 Natural resources

1. Flora, Water, Soil, mountains, oceans, minerals, fuel, Air, Natural Resources & Human resources! Is not natural? Dependency, Man made goods, Economic (natural resource based) PGR fauna (cultivated, domestic, wild)
2. Natural resources Resources available in nature like air, water, sunlight, soil, minerals, mountains, forests, flora & Those resources which cannot be replenished in a short period of time like minerals (coal, petroleum, natural gas, metals) because they take millions of years to be formed. Human activities produce lot of waste materials that are thrown into the environment causing pollution in air, water and soil. Pin down NOT to destroy the living globe. Non-renewable natural resources. Those resources which can be restored in a short period of time like air, water, sunlight, forests, etc. Renewable natural resources fauna, wild life, plants, PGR. Natural resources are of two main types.
3. Biotic From the biosphere (living and organic material), such as flora and fauna and the materials from them as fossil fuels from decayed organic matter. Abiotic Resources from non-living, non-organic material, include land, fresh water, air and heavy metals including ores. Classification
4. South Asia, bordering the Arabian Sea, India on the east. Iran and Afghanistan in the west and China in the north Area: 803,940 sq km Land: 778,720 sq km Population: 180 million Three mighty mountains Diverse geo-bio-ecology Highest youth ratio Rich in resources, why poor nation? Of Islamic Republic of Pakistan
5. Wildlife Importance i) Wildlife helps to preserve biodiversity. ii) Wildlife helps to maintain food chains and food web. iii) We get useful products from wildlife like food, medicines, leather, bones, honey, lac etc. Conservation i) Preserving the natural habitats of animals. ii) Banning poaching of animals. iii) Protecting endangered species of animals. iv) Setting up of wildlife sanctuaries, national parks, biosphere reserves etc.
6. Total Reported in Pakistan Endemics Threatened Mammals 174 6 20 Birds 668 ? 25 Reptiles 177 13 6 Amphibians 22 9 1 Fish (fresh water) 198 29 1 Fish (marine) 788 - 59 Echinoderms 25 - 2 Molluscs (Marine) 269 - 8 Crustaceans (Marine) 287 - 6 Annelids (Marine) 101 - 1 Insect >5000 - - Angiosperms 5700, Gymnosperms 21, Pteridophytes 189, Algae 775, 20 Fungi >4500, Natural Bio-resources of Pakistan
7. control floods. Social problems Economic problems Environmental problemsθ Supplying water to towns and cities. Producing electricity. Irrigation of crops. Water is the basic necessity for life. Used daily needs, for agriculture, transportation, construction of buildings, roads, dams. Water is a natural habitat for aquatic organisms. Human activities are affecting the availability of water and causing pollution of water bodies. Dams
8. Water harvesting (Rain water harvesting) i) Digging pits, ponds, lakes etc. ii) Building small earthen dams or concrete check dams. iii) Construction of reservoirs. iv) Construction of rooftop collecting units in houses. Advantages of underground water i) It does not evaporate easily. ii) It spreads out and recharges wells. iii) It provides moisture for irrigation of crops. iv) It does not get polluted easily. v) It does not provide breeding ground for mosquitoes and houseflies.
9. Forests help in controlling the level floods.θ Well managed forests supply higher quality water with less impurity than water from other resources. θ Trees offer artistic functions, background, framing a view, complementing architecture, and so on. θ Resorts, reduce light reflection, sound barrier and help guide wind direction and speed. θ Attracts wild life and offer food, shelter and protection to them. θ Generate oxygen and store carbon dioxide. θ Cool air temperature. θForests Multiple benefits to environment, people, and animals;
10. It provide food, medicinal herbs as well as other satisfactory requirement to fulfill our need. Forests help in conservation of soil, an important NR. Forests trees helps in bringing sufficient rainfall on earth. Helps scientist to discover new medicine as forest has different kind or plants and herb. Minimize noise pollution. Keep environment healthy and beautiful. Forests provide wood for different purposes, housing, furniture , paper, and pencils and so on.
