

INTEGRATING TOBACCO CONTROL INTO TUBERCULOSIS AND HIV RESPONSES

Implementing the WHO Framework Convention on Tobacco Control to address co-morbidities

INTRODUCTION

Tuberculosis (TB) and HIV remain among the world's deadliest infectious diseases, with TB killing 1.7 million people in 2016¹, and AIDS-related illnesses killing 940,000 people in 2017.² Alongside these, non-communicable diseases (NCDs) are the greatest source of premature death, disability and illness worldwide. Forty million people die from NCDs each year, including 15 million people between the ages of 30 and 69. Over 85 percent of these premature deaths occur in low- and middle-income countries (LMICs).³ Fourteen percent of all NCD deaths among adults aged over 30 are attributable to tobacco use,⁴ which kills over 7 million people every year.^{5,6}

These epidemics interact. The World Health Organization (WHO) estimates that 20 percent of TB incidence is attributable to tobacco use,⁷ while an estimated 24 percent of AIDS-related deaths are attributable to smoking.⁸ Evidence shows that reducing tobacco use improves HIV and TB outcomes, in addition to reducing cancers, heart disease, diabetes, chronic respiratory diseases and other NCDs.

[The 17 Sustainable Development Goals \(SDGs\)](#)⁹ and 169 targets offer a new framework for tackling complex public health threats. The targets are interlinked, including within SDG 3 on healthy lives and well-being, and realizing synergies between targets is crucial for successful SDG implementation. Target 3.3 calls for an end to the TB and AIDS epidemics by 2030. Target 3.4 calls for a one-third reduction in premature mortality from NCDs by 2030. Strengthened implementation of the [WHO Framework Convention on Tobacco Control \(WHO FCTC\)](#),¹⁰ SDG target 3.a, is important for both target 3.3 and target 3.4. The WHO FCTC, an international and legally binding treaty, was negotiated under the



A sign posted at a rural health facility in Naubise, Dhading, Nepal reads "No Smoking Zone/Area". Photo: Aisha Faquir/World Bank.

auspices of WHO. With 181 Parties as of September 2018, the WHO FCTC's provisions cover more than 90 percent of the world's population. The WHO FCTC establishes a minimum standard for action on tobacco control, and recommends Parties seek links between tobacco control and HIV and TB services.¹¹ Addressing these co-morbidities through integrated responses, rather than disease-specific ones, is critical in the era of the 2030 Agenda for Sustainable Development.

Integration of disease responses is core to improving health outcomes, strengthening health systems and achieving universal health coverage (UHC). Global institutions are well-positioned to help countries tackle co-morbidities. In 2015, the Board of the Global Fund to Fight AIDS, TB and Malaria (Global Fund) approved a financing framework for action on co-infections and co-morbidities (COIMs),¹² signalling the opportunity for TB and HIV grants to incorporate tobacco control.

UNDP's [HIV, Health and Development Strategy 2016-2021](#),¹³ in support of the [UNDP Strategic Plan, 2018-2021](#),¹⁴ commits to: reduce inequalities and social exclusion that drive poor health; promote effective and inclusive governance for health; and build resilient and sustainable systems for health. These are all critical for

addressing complex and inter-linked health challenges effectively.

UNDP and the Secretariat of the WHO FCTC are working to strengthen the governance of tobacco control responses. Through a global joint programme, [FCTC 2030: Strengthening WHO FCTC implementation to achieve the Sustainable Development Goals](#),¹⁵ UNDP and the WHO FCTC Secretariat are supporting 15 countries to strengthen implementation by integrating tobacco control with other health and development investments.

This Issue Brief aims to build awareness of the options to incorporate tobacco cessation activities into Global Fund HIV and TB grants. It outlines how tobacco consumption worsens TB and HIV outcomes, and how the integration of tobacco control into Global Fund TB and HIV grants could increase health benefits and efficiencies. The intended audience is Global Fund applicants – Country Coordinating Mechanisms (CCMs), Fund Portfolio Managers, TB, HIV and tobacco control programme managers, technical disease advisors and Ministry of Health officials.

