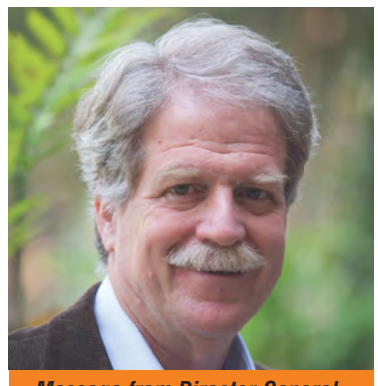
Message from United Nations Secretary-General,
António Guterres

Message from Executive Secretary of the CBD, UN Asstt. SG,
Dr. Cristiana Pasca Palmer

Message from Minister Ecology and Environment of the P.R. China,
HE LI Ganjie



Message from Director General, ICIMOD,
David James Molden

Message from Country Representative IUCN Pakistan,
Mahmood Akhtar Cheema

FROM INDIVIDUAL species through entire ecosystems, biological diversity is vital for human health and well-being. The quality of the water we drink, the food we eat and the air we breathe all depend on keeping the natural world in good health. We need healthy ecosystems to achieve the Sustainable Development Goals and to address climate change: they can provide 37 per cent of the mitigation needed to limit global temperature rise.

Yet the world's ecosystems face unprecedented threats. An alarming and authoritative new report from the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services reveals that nature is declining at rates never seen before in all of human history. Since 1990, deforestation has caused the loss of more than 290 million hectares of forests that help to absorb harmful carbon dioxide emissions from the atmosphere. One million plant and animal species are at risk of extinction and more than 90 per cent of marine fish stocks are in decline or overfished.

The impacts on people around the world will be grave. Current negative trends in biodiversity and ecosystems are projected to undermine progress towards 80 per cent of the targets for the Sustainable Development Goals. We simply cannot allow this to happen.

This year's International Day highlights the impact of environmental neglect on food security and public health. The world's current food system is increasingly broken. Billions of people lack access to proper nutrition. Approximately one third of what is produced is lost or wasted. The ways in which we grow, process, transport, consume and waste food are leading causes of

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GREETINGS ON this year's International Day of Biodiversity, which highlights the global importance of biodiversity for all people and for the planet. Today also underscores the work that we all must do— every day of the year—to conserve, restore, and equitably share nature and the myriad benefits that it provides humans who share this one small planet as our home.

"Biodiversity" may sound like a fancy word, but the concept is quite simple even as it is incredibly profound: it means all nature — all forms of life on earth, from individual species through entire ecosystems.

Biodiversity is the natural infrastructure supporting all life on earth — including human life. It is the food we eat - it is really on our plates every day - Biodiversity is the water we drink, and it is also the air we breathe. More than that, biodiversity is part of us, as we humans are part of nature. Therefore, it is not an accident that we chose this year's theme for the International Biodiversity Day to be: "Our food, our health, and our biodiversity". This focuses our attention on the intimate connections between health, food, and our natural environments. The truth is that without healthy nature and biodiversity, we cannot have quality nutrition, and without quality nutrition we cannot have good health – as simple as that.

Despite its central importance for human health and well-being, our current global food system is increasingly broken. And this adds to a genuine health crisis: one-half of the world is malnourished. At present, 2 billion people – including over 160 million children – already suffer from undernutrition, and an equivalent number are either overweight or obese. Meanwhile, regrettably,

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AS THE host of the fifteenth Conference of the Parties to the UN Convention on Biodiversity in Kunming in 2020, the People' s Republic of China sends greetings throughout the world on this International Day for Biological Diversity. We are at a critical crossroads for the preservation of nature worldwide, and for the many benefits that it provides for all peoples, including those highlighted by this year' s theme, Our Biodiversity, Our Food, Our Health. Indeed, biodiversity is the backbone of food, health, and well-being around the world. For that reason, we in China are committed to building an ecological civilization that guarantees the prosperity, the health, and the well-being of our people and those around the globe. We look forward to hosting the world in Kunming, where we will negotiate and adopt a new global biodiversity framework for the post-2020 era that secures a common future of living in harmony with nature for all. M ay you have a lovely International Day for Biological Diversity and we hope to see you in Kunming!

INTERNATIONAL DAY for BIOLOGICAL DIVERSITY

Our Biodiversity, Our Food, Our Health

22 MAY 2019

BIODIVERSITY IS a global asset of tremendous value, recognized as "natural capital" necessary for the survival of all species that share this planet. The International Day for Biological Diversity is annually celebrated on 22 May to draw attention to this indispensable asset, and the importance of ensuring its conservation and sustainable, equitable use of its benefits. This year's theme – "Our biodiversity, our food, our health" – recognizes biodiversity as the basis of our food security and health.

Alarmingly, the 2019 IPBES Global Assessment Report on Biodiversity and Ecosystem Services documents an accelerating rate of species loss and extinction and increasing vulnerability.

The comprehensive Hindu Kush Himalaya Assessment report states that one-fourth of endemic species from some parts of the Himalaya could become extinct by 2100. The assessment also points out that over 30% of the Hindu Kush Himalayan region's population suffers from food insecurity. Around half faces some form of malnutrition.

The state of our food and nutrition security and food production systems is inextricably linked to the health of the region's biological diversity. The central message is quite bleak: the increasing degradation of our vital ecosystems could destabilize our food and nutrition security. With the ever-increasing human population and concomitant rise in demand for food and other resources, biodiversity conservation is becoming increasingly important for maintaining food systems and improving welfare.

Biodiverse ecosystems are important for agriculture as they provide pollination services, much needed water regulation and erosion control from ma-

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TODAY IS the International Day for Biological Diversity Day, being celebrated all over the world to highlight the significance of the Biological Diversity on earth. The theme for the year 2019 is "Our Biodiversity, Our Food, Our Health". The theme conveys a strong message as how biodiversity is linked to our food and our health. The health and well-being of all the creatures on earth rely on each other, thus it is important that we protect the biodiversity in order to secure our existence on earth.

Pakistan is amongst the very few countries that host 10 agro-ecological zones and has abundant natural resources. But due to growing population, degrading of ecosystems and receding water resources our natural resources are depleting very fast.

Since IUCN established its offices in Pakistan, it has been the lead institution in conservation and protection of the biodiversity in Pakistan. It has been facilitating the federal and provincial governments in meeting their international commitments. Recently, on the request of the Government of Khyber Pakhtunkhwa, IUCN has completed a study on the Billion Tree Afforestation Project assessing the Impact of the project on Biodiversity. The Billion Tree Afforestation project attaches special importance to biodiversity conservation under its objectives. The project puts special focus on biodiversity conservation and management to achieve Aichi targets, by encouraging natural and indigenous vegetation cover.

The report also assesses the contributions of the project to the UN SDGs, Convention on Biological Diversity and the Aichi Biodiversity targets. It also highlights the accomplishments of the project in terms of contributions of the BTAP to the goals, objectives and targets under the above-mentioned instruments.

