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Original Research Paper

Arid Regions: The Unappreciated Gifts of Nature to Humans

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Arid land ecosystems, although providing a wide array of goods and services, are not always recognized as fully as other terrestrial ecosystems on the planet. Most previous works gave a picture of arid land as being barren. Therefore, these have resulted in discouraging both national and international policy makers in including arid land initiatives into their programs. The present article identifies some certain goods and services that arid lands can offer which are vital to human survival.

Keywords: Arid Region, Nature, Humans, Gifts.

INTRODUCTION

The arid regions of the world occupy a very extensive area of the continental land masses and constitute more, nearly one half of the land surface of the earth. The major part of the African continent is arid and has a greater potential which are often not realized. Encompassing grasslands, agricultural lands, forest and urban areas. Arid regions have supported people's livelihoods for thousands of years. Today arid regions are home to approximately two million people worldwide and support many modern cities, such as Cairo, Cape Town, Mexico, etc.Many arid land dwellers make their living as livestock herders and small scale farmers.

In the arid and semi-arid regions of the world, water resources are limited, and under severe and increasing pressure due to expanding populations, increasing per capita water use and irrigation. Point and diffuse pollution, increasing volumes of industrial and domestic waste and over-abstraction of groundwater provide a major threat to those scarce resources. Floods are infrequent, but extremely damaging, and the threat from floods to lives and infrastructure is increasing due to urban development. Ecosystems are fragile, and under threat from groundwater abstractions and the management of surface flows. Added to these pressures is the uncertain threat of climate change. An effective water management is essential, and this requires appropriate decision support systems, including modeling tools.

The biological resources of dry lands are both unique and vulnerable; and loss of dryland species increases the threats to the lives of millions of people these are some of the reasons why the protection of biodiversity and sustainable use of resources in drylands is an important concern and also educating the locals on the importance of the available resources in order to appreciate the gifts of nature. In underdeveloped and developing countries, successful experiences in conserving biodiversity and utilizing sustainable resources have not been widely publicized and hence recognizing the value of the areas is always not considered as a problem.

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Arid land assessment and management initiatives to date has failed to generate adequate interest and funding, largely because investors development agencies and the public interest have an incomplete understanding of the full range of valuable such lands can offer, hence the aim of this article is to identify and examine some set of goods and services that arid lands can offer.

ADAPTATION OF PLANT AND ANIMAL SPECIES TO ARID LANDS

The climatic and variable water supply in Arid lands present challenges to plant and animal survival, but many species have evolved with special adaptations that allow them to cope in that environment. One common plant adaptation is the development of deep and extensive root systems. Some animals adapt by becoming inactive, using shade and taking cover underground during the hottest times of the day.

IMPORTANT GOODS AND SERVICES THAT ARID LANDS CAN OFFER

Popular misconception holds that arid lands are empty, barren places. However, while the hardship for Humans living in arid lands is rarely disputed, arid land has a lot of good and services that if utilized properly can support more lives that it is supporting before. Initiatives such as the Degradation Assessment of Drylands (LADA) or the united nation Convention to combat Desertification (CCD), have emphasized the damage that arid lands ecosystem have incurred due to human activities.

Support for these programs has the potential to grow significantly if they called for more attention to the diverse, productive capacities of Arid lands, while simultaneously incorporating the optimization of dry land resources used into their objectives. Some goods and services that arid lands can offer includes the followings:

Plant Species

Arid lands are endowed with a number of plant species of food value which yield edible leaves, fruits, seeds, roots,rhizomes etc. Many of our major food crops, such as wheat, barley, sorghum, and millet originated in arid lands. Today, wild varieties of these plants serve as sources of genetic plant materials for developing drought resistance crop variety.Apart from crops, arid lands also have a lot of economical and medicinal value to man. Although the nutrition value of a majority of Arid trees is not precisely known, but most of the products obtained from these zones possess high nutritional values, viz. *Moringa oleifera*, *Tamarindus indica*, *Aegle marmelos*, *Ziziphusmauritiana Capparis decidua*, *Prosopis cineraria*, *Balanites eagyptiaca* etc.

