Review Article

Effect of disharmony between ecosystem and human well being

Abstract

The review concentrating on the direct and indirect connection between elements of ecosystems services and human well-being and effect of disharmony between ecosystem and human well-being. Resources found from ecosystem are the benefits for human being and other habitants of environment. These consist like foodstuff, wood, and fiber for clothes. The human species, while buffered against environmental changes by culture and technology, is fundamentally dependent on the flow of ecosystem services. Association between human well being and ecosystem became a growing interest for researchers from past few decades. Ecosystem is a life support system for human species and all forms of life and viewed in the context of the health of the earth and its natural process of ecosystems. Ecosystem positively and negatively affects cognitive, emotional, social behavior, and physical health of an individual. Today it is a very big challenge for a community/society to maintain a balance in between functioning of ecosystems and use of natural resources. But in the name of economic growth, humans pay more stress on the environment by disturbing its natural functioning.

Key words: ecosystem, human well being, support system, natural resources, environmental stress

Introduction

A broad perceptive of the association between human beings and the natural environment has been of growing interest to researchers or scientists over the past few decades. This is evident in the large number of research exploring the effects of nature contact and feelings of association to nature on health and wellbeing of human being, and environmental behaviors and attitudes. Greater feelings of correlation with the environment are seen to promote physical health, and psychological wellbeing of individual as well as community including mood state, and community cohesion (Maas et al., 2009; Shanahan et al., 2016). Carrus et al. (2015) revealed that contact with environment positively affect cognitive, emotional, social behavior, and physical health of an individual. Better physical health and psychological wellbeing has also been connected with feelings of emotional connection to natural world (Brown and Kasser, 2005; Nisbet et al., 2011; Martyn and Brymer,2016).

Ecosystem is a life support system for human species and all forms of life. Human health (physical and mental) is viewed in the context of the health of the earth and its natural process of ecosystems (Swimme and Berry, 1994; Clinebell, 1996). Natural ecosystem provides life support services to human as well as other species to make their life possible. Human and other biology

has a basic need for water, food, fresh air and shelters etc. Human species need health benefits which are derived from complement of other species, intact watersheds, climate change system, genetic diversity and biodiversities. All of these services also contribute to a good quality of life by influencing the well-being of an individual and society. Natural ecosystems make human civilization possible on earth. Unfortunately most of the human beings believe that all of these services which provided by mother nature are valueless and had no traditional economic value (Johnston et al.2017and Jordan et al. 2010). All human being as community directly and indirectly pay significantly for their loss through infrastructure and other policy costs for e.g. watershed treatment plants, construction cost, losses in soil fertility, increased illness and significant decrease in basic human well-being. Decisions made by human and their constituents have some kind of adverse effect on the amount and quality of services provided by the ecosystems. Today there is a need to emphasize the interrelated aspects of human well-being and the functioning of ecosystems whether these are natural or human altered (Johnston et al.2017). Life of every species and economy is dependent on natural resources which are provided by natural ecosystems (Daily G.C. 1997). Today it is a very big challenge for a community/society to maintain a balance in between functioning of ecosystems and use of natural resources. Natural resources like goods like food, water, fiber, timber, and other supplies have significant substantial and insubstantial value. But in the name of economic growth, humans pay more stress on the environment by disturbing its natural functioning. Human being have changed different ecosystems, costal ecosystem (Worm et al 2005), wetland resources (Zedler et al. 2005), environment loss and tropic crumple (Dobson et al. 2006), pollinator declines (Potts et al. 2010), loss of soil quality and agricultural production (Sandhu et al. 2012) extremely in the last several decades (Daily G.C. 1997) in order to meet increasing demands for freshwater, foods, shelters, means of transportation and fuel. These changes became necessity for the society to meet the basic needs of world's population but these changes have caused permanent losses in ecosystem structure and function for e.g., diversity loss, loss of ecosystem capacity for service generation as well as our perceptions of place, comfort and well-being (Chawla 1994, Summers et al. 2012).

Different environmental factors can influence human health in many ways including social, emotional, economic, psychological, physiological, behavioral and genetic foundation (Meyer A 2014). It is essential to notice that, in several cases these determinants of health could be more important than the effects of nature contact on specific outcomes. Basic environmental

factors determining levels of mental illness and health but these are not limited to marked demographic shifts in the world's population, social shifts to increased stress and being alone, physical activities shifts to more inactive lifestyles, and certain aspects of development of urbanization leads to a loss of many areas for experiencing nature closely on a regular basis for some people (Cox et al. 2017). Current lifestyles are associated with decreased routine nature contact in urban living (Glaeser 2011). Metro cities are centers of employment opportunities, wealth, access to good education, health and medical services and cultural improvement.These aspects of life may supportto mental health (Schwarz et al 2015). Though, these can also be connected with low access to natural world, particularly for those who are living within economically underprivileged urban areas (Skar et al. 2009). Some other factors contributing to a decrease in environmental contact include supposed barriers such as fear (Hartig et al. 2016) which leads to increased time spent inside the house and on screens, and reduce the participation in outdoor recreation activities. In recent decades, researchers in public health and health economics have intensified experientialand experimental research on the role of ecosystems and the environment to promote human well-being, including mental health (Bosch and Depledge 2015, Frumkin et al. 2017 & Hartiget al.2011).