11. Forests in some Thal Desert avoid soil erosion and further desertification. Forests along Indus have been managed to avoid excess flooding. The forests provide of ecotourism and wildlife conservation purposes. Other products include resin and 'mazri' (used for making baskets). The forests of Pakistan are a main source for lumber, paper, fuel wood, latex, medicine as well as human and animal food. θUses of forests
12. Total forest area coverage Parameter Pakistan Asia World Total forest area in (000 ha) 2,361 504,180 3,869,455 Natural forest area (000 ha) 1,381 375,824 3,682,722 Plantations area in (000 ha) 980 110,953 186,733 Total dryland area in (000 ha) 72,524 1,078,121 5,059,984 Percentage of forests ~3% ~20% ~29%
13. Examples of deforestation include conversion of forestland to farms, ranches, or urban use. Deforestation is the removal of a forest or stand of trees where the land is thereafter converted to a non-forest use. Deforestation
14. Diversity
15. Three components of biodiversity I. Diversity of genes Same species —but not the same because there is variety in their genes. II. Diversity of number of species Different species. III. Variety of ecosystems Lakes, Ponds, and Rivers are all Freshwater Ecosystems. Rocky coast, Sand Dune, Estuary, Salt Marsh , Coral Reef are all Marine Ecosystems.
16. However, many species of organisms are yet to be identified, especially in remote regions of Earth, so their usefulness in providing extracts or useful genes is unknown.θScientists continue to find new extracts from plants and other organisms that help in the treatment of human diseases. Many of the medicines that are used today are derived from plants or other organisms. Wild species serve as reservoirs of desirable genetic traits that might be needed to improve domestic crop species (disease- and insect-resistance). Most of the world’s food crops come from just a few species. Genetic diversity be needed in the future! Dependency on plants and animals for food, feed, clothing, energy, medicine, and shelter. Direct Economic Value
17. Healthy ecosystems provide protection against floods and droughts, generate and preserve healthful fertile soils, detoxify and decompose wastes, and regulate local climates. Natural processes provide drinking water that is safe for human use. Green plants provide oxygen to the atmosphere and remove carbon dioxide. Healthy biosphere provides many services to humans and other organisms that live on Earth. Indirect Economic Value
18. The value of biodiversity and healthy ecosystems would be more obvious to us then. How life would be possible if all Earth was a barren and desolate landscape. Interesting to study bio-natural resources. Aesthetic and Scientific Value
19. ECOSYSTEM!θ When species of plants and animals go extinct, many other species are affected. Scientists estimate that as many as 3 species per hour are going extinct and 20,000 extinctions occur each year. Should we be concerned about biodiversity? The Earth is losing species at an alarming rate
20. Extinction Rates 2011: International Year of Forests International Biodiversity Scenario 2010: International Year of Biodiversity 2010-2020: Decade of Biodiversity international trade of game species, Trade, Poverty, Energy crisis θGlobal climate change, Over-exploitation of natural resources, Introduction of invasive alien species, Habitat loss and degradation, Pollution and diseases, Human population growth, developing world in Challenges
21. Flora/Fauna Number of Species In World In Pakistan Endemic Plants 25,000 to 75,000 species 6,000 species 5,000 wild) 372 species Mammals 18 orders 10 orders Indus Dolphinm, Chiltan Markhor, Sand Cat, Suleiman Markhor, Punjab Urial, Baluchistan Bear 4,100 species 188 species, 63 rodents, 39 carnivores 38 bats 25 hoofed animals 11 insectivores 9 aquatic animals, 3 primates, 1 pholidota Biodiversity in Pakistan. Flora/Fauna Number of Species In World In Pakistan Endemic Birds 8,600 species 666 migratory & resident species Reptiles 6,500 species 174 species of which : 88 lizards 72 snakes 10 turtles (2 marine, 8 freshwater) 2 tortoises 1 crocodile 1 Gavial Amphibians 16 species Fishes 2,600 species 525 species, 400 marine fish 125 freshwater species Insects/ Invertebrates 750,000 species 20,000 species 700 marine
22. Threats to Diversity
23. Over exploitation and grazing, Global Climate Change, Species Introductions, Pollution De-forestation, Habitat destruction,
24. Threats food web: a model representing the many interconnected food chains and pathways in which energy and matter flow through a group of organisms Review, Decline of single species can affect an ecosystem. Factors that threaten biodiversity. Biodiversity crisis. Human intervention destroy biodiversity in ecosystems, and current evidence suggests that reduced biodiversity might have serious long-term effects on the biosphere.
