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## NET, IAS, State-SET (KSET, WBSET, MPSET, etc.), GATE, CUET, Olympiads etc.: Science and Technology Biodiversity Information Management

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### Biodiversity Information Management

#### Legal Aspects

1. Natural resources routinely inventoried and monitored include those with direct economic significance, such as minerals, timber, land and soil, agriculture production and water resources. Biological and genetic resources are increasingly viewed as natural resources with potential economic value. In addition, such resources play a key role in providing ecosystem services maintaining the air, water, soil climate and other environmental conditions essential to human survival.
2. A wide variety of resources are required for the objective assessment of the extent of biodiversity and the realization of its potential both to benefit humankind and to contribute to the well being of the planet. Biodiversity information refers to global biodiversity data that have been organized, integrated and to some extent analyzed. The development and use of biodiversity information has not been a priority of government and most efforts in this area have been undertaken by the scientific research community or to a lesser degree, by the nongovernmental sector. Broadening the use of biodiversity information from these to other sections of society is a principal challenge.
3. Use of biodiversity information generally depends upon specific motivations. These principle categories of motivations include:
  - a. Public Policy motivations: These motivations primarily involve compliance with laws, rules, regulations or treaties. They derive from all levels of human activities, from village established rules, through state-or national-level laws and policies to international treaties.
  - b. Private Sector motivations: These motivations relate to the need for biodiversity information to advance commercial interests. Companies involved in plant breeding, ecotourism, technology or natural resource management may have a vested economic interest in receiving and applying such information. In addition, the private sector is increasingly seeking biodiversity information to avoid potential environmental problems or to develop contingency plans.

- c. Public interest and cultural motivations: These include efforts by both governmental and non-governmental institutions, and individuals, to apply biodiversity information in ways that advance the conservation and sustainable development of natural resources.
  - o Public interest incentives act as primary motivators for biodiversity information management, which takes the form of encouraging proactive efforts of encouraging proactive efforts for environmental protection, such as establishment and management of protected areas. Access to environmental information has also proved to be a powerful force for empowering local people to take an interest in and feel responsible for their biodiversity resources. Cultural motivations including scholarly pursuits and incentives help to document knowledge about local plant and animal species and are responsible for the vast amount of biodiversity information. In addition to being the major source for exploration and information generation, these academic and scholarly endeavours also constitute a major incentive for the use of existing information.
- 4. A substantial part of the biodiversity in India exists in the Protected Areas declared under the Wild Life (Protection) Act, 1972, or in the Reserved and Protected Forests under the Indian Forests Act, 1927. The jurisdiction over these areas vests with the State Forest Department.
- 5. The proposed law relating to biodiversity drafted by the Ministry of Environment and Forests works on CBD's premise that the state has the sovereign right over its genetic resources. The law proposes to establish authorities at the national, state and local levels to deal with the issues of access to genetic resources. However, the issues with regard to 'ownership' jurisdiction, and inter-play with existing laws are yet to be addressed and resolved.
- 6. While access to information is generally important to biodiversity conservation and management, there must be some restrictions and the information may be governed by statute. The breadth of information needed for biodiversity conservation and management means that privacy conflicts are bound to arise. Many corporations and individuals may resist the collection of information by outsiders on private land, yet collecting such information may be essential to the effective management of biodiversity found there and therefore be required by law.
- 7. The goal of biodiversity information management is to strike optimal balance in conserving the diversity of nature and advancing human sustainable development, governments, citizens, international organizations and businesses will have to co-operate in finding ways to support the essential processes of the planet, on effort that depends on maintaining biological diversity.

## Solar Homes

1. In recent times, efforts have been underway to design buildings in line with the concept of building-integrated photovoltaic (BIPV) to minimize energy requirements. However,

this is still in the concept stage and is yet to prove its sustainability over a period of time.

2. India's first green housing project facilitated with building-integrated solar power has been developed in Kolkata. *Courtesy: Science Reporter*

## Frequently Asked Questions (FAQs)

- **What is the principle behind light emission by a firefly?**

(- ka...@ on 21-Apr-2023)

### 1 Answer

A firefly's bio luminescence is produced by a chemical reaction within its body. Calcium, adenosine triphosphate (ATP), the substrate luciferin, and the enzyme luciferase must all be present in the light organ which is present on the abdomens.

- ka...@ on 21-Apr-2023