An evaluation of Biodiversity Action Plan under Biodiversity Governance: Case of Pakistan

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Key Point: The country has its biodiversity governance setup, but it is weak in terms of policy and implementation and relies on international organizations and collaborations timely. Progress of BAP in Pakistan it is still facing some problems. Wildlife, fisheries and forestry policies are still beyond to achieve the mission of CBD. Pakistan's biodiversity governance needs some recommendations and solutions for its sustainable development urgently. Proper supply of funds and the adequate implementation of BAP nationwide make the biodiversity sustainable development/management dream comes true. Indeed, CPEC is a mega project and a bind between two countries.

Abstract

Biodiversity governance is the backbone to ensure biodiversity livelihood. The Government of Pakistan considered biodiversity as a major component by following the signing of the National Conservation Strategy in 1992. Although Pakistan is working towards coordinated management of biodiversity in ecological areas but could not achieve targets of National Biodiversity Strategies and Action Plan and not fulfilled policy implementation to reverse biodiversity losses. Governance for effective biodiversity governance needs to be improved to counter some of the pressures that will enhance not only the status of the country but also the state of China Pakistan Economic Corridor. However, the author argues that the current system of biodiversity governance has been set up gradually and is too slow to achieve its objectives. This manuscript describes the current status, challenges, and problems of biodiversity action plan in and China-Pakistan Economic corridor biodiversity status in Pakistan

1. Introduction

Pakistan is among the countries that respond to the World Conservation Strategy (WCS) in 1991 and drafts the National Conservation Strategy (NCS) in 1992 (Hanson, Bass, Bouzaher, Samdani, & Zehra, 2000). In line with this strategy, Pakistan has formulated its first ever Biodiversity Action Plan (BAP) by year 2000. This action plan supports for Aichi Biodiversity Targets (ABTs) 2011-2020 and 14 and 15th Sustainable Development Goals (SDGs) implementation. At the same time, Pakistan pledges to implement the objectives of the Convention on Biological Diversity (CBD) (C. C. D. GoP, 2014). Legally, in Pakistan, Convention on Biological Diversity, Article 6 requires the development of national strategies, programmes or plans along with its incorporations into the sustainable use of biodiversity. Some parties incorporate relevant sectors, plans, programs and policies in biodiversity conservation strategies (Baig & Al-Subaiee, 2009). Although Pakistan has developed biodiversity action plans to fulfill the requirements of international commitments but unable to achieve the targets due to week biodiversity governance and improper implementation of BAP. While on the other hand weak governance and institutional frameworks, low literacy rates, poor infrastructure, small budgets, low political clout, and insufficient policy or strategic implementation tools are barriers in conservation and management biodiversity (C. C. D. GoP, 2014). As a result, Pakistan has not worked at the international and national levels for optimal biodiversity management, policy, and institutional development. Pakistan made 5th PNBSAP that is combination BAPs of all provinces. Pakistan's relevant Millennium Development Goals for biodiversity, targets 7a and 7b, are about to incorporate sustainable development into policies and programmes to reverse ecological damage and reduce biodiversity loss, respectively (C. C. D. GoP, 2014). Implimentation is unsatisfactory since the BAP was approved. During the formulation of the 5th Pakistan's National Report showesd that there is no action was initiated on 52% of actions, and 44.5% actions are some how partially or fully finished, and on ther other hand with five (5) actions are still under implementation. Targets are too complicated for its proper implimentation is one of the reason and they could not be fully took into financial constraints and lack of institutianal empowerment (MoCC, 2015). In this context, Pakistan needs to improve its implementation of

BAP and look for biodiversity governance. Pakistan is already grappling with some of the external pressures on biodiversity, such as habitat fragmentation in avian species (A. Ali, Altaf, & Khan, 2016), turtles (M. Z. Khan et al., 2015) and brown bear (Nawaz, 2007). Indeed, Arabs illegally hunt endangered species in the country. The study purpose was to investigate the current state of biodiversity action plan barriers to biodiversity governance, and the role of Biodiversity Action Plan to China-Pakistan Economic Corridor in Pakistan.