25. Threats to Biodiversity: 192 Vulnerable, 540 Endangered, 188 Critically Endangered, 78 are Extinct or Extinct in the Wild. Of the world’s 5,490 mammals, More than 20,000 species are used for medicinal purposes, Animals provide 30% of human requirements for food and agriculture. Approximately 250,000 to 300,000 are edible plant species
26. Current status of biodiversity: Evolving species might not have the natural resources they need, evolution does it work today? Humans are changing conditions on Earth faster. Current high rate of extinction is due to the activities of a single species—Homo sapiens. **Factors that Threaten Biodiversity**
27. Rhinoceros, Ocelot, Passenger Pigeons, Bison are extinct due overexploitation or excessive use, of species that have economic value is a factor increasing the current rate of extinction
28. Disruption of habitat - the declining population of one species can affect an entire ecosystem.
29. Grazing : Threats to flora in mountain areas of Pakistan
30. Trade of rare species products
31. ECOSYSTEM THREATS Indus delta and coastal wetlands Flow from diversions upstream, Cutting mangroves for fuelwood, Drainage of coastal wetlands Indus river and wetlands Water diversion/drainage, Agricultural intensification Toxic pollutants Chagai desert Proposed mining Hunting parties from the Gulf Balochistan juniper forest Fuelwood cutting & overgrazing, Habitat fragmentation Chilghoza forest (Suleiman range Fuelwood cutting & overgrazing, Illegal hunting Balochistan subtropical forest Fuelwood cutting & overgrazing Balochistan rivers Water diversion/drainage Overfishing Tropical deciduous forests (Himalayan foothills) Fuelwood cutting & overgrazing Moist and dry temperate Himalayan forests Commercial logging, Fuelwood cutting and overgrazing Trans-Himalayan alps and plateau Fuelwood cutting & overgrazing, Illegal hunting Unregulated tourism, Habitat fragmentation Critically Threatened ecosystems in Pakistan

Conservation Strategy

1. Why should we worry about conservation? A. Ethics! Human intervention, and its negative effects: Is that right to continue? B. Aesthetics! The natural world is more beautiful: Isn't it! Should we keep it around? C. Genetic resources! End result of millions of years of evolution – unique gene combinations for disease resistance, chemical production: Should it be lost? Many of the products we rely on are result from the biotic component of the planet! Do we need yet? E. Life support! Plants produce oxygen, soil provides food, organisms/ processes cycle and purify the water that we need! F. Ecosystem support! The interactions of the world are all connected.
2. How can we reduce biodiversity loss? Two main approaches – ecosystem or species directed. 1. Preventing premature extinction of species. 2. Preserving & restoring ecosystems which provide habitats and resources for the world’s species.
3. Strategic plan for conservation 2011-2020 Vision living in harmony with nature. By 2050, biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people. Mission Take effective and urgent action to halt the loss of biodiversity in order to ensure that by 2020, ecosystems are resilient and continue to provide essential services, thereby securing the planet’s variety of life, and contributing to human well-being, and poverty alleviation.
