

HAPPINESS

Development with Values



“No matter what task you are assigned with or whatever responsibilities that you need to shoulder, give it your best! No matter how trivial or inessential that task seems as long as it has been assigned to you, you need to carry it out with due diligence and give it a 100%”

His Majesty the King

GENDER & THE BALANCING ACT

EARTHQUAKE RISK REDUCTION- *Gearing up for the shakeup- of preparations for disaster, by understanding disaster*

EV PROJECT- *A Nation Electrified – EVs continue to prove their point*

BTFEC – *Forerunner to Bhutan’s Environmental Conservation*



FAB 23 BHUTAN

International Youth Day, 2023
Green Skills for Youth: Towards a Sustainable World

DAMTSI handbook for scouts-
Developing Accountable and Moral, Trustworthy and Successful Individuals

HOW DRUG USE AFFECTS PEOPLE

AWARENESS ON RABIES





Dratshangs,
Shaydras and
Lhakhangs

Inside Private
Vehicles

Commercial
Centres

Fine Nu.10,000
per incident
of failing to
display 'No
Smoking' signs
by person-in-
charge

Fine Nu.500
per incident
of smoking in
'No Smoking'
areas

Fine Nu.1000
payable by
person-in-
charge (per
person smoking
in no-smoking
area of the
premise)

NO
SMOKING
AREAS

Public Spaces

Recreation
Centres

Public
Transportation

Public
Gatherings

Institutions



How Do Drugs Impact the Teenage Brain

- Planning
- Judgement
- Trouble performing easy tasks
- slowed thinking and reaction time
- Memory loss or impairment
- Lower IQ

Common Parts of the Brain Impacted

- Neurotransmitters
- Dopamine and serotonin production
- Prefrontal cortex

Long Term Effects & Consequences

- Dangerous behaviors
- Difficulty in school
- Addiction and dependency
- Co-occurring mental health disorders

TEENS ARE AT RISK!

- Teens who use cannabis regularly have, on average, **one grade point lower** than their peers.
- Kids who begin drinking before age 15 are **4x more likely** to become addicted than people who start at age 21.
- Teens who use cannabis may **lose up to 8 IQ points** between childhood and adulthood.



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Ministry of Health (MoH)

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The interconnectedness of things

With the level of interconnectedness and shared consciousness the world is seeing; the truth is more elevated than ever — the world is a big ball of twine.

Gender, climate, environment, technology —all hail from different worlds. But worlds collide! Or intertwine; like we were ruminating above. In today's world, there is no issue that is standalone. One cuts across another, another cross-cuts across all others. That's just the way it is and resolutions are no longer one issue-specific. They come across as broadly as the vastly networked issues present themselves.

The NCWC (National Commission for Women & Children) is the national machinery taking the lead to protect and promote the rights of women and children. In its line of duty, resolving visible issues (Domestic Violence, Child rights) are par for the course; but such matters as gender-equality ropes in multi-dimensional aspects such as climate change, environment, disaster, poverty alleviation etc. And so it seems that the EV Project of the government is straight-forward, a mission to cut emissions and help the country stay carbon-neutral. But through the interconnected lens it is so much more branched out to benefit multiple sectors and become an environmental champion, an economic equalizer. Speaking of economy, the Fab Lab

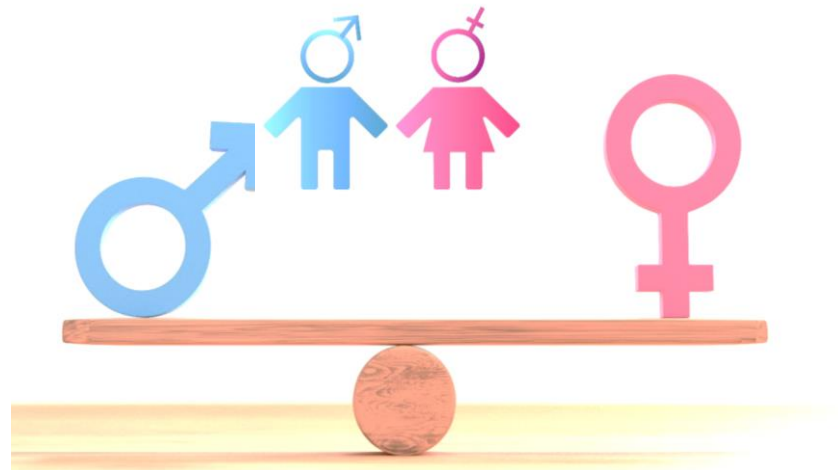
International Conference hosted annually by the Fab Foundation USA is the world's largest digital fabrication and innovation gathering. Titled "FAB 23 Bhutan," the event was held in the country this year. It signalled immense potential for the Bhutan economy.

The JICA-supported projects and programs in the country; the ones operating on the earthquake risk reduction/mitigation front break new grounds every day and offers better protection to lives and properties. A program that 'effectively' and 'efficiently' saves lives ensures the continuity not just of development activities but life itself. That way, the BT FEC – nation's first environmental NGO and world's first environmental trust fund is more-than-three-decades-strong protecting the nation's environment and by proxy helping resolve much of the world's environment-related malaise and impacts of climate change.

Interconnectivity is such a blessing. But, two sides to everything, right? All the worlds should but try see it as a gift and work that way.



GENDER AND THE BALANCING ACT



We've all heard that line – all beings are created equal. The evolved reality though (across changing times) has not stayed true to that most familiar and oft-chanted line. And nowhere is it truer than when we talk about gender equality and all things gender-associated.

Gender equality, besides being a fundamental human right, is essential to achieve peaceful societies, with full human potential and sustainable development. Moreover, it has been shown that empowering women spurs productivity and economic growth. Bhutan has made significant socio-economic and health development in the last decade. The Human Development Index (HDI) was 0.654 in 2019¹, which placed the country in the category of 'medium' human development countries – ranking 129 out of 189 countries. Between 2005 and 2019, Bhutan's HDI value increased from 0.520 to 0.654, an increase of 25.8%, suggesting good progress towards achieving its development goals. Between 1990 and 2019, the life expectancy at birth increased by 18.9 years, mean years of schooling increased by 1.8 years and expected years of schooling increased by 7.5 years. The gross national income (GNI) per capita increased by about 328.0% between 1990 and 2019.

Gender equality is inherently linked to sustainable development and the philosophy of Gross National

Happiness. It is vital to the realization of rights for all people and promoting full potential of women, men, boys and girls. There is conclusive evidence showing that greater gender equality stimulates economic growth of the countries which is crucial for a developing country like Bhutan.

In Gender equality, Bhutan has a Gender Gap Index of 0.637², ranking it at 126 out of 146 countries in 2022. While Bhutan has made progress towards gender parity in education attainment, health and survival and political empowerment, its performance in the labor force participation regressed significantly. Bhutan ranked fifth among the South Asian countries behind Bangladesh, Nepal, India and Sri Lanka.

The UN acknowledges there is a long way to go to achieve full equality of rights and opportunities between men and women. But that doesn't mean all concerned should down-tune their efforts. In fact, it is of paramount importance to end the multiple forms of gender violence and secure equal access to quality education and health, economic resources and participation in political life for both women and girls and men and boys. It is also essential to achieve equal opportunities in access to employment and to positions of leadership and decision-making at all levels.

¹ https://hdr.undp.org/sites/all/themes/hdr_theme/country-notes/BTN.pdf

² https://www3.weforum.org/docs/WEF_GGGR_2022.pdf.



Bhutan's efforts in promoting gender equality

In Bhutan the gender equality model has the strongest backing being provisioned and protected in the hallowed pages of the Constitution of the Kingdom of Bhutan which provides an overarching framework and foundation within which gender equality is enshrined. It provides the overall legal framework for women's empowerment wherein the fundamental rights are equally bestowed on men and women. The fundamental duties mandate every Bhutanese not to tolerate abuse of women and principles of state policies guide actions to eliminate discrimination against women and children.

The country has made remarkable efforts to promote gender equality. It has developed numerous frameworks, plans and programs while also establishing a sustainable protection and institutional mechanism. Efforts are on continuously to strengthen and promote gender equality at all levels and sphere of life. The country has adopted multiple legal and policy frameworks to provide women and men the right to full and equal participation in political, civil, economic, social and cultural life at all levels.

Domestic Violence Prevention Act 2013: As per the Act, domestic violence is a crime. The Act states four types of violence namely; sexual, physical, economic and emotional violence.

National Gender Equality Policy 2020: The gender equality policy provides an overarching policy directive for the government to promote gender equality and gender mainstreaming in legislation, policies, plans and programs. The policy explores gender equality through the three domains of Gender equality in the political and public domain; Gender equality in the social domain; and Gender equality in the economic domain.

Party to the CEDAW: Bhutan ratified the Convention on the Elimination of all forms of Discrimination Against Women (CEDAW) in August 1981. As a State Party to the Convention, Bhutan has to submit periodic reports to the CEDAW Committee every four years. The CEDAW Committee is an independent treaty body to monitor the implementation of the Convention by State Parties.

Gender equality is considered a priority in Bhutan, as it is enshrined in the Constitution of the Kingdom of Bhutan. This legal framework provides equal fundamental rights to men and women, and mandates every Bhutanese to eliminate discrimination against women and children. The country has developed many frameworks, programs, and institutional mechanisms to promote gender equality and has adopted multiple legal and policy frameworks to ensure full and equal participation of women and men in all aspects of life. Ongoing efforts are being made to further strengthen and promote gender equality in all spheres of life.

Relevant Acts/Bills passed in Bhutan

- The Inheritance Act 1980
- The Bhutan Citizenship Act (Amendment) 1985, enacted at the 62nd Session of the National Assembly 1985
- The Marriage Act of Bhutan (Amendment) 1996
- Local Government Act of Bhutan 2009, enacted at the 1st Extraordinary Sitting of the Parliament, 11th September 2009

- Civil Service Act of Bhutan 2010, enacted at the 5th Session of the First Parliament, 7th July 2010
- The Penal Code (Amendment) Act of Bhutan 2011, enacted at the 7th Session of the First Parliament, 24th May 2011
- The Civil and Criminal Procedure Code (Amendment) Act of Bhutan 2011, enacted at the 7th Session of the First Parliament, 25th May 2011
- The Child Care and Protection Act of Bhutan 2011, enacted at the 7th Session of the First Parliament, 31st May 2011
- The Domestic Violence Prevention Bill, endorsed by The National Assembly, at the 9th Parliament Session, June-July 2012
- Labour and Employment Act of Bhutan 2007, enacted at the 87th Session of the National Assembly, 4th January 2007 - Regulation on Sexual Harassment 2009 - Acceptable Forms of Child Labour 2009

(Source: Study On violence Against Women in Bhutan-NCWC)



Gender and Domestic Violence

Domestic violence. There is everything wrong with it because it is wrong on so many levels of moral and legal grounds. What we mean to say is; the prevalence of DV (domestic violence) has had its run for decades across the world and for the most challenged of reasons it just cannot be eliminated completely. A probable reason perhaps remains in the fact that it is rooted in human nature. It operates on human nature.

And when has there ever been a fixed template successfully predicting human nature? The answer is 'none.' Regardless, nobody is putting their hands up in resignation. They say it's complicated, it's emotional and nothing is solved with the wave of a magic wand. But then that's where the stark realities precede human nature- to perhaps seemingly feel a need to endure longer where there is little need to do so, to not

Speak out where there is actually need to do so, to not open up to those outside who can help with what's really going wrong inside.

As per a 2017 nationwide study on prevalence of violence against women and girls, 44.6% of women and girls experienced one or more forms of intimate partner violence (IPV) at least once in their life time. Controlling behavior was found to be the most common form of IPV with 35.3% of women and girls reporting experiencing such violence. Also, 53.4% of women and girls aged 15-64 believe that men are justified to hit their partner under certain circumstances, which indicates a high violence acceptance level. This suggests prevalence of harmful socio-cultural norms and practices, and a lack of awareness about women's rights.

This is where an agency like the NCWC (National Commission for Women and Children) steps in. And it steps in with all the conviction and express weight of sage wisdom and expertise powered by involvement of all linked stakeholder agencies, legal and law enforcement bodies, all actions legitimately justified again through multiple consultative stakeholder discussions.

For a period, a long one; local news reports would frequently that DV is hugely prevalent but is normally underreported judging by reported statistics. That was being said because the reality was that the bigger chunk of cases remain unreported. Then with the institution of a national commission like the NCWC, NGO agencies like RENEW and the specialized and focused treatment of DV issues in law enforcement like establishing a separate Women and Children Protection unit coupled with advocacy and action-oriented activities with international agencies like the UNDP; all these warmed up to bringing about a change in efficiency with which cases started to become more forthcoming in being reported, how then they are handled, managed- not for a short-term fix but with a goal to come out with a longer-termed solutions roping in components of individuals involved (man, woman), children, family, society, community and nation at large.

