s)	GEF
Executing/Implementing partner(s)	World Health Organization (WHO)
SRIF submission version	*N/A*
Safeguard-related reports prepared so far *(Please attach the documents or provide the hyperlinks)*	· *Feasibility report [ ]* · *Gender Action Plan [ ]* · *Stakeholder Engagement Plan/Mapping Exercise [X] – Senegal and Thailand* · *Safeguard risk assessment or impact assessment [ ]* · *ES Management Plan or Framework [ ]* · *Indigenous Peoples Plan [ ]* · *Cultural Heritage Plan [ ]* · *Others _____*

Safeguard Standards Triggered by the Project	Impact of Risk[1] (1-5)	Probability of Risk (1-5)	Significance of Risk (L, M, H) *Please refer to the matrix below*
SS 1: Biodiversity, Ecosystems and Sustainable Natural Resource Management	1	1	L
SS 2: Climate Change and Disaster Risks	1	1	L
SS 3: Pollution Prevention and Resource Efficiency	2	2	L
SS 4: Community Health, Safety and Security	2	2	L
SS 5: Cultural Heritage	1	1	L
SS 6: Displacement and Involuntary Resettlement	1	1	L
SS 7: Indigenous Peoples	1	1	L
SS 8: Labor and working conditions	2	2	L

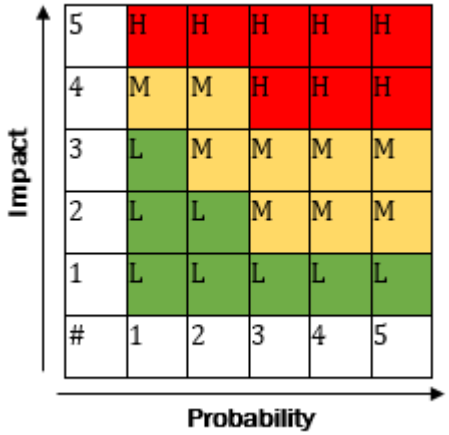
B. ESS Risk Level

Refer to the UNEP ESSF (Chapter IV)
and the UNEP's ESSF Guidelines.

Low risk X
Moderate risk

High risk

Additional information required



C. Development of ESS Review Note and Screening Decision

Prepared by

Name: __Mr. Ludovic Bernaudat_____ Date: _10 September 2021_____

Screening review by

Name: Yunae Yi Date: 03/02/2022

Cleared

D. Safeguard Review Summary (by the safeguard team)

This is a low risk project as the scale of pilot testing is limited. However, safety measures in handling the mercur y by the workers or waste management aspects need attention. Also guiding principles (through GP 1-10 in the S ection 3 below) should be reviewed regularly during the project implementation phase.

E. Safeguard Recommendations (by the safeguard team)

- No specific safeguard action required

Supporting Documents

Upload available ESS supporting documents.

Title	Module	Submitted
10936 - Dental Amalgam MSP - COVID questions	CEO Endorsement ESS	
SRIF Final	CEO Endorsement ESS	

ANNEX A: PROJECT RESULTS FRAMEWORK (either copy and paste here the framework from the Agency document, or provide reference to the page in the project document where the framework could be found).

PROJECT RESULTS FRAMEWORK

Project Objective	Objective level Indicators	Baseline	Targets	Means of Verification	Assumptions & Risks	SDG, UNEP PoW and MTS reference
To protect human health and the environment from harmful effects of mercury through implementation of policies and improved practices to phase down the use of dental amalgam	Nationally Amount of mercury reduced and disposed Number of policies/standards/regulations approved and/or implemented Availability of global guidance on how to effectively manage dental amalgam and associated wates Globally	Project countries have adopted two or more measures to phase down dental amalgam as set out in Annex A Part II, but not in a systematic and comprehensive manner; For the African region the East African Dental Amalgam Phase Down project demonstrates the feasibility of the phase-down approach of dental amalgam use	Approximately 0.3 tons of mercury to be reduced and 11.3 tons to be avoided (total 11.6 tons) 3 sets of national policies developed and implemented to minimize the use of dental amalgam in line with related provisions of the Minamata Convention 1 global guidance developed on how to effectively manage dental amalgam and associates wastes Expected total beneficiaries from the project in three target countries include: Men: 14,750,043; Women: 14,750,043	Technical and meeting reports	**Assumptions:** Central government prioritizes caries prevention and oral health promotion Target countries in the project are willing and able to adopt a common architecture, and standardised minimum data set to facilitate reporting and evaluating the effectiveness of measures for adopted to phasing down the use of dental amalgam **Risks:**	UNEP MTS PoW: Chemicals and Pollution Action Subprogramme Outcome 3A: human health and environmental outcomes are optimized through enhanced capacity and leadership in the sound management of chemicals and waste Outcome 3B: Waste management is improved,. Including th

