

HAPPINESS

Development with Values



“We have always steered our country in the right direction. We have successfully navigated through great geo-political and socio-economic changes of the past. This decade requires us to yet again skillfully navigate the new digital and technological landscape.”

His Majesty the King

RSEBL: Of personal finance & financial literacy

DoIM: THE ROLE & IMPORTANCE OF MEDIA

Community Engagement Platform (CEP)

Energy efficiency and conservation

WORLD FOOD SAFETY DAY 2022
Safer food, better health

Nationwide Accelerated Dog Population Management and Control Programme

National Adaptation Plan

Where environmental conservation is concerned EVERY LEAF COUNTS

BHUTAN SPACE WEEK 2022



The science of **CLIMATE CHANGE**

HAPPINESS



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Editorial



The small and big of it...

Bhutan’s smallness is its strength, an advantage — His Majesty has oft repeated this to make a point in the efficient drive of any or every planned policy initiative.

Smallness is most times overlooked. Understandable; maybe it’s below line of sight, perhaps it has blended into the bigness of a background. But you cannot entirely ignore ‘smallness.’ The beauty, strength, complexity and effectiveness of a single small unit is after all, what goes on to define the collective greatness or effectiveness.

The DLG’s CEP is a ‘small’ entity making an entry into the LG system. But it is conceptualized with rested wisdom and packaged customarily for the Bhutan setting. It demonstrates actionable promise and shall potentially remedy the few oddities in the Zomdu process literacy and enhance its effective contribution to the national plans.

Speaking of literacy; Stock Literacy is hailed to be something of ‘learning that has peaked’ in the world of Financial Literacy and Personal Finance. The securities/stock market of the country is slowly shedding its ‘small’ characteristics as market capitalization now chips away at the billions.

The importance and role of media gains further importance as does media literacy among people. With an onslaught of new media amidst advanced information technology, this role is like threading a needle with the smallest opening, under conditions of significant pressure and distraction. But perform, it must; and leading agencies like the DoIM are hands-on seeing it be done. And role-wise, the Nationwide Accelerated Dog Population Management and Rabies

Control Programme is out to enhance the role everyone must play in controlling, sterilizing the dog population or caring for dogs.

Bhutan’s conservation story is no small feat. It is a continuous process in as many avenues as possible. BT FEC, nation’s (and the world’s) first environmental trust fund is doing that for the last 30 years, and counting. It is further guided by such instrumental policies like the National Adaptation Plan. Energy efficiency and conservation adds favorably to the process and the DRE is the agency in action since day one of its establishment.

These days, advocating literacy also ropes in being sufficiently prepared to practice and preach, preach and practice the basics in good behavior to keep COVID at bay. The infectious yet supposedly milder Omicron might sway opinions to throw caution to the wind, but taking the prescribed precautions is still the best expert advice. Hold on to that thought, as small as it may be. It will make a big difference.

Keep in touch! **E-mail!**

Got an interesting story to share? Have any experiences you want to narrate? Or just feel like you have an interesting article to share? We have a space to promote something on those lines, to spread the good culture of reading and keep alive the art of writing. Share your stories with the Happiness at happinessbooklet@gmail.com We would love to hear from you.



Royal Securities Exchange of Bhutan

"Thinking Forward"



OF PERSONAL FINANCE & FINANCIAL LITERACY

A hand in glove affair that goes hand in hand

Onion; that bulbous vegetable. It's not really a blink-and-you'll-miss-it item of excitement, for it appears almost all the time before your eyes, a viewing experience, and for your oral senses- a tasting experience. Some might say it stinks, but they will also say it tastes good. From a surface level knowledge of it to peeling deeper into its essence, one might say there are levels of understanding to it that is gained layer by layer. The onion, that bulbous vegetable therefore is not just layered in characteristics but also in how you understand it layer by layer to successfully bring out the outcome you desire.

Financial Literacy – It also has the layered intricacies which one has to peel off, as in understand or master one layered slice at a time in the manner of gaining a surface level understanding to eventually acquiring better insight if one digs deeper for additional enlightenment. Where an individual can make do with an iota of understanding to receive fringe benefits; the same individual can also explore deeper understanding of the intricately layered workings and avail wholesome benefit. Deeper understanding equals to better gains, better gains equals to more understanding.

Personal Finance is what's to learn. It also happens to be the place/avenue to learn in. From being schooled and doted-upon in 'a penny saved is a penny earned' to 'a stitch in time saves nine,' the path to growing and growing up is laced and dotted with evergreen advice and lessons. Somewhere along the way we just lose track of weighted sense; because we are tracking so many other elements that make up life. Maybe that's why we always revisit the classics; because that is the place where we got it right first.

So, where is this headed? This nonchalant banter hailing terms like Personal Finance and Financial Literacy. The point we are trying to arrive at is perhaps, this:

Personal Finance, it constitutes the decision you make and the actions you take to manage your finances which- may be simply going through the motions of just earning-spending-earning or earning-saving-spending; it is of decisions that are carefully weighed backed by nuggets of wisdom time-tested and user-proofed. At the same time it is also characteristic of people just acting out knee-jerk reactions that impromptu situations demand, and command.

Personal Finance backed by Financial Literacy; now you can't go wrong with that. It's in the name after all loud and clear — "Literacy" — which means knowledge, mastery, savvy and being learned — which in this case means being literate, knowledgeable, savvy, learned and having mastery over financial matters, your financial matters.

The Importance of Financial Literacy

It is never too early or too late to improve your financial literacy. In fact, if you avoid major mistakes and do some of the most basic things, you may find yourself on the road to controlling your financial future with significantly less financial anxiety. Cash was used for virtually every purchase. Today, cash is rarely used. The way we shop has changed as well. Online shopping has become the top choice for many younger shoppers.

BENEFITS OF FINANCIAL LITERACY FOR SCHOOL STUDENTS



Financial Literacy makes you ready for the future



Financial Literacy makes you smart



Financial Literacy makes you independent



Financial Literacy prepares you for your first job

PERSONAL FINANCE

BUDGETING



Budgeting is the process of creating a plan to spend your money. This spending plan is called a **budget**. Creating this spending plan allows you to determine in advance whether you will have enough money to do the things you need to do or would like to do.



Financial Literacy is an avenue for lifelong learning. If you haven't started you can start right away. If you're acquainted then you have so much more room for improvement and growth

FINANCIAL LITERACY AND BHUTAN

School children are not sufficiently prepared to understand personal finance and make their way in the modern financial world. With inadequate initiation toward saving habits, most students still graduate from high school without any formal classroom education in personal finance.

The Financial Literacy Program launched by the country's central bank, the Royal Monetary Authority (RMA) in 2013 aims to ensure that every Bhutanese has access to safe financial services, and also the skills to use these services. The aim of this program is to equip youth, the workforce, and families with the introductory financial skills needed for success in today's economy.

Besides improving their personal financial decision-making, teaching students economic principles will help them as citizens, understand and make choices about many of the critical issues confronting our nation.

Many of these consumers have very little understanding of finances, how credit works and the potential impact on their financial well-being for many, many years. In fact, the lack of financial understanding has been signaled as one of the main reasons behind savings and investing problems faced by many.

Making thoughtful and informed decisions about your finances is more important than ever. Several trends are converging that demonstrate the importance of financial literacy.

What Is Financial Literacy? Financial literacy is the ability to use knowledge and skills to make effective and informed money management decisions. Gaining the knowledge and developing the skills to become financially literate is a lifelong process that begins with something as simple as putting a few pennies in a piggy bank, and evolves to more advanced subjects such as risk and asset allocation.

The foundation of becoming financially literate

Five key components build up what becomes financial literacy: earn, spend, save and invest, borrow, and protect.

> Be as informed as you can be about your finances. After all, you are the one who is going to have to live with your decisions.

> Try to find a financial institution or financial advisor that is knowledgeable, that you can trust, and with whom you can work comfortably. They cannot make all your decisions, but they should be able to help you put your situation into perspective and help you evaluate your options.

> Try to develop good financial habits. Just paying attention to how you spend your money will probably lead to some ideas about how to save more. Over time, your savings can make a large difference in your future financial lifestyle.

> Try to develop a financial plan of some sort. It does not have to be complicated or extensive. In fact, you may want to tackle one part of your finances at a time, breaking up a financial plan into smaller, workable pieces can make it easier to create.

Why It Matters: Financial literacy is crucial to help ensure consumers save enough to provide adequate income in retirement while avoiding high levels of debt

that might result in bankruptcy and foreclosures. Studies show that those with high financial literacy plan for retirement and in essence have double the wealth of people who do not plan for retirement. Conversely, those with low financial literacy borrow more, have less wealth and end up paying unnecessary fees for financial products. In other words, those with lower financial literacy tend to buy on credit, and are unable to pay their full balance each month and end up spending more on interest fees. This group also does not invest, has trouble with debt and a poor understanding of the terms of their mortgages or loans. Even more worrisome, many consumers believe that they are far more financially literate than they really are.

Financial markets help to efficiently direct the flow of savings and investment in the economy in ways that facilitate the accumulation of capital and the production of goods and services.

Long story short: If you are initiated early on about the financial world, it could be the best development ever in your life and throughout your life. If you have entered late into gaining awakening over financial matters, there is still hope as financial literacy is more than ever becoming a continuous process in life. So, starting late is much better than never trying to get educated. Make that move!

Personal Finance

Personal finance is the financial management which an individual or a family unit performs to budget, save, and spend monetary resources over time, taking into account various financial risks and future life events.

Personal finance is a term that covers managing your money as well as saving and investing. It encompasses budgeting, banking, insurance, mortgages, investments, retirement planning, and tax planning. The term often refers to the entire industry that provides financial services to individuals and households and advises them about financial and investment opportunities.

PERSONAL FINANCE

Steps Of Financial Planning



1. Assessing where you are now in financial terms
2. Setting Goals
3. Creating a Financial Plan
4. Implementing the plan

PERSONAL FINANCE



Planning a Budget: A budget is essential to living within your means and saving enough to meet your long-term goals.

Create an Emergency Fund: It's important to "pay yourself first" to ensure money is set aside for unexpected expenses, such as medical bills, day-to-day expenses, unforeseen events of losing a job or business) etc.

Limit Debt: It sounds simple enough: To keep debt from getting out of hand, don't spend more than you earn. However, debt taken for carefully planned/productive purpose is always encouraged.

Manage credits wisely: Credit just needs to be managed correctly, which means that you should pay off your full balance every month, or at least keep your credit utilization ratio at a minimum. The borrowers have a moral obligation to pay back their credits. Besides, his/her behavior or discipline in payback stands to affect their opportunity in the future positively/negatively to avail loans.

Discipline: The rule of thumb for investors is that they should have a long-term outlook. It takes discipline to set aside money for retirement over the years, get yourself out of debt, and avoid overspending. In addition, taking care of your finances when they need to be addressed can help you meet your goals over time.

Personal finance is about meeting personal financial goals, whether it's having enough for short-term financial needs, planning for retirement, or saving for your child's college education. It all depends on your income, expenses, living requirements, and individual goals and desires—and coming up with a plan to fulfill those needs within your financial constraints. To make the most of your income and savings, it's important to become financially literate, so you can distinguish between good and bad advice and make smart decisions.

Things to consider when planning personal finances

Individuals should consider the suitability to his or her needs of a range of banking products (cheques, savings accounts, credit cards and consumer loans) or investment in private equity, (companies' shares, bonds, mutual funds) and insurance (life insurance, health insurance, disability insurance) products or participation and monitoring of and/or employer-sponsored retirement plans, pension benefits, provident fund benefits, and income tax management.

Personal Finance Strategies

Smart personal finance involves developing strategies that include budgeting, creating an emergency fund, paying off debt, saving for retirement and many more. The sooner you start financial planning, the better, but it's never too late to create financial goals to give yourself and your family financial security and freedom. Some of the best practices and tips (among many others) for personal finance are:



In perspective — The Royal Securities Exchange of Bhutan Limited (RSEBL)

Some might say being well-educated, well-equipped and well-informed in stock literacy to be able to play market dynamics to one's gainful advantage may be the crowning glory to an individual's having mastered all there is to master in terms of financial literacy skills and personal finance skills. It certainly makes business sense that if individuals have sharpened their financial literacy skills and their personal finance skills to appreciable degrees of confidence, then the market of the economics is the ground to take it toward for application and execution. In Bhutan, that would be the Royal Securities Exchange of Bhutan (RSEB).

The RSEB, founded in 1993 is the only Stock Exchange in Bhutan. With 19 listed companies and market capitalization of Nu 49.17 billion as of 31st December 2021.

Back story – The Past: The capital for the establishment of the stock exchange was provided by Bank of Bhutan, the Royal Insurance Corporation of Bhutan, Unit Trust of Bhutan (now Bhutan National Bank) and the Bhutan Development Finance Corporation (Now Bhutan Development Bank). The RSEB is a member of the South Asian Federation of Exchanges and recently became a member of United

Nations sustainable stock exchanges (UNSSE). RSEB joined as a member of UNSSE in 2021. This is in line with GNH philosophy of sustainable development.

The RSEB officially opened for trading in October 1993. It was established as a non-profit making and quasi-public organization under the aegis of the RMA. The objectives of the company are to encourage wider spread of share ownership in the enterprises, mobilize savings, provide platform to raise equity capital for new ventures and to provide liquidity to the existing shareholders. Developed under the Technical Assistance of the Asian Development Bank, RSEB was incorporated under the Companies Act of the Kingdom of Bhutan, 2000 and is regulated by the Financial Services Act 2011. In July 1996, RSEB was delinked from the RMA as an autonomous body.

Forward – the present and future: The RSEB is a year shy of establishing three decades of presence. Presently, it operates as a membership organization comprising eight brokerage firms including BNBL, BoBL, BDBL, Drukyl Securities Pvt. Ltd (DSBPL), Lekpay Dolma Securities Broker Pvt. Ltd (LDSBPL), Sershing Securities Broker Pvt. Ltd (SSBPL) and Bhutan Postal Corporation Ltd. As of yet, there are three private brokerage firms, four subsidiaries of financial institutions and one subsidiary of Bhutan Post.

The total number of shareholders have increased significantly over the years. It had 100,360 shareholders as of December 2021 compared to 1,828 shareholders in 1993. In April 2012, RSEB moved its securities market to a new and enhanced trading system. The RSEB Integrated System replaced the traditional system that was used for 19 years since it was launched in 1993. The new system was established with grants from the World Bank and developed by the InfoTech Pvt Ltd as per the requirement of the exchange.

Over the past progressive decades, the country's securities market has received increasing interest from the public at large. A highlight event last year was the offer for sale of RICBL and BNBL shares held under the Sungchob Fund and Kidu Fund through a public auctioning process and the listing of first government bond. It was instrumental in getting the interests of even those eyes and ears so far adopting a casual bystander's outlook which includes the section of society that never took trouble even to find out what stocks are or what a Securities exchange is.

INVESTOR EDUCATION
Stock Market

The stock market refers to the collection of markets and exchanges where regular activities of buying, selling, and issuance of shares of publicly-held companies take place.

INVESTOR EDUCATION

Securities

The term "securities" is a financial instrument that holds some type of monetary value, typically any financial asset that can be traded. It represents stocks and bonds.

In 2012, the RSEB Integrated System replaced the traditional system that was used for 19 years since it was launched in 1993. The new system was established as per the requirement of the exchange

A stock market, certainly but not your average share bazaar

The average daily trade in the global stock market takes place in the billions. For example the average 'daily' trade for New York is more than 1 billion. The Bhutan stock market is not eyeing to hit those high notes wherein its 'yearly' stock trading figures are only now scratching away at the lower billions. Be that as it all may, these observations are neither reason for dissatisfaction nor cause for concern.

Our own yardstick for development

Bhutan sought to do things differently in embracing development. It chose to march, with the march of progress, not on the wheels of GDP but on the soaring wings of GNH or Gross National Happiness which strives to get a bird's eye view on matters on the ground and achieve development for country and people that is wholesome and not simply inclusive of material achievements.

As a late entrant to the development game and the development sphere after shedding its isolationist skin, the country is pretty much the new kid in class everywhere at every development avenue. Bhutan opened its doors to the world in 1961 after ending a self-imposed isolation period. But because it chose to 'develop' differently, even the proverbial yardstick operates differently to measure Bhutan's development.

Any globally hailed economic device/invention (for development) that is spurring rewards in the billions; if and when introduced in Bhutan will not be rated for the billions it should make but for the manner in which it helps its citizens improve livelihoods.