As per records maintained by the RBP (Royal Bhutan Police) which has eight divisions across the country, 2,481 DV cases were reported from 2019 till the end of March, 2023. The year 2019 recorded 421 cases, 2020 saw 476 cases, while 2021 and 2022 saw 574 and 817

cases reported respectively. As of March 2023, cases reported was 193 (20 March 2023/BBS)

The RBP has separate women and child protection units and desks across the country to receive domestic violence-related cases.

Women and Child Protection Units (WCPU) of the RBP are open in Thimphu, Paro, and Phuentsholing since these districts have the highest number of DV cases. Other districts have Women and Child Protection Desks (WCPD). The WCPUs and WCPDs also look after DV where men are victims. The RBP forwards domestic violence cases to RENEW for shelter and counselling services if required. The RBP also receives cases from RENEW.

The PREAMBLE to the Domestic Violence Prevention Act of Bhutan 2013

WHEREAS in consonance with the Constitution of the Kingdom of Bhutan towards the right to equality and to freedom and security of a person with the ultimate desire to realize happiness for all its citizens;

WHEREAS traditional means prevail to foster and promote family integrity and institution in the pursuit of Gross National Happiness;

WHEREAS the integrity and sanctity of person are respected and accorded the highest regard;

RECOGNIZING the need to prevent domestic violence and promote harmony, coexistence and respect within families and domestic relationships;

IT IS THE PURPOSE of this Act to ensure a prompt and just legal remedy for the victims of domestic violence; facilitate access to remedies for immediate and effective assistance, shelter homes and protection to the victims of domestic violence and to introduce measures which seek to ensure that the relevant organs of the State give full effect to the provisions of this Act.

The Parliament of the Kingdom of Bhutan do hereby enact the Domestic Violence Prevention Bill of Bhutan 2013 on 19th Day of the 1st Month of Water Female Snake Year of the Bhutanese Calendar corresponding to 1st Day of March 2013 at its 10th Session of the First Parliament.

The police sends mentally disturbed survivors to trained counsellors in NCWC and the RENEW. Also, the cases involving children are referred to trained counsellors in hospitals and schools. The RENEW says the increasing number of cases is a good sign because it means people are coming forward to report and availing themselves of support services. This is also because most times most cases go unreported. The

RENEW have the cases of criminal nature forwarded to the RBP. With the cases it handles, RENEW proceeds with mediation and intervention, which includes counselling and support services. RENEW has community service centres in Phuentsholing, Punakha, Paro, Tsirang, and Bumthang with stationed trained volunteers (who give support services) in other districts.



Gender and Climate Change

If you are stationed on earth you cannot escape climate change (impacts). But additionally climate change impacts spills over to affecting people more harshly if they are distributed across the vulnerable sections of population. It has been seen, recorded and reported, women bear a heavier brunt of Climate Change impacts due to existing gender inequalities and other developmental gaps as well as the nature of the job they are engaged in.

The NCWC as the nodal agency for gender equality has made substantive efforts to mainstream gender into sectoral plans, policies and programs. Gender mainstreaming into programs are initiated through sector-specific projects to enable effective delivery of outcomes. The RGoB has long embarked on mainstreaming gender into climate sectors to enable gender responsive climate actions. The GECDP (Gender, Environment, Climate change, Disaster

management, Poverty alleviation) mainstreaming project of the government (DLG) in the not so distant past is a good reference. This activity was initially started under the Joint Support Program (JSP) more than a decade ago and continued later through the Local Governance Sustainable Development Program (LGSDP) with the aim of creating an enabling and level-playing field for local governments to foster self-reliance and equitable socio-economic development by mainstreaming their socio-economic development activities into policies, plans, and programs. GECDP mainstreaming is integrated into the EU budgetary support's DLG component and facilitated by the central level Mainstreaming Reference Group (MRG) that was instituted through an executive order from the Cabinet.

Gender differences are visible in climate change vulnerability, participation in climate change decision-making and action, and diverse levels of benefit-sharing. With changing weather patterns (including heat stress), overall production is decreasing, and more pests as well as human-wildlife conflicts have become evident. Increasing temperature as a result of climate change has adverse but differentiating impacts on the lives of both men and women owing to their different adaptation and mitigation capacity. As migration increases especially those of male members, the responsibilities and roles of women become more difficult and working conditions deteriorate. Violence Against Women and Girls (VAWG) — including sexual exploitation and health problems — intensify.

As per the NCWC Summary Report policy brief of 2020 titled 'Gender & Climate Change in Bhutan with a Focus on Nationally Determined Contribution Priority Areas: Agriculture, Energy and Waste,' the felt effects of climate change on a person's personal life varies by



The National Gender Equality Policy 2020 (NGEP) of Bhutan envisions a society where substantive equality is practised, equal opportunities for women and men, and boys and girls are provided to achieve their full potential and benefit equitably from the social, economic and political development in the country.

Gender equality is achieved when women, men, girls and boys have equal rights, conditions and opportunities, and the power to shape their own lives and contribute to the development of society.

Women and the Sustainable Development Goals (SDGs)

Equality and empowerment: The United Nations is now focusing its global development work on the 17 Sustainable Development Goals (SDGs). Women have a critical role to play in all of the SDGs, with many targets specifically recognizing women's equality and empowerment as both the objective, and as part of the solution.

Goal 5, to "Achieve gender equality and empower all women and girls" is known as the stand-alone gender goal, because it is dedicated to achieving these ends. Deep legal and legislative changes are needed to ensure women's rights around the world. While a record 143 countries guaranteed equality between men and women in their Constitutions by 2014, another 52 had not taken this step.

Stark gender disparities remain in economic and political realms. While there has been some progress over the decades, on average women in the labour market still earn 20 per cent less than men globally. As of 2021, only 25 per cent of all national parliamentarians were female, a slow rise from 11.3 per cent in 1995. (un.org)



gender. For instance, a relatively higher portion of males reported 'difficulties in food production', 'increased use of electric fan', 'increased household waste', and 'more conflicts in the household'. On the other hand, a relatively higher proportion of females reported 'decrease in household income' and 'changes in household food habits'.

A slightly higher percentage of females than males affirmed the effect of climate change on the natural resources that they depend on, for their livelihood. About half of the surveyed population also agreed 'strongly' that 'climate change increases women's workload more than men's', and that 'climate change impacts women more than men'. The study indicates that at present, the gender and climate nexus receives very limited attention in Bhutan's education system—but a review of the present curricula offers opportunities to start such integration, particularly at secondary and tertiary level.



UN Secretary General Antonio Guterres has stated that achieving Gender Equality and empowering women and girls is the unfinished business of our time, and the greatest human rights challenge in our world.

Gender Equality – The unfinished business of our time

Women and girls represent half of the world's population and, therefore, also half of its potential. Gender equality, besides being a fundamental human right, is essential to achieve peaceful societies, with full human potential and sustainable development. Moreover, it has been shown that empowering women spurs productivity and economic growth.

Unfortunately, there is still a long way to go to achieve full equality of rights and opportunities between men and women, warns UN Women. Therefore, it is of paramount importance to end the multiple forms of gender violence and secure equal access to quality education and health, economic resources and participation in political life for both women and girls and men and boys. It is also essential to achieve equal opportunities in access to employment and to positions of leadership and decision-making at all levels.

The UN Secretary-General, Mr António Guterres has stated that achieving gender equality and empowering women and girls is the unfinished business of our time, and the greatest human rights challenge in our world. (un.org)

Gender Equality was made part of international human rights law by the Universal Declaration of Human Rights, which was adopted by the UN General Assembly on 10 December 1948.

The NCWC Summary Report—which dives deep into areas of governance provides concrete and action-oriented recommendations and helps develop short-term and long-term recommendations to inform ongoing projects, future projects and programs to mainstream gender into climate actions.

References: *NCWC Reports; National Gender Equality Policy 2020; Constitution of the Kingdom of Bhutan 2008; Domestic Violence Act of Bhutan 2013; Gender & Climate Change in Bhutan with a Focus on Nationally Determined Contribution Priority Areas: Agriculture, Energy and Waste (Summary Report by NCWC); un.org; Kuenselonline; BBS;*

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A Nation Electrified – EVs continue to prove their point



FYI, there really is a lesser vehicle and there really is a greater vehicle (when you put environmental conservation into perspective). When it comes to putting out cars on the road, the fossil fuel-driven air polluting automobiles, are for certain the lesser vehicles. Which means, we are hailing the zero-carbon emitting EVs (Electric Vehicles) as superior of the two – Greater Vehicle indeed!

It's a long journey across planning tables and boardrooms (the talks), till the show gets on the road (the actions). This doesn't get any truer when it comes to those pining for action to witness real and telling examples in terms of solid actions on the climate action front. The Bhutan Sustainable Low-Emission Urban Transport System or the EV Project started in 2018 was different. One might say it literally took the show on the road as it sought to replace a significant portion of fossil fuel-driven vehicles with electric vehicles. It went on to prove its point. The EV project helped in about 291 taxi drivers switch to EVs. It translates to millions of kilos of carbon emissions that is offset (in the years that the EVs continue to operate on the road).

Bhutan has plenty in laurels to rest its claim on as a champion of environment. It has a forest cover of more than 70%, it is among the few carbon-negative country in the world. In an era of climate emergencies though; no time to rest on laurels, right? Right! And the EV Project – it has really converted the conservation conversation into action. It helps maintain the country's carbon-neutral status for times to come.

Maximum impact, minimum emissions

Projections indicate emissions from the transport sector could hit 1.25 million metric tons by 2050 if things are allowed to operate in a business-as-usual scenario. The most significant rise in GHG emissions is expected from light vehicles (3.8 times), followed by medium vehicles (3.6 times) and heavy vehicles (3 times). Currently, light vehicles (including taxis) and two-wheelers combined account for more than 81 percent of the total registered vehicles, while heavy and medium public transport buses together constitute less than a percent.

The EV Project ‘Leveraging Nationally Determined Contributions (NDCs) to achieve net-zero emissions and climate-resilient development, in response to the climate emergency’ builds on the Bhutan Sustainable Low-Emission Urban Transport System funded by the Global Environment Facility (GEF). The EV Project is a partnership between the Government of Japan and UNDP’s next phase of the Climate Promise: From Pledge to Impact. It aims to help countries turn their NDC (Nationally Determined Contributions) carbon reduction targets into concrete results. Adding to the already operating fleet of EVs, the UNDP office in Thimphu handed over 19 EVs (Nissan leaf) by April 2023 funded through the USD 1.1 million project supported by the Government of Japan and UNDP. To draw a little perspective – the 16 EVs will help offset 5,585kg of carbon dioxide yearly. This is 83,775kgs over a period of 15 years, which is the estimated life of the EVs (as per UNDP Press Release).

The project supports the implementation of Bhutan’s Second NDC. The project also supported procurement and installation of 8 DC Chargers and 8 AC chargers.

“This project will support the implementation of Bhutan’s Second NDC, which is informed by low-emission development strategies for transport, human settlement, industries and food security. It identifies low emission development pathways to help Bhutan achieve development objectives while also maintaining its carbon neutral status. Meeting carbon reduction targets set in the 2nd NDC is central to realizing Bhutan’s ambitious climate goal, including remaining carbon neutral for all times. UNDP remains committed to working closely with the Prime Ministers’ Office in ensuring successful implementation of the project,” said Azusa Kubota, the-then Resident Representative of UNDP Bhutan in 2022 at the signing of the USD 1.1 million project.

Hiroyuki Yamashita, First Secretary (Economic & Development) of Embassy of Japan in Bhutan (based in New Delhi), said, “The partnership between the Royal Government of Bhutan and the Government and people of Japan has always been centered around sustainable development of both rural and urban areas of Bhutan and mitigating vulnerabilities. Tackling the challenge of climate change by curbing CO2 emissions is particularly crucial for improving urban environment and mitigating the risk of natural disasters. We look forward to seeing transformational changes through the implementation of this project.”

Bhutan’s Second NDC highlights the importance of reducing emissions from the transport sector, one of the major carbon emitters in the country. Almost 99.9 percent of motor vehicles in Bhutan are powered by



Wheels - revolutionary invention that radically changed life for mankind. Wheels – that unmissable feature on automobiles. Wheels – its every revolution per kilometre pumps more carbon emissions into the environment. Wheels on EVs though – entirely a different story. Every revolution of the wheels on EVs emits no emission. In fact, more EV wheels turning is more Carbon offset by the country. Now, that is, one might say, a real revolution – A true revolution!

diesel or petrol. Vehicle emissions accounted for 60 percent of the total emissions from the energy sector, amounting to approximately 398,829 metric tons of CO2 emissions in 2019.