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PMNH

What is biodiversity and what are the threats for it?

Biodiversity is the biological diversity which includes the variety of the whole species present on earth. It includes different animals, plants, micro-organisms and their genes, water ecosystems, terrestrial, and marine .....

What is biodiversity and what are the threats for it?

Pakistan Museum of Natural History

Biodiversity is the biological diversity which includes the variety of the whole species present on earth. It includes different animals, plants, micro-organisms and their genes, water ecosystems, terrestrial, and marine ecosystems in which they all are present. Biodiversity is necessary for our existence as well as valuable in its own right. This is because it provides the fundamental building blocks for the many goods and services which provides a healthy environment to lead our life. Biodiversity include fundamental things to our health like fresh water clean air and food products, as well as the many other products such as timber and fiber. Biodiversity also includes various other important things and services such as cultural, recreational, and spiritual nourishment that play an important role in maintaining our personal life as well as social life. So, it is an important task for all of us to take care of our Biodiversity and we should try to maintain it.

Over the last 200 years world has suffered the largest documented decline in biodiversity of any continent. Despite efforts to manage threats and pressures to biodiversity, it is still in decline. Main threats to our biodiversity are as given below:

- Degradation, fragmentation and loss of habitat
- Spreading of invasive species
- Unsustainable use of natural resources
- Change of Climate
- Inappropriate fire regimes
- Changes within aquatic environment and water flows

Why should we Conserve Biodiversity?

Human should conserve biodiversity because of its benefit for example services and biological resources which are essential to live our life on earth. However, it also provides spiritual benefits as well as social benefit.

Biological Resources

A biological resource means any product that is harvested from nature is the part of biological resources. These resources come under several categories such as medicine, food, wood products, fibers etc. For example under one category i.e., Food more than 7,000 species of plants are involved, although we dependent mainly on only 12 major crops for food. For Medicinal field human population is dependent on plants. It is true that in the developed country, many of our medicines are produced by chemicals in pharmaceutical companies, but the original formulas come from plants. For example, aspirin is comes from willows, opiate which is a pain relievers is derived from poppies and quinine which is used for the treatment of malaria produced by the Cinchona tree. Fibers which is used for ropes, clothing, webbing, netting, sacking, and other materials are obtained by plants mainly for example cotton plants, Agave plants (sisal), flax plants (linen), Corchorus plants (jute), bamboo, palms and Agave plants.

Ecosystem Services

Ecosystem services means processes provided by the nature to support human life. For example Pollination, decomposition of waste, water purification, renewal of soil fertility and moderation of floods. Ecosystem processes are often overlooked, and are not generally valued as part of the economy until they cease to function. When economic value is assigned to these services, it becomes very high. For example, insect pollinators help produce many commercially important fruits such as almonds, melons, blueberries, and apples. The global economic value of pollination services performed by insects has been valued at $217 billion per year. Similarly in other ecosystem service water purification just involves filtering of rain water by soil and by microbes that can break down nutrients and contaminants, and reduce metal ions, slowing their spread into the environment. Wetland and riparian plants absorb nitrogen, and trap sediments that decrease water quality. But human construction and development will disrupt natural environments as well all activity and services related to this environment. So finally we have to dependent on artificial man made services like for filtration we used different –different types of water filters and purifiers. For these artificial services we need to pay more while the natural ecosystem services are at free of cost.

Social and Spiritual Benefits

Most of the time in human history, conservation means protecting nature for the spiritual gifts it provides, and protecting sacred places in the local landscape. The biodiversity effects on cultural development can be shown by heterogeneity of the world's mythology, folk dances and folk art which contribute to the richness of literature and global arts. In different landscapes, different cultures are present which influenced our language, diet, occupation and various types of activity. Uniqueness of each habitat is presented by their animals and plants that why each country and state have their flagship animals as well as plants. Even during travelling, motivation of the peoples is to see biological diversity, different cultural and landscape. Ecotourism is travel with the aim to view, support and sustain the local cultures and its natural ecosystem. Support from ecotourism can be very helpful to reduce habitat destruction as well as to preserve endangered species.

Biodiversity Conservation Methods

In-situ biodiversity conservation

In-situ conservation means the conservation of species within their natural habitats, this way of conserving biodiversity is the most appropriate method for biodiversity conservation. In this strategy you have to find out the area with high biodiversity means the area in which number of plants and animals are present. After that this high biodiversity area should be covered in the form of natural park/ sanctuary/biosphere reserve etc. In this way biodiversity can be conserve in their natural habitat from human activities.

Ex-Situ conservation methods

Ex-situ conservation involves the conservation of biological diversity outside of their natural habitats. This involves conservation of genetic resources, as well as wild and cultivated or species, and draws on a diverse body of techniques and facilities. Ex-situ Biodiversity conservation can be done as following:

- By forming Gene banks: In this store seeds, sperm & ova at extremely low temperature and humidity.
- It is very helpful to save large variety of species of plants & animals in a very small space. e.g. sperm and ova banks, seed banks.
- Forming Zoo and botanical garden: for research purpose and to increase public awareness collecting living organisms for aquaria, zoos and botanic gardens.
- Collections of In vitro plant tissue and microbial culture.
- Captive breeding of animals and artificial propagation of plants, with possible reintroduction into the wild.

Ex-situ biodiversity conservation strategy also plays an important role in recovery programmes for endangered species. The Kew Seed Bank in England has 1.5 per cent of the world's flora - about 4,000 species - on deposit. In agriculture, ex-situ conservation measures maintain domesticated plants which cannot survive in nature unaided. It provides good platform for research opportunities on the components of biological diversity. Some of the institutions also play a major role in public education and in increasing awareness among public by bringing members of the public into contact with plants and animals they may not normally come in contact with. It is estimated over 600 million people visit zoos/ museums every year worldwide.

FAO-Pakistan

Risk to biodiversity pose challenges to food security and health

Securing environmentally sustainable quality food that is healthy and safe for the entire global population of 7.7 billion persons is one of the world's biggest challenges today.....

Risk to biodiversity pose challenges to food security and health

Mina Dowlatchahi, Aamer Irshad and Rosana Frattini, FAO-Pakistan

Securing environmentally sustainable quality food that is healthy and safe for the entire global population of 7.7 billion persons is one of the world's biggest challenges today.

The issue of sustainability is fundamental for human development. In 2015, when the MDGs evolved into today's Sustainable Development Goals (SDGs), world leaders committed to making their national development efforts sustainable in the larger interest of humankind and for future generations to come.

Sustainable Development activities cannot be carried out without giving due consideration to the biological resources of the world we live in. Biological resources; namely, genetic resources, organisms and other components of an ecosystem, are vital to our economic and social development. With this in mind, biological diversity is recognized as a global asset of high value for humanity.

