

Special Issue

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GREEN INSIGHTS



Forest-Derived Goods of Gujarat



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Environment Literacy - Eco-labelling and Eco-friendly Products

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Foreword

On the occasion of World Wildlife Day, 2024, through this newsletter we intend to appreciate the wildlife which is often overshadowed by the charismatic wild animals. Wildlife encompasses all forms of life, including animals, plants, and microbes, that exist independently of human control. When the term “wild” is mentioned, people often immediately think of iconic species like tigers, lions, ostriches, snakes, and giraffes. However, wildlife extends far beyond these charismatic creatures. It plays a crucial role in maintaining the ecological balance of vital ecosystems such as rainforests, wetlands, and coral reefs, and also provides essential services and resources such as food, medicine, and timber. One of the core areas of the CERC-

EIACP is Eco-Products. Let’s examine which products we use are also wildlife, akin to animals like tigers, lions, and panthers. Through this newsletter we have made an attempt to list forest produce gathered by forest dwellers for consumption or livelihood, specifically in Gujarat.

The initial section of the newsletter offers insights into diverse wild plant species utilized by both forest dwellers and local communities across various regions of Gujarat. The subsequent segment emphasizes strategies for harnessing the benefits of invasive plant species for local gains, frequently in terms of financial returns.



Wild fruits and vegetables obtained from Forests



Since our early schooling, we've been taught about the importance of forests, highlighting resources like timber, fruits, medicinal plants, and honey. However, the extraction of these resources is governed by specific regulations outlined in the Forest Rights Act of 2006. It's crucial to understand that not everyone has the authority to harvest these products; rather, it's the forest dwellers who possess this privilege.

The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 (FRA) stands as a significant legislation acknowledging the land rights of forest dwellers, including Scheduled Tribes and other traditional forest inhabitants who have lived in and depended on forests for their sustenance for at least 75 years. According to FRA provisions, these forest dwellers are entitled to gather Minor Forest Produce (MFP) for their livelihoods.

The inhabitants living in the vicinity of forests have acquired knowledge of utilizing certain elements of biodiversity for their advantage through experimentation and experience. Let's delve into some notable forest tourism spots in Gujarat and explore the wild products being marketed or consumed by the forest dwellers. The forests obviously are supposed to be rich in biodiversity. Tourists visiting forest areas, engaging in various forms of tourism such as eco-tourism and religious tourism, often come across locals selling a variety of wild fruits in these regions.

A. Gir National Park and Sanctuary, Saurashtra

Gir, the final refuge of the Asiatic Lions, holds significant ecological importance within the Saurashtra peninsula of Gujarat. Its undulating landscape, adorned with deciduous trees interspersed with patches of grasslands, serves as the habitat for a diverse array of wildlife and plant species. Tourists can often observe locals selling wild fruits in famous Sasan village, as well as the iconic narrow gauge train connecting various villages in and around Gir.

- **Rayan** (*Manilkara hexandra*): This indigenous, slow-growing tree thrives in Gir and its surrounding regions. Its fruits are highly prized by numerous fruit-eating birds and animals.
- **Java Plum** (*Syzigium cumini*): It is another notable wild fruit indigenous to the region, commonly known as Jambu or Ravana locally. Recognizable by its unique purple coloration, which often tints the tongue, this fruit boasts a rich nutritional profile, abundant in vitamins, protein, and water.
- **Glue Berry** (*Cordia dichotoma*): This short to medium sized deciduous tree is native to Indian subcontinent. It is locally known as Gunda. Its raw fruits are pickled, often alongside raw mango, while the ripe fruits, light pink in color, are favored by local fruit-eating birds and animals.



- **Coromandel ebony** (*Diospyros melanoxylon*): A well-known tree of dry deciduous forests, its leaves are utilized in the preparation of traditional Indian Beedis. Locally it is called Tendu.
- **Wild Jujube** (*Ziziphus nummularia*): Tiny bright red berries, locally known as chani bor grows on small to medium size bush. The berries attracts small rodents like rats and gerbils.
- **Indian Bael** (*Aegle marmelos*): This sacred tree in Hindu and Buddhist religions has fruits with woody shell. The fruit is rich in Vitamin C, and are eaten either fresh or dried.
- **Palash** (*Butea monosperma*): Famous tree of Indian subcontinent. The bright orange flowers are used in preparing traditional holi colors. In many villages, the leaves are used to make food plates. It is recognized by the name Kesudo locally.
- **Wild cucumber** (*Cucumis callosus*): Locally known as Kachari is a wild vine which is cultivated also, produces small oval shaped fruits. The fruits are dried up, and deep fried in oil, sometimes also roasted and is used as food.
- **Kair** (*Capparis decidua*): Kair or kerda is highly branched shrub which has small green (unripe) berry like fruits. The fruits are pickled.