Xu, Wang, and others (1999) put forward their idea in context of China that has signed some international agreements and conventions, such as Chinas Agenda 21, Chinese Environmental Protection Action Plan, and other agreements, but it is still under the high pressure of population and economy, there is a severe contradiction between biodiversity conservation and development. Ma, Rong et al., (2010), told there were four obstacles for conservation of China's biodiversity, firstly the fragmentation, and disturbance of wildlife habitats, secondly overfishing and wildlife illegal hunting and thirdly climate change and pollution fourth and last is a invasive alien species. Pakistan and China also have the same problems with protected areas due to decentralized, lacks comprehensive classification, inadequate coverage of biodiversity and ecosystem services. In this regard, the ministry of climate change (MoCC) was still on hold due to the Sindh policy that downcast measures contrary to the wildlife conservation, that includes trophy hunting and the unkindness of humans towards wildlife forms. Ren et al., (2019) believes that the Global Plant Conservation Strategy (GSPC) aims to prevent the continued loss of plant diversity and species around the world. By 2018, China achieved GSPC goals 1, 2, 4, 5 and 7 instead of 2020. On the other hand, it is also committed to integrating in-situ and ex-situ native species restoration programmes. According to Sarfaraz (2006) case on environmental governance like in abbotabad at the local level, the study concluded that environmental governance was being more neglected, and he recommended environmental fiscal reform and the capacity to build local civil society to address environmental issues through collective action. Barrett, Gibson, and others argued in 2006 that two problems that weakened biodiversity management and governance were corruption, the other being the exploitation of natural resources, which came from a system and took many forms (Barrett, Gibson, Hoffman, & McCubbins, 2006). Nadeem 2008 also argue that Pakistan is showing poor governance between forests, wildlife sectors, and local communities, providing a weak foundation.

Although Pakistan had developed BAP, it had not been achieved for a variety of reasons, which had made the obstacles to biodiversity monitoring. Therefore, to protect biodiversity, BAP is mandatory and is committed by CBD. Therefore, the literature reviews the current state of biodiversity and environmental governance not only in Pakistan but in China it seems week. There are ABTs for SDGs 14-15 and 1, 2, 4, 5, and 7 implementations for Pakistan and China to complete by 2020, respectively. There is an imbalance between Pakistan and China, particularly between institutions and sectors, but China is quickly and effectively seizing it as compared to China. If environmental governance is neglected, the loss of biodiversity may be irreversible