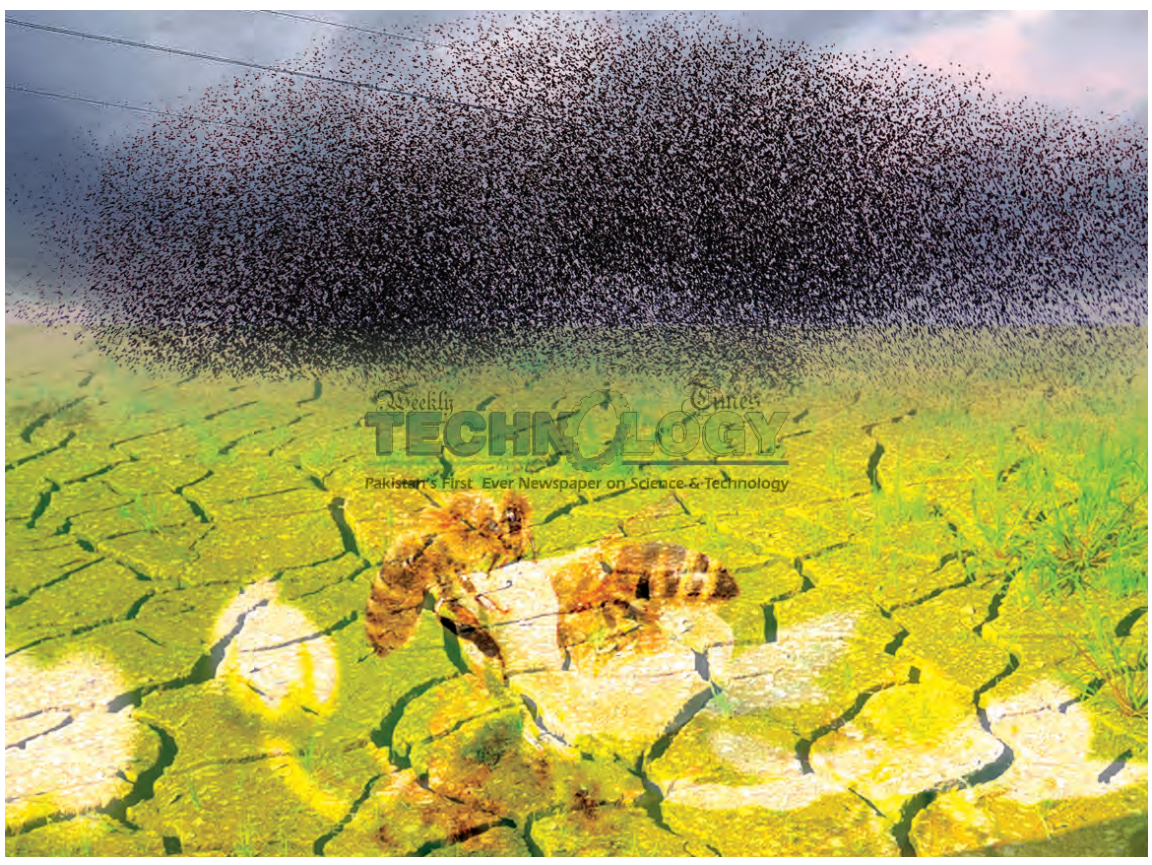
Acknowledging that all forms of life play a significant role in sustaining human wellbeing, the United Nations adopted the Convention on Biodiversity (CBD) which provides a framework for supporting all economically and socially important life forms on land and in water. In the tenth meeting of the Conference of the Parties, held in Nagoya, Aichi Prefecture, Japan, and the Strategic Plan for Biodiversity 2011-2020 was adopted. The Plan provides a framework for engaging all Parties in the effective management of biodiversity and the development of coherent policies with a focus on humanity living harmoniously with nature. To achieve this vision, the Plan provides twenty targets called Aichi Biodiversity Targets (ABTs). As with the SDGs, eleven of the ABTs are in support of nature in various contexts: water security, food security, health, sustainable livelihood, disaster risk reduction and climate mitigation.

The theme for International Biodiversity Day 2019 is "Our Biodiversity, Our Food, Our Health". Biodiversity is covered in SDG14 and 15 while food and health are covered in SDG2 (Zero Hunger) and SDG3 (Good Health and Wellbeing). This theme is very appropriate keeping in mind the direct benefits that biodiversity contributes to the quality of our food and to helping us to maintain good health and overall well-being.

Biodiversity creates resilience and is key to mitigating risks in agriculture, particularly farming. It ensures that the world will have access to an affordable nutrient-rich diet -- critical for maintaining good health. A more biodiverse food system coincides with a more sustainable and nutrition-sensitive food system. Further, biodiversity is critical for preserving cultural traditions, local farming systems, and flavors.

It is very relevant to align health and food security with biodiversity. Low agricultural diversity is proven from the fact that only a few hundred plants out of 50,000 edible species are used as food supply globally. The situation has further deteriorated as only 12 plant and 5 animal species are used to provide 75% of the global food supply. The major contribution (60%) to food energy however is sourced from three cereals; namely, wheat, rice and maize. This low dietary diversity has limited the availability of nutrition-rich diets resulting in high malnutrition due to high protein, vitamin and mineral deficiencies on a wider scale. Currently, about 200 million children are stunted and one in three persons have micronutrient deficiencies around the globe. This state of malnutrition is responsible for 35% of mortality in children and accounts for 11% of the global disease burden.

The situation in Pakistan is not very encouraging. Crop diversification has been lacking in both subsistence and economic farm-holding. The major crops across Pakistan have consistently been cereals (wheat, rice and maize) followed by cotton. This production trend is well-documented in consumption patterns where over 50 percent of food calories among Pakistanis comes from cereals. Such a trend may be attributed to government policies supporting wheat cultivation, a staple diet in Pakistan. These conditions have rendered Pakistan a diet-poor country with over 35% of households consuming five or less food items on a daily basis. Indicators show that Prevalence of Undernourishment, a food security yardstick, was 20.5% in Pakistan, along with 38% stunting, 9% wasting and 23% underweight. Figures show a 45% death rate in children attributable to malnutrition. In monetary terms, the burden of malnutrition on the economy is 3% of the GDP. This can be partially attributed to the underutilization of nutritious foods in Pakistan.



Due to its diverse landscape and ecological zones, Pakistan has a rich and unique biodiversity. According to the Biodiversity Action Plan (1999), Pakistan has 174 species of mammals, 668 species of birds, over 177 species of reptiles, 198 species of freshwater fish, over 5,000 species of insects, about 5,721 species of plants and 191 species of plant parasitic nematodes and 19 amphibian species. The forestry biodiversity is under threat due to the degradation of the forestry resources, where the natural habitats are degrading and will hardly support big wildlife, which has implications for both local food security and livelihoods. Due to the forest habitat degradation, the non-timber forest products like mushrooms and medicinal plants are also on decline, which has serious implications on the local income, and food security. The large scale plantations of exotic tree species like Eucalyptus has also serious implications on the biological diversity with indigenous species decreasing.