For instance, the rise of **FinTech** as a popular 21st Century invention has drastically changed financial mode of operations. The agents of FinTech such as Mobile Banking, Mobile Payments, Insurtech (in Insurance), Cryptocurrency & blockchain, Big Data (in trading) completely re-tooled the entire network and spectrum of the financial universe. But when Bhutan started to digitalize its economy and FinTech was tossed around as a catchphrase, homegrown economists were quick to point out that users should gauge the benefits in how it helps a farmer in the most rural area sell his produce by not having to be disadvantaged by 'remoteness,' or of how it improves financial literacy among sections of population that remain 'unbanked.' For clarity's sake: Bhutan does have one of the highest Total Population to Bank Account Holders' ratio.

INVESTOR EDUCATION



An initial public offering (IPO) refers to the process of offering shares of a company to the public for the first time.

Dividend



A dividend is the distribution of some of a company's profit to its shareholders, as determined by the company during its AGM.

By that measure, there is always a measure of solace in all that is set in motion in the name of development in this landlocked Himalayan nation peaking six decades in development years.

Reference: RMA; RSEBL; BBS; Reuters; Investopedia; Facebook/RSEBL

Illustrations by RSEBL. For more information, please visit www.rsebl.org.bt



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Department of Information and Media
Ministry of Information and Communications



THE ROLE AND IMPORTANCE OF MEDIA

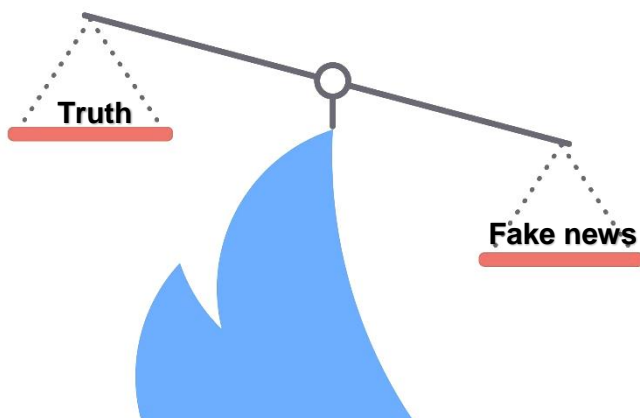
The information and media environment in Bhutan has undergone unprecedented changes in the past decade with the liberalization of the information and media markets, in particular, newspapers, cable television, radio and social media. As of 2022 there are 6 private newspapers (including 1 Dzongkha paper) and 1 National Newspaper, Kuensel and 3 private Radio Stations, BBS radio, Kuzoo FM, 3 Community Radio Stations, 5 campus radio stations and 28 publication Houses (24 Book Publication House and 4 Magazine Publication House). According to the Report on Sustainability of Print Newspapers in Bhutan, 2020, the mainstream media landscape has been dominated by the

Print media houses such as Newspapers but with the rise in the digital media it has affected their revenue and readership of the newspapers. The report recommends the newspapers to quickly move in the direction of digital and on-line platforms of newspaper business as is the global trend.

The following are some of the importance /roles of media:

1. The Neutrality of Media

Neutrality of the media states that stories be reported in an unbiased, even-handed, and impartial manner. Under this notion, the media should not side with any of the parties



The Media should support the values of GNH and promote cultural values such as Thadamtshe (the sublime trust and bond among the unique concept of the Tsa Wa Sum) and Lejungdrey (cause and effect).

involved, and must simply report the relevant facts and information. The influence of an individual and their mindset should not shape the media stories i.e. the narrative of the media stories should not be dictated by certain individuals.

2. Promoting shared National Consciousness through responsible media

The Media should support the values of GNH and promote cultural values such as Thadamtshe (the sublime trust and bond among the unique concept of the *Tsa Wa Sum*) and Lejungrey (cause and effect).



3. Important role of Media in a Democracy

The Media is often referred to as the fourth estate of democracy because it plays an important role as a watchdog, guarding over the public interest and acting as a channel between the government and the public. As indicated in the Information and Media Policy of the Royal Government of Bhutan; in fulfilling its watchdog role, the media should educate and inform the public and provide the public a platform for discourse that is open and accessible to all.



4. The promotion of culture of Heroes/ role models through media stories

It is true that the power of the media plays an important role in bringing out the awareness of heroes to a very large audience. The media must promote culture of heroes, and fulfill an enormous public service and social mandate, which touches all sectors, such as health, education, information, law and order, governance, culture, the environment, and most importantly, our national security



The Department of Information and Media in addition to creating a conducive growth of the media is also mandated to promote the Creative Industry.



Creative Industry

The Creative Industry (CI) is one of the most dynamic and fast-growing sectors that provide a significant contribution to the economy of a country. It has proven to generate income, create jobs and export earnings while also encouraging creativity and innovation in attaining inclusive, equitable, and sustainable growth of an economy. CI is a viable option to diversify the economy particularly for resource dependent economies or economies relying on limited resources.

The Organizational Development Exercise Report 2020 by the Royal Civil Service Commission established a Creative Arts Division under DoIM, MoIC with the mandate to promote the Creative Industry to strengthen our national identity.

Creative industries grow and thrive as liaison among culture, economy, and technology. Innovation in these industries is often a collaborative process that involves many different actors and stakeholders. With advancement in technology, especially the digital revolution, education and innovation, creative and knowledge-based industries have emerged as among the dynamic sectors of the global economy. Creative Industries have immense development prospects in Bhutan by leveraging on our rich cultural heritage, IT and IT-enabled services, robust and high-speed ICT backbone, and our talented youth.

DoIM, MoIC aims to foster sustainable socio-economic development through empowerment of media, youth and cultural development to achieve Gross National Happiness.

What to look forward to?

1. Bhutan Creative Arts Festival (B-CAF)

The first of its kind, the Bhutan Creative Arts Festival (B-CAF) will provide a platform for artists to showcase their talent and creativity and make them the inspiration for other young innovative minds. The festival expects to transform the lives of children and young adults by harnessing the potential of creative learning and cultural opportunity to enhance their aspirations, achievements and skills.

2. Creative Industry Database

The system shall contain critical information about the different sub-sectors of the creative industry and individual artists built upon common criteria and clear methodology supported by a significant data browsing system. Access to basic information will be made available to the public and statistical data series will be updated regularly. It will also have the option of navigation browsers that allow table or graphic presentations, easy selection and reorganization of data, personalized functionalities and straightforward extraction options. The system will include both a website and database of the creative industry.

3. Local content

In contribution to the preservation and promotion of our culture and tradition through different media platforms, the Department of Information and Media for several years have been producing animations and live-action movies which have been made available to the public

through BBS, local channels throughout the country. It has also been made accessible via the departments Facebook page, Website and the YouTube channel.

DoIM Bhutan -

https://www.youtube.com/channel/UCU_swwxyp8Z1TtXYI0wvmew

This is an effective way to make children cognizant of the Bhutanese folktales while also showcasing Bhutanese culture to the outside world.



In these times of rapid advancement in technology, especially the digital revolution, education and innovation, creative and knowledge-based industries have emerged as among the dynamic sectors of the global economy.

Creative Industries have immense development prospects in Bhutan leveraged by favorable factors such as a rich cultural heritage, IT and IT-enabled services, robust and high-speed ICT backbone, and a pool of talented youth

In the 21st century, the ubiquitous presence of media and information has the potential to empower people, in both their personal development and their development as members of the society. But these potentialities come with implications when they are not used properly and responsibly. To be able to engage with media and information meaningfully and productively, the competency of the people about media and information literacy plays a significant role.

The Media Impact Study 2008 highlighted the importance of the Media and Information Literacy (MIL), and it has recommended the promotion of MIL across the entire cross section of the society. In line with the Impact Study, MIL Framework was hence developed in 2009 to guide, plan and implement MIL activities for students, teachers, pre-service teachers, and the general public.

In MIL, due recognition and importance are given to all forms of media and other sources of information, including libraries, archives, museums, publishers, and those on the Internet. This recognition signifies the concept of the convergence between telecommunications and broadcasting and among many forms of media

and information providers. It must be noted that the concept is not limited to information and communication technologies. It also includes oral traditions and media forms, such as *lozey*, songs, and stories, through which important concepts, information, knowledge and values on culture, spirituality, and human lives are communicated to audiences.

1. Importance of MIL

MIL is important in a media-saturated society for enriching mainly the democratic process of development. As critical to democratic process of development, MIL is required for promoting critical thinking skills of an individual in making right choices and becoming an effective communicator to engage meaningfully in education and socio-economic development of a country.



Importance of Media and Information Literacy (MIL)



1. The influence of media in our central democratic process.
2. The high rate of media consumption and the saturation of society by media.
3. The media's influence on shaping perceptions, beliefs and attitudes.
4. The increasing importance of visual communication and information.
5. The importance of information in society and the need for lifelong learning.



WHY IS IT IMPORTANT TO HAVE MEDIA LITERACY?

We get the majority of our information for worldly affairs from the media. It is important to be able to pick out truth from persuasion.

We rarely get a chance to have first hand experiences with many of the things that happen in the world, so we're at the mercy of the media to inform us.



དཔལ་ལྷན་འབྲུག་གཞུང་། རང་སྲིད་དང་སྲོལ་འཛིན་ལྷན་ཁག་བཞུས་ཚོས་ཇོང་།

DEPARTMENT OF LOCAL GOVERNANCE
MINISTRY OF HOME & CULTURAL AFFAIRS

COMMUNITY ENGAGEMENT PLATFORM

All the many that makes the whole, the whole of small many that powers the giant whole



We are easily awed and captivated by the bigness of things that rise dizzyingly high above ground, with the massiveness of things that sprawl miles and miles across the land. Only rarely do we chance a thought upon the smallest single unit of that bigness- to realize that they are the true marvel and the bonafide element of wonder.



The single unit of carefully chiselled block of stone that blends away into the giantness of fortress walls, the small single drop that gets together with all its billion other droplet friends and makes the great oceans, the single step that began a ten thousand miles journey, a small spark of an idea that brightened and illuminated the whole world...

Everything big and awesome, every great big achievement, every great long journey, every big brilliant world-changing idea; they have all started somewhere small, they've had small beginnings — or we might say they have small but well-defined resolute units whose potential in its collective strength of hundreds and thousands brings out the greatness.



What is a Nangzom?

Nangzom is an informal gathering held amongst CEP members to discuss any issues of interest to a particular CEP group. At the Nangzoms, members not only bring issues to discuss with the rest of the group, but they deliberate and form community proposals and plans. Members also use the platform to coordinate activities/events, organize welfare activities, and emergency responses during difficult times.

What is a CEP?

CEP is defined as a mini-neighborhood group formed amongst the community on the principle of volunteerism. It is an important platform for the community people for enhancing their engagement in the democratic process of local governance and development.

The LGs — of the building blocks that make it great

Decentralization has enhanced effective governance for productive coordination, cooperation and communication among various organizations of the government; from the institutions centrally located and operating as the nucleus point to those branched out and functioning as functional regional units. Decentralization in Bhutan has its roots stretched as far back as the 1950s during the reign of the Third King Jigme Dorji Wangchuck (institution of the National Assembly in 1953 being a highlight point). Decentralization of governance, however became the stuff of visionary planning and legendary implementation due to the Fourth Druk Gyalpo Jigme Singe Wangchuck. It became a product of visionary planning and execution as His Majesty the Fourth Druk Gyalpo closely oversaw its workings till it stood firm on its foundations. The ultimate outcome of such meticulous and long-term planning has been not just the institution of a strong and efficient Local Government system but the major paradigm shift in governance where the nation adopted an about-face in the very nature of overall governance system – changing form; from an absolute monarchy to a Democratic Constitutional Monarchy.

There you have it. There couldn't be a more powerful way to prove our point — An idea born of a thought, the thought that legendary leadership (powered by excellent exemplary statesmanship) took on a journey of the century finally resulting in a decision of the millennium that made history.

Small but promising, small but influential

In the same vein of impactful 'small but promising thoughts and ideas,' let us introduce to you – 'Nangzom.' One might say Nangzom of the Community Engagement Platform (CEP) is that single impactful unit/atom that in its multiplicity shows huge promise and actionable potential to remedy shortcomings in its immediate parental system (the Local Government); and by way of multiple branched out representations, help and power main planning bodies at the central government frame policies or make policy decisions that are sufficiently in touch with the ground realities and are strategically evidence-based.

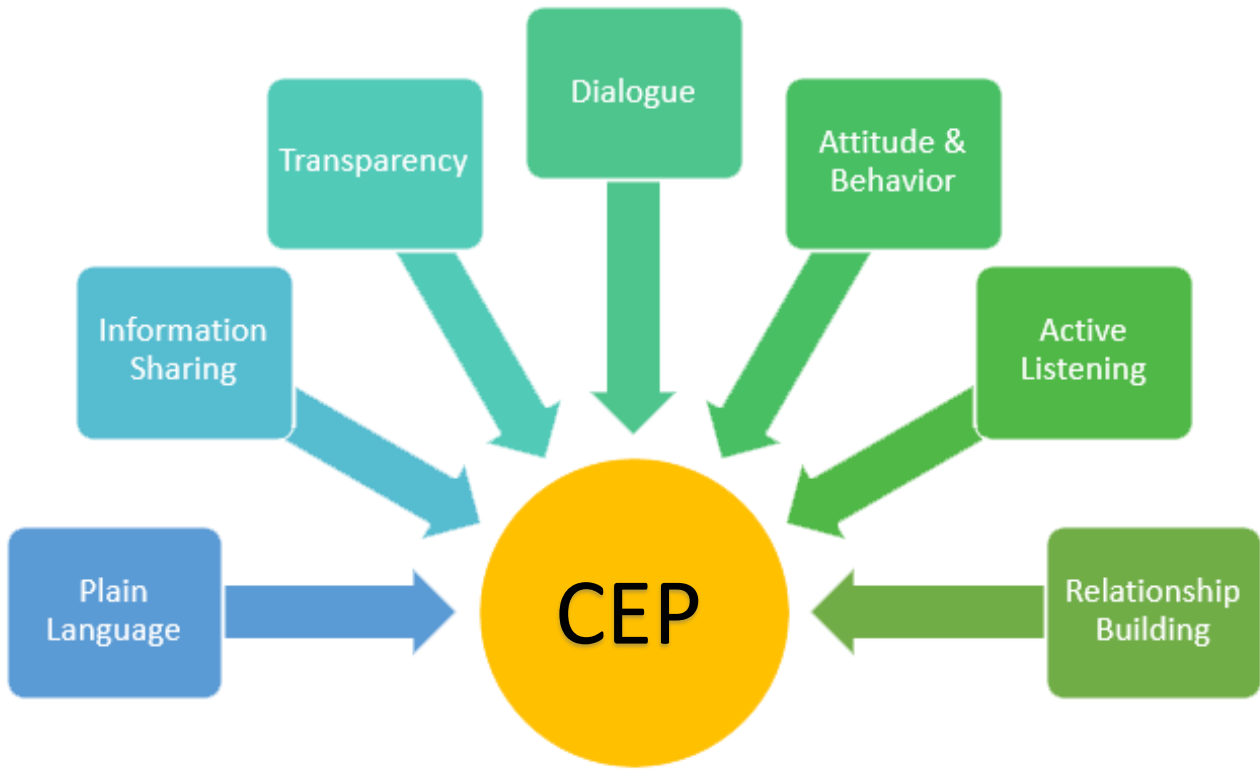
The great expanse of smallness – the extensively impactful CEP

To strengthen community engagement in local governance, the Department of Local Governance (DLG) conceived, conceptualized and pilot-tested a Community Engagement Platform (CEP) project in six



The DLG has drawn empirical evidence from Japan's CEP to adapt its own version that fits the contextual needs of Bhutan.

The Japanese CEP called 'Jichi-kai', can be defined as a voluntary organization "whose membership is drawn from a small, geographically delimited, and exclusive residential area (a neighborhood) and whose activities are multiple and centered on that same area". Jichi-kai carries out a wide variety of activities in cooperation with the local government. CEP in Bhutan has the same profile with the following addition: It is an important platform for people in the community to enhance their engagement in the democratic processes of local governance and in the development of their communities.



Increasing number of meetings organized in the communities, for various purposes is veritable proof and sign of success achieved with the decentralization initiatives. The frequency of meetings held, poor attendance, and lack of proper agenda to guide the conduct of the meetings have shown cause for concern. In this “Meeting fatigue” has become a social phenomenon widely faced by people in the communities

Gewogs in Dagana, Punakha, and Mongar Dzongkhags. The results were encouraging.