		# of countries' demonstrating the effectiveness of applying two or more measures in Annex A Part II of the Minamata Convention to phase down the use of dental amalgam		At least 3 additional countries demonstrate effective application of two or more measures in Annex A Part II of the Minamata Convention through project dissemination		Change in the domestic circumstances that impacts the project The shift to quality alternatives to dental amalgam generates significant socio-economic costs, and increases oral health inequalities, particularly in vulnerable and marginalized populations	rough circular processes. Safe recovery of secondary raw materials and progress reduction of open burning and dump sites Outcome 3 C: releases of pollutants to air, water soil and the ocean are reduced SDG 2030 outcome: significant progress is made towards a pollution free planet. SDG3.9: By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air,

								water and soil pollution and contamination SDG 12.4: By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment The project also addresses SDG 3 on Good Heal

						th and Well-being and SDG 6 on Clean Water and Sanitation

Outcome	Outcome Indicators	Baseline	Targets	Means of Verification	Assumptions & Risks	UNEP MTS Expected Result
Outcome 1.1: Policies and standards for sound management of dental amalgam in accordance with Minamata Convention provisions are approved by strengthened government agencies and stakeholders from participating countries	Number of national policies developed and implemented (impact class 4) Increase of dental facilities with sound systems for the procurement and supply of quality mercury free alternatives for dental amalgam, and a programme for their strategic purchasing (impact class 3)	Standards, knowledge products and tools exist and are in use, but are not consistently applied in the health and environment sectors	3 sets of national policies developed and implemented to minimize the use of dental amalgam in line with related provisions of the Minamata Convention 10% increase in dental facilities in each target country switching to mercury free alternatives 10% increase in population in each target country with dental health insurance which excludes application of dental amalgam (50% men and 50% women)	Documents publications and surveys	**Assumptions:** Political leadership and coordination mechanisms exist for multi-sectoral strategy development and implementation Major country level stakeholders are willing and able to adopt and implement standards, knowledge products and tools Dental industry business strategies and plans, research and developed is shaped by	Same as above

	Increase of population (gender disaggregated) in target countries covered by both public and private health insurance programmes for caries prevention and health promotion that exclude mercury dental amalgam applications (impact class 6)				provision of care oriented to health promotion and caries prevention **Risks:** Weak information and data management and infrastructure affects the quality and completeness of data during the project Insufficient coordination and communication between national stakeholders on project objectives, and the results of project monitoring and evaluation	

Outcome 2.1: Sound management practices to handle dental amalgam and their wastes adopted by selected dental facilities in target countries through demonstration of different disposal schemes	Increase of dental facilities with sound management techniques and systems to collect and treat dental amalgam wastes (impact class 3) No. of selected pilot sites adopted standardized best management practices and installed technologies to handle dental amalgam wastes (impact class 3)	Facilities with separators are available especially in Thailand and Uruguay, however, not in Senegal	10% increase of dental facilities with sound dental amalgam management techniques At least 80 facilities acquired new separators and adopted best management practices to handle dental amalgam wastes	Documentation, surveys, reports	**Assumption:** Dental facilities are willing to participate and supports project objectives **Risks:** Insufficient human or capital resources available to maintain separators and to sustain a national collection system of dental wastes	
Outcome 3.1: National and global awareness increased through enhanced knowledge sharing and facilitated information exchange on dental amalgam management	No. of countries globally demonstrating adoption of more than 2 measures in Annex A Part II of the Minamata Convention to phase down dental amalgam	Lack of global awareness and guidance related to dental amalgam management	At least 3 or more countries demonstrating dental amalgam phase down efforts	Documentation, conference, meeting reports	**Assumptions:** Enabling environment globally and nationally to support the project and successful dissemination of outputs **Risks:** Change in national priorities	