2. Biodiversity governance status and policies in Pakistan

Legislatively, biodiversity is claimed to be involved in a broad policy approach (Lucas et al., 2019). In 1992, The Pakistan's National Conservation Strategy (NCS) came into existance that formulated a framework policy to encompass conservation and biodiversity. After that, comprehensive Biodiversity Action Plan (BAP) 2000 was prepared and later, in 2005 it is approved by the Pakistan Environmental protection council (PEPC) (S. R. Khan & Pervaiz, 2001a). BAP was made by the biodiversity working group (BWG), which aims to improve biodiversity and protected areas (GoP, 2015). Under Biodiversity Action Plan, there are many policies that look over biodiversity matter, such as the Climate Change Act 2017(I. U. Khan & Yaseen, 2017), National Wildlife Policy 2018 (draft) (Change, 2018), Plant Breeders' Rights Rules 2017 (draft) (Aziz-ur-Rehman & Mubeen, 2018), the Plant Breeders' Act 2016 and the National Forest Policy 2015. In Pakistan, environmental governance is generally weak (Beg, 2004; Naureen, 2009). Lack of clear policies, unreliable baseline information, and low budget has been blamed for the failure to institutionalize biodiversity conservation (Carew-Reid, 2002a; Desai, Krishna, Yang, Nakul, & Eklabya, 2011; Network, 2010). As a result, the loss of biodiversity continues to decline (GEMS, 2007). On the other hand, significant stakeholders of biodiversity in Pakistan are poor even do not get any initiatives to conserve biodiversity (ADB, 2006; Assessment, 2005; Desai et al., 2011; GEMS, 2007). Besides, many factors, such as technical and institutional, exacerbate the problem. In the field of biodiversity in Pakistan has some significant areas, such as wildlife, fisheries, forestry, and agriculture, which has sectoral policies but all are the week in terms of governance and management (Z. I. Khan, 2011). The latest policy is Wildlife Policy 2018 (Draft), as new policy was enacted, veto on hunting but Recently, the federal government has issued licenses to the Arab royal family to hunt precious and endangered entity, Houbara Bustard, sometimes with falcons, in different parts of Pakistan, despite strong opposition from at least two provincial governments (Bhagwandas, 2019; Nabi, Ullah, Khan, Amin, & Rauf, 2019). A tourist has hunted a Markhor, a Pakistan's national animal in Chitral for $92,000**,** while hunting trophy licenses are issued each year for Markhor hunting, with 80% money allocated to the local community and 20% in the custody of the wildlife department. But it also well for white billed vulture, Indus dolphin, snow leopard, black bear etc. Now Country's existing wildlife policy mainly concerns game animals, except for plants and non-wild (Wani, 2002) but also there is a need for other key threatened species (Z. I. Khan, 2011). Climate change act 2017, but apart from international and domestic pressures, it has not succeeded in reducing greenhouse gases and protecting the sinks and showing belongness to meet its commitments (I. U. Khan & Yaseen, 2017). Under the influence of Forest policy 2015, the Government of Khyber Pakhtunkhwa has started Green Growth Initiative 'GGI' in 2014 that aims to increase forest area by 2%. National Green Pakistan Program announced a Sustainable Forest Management project sponsored by United Nations Development Programme and Global Environment Fund that aims to strengthen forest protection policy mechanism but unfortunately failure cause of this policy is deforestation (Hasan, 2007). This policy also aims,to reduce carbon

footprint in economic sector projects (GoP, 2015). However, Pakistan still has low performance upon threatened plants (Alam & Ali, 2010). One of the major responsibilities of the forestry that it sets some master plans for watershed development, biodiversity, and soil conservation and also for the production timber in the country. In Pakistan, the chief origin of policy failure in forest management and wildlife is timber Mafia, less political consideration (Saeed, 2003), and "the rule of jungle." Forest department and wildlife while both sometimes treat as a separate department specially at federal level (Pellegrini, 2011).The core causes for the policy failure in fisheries in country is unsatisfactory fishery systems, Lack of enforcement, Lack of precision and traceability, Failure to follow scientific advice (Nazira et al., 2015), Flag of Convenience vessels (S. R. Khan & Khan, 2011) and overfishing (Laghari, 2018). So, to make strengthen the field of fisheries like other countries that they have established ecotourism, marine parks, mariculture and apiculture facilities to locals. Aquaculture under Fisheries policy (Siddiqi, 1992) is developing in the Pakistan, but the development does not appropriate with the potential. Best aquaculture management practices need to be achieved through expanded collaboration with stakeholders (Laghari, 2018). This policy is not responsible for conserving indigenous aquatic biota (Carew-Reid, 2002b). Shrimp culture in the pond might be the best policy, especially for the use of barren or less populated areas like coastal areas of Pakistan (Mukhtar & Hannan, 2012). It might be designating Marine Protected Areas (MPAs) to protect biodiversity along the coast of Pakistan (Siddiqui, Farooq, Shafique, & Farooqi, 2008). Nowadays, national food security and agricultural policy 2013 addressed several issues related to the CBD, such a, increasing primary production, integrated pest management, and improving soil management (Arshad & Shafqat, 2012). But unfortunately, there are some gaps and shortcomings in practice and decisions that do not reflect the rights, culture, and interests of locals (Gazdar & Mallah, 2013; Rasul & Hussain, 2015).

