

1-15 DECEMBER, 2018

Down To Earth

AFRICA

FORTNIGHTLY ON POLITICS OF DEVELOPMENT, ENVIRONMENT AND HEALTH

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EMERGENCY

Poor health infrastructure, lack of investment
and a plethora of diseases will derail Africa's
economic and social development

ENVIRONMENTAL MANAGEMENT IN INDUSTRIES

TRAINING PROGRAMME

February 5-8, 2019

Environmental issues like climate change, water availability, pollution, waste generation and disposal are commanding considerable global attention. Industries, as a major user of raw materials and energy and source of pollution and waste generation, have a major role in addressing current and emerging environmental issues. Environment managers in industry have a challenging task to keep industry clean, competitive and compliant with national and international rules, Acts and treaties.

Centre for Science and Environment (CSE) had been conducting training programme to build capacity in industry for the past two decades and has trained hundreds of environment managers. This time a four-day training programme is scheduled in February, 2019 in New Delhi.

The takeaway from this training programme includes improved understanding for participants on:

1. Environmental Laws for better compliance;
2. Roles and responsibilities of environment managers to comply with such legal requirements and strengthening self regulation mechanism;
3. Processes and procedures to obtain environment and forest clearance, Consent to Establish (CTE), Consents to Operate (CTO), authorization for hazardous wastes and other clearances/licenses;
4. Implementation of Continuous Emission Monitoring System (CEMS);
5. Environment, Health and Safety (EHS) Management System and its implementation;
6. Protocol for conducting environmental audit for improving resource management;
7. Understanding sustainability reporting as per GRI G4 guidelines and
8. How to review Environmental and Social impact assessment report.

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COURSE DURATION

February 5-8, 2019

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Anil Agarwal Environment Training Institute (AAETI), Nimli, Rajasthan

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BREATHLESS SILENCE

LAST FORTNIGHT, I had explained how, in spite of all the drastic measures taken, including a ban on construction; coal usage in industry; truck entry into the city; and more, air pollution in my city was still at emergency levels. I reiterate that small and timid steps will not work.

As I write this, air quality has slightly improved. For the moment it seems the worst of the winter-onset-Diwali-crop burning period could be behind us. But the fact is that this does not mean that air quality will not once again decline in the coming months. It is now clear that the region's own sources of pollution are greatly responsible for the poor air quality we have seen in the past few weeks. Crop burning is exacerbating this situation, not creating it.

According to the Ministry of Earth Sciences' System of Air Quality and Weather Forecasting and Research (SAFAR), the contribution of crop burning to the region's pollution stress, peaked on November 5, when it went up to 33 per cent. After that, because of the direction of wind, the contribution has ranged between 5-14 per cent. There is no doubt that these emissions from crop residue burning are coming at a time when there was accumulated load, and very adverse weather tipped us over the edge into severe pollution.

But it is also clear that even if we eliminate crop burning in the coming months, weather conditions will only get more adverse. The cold will increase, which will add to inversion and not allow dispersion; moisture will increase, which will trap the pollutants. And in case we have prolonged periods of poor wind and low ventilation index (that measures dispersion), then we could be back again in the severe and severe plus category.

As I explained earlier, we have adopted a smog alert system, the Graded Response Action Plan, which allows for strict action to be taken when pollution peaks. It is an emergency plan, not a substitute for an action plan which works to reduce pollution altogether. This winter, the Environment Pollution (Prevention and Control) Authority (EPCA), of which I am a member, directed for the closure of all construction activity; all industrial activity (other than those based on natural gas); all brick kilns, stone-crushers and hotmix plants. In the days post Diwali, it also asked for truck entry into Delhi to be stopped—all to combat the worst of pollution.

And these measures helped to reduce the pollution

levels. However, it was also clear that the city could not have continued to impose these restrictions beyond 12-13 days, even as pollution levels did not go down below the severe category. The fact is that these are economic activities and shutting them down creates huge livelihood challenges for the very poor, daily labourers in the city. The poor in our cities suffer the most because of air pollution as their work requires them to do strenuous activity in the polluted air. By bringing in these measures, which were essential to battle the pollution emergency, we had hit them twice as they also lost their livelihood sources. Trucks cannot not be held at the border of the city indefinitely. It was clear that emergency measures cannot be as a proxy for our inaction on long-term emission reduction.

So, the question was what more could be done. This is when EPCA's chairperson suggested that there should also

be a restriction on the plying of private vehicles in the city. He said this because the latest emission inventory has shown that vehicles contribute 40 per cent of the pollution in the city. Also, private diesel vehicles add substantially to both NOx and PM emissions and are deadly toxic.

The sticker scheme to identify vehicles based on age and fuel type has not yet been implemented and he suggested that the only option was to either ban all private vehicles (without the identification of petrol or diesel), other than CNG and/or restriction on plying by number plate (odd-even).

Suddenly there was outrage. It was no longer about pollution—deadly and hazardous for our health. No, it was against the very idea of "touching" the private car. There is no doubt that restricting cars without adequate public transport will be a nightmare. But governments do nothing to upgrade our system of commute. When there is a public health emergency, why should only the poor be asked to sacrifice?

In my extremely polluted city where I continue to work and fight, there is silence on this question. It is an inconvenient truth. ■



RITIKA BOHRA / CSE

Sunita Narain

🐦 @sunitanar

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Rise of the e-car

This video explains the reason behind the rise in the number of electric vehicles worldwide. Find out which countries are buying such cars.

Natural home cleaners

Tired of using harsh cleaners to remove dirt? Kirti Negi Bajoria shows how to make multipurpose cleaner as well as glass and mirror liquid polisher at home using various kinds of essential oils and castile soap.



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Disparity in life expectancy



There is a huge regional inequality in life expectancy. For Africa it was 61 years in 2015 while in North America and Europe, it varied between 70 and 80.

www.downtoearth.org.in/infographics

Under shadow of death



India records the highest number of premature deaths among under-five children due to toxic air. In 2016, some 102,000 children died due to air pollution.



WEB SPECIAL

Safe for health

The Milk Quality Survey 2018 says that milk in India is largely safe as only 10 per cent sold in the markets is contaminated.

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Rhine dries up

Water level in the Rhine, Germany's most important river, is at a record low level due to a drought which is being blamed on climate change.

f FACEBOOK

Death of Sarayu

The Sarayu river is choking to death. It was in spotlight on Diwali when over 0.3 million earthen lamps were lit up on its banks.

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GLIMPSES FROM OUR ARCHIVE

Forest rights

In the past decade, tribal communities have filed 4.21 million claims under the Forest Rights Act (FRA), 2006. But just 1.74 million of them have been approved, says a report compiled by the Ministry of

Tribal Affairs. In *Masters of the Woods* (16-31 December, 2017), *Down To Earth* reported that the scope of FRA is huge, as there are 150 million forest dwellers. As per an estimate done by the Community Forest Resource-Learning and Advocacy, about 45 per cent



of India's total forest area should be recognised under Community Forest Rights.

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TARIQUE AZIZ / CSE

People should fight harassment

This refers to the Last Word “The others too” (1-15 November, 2018). Harassment or sexual exploitation of any gender can never be justified. Such acts must be reported on time to the appropriate authorities. This becomes vital when people lodge complaints with the police. If such acts are silently accepted, then they go on unchecked. So, it is the moral as well as social duty of the victims to raise objections immediately. However, the outcome of their claims is subject to legal recourse. One must also bear in mind that if innocent people are dragged into the matter, they lose their social reputation. To prevent filing of false complaints, courts must either punish or impose fine.

MAHESH KUMAR
NEW DELHI

Avni's death

This refers to the article “What is the exact procedure to remove a man-eater?” published in the website on 8 November, 2018. The killing of alleged man-eating tigress, Avni or T1, is no doubt condemnable. This is an extreme case of violence against animals. Today, human greed has endangered flora and fauna. There are reports of wild animals being crushed to death by speeding vehicles passing through natural reserves and elephants being mowed down by speeding



SUNITA NARAIN / CSE

trains. Panthers and leopards enter human settlements in search of food because we have encroached upon their habitat and destroyed their natural food sources.

Development projects in forested areas like the Sanjay Gandhi National Park and Aarey Colony in Mumbai have destroyed forest cover. If Avni became a man-eater, we

Down To Earth welcomes letters, responses and other contributions from readers. Send to Sunita Narain, Editor, *Down To Earth*, 41, Tughlakabad Institutional Area, New Delhi - 110062

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ADITHYAN PC / CSE

are no less to be blamed for it. Construction of highways through forests, land grab in coastal areas and degradation of salt pans, wetlands and mangroves have resulted in tragic consequences. Yet, we put the blame on Avni. Her killing, legal or illegal, is not the issue. Many Avnis are being killed by our acts of omission or commission. It is time we take a holistic view of conservation.

ANIL BAGARKA
MUMBAI

Stubble burning

This refers to the article “A quick fix” (1-15 November, 2018). Even after the National Green Tribunal banned crop burning in 2015, farmers in certain states, particularly in Punjab and Haryana, still continue to burn paddy stubble, unmindful of the heavy pollution it causes. The National Capital Region in particular is badly affected by this act every winter.

Use of machines to manage

paddy straw is a costly option. So, only a few farmers who can afford mechanisation are using them despite government subsidy. Time has come for the Centre to take the initiative to end crop burning on a priority basis. Making structural changes in the farm sector is also crucial to deal with this important issue. Though it will take a considerable period of time to end the practice of stubble burning, a quick start in this direction is imperative to prevent rising smoke billowing



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The river of Ayodhya is choking to death

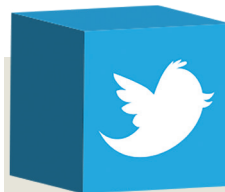
(posted on 11 November, 2018)

Perhaps now is the time to ponder as to why Ram's Ganga has become so dirty?

ALICE LAKRA

Since there is no temple as well as the statue of Ram, how can we expect the river to be clean? The Sarayu river would clean itself in honour of the temple once it is constructed. So let us have the temple first.

DHARMENDRA DAUKIA



twitter.com/down2earthindia

My clean air concerns

(tweeted on 10 November, 2018)

Maybe the time has come to switch over to solar energy and wind power on a war footing. Other cities in India should learn from this and take proactive measures.

@Sem303

Why doesn't the government direct private companies in the National Capital Region to ask their employees to work from home for two months? This can help a bit in cleaning up the air. **@ankur09526822**

No policy maker or minister is thinking about this serious issue except blaming each other.

@DrRanisharma21

from burning fields from engulfing the environment and polluting our cities.

K R SRINIVASAN
SECUNDERABAD

Easy solution to crop burning

This refers to "Crop burning: Small farmers left in lurch as machines favour big landholders" published in the website on 17 October, 2018. In my farm near Kota in Rajasthan, I have used a new type of machine this year for managing paddy stubble. It can be termed appropriate technology. First, a team of 14 women manually cuts the rice close to the ground and then lays it in bundles. Then I use the machine which ensures that the bundles are gathered and threshed at one place. As a result of this, the straw ends up in a pile at one place rather than getting strewn all over the field. The straw is either used as cattle fodder or loaded in farm trolleys.

VICTORIA SINGH
VIA EMAIL

Climate catastrophe

I was touched by the headline "Every bit of warming makes a difference" on the cover page of the 16-31 October, 2018 edition. Global efforts to maintain the temperature to 1.5° Celsius are getting weakened by rising aspirations and stingy economic contribution for CO₂ emission control. To contain global warming, it is vital to redefine our understanding of development. Asian development model should be different from the western one. Let us follow a simple lifestyle.

ILANKO XAVIER M
PUNE

Great initiative

This refers to "Can India reduce food wastage with community refrigerators?" published in the website on 12 October, 2018. The idea shared is indeed wonderful. It needs to be replicated in smaller cities and towns across the country.

ANJANEY
VIA EMAIL

Catching rainwater

This refers to the article "Wells rescued"



MEGHA PRAKASH

(1-15 November, 2018). It is good news that Thrissur district in Kerala is recharging 0.45 million wells. Water harvesting is the need of the hour. It should be made mandatory in all our cities. This well researched article should bring about greater awareness.

SHILPA GOEL
VIA EMAIL

Aarey's Chipko movement

This refers to the article "Aarey's Chipko moment" (1-15 November, 2018). I applaud the efforts of the local residents, who are trying to protect the last patch of forest in Goregaon from the proposed metro rail project. However, I have certain disagreements with the title used to convey environmental action in

NEHA PANDE
KANPUR

Polycropping in Anantapur

This refers to the article, "Anantapur farmers take up polycropping to drought-proof agriculture" published in the website on 26 February, 2018. The report is highly informative. I like it and would like to see such stories carried regularly in online portals on agriculture.

AMAR
VIA EMAIL

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Sidestepped

Extreme steps are not lauded in case of environmental emergencies



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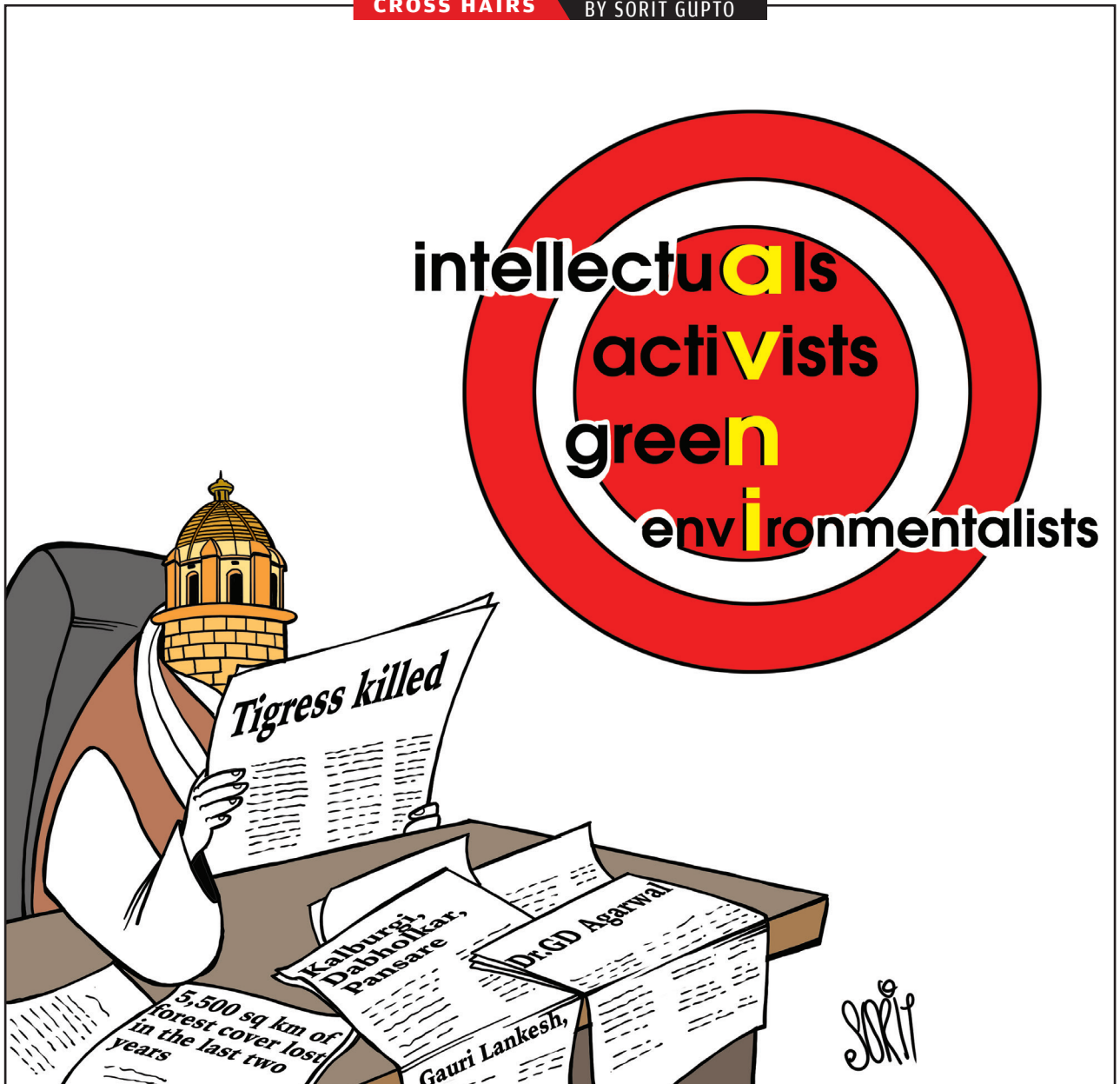
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CROSS HAIRS

BY SORIT GUPTO



For more dose of wit, check out www.downtoearth.org.in/cartoon

India again under attack at WTO

AFTER ALLEGING that India provides huge subsidies to its wheat and rice farmers, the US has again moved the World Trade Organization (WTO) complaining that the market price support for cotton in the country is "vastly in excess of what it has reported to WTO". The US has also demanded a robust discussion on

how India implements its policies at the upcoming WTO Committee on Agriculture meeting. Officials in New Delhi say they will strongly dispute the complaints as they are based on flawed calculations. They do not take the dollar-rupee difference into consideration and assume the entire production is eligible for subsidies. ■

