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ESCALATING NATURE POWER IN PROTECTED AREAS OF ALBORZ, TEHRAN

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Abstract: *The good resiliency of protected areas and their capacity to contribute to social and ecological solidarity require adaptation to uncertain socio-ecological conditions over time to carry long-range determination of communities and the conservation of their ecological systems. Some specified sites require major conservation because of their tremendous significance for the planetary biological community. Local communities and indigenous peoples are the best protectors of protected areas. They have profound knowledge in managing ecosystems sustainably and if have secure access to protected areas, no doubt they protect natural resources for now and future generations in an appropriate way. The result revealed that protected areas sustainability is more promising when local communities is involved in the process of conservation activities like; information collection, assessment and decision making. Also integrated management that concern the majority of stakeholders including local communities is more sustainable in protected areas.*

Key words: Protected Area, Resilience Capacity, Adaptation, Socio-Ecological System

Introduction

Protected areas make substantial benefits to the protection of the Earth's bio, geo and cultural diversity. They support ecological flow of energy and functions that are necessary for the environmental stability and wellbeing. The good resiliency of protected areas and their capacity to contribute to social and ecological solidarity require adaptation to uncertain socio-ecological conditions over time to carry long-range determination of communities and the conservation of their ecological systems. Conserving nature globally is crucial, including ecosystem services that provide welfare to humanity. Especially in developing countries since peoples' source of income extremely depend on nature. It is estimated above half of the world's total GDP to a certain degree or extremely depend on nature and reduction in biological diversity threaten more than 80% of SDGs targets. Protected areas are the Earth's connecting network of response to resilience capacity. Capacity can be considered as the competency and manner to attain a specific conclusion. In protected areas may be seen at Individual, institutional and societal levels (GEF, 2005 and Hough, J., 2007). Without them, the vulnerability to environmental crisis would rise up, while strengthening and escalating nature power will yield high natural resolutions to the environmental challenges. Since preventing biodiversity loss is one of the major goals in protected areas management, any performance in protected areas should be targeted towards management of biodiversity well-being.

In this regard, connectivity conservation contributes basic realization to fundamental changes taking place in corridor landscapes, through evaluating threats and conserving actions. Connectivity is a term refer to the movement of organisms between different parts of landscape (Lindenmayer, D. B. and Fisher, J., 2007). The theoretic idea of connectivity includes communication between main ecological processes, including the pattern of vegetation covering (Forman, R. T., 1995). Hence, the concept of connectivity because of the alteration of ecological systems and biodiversity lose has become very important consideration in biological conservation programs (Fitzsimons, J. et al., 2013a). Several species advantaging from wildlife corridors that connect compatible natural environment with each other (Haddad, N. M., et al. 2003). It contains species that do not utilize territory outside corridors such as open territory, also those that scatter only through appropriate habitat (Berggren, A., et al. 2002 and Driscoll, D., et al. 2014). Not all species utilize corridors (Lindenmayer, D. B., et al. 1993), and their use depend on that particular species, like behavior and social structure (Lidicker, W. Z., 1999 and Horskins, K., 2004).

At present time, the protected areas around the world are becoming very complicated organizations that demand worthy and qualified personnel. They require continuous and efficient management, like; sustain investment, multi-layer conservation and people participation to create healthy environment. Where most of the natural land converted into agricultural land or industrial development, protected areas are the only natural areas left for us to let the natural ecological processes to carry on. Protected areas provide us vital ecological services and by conserving biodiversity they are the basic foundation for sustainable development. We should manage protected areas through human capacity building, the investments in protected areas will emphasize our commitments to peoples, communities and nations of Earth. While the global human population amplifies rapidly, the overexploitation of the planet Earth goes on unabated that there is now unambiguous confirmation that the planet will definitely undergo the sixth considerable mass extinction of species in its evolutionary record (Wilson, E. O., 1992, 2002). Warming of the global climate system is happening now, that surely regarded as being caused by human activities (IPCC, 2013). Protected areas by securing ecosystems functions, facilitate adaptation actions to climate change. Natural ecosystems in protected areas build successful ways of mitigation for climate change. The advantages of adaptations and mitigations happen together when climate change set of tactics integrate protected areas in their model. Species distributions following climate change impacts have modified and will keep modifying, the only way to ameliorate the condition is

through protected areas connectivity with the broader landscape ecology and nature conservation (Juffe-Bignoli, D., et al., 2014).