Today, biodiversity is under serious threat due to human activity on the planet. Initial threats to biodiversity were hunting and gathering while current ones are climate change, urbanization and global warming. Loss of indigenous knowledge due to the shift to mono-cropping in response to commercialization has resulted in poor natural resource management and loss of biodiversity. The growing perception has been that climate change is the major threat to biodiversity until a study published in the Nature showed that the "old" threats are still the dominant drivers of current species loss. It concluded that over exploitation (72%) and agriculture (62%) have been the major contributors to the loss of biodiversity. Other important drivers have been identified in order of contribution: urban development, invasion and disease, pollution, system modification, climate change, human distribution, transportation and energy production.

A comprehensive and system-wide analysis on Pakistan has not been carried out to inform the major drivers and species loss in the country. The Food and Agriculture Organization of the United Nation (FAO) assessed the marine fisheries resources in Pakistan. In this study it was observed that Pakistan has about 150 fish species of economic importance in its territorial water and beyond to the Economic Exclusive Zone. The local fishing industry has developed over-fishing capacity for shallow water while the capacity for deep water is quite weak. Overfishing has disturbed the marine ecosystem. The presence of all species has declined, in some cases, by up to 90% or more. Overfishing has reduced major stock to undesirable limits. It is observed that nine of the species groups are below the depleted threshold limit. Only two species groups, of fourteen, remain within the safe limits. The FAO Assessment further recommended that several fishing regimes restore the ecosystem by making marine resources available on a sustainable basis.

While tackling the challenges, it is very important to prioritize the main threats to biodiversity. Priority attention should be given to over-harvesting and agriculture-based activities as these have been found to be the major threats. Activities for safeguarding biodiversity within this context, in all world regions, include: context development and governance of sustainable harvest regimes, enforcement of hunting regulations, establishment of

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From page 1: Message from United Nations Secretary-General, António Guterres

biodiversity loss, while also contributing to climate change.

We must act quickly to reverse these trends and promote transformative change. Solutions exist. By halting environmentally harmful practices, diversifying our food systems and promoting more sustainable production and consumption patterns, we can improve global health, increase food security and strengthen resilience to climate change.

On this International Day for Biological Diversity, I urge all – governments, businesses and civil society –to take urgent action to protect and sustainably manage the fragile and vital web of life on our one and only planet.

From page 1: Message from Executive Secretary of the CBD, UN Asstt. SG, Dr. Cristiana Pasca Palmer

approximately one third of all food produced is lost or wasted.

It is now well established that the way we grow, process, transport, consume, and waste food are leading causes of land degradation, which in turn is among the most prominent threats to the biodiversity we need and cherish.

The variety of species and genetic resources used for food and agriculture has considerably declined over the past century. And if you know, today, 75% of the world's energy intake is produced by only 12 plants and 5 animal species.

As biodiversity continues to decline, so too does the agroecosystems and the knowledge systems that nurture traditional foods, most of them nutritionally highly superior to the energy-rich and nutrient-poor food products that have become staples of simplified diets.

These challenges are really daunting, but solutions also exist and we know that with broad actions we can overcome all these threats. The links between biodiversity, ecosystems, and the provision of benefits to human health are deeply entrenched in our global commitments to curb biodiversity loss and climate change and also serve as crucial entry points for achieving of the Sustainable Development Goals. They will also be central considerations as we move forward in developing the new Global Biodiversity Framework, which hopefully will be adopted at the UN Convention on Biological Diversity in 2020 in Kunming.

Cross-sectoral action, steadfast commitment across all scales of governance and throughout the whole-ofthe-food chain is much needed. This includes conserving land and water resources used for food production; reducing the contamination of drinking water; safeguarding and restoring our agricultural landscapes and seascapes; implementing measures that support the production and consumption of healthy foods rich in vitamins and minerals; and also, very importantly, supporting traditional food cultures and knowledge.

We cannot do all of this alone, or in isolation, so all of you have a role to play, as individuals and consumers, and as active participants and advocates in the many larger organizations you are a member of-- from your family, to your work, to your local community, to your country, and to the entire international system.

So, I invite you all to take action, to be an agent of positive change in safeguarding our biodiversity and therefore our food and our health. You can contribute your initiatives to the Sharm El-Sheikh to Kunming Action Agenda for Nature and People by registering on our website at the Convention of Biological Diversity.

I wish you a happy and healthy International Day of Biodiversity. Thank you

From page 1: Message from DG, ICIMOD, David James Molden

ture land cover, regulation of microclimate and a source of soil fertility and nutrients important for agriculture. Healthy diverse ecosystems play an important role in pest control and control of invasive species. These ecosystems themselves are sources of important edible and medicinal products. Also provided are the genetic material important for future food, for example in wild relatives of edible plants.

Biodiverse agro-ecosystems themselves play an incredibly important role in nutrition and health of people, as well as supporting the benefits stated above. However, an unhealthy trend over the last few decades has been the shift away from diverse nutritious foods, and the increasing dependence on a handful of main crops and vegetables as staple foods grown in mono-culture agricultural systems. Similarly agricultural research has focused on provision of calories by improving the productivity of rice, wheat and maize, with broader issues of nutrition and environment taking second place. We have to start looking beyond calories and focus on nutrition and ecological security, and do so in ways that support livelihoods.

Mountains play a special role in biodiversity conservation and provisioning food and nutrition. More than 60% of global biodiversity hotspots are located in mountains, and mountains harbour a quarter of the world's terrestrial biodiversity. Of the world's total land based protected areas, 28% lie in mountains, and 39% of the area of the Hindu Kush Himalaya is under protected area management. The HKH region is endowed with rich biodiversity that sustains around 240 million people, but the degradation of its fragile ecosystems could threaten not only food supply and nutrition but also traditional practices and knowledge. For example, at current rates of ecosystem degradation, it may no longer be possible to produce traditional medicines integral to mountain lifestyles – such as the ones prepared by amchis (Tibetan healers) and other shamanism-based medicines – and indigenous mountain identities, practices and knowledge will gradually erode.

ICIMOD sees tremendous opportunities in promoting more biodiverse agricultural landscapes in the mountains, even in light of alarming trends of biodiversity loss and loss of traditional food systems. There is increasing demand for high value, nutritious and medicinal products from mountain areas, and still, the local knowledge remains to produce this food sustainably. The opportunity is to nurture that demand, and stimulate supply from mountain areas, with local mountain people receiving the benefits from these products. We have good examples. The demand for mountain-produced honey is high, and many people make a good living from honey. There is growing demand for healthy grains such as sorghum, amaranth and millet. More people are growing specialty crops like kiwis, yacun, quinoa, in addition to coffee and tea, and organic agriculture is prominent in both policy statements and practice in the mountains. ICIMOD is working with a group of agricultural centres, the Association of International Centres for Agriculture (AIRCA), with a much needed focus on diverse agricultural systems and nutrition. Indeed, the mountains of the Hindu Kush Himalaya and beyond can be a home of nature based agricultural solutions, with payoffs to humanity in the short term and the long run.