POINT

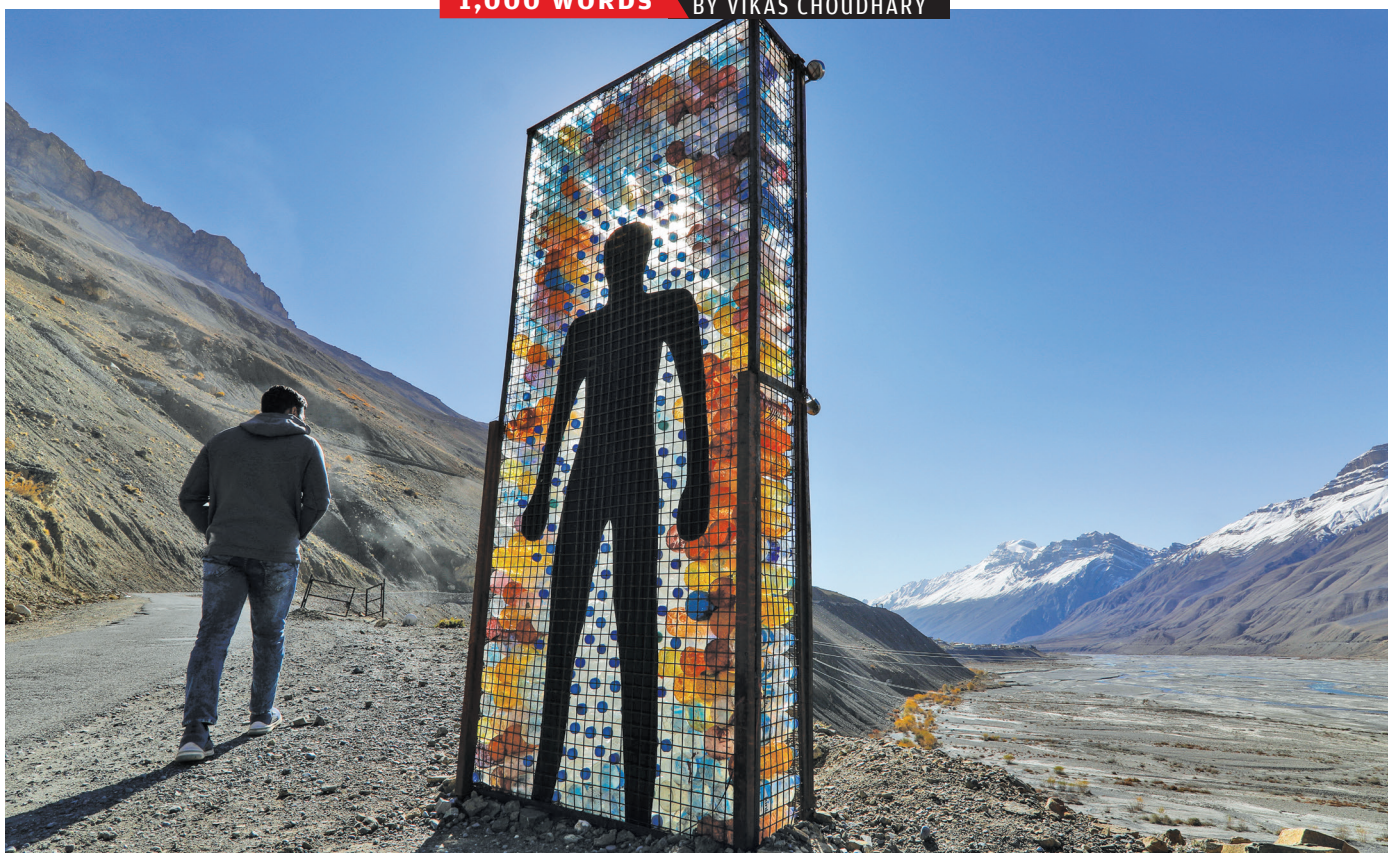
113%

is the increase in cancer deaths in India between 1990 and 2016, when 813,000 people died of the disease. Tobacco and alcohol use and dietary risks have been identified as top causes

Source: Indian Council of Medical Research, New Delhi

1,000 WORDS

BY VIKAS CHOUDHARY



SCREAMING FOR ATTENTION: This life-size art installation in Kaza town of Spiti Valley in the western Himalayas is made entirely from discarded plastic bottles that tourists left behind while visiting the eco-sensitive high-altitude mountain desert. Travel blogger Shivya Nath has built several such installations across the valley in collaboration with a social enterprise, Ecosphere, to emphasise on responsible mountain travel. Some 300,000 plastic bottles are dumped in Spiti every year.

For more photos, check out @dtemagazine on Instagram

China flip-flops on rhino, tiger parts

CHINA HAS backtracked on a recent decision to legalise the "controlled" use of rhino and tiger parts for cultural and medicinal use. In 1993 China banned the trade in tiger bone and rhino horn. In October this year, the government eased the ban and said it would permit the use of rhino and tiger parts obtained from farmed animals for scientific, medical and cultural purposes. This had triggered a wave of protests from environmental groups. A couple of weeks later, Ding Xuedong, deputy secretary-general of China's State Council, the country's highest governing authority, issued a statement, saying the implementation of the regulations "has been postponed." Ding did not give a reason for the postponement. Activists say every wild tiger and rhino would be in jeopardy until China cancels the ban reversal permanently. ■

Antibiotics, pesticides at risk

RESISTANCE TO antibiotics and pesticides is rising at alarming rates, shows the first estimates of antibiotic and pesticide "planetary boundaries", published in *Nature Sustainability*. If resistance to antibiotics and pesticides goes beyond these boundaries, societies risk large-scale health and agricultural crises, say the researchers who have assessed the state of six types of resistance—antibiotic resistance in Gram-negative and Gram-positive bacteria; general resistance to insecticides and herbicides; and resistance to transgenic Bt-crops and glyphosate resistance

in herbicide resistant cropping systems. Gram-negative bacteria, which includes well-known pathogens such as *Salmonella*, *Klebsiella pneumoniae* and *E coli*, are already beyond the "planetary boundary," as some strains of several species are already resistant to all or most antibiotics tested. Pesticide resistance is also an urgent concern, particularly resistance to glyphosate and insecticidal Bt-toxins in transgenic crops, which are now widespread. Some herbicides and Bt toxins have already reached regional boundaries with some farming areas reporting large-scale resistance to them. ■

COVERAGE

Caught in crossfire

The Maharashtra forest department could have captured Avni. Then why was she killed?

THE KILLING: On November 2, a sharp shooter, appointed by the Maharashtra forest department, gunned down Avni in the vicinity of Tippeshwar sanctuary. She was six years old with two cubs and was officially called T1. Armed with hand gliders, drones, sniffer dogs and elephants, forest officials were on a three-month search of Avni after courts ordered the department to capture or kill the tigress. Over the past two years, Avni and a male, T2, were suspected to have killed several humans; Avni was responsible for two recent killings.

CONTROVERSY: Animal lovers question whether Avni could have been saved, or at least captured. The National Tiger Conservation Authority does lay down protocols for declaring a tiger a "man-eater" and initiating its removal. While the jury is out on whether these were



Avni, the tigress of Yavatmal

followed in Avni's case, analysts observe a breach of the provisions of the Indian Veterinary Council Act 1984 as the order to tranquilise the tigress and her cubs had been entrusted to a person who was not a registered veterinarian. No veterinarian was present on the spot. An independent autopsy report suggests the tranquiliser dart may have been inserted into her thigh after she was shot. Media reports quote state government officials saying the forensics show the tigress was not charging at the

team. In that case, she would have been shot in her face or chest, not on shoulder.

POLITICS: Avni's killing has triggered a battle of words between Union Minister for Women and Child Development Maneka Gandhi and state forest minister Sudhir Mungantiwar, both belonging to the Bharatiya Janata Party. "Tigress Avni could have been saved if Mungantiwar had been a little more patient...Request you to fix responsibility of killing and removing the minister from post," said Gandhi, a known animal rights activist. Mungantiwar said that she needs to put in her papers owing moral responsibility because of malnutrition deaths. Meanwhile, Jayant Patil, state unit president of the Nationalist Congress Party, alleges that the forest department killed Avni to help mining industries of top business houses in that region. ■

Lights out for cryptocurrency

AFTER BANNING the exchanges where cryptocurrencies like Bitcoin are traded, the Chinese government is cracking down on plants where such currencies are mined. The Yingjiang Administration



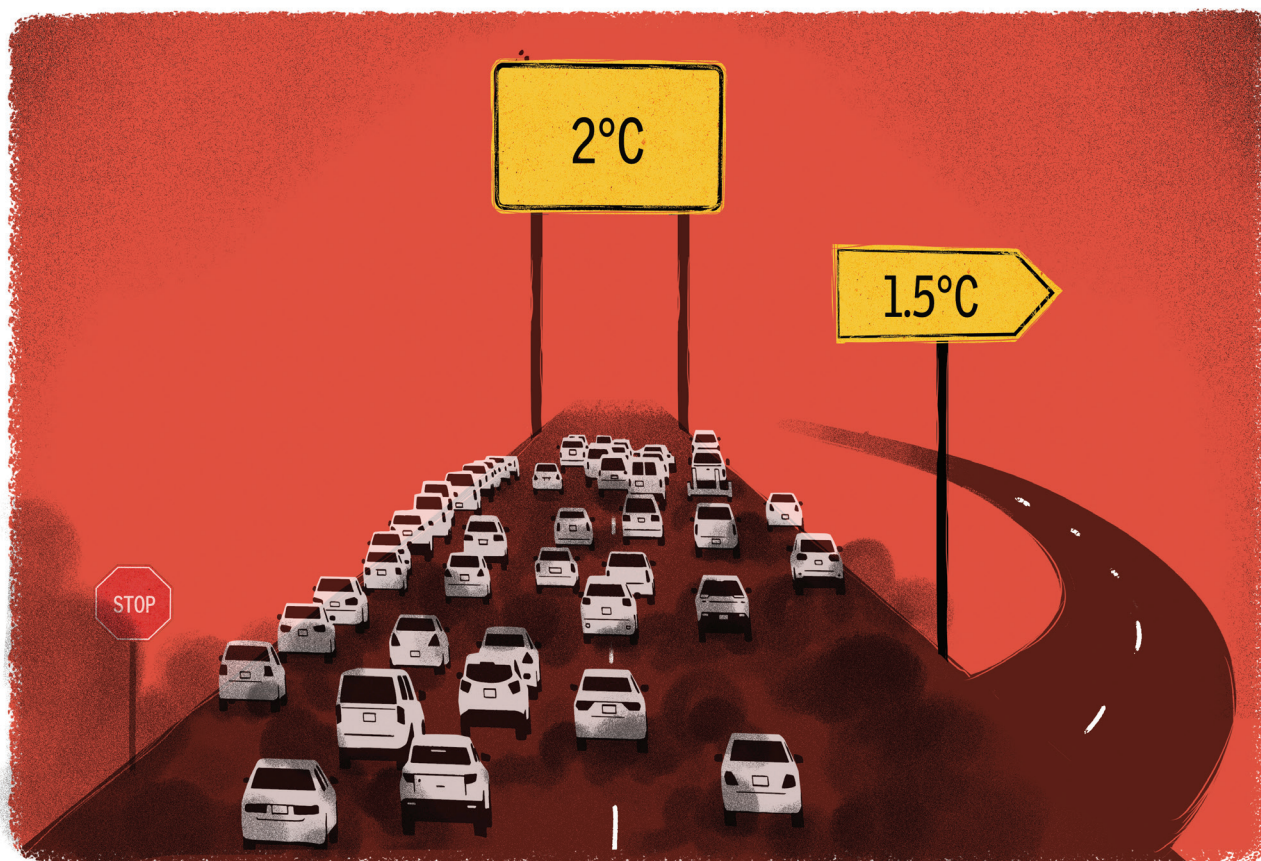
Bureau for Industry and Commerce, which enforces enterprises and consumer protection laws, has issued a notification to Bitcoin mining facilities in Yunnan province, asking them to register their firms with the Power Supply Bureau. In case of non-compliance, it warned them with power cuts, threatening the very premise on which their mining operations are based. The notification surfaced after big facilities were found to be using the state-sponsored cheap electricity to mine cryptocurrencies. China accounts for the world's highest computing power devoted to the crypto mining operations. It has made the country headquarters to some of the biggest crypto mining firms, including crypto giant Bitmain. ■

VERBATIM



"There is no reason for these massive...costly forest fires in California except that forest management is so poor... Remedy now, or no more Fed payments!"

—US President Donald Trump. His comment drew outrage from local leaders and firefighters who say Trump oversimplified the causes



TARIQUE AZIZ / CSE

Katowice offers last chance

To limit warming to 1.5°C, countries must revise national plans at the upcoming climate conference

PADMINI GOPAL AND TARUN GOPALAKRISHNAN | NEW DELHI

THE MUCH awaited report, Global Warming of 1.5°C, was expected to jolt governments into action and announce some bold commitments to cut greenhouse gas emissions. The report by the Intergovernmental Panel on Climate Change (IPCC) warns about the catastrophic impacts of climate change if global warming exceeds 2°C above

pre-industrial levels, and makes the strongest case to limit it below 1.5°C (see 'Every bit of warming makes a difference', *Down To Earth*, 16-31 October, 2018). But nothing remarkable seems to have happened since.

Countries are proceeding, at both national and international levels, as if nothing has changed since 2015, when the historic Paris Agreement was

signed. The Agreement seeks to hold the rise in the global temperature to well below 2°C and pursue efforts to limit the rise to 1.5°C. To help achieve the target, countries in the lead up to the Paris Agreement had declared their Nationally Determined Contributions (NDCs), or domestic action plans to address climate change.

But Climate Action Tracker, which is a collaboration of three research organisations, says the aggregate effect of NDCs, even if they are fully acted on, takes us well past 2°C. The IPCC report says current NDCs would result in 3.5°C rise by the end of the century.

To stay on the right side of the threshold—IPCC estimates the world has only 12 years before it runs over the 1.5°C carbon budget—we need a 45 per cent reduction of global anthropogenic CO₂ emissions by 2030, and a further reduction to net zero emissions



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in 2050 (both targets take 2010 emission levels as a baseline). This requires rapid and far-reaching transformations in our economies and commitments to start the transformation now.

The 24th Conference of Parties (COP24) in Katowice, Poland, which will be held from December 3 to 14, offers the perfect platform to initiate this transformation. COP24 is likely to be focused on the Paris Rulebook, which would set out the guidelines and rules needed to implement the Paris Agreement. It is expected to prompt countries to scale up climate action. But can it be achieved without targets?

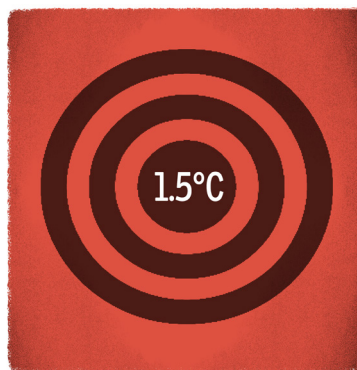
Time to raise ambition

Currently, countries are required to update their NDCs in 2020. Analysts say revision of NDCs needs to start at Katowice if the world is serious about staying below the 1.5°C target.

Civil society pressure to make the 1.5°C target a priority is increasing, particularly in developed countries. A

opportunities which were not available a few years ago, for governments to step up their own pledges". A report by research groups, Data-Driven Yale, NewClimate Institute and PBL Netherlands Environmental Assessment Agency, says if current initiatives by individual groups continue to scale up, they could curb emissions by a third before 2030. These, says Hale, combined with stepped up NDCs can put the world on the 1.5°C pathway.

This pressure needs to translate into increased ambition in NDCs in



The IPCC report on 1.5°C says even if countries fully meet their current Nationally Determined Contributions, this would result in 3.5°C warming by the end of the century

report by the European Capacity Building Initiative, an initiative in support of international climate negotiations, confirms the wide acceptance that climate efforts before 2020 are seen as vital to reducing global emissions. A newly formed civil society group, The Extinction Rebellion, had a thousand of its members protest in front of the Parliament House in London in October, issuing a declaration of civil disobedience as a means of drawing attention to the unfolding environmental crisis.

Thomas Hale, professor of climate policy at the University of Oxford, UK, says, "The groundswell of climate action from sub-national governments, the private sector and civil society has reached a massive scale, creating big

Katowice. There is an avenue available to push for this. Talanoa Dialogue, initiated at COP23 in 2017, is a year-long consultative process to take stock of the collective efforts to reduce emissions. It will culminate in Katowice with countries pledging to raise the ambition of their respective NDCs.

However, past experience shows countries tend to postpone negotiations. Increasing ambition has become an "after you, please" topic in international negotiations. This approach is often presented as the desire for equity for the impoverished. While this argument is often made stridently at home and abroad, the fact is these are the people who bear the maximum brunt of climate impacts. To refuse to raise climate ambition citing the need for

development is to shoot oneself in the foot. The two aims are not contradictory. As Benjamin Schachter, Focal Point, Climate Change and Environment, at the Office of the UN High Commissioner for Human Rights (OHCHR) says, there is a link between climate action and the success of Sustainable Development Goals, which is why the international community must take the most ambitious climate action to protect human rights, health and welfare. "Failure to take urgent action now clearly breaches human rights obligations," Schachter adds.

Action should be taken in both developed and developing countries. Rahul Tongia and Sahil Ali, researchers with think-tank Brookings India say, India requires better frameworks aimed at deep decarbonisation in energy and other sectors. Though decarbonising the power sector is easier than other sectors, this has limits; variable renewable energy needs large-scale storage solutions. Tongia and Ali say India should thus employ integrated strategies around urban development and land-use, preserve and enhance carbon sinks, and implement sustainable transportation systems.

Countries will also face challenges in raising ambition from groups which do not have an incentive to transition. Hale says there is a "need to find strategies to neutralise opposition from those actors most dependent on fossil fuels". This requires both pressure to show them the status quo cannot last, and engagement, to help them find a new low-carbon future, he adds.