3. Institutional capacity and Biodiversity Action Plan monitoring in Pakistan

The Ministry of Climate change has the responsibility to coordinate the implementation of the National Biodiversity Strategy Action Plan (NBSAP) through its Directorate of biodiversity in Pakistan (Directorate of Biodiversity, 2006). Pakistan Environmental Protection Agency, Pak-EPA is recently working as parallel to MoCC nationally, fbut there are provisional EPA,s also exists. While under this agency, different provisional departments are institutionalized like Forest, Wildlife, and Fisheries. In order to coordinate with implementing bodies, a steering committee has been set in Pakistan as shown in Fig 1. Along with government Biodiversity-related Implementing bodies there are some private organizations like International Union for Conservation of Nature, Bioresource Research Centre (BRC), Snow Leopard Foundation (SLF), Global Environmental Fund (GEF) and World-Wide Fund for Nature (S. R. Khan & Pervaiz, 2001b) also exists. On the other hand, local NGO's like Aga Khan Rural Support Program has launched community-based mobilization program such as Mountain Areas Conservancy Project finance by GEF and United Nations Development Programme (M Anwar & Shank, 2000) because Country's funds for conservations are not sufficient to support (Z. I. Khan, 2011).

Several federal and provincial institutions are researching various aspects of biodiversity including Zoological Survey Department, Punjab Forestry Research Institute, Pakistan Museum of Natural History, Pakistan Forest Institute, Pakistan Agricultural Research Council. The National Council for the Conservation of Wildlife established and implement policies and programs for wildlife at the federal level.

4. Legal and Institutional capacity at Provisional Level

Under the Pakistan Environmental Protection Act (PEPA-1997), there is no section on the restoration of biodiversity, but the BAP 2000 deals nationwide. To strengthen the BAP, different agreements so far done like Convention On International Trade In Endangered Species (CITES) that was recently indicated for Markhor in Pakistan (I. U. Khan & Yaseen, 2017). At the provincial level, some departments like Agriculture, Livestock, Fisheries, Forestry and Wildlife are accountable for all biodiversity problems. Fisheries and Aquaculture Policy 2006, look for Sindh and Balochistan in Pakistan for marine and freshwater fisheries along with shrimp farming and aquaculture activities (Kausar, 2017). But Balochistan Sea Fisheries act 2014, trying to fulfilled the commitment to BAP (M. R. Ali, 2018). More while in 2010, under the 18th amendment to the Constitution of Pakistan, the Provincial EPA's could adopt their conservation strategies within their jurisdictions to mitigate threats and enhance biodiversity conservation (Maqsood Anwar, Jasra, & Ahmad, 2008). Section 41a of Provincial Forest Act, of all provinces except Khyber Pakhtunkhwa authorizes Federal Government to give rule outline for the timber movement across custom Frontiers.

On the other hand, Pakistan legal instrument also addresses the provision and requirements of CBD on the aspects of carbon sequestration and carbon credit marketing has been arise as a new article of trade under the United Nations Framework Convention on Climate Change (UNFCCC) (Rueff et al., 2011). Sindh Wildlife Protection (Amendment) Act 2008, section 17, look for the most endangered species (GoS, 2009). Mainly, Wildlife Boards has been established for provisional wildlife to provide policy formulation and supervision (Pakistan, 2014), but on the other hand, first proper wildlife policy 2018 is in the form of draft, and it is still on hold for the policy input from Sindh province.

Generally, the fulfillment of BAP is missing by the proper implementation in forest, wildlife, and fisheries departments due to week institutional coordination and coherence. BAP requires a revision of marine fisheries policy, legislation, and supporting regulatory frameworks. Fisheries policy is outdated and needs a review of marine fisheries policy, law and supporting regulatory frameworks both on Sindh and Balochistan.