Output	Output Indicators	Baseline	Targets	Means of Verification	Assumptions & Risks	UNEP PoW Output Reference Number
Output 1.1.1: Project countries strengthened their regulatory and technical capacities to accelerate the implementation of the provisions for dental amalgam in line with the Minamata Convention	# standards, knowledge products and tools published and available to countries participating in the project and globally (indicator 3.2) (activity 1.1.1.1) # of awareness raising materials developed with active stakeholder participation which are available at public and private health facilities (indicator 8.1) (activity 1.1.1.2) # of improved regulations/policies that inform national and COMTRADE coding for trade and sup	Data on dental caries provided to WHO by countries participating in the project Limited information and incomplete data available at national level on the location of health facilities providing dental services including dental practices, and the numbers, density and distribution of dental professional workforce	- One global technical report on inventory of trade, supply and availability of dental amalgam, and quality mercury free materials - Three case studies (minimum 1 per target country) to include best practices that demonstrate the feasibility of dental amalgam phase down and sound mercury waste management - Three regulatory or policies improvements (one per country) related to dental	Policies and guidance documents	**Assumptions:** Insurance policies and programmes favour the use of quality alternatives to dental amalgam for dental restoration National education plans for dentists are aligned with national health plans, and national health workforce strategies and plans **Risks:** Change in political and economic environment Limited infrastructure and communications channels for dissemination	Same as above

		ply chain management of dental amalgam (indicator 4.1) (activity 1.1.1.4) # of training institutions and individuals (gender disaggregated) for dental professionals that have adopted and implemented recommendations on quality mercury free products and processes according to the best knowledge available (indicator 10.1) (activity 1.1.1.5) # of health insurers (public and private) that have policies and programmes which favour the use of quality mercury free alt		materials supply chain management - Three assessment reports (one per target country) on dental insurance policies and programmes - Three trainings (one per country) targeting dental health workforce (50% men and 50% women)		Limited coverage and reach of awareness raising materials		

	ernatives to dental amalgam (indicator 3.2) (activity 1.1.1.3)					
Output	**Output Indicators**	**Baseline**	**Targets**	**Means of Verification**	**Assumptions & Risks**	**UNEP MTS Expected Result**
Output 2.1.1: Feasibility on the application of sound management and displosal schemes for dental amalgam are tested and dental wastes transported and disposed	# of health/dental institutions demonstrating feasibility of applying sound management practices and technologies to reduce and dispose dental amalgam (indicator 3.1) (activities 2.1.1.1 to 2.1.1.4)	Public and private health insurers have insurance policies and programmes that cover dental restorative care, but with limited options that favour the use of quality alternatives to dental amalgam Capacity building/training activities among dental health policy makers, dentists and insurance providers conducted as part of East African Dental Amalgam Phase Down project, but not supported by an enabling	- One assessment tool and protocol to identify and select health/dental facilities for sound management of dental wastes - Eighty (80) dental separators distributed between Senegal and Thailand - One technical report on best waste management practices of materials used in dental restoration, including sustaina	Technical reports	**Assumptions:** Dental practices willing and able to invest in dental amalgam separators as part of multi-pollutant strategy **Risks:** Inadequate national infrastructure support and human resource capacity and capability for sustaining operationalization BAT BEP at selected pilot sites	Same as above

		health insurance policy and programmes National dental professional workforce aware of key components of a phase down approach, but absence of standards, knowledge products and tools limited its effectiveness and translation into training and daily clinical practice Awareness raising activities to promote oral health and alternatives implemented as part of East African Dental Amalgam Phase Down project	bility plan for each target country - 3000 kg of dental amalgam wastes are collected from the three target countries and sent for treatment			
Output	**Output Indicators**	**Baseline**	**Targets**	**Means of Verification**	**Assumptions & Risks**	**UNEP MTS Expected Result**

Output 3.1.1: Guidance materials updated on future us of dental restoration materials and global database established to inform project outputs, COP and reporting	# of databases established to contain updated reports, project results and relevant decisions of COPs and reporting related to dental amalgam (indicator 9.2) (activities 3.1.1.1 and 3.1.1.2)	Within countries there is limited use of good environmental practice and inconsistent operationalization for dental amalgam waste Promotion and demonstration of environmentally sound management of dental wastes as part of East African Dental Amalgam Phase Down project	- One report updated (WHO/UNEP guidance on Future Use of Materials for Dental Restoration, 2009) - One global database to inform project outputs, relevant decisions of COP and reporting related to dental amalgam	Technical and meeting reports	**Assumptions:** Countries willing and able to undertake national dental needs assessment survey including initial stage caries using standardized methods and tools Dental education stakeholders (professional organizations and dental schools) agree to use standards, knowledge products and tools **Risks** Change in political and economic environment	Same as above