Equally important is a strong signal from the top. Last three years have seen the spirit of Paris Agreement chipped away by defections, underwhelming commitments from key players and dubious commitment records. If Katowice is to revive the spirit, it must start with seriously pursuing efforts to limit warming to 1.5°C. ■

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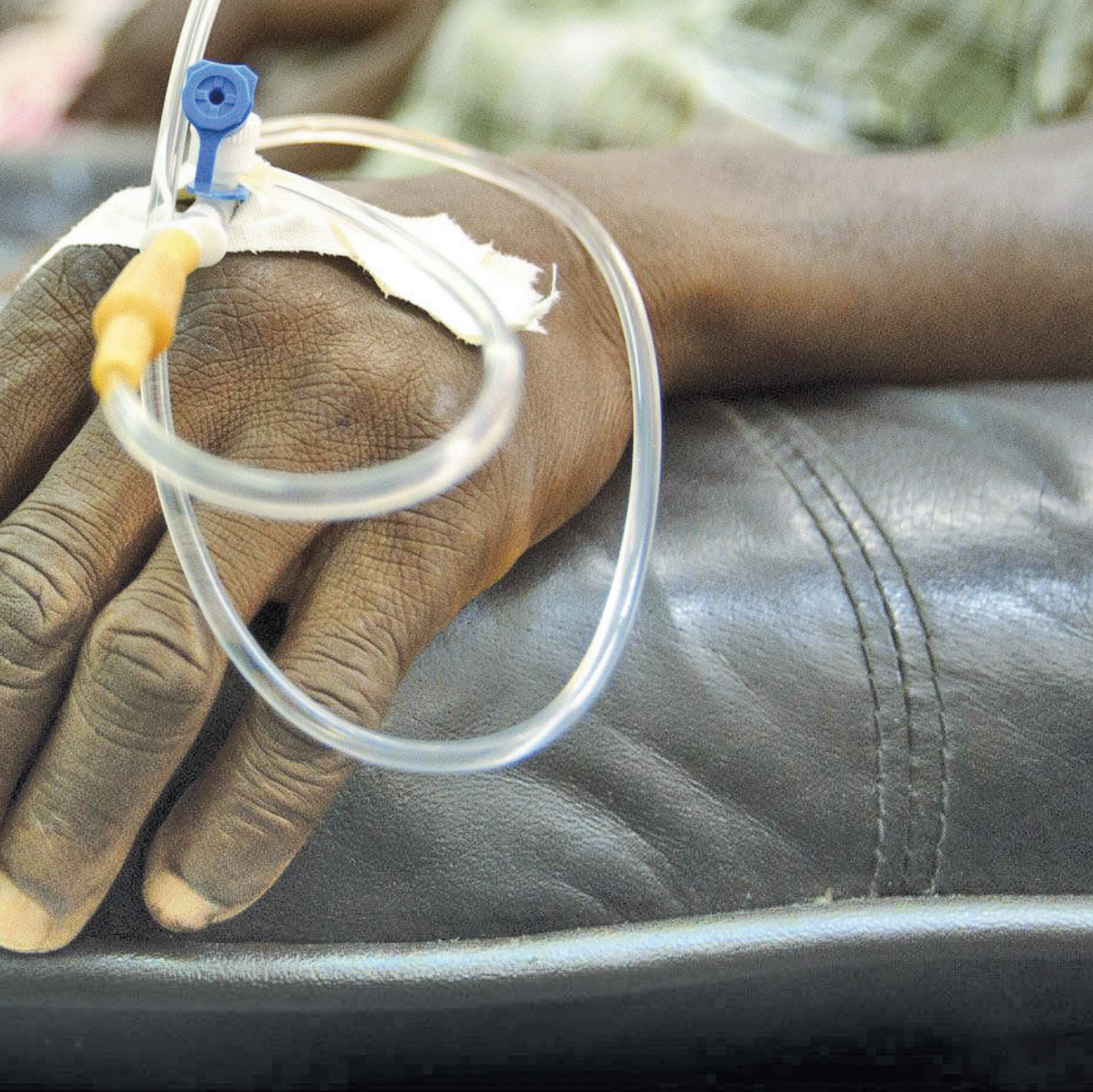
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HEALTH IN AFRICA

RX

Without political will and robust investments in healthcare,
Africa cannot break out of the underdevelopment trap



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Liberia: Adolphus Mawolo

Nigeria: Bennett Oghifo

Rwanda: Christophe Hitayezu

New Delhi: Kundan Pandey, Kiran Pandey



C**ALL IT** the curse of geography. A person born in the African continent will live 17 years less than one born in America or Europe. Enduring life in a place that has the world's highest infant and child mortality rates does not ensure that the spell of the curse will be broken. A 15-year-old adult in Africa has high probability of dying before the age of 60 years. The continent has a precarious demography—95 per cent of its population is less than 60 years old, while the average life expectancy at birth is 60.

The continent has been living with recurring droughts and famines, and unending conflicts that have disrupted settled lives and crucial basic infrastructures. Their impacts on the overall health are now unfolding with scary manifestations. According to the Global Hunger Index 2018, Africa has the world's 10 countries with the highest under-five mortality rate. Seven of them are fragile states, chronically ravaged by conflicts that do not allow governments to function.

Chronic hunger makes a person highly vulnerable to diseases. An African is more prone to it than a person living in any other continent. An increase in the burden of disease has resulted in the demand for government medical support. But women and children are deprived of it, even in times of medical emergencies. African countries are not known for using funds on this crucial human development aspect. Significant amounts are diverted to fighting weather extremities and in relief efforts. Only nine countries spend US \$500 per capita per year on health while half of the continent's countries spend less than \$140. This pushes the continent into a downward spiral.

Africa has missed all the Millennium Development Goals. Now, it has the opportunity to meet the Sustainable Development Goals (SDGs) that are high on health-related targets. But Africa's progress has been abysmal so far. The health indicators in African nations are so poor that

IF YOU ARE AN AFRICAN



LIFE EXPECTANCY

Africa

60
years

World

72
years



UNDER-5 MORTALITY/1,000 LIVE BIRTHS

Africa

76.5

World

39.0



MATERNAL MORTALITY/100,000 LIVE BIRTHS

Africa

546

World

216

meeting the world average seems unlikely.

As if the burden of diseases that Africa is already known for were not enough, the continent is under the grip of the rich world's diseases as well—non-communicable diseases. It immensely adds to the continent's crumbling health infrastructure and stretches the already trickling health budgets. Soon, non communicable diseases will emerge as the bigger killer in the continent than the most common diseases causing deaths—HIV/AIDS. Climate change and environmental destruction could lead to the emergence of a variety of diseases that the world is unprepared to deal with. A strong health



RISK OF DEATHS FROM NCDs

Africa	World
20.9%	18.8%



GRAPHIC: RAJ KUMAR SINGH / CSE

system could well be the saviour in the times to come. But Africa is still struggling with the basics.

A badly managed continent means a degraded and polluted environment. Now, this too is taking several lives. In the African region recognised by WHO, all the children under five years of age are exposed to fine particulate matter (PM_{2.5}), which is higher than the WHO air quality guidelines. Further, acute respiratory infection is the leading cause of death of children under five years of age in the African region. The economic cost of premature deaths from air pollution is estimated at \$450 billion. The economic loss due to the lack of access to safe drinking

water and sanitation is estimated to be 5 per cent of the region's gross domestic product. According to WHO, every dollar invested in sanitation could yield over six-fold return. This was recognised in 2008 when 52 countries in the continent signed the Libreville Declaration on Health and the Environment for Africa. The Strategic Action Plan to Scale Up Health and Environment Interventions in Africa 2019-2029 was adopted at the closing of the Third Inter-ministerial Conference on Health and Environment held in the Gabon in November 2018. It showed that financial resources for these are limited.

Lack of political will to improve infrastructure in the health sector has resulted in 80 per cent of the people taking help of traditional health workers for treatment. The African Union's Abuja Declaration states that every country must invest at least 15 per cent of its annual budget into healthcare. In 2014, only four countries managed to achieve this. Health has been a matter of concern for Africa for many years. The Declaration of Alma-Ata, which hoped to achieve the goal of health for all, was signed way back in 1978 in Kazakhstan. There was barely any progress on this front, so the world met again this year in October at the same venue to renew the pledges. The Astana Declaration was signed. If Africa meets this, it would also meet the Universal Health Coverage target.

The good news is that the continent has woken up to the importance of investing in improving the environment. It can take lessons from Rwanda which is moving towards meeting the SDG target. The country has strengthened its health network by making crucial investments and improving technology. This will help improve its health indicators. Achieving SDG targets is crucial to meet Africa's Agenda 2063, which is a strategic framework for the socio-economic transformation of the continent. ■



STILL NEGLECTED

More than 40 per cent of those affected by Neglected Tropical Diseases in the world live in Africa

AROUND 20 people have gathered at a grassy patch in front of a tin shed in Gitare village in Nakuru County, Kenya, to get treatment for cutaneous leishmaniasis (CL), a disease caused by a protozoa called *Leishmania* which passes from the rodent reservoir hyrax (*Procavia capensis*) to humans through sandflies. David Kamare, coordinator for disease surveillance for neglected tropical diseases (NTDs) at Gilgil and part of the team of clinicians, begins the treatment on 14-year-old John Nderitu. “If I start with the little children, there would be so much crying that it would be impossible for me to treat all the patients,” he says.

The disease manifests as scars on the skin. The reason for the children crying is clear once the treatment process begins. It entails injecting sodium stibogluconate (SSG)—for a scar with a diameter of 3 cm, the syringe needle is injected around 10 times under the scar. The process is painful and blood flows out profusely. The young boy braves it only with his grit as anesthesia is not available. Nderitu is lucky that his illness was diagnosed early. He got the lesions in August 2017, but his treatment began in March 2018 after his school friends identified the disease. Others end up without treatment for years.

CL is a zoonotic disease. Young boys are more likely to catch the infection as they play

near the rocky caves and go hunting in the forests. The rodent, hyrax, is found in the rocky region and the boys kill it for food. As they carry the animal home, sandflies that live on the animal, transmit the pathogen from the rodent to the children. The area has witnessed massive deforestation, which too could have increased the contact between hyrax and people. “The animals form a part of our diet, but the government should spray insecticides in the area to kill the sandflies. But this rarely happens,” says Leah Nyambura, chief of Gitare.

LACK OF MEDICINES

The team has identified 152 cases in Gitare alone since June 2016. The health centre does not have enough medicines to treat the patients. They collect money among themselves to buy the syringes. “We have found that cryotherapy along with SSG is useful to treat CL, but we do not have any provision to administer this to patients,” says Kamare. They would need sterile cold packs for this but these are not available. The disease



doesn't get government attention and the country does not even have guidelines or a treatment protocol.

However, the country has guidelines for a related disease, visceral leishmaniasis (VL), which is also spread by sandflies. Here, the sandflies takeover the old termite hills and when children play around them, they contract the disease. This disease is common in Baringo County. "It is difficult to control the disease in places like Baringo as people migrate extensively and sleep in the open," says Samuel Chirchir, who used to work with the Kenya Medical Research Institute (KEMRI) in the 1980s.

"Awareness is important. That's why we have involved Kaperur, a community-based organisation, in the programme. The members refer patients to the health facility," says Elijah Plilan, public health officer at Chemolingot in Baringo. "We tell nomadic population to carry their mosquito nets with them, check the area for sandflies, destroy old termite hills and build safe houses," he says.

This does not always help. Josephat

Kiptui, who recently purchased a house in Baringo, knew about the dangers of termite hills and was actively destroying them, but this did not help protect his seven-year-old daughter, Brigid, from contracting the disease in May. Diagnosis was difficult. First she was treated for malaria, then tested for HIV, and it was only when the clinicians suggested that she be treated for pneumonia that Kiptui put his foot down and brought her to the only treatment centre in Baringo, the Kimalel Health Centre (KHC) in August.

Around 90 per cent of patients who are treated here are from East Pokot. More would have come, but the Pokot tribe does not get along with the Tugen tribe that lives around KHC and patients are averse to come there unless there is an emergency. "We are trying to improve the clinical infrastructure at East Pokot," says Richard Wamai, professor of Global Public Health at Northeastern University in Boston Massachusetts, USA. He and his team have got funds from Probitas Foundation in Spain and Izumi Foundation in Japan to renovate the

If the 2020 goal of eliminating NTDs is met, sub-Saharan Africa could save almost US \$52 billion in productivity over the next decade

Chemolingot sub-county hospital and equip the laboratory.” We want the centre to have facilities for spleen aspiration which is the gold standard for identifying VL patients”, he says. This would ensure that there is timely diagnosis and treatment of VL in the areas and help patients by reducing the cost of hospitalisation. “Most residents of East Pokot have the odds stacked against them. The sub-county is sparsely populated and highly marginalised. They are housed far away from administrative centres and government health personnel hardly visit this area,” says Hellen Nyakundi, a public health specialist managing the Kala Azar project in East Pokot along with Wamai.

“There is little focus on either CL or VL as the burden is not as high as diseases like malaria and HIV,” says Damaris Matoke, senior research officer at KEMRI. “There are no special provisions to control the sandflies and people get protected indirectly through the malaria programme under which treated bed nets and residual spraying is provided,” says Matoke.

DISEASE BASKET

Along with CL and VL, a total of 20 diseases have been classified as NTDs, and estimates show that 40 per cent of the global disease burden of these has been reported from Africa. The World Health Organization’s (WHO) regional director for Africa, Matshidiso Moeti, says if Sub-Saharan Africa eliminates NTDs by 2020, it could save almost US \$52 billion in productivity over the next decade (see ‘Shifting the focus’, p25).

In Uganda, another neglected disease, schistosomiasis or bilharzia, is wreaking havoc. The disease is caused by a parasitic worm which spends a part of its lifecycle in snails present in the lakes and waterbodies. People exposed to this water or the fish that grows in it contract the disease and, in turn, shed the parasitic eggs in their faeces and urine. This then makes its way back into the lake, and the cycle starts again. “Bilharzia is human-made disease resulting from humans failing to observe hygiene in their surroundings,” says Moses Adriko, programme officer in charge of controlling Bilharzia at Uganda’s Ministry



of Health. The disease is endemic in 82 of Uganda’s 127 districts and affects 17 million people living around waterbodies and rice fields. A survey carried out under the Performance Monitoring and Accountability 2020 (PMA) by the Ministry of Health and Makerere School of Public Health and concluded in June 2018, that schistosomiasis affects three in 10 people in Uganda, with children between the age of 2 and 4 at the highest risk.

The disease can have a negative economic impact on households, particularly the poor, who do not have adequate resources to seek treatment. “Schistosomiasis is an urgent public health problem in Uganda,” explains Fredrick Makumbi, PMA 2020’s Uganda’s principal investigator. “We must work together across the health, water and sanitation sectors to develop comprehensive solutions to combat the disease throughout the country.” So far, the ministry of health provides medication to 44 districts where it is administered every year in schools and surrounding communities. The remaining districts get medication after every two years



Sandflies take over the old termite hills and when children play around them, they contract the disease

because the problem is not acute there. The drug, Praziquantel, is provided by WHO. Development organisations such as Beijing-based Sinoc Investment company, Ministry of Health and UNICEF, Save the Children Fund are also trying to sensitise the communities to keep the environment around the lakes clean. Simon Kaddu, district health officer, says this intervention can help to eradicate other diseases like cholera too. Adriko explains that there is a possibility of eliminating the disease by 2030 because of the steps undertaken by the ministry to generate awareness.

When it comes to NTDs good news such as the elimination of lymphatic filariasis in Togo, trachoma in Ghana and Guinea worm disease in Kenya are rare. The London Declaration—signed by countries endemic to NTDs and other stakeholders in January 2012—pledged to control or eliminate 10 NTDs by 2020 and then the Expanded Special Project for Elimination of Neglected Tropical Diseases (ESPEN) too planned to eliminate NTDs in Africa by 2020. These neglected diseases have been given traction in the

Sustainable Development Goal 3 (SDG), which has set the target for elimination by 2030, which would mean a 90 per cent reduction in the number of people contracting NTDs by 2030. NTDs have been termed as the litmus test for attaining Universal Health Coverage (UHC).

However, the link is not direct. The index to monitor progress in UHC has been developed, but this does not include progress in control of NTDs. Recently, researchers from WHO offices in Geneva and Congo developed an index which can be compared with the UHC index to see if the countries which are likely to meet the UHC target are doing well in the NTD sector too. The results show that progress in UHC does not mean that the country is doing enough to control NTDs. For example, in 2015, South Africa did not provide preventive chemotherapy for schistosomiasis and soil-transmitted helminthiasis, but the UHC service coverage index suggested that South Africa is the best performing country in the African Region.

There are countries like Ghana, Malawi, Sierra Leone and Senegal where the NTD index exceeds the UHC index and researchers posit that it is possible that medicines and treatment are being provided independently by other health agencies. It would be good if these systems are looked at to deliver other essential services to the poor, says a study published in *The Lancet Global Health* on September 1, 2018. “Achieving the SDGs simply can’t be done without eliminating NTDs,” adds Moeti.

However, there is hope both for Kenya and Uganda in the future. “There is high level commitment to eliminate these diseases and we have a well-coordinated plan to ensure that all poor people get the treatment,” says Sultani Matendecheo, manager of the National Neglected Tropical Diseases Program in Kenya. “We should not call them neglected tropical diseases. We do not want to neglect them anymore,” adds Matendecheo. ■

Shifting the focus

Apart from geographical and economic challenges, the presence of competing health interventions like malaria are negating NTD havoc



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IN 2015, world leaders adopted 17 Sustainable Development Goals (SDGs) targeted at improving the world and leaving no one behind. SDG 3 aims to “ensure healthy lives and promote well-being for all at all ages. SDG 3 also has 11 targets, the third of which focuses on ending the epidemics of AIDS, tuberculosis, malaria, Neglected Tropical Diseases (NTDs), hepatitis, water-borne diseases and other communicable diseases by 2030. The health landscape in Africa, however, poses many challenges to the attainment of these goals. While there is progress in combating some diseases, other diseases have been neglected and require significant inputs.

NTDs are a group of bacterial, parasitic and viral diseases that result in disabling and disfiguring conditions. They are strongly associated with poverty in tropical and subtropical environments, especially among the rural poor and disadvantaged urban populations. NTDs affect child development, pregnancy, and productivity. About 1.5 billion people are infected with NTDs worldwide, with Africa accounting for nearly 40 per cent. With an estimated 51 per cent of the population in sub-Saharan Africa (SSA) living on less than US \$1.25 per day, SSA represents the world’s largest concentration of poverty and NTDs. Estimates also suggest that more than 500 million people in SSA are affected by four of the most common NTDs, including lymphatic filariasis (LF), onchocerciasis, soil-transmitted helminth (STH) infections and schistosomiasis.