5. Biodiversity governance before and after CBD and it's challenges in Pakistan:

Before the CBD, the Code for biodiversity protection was novel when Pakistan as a whole was in the subcontinent. Besides, the law expands the protection of domestic animals during the Mughal and Sikh periods. In 1927, the Forest Act became Pakistan's first comprehensive legislation, becoming the main legal instrument for forestry in Pakistan, punishing violators. Legislation for

wildlife and parks was enacted during 1954 as "Kohat Mazri Control Act" and in 1961 West Pakistan Fisheries Ordinance for marine life (Naureen, 2009). Some other acts and laws before the CBD are listed in Table 1. After that, Pakistan is to be counted among 188 countries (Byron & Treweek, 2005) that signed CBD at Earth Summit in year of 1992. After one year, the Government held preliminary discussions with the World Bank on the national response to the CBD. Here Some efforts made by Pakistan after the Rio Summit in 1992 are presented in Table 1. To date, Pakistan appears to have underperformance in the implimentation of CBD on biodiversity (Wani, 2002).

On the other hand, it has also made some efforts to address protection measures. Some attempts have been remarkable, as the state of protection of snow leopards has gone from endangered to vulnerable, as stated by the International Union for Conservation of Nature-Pakistan IUCN-P (WWF-P, 2017). With the establishment of the Vulture Safety Zone (VSZ) in Sindh, white vultures have also reduced their endangered status by increasing active nests (Murn, Saeed, Khan, & Iqbal, 2015). Same conservation and protection done by Sandspit and Hawkes bay, Karachi, for green and Olive Ridley turtles (Asrar, 1999; Firdous, 2000). The population trend of Indus River Dolphin was increased during 2001 to 2006 but felt again after a devastating flood in 2010 in Pakistan but Sindh Wildlife Department and other World Wide Fund-Pakistan (WWF-P) trying to rescue (Braulik et al., 2012; Waqas, Malik, & Khokhar, 2012). So, in this regard, the strengthening of biodiversity area, a conference of Parties (CoP), held in 2010 at Aichi-Nagoya, Japan, and finally, they adopted a Strategic Plan for Biodiversity for the year 2011-2020, with five strategic objectives and twenty Aichi Biodiversity Targets. Achieving its goals are somewhat fruitful like as the the current NBSAP is based on the Aichi Biodiversity Targets and Pakistan is working on to formulate a policy tool by 2018 besides the adoption of the Paris Agreement (ul Hasson, Saeed, Böhner, & Schleussner, 2019). As shown in Table 2, Pakistan has signed almost all significant agreements in the area of biodiversity and has made some progress on CBD. Recently CoP 2018 also emphases to achieve ABTs till 2020 as a reminder. As shown in Table 3, some threatened ecosystems have some recommendations for a better approach and some country's responses to restore and conserve the environment. It is analyzed that, Pakistan did well for some wildlife biodiversity but still have a broad margin to achieve. In general, all policies appear to be a week in the way of implementation besides a legal setup in Pakistan. There is a space to fulfill the gap of CBD commitment. On the other hand, there is low-budget and politically unwillingness nexus that could not let smooth implementation for laws and policies in Pakistan.

6. Biodiversity and Sustainable China Pakistan Economic Corridor (CPEC):

CPEC, in consort with positives aspects, it also has negative aspects on the local fauna and flora (Nabi, Ullah, Khan, Ahmad, & Kumar, 2018). It is worth noting during the past decade, a warning of the threats are becoming more visible on biodiversity in the areas where the planned road network is in a rapid expansion driven by CPEC (Abid & Ashfaq, 2015). The geographic location is a gateway to CPEC that consists of the northern mountainous areas. The northern