The CEP forms a firm basis for enhancing community engagement and decentralization in Bhutan. As it is being replicated throughout the country, the DLG has readied a CEP Handbook to disseminate the concept, and support its management and operation.

Why CEP exists?

One might ask, if the soundly established system of Local Governments (LGs) wasn't 'local' enough that thinking had to go rustling for ways and means to make it more 'localized,' – to put it in plain terms – go small, smaller, smallest; that is, bring in the CEP. To put into context; the LGs already have in-built within its structural folds the instruments of Dzongkhag Tshogdu, Gewog Tshogdu and Chiwog Zomdus. So why is the CEP coming in?

The answer

Malfunctioning parts or halves of a whole, are most times responsible for the overall dysfunctionality of the operating system of that whole. That's the general understanding. But in the case of the LG of the country; it is not the 'non-functioning' that is putting a dent in the functionalities. It is actually because it is 'fully functioning,' because it is 'properly functioning.' Sounds like an explanation is due.

The explanation

As decentralization efforts are intensified, increasing number of meetings are organized in the communities,

for purposes varied and sundry. Although this is veritable proof of success achieved with the decentralization initiatives, there are growing concerns related to these meetings such as its frequency, poor attendance, and lack of proper agenda to guide the conduct of the meetings. Chiwog Zomdu is no exception. To that end “Meeting fatigue” has become a massively chanted catchphrase today and a social phenomenon that is widely faced by people in the communities.

Appraising the matter, weighing the factors, acting on the issues

The process of decentralization in Bhutan supports the development of active, self-reliant social apparatus at the community level. That is the one established aim, clear as day, of having the LGs. To address issues aforementioned and strengthen community engagement in local governance, the SCLG Project of the DLG hypothesized that forming smaller neighbourhood groups (CEP) at the community may work better for community engagement.

The CEP, a small village/community-based group should be distinguished from other types of community groups that are Function-based or Attribute/Personality.

Function-based organization is “association” which aims at achieving definite purposes shared by its members. Agricultural cooperatives, irrigation user groups, community forest management groups are some of the examples.

Attribute/Personality-based organization is formed by the people who share the same attribute/personality such as age, gender and so on. Youth group, elder citizen’s group, women’s group and parents and teachers’ associations (PTA) are the examples. These two types of organizations are often formed in accordance with the sectorial structure of the central/local governments.

CEP locates itself in the area where three different types of organizations overlap. As CEPs accumulate more experiences in community activities, they may identify the needs of forming issue-based/attribute-based CEPs in coming years.

Advantages of CEP

Before the introduction of CEP in pilot sites in Bhutan, Chiwog Zomdu formed the basic platform for people’s participation. Chiwog Zomdus however inhibited people from openly raising issues or sharing ideas. At other times, a few vocal and influential individuals dominated the discussions, leading to decisions which

are not in the community’s best interests. People also developed fatigue for the numerous disorganized or ad-hoc Zomdus, resulting in poor or passive participation.

CEP was initiated to address these challenges

CEP’s Nangzom, an informal gathering or meeting offers a platform that is conducive for people to gather amongst themselves and delve openly on issues which matter to them, their group and the community. Through CEP, people can participate in the planning and decision-making processes and voice their views and ideas in local governance and community development.

Specific advantages of CEP can be observed at different levels of Individual, Group, Community, Chiwog and Gewog levels.

Individual

- CEP is inclusive of all; differently-abled members, elderly citizens, physically challenged
- CEP has flexible timing schedule
- CEP inspires confidence, the informal setting allows members to participate in the discussion
- CEP encourages Team Work, the smaller the team, the tighter the members are bound to each other.

Group

- Easy for members to take initiatives
- Group members have clear identification
- Tasks are easily defined and shared among members
- Less coordination efforts are required to manage the group.

Community

- CEP is inclusive as every household belongs to one of the CEP groups based on their geographical location and no household is left behind
- CEP strengthens community cohesion and enables people in the communities to work together to improve their livelihood
- CEP instills ownership and supports the development of a better community
- CEP enables communities to become self-reliant.

Chiwog

- Easy to manage smaller CEPs over large Chiwog Zomdus
- Easy to share information through CEP Coordinators
- Easy to mobilize people for community works such as a waste management, farm road maintenance and constructions
- Strengthens the development of the Chiwog Plan

Gewog

- CEP is small and easy to coordinate and manage

- CEP enhances people’s participation in planning and decision-making processes
- CEP fosters community ownership and reduces pressure on limited Gewog resources

Drongsep Yardrak Program (DYP) – a case for the thinking/visionary farmers

The DYP is an approach to activate passive CEPs. DYP helps to build capacity of CEP stakeholders. There are three types of Drongsep Yardrak, which are: Self-help, Mutual-help, and Public-help.

The type of Drongsep Yardrak guides the development of CEP action plans. Self-help activities do not require money and can be addressed at the individual level. Beyond the individual capacity, mutual-help comes in, to design and implement community-based activities through CEP. Public-help activities are those that require government support and cannot be addressed by communities alone. The three types of DYP are not mutually exclusive and can be integrated to enhance community engagement.

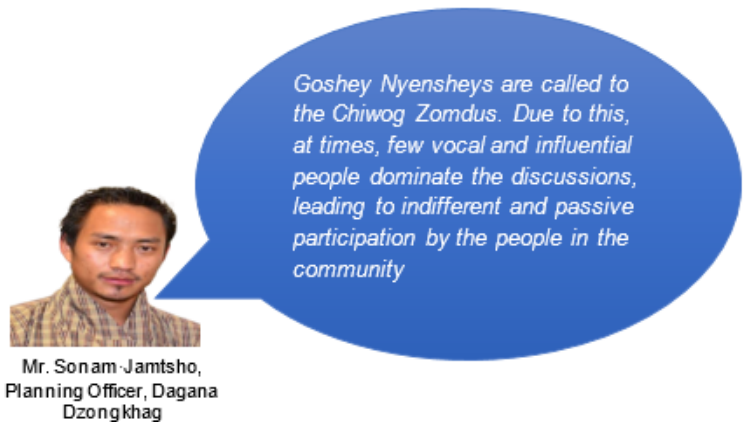
Nangzom – what, who, when, where
 Once CEP groups are formed, Nangzoms form quintessential part of a CEP. Nangzom are coordinated by the CEP Coordinators and they may be held once a month (or more frequently) as necessary and agreed amongst the group. Nangzoms are conducted in the community at one of the members’ house or at a mutually convenient place and time. Any member of a household can attend the Nangzom. They are informal and more inclusive in nature.

Advantages of Nangzom

- Nangzoms are easy to coordinate or organize
- Nangzoms have less participants and they are less formal
- Nangzoms are convenient (both place and time)
- Nangzoms offer safe environment for members to raise issues and share views
- Nangzoms can be therefore conducted more frequently
- Nangzoms are inclusive. Every household belong to one of the CEP groups based on their geographical location and so no household is left behind.
- Nangzom strengthens Chiwog Zomdu and Gewog Tshogde

Objective of DYP: The main objective of DYP is to engage community people to develop their own communities by persistently striving for improvement, using local knowledge, expertise, and resources.

The DYP’s being is reflective of the monotone of rural life which is immersed in timetabled and patterned trappings of the day and seasons; which yields rewards commensurate to the efforts put in, day in and day out. The DYP has entered the scene, not to change the scene, but to encourage a little innovative thinking in going through the motions of the same days, and enable them to prosper. To put it in a nutshell – make ‘thinking farmers’ out of these populaces. Thinking

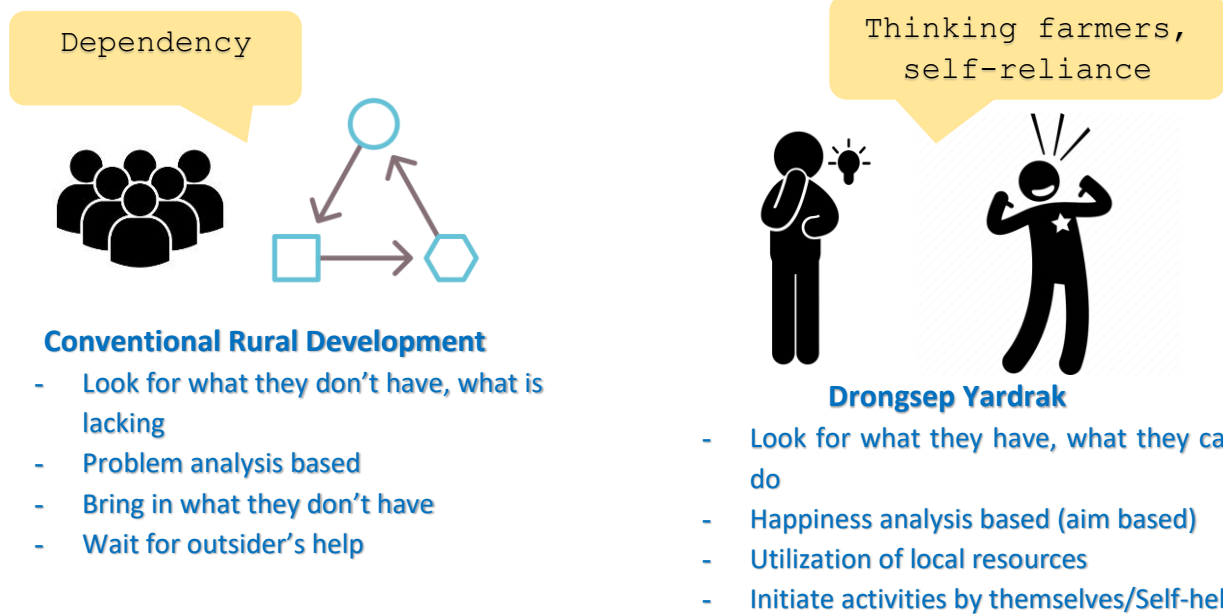


FIVE FINGERS MODEL FOR COMMUNITY ENGAGEMENT



Once the CEPs are formed and operationalized through the concept of Nangzom, it is important to manage the CEP group. To manage functional and managerial aspects of a CEP, the Five Fingers Model is developed.

Differences between Conventional Rural Development and DYP



farmers are driven to better their lives and explore opportunities to improve their livelihood options. Thinking farmers actively seek better income-generating activities and work toward sustaining them, achieving a certain level of happiness. There is also the visionary farmers, who are not only able to better their lives but are able to think for the whole community. They think long-term (10-15-20 years down the line) and have a vision for the community. This strong desire to transform their community drives them to chalk out clear vision and mission for the community and they strive towards achieving them through active participation in planning at local governance level and development processes.

CEP – Challenges identified

Without a few chinks weighing in; people are bound to say, a thing is 'too good to be true.' It's supposedly the unwritten rule and standard human condition that is in-built among the majority, to doubt the legitimacy of anything presenting itself as 'perfect.' CEPs are a success in its pilot sites save for a few challenges. It's a welcome observation then that the CEP has been given a few aspects to work upon and make it even more efficient.

Among observations made in rating the CEP, two, stand out due to its 'can't-do-without' factor and obvious connection to legislation that governs local governments – the Local Government Act.

- Legislative challenges: For CEP model to be replicated across the country it is felt that legislative provisions need to be added in the Local Government Act. This will protect its operational legality.

- Institutional challenge: CEP is not yet a legally recognized institutional setup. Its roles, therefore are no clearly determined, particularly in the formal planning and decision-making process.

A quality journey is more important, the destination will be grand

The CEP's 'smallness' is highly relevant and effective in enhancing community participation and strengthening decentralized local governance.

The CEP is promising from the start and it is charted out with structured plans that pastes actions to that promising appearance. Notwithstanding the few observed challenges, CEP is the administrative tool that is wrapped in the most neighborhood-friendly apparel. It has shown positive outcomes in its test drive and can only shine to completely live up to its designed role.

The CEP is not perfect, but it is, an operating perfectionist; which- is even better.

Reference: *Assessment of Community Engagement Platform (CEP)*, DLG, MoHCA www.dlg.mohca.gov.bt



ENERGY EFFICIENCY AND CONSERVATION



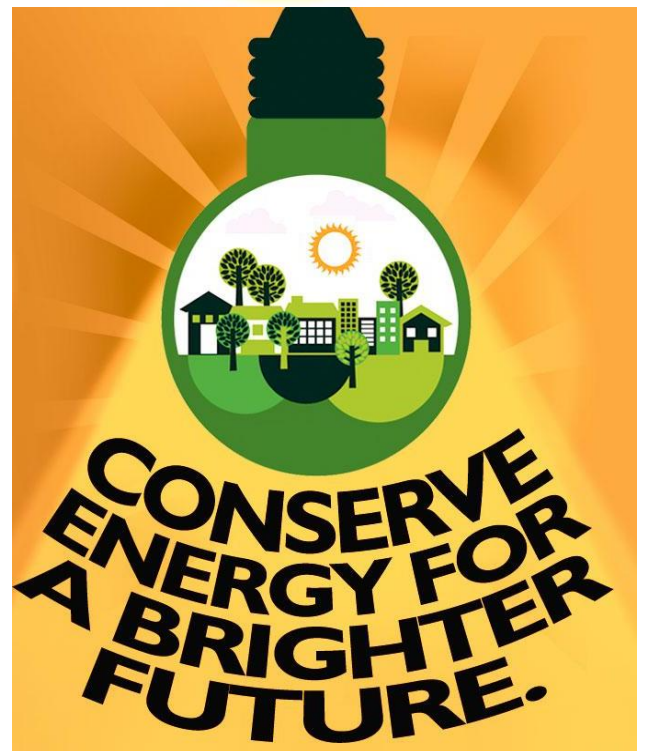
What is Energy Efficiency and Conservation?

“Energy efficiency simply means using less energy to perform the same task – that is, eliminating energy waste”¹

“Energy conservation means reducing the consumption of energy by producing or using less of it”²

In short, Energy Efficiency and Conservation (EE&C) measures are different means to reduce waste of energy. It sounds simple and some people may not find it important, considering the abundance of hydro power in the Country. But it is important to take EE&C into account and this article explains why.

Energy is an essential input for socio-economic development and a vital engine for economic growth. Bhutan has been developing and growing which has led to increased urbanization and reduced poverty rates. As



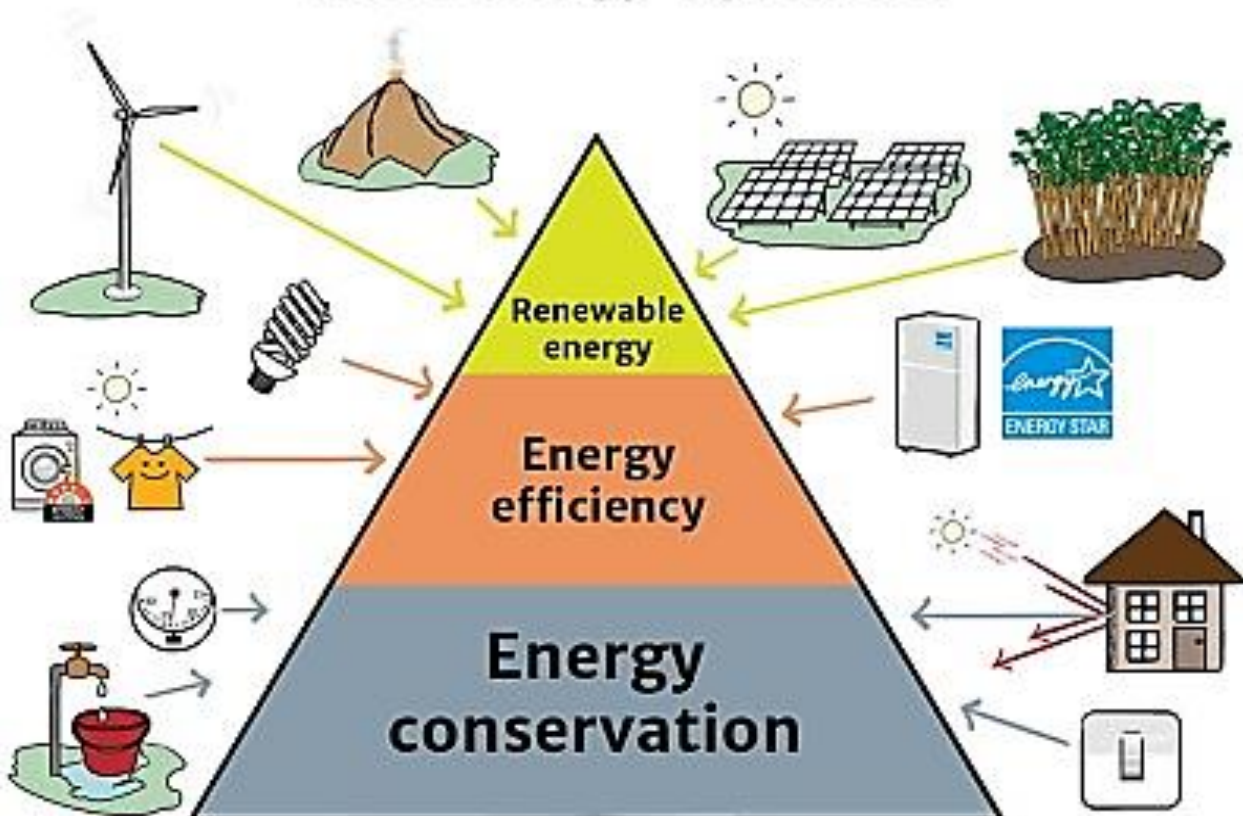
the country's socio-economic development increases, so does the energy consumption with more industries emerging in the market, the living standard of Bhutanese have also increased which allows the majority of the Bhutanese to use more appliances, equipment and vehicles, all of which results in more usage of energy. Therefore, more hydro power projects have been planned and constructed in the last few years to address the growing energy demands of the country and also the imports of fossil fuels like LPG, kerosene, diesel, petrol, etc has been increasing over the years.