Countries with large populations such as the Democratic Republic of Congo, Ethiopia and Nigeria have the highest burden of some NTDs in Africa. The woes of the continent are further worsened by conducive environmental factors such as temperature and humidity that lead to the development of disease pathogens and vectors that transmit them, coupled with poverty, unsafe water, poor sanitation and inadequate housing which perpetuate the transmission cycle.

Together with the geographical and economic challenges, several other factors contribute to the neglect of NTDs in Africa. First is the presence of competing public health interventions. Fast killing diseases such as malaria, HIV/AIDS, tuberculosis, and more recently Ebola and other viral hemorrhagic fevers, receive more attention and funding compared to the slow acting, long-term and chronic NTDs. In 2016, for example, the US provided \$100 million towards NTDs compared to \$1.5 billion for HIV, malaria and tuberculosis. The contribution of African countries towards health interventions is also minimal.

Following the Abuja Declaration of 2001, African countries pledged to increase their health budget by least 15 per cent of the country’s annual budget, and requested Western donor countries to increase their support. At present, only five countries—Botswana, Madagascar, Rwanda, Togo and Zambia—are known to have met the target. Promoting health through increasing health expenditure is vital to reduce poverty and associated diseases. With disease control programmes in African countries relying heavily on donor support, the failure of governments to commit financial resources towards such activities have limited the progress that could have been achieved.

Moreover, political instability and conflicts in some African countries contribute to

delays in achieving disease control, even when financial resources are available. Finally, there is the challenge of community fatigue, resulting from years of disease control interventions against diseases such as LF and onchocerciasis. The absence of apparent physical symptoms—elephantiasis and hydrocele in the case of LF and blindness in the case of onchocerciasis, even though the infection is present—gives community members the impression that the disease is no longer present. As such, they refuse treatment for a disease they deem not to have.

GLOBAL COMMITMENTS

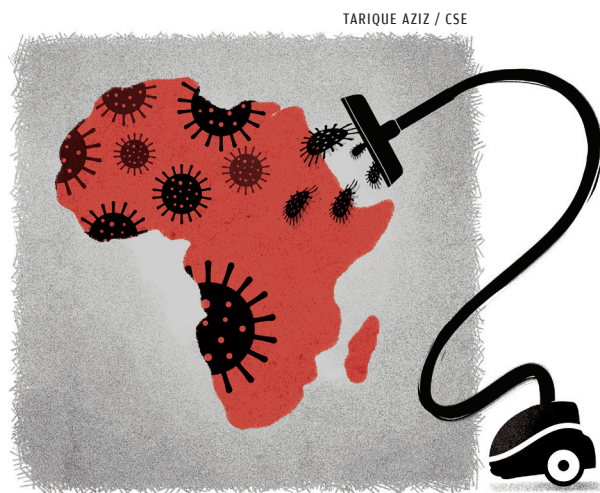
Despite these challenges, all is not lost. There are global and regional commitments towards controlling NTDs. The London Declaration on NTDs in 2012 saw an increase in pledges from pharmaceutical companies to provide free medicines for as long as needed, and commitments from non-governmental development organisations to assist in the implementation of programmes in endemic countries. In 2013, the World Health Assembly (WHA), through Resolution WHA 66.12, defined strategies for NTDs with clear targets and milestones, and endorsed the WHO NTD Roadmap goals linking NTDs to universal health coverage. In 2015, NTDs were added to the health targets of the SDGs with a goal to reduce the population getting infected by NTDs by 90 per cent by 2030.

The launch of the Expanded Special Programme for Elimination of Neglected Tropical Diseases (ESPEN) in 2016 has as a principal goal of eliminating five Preventive Chemotherapy (PC)-NTDs in Africa by leveraging funds and drugs to support coverage and access to treatments, strengthen health systems and provide universal health coverage of interventions against PC-NTDs. At the 30th African Union Summit in January 2018, heads of states added NTDs alongside malaria and maternal and child health as top health priorities for the continent. These different commitments over the years have resulted in some significant achievements towards the elimination of NTDs in Africa.

The tools available for NTD elimination are constantly being improved with the changing epidemiology of diseases, as countries move from pre-control to elimination status. The challenges encountered at each stage inform the need for the development of new strategies, drugs and rapid diagnostic tests (RDTs) to meet the elimination targets.

There are now paediatric praziquantel formulations for schistosomiasis control currently under evaluation, and the development of RDTs for the diagnosis of Human African Trypanosomiasis being assessed in east Africa. Some countries have also made progress towards the elimination of NTDs. Egypt and Togo have been certified free of LF, and Ghana and Morocco have been certified free of trachoma. Many other countries have made significant reduction in the burden of diseases such as onchocerciasis, LF, trachoma and schistosomiasis. Community health education programmes are being intensified to promote the acceptance of interventions. Integration of programme activities is being done to accelerate elimination, maximise the use of resources and improve cost-effectiveness.

The challenges to NTD elimination in Africa are multifaceted. However, the political commitment of governments and the financial support of international and non-governmental organisations is enabling the continent to achieve some progress, albeit not optimal, to control and eliminate NTDs. More inputs will be required in the next 12 years to attain the SDG 3 targets on NTD elimination. What is certain is that by 2030, the burden of most NTDs in Africa will be significantly reduced. ■



MOTHERS' STRUGGLE

A crumbling health system deters women from going to hospitals, makes Sierra Leone home to the world's highest maternal death rate

PREGNANCY IS not the harbinger of joy in Sierra Leone. Instead, it brings distress, sufferings and death. When Hawa Kamara of Thompson Bay went into labour, her husband, Joseph Dumbuya, had to rush her to a hospital because of the complications that she had developed. Hawa had reposed faith in a traditional birth attendant for supervision during pregnancy. The attendant did not have the expertise to handle the complications. At the hospital, Joseph was heart-broken when doctors told him that he had lost both his wife and child. "The baby was in the wrong position and Kamara had lost a lot of blood," the 34-year-old, who would have been a proud father the second time, was informed.

Sierra Leone, which has the highest maternal mortality ratio (MMR) in the world, recognises bleeding as the leading cause of maternal deaths. Pregnancy-induced hypertension and sepsis follow closely, states the maiden report of the Maternal Death and Surveillance Response (MDSR). The health ministry had introduced MDSR in 2016, when the sector was at its lowest ebb. The civil war in Sierra Leone between 1991 and 2002 had left most of its infrastructure in ruins. Millions of US dollars poured in as foreign aid, but the outbreak of Ebola brought the health sector to its knees one more time.

When MDSR was introduced, the government made it mandatory to report the death of every woman of child-bearing age. The

MDSR report noted that regular supervision of trained healthcare providers was crucial to prevent complications.

"Health centres have several shortfalls, but it is important that a patient is among skilled people who can respond in times of emergency and prevent deaths," said Fatu Fornah, a reproductive health specialist. Fornah heads Reproductive and Maternal Health at the country office of the World Health Organization (WHO), which helped the health ministry institute MDSR.

Delay in accessing health facilities is a common factor that leads to maternal deaths. The 2016 MDSR report states that 6 per cent of the maternal deaths that year occurred in transit to a health facility.

DELIVERING WITHOUT SUPERVISION

It's not without reason that Joseph and Hawa decided against going to a hospital for regular supervision and delivery. Reaching a health centre is a harrowing task in Sierra Leone. In some communities, people have to cover 80-100 km carrying pregnant women in hammocks, on wheelbarrows or commercial motor bikes, to reach the nearest health centre.

Many communities in the northern district of Kambia are located near rivers where the mode of transport is canoe. These are expensive and hard to come by in emergencies and at night. "So, many families choose traditional healers for regular supervision and delivery," said Alusine Komrabai Kamara, who heads Health for All Coalition, a health advocacy network, in Kambia.



KEMO CHAM

Frightful stories from health centres further prevent people from going there for treatment. Across the country, people are asked to bring along water when they come with pregnant woman for delivery. Health centres in Sierra Leone do not have piped water supply.

Blood banks exist, but storage is not possible in the absence of electricity. Banks that have the infrastructure in place provide blood only with the promise that it would be replaced by the patient's relative or friend. Corrupt officials make these available at exorbitant price, and most patients are unable to afford it. People die in observation rooms even when there is enough blood in the bank. During her first delivery, Hawa needed blood transfusion, but did not have the Le 40,000 (₹345) she was asked for a pint of blood.

Health centres are extremely short of cash. Thompson Bay, where Joseph lives, is home to some of the city's poorest residents. It is one of the over a dozen slum communi-

ties dotted around Freetown. The clinic here, which is made of corrugated iron sheets, comprises an open area that serves as both the reception and the outpatient ward. A rubber bowl hanging from the roof serves as a makeshift baby weighing scale. Adjacent to the reception desk is an enclosure that serves as the labour room as well as the storage facility. "Deliveries happen during daytime. At night, we go to the house of one of our co-workers who has electricity at home," said Rebecca Swarray, nurse in-charge at the clinic. Apart from the drugs they receive from the health ministry, everything is procured from personal contributions. A team of five state-registered nurses serves in shifts. The team is aided by volunteers from within the community, she said. Clinics like this constitute the majority of the healthcare facilities across Sierra Leone.

Small wonder, only 54 per cent of all the deliveries in the country were done in institutions, states the 2013 Demographic and Health Survey.

Make-shift health centres are common in Africa due to lack of sufficient funds

INFANTS IN DANGER

Undernourished infants of Somalia die of diseases that can be easily treated

SOMALIA, IN East Africa, is among the least developed nations listed in the 2012 Human Development Index. Although it came out of anarchy and civil war in 1990, its state of health is still poor. The country recently adopted a federal system, but the federal institutions or states did not formulate a good health policy. Worse, Somalia has been facing a continuing drought since 2011, putting the health of vulnerable groups like women and children at risk.

Somalia has a high fertility rate—each woman

has 6.6 children on an average. This is accompanied with high maternal and child mortality. Neonatal deaths, which happen in the first 28 days of life, are the third highest in the world.

Most deaths are caused by easily treatable illnesses like pneumonia, diarrhoea and measles. With the low rate of immunisation, the incidence of diarrhoea in children under five has remained at 24 per cent for decades. In 2014, the estimated immunisation coverage for measles and Diphtheria Pertussis Tetanus (DPT3) was well under 50 per cent. Pneumonia, which can easily be treated with antibiotics, kills more than two children every hour in Somalia. A 2017 report by non-profit Save the Children says 24 per cent of all under-five mortality is due to pneumonia.

Undernutrition is, however, the underlying cause of most deaths. More than 300,000 children under the age of five are acutely malnourished. According to the Somali Media for Environment, Science, Health and Agriculture (SOMESHA) and Monitoring and Evaluation Department for Social Affairs (MEDSA), children suffering from acute malnutrition are nine times more likely to die of disease than a well-nourished child.

Somalia's drought has led to severe malnutrition in children. More than 30 per cent of the under-five children are stunted. Over the last 15 years, the number of stunted children has increased from 50.4 million to 58.5 million. Up to half of all deaths in the under-fives are associated with under-nutrition. These have to



be treated with life-saving therapeutic food at nutrition centres run across Somalia by the United Nations agencies, NGOs and INGOs.

Three quarters of the children below two years are anaemic as their mothers know little about nutrition.

NO INFRASTRUCTURE

Sierra Leone is one of the three countries hardest hit by the 2014 Ebola outbreak. Guinea and Liberia were the other two. The epidemic exposed the weakness of the health system. The country with a population of over 5 million, barely had 30 ambulances for the Ebola patients. Many ambulances needed repair and were kept in garages.

Ebola hit the health workforce hard. It killed a good 221 health workers, including a dozen specialised doctors. The high attrition rate through emigration combined to result in the country having the lowest doctor-patient ratio in the world. There are 1,190 health centres and less than 200 doctors in Sierra Leone. The most recent Sustainable Development Goal Index sets 44.5 doctors, nurses, and midwives per 10,000. Taking only the higher cadre nurses, Sierra Leone has only 1.4 doctors, nurses and midwives per 10,000 people, states WHO.

Ninety per cent of the doctors are based in the western parts, many being in administrative roles. The country has only one known gynaecologist in the public sector.

In 2016, the government designed a scheme to ensure health cover to maximum people. Now, three major hospitals are being constructed in the capital Freetown alone. Many hospitals are under construction in the provinces. Last year, the health ministry created a medical post-graduate board to provide specialised training to young doctors. International organisations also provide training to healthcare workers. But there is only one college in the country which produces qualified doctors. But the College of Medicine and Allied Health Sciences does not offer a post-graduate specialist course.

GOVERNMENT PUT TO TEST

Only a few months ago, Julius Maada Bio was campaigning to be president.



DAUD ABDI DAUD DHIMBIL

Less than one in 10 infants are exclusively breastfed up to the age of six months. They get tea or sugar water with breast, formula or animal milk. Only one in 10 children at the age of one gets the correct combination of breast milk and solid foods recommended

by WHO/UNICEF. With poor health facilities in the country, it seems impossible that Somalia will reach the Sustainable Development Goal 3 (SDG3) target for child health (see 'SDG: A far fetched dream', p30). SDG3 sets 2030 as the year for Somalia

to end preventable deaths of newborns and children under five years of age, and reduce NMR to at least 12 deaths per 1,000 live births and under-five mortality to 25 deaths per 1,000 live births. Somalia is completely off track to reach the Millennium

Development Goals (MDGs). Abdiqani Sheikh Omar Hassan, former Director General of the Ministry of Health and founder of the Somali Young Doctors Association, says, "During my tenure, the aim was to achieve universal health coverage, and provide safe and affordable medicines and vaccines to all. But due to lack of funds, prolonged conflict and civil insecurity, Somalia will not be able to implement the SDGs."

The federal Ministry of Health has formulated a plan to reduce maternal and child mortalities through improved access to essential health services, and prevention and control of communicable and non-communicable diseases. But, Hassan warns, the plan's implementation depends on the occurrence of droughts, cooperation between the states health ministry officials, nation's security and political stability.

Improvement in the country's healthcare system was foremost on his agenda. When Bio became the President, the manifesto became the government's blueprint. The new government promised to improve the "poor and dysfunctional" state of the public healthcare system and reduce the country's maternal mortality by increasing investments and savings.

Health minister Alpha Wurie promised that the country will seek to meet WHO's universal health coverage. He said the government will ensure that the annual budgetary allocation meets the country's international commitment in line with the African Union's Abuja Declaration. It requires member countries to set aside at least 15 per cent of their budget for health.

Despite the promise, the health ministry received only 10 per cent of the budget. In fact, in the last 10 years, Sierra Leone's allocation to the health sector has fluctuated

between 9 per cent and 11 per cent. Civil society members and donor agencies have called upon the government to reconsider the decision.

Other than Sierra Leone, South Sudan, Chad, Somalia, Central African Republic, Burundi, and Guinea Bissau have the highest MMR. All these countries have one thing in common—a history of political instability. Yet, with the exception of Sierra Leone, all of them have made commendable progress. In 2008, Sierra Leone recorded 890 maternal deaths per 100,000 population, while South Sudan recorded 2,054. Ten years later, South Sudan reduced its MMR to 789, but MMR in Sierra Leone shot up to 1,360.

Now, Sierra Leone needs desperate corrective measures and provide patients a combination of proper healthcare facilities and skilled health workers to ensure universal health coverage. ■

SDG: A far-fetched dream

Decaying health sector is a chronic problem for Somalia



JAMILLAH MWANJISI

Head of advocacy, campaigns,
communications and media,
Save the Children

My first visit to Somalia was a 183-km road trip from Hargeisa to Burao. The journey, that would have taken a few hours, took a whole day to complete as I navigated through dry river valleys and bumpy roads. The sheer absence of public services along the route was disconcerting. There were no roads, schools or accessible health facilities. For a country struggling to survive a continuing drought since 2011, which has left millions hungry and malnourished, the absence of proper health facilities was disturbing.

An overview of statistics shows why achieving the Sustainable Development Goal 3 (SDG3) target for Somalia by 2030 is critical, but far-fetched. The Under-five Mortality Rate (U5MR), along with other health-related issues and the easily treatable diseases, continues to claim far too many lives. At present, U5MR is 137 deaths per 1,000 live births. SDG3 targets U5MR of 25 per 1,000 live births and Neonatal Mortality Rate (NMR) of 12 deaths per 1,000 live births by 2030. The leading causes of death are pneumonia (24 per cent), diarrhoea (19 per cent) and measles (12 per cent). As much as 17 per cent of the deaths are due to neonatal disorders. All these can be easily prevented with a strong healthcare system.

Access to maternal health services is abysmal—only 44 to 38 per cent of the births are attended by skilled attendants. In addition, the country has one of the highest global acute malnutrition rate for children under five years, which stands at 17.4 per cent. This is linked to food insecurity because of the drought, the sub-optimal infant and young child feeding practices, and poor water, sanitation and hygiene practices, among others.

According to WHO, some of the main challenges to Somalia's healthcare system are the lack of unified and credible governance, insecurity, the absence of emergency-oriented health programmes, a large number of internally displaced persons, decentralisation, and the lack of accountability and transparency mechanisms. However, these have been chronic problems for the country since the collapse of Siad Barre's government in 1991 and the subsequent civil war.

To make a progress, Somalia must address its socio-economic problems, such as poverty and education. The country must also put an end to social norms, such as female genital mutilation and early or child marriage. Investments on health must increase. At present, Somalia spends only 2 per cent of its national budget on health, way below the 15 per cent recommended by the Abuja Declaration.