4. Three R’s to save the environment Three R’s to save the environment are Reduce, Recycle and Reuse. i) Reduce: Means using less of NR and avoiding wastage of NR. ii) Recycle: Means the materials like paper, plastic, glass, metals etc used for making things can again be used for making new things instead of synthesizing or extracting new paper, plastic, glass or metals. iii) Reuse: means using things again and again like the plastic bottles in which we buy jams, pickles etc can be again used for storing things in the kitchen.
5. Need for management of natural resources All the things we use and consume are obtained from natural resources. Due to increase in population, industrialization and urbanization the demand for natural resources is increasing and their availability is limited . So there is a need for proper management of natural resources. i) Judicious use of NR & avoid wastage. ii) Long term planning for NR management, not only for the present use but also for conservation for mankind. iii) Exploitation of NR should not be for the benefit of a few people but should be distributed equally equitable for all. iv) While extracting and using NR we should plan for the safe disposal of wastes so that no damage is caused to the environment.
6. Protected areas category I. Strict Nature Reserve/Wilderness Area Areas of land/sea with specific ecosystems, geological, physiological, available primarily for scientific research/ environmental monitoring, protected and managed so as to preserve their natural condition. II. National Park Protected for ecosystem conservation and recreation. a) Protect ecological integrity of one or more ecosystems for this and future generations, b) Exclude exploitation of designation of the area, and c) Provide a foundation for spiritual, scientific, educational, recreational and visitor opportunities, all of which must be environmentally and culturally compatible.
7. III. Natural Monument Protected areas for conservation of special features. Areas containing one or more specific natural or natural/cultural features, representative or aesthetic qualities or cultural significance. IV. Habitat/Species Management Area Protected for active intervention to ensure the maintenance of habitats to meet the requirements of specific species. V. Protected Landscape / Seascape Protected for conservation and recreation. Safeguarding the integrity of this traditional interaction vital to the protection, maintenance and evolution of such an area. VI. Managed Resource Protected Area For sustainable use of natural ecosystems. Areas containing predominantly unmodified natural systems managed to ensure long- term protection and maintenance of biological diversity, while providing at the same time a sustainable flow of natural products and services to meet community needs.
8. Increasing the area of National park, wildlife century, game reserve and community hunting areas.
9. The UN supports a system of Biosphere Reserves and World Heritage sites. Currently, about seven percent of the world’s land is set aside as some type of reserve. Protected areas include national parks and nature reserves.
10. Protecting Biodiversity: The length of time, Biological communities can recover from natural and human- made disasters. Restoring Ecosystems, Biological Augmentation, Bioremediation, Ecologists use two methods to speed the recovery process of these damaged ecosystems. The size of the area affected and the type of disturbance are determining factors for recovery time.
11. Some species of plants are being used to remove toxic substances such as zinc, lead, nickel, and organic chemicals. From damaged soils.θ Microorganisms can be used in ecosystems to remove toxins from soils that are contaminated by accidental oil or fuel spills. Bioremediation: Use of living organisms, such as prokaryotes, fungi, or plants, to detoxify a polluted area is called bioremediation.
12. Ladybugs can be introduced into an ecosystem to control aphid populations. Adding natural predators to a degraded ecosystem is called biological augmentation. Biological Augmentation: Since the 1970’s, many more laws and treaties have been enforced and signed with the purpose of preserving natural resources and biodiversity for future generations.θLaws were enacted around the world and many treaties between countries were signed in an effort to preserve the environment. During the 1970’s, a great deal of attention was focused on the destruction to the environment and maintaining biodiversity and natural resources. Legally Protecting Natural Resources
13. Gene banks, Other Means of conservation & Zoos, Botanical gardens, farms, living collections, seed banks & Captive breedingθaquariums & DNA banksθAesthetic vs.
14. **Ecological value vs Reintroduction programs**
15. Conservation of plant genetic resources – a key to food security
16. Treaty was adopted by FAO Conference, 3 November 2001 and came into force in June 2004. Backgroundθ Treaty deals with special problems of PGRFA and is in harmony with CBD. Treaty negotiated in FAO Commission on Genetic Resources for Food and Agriculture. The CBD recognized that exceptional issues of PGRFA need to be settled within the FAO Global System on PGRFA. The Convention on Biological Diversity (CBD) was adopted in 1992 and entered into force in 1993.