Arid and semi-arid zone vegetation comprise a wide range of edible fruit-bearing plant species:Salvadoraoleoides, Balanites aegyptiaca, Cordiadichotoma, Ziziphus mauritiana, Prosopis cineraria., Capparis decidua, etc. Many of the species mentioned play a multiple role in the dry zone agroforestry systems, providing soil cover, wind protection, fuel wood and fodder. However, they are often undervalued and underutilized, as more exciting exotic fruits become accessible.Since most indigenous fruit trees have not much been cultivated on-farm, there is only scant and dispersed knowledge about their fruit production and fruit nutritional values. Some nutritional studies on a few fruits from arid zone have been reported (Duhan et al., 1992; Mala and Meena, 2004). More than any other use today, people rely on arid lands to provide forage for the production of domestic livestock. Some of the highest livestock densities in the world are in arid lands of Asia, Africa, the Middle East, and South America. From cattle, sheep, and goat, to horse and camels, arid lands support large variety of domestic animals, which become the source of meat, milk, wool, and leather products for humans.

Animal Species

Arid lands provide habitat for animal species from micro-organisms, to ants, grasshopper, and snakes to large carnivores such as cheetahs and leopards. Some areas have been identified as especially important to the survival of these uniquely adapted animal species.

The World Wildlife Fund-USA (WWF) has identified 232 ecoregions as outstanding of world's diverse ecosystem and priority targets for conservation actions. Of the 138 terrestrial ecoregions 31 can be characterized as arid land ecoregions, containing some of the most important biodiversity in the world today.

Freshwater

Freshwater resources in arid lands, often limited and variable in availability, are important water sources for drinking, irrigating crops, and supporting wetland flora and fauna. Water basins in arid lands are found on every continent, ranging from small (52 thousand km2) to very large (3 million KM2), from low population densities (1 person/km2) to high population density (nearly 400 people/km2).

While the number of wetlands in these basins in arid lands is generally low, many contain wetlands listed as internationally important.

Tourism

Arid lands have become major tourist destinations. Tourists may be attracted by the open, vast, and picturesque landscapes of the areas. Others may rely on arid land areas for hiking and camping, hunting, wildlife-watch, or photography.

Some specific arid land sites are considered culturally and spiritually important.

Energy

Arid lands provide energy resources to local populations as well as global markets.These resources include wood fuels and a variety of fuel minerals. In some cases, energy resources, supply local people with daily heating and cooking fuels. In fact, in Africa, households use more wood fuel than the industries and commercial sectors.

Carbon Storage

Over time, human activities have altered the amount of carbon that flows through and is stored in various reservoirs. To offset

the global warming caused by climbing carbon concentrations in the atmosphere, countries actively are seeking ways to reduce atmospheric co2 by increasing carbon storage capacity on land. Arid lands, as an ecosystem with extensive surface area across the globe, can store large amount of carbon, most of it in the soil rather than in vegetation. They have thus been suggested as potential candidates for major carbon storage efforts.

CONCLUSION

Arid lands support flora, fauna and people in an important and often unique ways. Enhancing awareness of these benefits can do more to raise the support that arid lands initiatives need to function more efficiently. Programs would then be more capable of sustainably managing and protecting arid land resources, ensuring that humans can enjoy and profit from arid lands for generation to come.