As per WHO, Somalia must have at least 23 doctors, nurses and midwives per 10,000 population, against the 4.5 at present. This apart, conflict, insecurity, mass displacement, drought and flood and extremely poor public services have significantly increased the population's vulnerability to diseases and malnutrition. The country needs to develop programmes that address both humanitarian and development needs of its people. There is also the need to expand coverage for high-priority services to everyone. This includes eliminating out-of-pocket payments while increasing mandatory, progressive prepayment with pooling of funds. ■

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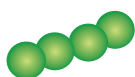
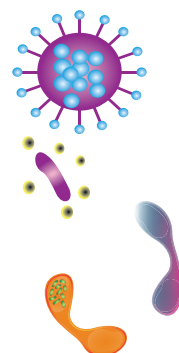
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SILENT KILLER

Being the most obese country in Sub-Saharan Africa, South Africa faces the highest risk of deaths from non-communicable diseases

CORN PORRIDGE, processed meat and convenience foods are staples in an average South African's diet. These food choices, made out of necessity and ignorance, are the main driving forces behind the country's growing epidemic of lifestyle diseases. Like other low- and middle-income countries, South Africa is experiencing a surge in non-communicable diseases (NCDs), including heart diseases, stroke, cancer, diabetes and chronic lung disease.

South Africans are more likely to die from NCDs even though the country is threatened by a prolific HIV epidemic (18.9 per cent of population is HIV-positive), coupled with tuberculosis (TB) co-infection in more than 60 per cent of HIV patients. The country's latest mortality statistics of 2016 shows diabetes is just behind TB as the leading cause of death, with heart diseases and stroke (cerebrovascular diseases), in third and fourth places.

South Africans have a 51.9 per cent probability of dying from NCDs, suggests NCD Countdown 2030, a collaboration between the World Health Organization (WHO), *The Lancet*, NCD Alliance (a network of civil society organisations) and the Imperial College, London. It is also the most obese country in Sub-Saharan Africa with two-thirds of women and about a third of men overweight or obese. At the same time, 25 per cent of South African children are undernourished, indicating double burden of malnutrition where members of a family can suffer from undernutrition and obesity at the same time.

"Driving the rise in NCDs in South Africa

is an obesogenic diet that is high in ultra-processed food," says David Sanders, an emeritus professor of public health at the University of the Western Cape, South Africa. South Africans' food energy rose by 397 kilojoules per person per day (equivalent to one extra candy bar a day) between 1998 and 2003 largely due to ultra-processed food products, says a 2015 study published in the bulletin of WHO.

Sibongile Nkosi, director of South African advocacy group Healthy Living Alliance (HEALA), blames junk food outlets for the current diet. "Fast food joints are popping up everywhere because they are perceived to be cheaper and more convenient than their healthy alternatives," says Nkosi.

At the same time, land policies dating from the former Apartheid era have discouraged subsistence farming, which has further pushed fast food. "We have done surveys in remote rural areas and found that even these communities purchase nearly all their food," says Sanders.

Socioeconomic factors have a large impact on the South African diet. Two-thirds of South Africans live on a household income lower than US \$240 (3,500 ZAR) a month forcing them to buy cheap unhealthy food. A 2012 study by Sanders and his colleagues published in the medical journal *PLOS Medicine* found that healthy food cost South Africans between 10 and 60 per cent more than junk food. Elsie Malaza, a pensioner from the Mpumalanga province who suffered a stroke in 2013, says she continues to survive on junk food knowing well that it is increasing her chance of another stroke. "I cannot afford the diet I have been

prescribed,” she says. Frequent electricity outages and limited refrigeration facilities in the country further minimise the consumption of fresh food. Salome Kruger, professor with the Nutrition Centre of Excellence at the North-West University believes school-children should be targeted to combat obesity. She says tuck-shops outside the school premises are a major source of unhealthy food to the children. “Efforts should be made to sell milk drinks, yogurt, *maas* (fermented milk) and fresh fruit in tuck-shops,” she says

TACKLING DISEASES

South Africa’s health minister Aaron Motsoaledi in his foreword to the National Strategic Plan (NSP) for NCDs says health services in the future will be overwhelmed with patients requiring acute, long-term support. The country has so far developed a Declaration for Prevention and Control of NCDs, which has 10 goals, out of which some

need to be achieved by 2020 and the rest by 2030. The goals include reduction of premature mortality, tobacco use, alcohol consumption, salt intake, while promoting physical activity and better screening of cervical cancer, hypertension, diabetes, asthma and mental disorder.

In April this year, South Africa, which is among the top 10 consumers of sugary drinks in the world, became the first African country to introduce an 11 per cent tax on sugary beverages. The soft drinks market in the country had doubled from 2.3 million litres in 1998 to 4.7 million litres in 2012. The tax is expected to generate \$130 million revenue. Though a move in the right direction, Tracey Malawana of HEALA says soft drinks should be taxed at least 20 per cent to make any significant impact. A 2014 report by Priceless-SA, a research unit of the Wits University School of Public Health, says a 20 per cent tax on sugary beverages would

South Africa’s soft drinks consumption has doubled from 2.3 million litres in 1998 to 4.7 million litres in 2012

HEALA



reduce obesity in over 220,000 South African adults.

Besides sugar, South Africans have high salt intake. While 65 per cent of South Africans consume more salt than WHO target of 5 grams per day, 40 per cent consume over 9 grams per day, states a WHO study on global ageing and adult health. The report adds that 53 per cent South African adults above 50 years suffer from hypertension. In 2016, the country introduced a legislation to reduce salt in processed food. The regulation has two reduction targets for individual items, one of which was to be implemented by 2016 and the other stricter target has to be adhered to by 2019. The legislation is expected to avert 11 per cent of deaths from heart diseases and save the government \$50 million per year in healthcare costs.

South Africa has also banned advertisements of tobacco products and man-

in the National Development Plan with a goal of 28 per cent reduction by 2030. But with just 0.1 per cent of the national health budget given to NCDs in 2017, it seems a difficult task. To ensure universal health coverage, the country is depending on the National Health Insurance (NHI). Though publicly funded, it would depend on delivery from both private as well as public providers. The green paper on NHI estimates that public health spending will increase from 4.2 per cent to 6.2 per cent of GDP by 2025.

“There is very little political will. The President attended and spoke at the UN high-level meeting on TB. But a day later not a single politician or high-level official attended the plenary session on NCDs,” says Victoria Pinkney-Atkinson, director, South African NCD Alliance. She added that NCDs received 0.011 per cent of the health budget

SOUTH AFRICA HAS INCLUDED NCDs IN NATIONAL DEVELOPMENT PLAN WITH A GOAL OF 28 PER CENT DROP BY 2030. BUT WITH 0.1 PER CENT OF THE HEALTH BUDGET GIVEN TO NCD, IT SEEMS A DIFFICULT TASK

dated that their packaging carry health warnings. “The legislation and annual increases in cigarette prices have led to a consistent decrease in the prevalence of smokers from 38 per cent in 1998 to 17 per cent in 2012,” says Savera Kalideen, executive director, South African National Council Against Smoking. The government also has a 2003 legislation to contain alcohol consumption. Health experts say the government should tax unhealthy food and use the revenue to subsidise healthy food. “This can make a packet of milk cheaper than a bottle of soft drinks,” says Sanders.

TIGHT SITUATION

South Africa needs to be proactive if it wants to achieve the Sustainable Development Goal 3 (see ‘Reform policies, focus on prevention, p36’) It has already included NCDs

in 2017. “With such low budgets it is common that even when NCD medication is available at the primary care level, diagnosis is poor due to insufficient equipment and training among health workers,” she says.

Sandhya Singh, acting chief director for NCDs at the National Department of Health, says that though prevention and control of priority NCDs like diabetes and hypertension are integrated into South Africa’s primary healthcare package, non-compliance by patients is an issue. “We find that people are struggling to maintain good health. Often, we have patients with uncontrolled diabetes who experience kidney failure, blindness and even amputation.” But she is optimistic. “We have leveraged many excellent lessons from the fight against HIV, which too is a chronic disease and they will benefit us in our fight against NCDs,” says Singh. ■

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Reform policies, focus on prevention

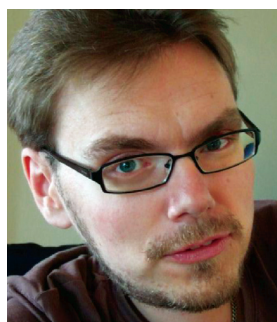
Africa has the resources and support to tackle non-communicable diseases. All it requires is political will to seize the opportunity



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HEALTH AND well-being are at the heart of the United Nation's Sustainable Development Goal 3 (SDG3), which for the first time brings non-communicable diseases (NCDs) to the global discourse. NCDs are inevitably called into question when we consider the core of SDG3, which is to achieve universal health coverage (UHC). Reducing premature mortality largely depends on our ability to include NCD coverage in UHC policies, while at the same time curbing prevalence of NCD-related risk factors, such as smoking and alcohol consumption, through effective policy reforms and focused prevention campaigns.

This is particularly important in Sub-Saharan Africa (SSA), where NCDs will be the leading cause of death by 2030, estimates the World Health Organization (WHO). In 2015, NCDs accounted for 3.1 million deaths (33.5 per cent of all deaths) in the region, rising from 29.4 per cent in 2010. What is more worrisome is that most NCD deaths in SSA occur in the age group of 30 to 60 years, when people are at the peak of their productivity. Recent estimates suggest that over one-third of the disease burden in the region can be attributed to NCDs. Emerging evidence proves that the situation is bound to worsen as almost half of the population already suffer from hypertension, an important risk factor for cardiovascular diseases. The prevalence of unhealthy risk behaviours is another reason for concern, with estimates indicating that 25 per cent of men in SSA are smokers. While the overall per capita alcohol consumption remains relatively low due to high abstinence levels in some areas, heavy consumption is observed among drinkers. Even within SDG3, three objectives target NCDs explicitly. The first aims at reducing premature deaths before the age of 70 by one-third through prevention and treatment and by promoting mental health and well-being. The second is to strengthen the implementation of WHO policies like the Framework Convention on Tobacco Control and prevention. The third is to prevent the harmful use of alcohol.

A NEW CHALLENGE

NCDs are an added burden to the existing weak health service provision in most SSA countries that is already struggling to keep up with the disease burden imposed by communicable, maternal, child and nutritional conditions. In Burkina Faso, for example, primary healthcare facilities called the Centre de Santé et Promotion Sociale are not equipped to provide care for NCD patients. This discourages users from seeking care, since they have to travel long distances to reach the district hospital for diagnosis and treatment. Our recent work in the country suggests that at the moment, only one out of five individuals affected by an NCD seeks care at a formal healthcare facility.

Poor health service is the result of weak health financing structure. Member states of the WHO African region are well below allocating 15 per cent of their government budget to health as prescribed by Africa Union's Abuja Declaration. This leads to high reliance on direct user contributions, which on an average account for 40 per cent of the total health expenditure in the continent. The impact of high individual funding is threefold. First, there is a supply shortage of NCD prevention and control measures,

especially in rural areas. Second, in select regions where measures are available, demand remains relatively low due to knowledge, geographical and financial barriers. Third, individuals affected by NCDs face high out-of-pocket spending with potentially catastrophic consequences for households. For example, in Malawi, paying for NCD care is responsible for close to 2 per cent of the impoverished population in the country.

HEALTHY SIGNS

In light of the health system weaknesses, one is left to wonder if SSA even stands a chance to meet SDG3. A closer look, however, suggests that the continent has multiple opportunities to counter NCDs. The International Monetary Fund estimates that even at current levels of spending on health, Africa's expected economic growth should result in higher health budgets. In addition, more specific analyses have highlighted the potential of many African countries to increase domestic funds for health spending. One short-term option can be raising taxes on tobacco and earmarking the additional funds for health. Alternative strategies such as earmarking value added taxes for health or taxing the mining industry have been proposed to increase domestic health resources.

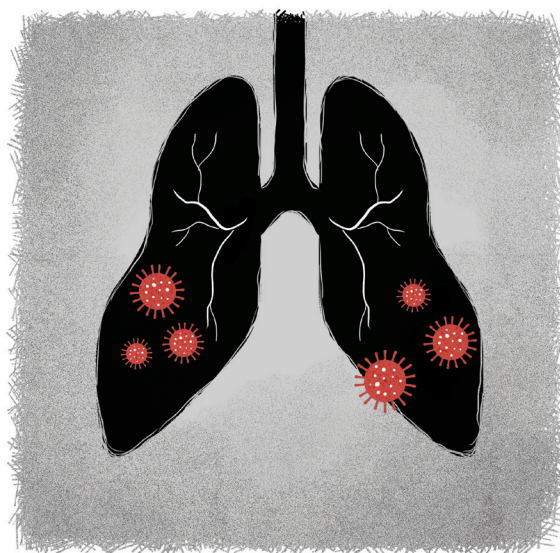
Increasing domestic resources, however, should not come at the price of reducing international support. SDGs call for collaborative and concerned effort, bridging financial, material and human resources across high- and low-income settings.

Increasing the health budget comes with the responsibility of making adequate and efficient use of the resources. To this regard, WHO has long identified the best buys to reduce economic burden by NCDs in low- and middle-income countries. SSA countries in particular need to focus on its young population to prevent the onset of unhealthy risk behaviours. As health system researchers, we know that embedding NCD-specific efforts within overall reforms in health system will have long-term strategic sustainability. The recent legislation to enable structural health financing reforms in countries as diverse as Kenya, Ethiopia or Burkina Faso reminds us of the importance that governance can play in steering systems towards positive change.

We firmly believe SSA countries can generate the necessary resources and develop technical know-how to invest them effectively. What we hope for is the political will to seize these opportunities and translate them into better health for the continent's population. Only time will tell whether SSA stands up to the challenge and manages to achieve SDG3, especially by reducing one-third premature NCD mortality by 2030.

Achieving SDGs is important because unlike the Millennium Development Goals, which addressed specifically issues relevant to Low and Middle Income Countries, the former calls for greater action at the global level. This choice reflects an explicit acknowledgement of the fact that a better future for the global community is only possible if we join forces and work together across boundaries towards achieving a shared set of objectives. ■

TARIQUE AZIZ / CSE



HEALTHCARE IN A SHAMBLES

In West African countries like Liberia and Nigeria, declining budgetary share in health services continues to undermine public well-being

SEVERE FINANCIAL crunch continues to affect healthcare services in Western Africa, especially in Ebola-ravaged Liberia. Even after huge global investments to contain the 2014-2015 epidemic, public health preparedness has not improved in the country. Take the instance of Soniiwien Clinic, a public health facility in capital Monrovia, where an effective screening system was put in place after the Ebola breakout. Though at present, a nurse at the entry gate takes temperature readings of patients and visitors before allowing them inside, the readiness ends here. Patients running high temperature are subsequently referred to the John F Kennedy Referral Hospital situated in the southern end of the capital.

Currently, the Liberian government is struggling to ensure basic services like electricity supply and piped water at Soniiwien where the labs too are not fully equipped. "Our head has written to the country health team on several occasions for power and water supply as well as additional equipment, but these are still not available," says Nathaniel B Witherspoon, senior laboratory assistant at the clinic. Even officer in-charge Irene Sherman Isiri admits there are challenges. "We no longer receive supplies that we used to get during the Ebola outbreak. We lack soap and chlorine. Our personal protective gear is also in limited

supply and at times we run out of gas for ambulances," Isiri says.

DISAPPEARANCE OF AID MONEY

Such a desperate situation at Soniiwien is despite the fact that during Ebola, millions of dollars flowed into the country to support recovery and build a resilient healthcare system. According to the World Bank's Global Ebola Response Resource Tracking, the United States channelised US \$9,71.3 million to tackle Ebola. The amount was part of a larger sum of \$2 billion committed to fight Ebola in West Africa. Further, \$1.6 billion was raised by the World Bank to support recovery in Liberia, Guinea and Sierra Leone. The United Kingdom provided \$1 billion, followed by the European Union which raised \$940.9 million, and the African Development Bank which contributed \$825.4 million for recovery in Liberia and other Ebola-hit countries. But now pertinent questions arise over how the funds were spent.

In November 2017, the International Committee of the Red Cross based in Geneva confirmed that more than \$5 million of aid money was fraudulently skimmed off in West Africa during the Ebola epidemic. An investigation by Red Cross auditors revealed that in Liberia, close to \$2.7 million disappeared as a result of overpriced supplies and for paying the salaries of non-existent health workers. In Sierra Leone, Red Cross



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staff apparently colluded with local bank employees to pocket over \$2 million, according to auditors, while in Guinea, where investigations are going on at present, around \$1 million disappeared in fake customs bills. In January this year, two Ebola survivors sued the government of Sierra Leone in the ECOWAS Court of Justice in Abuja, Nigeria, alleging that the lack of government accountability allowed the disappearance of almost a third of the aid money during the early months of the Ebola outbreak in 2014. The survivors claimed this led to violation of survivors' rights to health and life. In one case, health officials were meted out punishment. In June 2016, two senior members of the Guinean National Ebola Coordination Committee were sentenced to prison for periods extending from five to 18 months for embezzling \$67,405 granted by the World Health Organization (WHO). The fund was meant for educating traditional healers on the danger of Ebola.

"The aid money was not well managed. Our health system is bleeding and there is a chronic shortage of medical supplies and equipment," says George Poe Williams, president of the National Health Workers' Association of Liberia. However, he acknowledges that there has been improvements in training and capacity building of health

workers post Ebola.

At the height of Ebola, Liberia's Finance and Development Planning Minister Amara Mohamed Konneh announced that anyone who pockets Ebola money would go to jail. But in sharp contrast, former President Ellen Johnson Sirleaf said the emergency situation warranted making decisions that violated the country's public procurement and other laws in the interest of saving lives. According to critics, this was a public defence of corrupt officials.

FUTURE PLANNING

Determined not to have a rerun of the 2014 Ebola outbreak, the Liberian government established the National Public Health Institute of Liberia (PHIL) in December 2016 with a mission to prevent and control public health threats. Mosoka P Fallah, the deputy head of the institute, who also serves as a

Millions of dollars flowed into Liberia and other West African nations to support recovery and build a resilient healthcare system after the Ebola outbreak

IN JANUARY, TWO EBOLA SURVIVORS SUED THE GOVERNMENT OF SIERRA LEONE, ALLEGING THAT THE LACK OF ACCOUNTABILITY ALLOWED THE DISAPPEARANCE OF ALMOST A THIRD OF THE AID MONEY

HEALTH FOR ALL BY 2030

Nigeria's Minister of Health **Isaac Adewole** talks to **Bennett Oghifo**

Why is out-of-pocket expenditure high in Nigeria?