17. Objectives Conservation and sustainable use of PGR for food and agriculture and the fair and equitable sharing of the benefits arising out of their use, in harmony with the CBD, for sustainable agriculture and food security. These objectives will be attained by closely linking this Treaty to the Food and Agriculture Organization of the United Nations and to the Convention on Biological Diversity.
18. Centre of crop diversity: a geographic area containing a high level of genetic diversity for crop species under in-situ conditions. These definitions are not intended to cover trade in commoditiesθ Centre of origin: a geographical area where a plant species, either domesticated or wild, first developed its distinctive properties. Ex-situ collection: a collection of PGR for food and agriculture maintained outside their natural habitat, i.e., gene banks. Variety: plant grouping within a single botanical taxon of the lowest known rank. θ Genetic material: functional units of heredity. θ In-situ conservation: conservation of ecosystems, natural habitats, maintenance and recovery of viable populations of species in the centre of origin and in the centre of diversity.
19. Monitor the maintenance of the viability, degree of variation, and the genetic integrity of collections of PGRFA. Development of an efficient and sustainable system of ex-situ conservation, documentation, characterization, regeneration and evaluation, with a view to improving the sustainable use of PGRFA. Promote in-situ conservation of wild crop relatives and wild plants for food production. Promote or support to manage and conserve on-farm PGRFA. Status and degree of variation in existing populations. Survey and inventory of PGRFA taking into account. Conservation, Exploration, Collection, Characterization, Evaluation and Documentation of PGRFA
20. Reviewing and adjusting breeding strategies and regulations concerning variety release and seed distribution.θ Promoting the expanded use of local and locally adapted crops, varieties and underutilized species. Broadening the genetic base of crops and increasing the range of genetic diversity available to farmers. Strengthening research to enhance and conserve natural resources and diversity by maximizing intra- and inter-specific variation for the benefit of farmers. Fair agricultural policies that promote, as appropriate, the development and maintenance of diverse farming systems that enhance the sustainable use of agricultural biological diversity and other natural resources. Sustainable Use of Plant Genetic Resources Develop and maintain appropriate policy and legal measures that promote the sustainable use of PGRFA. The sustainable use of PGRFA include such measures as:
21. The right to participate in making decisions, at the national level, on matters related to the conservation and sustainable use of PGRFA.♣The right to equitably participate in sharing benefits arising from the utilization of PGRFA. ♣Protection of traditional knowledge relevant to PGRFA. ♣Farmers’ Rights Recognize the contribution of local and indigenous communities, and farmers of all regions of the world, particularly in the centers of origin and crop diversity.
22. The Contracting Parties agree that benefits arising from the use, including commercial, of PGRFA under the MLS shall be shared fairly and equitably. The Contracting Parties recognize that facilitated access to PGRFA constitutes itself a major benefit of the Multilateral System and agree that benefits accruing there from shall be shared fairly and equitably in accordance with the provisions of this Article. Benefit-sharing in the Multilateral System
23. Global Plan of Action Contracting Parties should promote effective implementation of GPA including through national actions and, as appropriate, international cooperation to provide a coherent framework, for capacity-building, technology transfer and exchange of information, taking into account the provisions of treaty.