The IPBES report has put nature loss in the global spotlight and warns us that time is running out. We need to rethink and revisit the importance of mountain ecosystems, recognize their fragility, address the brunt of climate change faced by mountain communities, and focus on ecosystem heath and resilience. It is time for bold and concrete actions. Based on the results of the HKH Assessment, a Call for Action is being developed calling for increased ecosystem resilience, and for more nature based solutions that address poverty and malnutrition. As the global community prepares for a post-2020 agenda for the Convention on Biological Diversity, we need a realistic strategy to support a global biodiversity agreement that has the heft and commitment of the Paris Agreement with clear targets to protect biodiversity and ecosystems vital for food production, clean water, and carbon sequestration.

From page 1: Message from Country Representative IUCN Pakistan, Mahmood Akhtar Cheema

IUCN Pakistan had also been instrumental in getting Astola declared as Pakistan's first Marine Protected Area.. IUCN Pakistan facilitated the process of bringing together all the stakeholders that included: the Ministry of Pakistan; Government of Balochistan; Pakistan Navy; National Institute of Oceanography; WWF-Pakistan; Indus Earth Trust; and Sindh Forest and Wildlife Department.

In the year 2000, IUCN Pakistan has the privilege of being the main partner of the then Ministry of Environment for developing the first Biodiversity Action Plan for Pakistan which was an important milestone and a major step towards conservation of Biodiversity in the country.

The Government of Pakistan assigned IUCN Pakistan with a task for aligning the National Action Programme (NAP) to Combat Desertification in Pakistan with the 10-year Strategy of the United Nations Convention to Combat Desertification. The process of developing NAP was led by IUCN Pakistan which involved engaging key stakeholders at the federal and provincial levels. IUCN has also been instrumental in developing the Pakistan National and Provincial Biodiversity Strategies and Action Plans for achieving Aichi Biodiversity Targets and Sustainable Development Goals

In the year 2010 in collaboration with the Forest and Wildlife Department, Government of Balochistan, IUCN Pakistan initiated the process of designating the Juniper Forest Ecosystem as UNESCO's Man and the Biosphere Reserves. The designating process was led by IUCN Pakistan under its UNDP funded project titled: Mainstreaming Biodiversity Conservation into the Juniper Forest Ecosystem Production with UNESCO Pakistan's financial support under One UN Programme in consultation with all the stakeholders, local communities and other relevant government departments.

In the past some of the successfully implemented programmes and projects of Pakistan for conserving the Biodiversity in Pakistan include: Conservation green turtles along Pakistan's coasts; conserving vanishing vultures in Tharparkar; conservation of fresh water turtles and the Mountain Areas renowned trophy hunting programme which helped in increasing the dwindling population of Markhor in Pakistan. It also worked to benefit the local communities through promotion of herbal and medicinal plants.

Keeping in view the theme for the year "Our Biodiversity, Our Food, Our Health, we need to send out a strong message that our health, our food and our wellbeing totally rely on well preserved Biodiversity. If the biodiversity is threatened, similarly the existence of human beings and animals will be at stake, so being the custodians of the earth human-beings have a major role in conserving and protecting the Biodiversity on this earth.

The National Biodiversity and Action Plan (NBSAP) is one of the recent undertakings by IUCN Pakistan. Pakistan was among the 150 countries that signed the Convention on Biological Diversity at the 1992 Rio Earth Summit, and ratified it in 1994 and was therefore obliged to implement the requirements of the Convention. IUCN Pakistan was requested to prepare the fifth National Report to CBD and revised the NBSAP. The convention required countries to prepare NBSAPs for the federal and provincial governments. The National Biodiversity Strategies and Action Plans (NBSAPs) are the principal instruments for implementing the Convention at the national and provincial levels.

Pakistan's Sixth National Report to the United Nations Convention on Biological Diversity has been prepared by IUCN Pakistan in line with Aichi Biodiversity Targets (ABT) 2011-2020 and Sustainable Development Goals (SDGs) 2030 to meet the national as well as global commitment to implement the objectives of UN Convention on Biological Diversity (CBD). The report reflects the progress made by Pakistan on the Biodiversity since the last report. Pakistan is a signatory to the United Nation's Convention on Biological Diversity and hence regularly reports the progress on the conservation of the Biodiversity.

The IUCN World Conservation Congress 2020 is being held from 11 to 19 June 2020 in Marseille, France. The Congress aims to improve how we manage our natural environment for human, social and economic development, but this cannot be achieved by conservationists alone. It will also provide a platform to the governmental institutes and NGOs for decisions that will shape the decisions at the Convention of Biological Diversity – COP 15 in China.

The Fifteenth Meeting of the Conference of the Parties to the Convention on Biological Diversity (COP15) will be hosted by China in 2020 it will provide an opportunity to Pakistan to showcase its milestones covered towards achieving the CBD goals. It will also provide a platform for learning from the best practices applied in other countries.

IUCN has been in discussion with Governments of China and Pakistan to ensure environmental safeguards along CPEC. In this regard, IUCN has hosted numerous meetings and delegations from China who have shared their expertise to further the cause of sustainable development in CPEC.

Business and Biodiversity Platform is a promising initiative meant to encourage businesses to invest in ecosystems and sustainable development. IUCN under its BBP planted one million mangroves along the Karachi coast in 2018 and another initiative is in the offing.

PMNH

Pakistanis losing its rangelands, forests, freshwaters and marine ecosystems

Pakistan is located in the transition zone between many of World's zoogeographical regions and therefore has specific affinities of our wildlife species with all these regions. With the grace of God, the country possesses .....

Pakistan is losing its rangelands, forests, freshwaters and marine ecosystems

Pakistan Museum of Natural History

Due to anthropogenic activities, wildlife populations have declined dramatically in Pakistan for the last three to four decades. Natural habitats are continuously being fragmented and degraded. It is feared that Pakistan is experiencing the worlds' second highest rate of deforestation. The country is losing its rangelands, forests, freshwaters and marine ecosystems at an alarming rate. It is also facing the menace of climate change, uncontrolled emission of greenhouse gases, pollution, increase in human population, urbanization, unsustainable agricultural practices, encroachments, hunting, poaching, introduction of exotic species and weak implementation of wildlife rules and regulations

Pakistan is located in the transition zone between many of World's zoogeographical regions and therefore has specific affinities of our wildlife species with all these regions. With the grace of God, the country possesses every possible habitat from sea to highest peaks culminating at K2, the second highest peak in the world. It has long coastal areas, deserts, network of rivers, canals, lakes, plains, variety of forests, mountains, glaciers, pasture lands and highest peaks in the world providing numerous habitats and ecological systems for faunal and floral species. It has millions of species of animals and plants many of them being endemic to Pakistan and not found anywhere in the world.