To mention further, protected areas are essential for maintaining global biodiversity, but we face lack of data and figures on the scope of current global protected area network in curbing native extinctions. In fact, the purpose of protected areas conservation is to enhance environmental conditions as well as social and economic well-being from the ecological systems. There is wide evidence in support of protected areas in reducing the speed of biodiversity loss. Some specified sites require major conservation because of their tremendous significance for the planetary biological community. Local communities and indigenous peoples are the best protectors of protected areas. They have profound knowledge in managing ecosystems sustainably and if have secure access to protected areas, no doubt they protect natural resources for now and future generations in an appropriate way. In this respect, customary financing sources for conservation of protected areas are steadily under constraint. Innovative other options to these customary financing sources are required in order to assure the long-range successful ability of protected areas standing. Moreover, for reinforcing customary funding, detection of extra funding sources would have extra advantage for diversifying protected areas' financing sources. This builds the protected areas more manageable and assists them to resist periods of hard economic adversity.

The basic principles of escalating nature power in protected areas include:

-Building up effective management programs in protected areas.
-Enhancing resiliency action plan by adaptation and mitigation programs.
-Identifying ecological gaps in protected areas.
-Making an inventory of priority issues, then develop distinct strategies to tackle each issue.
-Developing individual, institutional and societal capacities.
-Engaging all the possible sectors and stakeholders in policy making processes.
-Securing protected areas action plans in annual budgetary proceedings at the national level.

Methodology

For the methodology, an alliance between biodiversity conservation and socioeconomic outreach has been developed. Also considered the integrated management involving empowering local communities and other stakeholders in the planning and conservation activities in the protected areas.

Geographical Area

Geological location is Central Alborz protected area. The Central Alborz protected area considered by the Department of Environment (DoE) as one of the largest protected areas in Alborz Mountain Range. The area begins from north of Tehran and extends to the Caspian Sea. It is situated in the three provinces of Iran, namely: Tehran, Alborz, and Mazandaran province. The area is approximately 400,000 hectares. In Central Alborz protected area 48 species of mammals, 156 species of birds, 1,400 species of plants, and 26 species of reptiles have been identified. The mountain peaks of above 4000 meters are located in this protected area. There are many rivers in this area.

Results and Discussion

Protected areas are sensible locations for conserving wild species, as well as the ecosystems in which species live and reproduce. Developing and reconnecting protected areas to preserve nature with immense ecological values are key solution in nature conservancy. Protected areas besides conserving biodiversity and ecological system delivery, demonstrate the most efficient strategic instrument for sustainable development. Protected areas are subjected to the climate change impacts that alter ecosystem functions and services, reducing the effectiveness of protected areas to provide resilience and nature-based solutions to environmental challenges. Around one million species are threatened with extinction. Biodiversity loss exert influence on our life-carrying capacity which ultimately pressurizes

societal health and well-being. Protected areas while take steps in serving and protecting species, they count as life buffering capacity for living creatures. Maintaining the integrity of species, curbing diseases and pests, and managing natural assets, all consider as the key elements in assuring ecological systems resilience. Moreover, protected areas raise the welfare of local communities and biodiversity conservation (Naidoo, R., et al., 2019; Bruner, A. G., et al., 2001; Geldmann, J., et al., 2014).

In spite of enhancing conservation attempts, biodiversity keeps degrading universally (IPBES, 2019) and poverty stands unimaginably high (World Bank, 2018), as happen in Central Alborz too. Also, as we know, the value of biodiversity and its potential to combat climate change through Nature-based Solutions (NbS) is widely recognized worldwide. In this regard, protected areas play a crucial role in the conserving biodiversity against increasing human pressure like excessive harvesting and poaching (Coetzee, B. W. T., et al., 2014; IPBES, 2019; Laurance, W. F., et al., 2012). Biodiversity sustainable harvesting in a well-managed protected areas deliver ecosystem services needed for sustainable development, faraway of what is happening in Central Alborz. Natural, healthy and administered ecological systems can build a diverse array of services on which human health and fortune depends. The main objective of NbS is to direct special societal challenges while meantime providing extensive environmental, societal, and economic gains (Cohen-Shacham, et al., 2016). These numerous gains are crucial component supporting NbS. They contribute to climate change mitigation and adaptation while meanwhile is providing gains among various segments, like; water, energy, agriculture, health, economy and societal prosperity (Seddon, N., et al., 2021).