Ecosystems services and Human being

Human health is directly depends on ecosystem services. Ecosystems' natural services are co-produced by the interactions between nature and human being (Palomo et al., 2016; Reyers et al., 2013). Different mechanisms contribute benefits directly to different domains of human well-being, for example, physical and mental health (Doyal& Gough1991, Chaigneau2013).Ecosystem provides food, fresh water after natural purification, and disease regulations. These are very essential in decreasing child mortality, improvement in maternal health, and fighting against different diseases. Changes in ecosystems can influence the profusion of human pathogens which leads to outbreaks of diseases such as dengue, malaria, diarrhea and cholera and the appearance of new diseases like COVID-19. Natural process of ecosystems protects human being from natural hazards. People live in areas that are open to extreme environmental events such as floods, harsh storms, forest fires, and droughts. The changes in ecosystems affect the likelihood and the severity of extreme events by regulating global and regional climates. Healthy and natural process of ecosystems can also reduce the impact of extreme environmental events by regulating floods or protecting coastal areas from

storms and hurricanes. Natural disasters need investments in natural disaster protection which impose long-lasting stress on social, ecological and financial systems that contribute in human well-being. This became a challenge for societies to find ways to protect the socio-ecological systems on which they depend in the face of constantly changing ecosystem and natural hazard threats (Summers et. al. 2017). Climate change regulates the quality, quantity and timing of ecosystem servicessuch as fresh water, food and fresh air. Changes in ecosystems create vulnerabilities for human being and sectors that depend on the natural services. Different types of vegetation provide climateregulating services by capturing carbon dioxide, heatand other environmental pollutions from the environment. Ecosystem services such as water and erosion regulation, natural hazard protection, and pest control can help protect communities from climate-induced events such as increased floods, droughts, and pest outbreaks.

Natural ecosystems fulfill the need of water by regulating the water cycle, filtering impurities of water and regulating the erosion of soil from the upper layer of earth in to water. Increase in population,trade and industry development lead to rapid need for water resource development, to meet these needs many natural functioning systems have been replaced with highly modified and human-engineered systems. Needs for irrigation, domestic water, power, and transport are met at the expense of rivers, lakes, and wetlands that offer recreation, scenic values, and the maintenance of fisheries, biodiversity, and long-term water cycling. Modified human engineered systems adversely affect the natural water cycle.Ecosystems are very important for food production; due to massive increase in growth of population there is stress to increase agricultural production in the short time at the cost of ecosystems' long-term power for food production. Excessive use of natural resources to satisfy needs of increased population for food and other services can wear downthe ecosystems by soil degradation, water depletion, and contamination;fall down of fisheries, or loss of biodiversity. Provide habitats for a variety of wildlife. Biodiversity matters for human health. Micro-variables such as birds, plants, wildlife, and native species create a bond between people and natural places (Heezik and Brymer2018 and Schebella et al 2017).Billion of poor people live in rural areas. They directly depend on nature for their livelihoods and well-being: food and agricultural production, accessibility of freshwater, and protection from natural hazards. Rural population in developing countries is particularly susceptible to environmental change due to their direct reliance on ecosystems and their natural services (Doyal and Gough 1991). Dreadful conditions of these natural services can mean

malnourishments, hunger and death. Reserves in ecosystems natural service preservation and restoration can improve rural livelihoods and be a stepping stone to eliminate poverty of rural people. Sustainable Development Goals (Griggs et al. 2013, Sachs 2012&UN 2015) highlight the linked challenge of maintaining ecosystem integrity while addressing poverty and inequality. This challenge requires institutions, behaviours and governance systems that support both benefits from ecosystems to people, and the stewardship of those ecosystems (Guerry et al. 2015).

Conclusion

It is very difficult to develop useful and informative relationships between ecosystem services and human well-being due to lack of continuously accessible data to show a fundamental relationship between natural services and human well-being. Keeping in view these points there is an urgent need to combining natural/environmental sciences and social sciences data, approaches to research studies and interpretations. Even inside these disciplines, the combination of data representing indicators to create indices or demonstrate connections is highly debatable. Some scientists, researchers and policy makers recommend that summery of assessment tools (e.g., models, indices, statistical assessments) not have meaningful explanation and have little value in the actual world (Booysen 2002, Salteli 2007). Some policy makers argue that the real world is a multifaceted interaction of economic, social, and ecological activities where focus on single issues is inadequate to represent truth(Carpenter et al. 2009, Daily et al. 2009 and Haines and Potschin 2010). No matter who we are, or where we live, well-being of human completely depends on the natural process of ecosystems function. (Fisher et al. 2009, Groot et al. 2010) Community and human well-being is essential for a holistic policy view that minimizes accidental consequences (Summer et al. 2016).The research described in this chapter provides a deep understandingon ecosystem and its importance in human well-being, but important work still needs to be accomplished. The complexity of the relationship between natural services and human well-being raise an urgent need to do further researches with the inter-disciplinary scienceswhich will bring scientists together from different fields like biologists, social scientists, ecologists, economists, and environmental specialists. Primary goal of these researches is the development of anevaluation system mainly based on human well-being and well-being enhancement through alteration in the use of natural resources. It is further expected by the inter-

disciplinary team researchers to describe these needs to construct a stronger science for real world and construct a stronger socio-ecological science that reflects the fact that natural ecosystems and human well-being directly or indirectly affect each other.

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