According to the extensive studies carried out in 2014 the Department of Renewable Energy (DRE), it was found that the Country consumed a total of 650,200 tonnes of oil equivalent (toe) energy with 42% of energy consumption by Building sector, 37% by industry sector and 19% by the transport sector.³ This energy consumption was inclusive of use of firewood as an energy source. There are substantial rural settlements and public institutions (schools and monasteries) where firewood is still consumed for cooking and heating purposes. The continued use of firewood has a lot of negative impacts; it affects the health of users in the long run, it creates pollution (which adds to climate change) and it depletes our beautiful forest. As the population and energy demand grows, the demand for firewood will also continue to grow.

Considering all these concerns, the DRE, MoEA has identified that one of the easiest methods to save energy is the promotion and implementation of energy efficiency and conservation measures in different sectors of major energy consumers like building, industry and transport. The Department is actively taking up EE&C promotion and has developed the "National Energy Efficiency & Conservation Policy" in 2019 which will streamline the EE measures and create an enabling environment for all agencies to implement EEC measures. Further, the EE Roadmap was also launched along with the Policy which outlines the sector specific EE measures through different time horizons. But what can we, as an individual energy consumer do to help address these above issues? We can each contribute to energy saving by doing what we can at individual, household and community level. There are different measures we can adopt which range from zero investments to some major investments. Some of these EE&C measures are as listed below:

1. No Investments
 - Switching off gadgets, devices and appliances when not in use
 - Use of insulation tape at doors and windows for air tightness
 - Use of hot water bags in winter

The Energy Pyramid





- During construction, incorporation of passive house designs like sun orientation for maximum natural lighting and ventilation.
- 2. Minor Investments
 - Use of LED lamps
 - Use of digital/manual timer plug
 - Use of weather/season appropriate curtains and shades
 - Use of efficient cooking stoves
 - Use of Energy efficient appliances with star ratings
- 3. Major Investments
 - Use of Star rated HVAC system
 - Use of Star rated industry equipment
 - Use of energy efficient materials for construction
 - Installing Building/ Industry Energy Management System

EE&C will bring reduction in the daily operation costs at an individual and household level without compromising the thermal comfort, and at a collective larger scale, implementation of EE&C measures has the opportunity to enhance economic benefits by saving

energy losses, increasing domestic savings, and reducing expenditures incurred on the import of fossil fuels and electricity during lean seasons. Energy efficiency & conservation can start from small, conscious decisions at our homes and offices where we spend most of our time. Make use of technologies that will bring reduction in your energy bills without compromising the comfort and productivity and finally spread awareness, especially to our youth about the importance and benefits of EE&C both at personal and national level.

1. <https://www.eesi.org/topics/energy-efficiency/description>
2. <https://taraenergy.com/blog/your-guide-to-understanding-energy-conservation/>
3. Bhutan Energy Data Director 2015

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*Department of Renewable Energy
 (DRE, MoEA). For more info, please visit
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World Food Safety Day

7th June, 2022

"Safer food, better health"



WORLD FOOD SAFETY DAY

safer food, better health



World Food Safety Day is an annual celebration to draw attention and inspire action to help prevent, detect and manage foodborne risks. The United Nations established World Food Safety Day in 2018 to raise awareness of food safety.

SAFER FOOD, BETTER HEALTH

The theme for World Food Safety Day 2022 – “Safer food, better health” – is a reminder that we all play a role in keeping food safe. We need to prioritize food safety throughout the whole supply chain, from farm to table.

Foodborne diseases range from mild to very serious and can even lead to death. From a social perspective, they contribute to absenteeism from school and work

and reduce productivity. If we come together collectively to incorporate good food safety practices in our day-to-day lives, we can prevent foodborne illness and promote productivity.

Each person has a role to play – whether you grow, process, transport, store, sell, buy, prepare or serve food – food safety is in your hands.

KEY MESSAGES

If it is not safe, it is not food. There is no food security without food safety. Only when food is safe will it meet nutritional needs and help adults to live an active and healthy life and children to grow and develop.

Everyone is a risk manager. Everyone evaluates food safety risks as part of their daily choices. These choices are made by individuals and collectively by families, communities, businesses and governments. Strengthening collaboration improves food safety. Shared responsibility for food safety requires working together on issues that affect us all – globally, regionally, nationally and locally.

Food safety is based on science. Consumers usually cannot tell from sight or smell whether their food is safe, but scientists have developed tests and tools to detect unsafe food. Food scientists, microbiologists, veterinarians, medical doctors and toxicologists, to name a few, advise what food production, processing, handling and preparation practices are needed to make food safe. When safe practices are employed across the food chain, food becomes safe.

Investing in food safety today will reap future rewards. Safe food production improves economic opportunities by enabling market access and productivity. However, unsafe or contaminated food leads to trade rejections, economic losses and food loss and waste. Therefore, good practices along the supply chain can improve sustainability by minimizing environmental damage and helping to retain more agricultural product.

Food safety has a direct impact on health. Safe food allows for the uptake of nutrients, promotes long term human development and achievement of SDGs. Most foodborne disease is preventable with proper food handling and education.

Strengthening collaboration improves food safety: Shared responsibility for food safety requires working together on issues that affect us all – globally, regionally, nationally and locally. Collaboration is essential across sectors within communities, businesses, governments and across borders, to ensure the availability of safe food around the world in a sustainable manner now and in the future.

Food safety & Covid-19: Although COVID-19 is not transmitted by food, the impact of the pandemic has disrupted our agrifood system and shown us the importance of planning in advance. As part of preparation for the next pandemic, governments should prioritize minimizing disruptions in the food supply chains, as consumers must always have reliable access to safe food. To build back better, we need to collaborate - across disciplines, sectors and borders.



“Only when we work together, can we achieve safer food for better health.”

FIVE KEYS TO SAFER FOOD



KEEP CLEAN



SEPARATE RAW AND COOKED



COOK THOROUGHLY



KEEP FOOD AT SAFE TEMPERATURES



USE SAFE WATER AND RAW MATERIALS

FACTS & FIGURES

One in ten people worldwide fall ill from contaminated food each year. It affects all countries. The magnitude of the public health burden due to foodborne diseases is comparable to that of malaria or HIV AIDS.

Over 200 diseases are caused by eating food contaminated with bacteria, viruses, parasites or compound substances such as heavy metals.

Antimicrobial resistant microbes can be transmitted through the food chain, via direct contact between animals and humans or through the environment.

Each year, an estimated 700,000 people die around the globe because of antimicrobial resistant infections.

Foodborne parasitic diseases can cause both acute and chronic health problems. The estimated number of illnesses from 11 main parasitic diseases is 48.4 million per year, 48 percent of which are transmitted through food.

Children under the age of five are at a higher risk of malnutrition and mortality due to unsafe food and carry 40 percent of the foodborne disease burden. Unsafe food caused one in six deaths from diarrhoea, a major killer in this age group.

Safe and nutritious foods benefit child growth and development by improving intellectual and physical potential, as well as increasing school performance and work productivity in adult life. If there are no contraindications, exclusive breastfeeding is the safest way to feed infants during the first six months of life.

The production of safe food reduces food loss and waste and benefits the planet. Safe food benefits the economy by increasing productivity, allowing prosperous national food markets and stable food exports and trade. It reduces the strain on health care systems.

The safety of food is affected by the health of animals, plants and the environment within which it is produced. Adopting a holistic One Health approach to food safety will deliver a better food safety system.

188 countries and one member organization (the European Union) have negotiated science-based recommendations in all areas related to food safety and quality, Codex Alimentarius standards, which ensure that food is safe and can be traded.

Food safety contributes to the achievement of the SDGs and is a truly cross-cutting area.



ISSUED IN PUBLIC INTEREST BY :

**BHUTAN AGRICULTURE AND FOOD REGULATORY AUTHORITY (BAFRA),
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335540 HOTLINE #1555

Email : bafraheadoffice@gmail.com website : <http://www.bafra.gov.bt/>



Homeless, not worthless **ADOPT A DOG**



1. NATIONWIDE ACCELERATED DOG POPULATION MANAGEMENT AND RABIES CONTROL PROGRAMME (NADPM & RCP)

The mandate of Nationwide Accelerated Dog Population Management and Rabies Control Programme is to

- **Achieve 100% sterilization coverage of free-roaming dogs.**
- **Attain 100% registration and microchipping of the owned dogs.**
- **Achieve zero dog-mediated human rabies deaths by 2030.**

LET US ALL DO OUR PART

Support the campaign 



Toll Free Number: 1244

DON'T WAIT. VACCINATE.

2. DON'T WAIT VACCINATE

Pet owners must ensure timely vaccination and deworming of their pets against relevant zoonotic diseases. It is mandatory to vaccinate all dogs against rabies. Once vaccinated, a vaccination certificate will be provided.



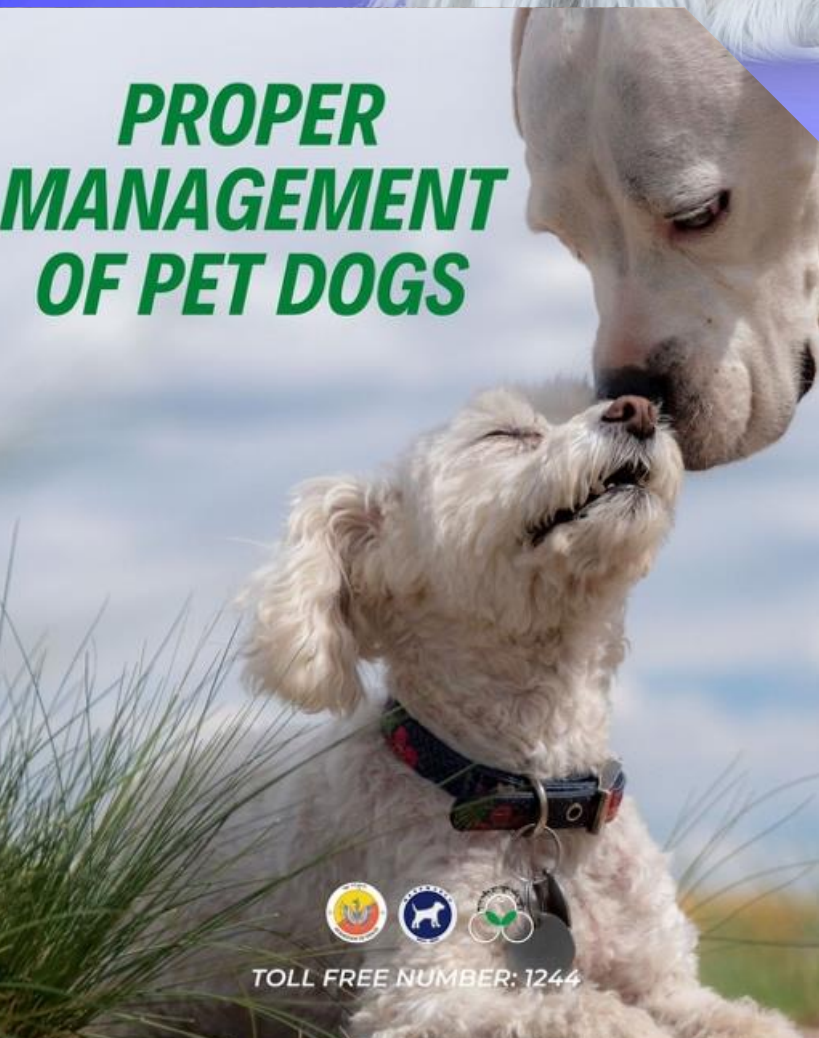


HOW TO BE A RESPONSIBLE PET OWNER

- Microchip & register your pet
- Vaccinate your pet
- Identify your pet with a collar/tag
- Neuter your pet
- Feed healthy
- Give them plenty of love & care



PROPER MANAGEMENT OF PET DOGS



3. PROPER MANAGEMENT OF DOGS

- All pet owners should keep their pets within their compounds
- In public places, the pet dogs must be properly secured to avoid any harm to people and environment at all times.
- Pet dogs must be muzzled or leashed in public places. It is also illegal for owners to let loose their pets into the streets. Such acts are liable for penalties.



TOLL FREE NUMBER: 1244

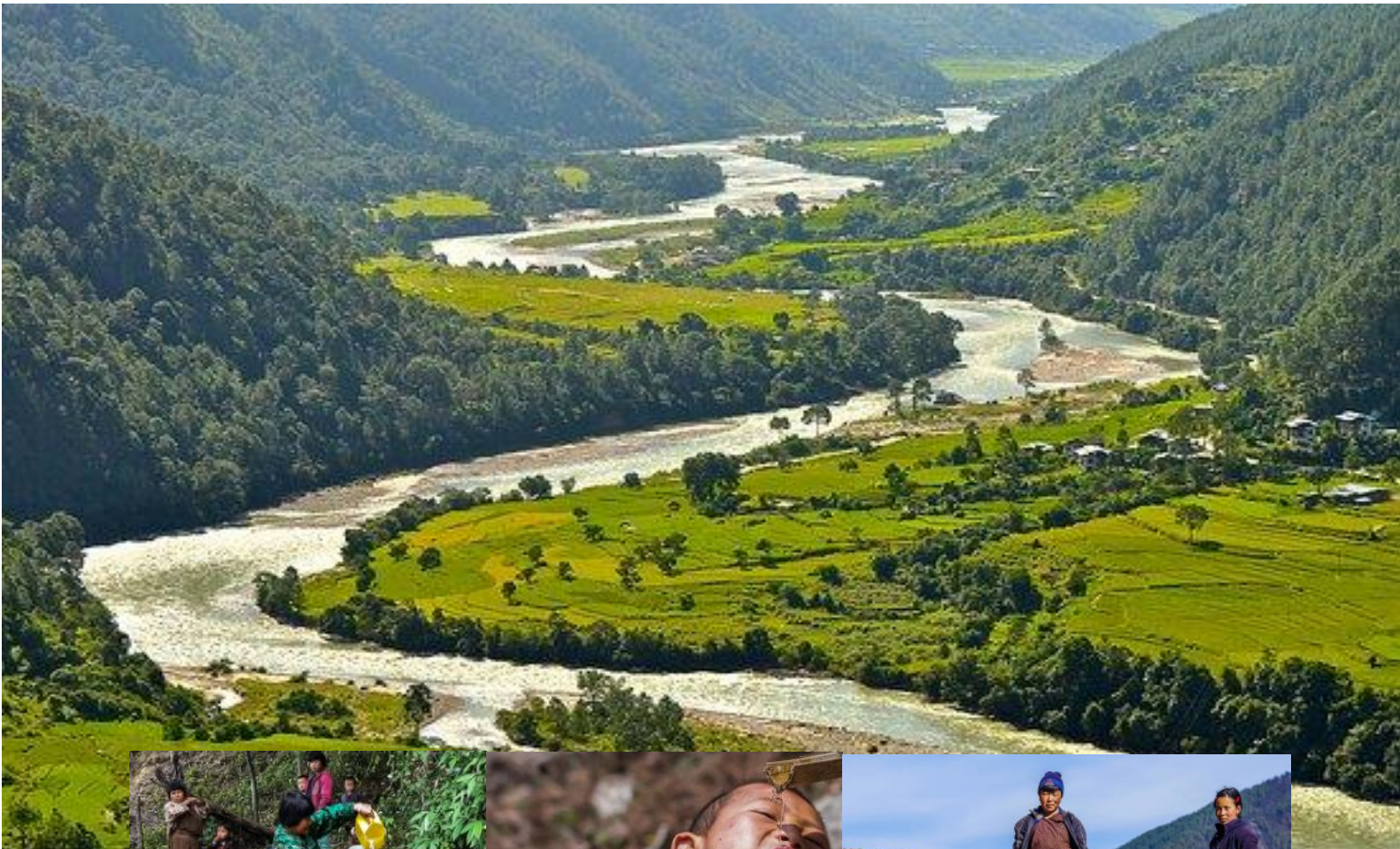
REGISTRATION & MICROCHIPPING

4. REGISTRATION AND MICROCHIPPING

Please register and have your pets microchipped by taking to the nearest Veterinary Centre.