Charging station inaugurated

The Minister for Infrastructure and Transport, Lyonpo Dorji Tshering, Japanese Environment Minister Akihiro Nishimura, Japanese Ambassador to Bhutan Hiroshi Suzuki and UNDP Resident Representative Mohammad Younus inaugurated the Electric Vehicle Charging Station at Dangrina in Dechencholing, Thimphu.

The charging station is one of the eight DC or quick charging stations installed as part of the EV project Leveraging NDCs to Achieve Net-Zero Emissions and Climate Resilient Development, in Response to the Climate Emergency — a \$1.1 million project aimed at accelerating Bhutan’s transition to low-emission transport system. It is led by the Prime Minister’s Office in partnership with the Government of Japan and UNDP. The project is well on its way to install eight AC or slow chargers.

Of the eight charging stations, six are in Thimphu and the other two in Zhemgang and Trashigang. These additional charging stations will help address concerns around limited number of charging stations, which has been one of the hurdles on the path to clean transport in Bhutan.

Japan’s Environment Minister Akihiro Nishimura is the first cabinet minister to visit Bhutan post COVID-19 pandemic. Speaking at the inauguration, Minister Nishimura thanked the Government of Bhutan and UNDP for the partnership and reiterated Japan’s continued support towards Bhutan’s sustainable development.

UNDP Resident Representative Mohammad Younus thanked the Royal Government of Bhutan and the

Government of Japan for the partnership. “This Bhutan-Japan-UNDP partnership has contributed significantly towards strengthening the EV ecosystem in the country,” he said.

“It is imperative that we keep the EV momentum alive. UNDP remains committed to providing the support needed at speed and scale as Bhutan strives to transition to zero-emission mobility by 2050.”

Besides supporting charging stations, the project provided 19 EVs to the government. It also trained 50 engineers from the Bhutan Power Corporation in charging station maintenance. In collaboration with the Technical Training Institute in Samthang, Wangdue Phodrang, 20 Motor Transport Officials from the government were equipped with skills and knowledge to handle EVs and hybrid cars safely and effectively. Over 140 EV taxi drivers underwent EV induction course.

The project also helped build capacity of transport officials in EV policy making and business models, recycling and repurposing EV batteries and building charging infrastructure. In partnership with the De-suung Skilling Programme, the project engaged 20 skilled Desuups in the development of charging sites.

The replacement of old government pool vehicles with EVs was part of the Project’s activities. This has yielded remarkable environmental and economic benefits. The adoption of 19 EVs is set to offset 35.88 metric tons of greenhouse gas emissions yearly. It has also resulted in substantial fuel and maintenance costs savings.



Fleet of 19 new EVs hits the roads as Bhutan gears toward zero-emission mobility by 2050

06 March 2023: The 19 EVs were supported through a USD 1.1 million project supported by the Government of Japan and UNDP. The remaining three cars will be procured soon.

The project titled, “Leveraging Nationally Determined Contributions (NDCs) to achieve net-zero emissions and climate-resilient development, in response to the climate emergency,” is a partnership between the Government of Japan and UNDP’s next phase of the Climate Promise: From Pledge to Impact. It aims to help countries turn their NDC (Nationally Determined Contributions) carbon reduction targets into concrete results.

UNDP Bhutan Resident Representative Mohammad Younus formally handed over the EVs to the Cabinet Secretary Dasho Kesang Deki.

The Cabinet Secretary, on behalf of the people and Royal Government of Bhutan conveyed appreciation to the Government and people of Japan, and UNDP for the support, notwithstanding the difficult times brought about by the Covid-19 pandemic. She said the support will go a long way in building public confidence in EV and reducing Bhutan’s dependence on import of fossil fuel.

Eight quick charging stations will be installed at strategic locations through the project. It will also build the capacity of EV technicians and work towards creating an enabling policy for EV promotion and increase awareness on EVs to boost consumer confidence. These will help improve the EV ecosystem in the country.

The project builds on the “Bhutan Sustainable Low-Emission Urban Transport System” project funded by the Global Environment Facility (GEF) and supported by UNDP, which helped 291 taxi drivers switch to EVs. It will help Bhutan achieve its goal to always remain carbon neutral.

UNDP Bhutan Resident Representative commended Bhutan’s bold transition to e-mobility to decarbonize the transport sector. He thanked the Governments of Bhutan and Japan for the partnership. “EVs are an important solution for countries to meet their emission reduction targets. Our EV partnerships seek to demonstrate the viability of a low-emission transport system and pave the way for wider and faster adoption of EVs to reduce dependence on fossil fuel. It’s imperative that we keep the EV momentum alive. UNDP remains committed to provide the support needed and at speed and scale,” said Mr. Younus.



All round benefits: environment gets to Zero (emission), drivers add zeros to earnings

Good for drivers’ income: The GEF-supported EV Project awards a subsidy of USD 5,500 to taxi drivers if they purchase an EV that costs Nu 1.9 M and above. They are also given a 70% loan without collateral from the Bank of Bhutan.

As taxi drivers swap fuel guzzling automobiles for EVs, they also swap that wear and tear that bores a hole in the monthly budget. The advantages of EV Taxis as a mode of earning is more prospective. And while doing that if you’re continuously saving the environment, then the question is not ‘Should I?’ but ‘Why not?’

Dangchu, a taxi driver in Thimphu traded his petrol taxi and went for an EV (through the EV Project).

That was a year and half ago. He speaks of his experience with the EV taxi. He has only had reasons to celebrate his decision with earnings tipping toward an advantage as compared to having to fuel from time to time which besides being more expensive proves also be a waste of time having to wait in long lines. The EV has not given him any trouble on the repair and maintenance front either. The ripple effects of Russia-Ukraine war sending fuel prices soaring, it has become all the more reason to celebrate his decision. Cumulative earnings are also better for the seasoned taxi driver. He used to earn up to Nu 60,000 a month driving his petrol taxi. Now, with the savings he makes on fuel and maintenance he brings home double the amount.

The song is pretty much the same across the EV Taxi-driving community’s landscape.

Good for national economy: Hydropower has been a blessing for the country's economy during the tumultuous COVID-19 period. It was in the words of many people 'COVID-Proof,' as it cushioned the impact of economic downturn with gross revenue generation of Nu 30.152bn in 2020. The disruption in the global supply chain, soaring energy and commodity prices and resultant inflation in the market are of grave concern as they directly affect households and individuals. Switching to EVs imply capitalizing on our own renewable hydropower resources to electrify the transportation sector, hence reducing dependency on the import of fossil fuels. This will, in many ways, help stabilize the market in terms of rationalizing the commodity prices. Furthermore, ICE taxis spend an average of Nu 1,000 per day on fuel alone, as opposed to zero cost on EVs.

The promotion of EV also syncs well with Bhutan's outstanding green credentials. Besides the environmental benefits, EVs are expected to be the preferred mode of transportation in the tourism sector, as it sees more international tourist arrivals in the unfolding months and years.

Meanwhile, the MoLHR has already introduced an EV Curriculum in the Technical Training Institutes. The idea is to train TTI graduates and automobile mechanics in operation and maintenance of EVs and related infrastructures to ensure a seamless transition to EVs.

Fuel for the EV fire: While the operating EVs on the road is a promising start already gathering milestones on the desired road to zero-emission by 2050, the gathering miles, they do need a power source to keep the miles running. Charging stations are the must-have features if EVs need to keep running.

The EV Project has installed 20 charging stations in seven districts. Eventually every dzongkhag will have a charging station. With support from Japan's Supplementary Budget and from Bhutan for Life Office, 10 charging stations will be installed in Thimphu and at strategic locations along the national highway.

Just as fuel stations dot the automobile landscape, EV charging stations need to station their presence at strategic locations. Add to that the EV Project also builds capacity of EV technicians who are the equivalent counterpart of automobile mechanics who ensure timely repair and maintenance of the EVs. All these goes toward creating an enabling policy for EV promotion and increase awareness on EVs to boost consumer confidence and ensure a progressive growth for the EV ecosystem in the country.



Country's first electric bus inaugurated in Thimphu, services to begin soon

In a move towards promoting sustainable transportation in the country, Thimphu Thromde's City Bus Service inaugurated the first-ever electric bus today. The electric bus holds the potential for reducing carbon emissions and fuel imports. The project is funded by the Austrian government and implemented through a partnership between the United Nations Industrial Development Organisation, the Prime Minister's Office and the Thimphu Thromde.

Equipped with an automatic wheelchair ramp, air conditioning, and CCTV systems among others, the new electric bus worth Nu 14.85 M ensures passenger comfort, safety, and convenience.

"These are the specs a city bus should have. So, we have plastic chairs, designated seats and stop bells. We also have phone charging ports and a camera for surveillance on the bus. We have an automatic wheelchair ramp for persons with disabilities," said Passang Tshering, director of City Bus Service.

With a capacity to carry 45 passengers including 27 seating and 18 standing, the electric bus has the potential to replace up to 49 vehicles on the road. The bus has a mileage of about 230 kilometres and is capable of covering up to 160 kilometres on a single charge. To support its operation, three charging stations will be available at Ngabiphu terminal, Dangrina terminal, and the City Bus Office. Following an evaluation and staff training, the electric bus is expected to start serving passengers along the capital city's highway in about a week.

The commencement of the electric bus project dates back over three years ago when the erstwhile Gross National Happiness Commission and United Nations Industrial Development Organisation signed a contract in 2021.

The Bhutan Construction and Transport Authority (BCTA) of the Ministry of Infrastructure and Transport (MoIT) is scheduled to complete the Electric Vehicle Charging Stations construction project in 14 dzongkhags.



The EV roadmap

Globally, electric vehicles are considered the most promising intervention to mitigate GHG emissions from the transport sector. The EV project is Bhutan's sustainable low emission urban transport system.

The number of vehicles in the country has increased from 66,430 in 2012 to 122,865 by June 2022. In this 361 is the representative figure for the EV population (as per RSTA report). The country aims to replace 70 percent of its current vehicle number with electric vehicles within the next 14 years (by 2035). This is directly aimed at reducing vehicular emissions. The Electric Vehicle Road Map 2035 specifies the target and complies with the Low Emission Development Strategy for Surface Transport (2021-2050) policy.

Success story in the driving

Wheels are common to the automobiles and the Electric Vehicles. But as the automobiles rack up the Carbon Dioxide emission figures with every spin of their wheels, the opposite is true for the EVs. The wheels on the EVs go round and round emitting Zero-emission as it moves from places to places.

In that manner of speaking, the government's aim (through the EV Project) to replace 300 taxis with electric vehicles is a success story in the writing. The EV project is close to putting those 300 taxis on the roads so far while customer orders for EVs numbering in the

hundreds have yet to arrive. The current fleet of electric taxis on the roads are already able to reduce carbon emissions by about 1,500 tons (according to the EV Project Unit office).

According to the EV Project unit, the 300 electric taxis will reduce 43,000 tonnes of the country's carbon dioxide emissions within nine years. A car is estimated to release close to 16 tons of carbon dioxide into the atmosphere every year. The project which started in 2018 missed the first deadline set for September 2022. The car dealers in the country were not able to deliver the orders on time due to the disruptions caused by the COVID-19 pandemic.

EVs – A promising case for Bhutan

With more than 70% of its land mass covered in trees and a strong, dedicated political will to limit global-warming emissions, Bhutan already absorbs more carbon each year than it produces making it a "carbon-negative" country. In the repository of earth's constituent nations, only a few can lay claim to such a claim.

The EV initiatives — the drive to promote EVs in government fleet, very much making them a part of public transport (the first Electric City Bus was inaugurated on 19 July, 2023) and the use EVs in the fleet of taxis (electric-taxi initiative) — are the impactful measures the government is taking to meet the country's pledge to ensure emission levels stay at net-zero for all times. With most of Bhutan's electricity generated by hydropower (a clean energy source), government data shows transport is the highest contributor to the country's carbon emissions. Cars, trucks and other vehicles are responsible for more than 45% of the energy-related greenhouse gases Bhutan produces.

To convince people to swap to battery-powered vehicles, the current EV Program offers taxi owners more incentives. Eligible applicants get 20% of the cost of their new cab as a direct cash subsidy, along with a low-interest loan from the Bank of Bhutan for 70% of the purchase price, leaving the owner only 10% to pay upfront. The EV Project in its time and beyond could cut greenhouse gas emissions by as much as nearly 50,000 tonnes over nine years. Nine years is counted as the average lifespan of a fuel-run taxi.