Many such wild plants are used by the locals for personal use, including medicinal use.

B. Tapi, the Dangs and Surat, South Gujarat

The Western Ghats, renowned as one of the biodiversity hotspots in the Indian subcontinent, commence from the southern tip of Gujarat, near the Maharashtra border. This region features Type 3B Tropical Moist Deciduous Forests.

- **Grey downy balsam** (*Garuga pinnata*): Garuga, locally known as Kakad is a large tree, which has round, fleshy, gooseberry size fruits. These fruits are eaten raw or pickled.
- **Karamda** (*Carissa spinarum*): Karamda is a thorny shrub with small fruits which are eaten raw and are also cooked.
- **Kanthar** (*Ziziphus oenopolia*): Kanthar or jackal jujube is a thorny scrub which produces small red berries which consumed by rodents and even humans.
- **Ice apple** (*Borassus flabellifer*): The fruits are black to brown with sweet, fibrous pulp and each seed is enclosed within a woody shell.

Locally it is called Taad or Taadi

- **Sage leaved Alangium** (*Alangium salviifolium*): Locally called Ankol is a tall thorny tree. In Ayurveda the roots and the fruits of ankol are used for treatment of rheumatism, and haemorrhoid.

A lot of other wild plants are used for a variety of purposes.

C. Central Gujarat and North Gujarat

Sanctuaries located in Central and North Gujarat are renowned for their sloth bear population, such as the Shoolpaneshwar Wildlife Sanctuary, Jessore Sloth Bear Sanctuary, Ratanmahal Wildlife Sanctuary, and Balaram-Ambaji Wildlife Sanctuary. These forests primarily consist of dry deciduous vegetation, characterized by a significant presence of teak, mahua, timru, and palash. Below are some key wild plants utilized by local people.

- **Roselle** (*Hibiscus sabdariffa*): Locally known as Khati bhindi or Ambodi or khate fule. The leaves and fresh calyx are used as vegetable.
- **Gangarasi** (*Grewia hirsute*): It is a shrub or a small tree with small fruits which are consumed by the tribal people.
- **Black oil Plant** (*Celastrus paniculatus*): Large woody climber locally known as Mal kangani. Its Young flowers are used as vegetables, and oil from seeds is used to cure certain body pains.
- **Kusum** (*Schleichera oleosa*): Big sized tree with tiny plum sized fruits are consumed by locals.
- **Kavach** (*Macuna prurita*): An annual climbing shrub produces long seed pods, with up to seven seeds which are black or brown in colour. The seeds are often consumed after roasting.
- **Gegadi** (*Gardenia uliginosa*): A small tree with thorns with small berries which are used as food by tribals.
- **Erect Leucas** (*Leucas stricta*): Erect small herb, locally known as kumbi. The leaves are used as vegetable.
- **Tamboli** (*Ehretia laevis*): This fast growing small tree with white fragrant flowers produces small red berries (green when unripe) which are relished by the locals.
- **Polynesian arrow root** (*Tacca leontopetaloides*): Locally called Badhva is a flowering plant in Yam family. Its tuberous root is used as food by the locals.
- **Air Potato** (*Dioscorea bulbifera*): Locally known



as Kandavel, is a perennial vine which forms bulbils which are consumed by the tribal people after repeated boiling and washing.

- **Five leaf Yam (*Dioscorea pentaphylla*):** Another vine which produces bulbils, which are consumed after keeping in running water for a day and repeated boiling and washing. Locally it is called Suri.

D. Kutchh

Despite being a dry region, Kutchh or Kachchh boasts a diverse range of flora and fauna, thanks to its extensive coastline, salt pans, wetlands, and

mangroves. Locals consume a variety of plants for different purposes.