Output 3.1.2: Lesson learned collected, systematized and distributed nationally and by the knowledge hub through Global Mercury Partnership	# of hits on the knowledge hub pages hosted on the Mercury Partnership website (indicator 9.3) (activity 3.1.2.2) # of presentations made on project results at international and regional meetings (indicator 8.1) (activity 3.1.2.3)		- One knowledge hub within the Global Mercury Partnership web site - At least 1 presentation at national level in each country and 2 presentations at international and regional meetings			

ANNEX B: RESPONSES TO PROJECT REVIEWS (from GEF Secretariat and GEF Agencies, and Responses to Comments from Council at work program inclusion and the Convention Secretariat and STAP at PIF).

Not applicable

ANNEX C: Status of Utilization of Project Preparation Grant (PPG). (Provide detailed funding amount of the PPG activities financing status in the table below:

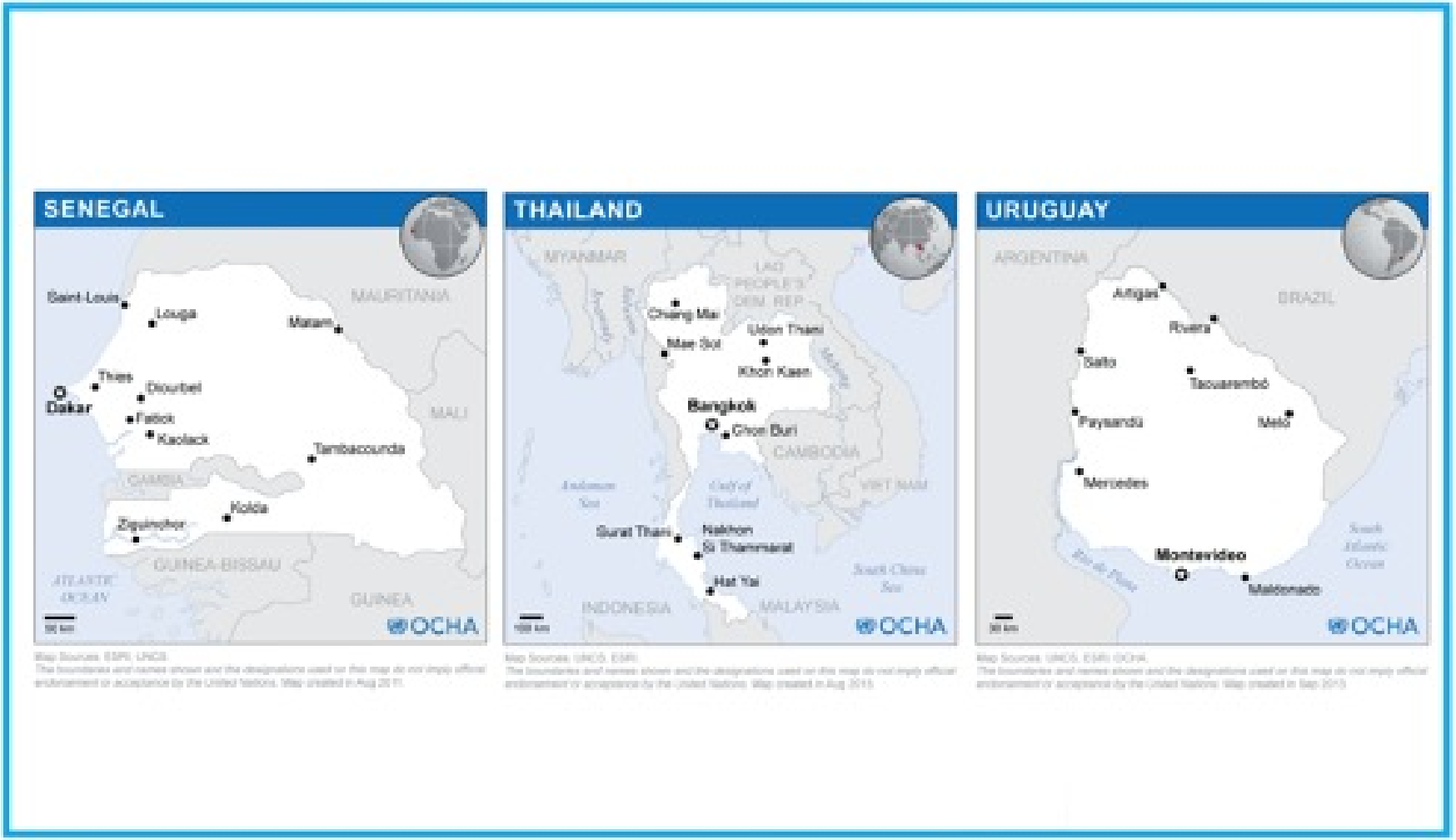
During project preparation, an international consultant was recruited to provide project baseline information and to assist in obtaining several co-financing support from the private sector, academia and dental associations.