Pakistan also has global importance due to its location on the flyway to Central Asia and Northern India. The birds breeding in Central and Northern Asia migrate via Afghanistan as well as higher parts of the Himalayas and usually follow Indus valley which provides ample food and favorable habitat for them. Hence, Pakistan provides winter refuge for millions of migratory ducks, geese, flamingoes, houbara bustard and other migratory bird species.

Due to anthropogenic activities, wildlife populations have declined dramatically in Pakistan for the last three to four decades. Natural habitats are continuously being fragmented and degraded. It is feared that Pakistan is experiencing the worlds' second highest rate of deforestation. The country is losing its rangelands, forests, freshwaters and marine ecosystems at an alarming rate. It is also facing the menace of climate change, uncontrolled emission of greenhouse gases, pollution, increase in human population, urbanization, unsustainable agricultural practices, encroachments, hunting, poaching, introduction of exotic species and weak implementation of wildlife rules and regulations. As a result of all these malpractices, we are facing a decline in numerous native species of plants and animals. A number of them are already extinct and many are listed as threatened in Pakistan.

If we see the international scenario, the picture is still very gloomy. The IUCN Species Survival Commission estimates that more than 19,000 of the 65,000 species evaluated to date are in danger of extinction. More than half of the 328 species of turtles and tortoises of the world are in danger of extinction, most of them in Asia. Since 1992, world has lost more than 300 million hectares of forest, only 10% of the world's forests are under sustainable management. Due to over exploitation 33% of the world' fish stocks are depleted. The polar ice caps continue to melt faster every day, threatening many arctic species and ecosystems. The data coming from Africa is alarming, indicating that poaching of species like elephants and rhinoceros has increased dramatically over the past few years, mostly driven by illegal international trade. Our impacts extend well beyond land and into the ocean, where sharks are being fished extensively.

The changes happening in land and sea not only impact other species, they are impacting our own lives. We rely on these species and ecosystems for our own livelihoods and wellbeing. Our own population has reached seven billion people. Seven billion people who rely on food, water and energy for their daily lives, and a legitimate aspiration of better livelihoods for them and their children. It is also fact that more than 50% of human population live in cities. We are an increasingly urban species, and this presents new challenges and opportunities. Increasingly, large cities rely on other parts of the world to provide the food, water and energy used by millions of people. Big cities of the world are having an impact on species and ecosystems across the planet.

We have many challenges to face and many questions to ask to ourselves regarding emerging environmental issues. We have to think as how will we increase food production by 50% over the next 50 years? How can we reduce the emissions of CO2 without hampering industry and economic growth? How can we reduce the impact of invasive species that are moving around in an increasingly globalized world? How can we create effective governance mechanisms and greater awareness about the link between people and nature? How can we leverage new technologies to improve the exchange of information for conservation? How can we protect the species and ecosystems to make sure they are around for future generations? These are the questions and challenges that we need to address while we get together in these kinds of functions.

PMNH

Pakistan Museum of Natural History
A hub for biological diversity

Pakistan Museum of Natural History, the only Natural History Museum in the country, was established in 1976 as an attached organization of Pakistan Science Foundation (PSF)/ Ministry of Science and Technology, ...

Pakistan Museum of Natural History

A hub for biological diversity data, specimens and displays

Pakistan Museum of Natural History

Pakistan Museum of Natural History, the only Natural History Museum in the country, was established in 1976 as an attached organization of Pakistan Science Foundation (PSF)/ Ministry of Science and Technology, Government of Pakistan. It holds the mandate of exploring, collecting, identifying, cataloguing, and preserving natural resources of Pakistan in the form of plants, animals, minerals, rocks and fossils to cater the research, educational and recreational needs of the country. PMNH offers amusement as well as disseminates knowledge on various scientific disciplines to students, teachers, researchers, conservationists, tourists and general public through its exhibits and displays and by organizing scientific exhibitions/ fairs on large scale.

At present, PMNH has a collection of 1.5 million specimens collected from all over the country and displayed in the form of more than 150 attractive 2-D and 3-D exhibits. In its displays, it has some of the world s' famous iconic specimens like 16 ton Whale Shark with a length of 41 feet, 80 feet long Blue Whale, extinct Balochitherium (a 30 million old largest land mammal), 50 kg Python with a length of 18 feet. In addition, it has state of the art Gemstone Gallery, Biodiversity Gallery, Birds of Pakistan Gallery, Dinosaurs Gallery, Fossils Gallery, Gallery for Higher Plants, Gallery for Medicinal Plants, Gallery for Lower Plants including Algae, Cave life, World of Butterflies, World of Fishes, World of Reptiles, World of Mammals, World of Ocean Life, which are just few to mention here. The distinctive collections, exhibits and repositories make PMNH a unique place for enjoyment, excursion and recreation while learning about natural resources of Pakistan. During 2016-17, our displays have been visited by more than 300, 000 visitors including general public, students, local and foreign tourists and researchers from all parts of the country and the number are increasing every year.

Due to diverse educational themes at display, Pakistan Museum of Natural History is the best place for imparting formal and informal education and a focal point for research on various aspects of ecology, biodiversity and environmental sciences. Study tours of PMNH can be considered for the schools and colleges for a lifelong learning opportunity for the students as here the scientific phenomena and concepts are exhibited through specially designed devices, machines and instruments which make them easy to understand. The display staff r is always ready to welcome study tours and visits of schools, colleges and universities for all the seven days of the week.

From page 3: **Risk to biodiversity pose challenges to food security and health**

no-take marine protected areas, maintenance of international policy mechanisms, establishment of protected areas to safeguard key biodiversity areas, management of agricultural systems that allow threatened species to persist within them, regulation of agrochemical use (especially of pesticide), certification of agricultural sustainability and reduction of food loss and waste.

The publication of National Dietary Guidelines is an efficient way to promote the biodiversity in individual countries from the demand side. FAO, in collaboration with Government of Pakistan Planning Commission, has formulated and launched the first of its kind Dietary Guidelines for Better Nutrition. If put into practice, the guidelines can result in a demand for diverse food items thereby stimulating producers to grow diverse crops. A unified consumer approach may also drive Government support for crop diversification to meet the local food demands.

The FAO promotes and advocates the importance of genetic resources and the threats against them. Through the Commission on Genetic Resources for Food and Agriculture, FAO sets the global agenda on the conservation, sustainable use and access, and benefit sharing of biodiversity for food and agriculture. FAO has also negotiated and hosts several biodiversity-related agreements. The International Treaty on Plant Genetic Resources for Food and Agriculture acknowledges that plant genetic diversity is essential to achieve food security and sustainable agriculture. The International Plant Protection Convention is another international treaty for protecting plant resources from plant pests and covers cultivated plants and wild flora. To protect global genetic resources, a global seed vault was established in Svalbard, Norway. The vault holds and protects almost all seeds used for agriculture development. Pakistan has also established its own Gene Bank at the National Agriculture Research Center in Islamabad. It stores approx. 40,000 accessions of 450 crop species. The National Gene Bank is distributing about 10,000 accessions per year to local researchers and global food security partners to develop improved crop varieties. FAO is strengthening the capacity of this National Gene Bank through efforts focusing on strengthening public-private collaboration to facilitate the diffusion of newly developed seeds for varietal crops. This will increase the systematic production of seeds which will enhance crop productivity and ensure food security. FAO is also supporting seed certification and building capacities of local farmers so that local plant varieties may continuously become available to farmers in the current regime of patents and IPR.