mountainous regions of Pakistan are inhabited roughly 50% of the state's biodiversity. The Himalaya is native to several endangered species including Siberian Ibex "Capra sibirica", Himalayan brown bear "Ursus arctos isabellinus", Snow leopard "Panthera uncia", Himalayan black bear "Ursus thibetanus larger", Leopard cat "Prionailurus bengalensis" in Mansehra and Himalayan Ibex "Capra ibex sibirica" in Kohistan (Haq, 2012; Shah, 2011). There is no biodiversity management and policy for the CPEC road route. China made Belt and Road Ecological and Environmental Cooperation Plan 2017 that promote Green Belt and Road for Pakistan, but this policy is more viable that already china shifted polluted industries to Pakistan favored by low labor rate and week policy adhere (Ascensão et al., 2018). In this region, the economic development and biodiversity are equally participated in the spatial area; hence, biodiversity is more likely to damage. There is a dare need for extensive dialogue among environmentalists and planners of China and Pakistan to peruse biodiversity matter. (Nabi, Khan, Ahmad, Khan, & Siddique, 2017).

7. Conclusion

The country has its biodiversity governance setup, but it is weak in terms of policy and implementation and relies on international organizations and collaborations timely. Progress of BAP in Pakistan it is still facing some problems. Wildlife, fisheries and forestry policies are still beyond to achieve the mission of CBD. Pakistan's biodiversity governance needs some recommendations and solutions for its sustainable development urgently. Proper supply of funds and the adequate implementation of BAP nationwide make the biodiversity sustainable development/management dream comes true. Indeed, CPEC is a mega project and a bind between two countries. Along with its benefits, it also threats to the northern area biodiversity, especially along its road rout. Make ensure CPEC route a sustainable project by protecting from all unsafe and polluted oriented projects. Biodiversity Action Plan should implement its power but not let them as a political will or a tentative transboundary matter. Ministry of environment and ministry of climatic change should enforce, achieve practically and fulfill the actions and plans of PNBSAP what they had promised for future sustainability.

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Pakistan before CBD	Pakistan after CBD
1912-Wild Birds and Animals Protection Act 1936-NWFP Hazara Forest Act 1961-The West Pakistan Fisheries Ordinance 1970-Baluchistan Sea Fisheries Ordinance 1974-The Punjab Plantation and Maintenance of Trees Act 1979-Pakistan Animal Quarantine Ordinance	1992-National Conservation Strategy 1994-Convention on Biological Diversity (CBD) 1997-Pakistan Environmental Protection Act 2000-Biodiversity Action Plan 2005-Pakistan Environmental Policy 2005-Pakistan Biosafety Rules 2012-National Climate Change Policy 2012-The Pakistan Trade Control of Wild Fauna and Flora Act 2012-Genetic Resources and Benefit-sharing Act, (Draft) 2013-National Food Security and Agriculture Policy (draft) 2017-Plant Breeders' Rights Rules (draft) 2015-National Forest Policy 2017-Climate Change Act 2018-National Wildlife policy (Draft)

Table 1 Updated Pakistan Institutional arrangements for Biodiversity Conservation before and after CBD. Source own constructed.

S: No	Conventions/Agreements	Year	Adopted Acts/Plans
1	Convention on Biological Diversity	Ratification on 26 July 1994	2000 Biodiversity Action Plan
2	Cartagena Protocol on Bio Safety to the Convention on Biological Diversity	Ratification on 2 March 2009	2005 Pakistan Biosafety Rules
3	Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES)	Entry into force 1976	2012 The Pakistan Trade Control of Wild Fauna and Flora Act
4	Convention on Migratory Species (CMS) or Bonn Convention	December 1987	
5	Member of International Waterfowl and Wetland Research Bureau (IWRB) and World Conservation Union (IUCN) and		