- **Goras Amli (*Pithecellobium dulce*):** This species is a large sized tree which produces seed pods with sweet and sour pulp which is consumed by locals and many fruit eating birds.
- **Pilu (*Salvadora persica*):** This small evergreen tree produces tiny juicy berries which are sweet in taste. Sticks from branches are used as natural toothbrush.

Other important trees are Wild Jujube, Glue Berry, and Rayan also.



Source:

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Using Invasive Species for Preparing Value Added Products



According to definitions, an invasive species refers to any organism introduced to a new area where it did not naturally occur, posing a threat to native species and disrupting the local ecosystem. Their negative impact contributes significantly to the loss of global biodiversity.

Some facts about Biological Invasion

- » 218 invasive alien species have caused 1,215 local extinctions of native species
- » In 2019, the estimated global annual economic cost of biological invasions was \$423 billion
- » A total of 173 invasive species of plants and animals are known from India

The Indian subcontinent, known for its remarkable biodiversity, faces challenges from invasive species such as *Lantana camara*, *Prosopis juliflora*, *Eichhornia crassipes*, and *Parthenium hysterophorus* invading forests, water bodies, and grasslands.

Controlling these invasive species is crucial to preserving the integrity of indigenous ecosystems and biodiversity. Institutions and governments across India have devised various methods to mitigate their damage. These include manual removal, chemical control using herbicides, biological control through natural predator introduction, and mechanical control using machinery like chainsaws and mowers.

While traditional approaches have focused on these methods, particularly for invasive plants, an innovative strategy involves utilizing these species as a resource for producing value-added products, thus providing income opportunities for locals.

Prosopis to Charcoal

Prosopis juliflora commonly known as Mesquite (Locally known as Gando baval) is a thorny tree of Central and aSouth American origin. The introduction of *Prosopis* species into the Indian subcontinent involved multiple events spanning from the late 19th to the early 20th centuries, with various species and forms introduced from different regions.

Prosopis being highly adaptive to arid and semi-arid environment, has spread across the Indian subcontinent gradually, during the last century. The invasion has resulted in heavy damage to some finest grasslands in Asia, for instance, the Banni region of Kutchh district in Gujarat. More than half of the Banni is now covered in aggressive Invasive species.

However, with the passing time, the *Prosopis* is now used as Firewood as well as in preparation of Biochar. Non-wood products such as leaves, seed pods, gum etc. are also used as animal feed and for other purpose. Thus, *Prosopis* provides a secondary source of income for the local maldhari community which is mainly associated with dairy farming.

Lantana to Eco-friendly furniture

Lantana camara, a flowering shrub originating from tropical America, is recognized as one of the top ten most harmful invasive species worldwide. Its widespread presence in the forests of the Indian subcontinent poses a significant threat as it competes with indigenous plant species for essential resources like space, water, and soil nutrients. The scale of its invasion, encompassing over 150,000 square kilometers of forested areas in India, underscores the urgency of addressing this issue. However, eradicating *lantana* is a challenging endeavor, with the cost of controlling it in just one square kilometer amounting to nearly 14 lakh INR, making it a costly endeavor.

To tackle this challenge, an innovative idea has emerged: utilizing *lantana* to create furniture. The wood derived from *lantana* is known to be stronger than traditional materials like bamboo and cane, commonly used by local artisans and craftsmen for furniture and other value-added products. A Green Skill Development Program (GSDP) initiated by Amrita University in Tamil Nadu trains members of tribal communities to craft value-added items from *lantana*. This GSDP course not only transforms a weed into a valuable resource but also contributes to restoring balance in the local ecosystem.



Source:

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7. <https://www.amrita.edu/center/envis/gsdp>

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Environmental Information, Awareness, Capacity Building and Livelihood Programme acronymed as EIACP erstwhile Environmental Information System (ENVIS) was implemented by the Ministry of Environment, Forest & Climate Change by end of 6th Five Year Plan as a Plan Scheme for environmental information collection, collation, storage, retrieval and dissemination to policy planners, decision makers, scientists and environmentalists, researchers, academicians and other stakeholders. MoEF&CC has identified Consumer Education and Research Centre (CERC), Ahmedabad, as one of the Resource Partner to collect and disseminate information on “Environment Literacy - Eco-labelling and Eco-friendly Products”. The main objective of EIACP Programme centre- Resource Partner is to disseminate information on Environment literacy, Eco-products, International and National Eco-labelling programmes.

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