Encouraging Bhutan's drivers to go electric will drive the country faster toward reaching its green (environmental) goals and that much quicker in achieving its sustainable development goals (SDGs).

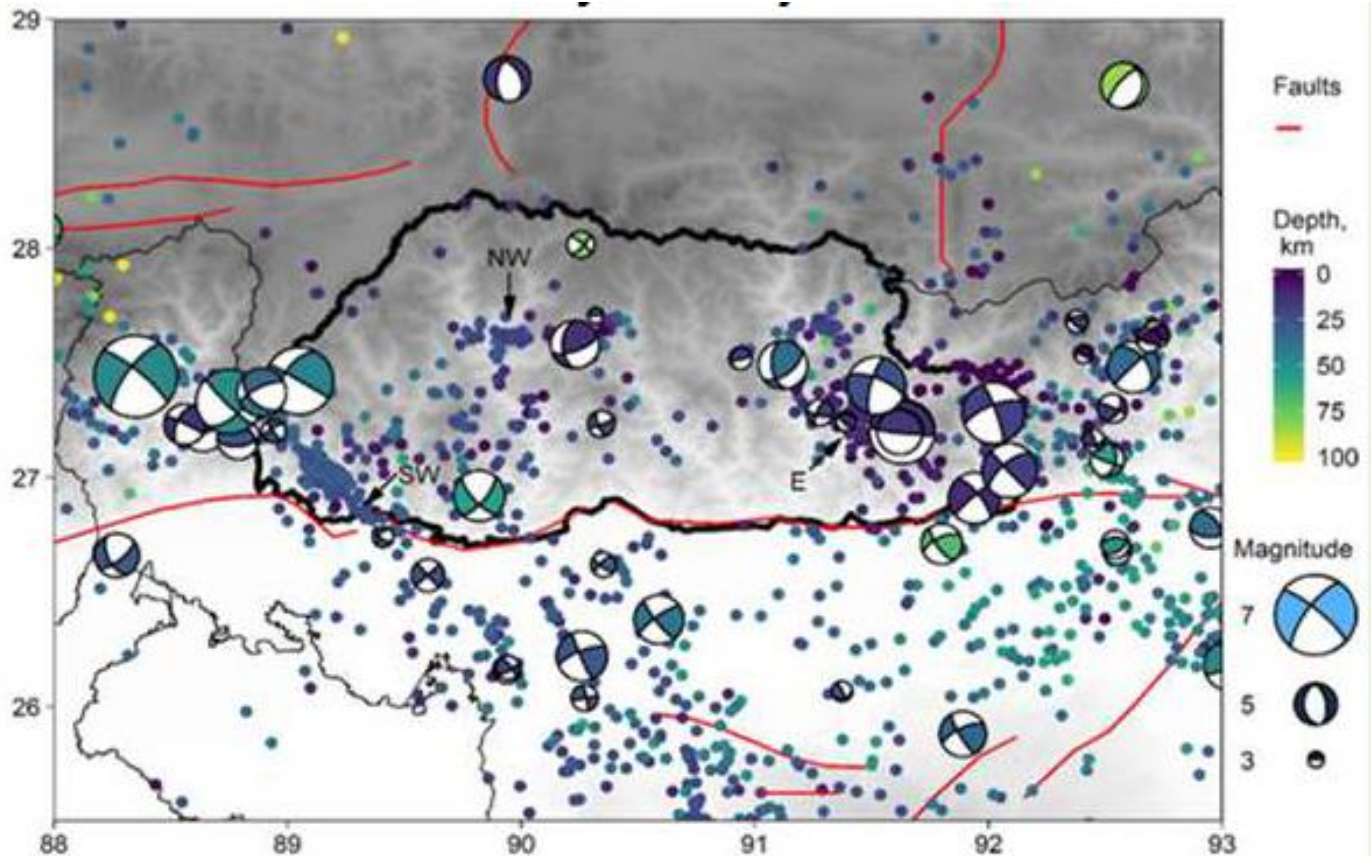
References: *cabinet.gov.bt; PMO; Kuenselonline; BBS; EV Project*



GEARING UP FOR THE SHAKEUP



Of preparations for disaster — by understanding disaster



For all that humankind professes to have become – the most highly advanced being on the planet earth; and for all that humankind is lauded to be – the alpha species among all other species – it still has the rug pulled from underneath it when nature strikes. That’s right! Realization has dawned upon one and all – nature doesn’t need people, people need nature.

For as long as we have existed, so has the prevalence of earthquakes. It’s a non-negotiable scenario and humans have but had to bow to fate and do the next best thing – bet on preparedness and hope for the best.

This article is about Bhutan and its dealings with the bouts of earthquakes it has been served. But more so this piece is about the mitigation measures it has taken and continues to do so to prevent loss of lives and injuries, reduce damages in infrastructure and properties with assistance from international partners like the JICA (Japan International Cooperation Agency).

Bhutan — earthquake in focus

Geo-physically, Bhutan is located in the young Himalayan Mountains and is considered to be one of the most seismically active zones in the world (seismic zones IV and V as per Indian Seismic Code). In simple terms that means the country is situated on the most active zones. All that has been sufficiently proven by earthquakes in the distant past and recent times. Earthquake is classified one of the most imminent hazards in Bhutan.

The country has experienced its fair share of earthquakes (considering it strikes all across the world) with many magnitude 7.0 in the last half century. The 2009 earthquake with its epicentre in Narang, Mongar struck with a 6.1 Magnitude and caused 10 fatalities. More than 1000 houses were destroyed and caused

nearly \$100 million in damages. The magnitude 6.9 earthquake (epicentre in Sikkim) of 2011 caused loss of one life due to landslide triggered by earthquake, 14 injuries and substantial damages in infrastructure and properties amounting to damages to the tune of Nu 1,197.63 million (approx. 24.5 million USD).

Findings of an earthquake impact assessment simulation of Equip-Bhutan project conducted jointly by the World Food Programme and a Mr. Tom Robinson (PhD) of Newcastle and Durham University in consultation with the then DDM (Department of Disaster Management) revealed the following in 2020: There is a need to develop practice response and coordination amongst the humanitarian clusters through the use of periodic simulation exercises to identify current gaps and to improve readiness for earthquake preparedness and response. The assessment study also recommended public awareness and community resilience, data needs and availability, and building codes.

Messages loud and clear that need to keep coming

A lot has been said, but more importantly — they've also been done — on the advocacy front that is, where awareness and sensitization have planted all the mile markers nationwide with educational campaigns having done their exhaustive rounds massively sweeping across territories. And so everyone's covered in that manner of speaking — general public, towns people, rural folks, school students, office-goers. And it continues to be the case by way of marking international days, propagating messages on disasters

through various media, training rescue personnel, staging mock emergency drills etc. Preparedness is not a seasonal thing and is accordingly pursued — as fervently through actions on the ground as it is diligently earmarked for priority on all planning and discussion tables.

Earthquake is in focus and therefore the mitigation measures set in motion to meet future incidences of earthquakes with a better-prepped front. All things good and rested in their places such as the aforementioned measures. But some moves are more specialized and target-specific. Let's take up the case of the JICA's Project for Evaluation and Mitigation of Seismic Risk for Composite Masonry Buildings in Bhutan.

More than 60% of Bhutanese live in traditional houses in rural areas. These rammed earth and stone masonry structures took the biggest hit during the earthquakes in 2009 and 2011. The government has thereafter taken this upon itself as a critical task to guide people to improve the seismic resilience of traditional houses. It has become the most imperative need of the hour. Bhutan is situated in the seismically active young Himalayan range — check. It is prone to earthquakes — check. Therefore, building earthquake-resilient structures is crucial — double check!

Directly consequential to that, the government in collaboration with JICA and with support of SATREPS Project (Science and Technology Research Partnership for Sustainable Development Programme) has been developing building seismic resilience technology and monitoring earthquakes.

What are the objectives of disaster risk reduction?

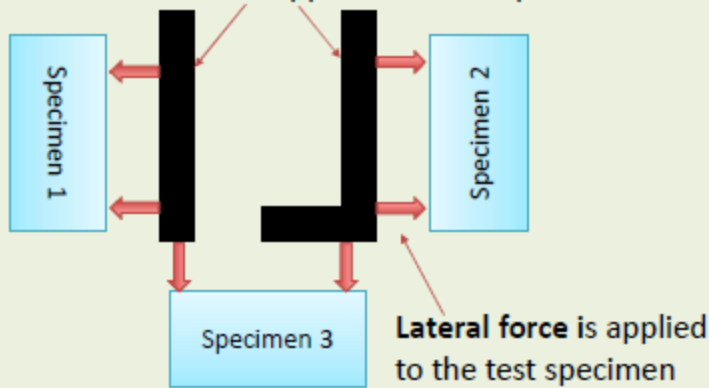
Disaster Risk Reduction (DRR) aims to prevent new and reduce existing disaster risks and to contribute to strengthening resilience (wmo.int).





Reaction wall:

It is a strong wall that resists the counterforce applied to a test specimen



Test facility with test specimens (top left). Real Scenario experimentation setup (top right). Schematic diagram for testing (left). Conventional unreinforced specimen (bottom left). New construction with intervention (bottom middle). Retrofitted specimen (bottom right)



The Mode of Operation — Concept gets action

Three buildings that are typical of traditional composite masonry buildings are constructed at the premises of the then Department of Culture office in Thimphu. People in general look at the specimens and they have an opportunity to learn about (traditional) building techniques. More to the point, it helps experts understand the characteristics of these buildings so that these traditional buildings can be made more earthquake resilient

This was done as part of a project titled 'Evaluation and mitigation for seismic risk for composite masonry buildings in Bhutan' that aims to preserve the existing pool of traditional houses and to build affordable and seismic resilient homes. Additionally, the project initiative promotes sustainable and eco-friendly traditional construction practices in the country. In the course of the project, knowledge-sharing and –transfer with Bhutanese individuals working with the project was a knitted benefit. A full-scale static test was

conducted in December 2019 to check the strength of the buildings.

The first ever Shaking Table Test on traditional composite masonry buildings was also conducted in December, 2019. Shaking Table is a simulation of earthquakes to understand the properties and behaviour of various structures. The test which included stress tests and shaking table tests was conducted on a replica of the composite masonry building.

The then Department of Culture (now it's called Department of Culture & Dzongkha Development) in collaboration with JICA conducted the final test and demonstration in March 2023 to test the strength of the composite masonry structures against earthquakes. The demonstration marked the end of the six-year project.

During the demonstration, JICA conducted a full-scale earthquake test with a two-storied house. On the sides a shaking table test was demonstrated to the effect of the earthquake with smaller model houses. The purpose of these carefully studied and effectively demonstrated event is to safeguard traditionally built houses against future earthquakes.

The usage of mesh-wrapped retrofitting technique during construction was one of the successful solutions during the test. In this, the walls are wrapped with mesh from both outside and inside of the building to protect stone masonry and rammed earth houses from earthquakes.

As part of the six-year project, the department has developed construction guidelines and manuals for earthquake resilient traditional buildings and trained craftsmen to make traditional buildings more resilient to earthquakes. The Project for Evaluation and Mitigation of Seismic Risk for Composite Masonry buildings started in April 2017 in the country with financial support from the Government of Japan.

SATREPS on the progressive trajectory

The SATREPS project was initiated to enhance the seismic event detection capability and improve disaster resilience through establishment of robust and reliable seismic source monitoring stations and earthquake intensity meter.

The macro seismic hazard map from 2020 was updated by incorporating the shear wave velocity for 30 m depth (V_{s30}) obtained at the pilot sites through micro tremor assessments. As part of the project, site amplification maps of the pilot sites were also

generated using results of the micro tremor assessments. The results obtained from site amplifications were used to produce the micro seismic hazard and risk maps.

The establishment of earthquake monitoring network was first initiated in 2015. Prior to SATREPS project, 14 seismic stations and 20 intensity meters had been installed across the country. Seismic stations are important for monitoring the local seismicity and providing earthquake information. On the other hand, intensity meters are useful during disaster response and recovery. However, the detection ability of a network depends upon the type of instruments and network connectivity.