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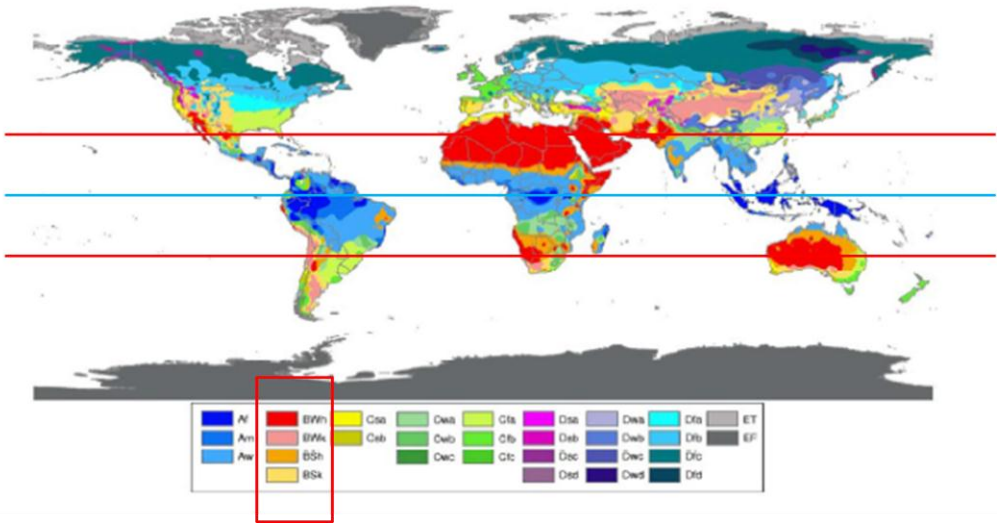
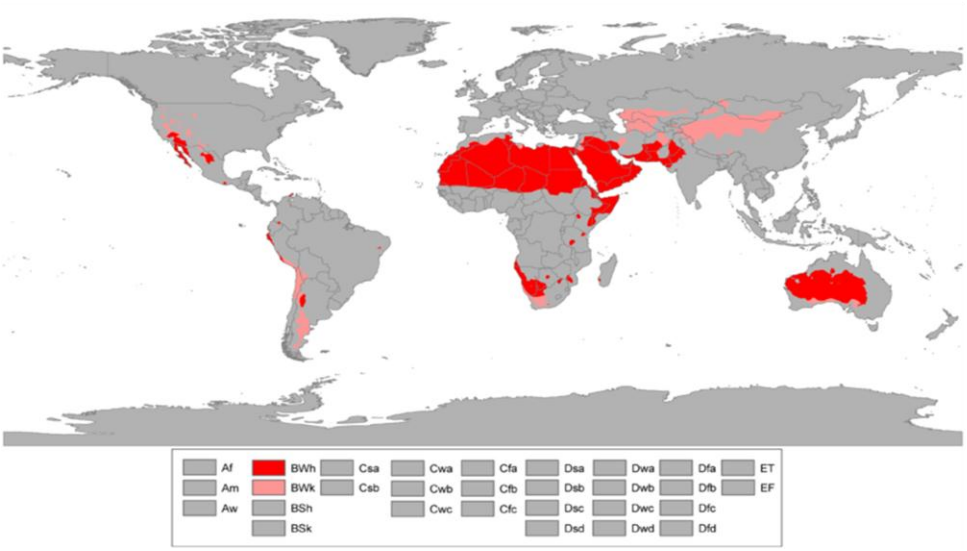
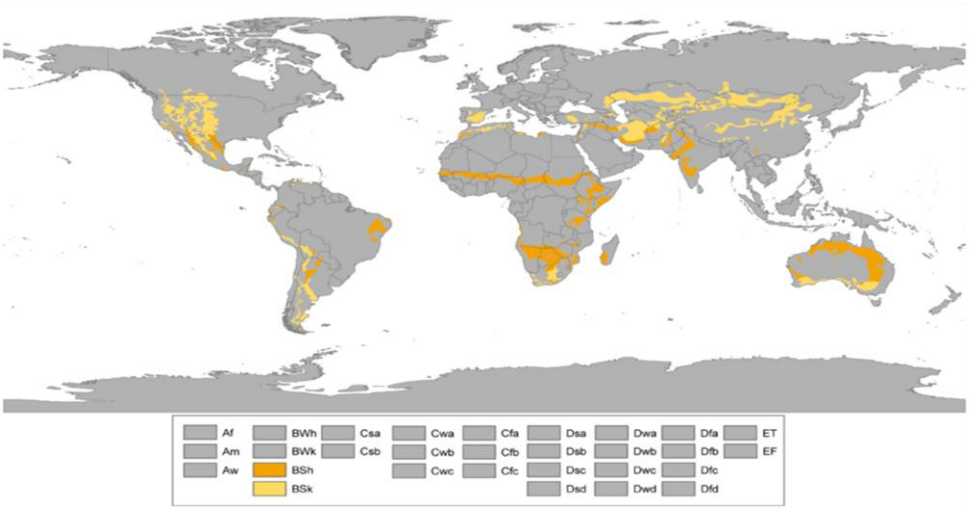
Where, on a map, do we find Arid ecosystems?



Arid and Hyper-Arid



Semi-Arid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