Project Preparation Activities Implemented	*GETF/LDCF/SCCF Amount ($)*		
	Budgeted Amount	*Amount Spent To date*	*Amount Committed*
International Consultant Fees	50,000	50,000	0
Total	50,000	50,000	0

ANNEX D: Project Map(s) and Coordinates

Please attach the geographical location of the project area, if possible.

Accelerating early implementation of the phase down of the use of dental amalgam to achieve socio-economic, environmental and public health benefits



The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations

This map is intended for illustrative purposes only, and should not be used to derive any information regarding the project's operations. All maps were downloaded from https://reliefweb.int/location-maps

ANNEX E: Project Budget Table

Please attach a project budget table.

			BUDGET ALLOCATION BY PROJECT COMPONENTS					
			Component 1	Component 2	Component 3	PMC	M&E	Total
UNEP BUDGET LINE/OBJECT OF EXPENDITURE			US$	US$	US$	US$	US$	US$
10	PROJECT PERSONNEL COMPONENT							
	1100	Project Personnel						
	1101	WHO Technical Lead	98,111	98,111	38,578			234,800
	1102	WHO Project Coordinator				100,000		100,000
	1103	Knowledge manager/ Expert on clinical dental restorations	36,400	36,400	65,800			138,600
	1199	Sub-Total	134,511	134,511	104,378	100,000	0	473,400
	1200	Consultants						
	1201	Senegal National Project Support Officer	41,260	40,000		0		81,260
	1202	Communication consultant to develop case studies	17,500					17,500
	1203	Legislation Expert	30,000					30,000
	1204	Waste Management Expert		105,000				105,000
	1205	Global communication expert			55,000			55,000
	1299	Sub-Total	88,760	145,000	55,000	0	0	288,760
	1300	Administrative support						
	1301	WHO Finance Officer				71,800		71,800
	1399	Sub-Total	0	0	0	71,800	0	71,800
	1600	Travel on official business (above staff)						
	1601	Travel for Project Coordinator	19,500		19,500			39,000
	1699	Sub-Total	19,500	0	19,500	0	0	39,000
	1999	Component Total	242,771	279,511	178,878	171,800	0	872,960
20	SUB-CONTRACT COMPONENT							0
	2100	Subcontract						0
	2199	Sub-Total	0	0	0			0
	2200	Sub-contracts (SSFA, PCA, non-UN)						0
	2201	Update and enhance 2009 Report on Future use of Materials for Dental Restoration (technical report writing, editing, etc)			40,000			40,000
	2203	National contracts for the transport and installation of dental amalgam separators and support for ongoing maintenance		50,000				50,000
	2204	National contracts to manage and dispose dental amalgam wastes in an environmental friendly manner		100,000				100,000
		National contracts on services and support needed t						