The advantage of protected areas mostly is as such that they are well organized instruments for sustainable ecological management. Hence they support broad range of ecosystem services than unmanaged areas with a chance of quick degradation. Therefore, the productive action to cease the biodiversity loss in protected areas, may secure sustained ecosystem resilience that provide crucial services to society. The result revealed that in Central Alborz protected areas sustainability is more promising when local communities is involved in the process of conservation activities like; information collection, assessment and decision making. Also integrated management that concern the majority of stakeholders including local communities is more sustainable in protected areas. We observe, there is an immense social and political commitment for the safe keeping and management of Central Alborz biodiversity. Landholders and government are taking multi-actions to address the huge devastation of habitats. Community-based arrangements are determined by social networks. Realizing the function and circulation of information in social networks is a prominent know-how needed for successful management. Only by realizing the efficacy of the social network, management system in protected areas is able to energetically promote situational relationship. Acknowledging identification of protected areas as a constituent of a complicated social-ecological system, they should receive very effective comprehensive management and governance type. What makes protected areas complex is the nonlinearity connection and dependency among components of the system, hence minor change in one part may cause bigger change in another part or the entire ecological system.

Recommendations

-Create financial sustainability for protected areas.
-Strengthen conservation opportunity and participation for protected areas.
-Integrate climate change scenario in protected areas management.
-Recognize protected areas contribution to climate change adaptation and mitigation program.
-Recognize all possible restrictions that cause biodiversity loss in conserved areas.
-Safeguard vulnerable areas to climate change.

Conclusion

Protected areas are crucial constituents in building resilience to climate disturbances and determining sustainability achievement globally. Financing protected areas can furnish notable advantage to local and national wealth. Since efficaciously administered protected areas are an important instrument for protecting biodiversity, securing ecosystems adjustments and enhancing environmental resilience to climate change, by escalating nature power through multidimensional operations, we may maximize benefits that occur from protected areas. Via safeguarding ecosystems' function, protected areas deliver important ecological processes to its neighboring ecosystems, either through direct assistance or by possible rehabilitation to other parts of the landscape. Regrettably, the noteworthy advantages of protected areas have not been fully appreciated. Hence, protected areas often receive inadequate financial support for their effective management. Slight financing in protected areas can bud into huge economic and non-economic augmenter effect. Protected areas need investment like other fundamental infrastructure that are necessary for society and the economy to act appropriately. Economic, social and ethnic merits of protected areas should be addressed at the same time to secure a sustained influence on poverty alleviation, with knowing that the poverty is a multi-aspect implication.

The complicated structures of protected areas are combined of numerous distinct essence that produce a system bigger than its parts. This system is hold together by a network of ecological communication. Understanding this network communication by a good governance approach, escalate nature resiliency in protected areas. Based on result, one can conclude that, positive alliance exists between local socioeconomic outreach and biodiversity conservation in well managed protected areas. Also, the solidarity between local socioeconomic outreach and biodiversity conservation is more when national socioeconomic outreach is more on a right place. Moreover, we should consider the increased solidarity in management activities as a by-product of prosperous conservation programs in protected areas. There is a need to enhance the quality of protected areas' governance based on acceptable standards, principles, and merits, regardless of their type. The principles should encourage stakeholders including peoples for the greater effectiveness and equity program in protected areas quality governance. Protected areas are the inherent repository for biodiversity, needed to rehabilitate degraded ecosystems. Biological health and human well-being depend on the existence of functional ecosystems and their connectivity in landscapes. A comprehensive management in protected areas which incorporate economic, social and environmental concerns to active responsibilities would interest tourists, educators, local people, investors, and as totality the present and future generations. For system to escalate nature power, interventions to attain goals would leverage an effective and efficient impact on protected areas. Human activity is changing the composition of Earth’s biomes. Protected areas could supply unique nature-based solution for boosting successful conservation management in protected areas by enhancing ecological integrity in a vital landscape setting. With increasing ecological disruption, the protected areas management require better planning and governance approach. Protected areas should regularly engage local communities to strengthen intergenerational advantage to people in society.

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