24. FOOD CROPS 1- Breadfruit, 2- Asparagus, 3- Oat, 4- Beet, 5- Brassica complex, 6- Pigeon Pea, 7- Chickpea, 8- Citrus, 9- Coconut, 10- Major aroids, 11- Carrot, 12- Yams, 13- Finger Millet, 14- Strawberry, 15-Sunflower, 16- Barley, 17- Sweet Potato, 18- Grass pea, 19- Lentil, 20- Apple, 21- Cassava, 22- Banana, 23- Rice, 24- Pearl Millet, 25- Beans, 26- Pea, 27- Rye, 28- Potato, 29- Eggplant, 30- Sorghum, 31- Triticale, 32- Wheat, 33- Faba Bean, 34- Cowpea, 35- Maize LEGUME FORAGES 36- Astragalus, 37- Canavalia, 38- Coronilla, 39- Hedysarum, 40- Lathyrus, 41- Lespedeza, 42- Lotus, 43- Lupinus, 44- Medicago, 45- Melilotus, 46- Onobrychis, 47- Ornithopus, 48- Prosopis, 49- Pueraria, 50- Trifoliump GRASS FORAGES 51- Andropogon, 52- Agropyron, 53- Agrostis, 54- Alopecurus, 55- Arrhenatherum, 56- Dactylis, 57- Festuca, 58- Lolium, 59- Phalaris, 60- Phleum, 61- Poa, 62- Tripsacum, OTHER FORAGES 63- Atriplex, 64- Salsola
25. Enforcement: Pressure on finite natural resources, water and land (overuseθ The NCS begins with environmental problems. Pakistan National Conservation Strategy (NCS) & Three areas highlighted as in need of particularly attention. 1. Institutional strengthening 2. Mass awareness 3. Regulatory legislation as well as the introduction of economic incentives and other policy measures, poor husbandry, deforestation, wasteful energy consumption patterns, and inadequate systems for solid wastes)
26. The core area to address 1. Maintaining soils in cropland 2. Increasing irrigation efficiency 3. Protecting watersheds 4. Supporting forestry and plantations 5. Restoring rangelands and improving livestock 6. Protecting water bodies and sustaining fisheries 7. Conservation of biodiversity 8. Increasing energy efficiency 9. Developing and deploying renewable 10. Preventing and abating pollution 11. Managing urban wastes 12. Supporting institutions for common resources 13. Integration population and environment programs 14. Preserving the cultural heritage
27. Preventing and Increasing energy efficiency, Increasing irrigation efficiency, Pilot Projects Preserving juniper forests in Balochista Protecting Margalla Hills from encroachment, Nature Conservation/Biodiversity, Reclamation of damaged soils for crop production through gypsum application. On-farm water management projects for increased irrigation efficiency. Energy efficiency in public building construction Household energy efficiency program, Energy Efficiency/Irrigation Efficiency, Conserving biodiversity The Pakistan National Conservation Strategy, Restoring rangelands and improving livestock, Protecting waterbodies and sustaining fisheries, Protecting watersheds, Managing urban wastes and pollution.
28. List of Laws with Environmental Impact 1. The Pakistan Penal Code, 1860 2. The Canal and Drainage Act, 1873 3. The Land Improvement Loans Act, 1883 4. The Explosive Act, 1884 5. The Punjab Forest (Sale of Timber) Act, 1913 6. The Boiler Act, 1923 7. The Factories Act, 1934 8. The Hazara Forest Act, 1936 9. The Punjab Health (Emergency Provision) Ordinance, 1944 10. The Regulation of Mines and Oilfields and Mineral Development Act, 1948 11. The Punjab development of Damaged Areas Act, 1952 12. The Punjab Soil Reclamation Act, 1952 13. The West Pakistan Epidemic Diseases Act, 1952 14. The West Pakistan Canteen Rules, 1959 15. The West Pakistan Goats (Restriction) Ordinance, 1959 16. The West Pakistan Agricultural Pests Rules 1959, 1960 17. The West Pakistan Prohibition of Smoking in Cinema Houses Ordinance, 1960 18. The West Pakistan Fisheries Ordinance, 1961 19. The Motor Vehicles Ordinance, 1965 (and Rules, 1969) 20. The Islamabad (Preservation of Landscape) Ordinance, 1968 21. The Agricultural Pesticides Ordinance, 1971 22. The Balochistan Sea Fisheries Ordinance, 1971 23. The Sindh Wildlife Protection Ordinance, 1972 24. The Punjab Wildlife Protection, Preservation, Conservation and Management Act, 1974 25. The Antiquities Act, 1975 26. The NWFP Management of Protected Forest Rules, 1975 27. The NWFP Fisheries Rules, 1976 28. The Grazing of Cattle in the Protected Forests (Ranglands) Rules, 1978 29. The Pakistan Plant Quarantine Act, 1978 30. The Balochistan Groundwater Rights Administration Ordinance, 1978 31. The Punjab Local Government Ordinance, 1979 32. The NWFP (Conservation and Exploitation of Certain Forests in Hazara Division) Ordinance, 1980 33. The On-Farm Water Management and Water Users Association Ordinance, 1981 34. The Pakistan Environmental Protection Ordinance, 1983. The NWFP Salinity Control and Reclamation Act, 1988