Achievements

- 20 intensity meters in Dzongkhags
- 201 Intensity meters across the gewogs
- 14 source monitoring stations
- Real time monitoring of earthquakes and other seismic events
- Automatic event detection and location
- Real-time or post-event data processing
- Data archive
- Near real-time display of earthquake intensity values
- Post-earthquake response and Recovery

Future Plans

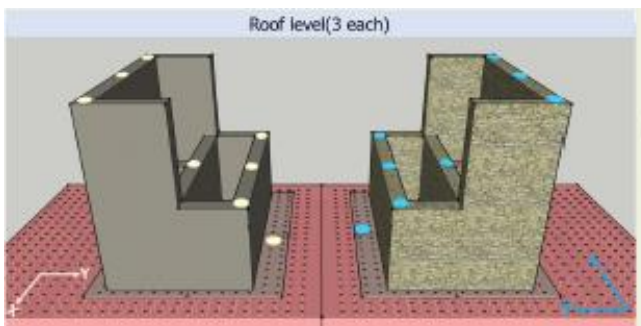
- Real-time dissemination of seismic information to the public
- Automated dissemination system
- Assurance of sustainability of monitoring network
- Enhance data utilization by building human resource capacity
- Develop intensity scale for Bhutan's scenario

Solutions for Reality in Virtual Reality

Virtual Reality (VR) simulation exercises or experiences are designed to give viewers a near-to-real life experience of an earthquake in a particular surrounding such as a school campus, classrooms, office buildings, residential buildings etc. They are therefore able to give an opportunity to learn how to react effectively during such a situation in reality or real life situations.



Specimens on shaking table (above). Location of accelerometer sensors (below).



Shaking Table in Operation

The Department of Culture (DoC) launched a shaking table to test the response of structures to earthquakes and to verify the effect of seismic strengthening. The shaking table, imported from Japan, is compact, with dimensions of nine square metres and shakes only in a horizontal direction. It can not only show the collapse pattern of a miniature model of a traditional house but also examines intervention technology developed for earthquake-resilient houses.

The shaking table allows people to feel earthquakes and raises their awareness of how to prevent damage caused by them. In March 2019, the DoC held an opening ceremony for the shaking table where they invited the Chief Representative of JICA Bhutan Office.

The examination facility in the premises of the DOC has been fully opened since the shaking table was installed. This facility enables a vibration test on a small house model as well as a stress test on a full-scale house. Simulating an earthquake as realistically as possible, the tests help understand the seismic behaviour of various traditional houses and evaluate the seismic technology that has been developed for them. Since April 2019, the project has been preparing for a series of tests at the facility.

SVR enhances effectiveness

The use of SVR (Simulated Virtual Reality) has enhanced the effectiveness of the earthquake test facility at the DoC compound. If the physical shaking

has given a— well... very physical shaking experience conceptualized around the occurrence of an earthquake, then the use of SVR accompanying it has awarded double effectiveness to the whole experience. It is successful in showing, telling and teaching; all at the same time. In fact the convincing reality-based scenes, structures, landscapes and events graphically animated in that virtual world (all seen and experienced through SVR gears like head wear and hand devices) is extremely life-like and near-inseparable.

The virtual simulation experience has been designed to give the viewers a near-to-real life experience of an earthquake and thereby gives an opportunity to learn how to react effectively during such a situation.

Virtual Reality (VR) helps people explore places without actually being there. VR refers to the imaginary environment made with the help of technology with an essence of reality. It helps therefore to explore various places without even going to that place. This has made learning much easier and perhaps even more entertaining. In the case of SVR for earthquakes, VR provides all the benefits of learning minus the risks of being in an actual earthquake.

Teaching with the help of virtual reality equipment allows the user to see the environment which is imaginary but completely based on the topic and therefore very useful lessons can be learnt from it by analysing the situations.

VR creates an imaginary world for the user based on the topics to study or for entertainment. Although the VR created is imaginary, to the user it comes across as being as real as possible — an actual real world. Therefore, that helps them to have a better and more effective experience of the current reality although everything may be unreal.

Virtual reality refers to the use of a computer that creates an environment for the user that appears to be real so that the user can feel immersed in the surroundings. With the help of a headset or helmet, a user can work on the virtual reality system. The environment provided is 3-D and the user controls the environment according to his/her need. Virtual reality is a boon in the field of education and entertainment. In the field of education, it has made a revolution as it has become easy to explore and understand the topic or subject.

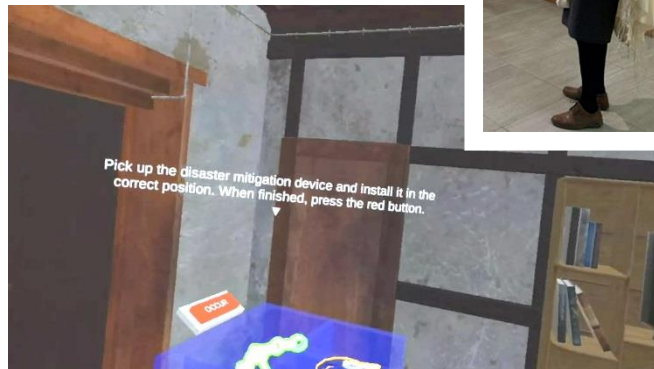
SVR awareness programs created by JICA based on earthquakes

For the purpose of raising awareness on earthquakes, the JICA has developed different types of VR programs as follows:

hazard mitigations like securing the household items using ropes and hooks, L-clamps and chains.

Second earthquake is triggered by pressing a occur button and feel the difference in safety and risk reduction with carrying out the mitigation at home or any space.

The experience aims to illustrate the difference between safety and risk reduction during an earthquake.



SVR-1

Target group: All Bhutanese citizens
 Purpose: Experience earthquake simulation to understand the importance of non-structural mitigation work.

Description:
 It is an offline standalone Virtual Reality (VR) that simulates two earthquake scenarios, first without mitigation measures and the second with mitigation measures in place.

The first earthquake is triggered by lifting the red teapot. During the first earthquake, household items in the room fall and break. After the earthquake, several caution marks appear which can be touched or tapped to play the safety messages.

After playing and listening to all the messages, users can reset the environment and carry out nonstructural

SVR-2

Target group: Global citizens
 Purpose: To share the outputs of the SATREPS project in a metaverse environment.

Description:
 • The built environment reflects the actual built-in scenario of the test facility within the Department of Culture and Dzongkha Development (DOCDD) premises.

- You can move around and explore, and you'll find test facility and its services, research papers, and project posters and other results.
- You can experience an earthquake in the metaverse and see a structure collapse that is not properly reinforced.

The viewers can see and understand the seismic resilient features incorporated in a seismic resilient construction of traditional house.

No news is not good news; Ignorance is not bliss

Defeating an earthquake? Of course, it's a non-existent concept; you might even go as far as to say it's ridiculous.

When it comes to battling an earthquake, the stakes are pretty clear and the odds are heavily in its favour. It is an adversary that can only be endured and contained- not defeated. There's no predicting its occurrence to an exact time of the day or the exact place where it will occur. But the odds, they can be evened to some degrees.



SVR-3

Target group: All Bhutanese citizens

Purpose: To experience real earthquake in VR context.

Description:

- It is a location-based VR, where the virtual space is linked with the real space and earthquake in the VR space is triggered by the motion of the shaking table using the VR head set and hand control as a motion capture system.
- This SVR employ the use of shaking table and virtual reality systems.
- The shaking table is physically shaken to trigger tremors in the virtual world, resulting in a more realistic earthquake simulation.
- SVR-3 offers an advanced technology and immersive experience for studying and preparing for earthquakes in a safe and controlled environment.

Target group: Craftsmen and technical professions (Engineer/Architect)

Purpose: Easy understanding of step-by-step process for constructing a seismic resilient traditional house.

Description:

- It is an offline VR that plays progression of construction of a seismic resistant traditional house where one can navigate through the construction progress and navigate in the space by choosing the viewpoint in the construction site. The viewer needs to activate the navigation control panel by tapping the left wrist by right hand. Navigation through construction progress is done by using the sliding and viewpoint by tapping on the predetermined viewpoints.

Over centuries the world has continuously witnessed earthquakes at various levels of mild to severe, small to big, low risk to highly dangerous. And from all those experiences, humankind has been able to successfully draw out lessons to better protect itself from the big and small shakeups. With progressive and continuous advancement in technology, probabilities of seismic events are now far more effectively calculated (not exactly predicted). And as mentioned in preceding sections, now we are able to chart out seismic hazard maps. That's how we know Bhutan is resting on seismically active zones of the young Himalayas.

And so, knowing; and knowing more and more is the saving grace. With that we can plan suitable preventive measures, build structures that are proportionately commensurate to probable or projected risks. Being prepared is always better, in that time-tested manner of speaking. In any manner it's much better than resigning to fate — just putting our collective hands up and rolling over to perish.



References: *Evaluation and Mitigation of Seismic Risk for Composite Masonry Buildings in Bhutan (JICA); SATREPS Project (JICA); Disaster Resilient Society (JICA); jica.go.jp; DDM Documents; Earthquake Safety Training through Virtual Drills (Research Gate); adrc.asia Asian Disaster Reduction Center (ADRC); climateknowledgeportal.worldbank.org; Kuenselonline; BBS.*

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BT FEC – Forerunner to Bhutan’s ENVIRONMENTAL CONSERVATION

“Whereas the Kingdom of Bhutan desiring to protect its pristine natural environment and the abundant biodiversity for the Bhutanese people and mankind at large has willed and desired to establish a Trust Fund for the conservation of environment and biodiversity.” –
– The preamble of the Royal Charter to establish BT FEC



The development game is so much like the proverbial ‘carrot and stick’ deal, only it is played with the highest stakes. All that ransacking (of natural resources) and pulverizing manner of developing a country seems to have taken many a country forward; but it has not come without a price. The trade-off comes around in the form of severe beatings that nature dishes out in the form of natural hazards, natural disasters, and let’s not forget the elephant in the room — climate change. Humanity however continues to endure the punishment for the many carrots (developmental gains) it seeks in return.

And because development appears to be an offer so heavily rigged with risks and rewards from the start till wherever it ends; much of humanity may continue bulldozing the approach choosing to endure the pain that tags along. The thought-provoking intervention however is that the planet earth in its entirety, may have just about had enough. The signs are already showing and it threatens to burst at the seams. A hole in the Ozone layer; melting ice caps; oceans warming up; the danger of entire island nations going underwater (countries like Maldives), extinction in the world of floral and faunal species; extreme weather conditions; the very real, clear and present danger of



GLOFs (Glacial Lake Outburst Floods) for a country like Bhutan etc... (the list goes on).

Thankfully, in favour of all of ourselves, after many climate conferences and mind wrestling at global forums, the world is indeed in agreement to keep global temperature rise at a minimum of 1.5 degree Celsius. In that one pledge/commitment is packaged an exhaustive to-do list for all member countries such as reporting their NDCs (Nationally Determined Contributions), honouring the commitments to various climate or environmental conventions that they have ratified and remain signatory to.

The silver lining to this global environmental/climatic situation that has reached its precipice is the most compellingly initiated united global front to fight and mitigate the ensuing impacts.

If environmental degradation is the cause for the many negative effects; if environmental conservation is the virtuous practice that brings in all round benefits — if that is the yardstick by which risks and rewards are awarded — then Bhutan is that country long championing the environmental cause since the 1960s through the 1970s till today. In this 21st Century, Bhutan is probably the only country to boast a forest cover of more than 70% with the promise of maintaining a forest cover of 60 percent for all times to come (this is provisioned in the Constitution of the Kingdom of Bhutan).

With climate change bringing on certain complications this drive has only become more steadfast, more dogged, more determined. This writeup is about BTFEC (Bhutan Trust Fund for Environmental Conservation) nation's first environmental NGO and the world's first environmental trust fund established and in action for more than 30 years since the day of its inception.

A committed country's committed stand

Bhutan remains committed to the global community in its concern-fuelled attempt to remain Carbon-neutral. This adds on to collective global efforts to address climate change and keep the planet safe for all life. On Bhutan's part it is the country doing its part to help the world at large achieve the ambitious and legally binding agreement to keep global temperature increase at safe levels of not more than 1.5 degrees Celsius. The country's strategy in meeting this commitment is to maintain a minimum of 60 percent land under forest cover for all times to come. This national commitment is provisioned in the hallowed pages of the Constitution of the Kingdom of Bhutan. Efforts are continually on to maintain current levels of forest cover, which stand at more than 70 percent. This is done through sustainable forest management and conservation of environmental services. Bhutan's economy is primarily dependent on the environment and natural resources through agricultural production and hydropower, which in turn depend on forest and biodiversity conservation.



Building the best in conservation efforts

Geography is not up for grabs as a choice, because it is what it is (and so places are where they are). For Bhutan it's the rocky Himalayas it got. As it is, the country had to try the extra mile to find its way over and around the geographical difficulties to implement developmental activities. With climate change in the picture, it seems the inherent snag in the geographical system has put up one more giant boulder for the country (to find its way around). The change in global climate and development activities has been increasing pressure and affecting ecosystem integrity in already fragile mountain ecosystem such as Bhutan's natural environment. For instance, Bhutan's developmental initiatives toward lifting poverty, promoting socio-economic development and improving the living standards of the people often resulted in increase of the pressure on the natural environment.