UNDERSTANDING CO-INFECTIONS AND CO-MORBIDITIES

Reducing tobacco consumption contributes significantly to the prevention and treatment of TB, as well as the effective management of HIV.¹⁶ Risk of TB infection, disease progression and adverse treatment outcomes are strongly associated with many NCDs and NCD risk factors.¹⁷ Tobacco use is strongly associated with an elevated risk of TB infection, disease progression and adverse treatment outcomes. Tobacco use also negatively affects TB indirectly by being a risk factor for diabetes which is independently associated with increased risk of TB.¹⁸

There has been a notable scale-up of antiretroviral therapy (ART), yet declines in new HIV infections among adults have slowed, threatening further progress on HIV.¹⁹ The success of ART has drastically improved the life expectancy of people living with HIV (PLHIV) and led to HIV now being considered a ‘treatable’ chronic disease.²⁰ Tobacco use among PLHIV, however, contributes to increased rate of progression from HIV to AIDS,²¹ increased risk of developing NCDs, such as cardiovascular disease (CVD) and cancers,²² and a poorer response to ART.²³ Further, smoking prevalence among PLHIV is significantly higher than among the general population.²⁴

Concurrent epidemics underscore the importance of tobacco control to public health. For example, the Asia-Pacific region is confronting an NCD crisis and is also home to more than half of the global TB burden, which in 2016 was concentrated in five countries – India, Indonesia, China, the Philippines and Pakistan.⁴⁷ Likewise, an estimated 75 percent of all AIDS-related deaths occur in the African region,⁴⁸ where NCDs are projected to increase by 27 percent in the next 10 years, as compared to 17 percent globally.⁴⁹

RATIONALE FOR INTEGRATING TOBACCO CESSATION INTO GLOBAL FUND TB AND HIV GRANTS

The WHO FCTC establishes a minimum standard for action on tobacco control. [The Global Fund Strategy 2017-2022: Investing to End Epidemics](#)⁵⁰ and the Global Fund’s [Tuberculosis Information Note](#)⁵¹ identify investments in co-morbidities as necessary for building resilient and sustainable systems for health. Further, the Global Fund’s 2015 Board Decision, [GF/B33/11 Global Fund Support for Co-infections and Co-morbidities](#),⁵² approves a framework for financing interventions to address co-infections and co-morbidities of HIV, TB and malaria.⁵³ WHO’s [The End TB Strategy](#)⁵⁴ and the Stop TB Partnership’s [The Paradigm Shift: Global Plan to End TB 2016-2020](#)⁵⁵ emphasize the need to manage co-morbidities as a priority of integrated, patient-centred care and prevention. Addressing co-morbidities would advance multiple components of ‘The End TB Strategy’, from innovative TB programmes to integrated health systems and investment in addressing socio-economic determinants. ‘The End TB Strategy’ and ‘The Paradigm Shift: Global Plan to End TB 2016-2020’ outline an investment case for addressing diabetes and smoking. Likewise, [WHO’s Global Health Sector Strategy on HIV 2016-2021: Towards Ending Epidemics](#)⁵⁶ acknowledges that investments in treatment are being challenged by increasing morbidity and mortality associated with co-morbidities of HIV and AIDS. Further, expanding



Young man smoking. China. Photo: © Curt Carnemark / World Bank

Box 1. Key facts: tobacco, TB and HIV interactions

Tobacco, TB and HIV interact physiologically and have common social and economic determinants that enhance their interaction and the impacts of this interaction. They together represent a syndemic, requiring an integrated response.²⁵

Tobacco

- Tobacco use is a leading cause of preventable death worldwide.²⁶
- The WHO estimates that tobacco use kills over 7 million people each year.²⁷
- Tobacco is a leading risk factor for NCDs, including chronic obstructive pulmonary disease (COPD), CVD and 13 types of cancer.
- The cost of tobacco to the global economy is estimated to be US \$1.4 trillion per year, approximately 2 percent of global Gross Domestic Product (GDP).²⁸
- In every region, the poor are more likely to use tobacco.²⁹