29. Environmental Curricula has been developed for schools up to middle level. National Conservation Strategy , National Environment Law, National Environment Policy, National Institutional Arrangement, National Environmental initiatives
30. Survey and data base on fauna of Pakistan, Zoological Survey Department, Forestry research and education, Pakistan Forest Institute, Deals with energy conservation issues, Energy Conservation Center (ENERCON), Responsible for implementation of Environment Act, Monitoring of pollution, etc. Pakistan Environmental Protection Agency, Political support, coordinates and supervises strategic decisions, approve policies and plans and monitor law enforcement. Pakistan Environmental Protection Council National institutional arrangement. Regional coordinated projects Problems faced by Pakistan, Basic research for changing environment, Lack of resources available for mitigation and adaptation to climate change, Lack of adequate Technology for mitigating the environmental and climate change affects.
31. Natural Resources Conservation and Food Security
32. Loss of biodiversity, Food insecurity, Climate change, Energy crisis, Challenges for sustainable development Four of major global challenges identified by the UN are:
33. Over one billion people are gravely or permanently undernourished. Every day 25,000 people die from hunger, or immediately-related causes. Hidden hunger! Every five seconds a child below ten years of age dies from hunger. Global consequences of food insecurity
34. 30 % of livestock breeds are at risk of extinction; six breeds are lost each month. Use of few genetically modified varieties and breeds in monocultures has replaced well-adapted old cultivars, depletion of nutrients, increased waterlogging, increased salinity, Require high inputs which deteriorate the environment , For the last decade, 75 % of diversity has been lost - genetically uniform, high-yielding varieties. Biofuels, Monocultures, Neglected/underutilized species, Loss of gene pool, Introduction of exotic species , Rapid decline in biodiversity is a threat to food security through, Biodiversity and food security
35. Karachi University has established a superb botanical garden a few years ago♣ Botanical gardens conservation could be considered as field gene bank or seed gene bank or both, depending on the conservation method being used. ♣ Maintain more than 6 million living collections and 142 million herbaria specimens. ♣ Now more than 2000 botanic gardens are known around the world in over 150 countries ♣ Recently, they have taken on significant conservation responsibilities by establishing seed banks and tissue culture units. ♣ Promoted the study of taxonomy and became a focal point for the study of aromatic and medicinal plants. ♣ By the 16th Century, they become important centers for research. ♣ Designed mainly for the purpose of recreation. ♣ Botanic gardens traced back as the Hanging Gardens of Babylon, built by Nebuchadnezzar in 570 BC as a gift to his wife. ♣BOTANICAL GARDENS
36. Environmental Science Divisionθ Faunistic Diversity Division, Floristic Diversity Division, The Centre includes three divisions θEstablished at Shah Abdul Latif University, Khairpur, Sindh, Pakistan on December 24, 2009, First center for biodiversity conservation in Pakistan
37. National Commitments: Recommendations of the NCS remain extremely relevant for government policy-making today.The document is not limited to forestry. In fact, it is considered the landmark document on incorporating environmental concerns into all national policies. The National Conservation Strategy seeks to approach the entire set of economic concerns through the sustainable development paradigm. National Conservation Strategy (1992). Its goal is to foster the sustainable development of Pakistan’s renewable natural resources, the maintenance and rehabilitation of its environment, and the enhancement of sustainable livelihoods of its rural population, especially women, children, and other minority groups.θ It highlights poverty alleviation as a major objective and details an action plan for sustainable management of all types of forests. The National Forest Policy outlines the broad set of objectives, casting the net wider than forest preservation. National Forest Policy (2002). Punjab Urban Water and Sanitation Policy are few in the list of many policy documents Existing policy, institutional and legislative structure….contd. 82. Pakistan Water Sector Strategy National Rangeland Policy, National Sustainable Development Strategy, Drinking and National Water Policy, National Climate Change Policy 2012 provides framework for addressing climatic issues.