All that in the backdrop, the Bhutan Trust Fund for Environmental Conservation (BT FEC) envisioned by the nation's visionary monarchs was established to power Bhutan's drive to conserve its environment and fight climate change. This is in action by funding appropriate environmental projects for sustainable management of Bhutan's natural resources. For close to 30 years now, BT FEC's innovative financing mechanisms and Strategy Plans has helped it respond to the country's changing environment priorities and political transformations. Thus, BT FEC's funding support to relevant agencies has resulted in achievement of sustainable development through strategic environmental planning and integration of cross-sectoral considerations.

Today BT FEC is member of various international organisations such as International Union for Conservation of Nature (IUCN), Founding member for Asia Pacific Network of Conservation Fund, and Conservation Finance Alliance.



Why BT FEC exists – is the Bhutan story that tells of global benefits

Bhutan's rich environmental wealth serves more than being just the scenic pleasantry. It is representative in thought and form the values the country holds dearest. It is the legacy of the nation's glorious ancestors and the nation's leaders, the monarchs. It is reflective of being a national identity in the sense as a country that serves as a safe haven for a wide range of flora and fauna, most of them on the verge of extinction in parts of the world, it is among the priority regions in the world for biodiversity conservation.

With developmental activities endangering the country's fragile ecosystem, overexploitation and degradation of natural resources will lead to serious consequences for the stability of the nation's ecosystem and mankind at large. The BT FEC is in place to protect and preserve the ecosystem by funding and supporting environmental projects.

BT FEC is the world's first environmental trust fund and an independent, non-government, grant making organization based in Thimphu — A pioneering organization established under the visionary leadership of our enlightened Monarchs. As envisioned by The Fourth Druk Gyalpo, His Majesty Jigme Singye Wangchuck, BT FEC was established in 1991 as a long-term sustainable financing mechanism for biodiversity conservation.

Why was BT FEC established?

With the developmental activities such as infrastructure development and rapid urbanization, exacerbated by rising economic expectations of the people, the country's fragile ecosystem is posed with serious threat. Overexploitation and degradation of natural resources will lead to serious consequences for the stability of our ecosystem and mankind at large. Thus BT FEC exists to protect and preserve our ecosystem by funding and supporting environmental projects.

The fragile earth deserves a voice. It needs solutions. It needs change. It needs action.

How did the BT FEC start?

The Kingdom of Bhutan desiring to protect its pristine natural environment and the abundant biodiversity for the Bhutanese people and mankind at large, conceived an innovative and sophisticated financing mechanism in the late 1980s. In January 1991, the BT FEC was established with a US\$ 1 million seed money from World Wildlife Fund (WWF). Between 1992 and 1998, donors conscious of the environmental degradation and consequent threat to sustainable development at the global level, have contributed to the trust fund, raising the initial capital to US\$ 21 million. The donors include the Royal Government of Bhutan, Global environment Facility, World Wildlife Fund and the Government of Denmark, Finland, the Netherlands and Switzerland.

In 1996, the trust fund was granted with a Royal Charter, and its assets of \$21 million were then invested in the global financial markets.

What does BT FEC do?

BT FEC is mandated to support the Royal Government, Civil Society Organizations, Local Governments and the Bhutanese citizens at large in the conservation of the country's pristine but fragile natural environment.

OBJECTIVES

BTFEC demonstrates its leadership role in environmental conservation by increasing measureable results of grant funding and capacity building.

The BTF shall promote social welfare in Bhutan through environmental conservation, amongst others, by supporting activities for:

1. *Preserving biological diversity*
2. *Mitigating and adapting to climate change*
3. *Enabling human-wildlife coexistence; and*
4. *Addressing adverse impacts of development on the environment*

The BTF shall achieve the objects through an efficient combination of grant making and program related investments (PRI) by strategically supporting the following programs:

1. State-of-art research on Bhutan's natural heritage; and multi-faceted approach to ecological integrity including climate change, environmental education and advocacy, and building human and institutional capacity throughout society for adaptive natural resource management;
 2. Effective interventions for in-situ conservation through multi-faceted management of protected natural areas, forests, flora, wildlife, land, and water resources; protection of endangered and threatened species; ecological restoration of degraded ecosystems and habitats; and waste management models;
 3. Promoting sustainable human-wildlife co-existence through public stewardship, sustainable utilization of natural resources, and establishment and maintenance of robust and ecologically sustainable human livelihoods, especially in vulnerable communities; and
 4. Support for climate change mitigation and adaptation through strategic, and environmentally friendly interventions for building resilience, especially among vulnerable communities.
- Set its strategic priorities and target key issues for grant funding in line with the conservation priorities of the nation;
 - Increase the conservation capacities of rural populations, civil societies and local governments;
 - Expand the pool of grantees to non-governmental and rural sectors and provide greater assistance with proposal preparation;
 - Proactively support grantees to produce replicable, demonstrated results;
 - Provide monitoring and evaluation of all grants to ensure successful grant completion;

- Disseminate conservation achievements to encourage successful replication;
- Use all available financial resources annually to increase grant impacts and organization development;
- Increase name recognition and visibility of BTFEC activities.

What are the achievements of BTFEC?

Since inception BTFEC has financed over 183 conservation projects amounting to over \$ 16 Million (Nu. 993.406 Million) in the areas of Institutional support, Human Resource Development, Research and Protected Areas Management, etc. Further, BTFEC has been supporting small projects such as installation of fuelwood efficient stoves and waste management support in schools and monasteries. Currently, there are 31 ongoing projects which include Environmental Science Curriculum Development, Human Resource Development, Nursery and Park Development, Waste Management, Fish Fauna Assessment, Research and Conservation Management Plan for threatened species, etc.

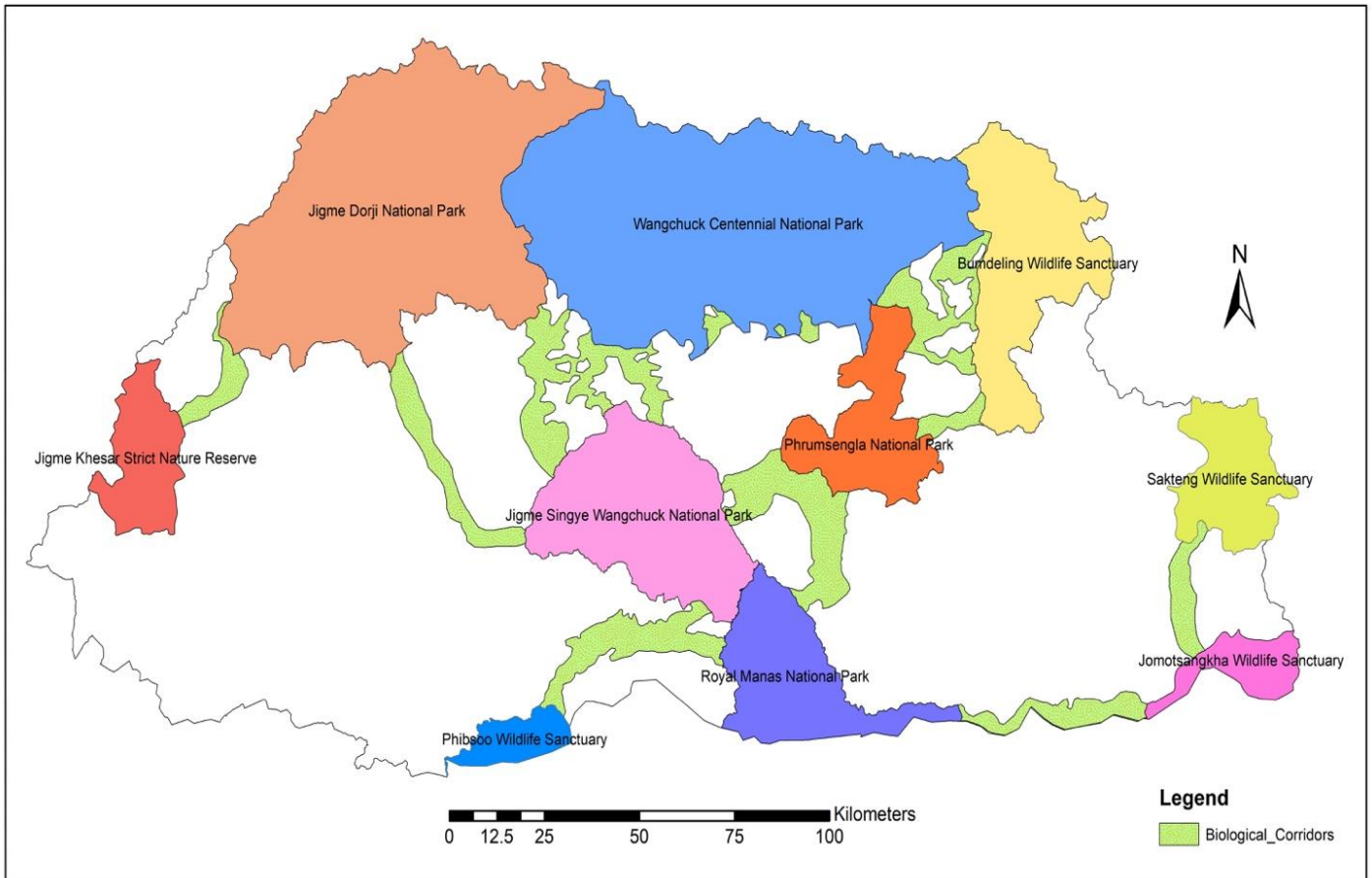
The Trust Fund has also committed Nu.455 million for 14 years starting July 2019, i.e. annual contribution of Nu.32.5 Million to Bhutan For Life – a 'Project Finance for Permanence' mechanism to provide sustained flow of fund to effectively manage Bhutan's network protected areas and biological corridors.

BTFEC is currently the sole accredited institution in Bhutan to the Adaptation Fund and the Green Climate Fund. The BTFEC in collaboration with the MoF accessed US\$ 9.951 million from the Adaptation Fund and started the project in April for a period of five years. The fund will be channelled to build resilience to climate change and adaptive capacity of communities with water shortages in 13 gewogs of Paro, Dagana, and Tsirang dzongkhags. Initiatives are also already underway to access similar climate funds from GCF to enhance capacity of local government in more than 60 selected gewogs.

Who can apply for BTFEC fund?

Any Bhutanese individuals or institutions, communities or Government/Non-Government agencies who aspire to promote and preserve our environment for the welfare of our citizens and mankind at large.

For more information, Visit: www.bhutantrustfund.bt to find out about its achievements.



BT FEC — in it for the long haul

Bhutan is among one of the Top Ten Biodiversity Hotspots in the World. The country today has more than 70% of total land area under forest cover and. Bhutan Trust Fund for Environmental Conservation (BT FEC) has played a central role in providing sustainable financing for conservation of environment and biodiversity in Bhutan. BT FEC has been successfully promulgating innovative financing mechanism modality and playing a leadership role in supporting biodiversity conservation. For that it has become an exemplary reference in best practices for similar trust funds around the world.

Close to 30 years since inception, the BT FEC’s impact on Bhutan’s natural environment is most significant. A highlight contribution is the BT FEC support which fast-tracked remarkable progress in the creation of a system of protected areas. Thanks in large part to that more than 50 percent of the country’s forested areas are designated as Protected Areas (PAs).

The nation’s devoted and determined drive on the environmental conservation front awards many benefits – sound ecological conditions, stable ecosystem, pristine rivers and mountains, floral and faunal diversity etc. The other unchallenged reality is that nature/forest conservation has direct bearing on the human population as well. More than 60 percent of the country’s population reside in rural areas. And they are hugely dependent on natural resources to make and sustain a livelihood.

BT FEC initially funded and assisted to establish almost all of the 10 PAs in the country, and recruited more than 140 technical staff (later formalized into the government’s recruitment system). Similarly, it supported human resources development of more than 600 Bhutanese in conservation arenas through short and long-term studies. The capacity development is still being supported for numerous on-going projects.



The PAs include two components: the protected areas (includes 5 National Parks, 4 Wildlife Sanctuaries and 1 Strict Nature Reserve) and the Biological Corridors. The PAs system encompasses a continuum of representational samples of all major ecosystems found in the country, ranging from the tropical/subtropical grasslands and forests in the southern foothills, to temperate forests in the central mountains and valleys, to alpine meadows and scree in the northern mountains.

Disciplined investment management and opportune decisions guided the growth of the original Trust Fund capital, which increased, from US\$20.3 million in 1992-97 to more than US\$75.974 million as of 30 June 2023, and allowed over US\$24 million in grants to be distributed in support of pressing conservation needs.