Nigeria's out-of-pocket expenditure is high primarily because public funding in health is low. In a large informal economy, traditional methods of revenue generation through contributions are inapplicable. At 70 per cent of total health expenditure, out-of-pocket expense in Nigeria thus exacerbates poverty. A number

of other factors further contribute to this, like the way health systems are financed. There are three methods for financing healthcare—taxation, contributions through insurance and user fees (out-of-pocket expense).

In the past, Nigeria provided free healthcare to its citizens and funded this through taxation. To deal with the impact of the fiscal crunch experienced in the mid-eighties, the then government introduced the user-fee policy. User fees are not bad, as these can help reduce unnecessary usage of services just because they are free. Unfortunately, the policy faltered in its implementation, as basic

services were no longer adequately financed and patients then had to pay for everything on their own.

Will Nigeria be able to fulfil Universal Health Coverage?

We are positive that the country will meet the SDG goal of Universal Health Coverage (UHC) based on the foundation we are putting in place. Enabling policies have been developed and relevant programmes are being rolled out to ensure a reduction in out-of-pocket payments for basic services. We developed the National Health Policy in 2016. The main thrust of the policy is achieving UHC. This sets the stage for strategic

approaches and programme development. I must say that President Muhammadu Buhari is recognising the impact of human capital development as a driver of economic growth. In September, our National Strategic Health Development Plan committed to improve the health and overall well-being of all Nigerians was passed at the Federal Executive Council meeting.

Our health plans are supported by the Basic Health Care Provision Fund (BHC PF), which guarantees that Nigerians will receive a set of high-impact services for free at the point of use. These services, which address 70 per cent of the disease burden in

visiting scientist at the Harvard T H Chan School of Public Health in the US, praised Liberia's current capacity to detect early outbreaks and respond to them adequately. "Immediately after the official end of Ebola in May 2015, we had three subsequent outbreaks that we were able to contain quickly," he says. Fallah adds that prior to the 2014 Ebola outbreak, Liberia lacked the capacity to test for highly contagious diseases such as lassa fever. Samples of suspected cases were usually transported to other countries for confirmation. But things have changed. According to Fallah, since the beginning of January 2018, Liberia has identified and responded to 42 outbreaks ranging from lassa fever to monkey pox.

After Ebola ended, the government launched a six-year national plan (2015-21) to build a resilient healthcare system to restore public trust in the government's ability to ensure quality services. Then there is also the National Health Plan (2011-2021) of Liberia. The cost of implementing it is estimated at \$2.8 billion from 2015 when the decision to build a resilient health system was taken, but the total projected allocation

based on current levels is estimated at \$416.9 million, thus leaving a gap of \$2.4 billion over the same period. According to WHO, budgetary allocations in the health sector in the past 12 years has risen from \$10,913 in 2006 to \$48,999 in 2012 in the country. But Liberia's recent allocations fall below the annual allocation target of \$466,666 needed to implement the six-year plan. The Liberian government hopes that domestic resources and external aid would help execute it.

SUDDEN BLOW

Absence of a strong healthcare system in many West African countries often results in high out-of-pocket expenditure for people. For example, in Nigeria, out-of-pocket payments can be higher than 72 per cent of the total health cost. For 70 per cent of Nigerians, who are extremely poor, out-of-pocket payments can exacerbate their level of poverty. In 2016, researchers Obumneke Obieche and Valentine Odili based in Benin City in southern Nigeria, stated that on an average, Nigerians spend a minimum of \$13.5 to treat a single bout of malaria. The government's Roll Back Malaria programme



the country, include ante-natal care, delivery, treatment of childhood illnesses, treatment of malaria and screening and referral for certain non-communicable diseases. In addition, BHCPF supports improvement in the quality of services at primary healthcare

facilities by providing monthly operational budgets.

Where would you get funds for all these initiatives?

In 2018, four years after the National Health Act was passed and three years after it was gazetted, we managed to get

1 per cent of the Consolidated Revenue Fund (a total of US \$180 million) set aside in the Appropriation Act for financing the delivery of high impact primary healthcare interventions in the country.

Investment in the health sector is also being improved

through Gavi. After months of negotiations, we have received a commitment from Gavi to extend its support to Nigeria. This commitment unlocks \$1.03 billion from Gavi to support Nigeria's financing of vaccine procurement and strengthening of health systems over a 10-year period. With this, I am proud to say we have secured long-term grant for procuring life-saving vaccines for our children.

This is a huge and unprecedented step in the history of Gavi, as no other country has received such a support before. I consider it a due recognition and approval of the reforms we are undertaking.

provides insecticide-treated nets, artemisinin-based combination therapy and rapid diagnostic tests, but these are not available. Allegation is rife that these drugs and nets are sold in the open market.

Hannah Fadekemi had to admit her septuagenarian uncle to a private hospital in Lagos in August this year for septicemia. "I have spent \$980 on antibiotics in less than two days," she says. Her uncle is a retired worker of the Nigerian railways and Fadekemi is not sure if he could repay her. The cheaper option would have been to take him to a public hospital. Though the cost in government hospitals is about 10 per cent of the total amount charged at private units, they are full of patients and it takes a long time to find doctors. Those who can afford prefer private hospitals.

People find it so difficult to pay that often there are instances when patients stay back in hospitals and work to pay for their bills. "Sometimes a few patients are rescued by philanthropists or charity organisations during Christmas or Easter on the recommendation of the hospital welfare committee. Those strong enough

are allowed to work to pay their bills," says a staff of the University of Benin Teaching Hospital, a multi-facility provider about 300 km from Lagos. Lack of funds has hit rural clinics too. In Ahiazu Mbaise in South-East Nigeria, nurse Chinyere Okoro, in charge of the local health facility, says, "The centre has not received malaria drugs or rapid diagnostic kits since 2017 under the Roll Back Malaria programme."

Strengthening primary healthcare is at the root of achieving universal health coverage mentioned under Goal 3 of the Sustainable Development Goals (SDGs). But the health scenario in West African countries is not likely to improve anytime soon due to declining budget even after the 2001 Abuja Declaration when African countries agreed to allocate at least 15 per cent of their annual budget in health. Since the declaration, the highest allocation for Nigeria's health sector has been 5.95 per cent in 2012, which is far below the WHO recommendation of 13 per cent of the country's annual budget. Liberia launched the SDGs on January 26, 2016. But with fund crunch, hopes of building a resilient health system by 2030 remain faint. ■

NATION WITHOUT DOCTORS

Shortage of medical staff is a major challenge to Kenya's healthcare sector

ONA cloudy morning at Ihiga community health dispensary in Murang'a county of central Kenya, James Njuguna, the resident nurse, is attending to an elderly patient. The door to his consulting room is slightly open, affording him a peek into the growing queue of patients sitting on the veranda bench that serves as the waiting room. The dispensary that began operations in 2017 and was constructed through community efforts, serves the neighbouring villages of Hura, Ngechu and Karindi, besides Ihiga. The estimated combined population of these villages is 8,000. Njuguna is the only health professional at the dispensary and is assisted by a health records clerk, a cleaner and a watchman.

To cope with the average 48 patients that he sees daily, Njuguna has had to teach his cleaner and watchman basic healthcare tasks such as weighing infants, taking temperature and dispensing prescribed drugs. "It is the only thing to do if I'm to be able to attend to all patients who seek treatment here," he says in a most emphatic manner.

There is an acute shortage of health personnel in Africa. There are only 168 med-

ical schools in the entire continent, with only one in 24 countries and none in 11 countries, as per a 2017 World Health Organization (WHO) report. Kenya is typically one of the African countries that suffers a shortage of health workers. While it may be doing better than many other African nations, Kenya still has a shortage of 42,800 workers, says the Cabinet Secretary for Health, Cecily Kariuki.

The situation at the Ihiga dispensary typifies health facilities across rural Kenya, and is worse in the more remote parts of the country. The shortage of health workers is more acute at the crucial levels of primary healthcare delivery, including nurses, community health workers and public health officers. These are identified by WHO as the frontline cadres in health sector and are responsible for delivery of preventative health services.

Kenya, according to Kariuki, has 63,000 health personnel. Of these, 21,000 are nurses, 3,200 clinical officers, 2,285 doctors and 1,100 pharmacists. The rest 35,000 are public health technicians, technologists, physiotherapists and records assistants, among others. The country has one doctor for 7,200 people, one clinical officer for 21,000 and one nurse for every 1,600. WHO recommends 23 health professionals for every 10,000 and to meet this ratio, Kenya needs over 0.1 million workers, says Kariuki.

According to the 2016 Kenya Health Workforce Project report, the country not only suffers shortage, but also serious disparities in distribution of health workers. The report found that the ratio of nurses per 10,000 Kenyans varied from as high as 9.7 for every 10,000 people in Nairobi to as low

**THE SHORTAGE OF HEALTH WORKERS
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DELIVERY, INCLUDING NURSES,
COMMUNITY HEALTH WORKERS
AND PUBLIC HEALTH OFFICERS**



GAVI

as 0.1 for every 10,000 in remote counties of northern Kenya. The disparity in doctors' distribution is more pronounced because a majority of them are in urban areas. The ratio of doctors per 10,000 population ranged from as high of 9.5 per 10,000 in Nairobi to a low of 0.8 per 10,000 in the northern Kenya county of Mandera.

Faced with these grim statistics, Kenya has taken a few measures, at least at the national level, to address the problem. It recently "imported" 100 specialist doctors from Cuba. This was the first step in a programme meant to bridge medical officers' gap in Kenya. The country brought in Cuban doctors and sent Kenyan medics for specialised training to the island country. According to Jeremiah Maina, national secretary of Clinical Nursing Society of Kenya, shortage of health workers in Kenya, especially the "frontline" cadres, can be blamed on low government investment in the health sector, low pay and the high cost of training.

For instance, Maina said, it costs US \$10,000 to train as a nurse to degree level, an amount many people interested in

enrolling in the programme cannot afford. Similarly, a diploma course in nursing costs \$4,500, an amount not affordable to many. "For those parents who can afford, or the health workers who self-sponsor to study the degree course, the compensation in terms of salary is not adequate and they finally seek greener pastures in Europe and North America," he told *Down To Earth*.

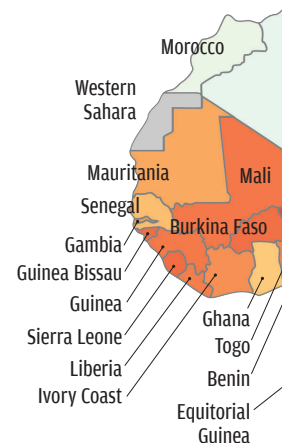
The government could also lower entry points for admission to the Kenya Medical Training College. The points currently stand almost the same as those for degree courses in universities, yet the college only offers three-year diploma courses, Maina says. Alternatively, he notes, the government could continually train and upgrade community health workers and volunteers through workshops, seminars and short courses to equip them to offer specialised health services.

"The government must invest more in the right areas of health delivery system, in health promotion and prevention, including measures to ensure that more people are attracted to work in the health sector," Maina says. ■

There are only 168 medical schools in Africa, with 24 countries having only one and 11 having none

Unhealthy signs

Africa's progress is crucial to the world achieving the 37 health-related indicators under the United Nations' Sustainable Development Goals by 2030. But the slow pace of progress in most nations, specially in the Sub-Saharan region, is a cause for concern

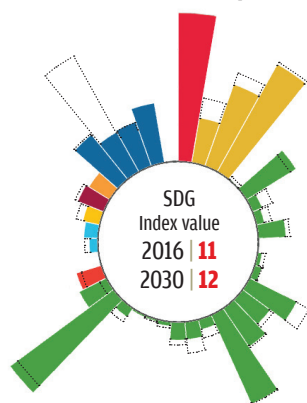


Limited success | Sub-Saharan Africa is unlikely to meet health-related SDG targets by 2030

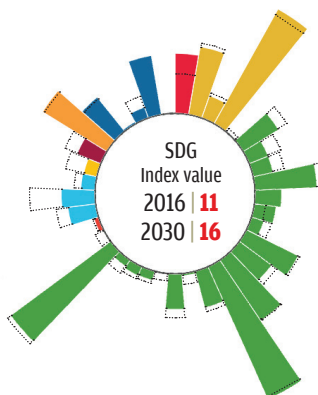
Worst performers | Three African nations are likely to struggle the most in achieving even basic health indices, such as low maternal mortality, or arresting HIV/AIDS and malaria

■ Solid colours give 2016 figures; dotted areas show the figure expected in 2030

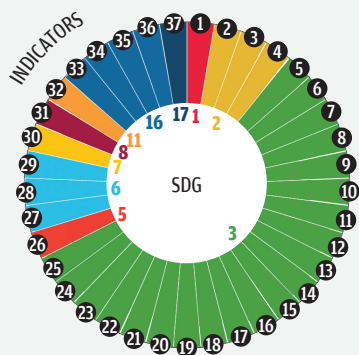
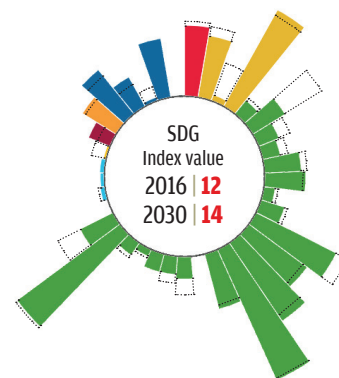
Central African Republic



Somalia

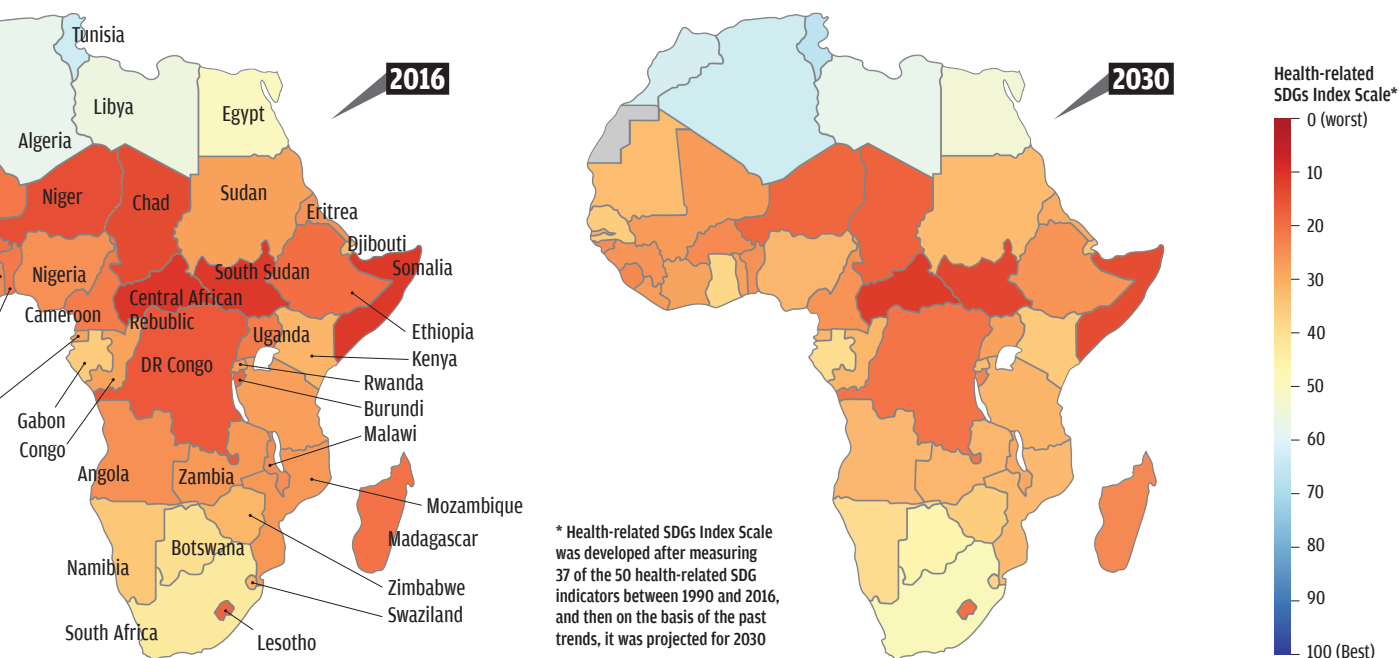


South Sudan



Health-related index for SDG indicators

- 1 Death rate due to exposure to forces of nature
- 2 Prevalence of stunting among children under five years
- 3 Prevalence of wasting among children under five years
- 4 Prevalence of overweight among children under two to four years
- 5 Maternal mortality ratio
- 6 Proportion of births attended by skilled health personnel
- 7 Under-five mortality rate
- 8 Neonatal mortality rate
- 9 Age-standardised rate of new HIV infections
- 10 Age-standardised rate of tuberculosis cases
- 11 Age-standardised rate of malaria cases
- 12 Age-standardised rate of hepatitis B cases
- 13 Age-standardised prevalence of 15 neglected tropical diseases
- 14 Age-standardised death rate due to cardiovascular diseases, cancers, diabetes and respiratory diseases among population (30-70 years)
- 15 Age-standardised suicide rate
- 16 Risk-weighted prevalence of alcohol consumption
- 17 Age-standardised death rate due to road injuries
- 18 Proportion of women who use modern contraception methods for family planning
- 19 Number of live births per 1,000 women aged 10 to 19 years



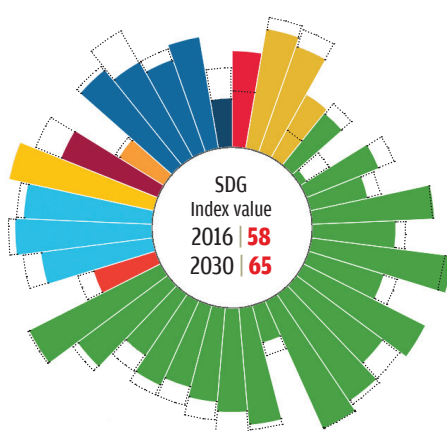
Best performers | Three countries will perform well in basic health indicators. They are likely to stay behind in SDG parameters, such as deaths due to road accidents and maintaining proper death registers