Pakistan is a signatory to the CBD and understands the importance of the Aichi Biodiversity Targets which require its members to adjust the overarching international framework so that it is suitable to national biodiversity strategies and action plans. In compliance, Pakistan has developed its National Biodiversity Strategy and Action Plan (NBSAP). The Strategy comprises ten action points which include biodiversity awareness, gender, poverty, and biodiversity nexus, mainstreaming biodiversity in national planning and policy processes, terrestrial ecosystems, habitats, and species, forest ecosystems, inland wetland ecosystems, coastal and marine ecosystems, sustainable agriculture and agro biodiversity, Sustainable Production and Consumption, and biosafety. Provincial governments have also formulated their own biodiversity strategies and action plans. The Ministry of Climate Change has approved the NBSAP, yet its adaptation to on-the-ground activities is still lacking. Various sectors related to biodiversity are working in isolation in Pakistan since there is no coordination mechanism at federal level. There is a huge knowledge gap and an assessment and monitoring mechanism is lacking. An implementation modality has not been devised for implementation in the field. FAO can provide the Government of Pakistan with technical support for field-level actions. At the 13th Conference of the Parties (COP13) to the CBD, it was called for the mainstreaming of biodiversity across all agricultural sectors. FAO is acting as the Biodiversity Mainstreaming Platform and organizing a multi-stakeholder dialogue to devise strategies. Such a dialogue for the Asia-Pacific region will be held in July 2019 to deliberate on the mainstreaming of biodiversity.

The promotion of biodiversity and protection of endangered plant and animal species is vital for food security, health, and wellbeing. To keep this planet habitable for future generations, it is of utmost importance that all actors, including international agencies, governmental bodies, private entities and individuals, work together in an integrated and holistic manner so that life on Earth may continue to prosper on a sustainable basis.

SLF

Snow Leopard Foundation: A torch barrier for Snow Leopard ecosystem

Food adulteration has become a common issue in our society. Now there is no difficulty to say that every edible processed item contains intentionally added substances, which may lead to some hazardous effects .....

Snow Leopard Foundation

A torch barrier for snow leopard ecosystem protection

Snow Leopard Foundation

The Snow Leopard Foundation (SLF) has been contributing over a decade in wildlife conservation through various conservation programs. The GEF funded project Pakistan Snow Leopard and Ecosystem Protection Program (PSLEP) is one of the ongoing projects, which SLF is implementing in partnership with Ministry of Climate Change and UNDP-Pakistan.

By partnerships with the mountainous communities, SLF has helped them in bearing economic losses from predation and brought a visible change in community attitudes towards predators like snow leopards. SLF's capacity in wildlife research is well recognized nationally and internationally. The focus of SLF is to improve the socioeconomic conditions of the people who share fragile mountain ecosystems.

Some of the Facts & Figures of SLF contribution in wildlife and ecosystem conservation:

- Over 800 Camera Trap Stations established to explore 30% of snow leopard range
- 200000 Livestock vaccinated bi-annually through ecosystem health program
- More than 300 Field Staff of Parks & Wildlife trained in wildlife surveys
- 200 Ecosystem Health Workers trained to eliminate diseases in snow leopard range
- 3000 Livestock protected from mass killing through predator proof corrals
- 50 Postgraduate students engaged in research on snow leopards, prey species and ecosystem

Community-based conservation programmes:

- Ecosystem Health Programme in Gilgit-Baltistan and Chitral

The Ecosystem Health Programme aims to reduce livestock mortality due to diseases, improve the productivity of the stock, and cutback transmission of diseases from livestock to wildlife, respectively.

Snow Leopard Enterprises

Snow Leopard Enterprises (SLE) involves training local people, especially women-folk living within the snow leopard habitat to produce handicrafts that are marketed regionally and internationally. SLE was established in Pakistan in 2003.

Predator proof corrals

Livestock losses due to snow leopards can be devastating when the carnivore gains entry to a poorly developed and predator prone corral. The cats have been known to kill large number of animals in one attack (far more than they need to consume) and may return for multiple nights in a row. SLF started building predator proof corrals in selected hotspots to minimize the risk of this mass predation.

Plantation of forest trees in Chitral

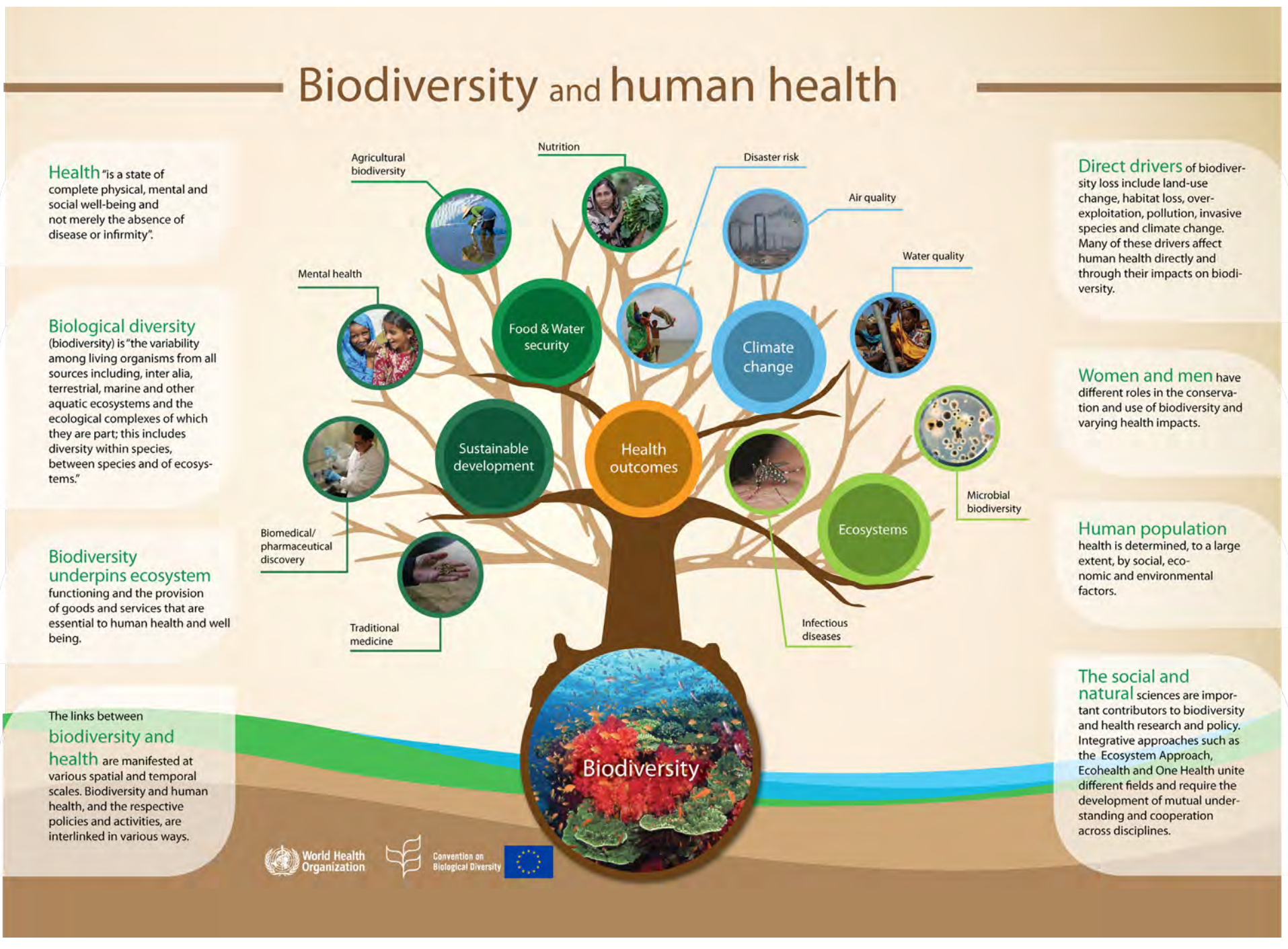
As part of environmental campaign SLF organizes tree plantation drives in collaboration with provincial Forest Departments in Chitral and Gilgit.