Table 2 International agreements in the field of biodiversity

S. No	Component/Ecosystems	Pressures/Threats	Significance	Responses	Recommendations	References
1.	Indus delta and coastal wetlands	Reduce the flow of freshwater from upstream diversions. Sea invasion cuts mangroves for fuelwood drainage	There is suitable habitat for avian, marine and Mangrove habitat.	Large-scale plantation (Mukhtar & Hannan, 2012).	Freshwater releases downstream of the Kotri Barrage (González, Basson, & Schultz, 2005). Establishment of marine parks, ecotourism, Mariculture and Apiculture	(Mukhtar & Hannan, 2012)
2.	Trans Himalayan alps and plateau	Fuelwood cutting along with overgrazing. Possibility of Illegal hunting and. Void strong policy	Unique biodiversity variety.	Khunjerab National park Pakistan. passages along the KKH (Y. Wang et al., 2012).	Relocation of Critical Species (Bhatnagar, 2008). Strong Conservation policy.	(Knudsen, 1999).
3.	Tropical deciduous forests (Himalayan foothills)	Fuelwood cutting and overgrazing	Significantly rich multi ecosystems	2017-The Green Pakistan Programme	Long-term conservation program and Reforestation	(W. Wang, Gauchan, Degen, & Shang, 2020)
4.	Moist and Temperate Himalayan forest	logging. Fuelwood cutting along with overgrazing.	It Is Global hot spot for avian diversity.	Green Growth Initiative (GGI)" in 2014. Billion Tree Afforestation" campaign (Kamal, Yingjie, & Ali, 2019).	To start this campaign in all remaining Provinces of Pakistan	(GoP, 2017-2030)
5.	Chilghoza forest (Suleiman Range)	Fuelwood cutting along with overgrazing. Possible hunting	Wildlife habitat risk	Chilgoza pine (pine nuts) forest Project (Urooj, 2019).	Don't allow animals for grazing. promote nut business	(Akbar et al., 2014; Sehgal & Khosla, 1986).

Table 3 (BAP-1999/IUCN) It is latest possible source of factual data and Some Threatened Ecosystems and some suggested Responses in Pakistan.

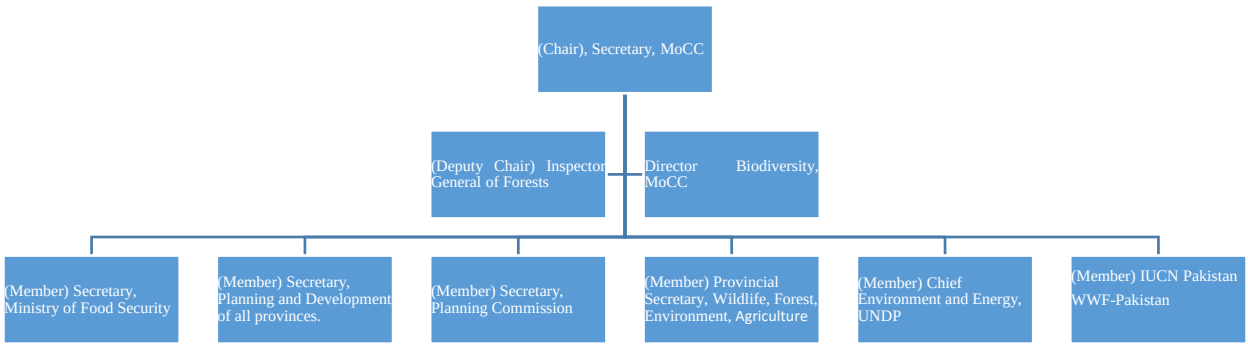

Fig 1 Pakistan Biodiversity Steering Committee at Federal/National Level. Source own Constructed.

Figure.

(Chair),
Secretary,
MoCC

(Deputy Chair)
Inspector General of Forests

Director
Biodiversity,
MoCC

(Member)
Secretary,
Ministry of
Food Security

(Member)
Secretary,
Planning and
Development of
all provinces.

(Member)
Secretary,
Planning
Commission

(Member)
Provincial
Secretary,
Wildlife, Forest,
Environment,

(Member) Chief
Environment
and Energy,
UNDP

(Member) IUCN
Pakistan
WWF-Pakistan

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