While continuing to support the conservation goals embedded in the Royal Charter, the BTFEC acknowledges the accelerating changes in Bhutanese society.

The country experiences increasing pressure on the natural environment from the main drivers of change which comprises construction of roads and electricity transmission lines, pollution of water and soil by improper waste management, hydropower dam construction, open cast mining, illegal logging and poaching, and limited efforts to integrate development and environmental protection. In addition, climate change continues to affect the fragile mountain ecosystem of the Himalayas at a pace that is faster and at a level that is greater than in other parts of the world.

For the most part though the BTFEC will take it into stride just as a resilient and determined nation did all the centuries and through the ages.

References: *BTFEC Publications; Kuenselonline; BBS*



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Bhutan Trust Fund
for Environmental Conservation

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Background

The International Fab Lab Conference

The Fab Lab International Conference, hosted annually by the Fab Foundation (FF), USA in collaboration with a local partnering Fab Lab, is the world's largest digital fabrication and innovation gathering. Members from within the 2,500 Fab Labs worldwide come together to share and exchange innovative approaches, best practices and experiences related to digital fabrication, manufacturing and sustainable development.

Each year, the conference is hosted in a different country through a different Fab Lab. Between on-site and virtual participation and outreach, the global event boasts an average reach annually of 35,000 people across multiple disciplines and industries, bringing together fields such as digital social innovation, Industry 4.0, regenerative economy, education, and sustainable tourism.

The first Fab Lab conference was held at the Center for Bits and Atoms, MIT in 2005 and in the last five years, the following cities/countries have hosted the conference:

1. [Fab 17 Bali/Indonesia, 2022](#)
2. [Fab 16 Montreal/Canada, 2021](#)
3. [Fab 15 El Gouna and Cairo/Egypt, 2020](#)
4. [Fab 14 Toulouse/France, 2019](#)
5. [Fab 13 Santiago/Chile, 2018](#)

Bhutan the Next Host

The Fab Foundation and its partners the Center for Bits & Atoms at MIT and the Fab City Foundation in



coordination with Druk Holding and Investments Limited (DHI) are hosting this groundbreaking event for the first time in Bhutan, through the Jigme Namgyel Wangchuck Super Fab Lab (JNWSFL). The Fab Conference (FAB Bhutan '23) will be held from July 16th - 28th, 2023.

FAB Bhutan '23

The Event

The conference is an immersive experience to gather, connect and empower local and global communities towards imagining and designing the future. By providing a place and a platform for exchange and collaboration, the conference aims to foster connections and partnerships that can shape the future. FAB Bhutan '23 will provide opportunities to make connections - introductions to, understanding of and eventually, partnerships between the international maker community and the local industries, communities and grassroots movements that will impact the future.

The Goal & Desired Impact

With its core identity tied to becoming a platform for connection and empowerment, the event goals are centered around learning, knowledge sharing and providing space for collaboration. There is immense potential to strengthen the economy of Bhutan, provide access to knowledge, and explore opportunities for the Kingdom to learn from others and share its unique story with the world.

In addition to connecting people of similar interests, given that the concept of Fab Labs and the Fab Community is largely new in Bhutan, we hope to use this event, and its components to build an inclusive space where members of the general public are introduced to digital technologies tools through conversations, panels and workshops.

At a global level, we aim to connect with makers, innovators, researchers, educators, scientists, engineers, businesses and others whose experiences could prove vital to initiating transformative projects in Bhutan, and/or scaling up existing ones. At a local level, in addition to innovators and relevant personnel who would benefit from connections to such expertise, we also hope to engage with the local community, educators, and those working within grassroots initiatives.

The Theme

The theme, ***Designing Resilient Futures*** is an acknowledgement of the changes and transformation that Bhutan is currently undertaking. Through the focus on resilience, FAB Bhutan '23 aims to act as a catalyst, providing a platform to foster connections and partnerships that could shape Bhutan's future. Through these



connections – introductions to, understandings of and eventually, partnerships between the international makers community, and the local industries, communities and grassroots movements, the conference will push the country towards resilience and adaptability.

The theme also attempts to connect to Bhutan’s new brand identity, *Believe*. At the center of the brand is the country’s renewed shift towards looking to the future and believing in the nation’s capabilities, values, contribution and future. Through this theme, the conference will tackle Bhutan's future, with digital fabrication solutions while focusing on each one of the four pillars.

In order to structure the event, and ensure that all event activities are aligned to the theme, the team has also identified four key pillars:

- Youth & Education
- Technology
- Innovation, Sustainability & Community
- Economic Opportunity

All of the event components have been designed and centered around one of the four pillars. The initial idea is to focus on one pillar on each day of the conference, and schedule the corresponding talks, panels and activities within the scope of the pillar.

EVENT COMPONENTS

FAB23 Student Challenge (Current Event)

As part of the lead-up to FAB Bhutan ‘23, DHI InnoTech has collaborated with the Ministry of Education to design a Student Challenge with the theme **“Curriculum through Fabrication”**. Through the Challenge, students from around the country have proposed fabrication solutions to allow for enhanced learning of their curriculum. With the help of their mentors, student teams have developed ideas for teaching aids from within any subject to help their fellow students learn better. Once screened, selected teams will be paired with their closest Fab Lab to build a physical prototype of their idea.

Floated as an open invitation to all students and schools across the nation, the challenge received 114 proposals from 52 schools distributed across 18 dzongkhags. 12 winning finalists were selected, and will be sponsored by DHI, UNICEF and RSSTEM to travel to Thimphu, attend FAB Bhutan ‘23 and showcase their projects at the Conference in July.





Statistics can be found here:

(<https://docs.google.com/document/d/1zo0tPCGibwL1W7OmlnBHyXumJQ0ni1BqV9D9uw2Uo3w/edit>)

FAB Bhutan Challenges (16th - 22nd July)

In order to facilitate the inclusion of the other Fab Labs in the country, DHI and JNW Super Fab Lab have also invited each Fab Lab in the country, in collaboration with a partner from within the local community, to float a challenge to the international and local innovators. The ultimate goal, through these challenges, is to ensure that grassroots initiatives are acknowledged and impacts are well distributed across the country. The challenges will take place ahead of the main conference where a showcase of each prototype will be featured.

The challenges include:

- **Interspecies Peace Negotiations**
Hosted by Bio-Fab Lab at College of Natural Resources
- **Sub-Tropical Monsoon VS Sprouts**
Hosted by TTTRC Fab Lab at Jigme Wangchuck Power Training Institute
- **Aesthetics of Water**
Hosted by DGI Fab Lab at the Druk Gyalpo's Institute
- **Aluminum Waste, Gracefully Braced!**
Hosted by CST Fab Lab at the College of Science and Technology
- **Future FABrics: Weaving Technology into Tradition**
Hosted by Jigme Namgyel Wangchuck Super Fab Lab, DHI



Application to the challenge was open to both

domestic and international participants. Each lab screened applications and finalized their team to ensure diverse backgrounds and representation from domestic participants. Participants will arrive and travel to their respective labs on the 16th of July.

FAB Fest (23rd July, Clocktower)

To encourage domestic participation in the event, the organizers will host a free day of activities at the clock tower on 23rd July, from 10AM onwards. The event will feature stalls with project demos and showcases from the FAB Student Challenge and FAB Bhutan challenge, talks by the international maker community, hands-on workshops, and other engaging activities.

FAB 23 Bhutan (24th - 28th July, JNW Super Fab Lab)

The main conference will feature talks, panels, workshops, working groups, research paper presentations all centered around innovation, digital fabrication, technology and community. With the focus on the different pillars, *Youth and Education; Technology; Innovation, Sustainability & Community; and Economic Opportunity*, and through the different conference components, *talks, workshops, and challenges*, the event is expected to leverage innovation and digital transformation to contribute towards local sustainable development, particularly by through community engagement, youth engagement and the development of a local innovation ecosystem with community-based solutions.

The full schedule for the conference can be found here: <https://fab23.fabevent.org/programs/schedule>

Tickets for the conference can be purchased here: <https://fab23.fabevent.org/purchase/bt>

Under the domestic conference tickets, snacks, lunch and transportation to the venue will be covered. In addition to selling domestic and international Tickets, DHI is also sponsoring 100+ tickets for students, and the domestic participants for the FAB Bhutan Challenge. Through partnerships with sponsors like UNICEF and GIST iHub, 28 sponsored tickets for girls between the ages of 15 - 21, and additional tickets for entrepreneurs respectively will be available. Additional sponsored tickets will go live depending on availability. JNWSFL is also considering sponsorships through requests at fab23bhutan@dhi.bt



HOSTS

The event is hosted by:



(Jigme Namgyel Wangchuck Super Fab Lab (Druk Holding and Investments Limited (DHI)), Fab Foundation, Center for Bits and Atoms at the Massachusetts Institute of Technology, Fab City Foundation)

SPONSORS & PARTNERS

In addition to the hosts, this event is also sponsored by:



(CHEVRON, USAID and USEA, Bank of Bhutan, GIST I-Hub, UNDP, UNICEF, Indian Embassy)

Partners:



(Department of Tourism, Bhutan Telecom Limited, Thimphu Tech Park Limited, Royal Society for STEM)

FAB Network Partners

The Fab Network Partners include:

- CST Fab Lab at the College of Science and Technology and their Partner JICA;
- Bio-Fab Lab at College of Natural Resources and their Partner, UNDP ;
- TTTRC Fab Lab at Jigme Wangchuck Power Training Institute
- DGI Fab Lab at the Druk Gyalpo's Institute.



DAMTSI

A Handy handbook

(Developing Accountable and Moral, Trustworthy and Successful Individuals)

What could be the significance of a corruption-fighting constitutional body launching a handbook for boy scouts and girl scouts? Well there is purpose and singularity involved in this.

The boy-scouts and girl-scouts are in an atmosphere of learning. They live and breathe in that environment for extended periods of time, throughout the days and all the way through the weeks and months. It's the fertile grounds, structured for teaching and learning.

The Scout programs are designed to teach valuable life lessons, impart skills and groom talents in various fields. It builds character and enhances personalities of those absorbing every lesson they learn from it. And therefore, what does the addition of a handy handbook like DAMTSI do? Adds to the goodness and makes it better, of course.

The DAMTSI Handbook for Scouts: It was developed in collaboration with the Ministry of Education & Skills Development (MoESD). It complements the core values of Scouting Program while at the same time it instills the values of integrity, accountability and transparency among youth. It is purposefully crafted to nurture a generation of upstanding citizens.

The Anti-Corruption Commission (ACC) launched DAMTSI (Developing Accountable and Moral, Trustworthy and Successful Individuals) Handbook for Scouts in June 2023. The National Integrity Assessment 2022, and an Enhanced ACC Website was also launched at the same time. The launched objects are all standalone symbols and devices that complement the good fight against corruption. It adds to the strength of the strategized movement that promotes transparent and accountable systems and building conscious and responsible individuals.

The Handbook contains various engaging activities, for both within and beyond the school environment. Those behind the creation of the Handbook (ACC) are positive this will lead toward fostering long-term behavioral changes and empower youth to make a positive contribution to society, thus realizing the national vision of the country that adheres to the highest standards of integrity and discipline.

The ACC looks forward to engaging more such meaningful collaborations with MoESD to ensure a high level of integrity, discipline and values in young people.



“One issue poses a huge threat to our national security, economy, the wellbeing of our people and our children, and above all, the future of our nation: drugs and substance abuse. We are a small population. Every child is precious. We cannot afford to lose any child or for that matter, anyone to substance abuse. We must not allow substance abuse to jeopardize their future. Substance abuse is already taking root among our children, and we cannot let it proliferate. We must act now before it is too late, and do whatever it takes to eradicate this threat. Failure is not an option.”

— His Majesty the King Jigme Khesar Namgyel Wangchuck’s Address to the Nation on National Day, 2022



SAY NO TO **DRUGS**

HOW DRUG USE AFFECTS PEOPLE

Drug use affects people across all walks of life and levels of socioeconomic status. Whatever reason a person starts taking drugs for—whether recreationally or as prescribed—tolerance, patterns, of increased use, physical dependence and, ultimately, addiction may develop—sometimes before the user even realizes it.

When a full-blown substance use disorder (SUD) develops, it can be extremely difficult to stop using drugs without professional treatment. Drug use can wreak havoc on the body and mind and may eventually become deadly. When you realize that you or someone you love has a problem, it’s essential to get help right away. There is no shame in admitting that you need treatment for drug use; doing so can be life-saving.

The use of most substances will produce noticeable signs and symptoms. These may include physical or behavioral symptoms—most likely both.