Tobacco and TB

- More than 20 percent of global TB incidence may be attributable to tobacco.³⁰
- Smoking is predicted to produce an excess of 18 million TB cases and 40 million deaths from TB between 2010 and 2050, increasing TB cases and deaths by 7 percent and 66 percent respectively.³¹
- Smoking weakens the immunity of PLHIV, such that they have approximately twice the risk of both latent³² and active TB infection.³³
- Second-hand smoke (SHS) is a risk factor for TB,³⁴ with women and children significantly exposed.
- Smoking can mask TB-related symptoms and, as a result, smokers are less likely to be aware of having TB. This results in delayed diagnoses, more critical TB conditions and higher mortality rates.^{35,36}
- Smokers are seven times more likely to cease or inadequately complete TB treatment, are less likely to be cured,³⁷ and are up to three times more likely to relapse after having successfully completed TB treatment.^{38,39}
- Recurrent TB cases are more likely to be multi-drug resistant and carry higher mortality rates relative to new cases. Retreatment regimens are often more expensive than first-line treatment.⁴⁰

Tobacco and HIV

- Smoking is associated with a two-fold increase in mortality in PLHIV.⁴¹ Overall HIV mortality could be brought down by as much as one-quarter if tobacco use is fully avoided.⁴²
- Continued smoking among PLHIV is associated with opportunistic infections, pneumonia, COPD, emphysema, lung cancer, non-adherence to medication, increased risk of developing AIDS and increased risk of all-cause mortality.⁴³
- Tobacco use threatens gains made in extending the lives of PLHIV. HIV-positive smokers lose an average of 12.3 life years compared with HIV-positive non-smokers - more than twice the number of years lost to HIV infection alone.⁴⁴
- Both uncontrolled HIV infection and ART may confer an elevated risk for CVD that is further exacerbated by tobacco use.⁴⁵
- Smoking cessation among PLHIV could decrease the risk of early mortality by 16 percent, the risk of CVD by 20 percent and the risk of non-AIDS-defined cancers by 34 percent. Increased duration of smoking abstinence is associated with decreased HIV-related symptoms and decreased risk of CVD.⁴⁶

treatment beyond ART to the management of co-morbidities and chronic care, as well as developing guidance on the prevention and management of common co-morbidities, are identified by the 'Global Health Sector Strategy on HIV 2016-2021: Towards Ending Epidemics' as fast-track actions for countries to accelerate progress towards UNAIDS' [90-90-90: An ambitious treatment target to help end the AIDS epidemic](#).⁵⁷

The rationale for integrating tobacco cessation into Global Fund TB and HIV grants is multi-pronged:

- **Disease-specific approaches do not capitalize on synergies and are inefficient.** Over the next 10 years, ending the TB epidemic will require US \$44.3 billion in investment at country level.⁵⁸ With only an estimated US \$21.8 billion available, a total funding gap of US \$22.5 billion remains. The largest resource need is in Africa, followed by Eastern Europe and Southeast Asia.⁵⁹ Likewise, US \$26 billion is needed annually to achieve SDG target 3.3 to end the AIDS epidemic by 2030. As of 2016, US \$19.1 billion was available from all sources for HIV in-country activities, leaving a significant resource gap.⁶⁰ The

Global Fund acknowledges the management of co-morbidities as a high-impact intervention that can achieve maximum health impact and increase allocative efficiency.

- **Approaches to integrate tobacco cessation into TB and HIV services are known and feasible.** Collaborative TB-HIV activities have illustrated the viability of integrated approaches.^{61,62} Innovations in integrating tobacco control have been developed, for example combining nicotine replacement therapy (NRT) with TB and HIV screening strategies.^{63,64} Regular contact between patients and health professionals provides entry points for sustained intervention. Adjustments to existing DOTS (direct-observed TB treatment, short-course) or ART regimens to integrate tobacco cessation can improve TB and HIV outcomes, as well as tobacco consumption. These include increases in treatment adherence,^{65,66} TB cure rates,^{67,68} and health-related quality of life,^{69,70} in addition to improved NCD prevention and control outcomes.^{71,72,73,74} Pilot studies underscore the feasibility of integration in resource-constrained settings and its potential to amplify the effectiveness of TB and HIV treatment services. Even modest success in reducing the prevalence of tobacco consumption can confer health and economic benefits for TB and HIV responses.