Snow Leopard Clubs in Snow Leopard Conservation valleys

SLF always considers youth as one of the important stakeholders in snow leopard and its ecosystem conservation. SLF has established Snow Leopard Clubs (Nature Clubs) in schools of snow leopard conservation valleys to educate the students through capacity building activities creating awareness about the importance and conservation of wildlife and environment.

Promotion of Ecotourism in Snow Leopard Habitats

Promotion of ecotourism in snow leopard habitats is part of the PSLEP project under the community support and livelihood improvement component. This component is designed to enhance the livelihood opportunities of the local communities living in snow leopard habitats and to educate the tourists and local communities about protecting the biodiversity and wildlife.



Hina Baloch

The Value of biodiversity!

While there is a growing recognition that biological diversity is a global asset of tremendous value to present and future generations, the number of species is being significantly reduced by certain human activities. The Convention on Biological Diversity is the international legal instrument for “the conservation of biological .....

The Value of biodiversity!

While there is a growing recognition that biological diversity is a global asset of tremendous value to present and future generations, the number of species is being significantly reduced by certain human activities.

The Convention on Biological Diversity is the international legal instrument for “the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources” that has been ratified by 196 nations.

Given the importance of public education and awareness for the implementation of the Convention, the General Assembly proclaimed 22 May, the date of the adoption of its text, as the International Day for Biological Diversity by its resolution 55/201 of 20 December 2000.

2019 Theme: Our Biodiversity, Our Food, Our Health

Nowadays, we have access to a greater variety of food than your parents or your grandparents once did. But even as the offerings become more diverse, the global diet as a whole - what people actually eat - is becoming more homogenized, and this is a dangerous thing.

This year’s celebrations of the International Day for Biological Diversity focus on biodiversity as the foundation for our food and health and a key catalyst to transforming food systems and improving human health.

The theme aims to leverage knowledge and spread awareness of the dependency of our food systems, nutrition, and health on biodiversity and healthy ecosystems. The theme also celebrates the diversity provided by our natural systems for human existence and well-being on Earth, while contributing to other Sustainable Development Goals, including climate change mitigation and adaptation, ecosystems restoration, cleaner water and zero hunger, among others.

In the last 100 years, more than 90 percent of crop varieties have disappeared from farmers’ fields. Half of the breeds of many domestic animals have been lost, and all of the world’s 17 main fishing grounds are now being fished at or above their sustainable limits. Locally-varied food production systems are under threat, including related indigenous, traditional and local knowledge. With this decline, agrobiodiversity is disappearing, and also essential knowledge of traditional medicine and local foods. The loss of diverse diets is directly linked to diseases or health risk factors, such as diabetes, obesity and malnutrition, and has a direct impact on the availability of traditional medicines.

Decisions from the 14th meeting of the Conference of the Parties to the UN Convention on Biological Diversity (CBD COP 14), along with reports on biodiversity and health, provide recommendations.

Participate in the celebrations! You can share your activities on the special pages of the Convention’s website, dedicated to these celebrations worldwide.

Biodiversity and the Sustainable Development Goals

The objectives of halting biodiversity loss and promoting the sustainable use of terrestrial and inland freshwater ecosystems are included in Sustainable Development Goal 15.

Species Extinction Rates ‘Accelerating’

A hard-hitting report into the impact of humans on nature shows that nearly one million species risk becoming extinct within decades, while current efforts to conserve the earth’s resources will likely fail without radical action. The historic report features the work of 400 experts from at least 50 countries, coordinated by the Bonn-based Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES).

Biodiversity to serve humanity

Protecting biodiversity is in our self-interest. Biological resources are the pillars upon which we build civilizations. Nature’s products support such diverse industries as agriculture, cosmetics, pharmaceuticals, pulp and paper, horticulture, construction and waste treatment. The loss of biodiversity threatens our food supplies, opportunities for recreation and tourism, and sources of wood, medicines and energy. It also interferes with essential ecological functions.

Our need for pieces of nature we once ignored is often important and unpredictable. Time after time we have rushed back to nature’s cupboard for cures to illnesses or for infusions of tough genes from wild plants to save our crops from pest outbreaks. What’s more, the vast array of interactions among the various components of biodiversity makes the planet habitable for all species, including humans. Our personal health, and the health of our economy and human society, depends on the continuous supply of various ecological services that would be extremely costly or impossible to replace. These natural services are so varied as to be almost infinite. For example, it would be impractical to replace, to any large extent, services such as pest control performed by various creatures feeding on one another, or pollination performed by insects and birds going about their everyday business.

Protecting Biodiversity

The current decline in biodiversity is largely the result of human activity and represents a serious threat to human development. Despite mounting efforts over the past 20 years, the loss of the world’s biological diversity, mainly from habitat destruction, over-harvesting, pollution and the inappropriate introduction of foreign plants and animals, has continued. Biological resources constitute a capital asset with great potential for yielding sustainable benefits.

Urgent and decisive action is needed to conserve and maintain genes, species and ecosystems, with a view to the sustainable management and use of biological resources.