■ Solid colours give 2016 figures; dotted areas show the figure expected in 2030

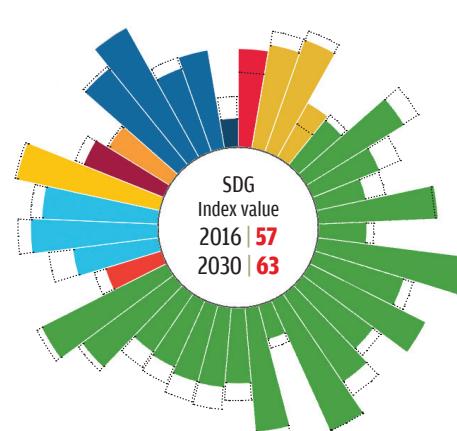
Tunisia



Algeria



Morocco



- 20 Coverage of essential health services
- 21 Age-standardised death rate due to household and ambient air pollution
- 22 Age-standardised death rate attributable to unsafe water, sanitation and hygiene
- 23 Age-standardised death rate due to unintentional poisonings
- 24 Age-standardised prevalence of smoking among populations (10 years and older)
- 25 Coverage of seven vaccines in populations
- 26 Risk-weighted prevalence of populations

- using unsafe/unimproved water sources
- 27 Age-standardised prevalence of women who experienced intimate partner violence in the last 12 months
- 28 Risk-weighted prevalence of populations using unsafe or unimproved sanitation
- 29 Risk-weighted prevalence of populations without access to hand washing facility
- 30 Risk-weighted prevalence of household air pollution
- 31 Age-standardised disability-adjusted life years due to occupational risks

- 32 Population-weighted mean levels of PM2.5
- 33 Age-standardised death rate to interpersonal violence
- 34 Death rate due to conflict and terrorism
- 35 Age-standardised prevalence of violence experienced by people in past 12 months
- 36 Age-standardised prevalence of people aged 18-29 years who experienced sexual violence by age 18 years
- 37 Percentage of well-certified deaths by a vital registration system among a country's total deaths



Prepared by DTE/CSE Data Centre

Infographics: Raj Kumar Singh
Analysis: Kiran Pandey and Rajit Sengupta

Data source: Global Burden of Disease Study 2016 by the Institute for Health Metrics and Evaluation.
For more such factsheets visit:
www.downtoearth.org.in/factsheet

LESSONS FROM RWANDA

This east African nation is one of the few that can meet the health targets under SDGs

WHEN MOTORCYCLIST Venuste Niyonsaba of Kigali in Rwanda's Eastern Province met with an accident and was hospitalised for a week, he knew he would not have to worry about his medical bill. "I had to pay less than Rwandan franc (RWF) 2,000 (US \$2.3). The insurance paid my bill," he told *Down To Earth* (DTE). This community-based health insurance, named Mutuelle de Sante, was set up in 2004. It reduces patients' out-of-pocket expense as they have to pay only 10 per cent of the bill. To finance the insurance system, citizens pay as per their income categories—the rich pay RWF7,000 (\$8.5) annually while the poor pay nothing. Universal health coverage (UHC) is one of the targets under Sustainable Development Goal 3 (SDG3)—"Good Health and Well Being"—and Rwanda is one of the few African countries that seems to be on path to meet the target.

Though there was progress in Africa towards the Millennium Development Goals (MDGs), supposed to be achieved by 2015, the continent fell short miserably. The Sustainable Development Goals (SDGs), set for 2030, provide another opportunity to Africa to ensure that lack of healthcare does not limit its economic development. The path is difficult. As of 2013, only six of Africa's 54 countries managed to meet the target of 15 per cent of annual government budget expenditure on health. This target was set during the Abuja Declaration of 2001. Informal economies in most countries make it difficult to use taxation as a source of revenue. As a result, investments in health

are highly variable across the continent, ranging from 4 per cent in Cameroon to 17 per cent in Swaziland. Rwanda was one of the countries that could meet the Abuja target. It has managed to put an effective health system in place and there is a lot that others can learn from Rwanda.

Rwanda's healthcare system has been strengthened by 58,286 community health workers (CHWs), who are part of the National Community Health Worker Program launched in 2007. They go house to house to provide basic healthcare support and are trained to reduce maternal and child mortality, prevent diseases, fight malnutrition and promote family planning. CHWs do not get a regular salary. Instead, there is a Performance Based Financing system.

The country has also increased its health budget by 22.9 per cent between 2014 and 2018. The government spent RWF27,415.22 (\$36) per capita on medical services in 2018. Rwanda has also shifted from a donor-dominant financing to domestic financing. External finance has fallen from 57.2 per cent





PHARMACCESS

in 2013-14 to 15.3 per cent in 2017-18. Domestic resources have been mobilised from the private sector and by citizen contributions.

On the ground, a mix of strategies to deliver healthcare are visible. To protect children from complications of malarial infection, insecticide-treated mosquito nets are distributed free to pregnant women on their first visit to the health facility and to children during their final visit under the Expanded Program of Immunization for measles since 2006. Rwanda has also been quick to adopt telemedicine to help health service providers. In November 2016, it launched a drone medical delivery project to ensure quick delivery of blood to hospitals. Rwanda's vaccination programme has also been a big success. As many as 95 per cent of children under five complete their vaccination while all teenaged girls get cervical cancer vaccination. As per the Rwanda Demographic and Health Survey (2014-15), the infant mortality rate has declined by 30 per cent since 2000, the under-five mortality rate by 25.51 per cent and neonatal

mortality rate by 45.45 per cent. Between 2005 and 2014, the maternal mortality rate decreased by more than three times—from 750 per 100,000 live births to 210—while stunting fell from 51 per cent in 2000 to 38 per cent in 2015.

Talking to DTE, health minister Diane Gashumba said that Rwanda will be able to achieve SDGs in health by 2030. "We managed to achieve MDGs and there is no doubt that with commitment and collaboration with other sectors, including the private sector and other public institutions, and full support of our top leaders, we will achieve SDGs too," she said.

"The effectiveness of the system is due to the setting up of people centered services (to include every category of people), integrated services, sustainable services (sustaining initiatives like the cooperative of CHWs to avoid it from failing, urging stakeholders to not initiate new initiatives but fund the existing ones and infrastructure) and setting up the priority of the country," says Parfait Uwaliraye, director of planning (*turn to p50*)

About 1 million people have registered for m-tiba, a digital platform to promote health insurance in Nigeria

A different approach

Health does not begin with disease but is dependent on the way of living, clean environment and good nutrition knowledge



JOSEPH K WANG'OMBE

Professor at the University of Nairobi and member of Kenya's committee working to develop a proposal for minimum healthcare package

IN KENYA, the out-of-pocket expenditure on health is around 30 per cent of household income. We are trying to reduce this. A committee has been working since June to develop a proposal for minimum healthcare package that would be made available to people under universal health coverage (UHC). This is an identification of services that would be provided throughout the country to ensure a minimum health status. However, there is a big gap between the funds that are needed and what the government can provide. The country allocates around 3 per cent of its GDP to health, which is around 6 per cent of the total public budget. The package may have to be reorganised depending on how much funding the government will make available at implementation.

It is hoped that there will be sufficient funds because there is political will to provide UHC. The deadline for UHC in Kenya is 2022 and we are about to pilot the package in four counties. We have the option to pay for health services through insurance or through budgetary allocations or by a combination of the two. We are looking at a combination. We plan to have an independent body to monitor private health service providers. This body would ensure that the private sector does not take advantage of the consumer. We are focusing on social health insurance based on many lessons from the National Hospital Insurance Fund which already covers 30 per cent of the population.

We cannot say we will have 100 per cent success as there are likely to be hiccups. There

are areas of the country like East Pokot where the population is scattered. These places need a different model. The local governments will have to devise their own plans. There is probably going to be 75 per cent success depending on the resources provided.

Basing healthcare delivery on doctors and their ability is likely to fail because nobody has enough doctors and nobody will ever have. The solution for Africa's health problem can be found by basing health outside of disease. Health does not begin with disease but is dependent on the way of living, clean environment and good nutrition knowledge within the community. Unfortunately, we say that prevention is better than cure but then we turn it the other way in our programmes and concentrate on cure. This is because the practise of medicine is very dramatic. When you are sick, you get the

medicine and within two days you are better. While only 2-3 per cent of the people in Africa go through this drama, majority of the resources are directed in treatment.

We cannot approach health like they do in the UK as we are at a different developmental stage. Diseases, not primary healthcare, are the biggest problem there. They do not need to worry about purity of water or insects and malaria. In Africa, we have a rural population, have to provide primary healthcare and use a public health approach. ■



TARIQUE AZIZ / CSE

Health for all, the digital way

Technology is driving expanded and smarter access to healthcare in Africa

EVERY YEAR in Africa, out-of-pocket health expenditures push millions into poverty. Today, an estimated 60 per cent of healthcare is paid for out-of-pocket, with only a small number of Africans covered by health insurance.

Nigeria, for instance, has a population of 197.4 million—the largest in Africa. But over 60 per cent Nigerians are from lower socioeconomic backgrounds and less than 4 per cent of the population has healthcare coverage. Since 2017, the federal government has taken major steps towards universal health coverage (UHC). Notably, the enactment of the National Health Act 2014 earmarks 1 per cent of the annual revenue for the provision of basic healthcare services to those in the lowest income groups. In 36 states, primary health centres have been upgraded and 19 of these states have either passed their mandatory health insurance law or their Bills are currently going through a legislative process.

In the context of the global push for UHC by 2030, the implementation of a digital platform for a health insurance scheme's operations is pivotal. Such a platform connects key stakeholders—the payers, patients and providers—and enables communication, data and money transfers. Together with CarePay and Safaricom Foundation, PharmAccess Foundation has developed, and is implementing such a platform in Kenya, where it is called M-TIBA. This can be accessed through a mobile phone and over 1 million people are enrolled. It's a mobile wallet that can only be used for healthcare. Individuals use it to pay for insurance, to save money for other expenditures, or to pay for their family's healthcare. Every time the wallet is used, medical and financial data is collected. This creates transparency and empowers people to take decisions.

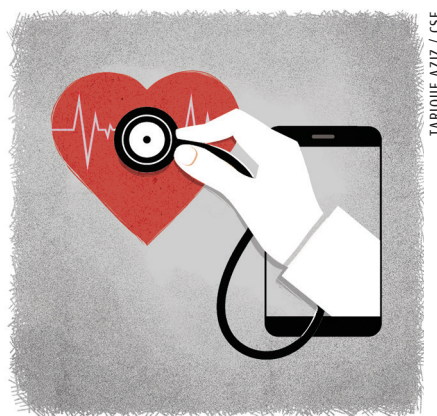
Lagos, a state with a population of over 20 million, has chosen the CarePay platform to administer its mandatory health insurance scheme using a combination of mobile and digital technology to increase access and reduce administrative costs. But it is only a part of creating a wider healthcare ecosystem. To create a sustainable demand for health insurance, improving healthcare providers' administrative and medical capacity through bench-marking and continuous quality improvement programmes is necessary. People should have a reasonable expectation of receiving care and the quality of care. SafeCare, the brainchild of PharmAccess is a unique standards-based approach for measuring, improving and recognising the quality. To date, 2,500 clinics have been awarded a SafeCare rating. By digitising, the methodology can be implemented cost-efficiently at scale and enhance the health insurance schemes.

It has taken years of collaboration between the state, healthcare providers and communities to ensure long-term delivery of primary healthcare, including maternal and child health—a key part of Sustainable Development Goal 3. Technology empowers the individual to decide when and where to seek care. But technology itself is not an end in our mission, only a means to offer healthcare to those who were previously unreachable. ■



NJIDE NDILI

Country Director, PharmAccess Foundation, Nigeria



TARQUE AZIZ / CSE

in the ministry of health. Addressing the 71st World Health Assembly in May 2018, the President of Rwanda, Paul Kagame, said UHC is an opportunity, not a burden, and achieving it is affordable for countries at every income level.

FUND CRUNCH

Adequate funding of the health system is crucial to meet SDG3. Sub-Saharan Africa accounts for about 11 per cent of the world's population and bears 24 per cent of its disease burden. But the governments here spend just 1 per cent of the world's total health expenditure. As a result, there is a high out-of-pocket expenditure borne by patients. At a meeting organised by African countries in Rwanda in June 2017, it was estimated that 11 million people become poor every year due to these reasons. As per a 2015 estimate by the World Health Organization, countries had to invest more than \$86 per capita every year to ensure UHC. But most African countries do not meet this standard. A study in PLOS ONE in August 2018 looked at the health insurance schemes in Ghana, Kenya, Nigeria and Tanzania and concluded that at the current levels, Kenya, Tanzania and Nigeria would not be able to achieve UHC and meet SDG on health by 2030 (see 'A different approach' on p48). Ravi Ram, member of Peoples Health Movement (PHM), a global network of public health experts, working in east African countries, says there is no clarity as to what is being done in the continent to meet the target. Many countries are relying on private insurance and there is no effort to improve the primary health system, says John Elias Mahama, an expert with PHM in Ghana. Without strengthening the health infrastructure, universal insurance cannot be achieved, they say.

SMALL INITIATIVES HELP

Experience has shown that small initiatives can help improve health indicators and ensure UHC. One such initiative is the AfyaElimu Fund in Kenya. It was set up by non-profit IntraHealth International, Kenya's Strathmore Business School and the African Medical and Research Founda-



tion to provides loans to students who want to become health workers. "The aim is to address the critical shortage of frontline health professionals who offer 'promotive' and preventive health services in dispensaries and health centres at the community level," Wasunna Owino, chief of party of the Human Resources for Health Kenya Program of IntraHealth International, told DTE. The party is implementing the programme along with other partners. The project started in 2013 with a \$1.19 million seed money from the United States Agency for International Development. The health ministry provided \$0.1 million and private contributors gave \$1.2 million. The funds take care of the total fees of the course. "This was not a scholarship fund but a revolving fund. Those who benefit repay the money after they get employed, so that it benefits other equally needy students," he says. So far, 4,814 students have graduated from medical training colleges (MTCs) and another 19,242 are enrolled in 110 MTCs across the country. Owino, however, acknowledges that there are challenges. Every needy student does not get the benefits and every beneficiary who graduates does not get employed, he says.

In Liberia, the focus is on improving the surveillance system against infectious diseases like Ebola. Under an initiative named One Health, service providers, such



To protect children from complications of malarial infection, governments in Africa provide insecticide-treated mosquito nets free to pregnant women

USAID

as those providing laboratory services, have come together to assess the capacity requirements and gaps in the health services, and to devise solutions, such as training programmes, to overcome challenges. “Liberia is the first country in the region to rollout a field-level epidemiologist training programme,” says Sonpon Sieh, coordinator of One Health in the country.

Mobile apps too have been found useful in monitoring outbreaks in Liberia. mHero, a mobile phone-based communication system that uses basic text messaging to connect the health ministry and health workers, is one such app. mHero operates on simple talk-and-text mobile devices—no smartphone or tablet required. IntraHealth International and UNICEF created mHero in August 2014 during the Ebola outbreak in Liberia to improve communication network in the health sector.

The use of mHealth apps is not limited to monitoring of epidemics. In Rwanda, an app, named Babyl, is being used to ensure accessible and affordable health services to all. Within a year of launch, it was used by 0.1 million people. This platform uses a combination of artificial intelligence and machine learning with doctors and nurses to provide medical consultations to anyone with a mobile device. Kenya has a new initiative named M-TIBA, a mobile health wallet (see ‘Health for all, the digital way’ on p49).

Some countries have adopted a more localised approach. Rwanda has set up condom kiosks across the city to reduce HIV infections. AIDS Healthcare Foundation (AHF) in collaboration with the ministry of health through Rwanda Biomedical Center, initiated the programme in 2016. “At present each kiosk distributes over 28,000 condoms per month,” says Narcisse Nteziryayo, in-charge of prevention activities, AHF-Rwanda. “Our main objective—to increase the use of condoms—has been achieved. The kiosks distribute a bigger number of condoms compared to other channels, like social marketing channels, public institutional distribution and hospitality facilities,” says Sabin Nsanzimana, head of HIV division at Rwanda Biomedical Center.

While these initiatives try to fill the need, it is imperative that the continent strengthens its health data to meet SDG3. For instance, more than half of the African countries lack high quality nationwide data on diabetes and deaths related to it. Data on 31 per cent of the indicators under SDG3 is not available, says “2017 Africa Sustainable Development Report” by the United Nations Economic Commission for Africa.

Similarly, 11 of 17 SDG goals have indicators interlinked to SDG3. But 30-82 per cent of the key indicators under the related targets do not have relevant data. For instance, SDG6, aimed towards access to clean water and sanitation with a significant impact on health, suffers from a huge data deficit. The inter-linkage of SDG3 with other SDG goals means that progress in health outcomes will only be achieved with progress in related sectors—nutrition, water and sanitation, air quality, road safety, education, gender equality, poverty, among others.

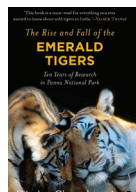
So what can be done? Information systems need to be strengthened as per SDGs. Countries must set up national-level targets with indicators relevant to achieving them. The role of public and private sectors, and civil societies cannot be underestimated. The countries should ensure collection and convergence of data. National statistical institutes should generate and manage accurate, unbiased data. ■



Shooting the messenger

Chronicles of a researcher who spent 10 years in the Panna reserve in Madhya Pradesh to understand the world of tigers

ISHAN KUKRETI



THE RISE AND FALL OF
THE EMERALD TIGERS

Raghu Chundawat

Speaking Tiger, 2018 |

356 pages | ₹685

IN 1995, Raghu Chundawat arrived in the Panna Tiger Reserve in Madhya Pradesh to do a long-term scientific study on tigers. Between 1996 and 2005, Chundawat, who was then with the Wildlife Institute of India, Dehradun, meticulously collected data on tiger behaviour by radio-collaring the big cats. When the reserve's administration changed in 2001, he was asked to stop the study and by 2005, he was denied permission even to enter the reserve.

