TECHNICAL FACTSHEET

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CHIURI (NEPALI BUTTER TREE)

A MULTIPURPOSE SPECIES FOR LANDSCAPE RESTORATION, FOOD SECURITY AND LIVELIHOODS

Background

The *chiuri* (*Diploknema butyracea* Roxb; syn. *Bassia butyracea;* syn. Madhuca butyracea; syn. *Aesandra butyracea*) — English common name: 'Nepali butter tree' — is one of the most important species of Nepal, providing a range of ecosystem goods and services: erosion control, medicinal ingredients, pollinators' habitat, honey, fodder, butter for cooking and other uses (candles, soap), and pulp and timber for furniture.

The fast-growing species is adaptable to a wide range of soil conditions, making it an excellent candidate as a cornerstone species for landscape restoration, food security, improvement of livelihoods and carbon farming.

Yet, despite its popularity, there is limited knowledge about the species, especially, about its multiple uses and the potential for value addition. Studies are needed to fill gaps in knowledge and enhance use.

Silvicultural characteristics

Chiuri is a medium-to-large-sized broadleaved tree of the Sapotaceae family (Shukla 2017). The tree can reach 25 m in height, starts producing fruits at 6–10 years, and can be harvested for 50–60 years (Chikanbanjar et al. 2021). The bark is dark grey or brownish and slightly fissured. The leaves are alternate, petioled, obovate-cuneate, obtuse-pointed, entire; the veins simple; and parallel; obtaining lengths of 15–30 cm with breadths 7–15 cm and petioles are 2.5–5 cm long. The flowers are creamy white, long stalked, usually crowded in fascicles on the leafy axis and have a soft, sweet aroma. The fruits are light green when young and become yellowish or orange when fully ripe; scented and sweet to taste. The berries are oblong, generally pointed by a remaining portion of the style; smooth, fleshy, containing 1–3 large seeds (MEDEP 2010). The average fruit yield is estimated at 5–155 kg/tree, depending on the girth class sizes (Sundriyal and Sundriyal 2003). Flowering and fruit ripening occur in April–November or June–December, depending on the region (Chikanbanjar et al. 2021).

Chiuri tree and flower (courtesy: Bishnu P. Acharya)

Distribution

Chiuri is a shade-intolerant species, growing at 400–1500 masl, often on steep slopes, in narrow, shady valleys or gorges, and cliffs (Bhattarai et al. 2021). Chiuri occur singly or in small groups as a natural component of broadleaved forests as well as on agricultural land (MEDEP 2010). An estimate of the chiuri in Nepal has been given as approximately 10.8 million trees, geographically distributed in 46 districts (MEDEP 2014). Density ranges 37–90 trees per hectare, averaging 40 (Practical Action 2006).

Importance

Chiuri is one the most important tree species in Nepal, used for multiple purposes by rural households. Chiuri products are used in confectionery, pharmaceuticals and traditional medicines, cosmetics, vegetable ghee production, candle manufacturing and soap making (Practical Action 2006).

Socio-cultural

The leaves of chiuri are used as fodder and the residue of leaves as manure; stems are used as an alternative fuel source (Thapa 2019).

Chepang indigenous communities of the Mahabharat mountain range of central Nepal, in particular, have a long association with chiuri such that the felling of a chiuri is considered a sin (Uprety and Asselin 2023) and chiuri are given as dowries to daughters (MEDEP 2010). The species has multiple uses and is central to the Chepang culture; no other species can provide the same benefits. Accordingly, the species has been recognized as a cultural keystone species of the Chepang people (Uprety and Asselin 2023).

Economics

Potentially, 37,245 tonnes of Chiuri butter and 17,285 tonnes of honey can be produced from the total number of chiuri in Nepal. Chiuri butter has economic value of over NPR 5 billion (nearly USD 38 million as at March 2024) (MEDEP 2010).

There is enormous scope and a wide resource base for establishment and enhancement of chiuri-based micro-to-small enterprises, for example, production of butter products, beekeeping and honey processing, nectar and pulp processing, paper plates and furniture making.

Ecosystem services

Chiuri is a good soil binder, useful for soil conservation. Chiuri adapts to slopes and barren land with comparatively less fertile soils, making it a suitable species for restoring degraded landscapes (Acharya 2023; Uprety et al. 2023). Chiuri also provide food and shelter for bats, birds, honeybees and other insects (MEDEP 2010).

The Forest Resource Assessment 2015 identified 18 uses of chiuri in the Chure Region of Nepal, of which seven were nutritional (MSFP 2016). Chiuri can play a significant role in carbon sequestration (Acharya 2023; Chikanbanjar et al. 2021).

Existing policy

The National Forest Policy 2019 has as one of its objectives the “conservation and sustainable utilization of forests, plant resources, wildlife and biodiversity”.

The annual policy and programme of Bagmati Provincial Government for the fiscal year 2023/24 features a chiuri conservation programme with Chepang communities. For this purpose, the provincial government has allocated the equivalent of USD 38,000 in Chitwan, Dhading and Makwanpur districts.


Chiuri fruit and seed (courtesy: Bishnu P. Acharya)

Challenges and gaps in enhancing use of chiuri

- Lack of an updated, comprehensive inventory of chiuri in Nepal
- Decreasing numbers of chiuri on both government and private land
- Inadequate processing, value addition, product diversification and market exploration
- Lack of studies of the role of chiuri in ecosystem services, including carbon benefits
- Eroding of traditional knowledge of chiuri and its multiple uses

Way forward

- Conduct a national resource inventory of chiuri
- Target programmes of chiuri conservation by relevant agencies
- Diversify products, add value and develop markets
- Document and support the maintenance of traditional knowledge of chiuri
- Conduct research into ecosystem services from chiuri, including carbon benefits

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Chiuri nursery and Chepang people (courtesy: Bishnu P. Acharya)

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