	2205	National contracts on services and support needed t o deliver component 1	248,864					248,864
	2206	National contracts on services and support needed t o deliver component 2		153,843				153,843
	2299	Sub-Total	248,864	303,843	40,000	0	0	592,707
	2999	**Component Total**	**248,864**	**303,843**	**40,000**	**0**	**0**	**592,707**
30	TRAINING COMPONENT							0
	3200	**Group training (field trips, WS, etc.)**						0
	3201	Health facilities assessment and implementation tra ining for selection and installation of dental amalga m separators		45,000				45,000
	3299	Sub-Total	0	45,000	0	0	0	45,000
	3300	**Meetings/conferences**						0
	3301	International Expert Working Groups meeting to sup port the update and enhance 2009 Report on Use an d Future of Materials for Dental Restoration	75,440					75,440
	3302	National policy and dental insurance dialogues	20,000					20,000
	3303	National policy and dental industry dialogues	15,000					15,000
	3304	National dental workforce and education meetings	20,000					20,000
	3305	Inception webinars (videoconference)			3,500			3,500
	3306	Kick off meeting			45,228	0		45,228
	3307	Mid-project visit in the three project countries (cover ed under budget line 1601)	0	0				0
	3308	Sub-regional workshops	25,000	25,000	63,724			113,724
	3309	Wrap up meeting in Geneva			44,164			44,164
	3399	Sub-Total	155,440	25,000	156,616	0	0	337,056
	3999	**Component Total**	**155,440**	**70,000**	**156,616**	**0**	**0**	**382,056**
40	EQUIPMENT & PREMISES COMPONENT							0
	4100	**Expendable equipment (under 1,500 $)**						0
	4101	Supplies for field visits/meetings by experts (e.g. sta tionary, fuel)	10,000	10,000	10,000	0		30,000
	4200	**Nonexpendable equipment (beyond 1,500$)**						0
	4201	Supplies for field visits/meetings by experts (e.g. co mmunication and web development software and lic enses)	4,000	4,000	10,000			18,000
	4199	Sub-Total	14,000	14,000	20,000	0	0	48,000
	4999	**Component Total**	**14,000**	**14,000**	**20,000**	**0**		**48,000**
50	MISCELLANEOUS COMPONENT							0
	5200	**Reporting costs (publications, maps, NL)**						0
	5201	Publication of key project documents including publi shing in technical journals at global level			15,000			15,000
	5202	Publication of key project documents including publi shing in technical journals at national level			12,000	0		12,000
	5202	Editing and design for knowledge products	14,000	3,500				17,500
	5299	Sub-Total	14,000	3,500	27,000	0	0	44,500
	5300	**Sundry (communications, postage, etc)**						0
	5301	Communication, postage, freight etc.				7,777		7,777

	5302	Internet	1,000	1,000	1,000			3,000
	5303	National dissemination of results	3,000	3,000	3,000	0		9,000
	5399	Sub-Total	4,000	4,000	4,000	7,777	0	19,777
	5500	**Evaluation**						0
	5501	Final Evaluation					40,000	40,000
	5599	Sub-Total	0	0	0	0	40,000	40,000
	5999	**Component Total**	**18,000**	**7,500**	**31,000**	**7,777**	**40,000**	**104,277**
	TOTAL		**679,075**	**674,854**	**426,494**	**179,577**	**40,000**	**2,000,000**

ANNEX F: (For NGI only) Termsheet

Instructions. Please submit an finalized termsheet in this section. The NGI Program Call for Proposals provided a template in Annex A of the Call for Proposals that can be used by the Agency. Agencies can use their own termsheets but must add sections on Currency Risk, Co-financing Ratio and Financial Additionality as defined in the template provided in Annex A of the Call for proposals. Termsheets submitted at CEO endorsement stage should include final terms and conditions of the financing.

ANNEX G: (For NGI only) Reflows

Instructions. Please submit a reflows table as provided in Annex B of the NGI Program Call for Proposals and the Trustee excel sheet for reflows (as provided by the Secretariat or the Trustee) in the Document Section of the CEO endorsement. The Agencys is required to quantify any expected financial return/gains/interests earned on non-grant instruments that will be transferred to the GEF Trust Fund as noted in the Guidelines on the Project and Program Cycle Policy. Partner Agencies will be required to comply with the reflows procedures established in their respective Financial Procedures Agreement with the GEF Trustee. Agencies are welcomed to provide assumptions that explain expected financial reflow schedules.

ANNEX H: (For NGI only) Agency Capacity to generate reflows

Instructions. The GEF Agency submitting the CEO endorsement request is required to respond to any questions raised as part of the PIF review process that required clarifications on the Agency Capacity to manage reflows. This Annex seeks to demonstrate Agencies' capacity and eligibility to administer NGI resources as established in the Guidelines on the Project and Program Cycle Policy, GEF/C.52/Inf.06/Rev.01, June 9, 2017 (Annex 5).