Chundawat's *The Rise and Fall of the Emerald Tigers* chronicles what happened inside the reserve till 2009 when all tigers were wiped out. The author says the initial success in monitoring and conserving tigers was mainly due to the efforts of Field Director P K Chaudhary, in whose tenure, Chundawat's team was given radios to communicate with reserve officials in case they came across any illegal activity. He attributes this collaboration

TARIQUE AZIZ / CSE



between the park authorities and the research team for the successful conservation of the tiger population. He says that as tigers have a short gestation period—the average in Panna is 103 days for a big cat if they are provided a protected environment—their population can recoup quickly. This was observed in Panna, where the population rose from 10-15 tigers in 1995 to 35 in 2001, according to Chundawat.

Change of guard, change of rules

However, things changed when the new management took charge in 2001. The team lost permission to track tigers on elephants' back. From Chundawat's account, it seems that the new management did not like the inputs of the research team. He recounts how when the team dismantled some tiger traps near a waterhole, they were told that they didn't have permission to do that. When Chundawat approached the National Tiger Conservation Authority Director, Rajesh Gopal, and biologist George Schaller, the reserve authorities responded by seizing their equipments and vehicles and charged them saying they were illegally entering the reserve at night.

In 2005, Chundawat sent a report *Missing Tigers of Panna* to the reserve authorities, the Union Environment Ministry and the Chief Minister of Madhya Pradesh. The story made headlines and it was clear that Panna was going the Sariska way, which had lost all its tigers in 2004. The book is a strong indictment of authorities of the Panna Tiger Reserve. The author says that even though his report said there were only a few adult tigresses left in the reserve, the authorities stated there were more than 23 in 2005. Though reserve officials admitted that tiger numbers were declining, they did not take steps to curb poaching.

The book gives the reader a peek into the life of one of the most privacy-loving animals in the world. In a language free from scientific jargon, Chundawat narrates the findings of his study through its protagonist, Bavan, a female tigress named so because of the distinct stripes over her eyes in the shape of numerical five and two. He talks about their unique individual behavior, and at once, the tiger doesn't seem like an irrational, scary beast, but rather an animal which plays different roles—lover, parent, defender of his/her territory, hunter, and importantly, the hunted.

Chundawat's inferences aren't based on generalisations or romantic notions about the Royal Bengal Tiger, but on empirical scientific data, collected for almost over a decade, firsthand from the forest of Panna. The book is an important read for the authorities too, as it provides an excellent example on how wildlife monitoring can curb poaching, and the importance of not running protected areas as a personal fiefdom. ■

 @ikukreti

'We always tend to focus more on our problems and threats and not on our successes'

Raghu Chundawat speaks to *Down To Earth* on issues that confront tiger conservation

Can you shed some light on why tigers are becoming man-eaters?

I have little experience with man-eating tigers. Since individual tigers are so different from one another, some individuals may react to a particular situation differently from other tigers. At best, it may be an acquired behaviour due to paucity of prey or loss of habitat.



What reasons did the new management of the Panna Tiger Reserve give you for stopping your study?

It was a two-line letter which said on technical grounds they couldn't give permission, but they never explained what these technical reasons were.

What were the reasons for tiger extinction in Panna?

Poaching. But it is not as simple as it sounds. During 2002-2004 when poaching hit the Indian tiger population due to the demand for skin in Tibet, tigers were poached in almost all tiger reserves. But only Sariska and Panna completely succumbed to poaching. Kanha, Corbett and many other tiger reserves may have lost many more tigers, but extinction did not happen there.

How can tiger conservation be done better?

We tend to focus too much on our problems and threats, which is fine but ignoring our success is a major problem which does allow us to move forward and take conservation successes to different levels.

I don't see plans to take advantage of our rare hard-earned successes. We are busy firefighting and keep moving from one crisis to the other.

PATENTLY ABSURD LATHA JISHNU

Beware of Japan's trade ambitions

Japan is pushing for higher levels of intellectual property protection that will cut access to affordable medicines

FREE TRADE agreements (FTAs) have a dangerous side effect these days: they are hazardous to the health of citizens signing these treaties. Sounds bizarre? Here's why. Embedded in these pacts, whether they are called FTAs or comprehensive economic partnerships, are clauses, if not entire chapters, on intellectual property rights (IPRs) that are hugely more restrictive and more expansive than those mandated by the World Trade Organization known as TRIPS. Foremost in pushing a higher standard of IPR protection in FTAs are the usual suspects, the US and the EU, but the surprise front runner is Japan.

The biggest concern is the impact such provisions will have on access to affordable medicines. The TRIPS plus regime will restrict the early entry of generic medicines while high-cost branded medicines will remain out of the reach of millions of patients in India and other developing countries. Without exception, all the regional and plurilateral FTAs being negotiated across the globe seek to have the TRIPS-plus IPR protection. For instance, the Comprehensive and Progressive Trans-Pacific Partnership Agreement (CPTPP) includes an ominous provision that would give private investors the right to use the investor-state dispute settlement mechanism to interpret the IP chapter of CPTPP. This provision, innocuously titled "IP – An Asset," nestles in the investment chapter of the agreement but the good part is that CPTPP negotiators have shelved some IPR obligations that were part of the earlier TPP.

Such good sense is missing in the case of the largest Asian FTA under negotiation, the Regional Comprehensive Economic Partnership (RCEP) which brings together the 10 ASEAN members

and six other countries: Australia, China, India, Japan, South Korea and New Zealand. The primary reason for this obduracy is Japan. Backed by South Korea, Japan is insisting on a series of TRIPS-plus provisions—from extension of the patent term by as much as 10 to 30 years to stiff enforcement measures. The basic idea is to extend the period of monopoly for innovator drug companies to allow them to milk the market with unrestrained pricing. RCEP negotiators are also looking at the same worrying provision that will allow investors to sue the governments if they feel their IPR has not been protected. So far, India has rejected all TRIPS-plus measures.

What is driving Japan on this IPR trajectory? A recent research paper says Japan's newfound role as IPR champion in the region "reflects a strategic shift since 2013" when the government of Shinzo Abe made pharmaceuticals a key

driver of export growth. Apparently Japan aims to capture five trillion yen of the global pharmaceutical market by 2020 and as such it "includes an explicit focus on expanding IP protection" with its trading partners.

RCEP is particularly important because it includes India, a major producer and exporter of generics. Known as the pharmacy of the world, India is the biggest source of low-cost generics for not just low and middle income countries, but also for Japan, Europe and the US. The researchers contend that Japan's IP "outreach" policy "also reflects the ambitions of the Japan Pharmaceutical Manufacturers Association, the lobbying body for the research-based pharma industry". In other words, Japan is going the US way. For those concerned about public health, this is bad news. ■



RITIKA BOHRA / CSE



TRAINING PROGRAMME ON CORPORATE SOCIAL RESPONSIBILITY (CSR) AND BEYOND

Centre for Science and Environment (CSE) is pleased to invite you to a four-day Residential training programme at the Anil Agarwal Environment Training Institute (AAETI), Nimli, Rajasthan, on 'Corporate Social Responsibility (CSR) and Beyond' to be held from February 19 to 22, 2019.

CSE recognises CSR as a key component of inclusive and responsible businesses. In view of CSR (addressing and reporting) becoming mandatory, it is desirable for all stakeholders to formulate a CSR policy, and implement and monitor its effectiveness. This training programme is designed based on the provisions of the Act and Rules. It aims to give practical exposure on CSR to the participants, with specific references to the regulatory framework and processes to formulate policies—need-based assessment, stakeholder engagement, methodologies for implementation, performance evaluation and statutory reporting.

Alongside, the programme will go beyond the 2% expenditure on social – environmental initiatives and cover numerous aspects of the Business Responsibility Reporting (BRR), National Voluntary Guidelines (updated), Responsible Financing and similar international practices.

The objective of the training programme is to build a cadre of professionals who would assist in effective development and implementation of CSR and related activities of organizations for development that is sustainable in nature. This training programme would be relevant to the CSR leaders, senior and middle-level managers, practitioners and implementation partners, NGOs, students, etc.

WHAT IS THE TAKE AWAY FOR THE PARTICIPANTS FROM THIS PROGRAMME?

1. Regulatory Framework for CSR—Companies Act 2013 and CSR Rules 2014, international guidelines and best practices
2. CSR Implementation status—Challenges, risks, and learning
3. Approach for identification of CSR activities through needs assessment
4. Developing CSR policy
5. CSR; sectors – renewable energy, sanitation, municipal solid waste management, etc.
6. CSR planning and implementation
7. Monitoring, measurement and evaluation of CSR activities for outputs and outcomes
8. Success stories in CSR in India
9. Assessment of capacity of implementing partners
10. Grievances redress (processes and practices)
11. Reporting guidelines
12. Inclusive and sustainable businesses

TRAINING METHODOLOGY:

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COURSE DURATION

February 19 to 22, 2019

COURSE VENUE

Anil Agarwal Environment Training Institute (AAETI), Nimli (Alwar), Rajasthan

COURSE FEES

(inclusive of tuition fees, accommodation, food and local travel):

Double room

Rs. 23,000/- per person

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LAST DATE FOR APPLYING

February 13, 2019

OPEN FOR ALL

CSR practitioners, officials from companies, PSUs, consultants, academicians, students, NGOs and other

FOR REGISTRATION MAIL AT:

ishani.sonak@cseindia.org



COURSE COORDINATOR:

Ishani Sonak

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A DEAL FOR FARMERS

The proposed law on contract farming must include safeguards and a robust monitoring and dispute settlement mechanism to protect farmers' interests

AKHILESHWARI REDDY

THE UNION government, with its ambitious and untenable plan of doubling farmers' income by 2022, has embarked on reforms in the farming sector, one of which is the formulation of a law on contract farming. If devised and implemented in the right way, this law could indeed alleviate some of the stresses that India's farmers face. Studies have shown that contract farmers earn considerably more than non-contract farmers.

At present, contract farming is regulated under the Agricultural Produce Market Committees (Development and Regulation) (APMC) Act of 2003. This is the law that legalises contract farming. It mandates that private companies (sponsors) must register themselves as well as the farming contract agreements with the market committees created under the Act. Significantly, the Act provides that the sponsor cannot, at any time, lay claim to the land title of the farmer, thereby giving farmers some protection. However, these provisions are woefully inadequate. The Act does not provide for an effective monitoring mechanism, capacity building programmes or a robust dispute settlement system.

The NITI Aayog recently circulated a draft model contract farming law titled Agricultural Produce and Livestock Contract Farming (Promotion and Facilitation) Act, 2018, which proposes a comprehensive legal regime to enable contract farming. However, the draft law too suffers from some of the same deficiencies as the APMC Act. The draft says, "Contract farming is a pre-production seasonal arrangement between farmers and sponsors which transfers post-harvest market unpredictability from farmers to sponsors." In theory, contract farming seeks to combine agriculture with corporate efficiency while ensuring the provision of inputs such as seeds and technology to the farmers.

TARIQUE AZIZ / CSE



Problems at hand

Sponsoring entities typically rely on economies of scale to achieve profit maximisation and therefore often exclude small-scale farmers. This would be untenable in the Indian context as this would exclude a majority of Indian farmers, who are small farmers, owning less than 2 hectares (ha) of land, and marginal farmers who, on an average, own 1.1 ha of land. Though the draft Act, in its preamble, recognises the precarious position of the India's small and marginal farmers and also accepts that some form of non-coercive pooling of resources would be necessary, the draft Act itself provides no guidance on how this can be done. Further, India also has no concrete law on land pooling that would be necessary to make this law a success.

Contract farming is also known to lead to an increase in monoculture farming and a loss of crop diversity, making crops more vulnerable to destructive pests and crop diseases as only a single crop is sown to achieve efficiencies of scale.



The new law must find a way to address the additional risks that contract farmers have to confront and find a way to ensure protection to farms through better fertilisers, pesticides and incentivisation. Therefore, it is imperative that the government promotes risk sharing between the contracting parties and farmers and provide easy access to non-exploitative crop insurance schemes.

Importance of safeguards

There is a great probability that the disparate bargaining power between farmers and sponsors could also lead to exploitative contracts for farmers. Although the Model Contract Farming Act provides for the setting up of “Registering and Agreement Recording Committees” where the contracts are to be registered, it does not make provisions to ensure that these committees must be staffed with legally-trained persons who must vet the contracts to ensure that no dubious or unfair clauses have been included.

Studies also show that the success of contract farming depends significantly upon the type of crops that are planted. For instance, a study conducted in Punjab that compared Basmati rice with potato yields showed that the latter had a significant yield and income advantage over the former. This was a direct result of better suitability of soil and weather conditions for potato growth in addition to better technology and supervision by the sponsors. Therefore, it is necessary that state governments do not adopt a one-size-fits-all approach, and rather promote crops that are uniquely suited to the state's own unique soil, weather and technological conditions.

It must be noted that there are many contract farming success stories, including that of chilly and prawn farming in Andhra Pradesh and cotton farming in Tamil Nadu. Many studies by the Food and Agriculture Organization also show that contract farming can indeed benefit both parties by increasing efficiency, productivity and farmers' income, while at the same time, giving private sponsors a greater say in farming methods, type and quality of produce.

The improved yields, greater technology transfer and market access that could potentially accrue from contract farming are advantages that will significantly benefit the Indian farmers. While contract farming, if implemented wisely, does have the potential to alleviate the suffering of India's farmers, it is imperative that the government takes a cautious, research-backed approach rather than imposing another hasty, ill-thought-out decision that will cause more harm than good. ■

 @down2earthindia

(The author is a research fellow with the Vidhi Centre for Legal Policy, Bengaluru)

Environment as the enemy

We celebrate disruptive financial decisions as a sign of decisive leadership. So why not in the case of environmental emergencies?

FOR 34 years, every election in Bhopal brings back memories of the intervening night of 3–4 December, 1984. The campaign for the General Elections was at its peak. Bhopal was cursed on this night by what is now known as the Bhopal gas tragedy or the world's worst industrial disaster. The election campaigns went on and after a few weeks, the country celebrated the historic mandate of late Prime Minister Rajiv Gandhi. India witnessed two extremities: a political triumph and an environmental tragedy.

Just a few weeks before the 34th anniversary, the state was in the midst of electioneering to elect a new state government. But the concerns of the affected didn't feature in the agenda of political parties in any of the three legislative constituencies, which account for most of the tragedy's victims. The victims led a campaign: "No compensation, no votes." Still, the popular mood was to give the tragedy a miss. Newspaper reports quoted people saying that since the industry was no longer functioning, the threat of a repeat of 1984 didn't arise. For the half a million victims, this was like a judgment delivered by the majoritarian memory lapse.

Some 700 km away from Bhopal, Delhi, was witnessing its annual environmental disaster. Air pollution spiked from severe to emergency levels. Like the Bhopal tragedy anniversary, Delhi's annual extreme air pollution phase is also witnessing a seasonal span of attention only to be forgotten later. The city has what is called the Graded Response Action Plan, which recommends a set of actions to be implemented depending on the levels of pollution. By mid-November, as the air quality dipped, there was the extreme recommendation of allowing only cars running on cleaner fuels like compressed natural gas on the roads. It was an extreme proposal for an extreme

situation. But hell broke loose: from politicians, eminent people, advocates, experts to members of the media, everyone junked the extreme step.

Coming back to Bhopal. People and politicians are at least talking about "extreme" steps like demonetisation and the abrupt implementation of the Goods and Services Tax. There might not be general support, but the tone of debates and discussions is positive and the argument is that in the face of extreme situations we need extreme solutions. But the moment there is talk of an extreme

situation like say the air pollution in Delhi or an industrial disaster, the discourse ends with an argument that criminally reflects our pathetic understanding of public interest: "These are one-off incidents, and environmental concerns can't stop development". That is the new polarisation: environment *Vs* development. In this polarisation our support and acceptance of disruptive steps/solutions is limited to

"development". For example, stopping vehicles would bring "development" to a grinding halt in Delhi. Similarly, anti-corruption campaigns never supported the environmental concerns raised by local communities whose lands and water were being taken away for private businesses. The moment the Supreme Court ordered the communities in Odisha to give a verdict on bauxite mining in Niyamgiri areas, the debate again was steered back to environmental concerns being a stumbling block for development. Mining in that mountain range would have killed many rivers which, in turn, would have impacted overall water security of towns and cities depending on them. Our definition of a decisive leadership has been reduced to taking decisive steps on a few issues, but not on critical environmental concerns that fundamentally define our existence. ■



RITIKA BOHRA / CSE

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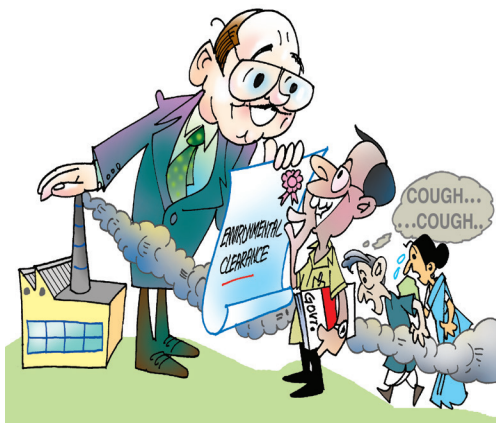


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COURSE DURATION

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Functional Area Experts, Environment Consultants, NGOs, Regulatory Institutions (such as SPCB, State Environment Impact Assessment Authority), Students, Decision Makers and Industry Professionals

Environmental Impact Assessment (EIA) is an important tool to inform decision-makers, regulators and stakeholders, about the possible environmental, social and economic costs of the proposed project. To be effective, it requires the active involvement of all concerned stakeholders.

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Centre for Science and Environment recognises this need and has developed a hands-on five-day training programme aimed at giving exposure to the participants on EIA with specific reference to *mining, power sector and infrastructure projects (road and highway)*. After the programme, the participants shall have an understanding of:

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6. Risk and Biodiversity Assessment
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