TOLL FREE NUMBER: 1244



Weathering **climate change** — With the **NATIONAL ADAPTATION PLAN**

Worry grips life no matter what. Something is always falling short, and people must tend to them; tie those loose ends. Worry grips the world too, no matter what. Some earth-endangering or world-ending threat is always looming large and threatens not to go away. Climate change and its inconsistently consistent impacts is the global debacle for these ages. And its agents of disruption and destruction continue to create and wreak havoc on world nations. Global communities are up in arms and have had their guard up ever since they felt the temperature rising (global warming); ever since they discovered that hole in the sky (the depleting Ozone layer); since when the ice caps started melting; and ever since the oceans started warming up. Without concrete actions the world is likely to increasingly continue down a path to climatic doom and chance upon the perilous lose-lose situation visibly being foreshadowed in the guise of sea levels that rise higher and higher while extreme precipitation and increased incidences of drought (among the many other climate change impacts) threaten life on earth and the very existence of an earth that is harmonious and life-friendly.

On this end of the world, Bhutan is fighting the good fight with the NAP. No, the country is not taking the ultimate siesta and then hoping climate change will disappear. In complete opposition to what the abbreviation might suggest (taking a nap); Bhutan's NAP which stands for National Adaptation Plan stirs up every facet of the country's attributes in relation to climate change to address and alleviate impacts of climate change that are various and sundry.

A climatic context for concern

Bhutan, for all its virtues in having a well conserved/protected environment and all the gifts that come along with it such as richness in biodiversity wealth, is nonetheless a reluctant recipient of the negativity that climate change as a global phenomenon dishes out. Being a mountainous ecosystem, the country's Renewable Natural Resources (RNR) Sector is the most significantly hit; mainly due to the extreme weather/climatic conditions effected by climate change. Bhutan is an agrarian society and agriculture is the lifeline of more than 60 percent of the population; this means agriculture is badly affected by climate change. The sector is the biggest employing sector for the country's population that is largely rural and dependent on agriculture for livelihood. It is credited for generating close to 20 percent of the country's GDP. Since erratic and extreme weather events affect rainfall patterns and river flow, this in turn negatively impacts hydropower generation (the biggest economic activity of the country). In the past, news coverage have called out risks of damage to turbines of hydropower plants consequentially accounted for as developments triggered by climate change. Deeper studies and findings have also revealed cross-cutting issues caused mainly because of climate-change aggravated events that significantly aggravate unfavorable conditions in environmental conservation, disaster management, poverty alleviation, gender balancing etc.

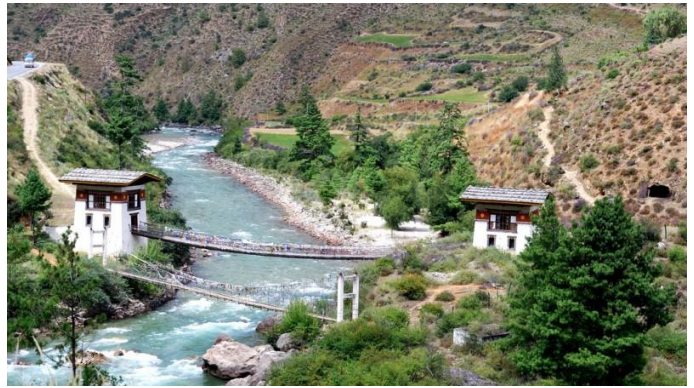
For starters, heavy rainfall is now more common and they have led to flash floods and landslides. At the same time melting glaciers impact water availability and increase the impending threats/risk of glacial lakes outburst floods. Various regions in the country increasingly report streams drying up, causing water scarcity. The hydropower, agriculture, and tourism sectors, which together contribute significantly to the country's GDP are all heavily dependent on climate variability and therefore severely affected by natural hazards.

The National Adaptation Plan

In June 2019, Bhutan stepped up its response to climate change with the launch of a project to advance its National Adaptation Plan (NAP) focused on water. The project is implemented with a US\$ 2.7 million grant from the Green Climate Fund (GCF). The GCF is a fund created within the United Nations Framework



The hydropower, agriculture, and tourism sectors, which together contribute significantly to the country's GDP are all heavily dependent on climate variability and therefore severely affected by natural hazards



Convention on Climate Change (UNFCCC) to support the efforts of developing countries to respond to the challenges of climate change. The National Environment Commission (NEC) leads the formulation and implementation of the NAP in collaboration with several other government agencies, Civil Society Organizations and Academia.

The project builds on work already underway to identify and respond to climate change impacts, including a comprehensive National Adaptation Programme of Action, Bhutan's Nationally Determined Contributions (NDCs) under the Paris Agreement (including both mitigation and adaptation), and a Five-Year Plan with a focus on climate and disaster resilience. NDCs are the efforts by each country to reduce national emissions and adapt to the impacts of climate change. The Paris Agreement—a legally binding international treaty on climate change—requires each party to prepare, outline and communicate their NDCs.

The NAP – Origin story

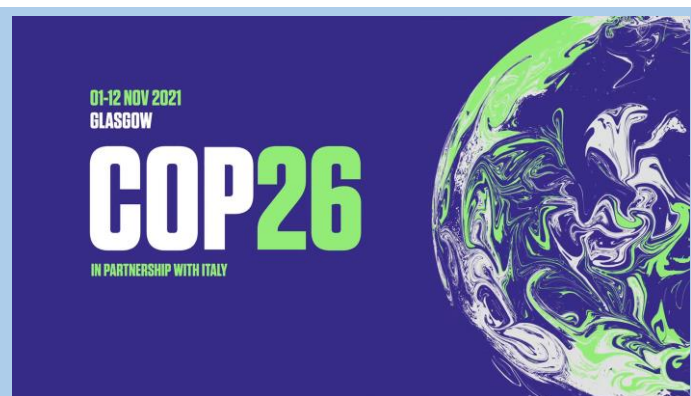
Bhutan launched the process for a National Adaptation Plan process in 2015 definitively as a national NAP road-map and as an update of the 2012 National Adaptation Program of Action. The NAP project builds on Bhutan’s Nationally Determined Contributions (NDC) by accelerating the NDC vision to scale up adaptation in the medium- to long-term and by focusing on priority sectors in the NDC, such as water resources.

Bhutan has identified the water sector as a national priority, and seeks to identify areas of cooperation in terms of water resources management and development among different sectors in the 12th Five Year Plan (FYP). Increased water security through Integrated Water Resources Management is defined as a priority adaptation need in the NDCs. It has also been identified as a key, cross-cutting sector for adaptation in the country, calling for further water-specific risk assessments.

While Bhutan has been budgeting national resources for adaptation through its Five-Year Plans and the Bhutan Trust Fund for Environmental Conservation (BT FEC), climate change spending still accounts for only two percent of the national budget, demonstrating the need for external funding as highlighted in the NDCs. In addition to financial limitations, Bhutan faces barriers related to coordination, learning and awareness, technical capacity for climate information, systematic identification and appraisal of adaptation options, and monitoring and evaluation. In order to enhance adaptation planning, all of these challenges need addressing.

The larger focus is on assisting the country to further advance its cross-sectorial adaptation plan process at the national level and to put in place a robust implementation monitoring and evaluation system. The NAP as a proposed readiness request supports the Royal Government of Bhutan (RGoB) to advance its NAP process by building on existing capacities and enhancing institutions already in place for adaptation planning through the following outcomes:

1. Enhanced coordination, learning and knowledge management for an iterative NAP process;
2. Technical capacity enhanced for the generation of climate scenarios and impact assessment;
3. Vulnerability assessments undertaken and adaptation options appraised and prioritized; and



The Bhutanese delegation at the COP26 in November 2021 called upon developed countries to scale up finance for adaptation, loss, and damage, and said technology transfer and capacity building are needed to enable vulnerable countries to cope with climate-induced challenges. The delegation highlighted how water resources, agriculture, and infrastructure for life, food security, and livelihood were at risk in the fragile mountain ecosystems of countries like Bhutan.

4. NAP formulated and capacity for implementation and monitoring established.

These national level outcomes include both a comprehensive component on water resources as well activities across other climate sensitive sectors in Bhutan. These outcomes will address identified barriers to adaptation planning in Bhutan through the formulation of a National Adaptation Plan and the strengthening of institutional frameworks and systems to enable long-term decision making for climate change adaptation.

The NAP’s contribution to the Sustainable Development Goals (SDGs)

The project contributes to the achievement of the following SDGs:

- SDG 1: No Poverty
- SDG 6: Clean Water and Sanitation
- SDG 13: Climate Action
- SDG 14: Life Under Water



Nationally Determined Contributions (NDCs)

The Paris Agreement requests each country to outline and communicate their post-2020 climate actions, known as their Nationally Determined Contributions or NDCs. The NDCs represent efforts by each country to reduce national emissions and adapt to the impacts of climate change.

The Paris Agreement requires each Party to prepare, communicate and maintain successive NDCs that it intends to achieve. In this, Parties are to pursue domestic mitigation measures, with the aim of achieving the objectives of such contributions. The Agreement says all Parties have to put forward their best efforts through NDCs and to strengthen these efforts in the years ahead. This includes requirements that all Parties report regularly on their emissions and on their implementation efforts.

The Paris Agreement and NDCs: In the year 2015, 196 countries party to the Paris Agreement came together to transform their development paths so that they set the world on a course toward sustainable development, aiming at limiting warming to 1.5 to 2 degrees above pre-industrial levels.

Through the Paris Agreement, Parties also agreed to a long-term goal for adaptation – to increase the ability to adapt to the adverse impacts of climate change and foster climate resilience and low greenhouse gas emissions development, in a manner that does not threaten food production.

Additionally, they agreed to work toward making finance flows consistent with a pathway toward low greenhouse gas emissions and climate-resilient development. Together, these climate actions determine whether the world achieves the long-term goals of the Paris Agreement.

Each climate plan (NDCs) reflects the country's ambition for reducing emissions, taking into account its domestic circumstances and capabilities. There will be a global stocktake every 5 years to assess the collective progress toward achieving the purpose of the Agreement and to inform further individual actions by Parties.

Biennial Transparency Report (BTR): In addition to scientific research and findings by the Intergovernmental Panel on Climate Change (IPCC), information reported in BTRs is considered at a



The NDCs represent efforts by each country to reduce national emissions and adapt to the impacts of climate change



collective level as an important input into the global stocktake, leading to stronger climate action that will continue as the climate regimes moves towards the goal of zero net emissions by 2050 and climate neutrality thereafter.

Parties under the Paris Agreement are required to submit their first biennial transparency report (BTR1) and national inventory report, if submitted as a stand-alone report, in accordance with the MPGs, at the latest by 31 December, 2024.

Reporting and Review under the Paris Agreement

The Paris Agreement establishes an Enhanced Transparency Framework (ETF) designed to build trust and confidence that all countries are contributing their share to the global effort.

A framework was sorted out during the COP24 (Dec, 2018) that is applicable to all countries by adopting a detailed set of modalities, procedures and guidelines (MPGs) that make it operational. The MPGs are based on a set of guiding principles and define the reporting information to be provided, the technical expert review, transitional arrangements, and a facilitative multilateral consideration of progress. The ETF provides built-in flexibility to those developing countries that need it owing to their national capacities.

Through the detailed guidance on the reporting/review/consideration processes for the information to be submitted and by making these reports publicly available, the ETF will make it possible to track the progress made by each country. In this way, it will be possible to compare a country's actions against its plans and ambitions as described in its Nationally Determined Contributions (NDCs).

Transition to the ETF: The ETF under the Paris Agreement builds on the current, solid measurement, reporting and verification system under the Convention, which for developed countries is the greenhouse gas (GHG) inventories and the International Assessment and Review and for developing countries is the International Consultation and Analysis.

The final biennial reports for developed countries are due as early as the date of the annual GHG inventory submission in 2022 (i.e. 15 April 2022) but no later than 31 December 2022 and they will be multilaterally assessed to complete the final IAR cycle during 2023-2024. The final biennial update reports for developing countries are those submitted no later than 31 December 2024 and will undergo the last ICA cycle between 2024 and 2026.

ETF and the Global Stocktake: The enhanced transparency framework represents an important component of the ambition cycle in the global climate regime established by the Paris Agreement by building trust and confidence that countries are taking action to meet their national climate targets and actions defined in their NDCs under the Paris Agreement.

Signs and symptoms of Bhutan's vulnerability to climate change



→ The crop (paddy) damage due to incessant rain in parts of the country in November last year shows how vulnerable the country is to climate change.



→ The changing weather patterns, growth of algae in lakes, and retreating glaciers are some conditions observed in the highlands that are attributed to global warming.



→ Global warming threatens to severely impact natural conditions such as ice sheet collapse, ocean circulation changes, sea-level rise, ocean acidification, extreme weather conditions, changes in the hydrological cycle, and glacier retreat. The National Centre for Hydrology and Meteorology (NCHM) has

reported that the 700 glaciers in the country are retreating at an alarming rate and experts warn that the glaciers could disappear in the next 50 years if the trend continues.

- If globally, ocean circulation is affected, it would affect precipitation in the country causing long periods of drought, which would cause disturbances in the sowing season. This will also affect the capacity of hydropower plants and their power generation capacity.
- While the Intergovernmental Panel on Climate Change mentioned that limiting warming to 1.5 degrees Celsius will require the 2030 greenhouse gas emissions level to be a 45 percent reduction from the 2010 level, existing NDCs will instead lead the world to a 16.3 percent increase (A press release from the Least Developed Countries (LDCs) group in 2021).



- Bhutanese children are world's 111th most vulnerable in UNICEF first ranking of countries based on their exposure and vulnerability to climate and environmental shocks. Young people living in Bhutan are among those at risk of the impacts of climate change, threatening their health, education, and protection, according to a UNICEF report launched in August 2021.

“There remains a frightening gap between the current trajectory of global emissions, the emissions reductions planned, and the emissions reductions needed to limit warming to 1.5 degrees Celsius.”

— Chairperson of the LDCs group, Sonam P Wangdi (also Secretary of the National Environment Commission)



It's the fight that sees no end, it's the fight that must go on till The End

In its fight against climate change, Bhutan's approach has been that of making it a focused hit on alleviating impacts brought about by the climate conundrum. It has mainstreamed climate change and resilience in policies on disaster risk management and weather monitoring, water-related services, agriculture, urban transport, information and communications technology (ICT), hydropower, and forest management.

The country continues to present itself as a world nation that champions environmental causes and works diligently to hold its end in meeting criterion of various climate pacts and protocols. Nationally, the government in January 2020 adopted the Climate Change Policy of the Kingdom of Bhutan, a highly cross-sectoral approach in combating climate change. In terms of regional network and cooperation governing environment and climate change, Bhutan is member to



“We are also developing a National Adaptation Plan, enhanced Nationally Determined Contributions (NDCs), and long-term low emission climate resilient development strategy that will ensure we remain carbon neutral for all times to come.”

— Prime Minister Dr Lotay Tshering at the virtual summit “Thimphu Ambition Summit Momentum for a 1.5°C world” on 09 December, 2020 calling for stronger international cooperation and solidarity to address challenges of climate change and Covid-19.