- **Integrated health service delivery is integral to UHC (SDG target 3.8).** In many countries facing simultaneous burdens of TB, HIV and NCDs, supply-side barriers inhibit access to co-morbidity care. The significant rise of NCDs in the last few decades has placed major strains on already over-burdened health systems, especially ones designed to address acute, rather than chronic, illnesses. Resource-poor settings are often unable to develop additional capacities and infrastructure to oversee and deliver tobacco cessation services, necessitating the efficient use of existing capacities and infrastructure.
- **Integrating tobacco cessation aligns with efforts to 'leave no one behind' in the context of the 2030 Agenda.** NCDs burden poor and vulnerable populations such that many people with NCDs are among the same populations left behind in TB and HIV responses.^{75,76} When NCD services are available, high costs often inhibit access to care and adherence to treatment. Disability and time spent seeking health care can result in income loss. Often, different services are not offered by the same provider, leading to multiple trips as well as additional income and time spent seeking treatment. Integrated, patient-centred management addresses many of the barriers hindering treatment adherence and outcomes by incorporating routine diagnosis and treatment into services that can be readily accessed by patients.



Woman smoking in Novi Sad, Juzhna Bachka, Serbia. Photo: Zlatko Vickovic

Box 2. Responses to tobacco, TB and HIV – a common grounding in human rights

Health is enshrined as a human right in several treaties and in a number of constitutions. WHO's Constitution asserts the fundamental right to the highest attainable standard of health without discrimination. The right to health specifies that services, goods and facilities must be available, accessible, acceptable and of good quality.⁷⁷ The Global Fund, Stop TB Partnership, UNAIDS, UNDP and the WHO FCTC Secretariat all acknowledge the need for a rights-based approach. The preamble to the WHO FCTC cites the right of the child to the highest attainable standard of health, as asserted in the Convention on the Rights of the Child. As parties to this and other international human rights instruments, such as the United Nations Convention on the Rights of Persons with Disabilities and the Convention on the Elimination of all Forms of Discrimination Against Women, States are obliged to respect, protect and fulfil the human rights of all who are impacted by or at risk for TB, HIV and NCDs.

Poverty, inequalities and marginalization exacerbate TB and HIV burdens, particularly for key populations. This is also true for NCDs. Vulnerable groups for NCDs include those living in poverty, indigenous populations, migrants and people with mental and psychosocial disabilities.

Tobacco control measures can be integrated into Global Fund requests with explicit emphasis on their ability to address human rights barriers and advance health equity. Certain disadvantaged groups are at increased risk of tobacco consumption. For example, in every region of the world the poor are more likely to use tobacco, in part due to targeted marketing by the tobacco industry.⁷⁸ Smoking rates among the lesbian, gay, bisexual and transgender (LGBT) community have been found to be almost twice that of the general population. The tobacco industry targets the LGBT community, ethnic minorities, women and girls, and youth with specific versions of their products.⁷⁹

Women and girls are uniquely impacted by tobacco use. Smoking rates among women and girls are rising in several regions and are predicted to increase proportionally from 12 percent in 2010 to 20 percent in 2025.⁸⁰ Women and girls also face heightened exposures to SHS, including because of gender power imbalances which constrain their capacity to negotiate smoke-free spaces.⁸¹ The tobacco industry is increasingly targeting women and girls in LMICs. Where tobacco products are affordable and marketing campaigns conflate independence, beauty, emancipation, femininity and sex appeal with tobacco use, women's and girls' ability to make informed choices about tobacco use may be compromised.⁸² The differential impacts of tobacco use on vulnerable populations require disaggregation of data by age, sex, gender identity, socio-economic status and region.

CASE STUDIES IN INTEGRATING TOBACCO CESSATION INTO HIV AND TB CARE

Successful smoking cessation interventions for TB patients have been documented in Bangladesh,⁸³ Brazil,⁸⁴ India,⁸⁵ Japan,⁸⁶ Malaysia,⁸⁷ Pakistan,⁸⁸ South Africa⁸⁹ and Sudan.⁹⁰ Overall, studies demonstrate that integrating tobacco cessation into routine TB care is feasible, potentially cost-effective, and does not detract from TB treatment services.^{91,92}

In **Sudan**,⁹³ researchers studied the effectiveness and feasibility of a brief tobacco cessation advice intervention for new TB patients. Medical assistants administered the intervention at the beginning of TB treatment and repeatedly at 2, 5 and 8 months as part of DOTS treatment, with a follow-up survey at 12 months.

Results indicate the intervention was feasible and effective. Medical assistants appeared both willing and able to integrate the brief advice on tobacco cessation, and the intervention did not diminish the quality of services being offered to the patients. TB treatment success was higher among those receiving the tobacco cessation intervention versus those who did not (83 percent versus 59 percent). Tobacco cessation rates increased at each successive intervention; by the fourth and final visit, 86 percent of smokers and 65 percent of smokeless tobacco users had quit compared to 14.3 percent of tobacco users in the control group.