38. National Disaster Management Authority (NDMA) is the leading implementing agency headed by Chairman/Director General. National Disaster Management Council (NDMC) is an apex body in the field of disaster management under the chairmanship of Prime Minister. National Disaster Management (NDM) Act 2010 provides a complete institutional mechanism of pre, during and post disaster management at federal, provincial and district levels. Disaster Management Systems
39. The per capita availability of river water, which was 5,650 cubic meter/y in 1951 and 1000 cubic meter/y in 2010, is expected to decline further to 800 cubic meter/y in 2026.
40. Indus: 44%, Chenab: 19%, Jhelum: 16%, Kabul: 16% and Others: 5%. The shares of main contributing rivers to the IRS in Pakistan are: Pakistan’s primary sources of water are rainfall (50 maf ) by monsoon and river inflows (141 maf) in the Indus River System fed by glaciers and snowmelt from the Hindukush-Karakoram- Himalayas. θWater-stressed country water availability heading towards less than 1000 cubic meter/y by 2035 (WB 2006). Pakistan is extremely short of fresh water resources.
41. Water Sector: Current Status and VulnerabilityWater Security Socioeconomic
42. International Agencies dealing with conservation of natural resources“to conserve the natural environment andθEstablished in 1961. WWF: World Wildlife Fund promoting the reduction of pollution and wasteful consumption. ensuring that the use of renewable natural resources is sustainable, conserving the world’s biological diversity, WWF’s mission is to stop the degradation of the planet’s natural environment and to build a future in which humans live in harmony with nature, by: θecological processes worldwide”.
43. As a global organization, Greenpeace focuses on the most crucial worldwide threats to our planet's biodiversity and environment. --Stop climate change --Protect ancient forests --Save the oceans --Stop whaling --Say no to genetic engineering To maintain its independence, Greenpeace does not accept donations from governments or corporations but relies on contributions from individual supporters and foundation grants. Greenpeace is a non-profit organization, with a presence in 40 countries across Europe, the Americas, Asia and the Pacific. θ Greenpeace exists because this fragile earth deserves a voice. It needs solutions. It needs change. It needs action. Greenpeace
44. Enforceability – underfunded, under-supported. Diplomatic constraints – tied to the UN. Speed of Response – slower, through government action. Use of the media – limited, website. Activities – focus on consumption issues, energy, food, youth programs. Role – negotiate, monitor, implement environmental treaties. Provide leadership and encourage partnership in caring for the environment by inspiring, informing, and enabling nations and peoples to improve their quality of life without compromising that of future generations. Established in 1972. UNEP: United Nations Environment Programme
45. proposes effective ways for achieving the Strategy's aim identifies the priority conservation issues and the main requirements for dealing with them; θexplains the contribution of living resource conservation to human survival and to sustainable development; Secretariat/focal point: IUCN/UNEP/WWF Aim/comment: To help advance the achievement of sustainable development through the conservation of living resources. The Strategy: World Conservation Strategy (1980)
46. World Conservation Strategy Summary Points 1. Maintenance of essential life support systems (climate, water cycle, soils) and ecological processes. 2. Preservation of genetic and species diversity. 3. Sustainable use of species and ecosystems.