South Asia Association Regional Cooperation, regional cooperative mechanisms and land mark agreement like Male` Declaration established under the South Asian Cooperative Environment Program, Asia Pacific Adaptation Network and other initiatives in the regional information network facilitated by International Center for Integrated Mountain Development on sharing information on transboundary pollution resulting from atmospheric black carbon.

Since 2009, the country is committed to remain carbon neutral. Bhutan made this commitment to the global community at the 15th UN Climate Change Conference of Parties (COP), it’s a promise reiterated at COP21 in 2016. The country’s global commitment to remain a carbon-neutral country for all times in itself is an explicit and more than its fair share responsibility. Nevertheless, Bhutan continues to effectively participate, engage and contribute towards the local, regional and global climate change programs.



References: Kingdom of Bhutan: Third National Communication to the UNFCCC 2020; nec.gov.bt; gnhc.gov.bt; bt.undp.org; www.unfccc.int; Kuenselonline; BBS
Climate Change Division, National Environment Commission Secretariat (NECs) For more info, please visit www.nec.gov.bt



WHERE ENVIRONMENTAL CONSERVATION IS CONCERNED

EVERY LEAF COUNTS

In most places in the world (let's call them 'developed nations'), people drive for hours, and for miles simply to glimpse a colony of trees, and an array of wild growth and undergrowth; in other words – get a glimpse of nature. And these natural worlds inside guarded enclosures of a nature park or some botanical garden are the surviving remnants of a thriving whole that is now all but plundered, pillaged and bulldozed by the march of progress; the last few surviving mementos. This is the trade-off, the cost of (recklessly) sacrificing natural environment at the altar of development – the healing peace and quiet of nature, the meditative tranquility of the greenery eludes them in their immediate surrounds (the places from where they drove all the way). Sure, this thought escapes the mind when wallowing in all the luxury, convenience and comfort that development has gifted, but the compromise goes far beyond the extra effort of 'having to drive miles to see nature.' Consequences are weighty and it is weighing heavy (especially in these times of living in a post-climate change era. When the last leaf falls (and new ones never grow back), realizations will be too little and too late.

Not to make a contest out of this, but, on the current topic, Bhutan has all grounds covered, matter of fact- all in green with more than 70 percent of its land area as forest cover. Now that definitely awards it some mighty bragging rights. In contrast to the aforementioned situation, people in Bhutan need only look out of their windows, lo and behold – nature all around.

Behind such rewards is usually- a lot of hard work, steely resolve that is the epitome of true grit and stories that are simply 'the stuff of legend.' The conservation story of Bhutan is exactly that kind of swashbuckling dare pulled off quite neatly. Woven intricately into these gloriously patterned stories as standout color codes are agencies like the BTFEC, the Bhutan Trust Fund for Environmental Conservation.

And yes, even from the office windows of the BTFEC you can see nature all around. Even better, right next to the BTFEC office you can see the Thimphu Ecological Park. The BTFEC supported the establishment of the Park (inaugurated in 2016) with required fund support.



Getting to the point

In Bhutan you don't just see a representation of nature or a couple of representatives of nature (trees, flowers, shrubs, birds bees etc.), every scenic view is an individual ecosystem in themselves- size varying- from a mini ecosystem to a sizably thriving ecosystem. For instance take into consideration the world of birds, bees, insects, flowering and non-flowering growths that provide habitats, breeding grounds, nesting places for sheltered individual members of the plant, birds, animal and insect world while the greenery themselves fulfill inherent functions of aiding natural processes. You might say it's a natural show of sound and scene where the food chain is live on display and the balance-of-nature is in action- all this, as you glimpse, glare and breathe. Very few places in the world can host such a natural extravaganza. But of course, while nature is allowed to take its course, human interventions such as conservation-friendly laws and political will are key and cornerstone to achieve results like this.



The conservation-friendly laws, and the reassuring political will

The leaders of the nation, the monarchs, have always steered development very cautiously taking into stride what could be lost from what could be gained and how to always find a middle path to embracing continuous development but also hang onto what remains valuable for the country as treasured national identity. This was the very foundational bedrock on which the Fourth Druk Gyalpo proclaimed loud and clear that Bhutan would prioritize Gross National Happiness (GNH) over Gross National Product (GNP). Environmental Conservation therefore became one among the four chief pillars of the nation's development philosophy of GNH. Balanced Socio-economic Development, Preservation of Culture; and Good Governance in this are the three other pillars of GNH.

Environmental conservation is enshrined and immortalized in the hallowed pages of the nation's Constitution which states that a minimum of 60 percent forest cover must be maintained for all times

Conservation conversation gets action

The story of Bhutan's conservation journey can be told from how it all started once upon a time and then took off to reach the current glorious stage. The story of Bhutan's conservation journey can also be told through the BTFEC lens; of how and why the trust fund was instituted to do what it does and continues to do to this day – conscientiously enable conservation of the nation's environment harmoniously in check with the changing times. And in these realities of a rapidly metamorphosing 21st century, it is a time in history that is continuously battered by climate change where developmental plans (that needs execution come what may) are compelled to wisely seek out safe passage within the crisscrossing and winding maze of complexities ever-growing in intensity and confusability.

BTFEC is world's first environmental trust fund and an independent, non-government, grant making organization of the country.

Why BTFEC exists – is a story a 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 BTFEC is in place to protect and preserve the ecosystem by funding and supporting environmental projects.

to come. Hip to all aforementioned; a host of laws, bylaws, rules and regulations and frameworks are in operation to put conservation first and development next. And all this happens after every development activity fulfills various criteria of passing environmental impact assessments. Even on the financial front, one of the chief conditions to fulfill while availing loans is the absence of any negative criteria toward environmental conservation in the purpose for which loan is being availed.

How the BTFEC started: is a story of nature conservation in Bhutan that helps the world at large

The BTFEC was the outcome of an innovative and sophisticated financing mechanism the country conceived in the late 1980s. It was established in January of 1961 with US\$ 1million donation from World Wildlife Fund (WWF). Through the years that was 1992 and 1998, donors conscious of environmental degradation and threat to sustainable development contributed to the trust fund. This raised the initial capital to US\$ 21million. Donors include the Royal Government of Bhutan (RGoB), the United Nations Development Program (UNDP), Global environment Facility (GEF), World Wildlife Fund (WWF) and Government of Denmark, Finland, the Netherlands and Switzerland.

The trust fund was legally incorporated in 1996 through Royal Charter, and its assets of US\$ 21million was then invested.

What BTFEC has been up to: fuelling conservation, maintaining Bhutan’s name as a green champion

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.

BTFEC 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.

BTFEC demonstrates its leadership role in environmental conservation by increasing measurable results of grant funding and capacity building. It sets its strategic priorities and target key issues for grant funding in line with the conservation priorities of the nation. It increases the conservation capacities of rural populations, civil societies and local governments.



Coming back to the point

The previously mentioned Thimphu Ecological Park, situated not 50 meters outside the BTFEC compound is a quick peek that generates an even quicker but deep-seated insightful look into how the trust fund’s operations make the most impactful difference in effective conservation works around the nation. Here’s an explanation (call it a teaser/trailer of how the bigger picture works). The explanation should be understood in the context that if the Trust Fund’s involvement in a small park has much, much far reaching conservational impact, then the multiplied impact in funding conservation and mitigation activities and programs across the nation and especially in the Protected Areas covering more than 50 percent of Bhutan, is simple mathematics- in doubling, tripling, quadrupling the benefits.



The Thimphu Ecological Park – powered by BTFEC:

Commanding a sizable perimeter of nearly 11 acres (10.77), the park harbors and hosts a large stretch of wetland which in turn shelters and sustains diverse species of flora and fauna. Like in the way it shelters the endangered bird species, wood snipe that seeks habitat and refuge within the reservation. The park has 130 plant species (identified thus far) growing in the park which is more than 60 percent herbaceous plant and more than 20 percent shrubs). Currently, Bhutan has more than 4,500 species of seed plants. Of this more than 90 percent are native, which means they are naturally found in Bhutan. New species are still being discovered through botanical explorations and

The laws, rule, regulations and policies that protect and save the environment

Bhutan's commitment to environmental conservation is immortalized in the Constitution while it has translated into numerous Policies and Acts.

- The Constitution of the Kingdom of Bhutan 2008 decrees that the country maintain a minimum of 60 per cent of the total land under forest cover for all time.
- The Food and Nutrition Security Policy of Bhutan, 2014 promotes biodiversity conservation for food security and resilience.
- The National Forest Policy, 2011 ensures that Bhutan's forest resources and biodiversity are managed sustainably to provide a wide range of social, economic and environmental benefits.
- The Biosecurity Policy of the Kingdom of Bhutan 2010 ensures the protection of the Bhutanese people and Bhutan's biodiversity from the harmful effects of pests and diseases, invasive alien species, genetically modified organisms, toxic chemicals and food additives.
- The Economic Development Policy (EDP) of the Kingdom of Bhutan 2010 recognizes the success of the country's environmental conservation as one of the main drivers for developing the "Brand Bhutan" theme.
- The Bhutan Water Policy 2003 focuses on conservation of all forms of water resources and calls for integrated water resource management through extensive soil conservation, watershed area treatment, conservation of forests and increasing the forest area.
- The Water Act of Bhutan 2011 establishes water resources as a state property and ensures that it is protected, conserved and/or managed in an economically efficient, socially equitable and environmentally sustainable manner.
- The Waste Prevention and Management Act of Bhutan 2009 requires all development activities that generate waste to be planned and executed in harmony and within the carrying capacity of the country's fragile ecological settings.
- The Local Government Act 2009 empowers the local government with authority to regulate air, water and noise pollution; approve clearance for mining activities as per law.

research. Bhutan is part of the Eastern Himalayan biodiversity hotspot with diverse ecosystems and is rich in plant species with enormous economic value and scientific intrigue. A biodiversity hotspot is a biogeographic region that is a significant reservoir of biodiversity and at the same time is threatened with destruction.

The park which contains a large stretch of wetlands adds huge value to mitigating climate change as wetlands are said to hold the greatest volume of carbon on a per unit-area basis. Research on mangroves, for example, indicates that preserving them is justified in most places around the globe solely on the basis of carbon storage, even without considering the broad range of other benefits they provide. These include safeguarding coasts, protecting fisheries, regulating water quality, and providing wood and habitat for wildlife.

The BTFEC established recreational parks for social welfare such as Royal Botanical Garden, Ludrong Memorial Garden and Changjiji Recreational Area; each one a huge nod toward preserving and promoting the hugely good sense to value and protect the natural environment. For promotion of environmental-values for future generation, BTFEC has successfully mainstreamed environmental science curriculum into school education from Classes IX to XII.



The effectiveness of conservation can(not) be questioned

Someone somewhere at some point in time has somehow always asked or wondered; if climate change is such a universally assertive force bent on imposing and spreading its impacts, then how would saving a bunch of trees and greenery ever slow it down to do damage control.

In the context of Bhutan, an environment-rich country that has more than 70 percent of its land area under forest cover, its continual efforts in environmental conservation has more weighted perks to show than the few climate-change affected signs and symptoms demonstrated in isolated pockets. As reported in the Second National Communication (to the UNFCCC), Bhutan is highly vulnerable to adverse impacts of climate change due to the fragile mountainous ecosystem and economic structure.

- The National Environment Protection Act (NEPA) 2007 provides for the establishment of an effective system to conserve and protect the environment through the National Environment Commission or its successors, designation of competent authorities and constitution of other advisory committees, so as to independently regulate and promote sustainable development in an equitable manner. The Act calls for the conservation of natural resources to be based on a participatory approach aimed at achieving an equitable sharing of the costs and benefits of conservation among resources users. It also promotes the use of clean energy and alternative technologies in order to reduce use of fuel wood/timber from primary forests. The Act also calls for conservation and protection of wetlands, alpine regions, watersheds, and other vulnerable ecosystems in addition to the existing protected areas.

- The Land Act of Bhutan 2007 provides for the leasing of State land for economic and various other activities. All Tsamdro (grazing land) and Sokshing (forest land for collection of leaf litter) rights revert to the State and convert to leasehold uses with management plans giving preference to previous rights holders.

- The Biodiversity Act of Bhutan 2003 provides for the conservation and sustainable utilization of biological resources and associated traditional knowledge and ensures protection of new plant varieties.

- The Environmental Assessment Act 2000 requires the issuance of environmental clearance as a pre-requisite to the approval of any development activity.

- The Seeds Act of Bhutan 2000 regulates the import and export of agriculture seeds and prevents introduction of unwanted plants and diseases. It also promotes the seed industry with the aim to enhance rural income and livelihood.

- The Pesticide Act of Bhutan, 2000 encourages the practice of organic agriculture and integrated pest management with a centralized system that controls and limits the import, sale and use of pesticides.

- The Forest and Nature Conservation Act of Bhutan 1995 covers forest management, prohibitions and concessions in State Forests, forestry leases, social and community forestry, transport and trade of forestry produce, protected areas, wildlife conservation, soil and water conservation, and forest fire prevention.

- The Plant Quarantine Act 1993 was enacted to prevent the introduction of pests; control those pests already present by restricting their spread and by endeavoring to eradicate them; provide facilities for services for import of plants and plant products; and extend cooperation in the prevention or movement of pests in international trade and traffic.



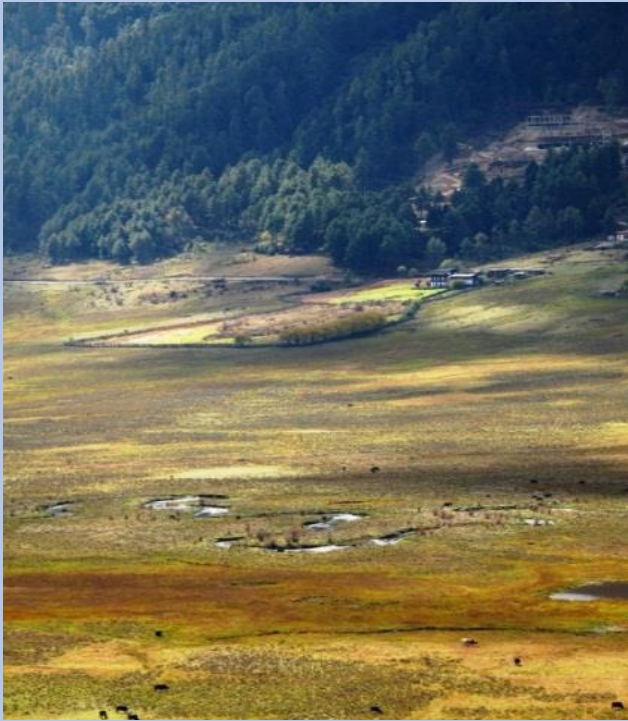
Benefits of having a sound natural ecosystem (climate change in perspective)

Ecosystems vary in their capacity to store and sequester carbon. But it is also now being said of all ecosystems, forests have the biggest capacity and the greatest amount of cost-effective mitigation opportunities to offer. This makes up about two thirds of all nature-based climate solutions globally.

A net carbon sink: Bhutan is a net sink for greenhouse gases because of its well protected environment. The estimated sequestration capacity of the country's forest is 6.3 million tons of CO₂ but it sequesters more than three times the amount of carbon than it produces. This is largely due to huge areas of forest cover, low levels of industrial activity and almost 100% electricity generation through hydropower. The country is therefore a net carbon sink for more than 4 million tons of carbon dioxide produced each year by the world.

Mitigate climate change: Global reports have stated that within the forest sector, reforestation offers the largest potential to mitigate climate change, followed by avoided deforestation and improved forest management. This is good news for Bhutan that in the first place has the most pristinely preserved environment and secondly; is decided to determinedly stick on the path to sound conservation. It is said Bhutan is possibly the only place in the world where 'green' growth is actually on the rise as compared to other countries –developing and developed alike– where the trend is on a downward spiral.

Water resources and livelihood: Forests help reduce run-off, improve groundwater recharge, reduce erosion, and improve water quality. Some 69 percent of Bhutan's



The Gangtey-Phobji Ramsar Site: Gangtey-Phobji was designated a Ramsar site on 02 May, 2014. Gangtey-Phobji Ramsar Site lies in a wide glacial valley that spreads across the central highlands of Bhutan. Streams in the valley drain through open grasslands to the Nakeychhu, Khewangchhu and other small annual and perennial streams. The total area of the Gangtey-Phobji Ramsar site is 974.65 ha. It is the biggest Ramsar site in Bhutan.