WHAT THE NDPSSA PROVISIONS; WHAT THE GOVERNMENT SUPPORT INCORPORATES

The Narcotic Drugs Psychotropic Substances & Substance Abuse Act or the NDPSSA Act provisions various measures where rehabilitation is the key drug control strategy.

Sections 33 and 34 of the Act mandates the state to institute quality treatment and rehabilitation centres for drug dependence. Section 35 specifies a range of care services and obligates the concerned drug authority to ensure availability of counseling, detoxification, after-care and social reintegration services. Section 36 allows NGOs to establish licensed



rehabilitation initiatives, and promote a variety of care options.

All these provisions are objectively aimed to uphold a strong commitment from the state government’s side to- not simply punish but rehabilitate drug dependence and socially and meaningfully reintegrate offenders back into society.

DRUG CASES IN NUMBERS; THE NUMBERS TO BE WARY OF

In 2022 Drug-related crimes amounted to 19.9 percent of all criminal activity

In 2022, In terms of particular forms of drug crimes, substance abuse accounted for 78 percent, followed by illicit trafficking of narcotic drugs and psychotropic substances at 36 percent.

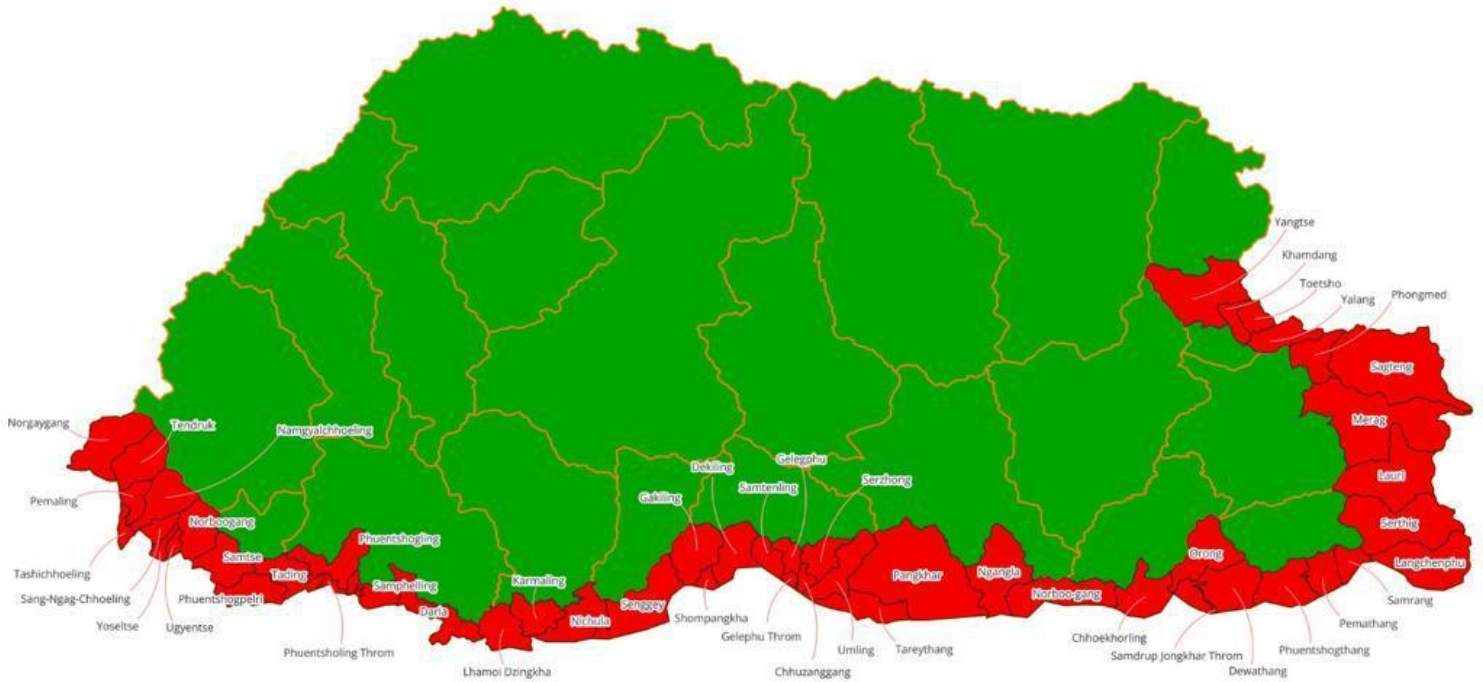
Crimes related to drugs recorded for 2021 and 2022 were 331 and 761 respectively. Close to 3000 drug-related cases were reported to the police in the past five years

- 484 Drug cases in 2018
- 668 Drug cases in 2019
- 530 cases in 2020
- 331 cases in 2021

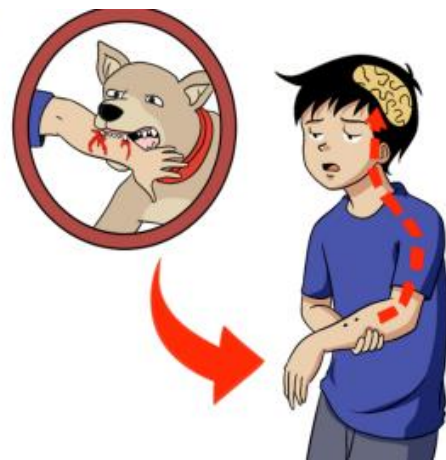
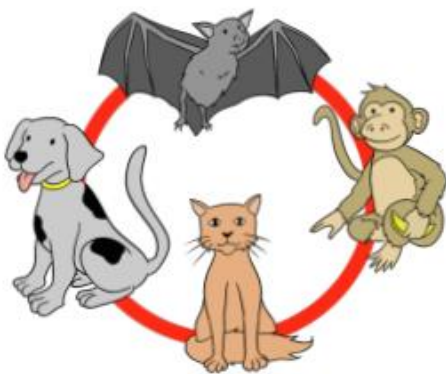
References: NDPSSA Act; Kuenselonline; BBS.



AWARENESS ON RABIES



Map of Bhutan depicting rabies endemic (in red) areas



WHAT IS RABIES?

Rabies is a deadly disease caused by a virus. It affects the brain and has no cure. Rabies is a zoonotic disease, meaning it can be transmitted to people from animals. It is a disease that can affect any mammal.

HOW DO WE GET RABIES?

The virus enters the body through the saliva of an infected animal, usually through a bite. The virus reproduces at the site of the bite wound and moves up to the brain. Once the virus reaches the brain, it

reproduces and spreads to different parts of the body such as the salivary glands. The person bitten usually shows signs of the disease after 1-3 months. The victim becomes paralyzed and will eventually die about a week after they have shown symptoms of rabies.



Headache



Fear of water



Fear of wind



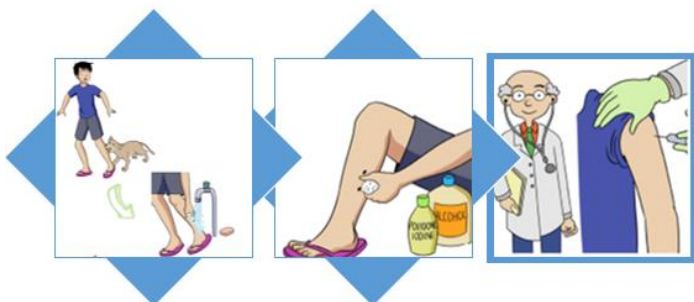
Fear of exposure to light

WHAT ARE POSSIBLE SIGNS OF RABIES IN HUMANS?

- ☀ Headache
- ☀ Fear of water
- ☀ Fear of wind
- ☀ Fear of exposure to light
- ☀ Difficulty swallowing and breathing
- ☀ Seeing and hearing things (hallucinations)
- ☀ Anxiety
- ☀ Excessive drooling
- ☀ Fear of exposure to light
- ☀ Lethargic or aggressive
- ☀ They sometimes chew on strange things, such as rocks, dirt or wood

WHAT SHOULD YOU DO IF AN ANIMAL BITES YOU?

- ☀ Immediately wash the wound with soap and running water for 15 minutes
- ☀ Disinfect the wound with alcohol or iodine solution.



- ☀ Immediately consult a doctor or seek the nearest hospital or clinic in your area.
- ☀ Do not kill the animal! Consult a veterinarian or Animal Control Service in your area so they can handle it.

WHAT SHOULD WE DO WITH THE BITING ANIMAL?

- ☀ If the animal gets sick or dies within 14 days, it should be reported immediately to the nearest veterinarian in your area to have the body tested for rabies.
- ☀ If the animal is free of signs of rabies after 14 days, it can go back to its usual life.
- ☀ The animal should be given food, water and space to move around, but isolated from other animals and people, and should be watched for signs of rabies for 14 days.

HOW CAN I PROTECT MY PET ANIMAL AGAINST RABIES?

- ☀ Have your dogs and cats vaccinated against rabies at 3 months of age and then every year.
- ☀ Provide your pets with nutritious food, clean water and exercise.
- ☀ Be a responsible pet owner!
- ☀ Be sure to provide them with a clean and comfortable shelter.
- ☀ Do not let them roam freely in the streets.
- ☀ Keep your dog on a leash when going out.
- ☀ Do not keep your pet tied up all the time.



HOW CAN I AVOID BEING BITTEN BY DOGS?

Do not go near or disturb dogs that are:

- ☀ Sleeping or Eating,
- ☀ With newborn puppies,
- ☀ Feeding their puppies,
- ☀ Afraid, angry or unknown to you.

Do not:

- ☀ Run from a dog,
- ☀ Pull their ears or tail,
- ☀ Tease or hug the dog
- ☀ Stare directly at the dog,
- ☀ Play roughly with the dog



The 3 Dos you should know right after animal bites to prevent rabies:



Wash your wounds

Do wash your wounds with soap and water for 10-15 minutes



Consult doctor

Do consult doctors/health workers and seek medical help from the nearest health facility.
To avoid complications and medication



Get rabies vaccination

Do not forget to get vaccination if you are bitten by a suspected rabid animal or have consumed any rabid animal products (like milk, butter, meat, etc.)

5 doses of Anti Rabies Vaccine must be taken

Prevent Rabies!
Vaccinate your pet animals regularly



Issued in public interest by the National Accelerated Dog Population Management and Rabies Control Program (NADPM & RCP)
National Centre For Animal Health, Department of Livestock, MoAL


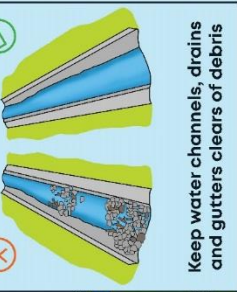
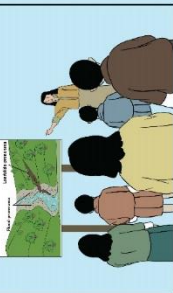











FLOOD SAFETY

Before a flood





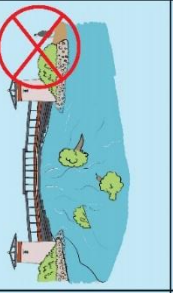

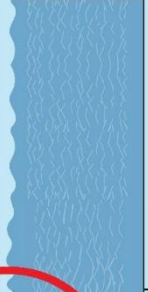




<p>Select a safe site for your building and avoid building houses or amenities within the flood risk areas</p> 	<p>Keep water channels, drains and gutters clear of debris</p> 	<p>Know the flood and landslide prone areas in your locality</p> 
<p>If you live in flood prone areas, consider relocating or consult authorized agencies for advice and directives</p> 	<p>Know the Flood Early Warning System and Evacuation Plan of your community</p> 	<p>Participate in community flood preparedness action and mock drills</p> 
<p>Identify your safe evacuation routes and sites</p> 	<p>Stay informed and monitor the weather on TV/ Radio/ social media and follow the advisory</p> 	<p>Follow all evacuation instruction and order from relevant authorities</p> 
<p>If you have time before evacuating, switch off miniature circuit breaker (MCB) and turn off the gas</p> 		



FLOOD SAFETY

During and After a flood



<p>Go to higher ground as soon as possible in absence of an evacuation plan or instruction</p> 	<p>Never attempt to cross or swim in any flowing water during a flood</p> 	<p>Stay away from bridges and river embankments</p> 
<p>Don't walk or drive in the flood water</p> 	<p>Stay away from underpasses as it can be filled with water</p> 	<p>Do not drink, play or swim in flood water</p> 
<p>Stay away from falling power lines because the water may have been electrically charged</p> 	<p>If your vehicle stalls in water, abandon it</p> 	<p>Make sure that food and drinking water is not contaminated</p> 
<p>Don't consume fish or water species left by flood</p> 