As with TB, studies demonstrate that integrating smoking cessation into HIV services is feasible and effective.⁹⁴ In **Switzerland**,⁹⁵ HIV care physicians at an outpatient clinic were provided a half-day training in smoking cessation counselling services. During a two-year period, the trained physicians completed a short



TB & TB-MDR Detection & Treatment in Lima, Peru. Photo: Pan American Health Organization.

smoking status assessment for each of their patients and provided brief smoking cessation counselling on the harms of tobacco, challenges of smoking cessation, options to support the patients, and, if appropriate, follow-up appointments for further discussion or planning on smoking cessation. Counselling was carried out in 80 percent of visits for current smokers, indicating that counselling can be integrated into routine care. Smoking cessation rates at the outpatient centre where physicians had received training were higher than in other centres, while smoking relapse rates were lower.

A meta-analysis of 12 studies indicates that brief tobacco cessation behavioural interventions are just as effective as interventions combining behavioural support and pharmacotherapy. Findings from **Nepal**⁹⁶ also indicate that interventions need not be intensive or expensive; researchers found that HIV-positive smokers were over three times more likely to want to quit within the next 6 months if a physician had assessed their smoking status within the last 12 months.

Further research is required to assess the interaction of smoking cessation interventions with co-morbidities and other risk factors besides tobacco consumption. The study in Nepal found that injecting drug users had significantly lower intentions to quit tobacco use, while in **Vietnam**⁹⁷ those who reported binge drinking or lifetime drug use were less motivated to quit smoking.

Additional research is also required in settings where tobacco use is underreported.

OPTIONS FOR INTEGRATING TOBACCO CONTROL INTO GLOBAL FUND HIV AND TB GRANTS

The Global Fund encourages more funding requests to address COIMs. To support COIM integration into Global Fund grants, the Global Fund has developed a framework for COIM financing, which prioritizes the scale-up of existing core interventions for HIV, TB and malaria while providing flexibility and accountability for a strong investment case to finance addressing COIMs. Before approval, funding requests that incorporate a COIM component undergo a quality assurance process and are evaluated for consistency with the principles of country ownership, such as COIM inclusion in existing national TB, HIV and NCD plans. The Global Fund Secretariat and Technical Review Panel (TRP) then review and potentially recommend funding requests that contain COIM interventions to the Board in accordance with the proposed framework and standard review processes.

Several integration options can be considered for inclusion in Global Fund TB and HIV grants either for single or multi-country requests. Important resources are [A WHO/The Union Monograph on TB and Tobacco](#)

[Control: Joining Efforts to Control Two Related Epidemics](#)⁹⁸ and [Guidelines 2017](#) from the European AIDS Clinical Society (EACS), both of which primarily cover tobacco cessation. Their key approaches are summarized below, as are additional integration opportunities based on a review of research studies.

1. Understand the national prevalence of tobacco use among people with TB and/or HIV. Understanding the prevalence of tobacco consumption among people with TB and/or HIV precedes integrating tobacco cessation services into Global Fund requests. Applicants can refer to [WHO's Global Health Observatory \(GHO\) Data - Prevalence of Tobacco Smoking](#),⁹⁹ [The Tobacco Atlas](#) from the American Cancer Society and Vital Strategies,¹⁰⁰ and WHO's [Noncommunicable diseases and their risk factors: STEPS Country Reports](#).¹⁰¹ While tobacco consumption data is available for the vast majority of countries, applicants may wish to incorporate a more in-depth assessment of tobacco use prevalence among TB and HIV patients, disaggregated by age, sex, gender identity, socio-economic status and region. Disaggregated data would help to identify whether certain groups are disproportionately affected. This information, in turn, would enable TB/HIV/tobacco control collaborative activities to be tailored to those most in need.

2. Strengthen an enabling continuum of care. To encourage patients to quit smoking and for specialists and health workers to effectively support them in this process, an environment conducive to tobacco cessation must be promoted. This includes the provision of brief advice on tobacco use by all health professionals, as well as ensuring all health care facilities are strictly smoke-free. Ensuring supportive attitudes among specialists and health workers for smoke-free environments, including by identifying and addressing potential issues of stigma and/or discrimination, is essential.