Most of the areas along the streams are marshy, covered by grass, bamboo, and several species of shrub and herbs including thick sphagnum moss. They support rich ecosystems, and provide prime winter habitat for up to 300 globally vulnerable black-necked crane (*Grus nigricollis*), and other globally threatened species such as the endangered red panda (*Ailurus fulgens*) and tiger (*Panthera tigris*), and the vulnerable sambar (*Cervus unicolor*).

About 100 species of birds such as the globally threatened or near-threatened black-necked crane (*Grus nigricollis*), Himalayan griffon (*Gyps himalayensis*), and Satyr Tragopan) are found in Gangtey-Phobji wetland area during different periods of the year. The core wetland area is encircled by endemic rhododendrons; there are 24 species of mammals which visit the wetland area for food and water such as the tiger (*Panthera tigris*), red panda (*Ailurus fulgens*), sambar (*Cervus unicolor*), and leopard (*Panthera pardus*) etc. A total of 103 species belonging to 38 families of plant are recorded in the core wetland area. A few endemic herb species such as *Eriocaulon bhutanicum* and *Euphrasia bhutanica* are also recorded.

population lives in rural areas, and forests and surrounding landscapes help make their livelihoods by providing food, shelter and income.

Benefits to the world outside: Bhutan's environment benefits the region and the world by providing clean water, clean air, and carbon sequestration. Bhutan's rivers, which flow into neighboring India and Bangladesh, are part of a network of rivers originating from Asia's "water towers" that provide water for one-fifth of the world's population. Adding weight to words, Bhutan has made robust commitments to the UN's Sustainable Development Goals, especially those relating to environmental sustainability, poverty alleviation, food security, and water quality, and the Convention on Biological Diversity Aichi targets.

Wetlands and carbon neutrality: Reports state that ecosystems not only help to mitigate climate change, but also add to climate resiliency and adaption. Wetlands adds huge value to mitigating climate change as they are said to hold the greatest volume of carbon on a per unit-area basis. Bhutan, not surprisingly is host to two Ramsar-certified wetland sites: the Gangtey-Phobji Ramsar site and the Khotokha Ramsar site, both sites also being the wintering grounds favored by the endangered Black-necked cranes.



The Khotokha Ramsar Site: Khotokha wetland was designated a Ramsar site on 07 May, 2012 is located in Wangduephodrang. The wetland is one of the sources for the tributaries of the Punatsangchhu (river flowing through Wangduephodrang district). The sub-alpine shrub marshes consisting of peat bogs and fens, is one of the larger marshes that are typically present in sub-alpine regions of Bhutan. The wetland area at Khotokha is one of the wintering sites for the Black-necked Cranes (*Grus nigricollis*) in the bio-geographic region as they migrate from Tibet (China). There are few places in Bhutan where these cranes roost during the critical cold winter months and Khotokha has been one of these serene places that give refuge to them.



BT FEC — along for the ride, along for the long haul

Bhutan is among one of the Top Ten Biodiversity Hotspots in the World. The country today has 80.89% 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. As BT FEC has been successfully promulgating innovative financing mechanism modality and playing a leadership role in supporting biodiversity conservation, it has been widely referred as best practices for setting up of 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 half of the country's landscape (51.40%), which accounts for 16,396.4 square km of the country's total land area is now stabilized for conservation as Protected Areas (PAs).

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 purpose for creating the BT FEC is clearly spelled out in the preamble of its Royal Charter:

“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 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\$71.56 million as of 30 June 2019, and allowed over US\$24 million in grants to be distributed in support of pressing conservation needs.

Morphing with change, getting dynamic at the dynamics: While continuing to support the conservation goals embedded in the Royal Charter, the BT FEC's successive Strategy Plans 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 than in the other parts of the world.

References: BT FEC; IUCN; Bhutan's Second National Communication to the UNFCCC; NBSAP, NBC; Bhutan Ramsar Sites, WMD.

Get a better understanding of the science of **CLIMATE CHANGE** in just 6 charts



November's UN climate conference, COP26, turned a spotlight on the climate crisis. But in order to better understand the policies and impacts of global warming, it's useful to understand the science behind it.

Here are six things you should know, in charts:

Chart 1: Since 1960, CO2 levels have been steadily climbing

The primary focus of the negotiations at COP26 has been on carbon dioxide, a greenhouse gas that is released when fossil fuels — coal, oil and natural gas — are burned, as well as by forest fires, land-use changes and natural sources.

The Industrial Revolution of the late 1800s started an enormous increase in the burning of fossil fuels. It

powered homes, industries and opened up the planet to travel. That same century, scientists identified carbon dioxide's potential to increase global temperatures, which at the time was considered a possible benefit to the planet. Systematic measurements started in the mid-1900s and have shown a steady increase in carbon dioxide, with the majority of it directly traceable to the combustion of fossil fuels.

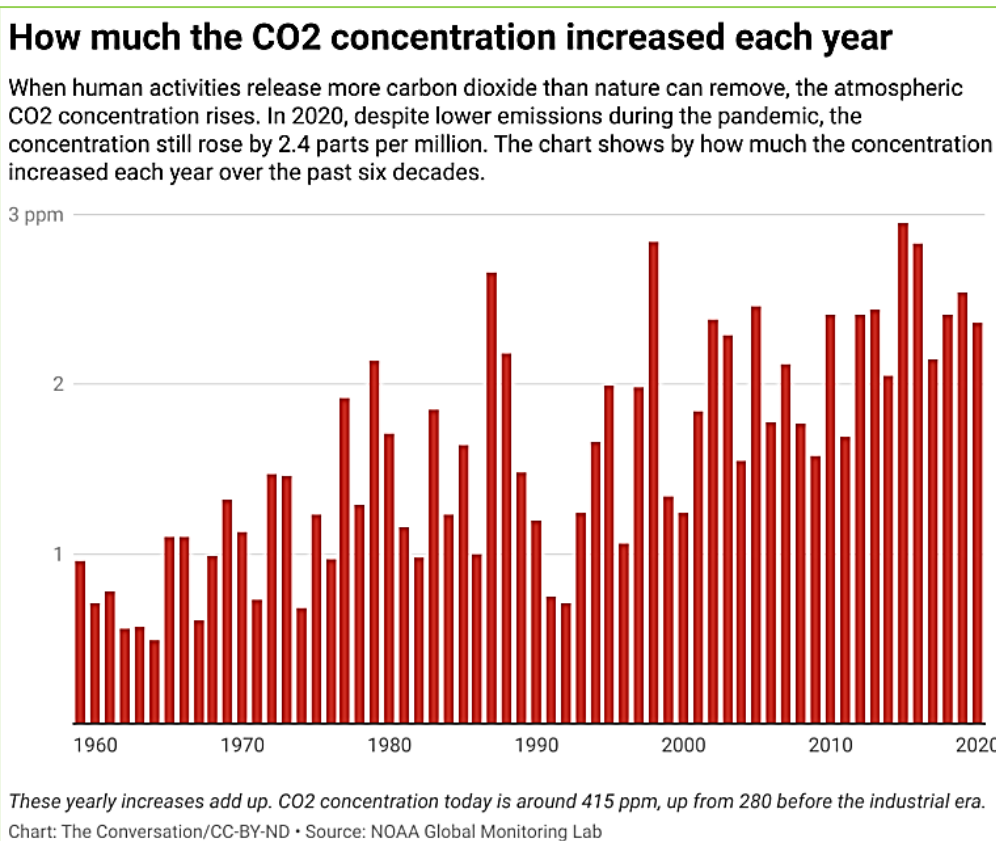
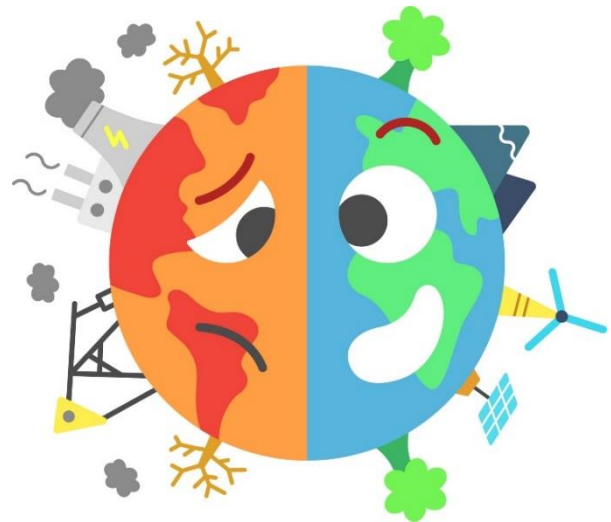


Chart 2: CO2 stays in the atmosphere for hundreds of years

Once in the atmosphere, carbon dioxide tends to stay there for a very long time. A portion of the carbon dioxide released through human activities is taken up by plants, and some are absorbed directly into the ocean, but roughly half of all carbon dioxide emitted by human activities today stays in the atmosphere — and it likely will remain there for hundreds of years, influencing the climate globally.

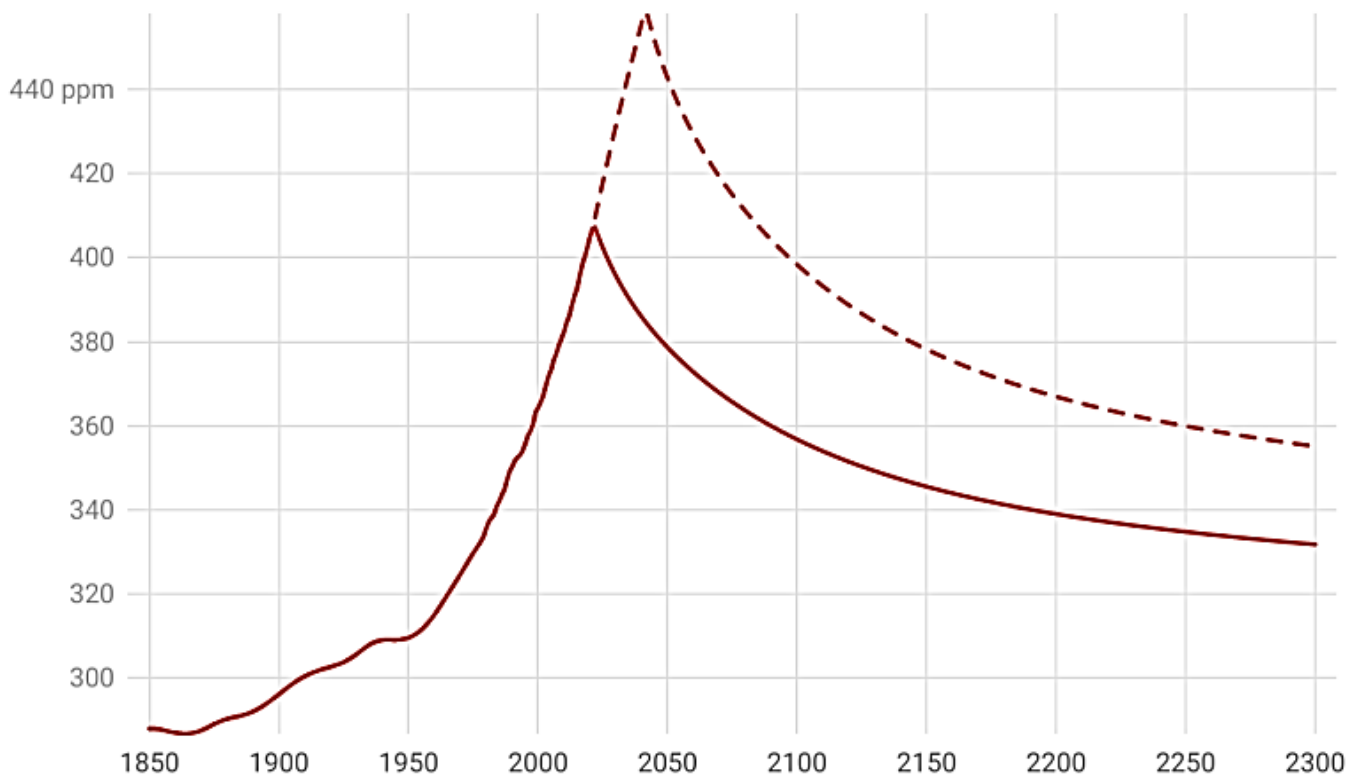
During the first year of the pandemic in 2020, when fewer people were driving and some industries briefly stopped, carbon dioxide emissions from fuels fell by roughly 6 percent. But it didn't stop the rise in the concentration of carbon dioxide because the amount released into the atmosphere by human activities far exceeded what nature could absorb.



If civilization stopped its carbon dioxide-emitting activities today, it would still take many hundreds of years for the concentration of carbon dioxide in the atmosphere to fall enough naturally to bring the planet's carbon cycle back into balance because of carbon dioxide's long life in the atmosphere.

How long does CO2 stay in the atmosphere?

If people completely stopped burning fossil fuels in 2021, models estimate the atmospheric CO2 concentration would decline slowly, taking over a century to return to even 1980s levels. Waiting 20 years to stop all emissions would take much longer, as the dashed line shows.



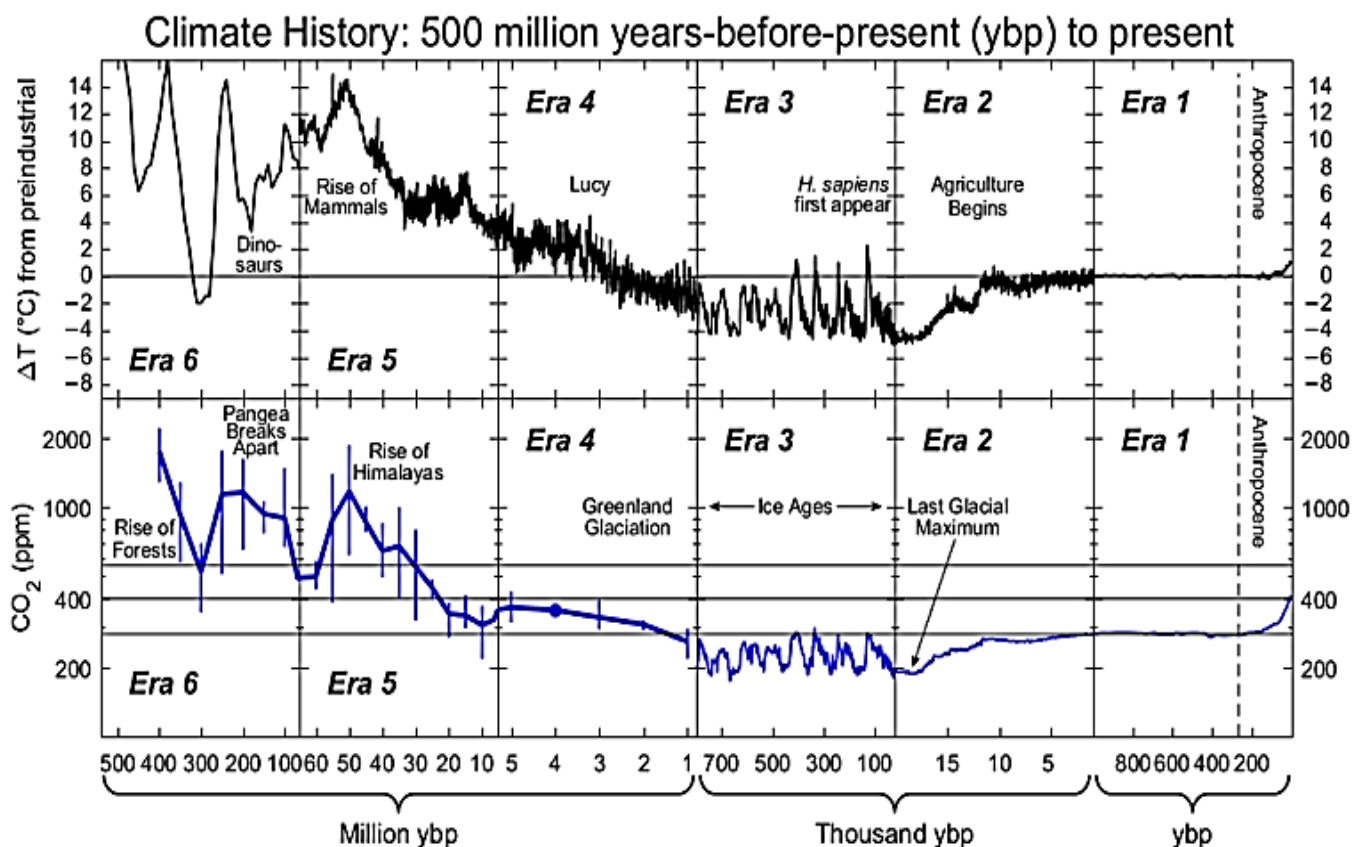
Measured in parts per million

Chart: The Conversation/CC-BY-ND • Source: Pieter Tans

Chart 3: When CO2 levels go up, so do global temperatures

Multiple lines of scientific evidence point to the increase in greenhouse emissions over the past century and a half as a driver of long-term climate change around the world. For example:

- Laboratory measurements since the 1800s have repeatedly verified and quantified the absorptive properties of carbon dioxide that allow it to trap heat in the atmosphere.
- Simple models based on the warming impact of carbon dioxide in the atmosphere match historical changes in temperature.
- Complex climate models, recently acknowledged in the Nobel Prize for Physics, not only indicate a warming of the Earth due to increases in carbon dioxide but also offer details of the areas of greatest warming.
- Long-term records from ice cores, tree rings and corals show that when carbon dioxide levels have been high, temperatures have also been high.
- Our neighboring planets also offer evidence. Venus' atmosphere is thick with carbon dioxide, and it is the hottest planet in our solar system as a result, even though Mercury is closer to the sun.