3. Screen TB and HIV patients for tobacco consumption. TB and HIV clinics can screen patients for tobacco use or exposure to SHS and, where appropriate, refer patients for further services. Referral can be to private narcologists, tobacco cessation services and/or peer support groups.

4. Deliver tobacco cessation interventions. Specialists and health workers can administer patient-centred tobacco cessation interventions at the time of diagnosis or during treatment. Interventions may be low cost and be integrated into existing Global Fund supported infrastructure, such as DOTS or ART provision. Most common are brief advice interventions providing clear,

strong and personalized advice on the adverse effects of tobacco consumption on TB or HIV outcomes, such as the WHO advice model as outlined in the [Toolkit for Delivering the 5A's and 5R's Brief Tobacco Interventions in Primary Care](#).¹⁰² Applicants could also refer to [FCTC/COP4\(8\) Guidelines for implementation of Article 14 of the WHO Framework Convention on Tobacco Control](#).¹⁰³ Pharmacological interventions may be difficult to implement in resource-limited settings and may not be more effective than brief advice interventions.¹⁰⁴ The documentation of smoking status of patients in medical notes can facilitate provision of advice and follow-up.

5. Support strengthened national frameworks. TB and HIV programme staff should support efforts to coordinate, link and strengthen national strategies and legislation on tobacco control and infectious diseases. For instance, the national TB and/or HIV strategy can be linked with the outcomes of the national tobacco control strategy, and vice versa. Some countries have committed to aligning their national TB and tobacco control strategies to identify synergies. Beyond this, efforts should be made to integrate national TB, HIV and tobacco control strategies with those covering NCDs broadly, as a contribution towards UHC.

6. Advocate for tobacco tax measures as a source of financing for tobacco control, HIV and TB programmes. [The Addis Ababa Action Agenda of the Third International Conference on Financing for Development](#)¹⁰⁵ signed by all UN Member States in 2015, specifies that price and tax measures on tobacco “can be an effective and important means to reduce tobacco consumption and health-care costs, and represent



Construction worker takes a break. Photo: Alex Baluyut / World Bank



A man smokes a cigarette at a road side rest stop in rural Nepal. Photo © Aisha Faquir/World Bank

a revenue stream for financing for development in many countries.” Considering the linkages between TB, HIV and tobacco, decision makers and front-line staff should advocate for stronger policies that have outsized potential for impact. With Global Fund budgets and development assistance for HIV and TB insufficient to meet global targets,¹⁰⁶ and many countries facing graduation from eligibility, increased tobacco taxes could serve as a new means for domestic resources to ensure continuity and even expansion of services.

7. Support strengthened national coordination.

Coordination among HIV, TB and tobacco control responses across sectors can accelerate progress towards integrated care and effective, holistic policy measures. Mutual representation on HIV, TB and tobacco control coordination mechanisms would ensure alignment of strategies and service delivery. For example, a CCM could ensure a seat for a representative from the national coordinating mechanism (NCM) for tobacco control, while that NCM could have as a member the head of the national TB and HIV programmes. At a minimum, the coordinating bodies should have regular communication.

CONCLUSION

Strengthening WHO FCTC implementation as part of HIV and TB programmes could significantly improve multiple health outcomes, not just for the two infectious diseases but also for a number of NCDs. There is an opportunity for greater programme integration, given the evidence base, the mandate from the Global Fund Board and the 2030 Agenda for Sustainable Development. Global health institutions and initiatives can facilitate such integration at country level.

The first actions in making this integration routine can be taken immediately. Global Fund CCMs can include tobacco control interventions in future requests, or the integration of tobacco control interventions can be piloted with funds available as part of regular year-end reprogramming.

The 2030 Agenda for Sustainable Development calls for integrating action across health and development priorities. Integrating tobacco control into Global Fund HIV and TB grants is a feasible and cost-effective measure for improving health and well-being.

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November 2018

This issue brief has been prepared under the FCTC 2030 Project, with generous funding from the United Kingdom.

The FCTC 2030 project supports the accelerated implementation of the WHO FCTC in low- and middle-income countries.



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"We thank Diana De León, mobilized through UNV's Online Volunteering service for layout and typesetting of this issue brief."