When carbon dioxide levels have been high in the past, evidence shows temperatures have also been high.



Chart 4: Temperatures are increasing on every single continent

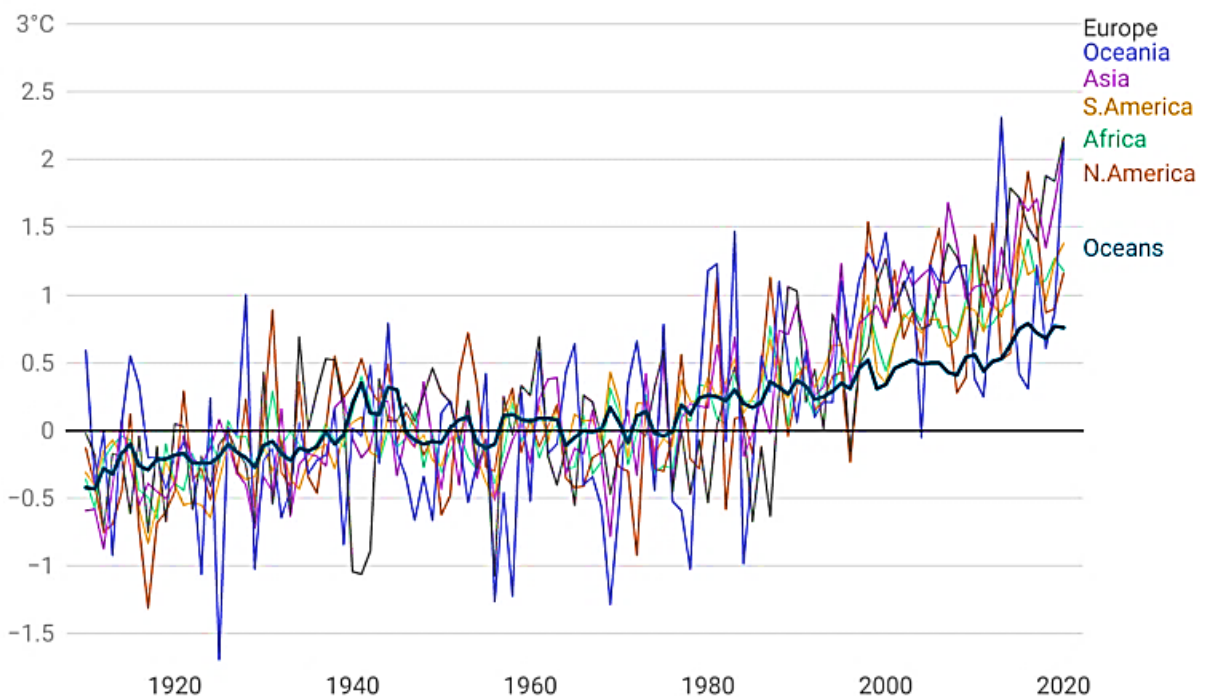
The rising temperatures are evident in records from every continent and over the oceans.

The temperatures aren't rising at the same rate everywhere, however. A variety of factors affect local temperatures, including land use that influences how much solar energy is absorbed or reflected, local heating sources like urban heat islands, and pollution.

The Arctic, for example, is warming about three times faster than the global average in part because as the planet warms, snow and ice melt makes the surface more likely to absorb, rather than reflect, the sun's radiation. Snow cover and sea ice recede even more rapidly as a result.

How temperatures have risen over time around the world

Every continent has warmed over the past century, though not at the same rate. The lines show the difference between each continent's average annual temperature and the 1910-2000 average. The oceans are also warming but not as quickly.



Baseline is the 1910-2000 average.
 Chart: The Conversation/CC-BY-ND • Source: NOAA

Chart 5: Rising temperatures = rising oceans

Earth's climate system is interconnected and complex, and even small temperature changes can have large impacts – for instance, with snow cover and sea levels.

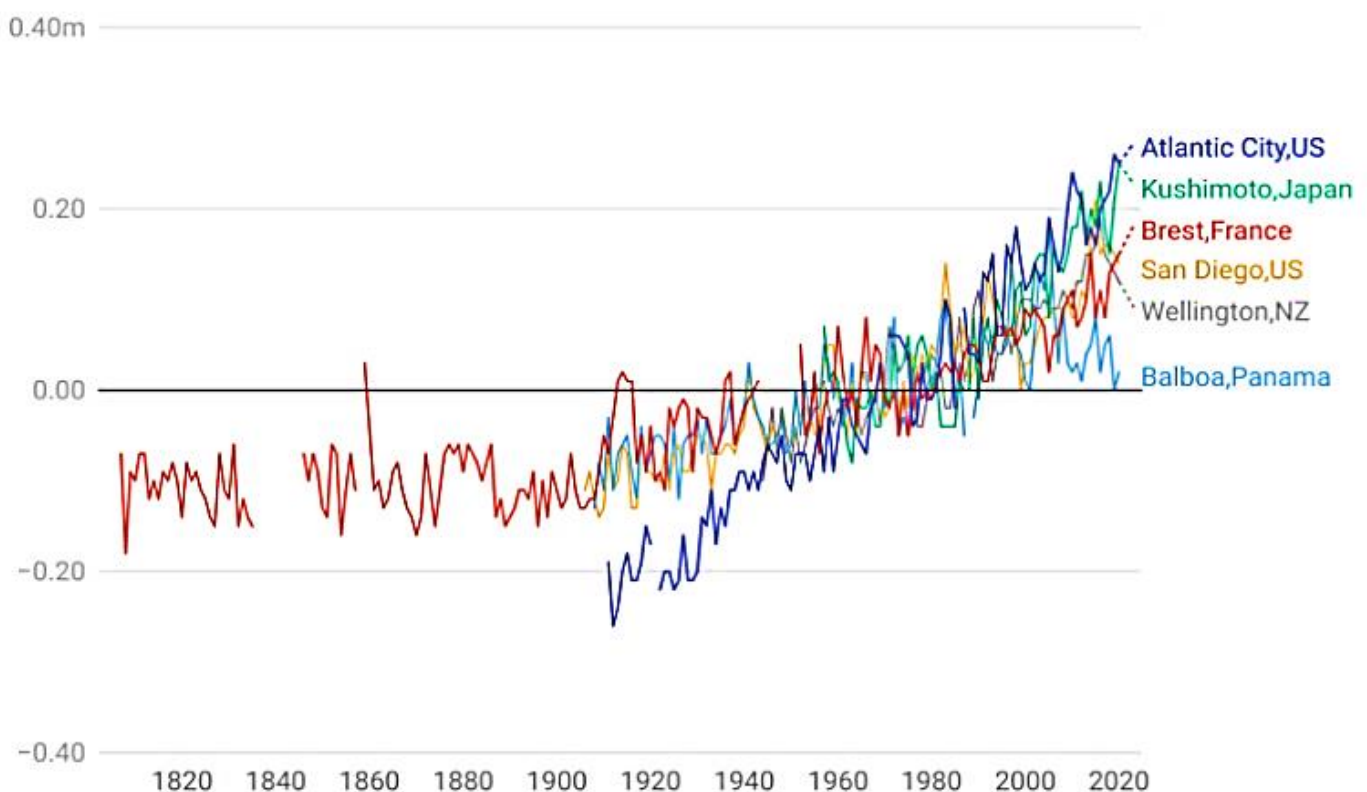
Changes are already happening. Studies show that rising temperatures are already affecting precipitation, glaciers, weather patterns, tropical cyclone activity and severe storms. A number of studies show that the increases in frequency,

severity and duration of heatwaves, for example, affect ecosystems, human lives, commerce and agriculture.

Historical records of ocean water levels have shown mostly consistent increases over the past 150 years as glacier ice melts and rising temperatures expand ocean water, with some local deviations due to sinking or rising land

Sea level has risen in coastal cities around the world

Melting glaciers and the thermal expansion of ocean water are causing sea level to rise. Rising and sinking local land masses can also affect the apparent sea level.



In meters relative to each site's local 1961-1979 average.

Chart: The Conversation/CC-BY-ND • Source: Permanent Service for Mean Sea Level

Chart 6: If we don't act, temperatures will keep increasing. So will rainfall

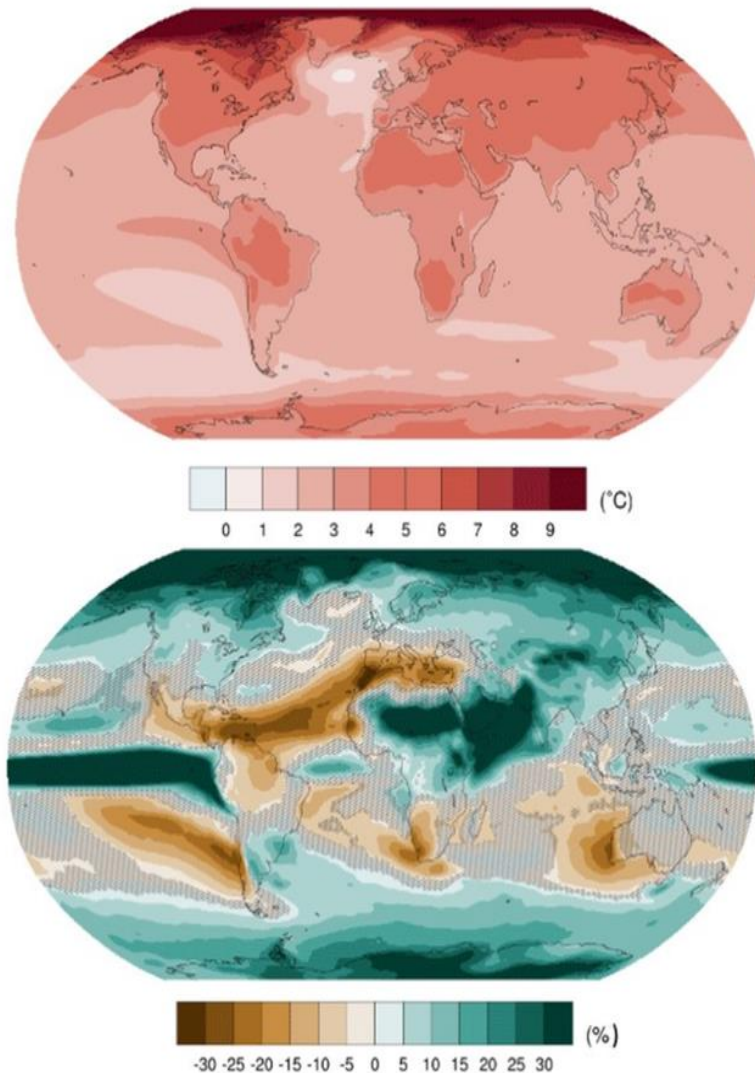
While extreme events are often due to complex sets of causes, some are exacerbated by climate change. Just as coastal flooding can be made worse by rising ocean levels, heat waves are more damaging with higher baseline temperatures.

Climate scientists work hard to estimate future changes as a result of increased carbon dioxide and other expected changes, such as world population. It's clear that temperatures will increase and precipitation will change. The exact magnitude of change depends on many interacting factors.

Temperature and precipitation in a changing world

If the world doesn't take strong actions to reduce greenhouse gases, models indicate there will be higher temperatures worldwide, as the first map shows. The second map shows some areas will see more precipitation, while others see less, notably some regions important for agriculture.

2081-2100 relative to 1995-2014



Based on SSP3-7.0, a high-emissions scenario. *Claudia Tebaldi, et al., 2021*

But there are a few reasons for hope

On a hopeful note, scientific research is improving our understanding of climate and the complex Earth system, identifying the most vulnerable areas and guiding efforts to reduce the drivers of climate change. Work on renewable energy and alternative energy sources, as well as ways to capture carbon from industries or from the air, are producing more options for a better-prepared society.

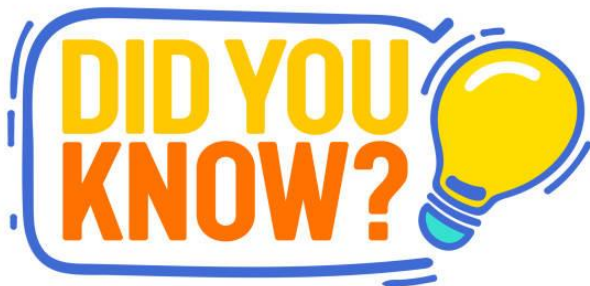
At the same time, people are learning about how they can reduce their own impact, with the growing understanding that a globally coordinated effort is

required to have a significant impact. Electric vehicles, as well as solar and wind power, are growing at previously unthinkable rates. More people are showing a willingness to adopt new strategies to use energy more efficiently, consume more sustainably and choose renewable energy.

Scientists increasingly recognize that shifting away from fossil fuels has additional benefits, including improved air quality for human health and ecosystems.

Courtesy: TED Community

Bhutan Space Week 2022



Bhutan Space Week (BSW) 2022, running with the theme “Space Inspires,” began on January 17 in the six dzongkhags of Trongsa, Punakha, Dagana, Thimphu, Wangdue, and Haa.

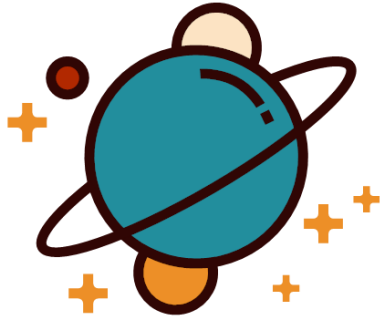
For the uninitiated, BSW is an annual week-long space promotion, outreach, and educational event observed from February 17 to 23. It began in 2020 to commemorate the 40th birth anniversary of His Majesty The King.

This year, the space week event is conducted in six schools whose teachers are recipients of the Bhutan Space Week Teachers’ Award.

“The participants will explore the theme ‘Space Inspires’ to understand how space was and still is a source of inspiration for technological advancements worldwide. The theme can be enhanced by exploring how space can be used as a tool to inspire the youth towards STEM in Bhutan.

Such a programme can nurture the youth’s interest and enthusiasm in space science and technology through fun and educational activities.”

- Yeshey Choden, BSW focal officer



BSW was launched as an annual week-long event for space promotion, outreach, and education in 2020 to nurture the youth's interest and enthusiasm in space science and technology.

Following the launch of the country's maiden satellite, youths showed a lot of interest in space education, and such a programme was essential to initiate outreach and educational activities.

Bhutan Space Week (BSW) 2022 called for space-related activity proposals from teachers across the country. A committee selected six proposals, each of which received a Nu 100,000 grant.

The Tsangkha Central School teacher and his team's proposal won the nomination for the Bhutan Space Week Teachers Award 2022, along with five other schools across the country.

The five other schools are Kabesa Central School, Tsangkha Middle Secondary School, Dechencholing Higher Secondary School, Bajothang Higher Secondary School and, Gongzim Ugyen Dorji Central School

The objective of celebrating Space Week was to educate people on how space inspires, encourages, and motivates Bhutanese in the field of the universe.

The event also helps students understand and know what astronauts and space engineers do. It provides broader knowledge on space and creates room for Bhutanese in space in the future.

Courtesy: BSW, DITT MoIC