LOCAL NAMES
Burmese (thitsein); English (bedda nut tree,beleric myrobalan,belliric myrobalan); French (myrobalan beleric); Javanese (jaha sapi,jaha kebo); Lao (Sino-Tibetan) (nam kieng dam,haen-ton); Malay (jelawai,mentalun,simar kulihap); Thai (haen-khao,samo-phiphek); Vietnamese (b[af]ng n[uw][ows]c,simar kulihap,b[oo]ng d[ee]u,heen, mung tr[awf]ng)

BOTANIC DESCRIPTION
Terminalia bellirica is a large deciduous tree to 50 m tall and a diameter of 3 m with a rounded crown. The frequently buttressed bole at the base is branchless up to 20 m. The bark is bluish or ashy-grey covered with numerous fine longitudinal cracks, the inner bark yellowish.

Leaves large, glabrous, alternate, broadly elliptic to obovate-elliptical, 4-24 cm x 2-11 cm, base rounded to cuneate, rufous-sericeous but soon glabrescent, with 6-9 pairs of secondary veins. Secondary and tertiary venation prominent on both surfaces, clustered towards the ends of branchlets. Petiole 2.5-9 cm long.
Young leaves copper-red, soon becoming parrot green, then dark green.

Flowers solitary, small, 3-15 cm long, greenish white, simple, axillary spikes; calyx tube densely sericeous or tomentulose; flowers appear along with new leaves and have a strong honey-like smell.

Fruit sub-globular to broadly ellipsoid, 2-4 x 1.8-2.2 cm, densely velutinous or sericeous, light-yellow, obscurely 5-angled and minutely brown tomentosa.

The generic name ‘Terminalia’ comes from Latin word ‘terminus’ or ‘terminalis’ (ending), and refers to the habit of the leaves being crowded or borne on the tips of the shoots.

BIOLOGY
The species flowers in October-November and fruits in November-December. The tree sheds leaves in November with young ones appearing together with flowers. Animals eat fruits, thus dispersing the seeds

ECOLOGY
It is frequently found in monsoon forests, mixed deciduous forests or dry deciduous dipterocarp forests, associated with teak (Tectona grandis)

BIOPHYSICAL LIMITS
Altitude: 0-1000 m
Mean annual rainfall: 900-3000 mm
Mean annual temperature: 22-28oC
Soil type: It grows best on fertile, loam soils with good drainage; however, it has performed reasonably well on poor soils where the choice of tree species is limited

DOCUMENTED SPECIES DISTRIBUTION

Native: Bangladesh, Bhutan, Cambodia, China, Indonesia, Laos, Malaysia, Nepal, Pakistan, Sri Lanka, Thailand, Vietnam

Exotic:

The map above shows countries where the species has been planted. It does neither suggest that the species can be planted in every ecological zone within that country, nor that the species can not be planted in other countries than those depicted. Since some tree species are invasive, you need to follow biosafety procedures that apply to your planting site.

PRODUCTS
Food: The kernels of the fruit can be eaten but are somewhat dangerous as they have a narcotic effect.

Fuel: The tree yields a good-quality firewood and charcoal with calorific value of sapwood being 5000 kcal/kg.

Fodder. The leaves are highly valued and extensively used as fodder. The farmers lopp side branches, often sparing the main limbs to ensure good growth and future supplies of fodder. The chemical composition improves with the stage of maturity in leaves, which are on the whole considered to be nutritious, palatable and digestible. Leaves contain 9-14% crude proteins and can be used to rear tussar silkworms (Antherea mylitta).

Dyestuff or tannins: The fruit produces tannins and dyes used for leather tanning, dyeing of clothes, matting and inks

Timber: The wood is whitish, rather soft, with a density of 675-900 kg/m3 at 12% moisture content; sapwood and heartwood are not distinct with straight grains. The wood is steeped in water to make it more durable then used for making boxes, furniture and construction.

Medicine: The fruit rind (pericarp) is astringent, laxative, anthelmintic, pungent, germicidal and antipyretic. It is applied in a diverse range of conditions including cough, tuberculosis, eye diseases, anti-HIV-1, dyspepsia, diarrhoea, dysentery, inflammation of the small intestine, biliousness, flatulence, liver disease, leprosy, cleanse the blood and promote hair growth in the Ayurvedic drug. Fruit extracts have anti-bacterial activity against Micrococcus pyogenes and Escherichia coli.

Cosmetic: The kernel produces a non-edible oil used in toilet soap and is good for hair.

SERVICES
Ornamental: It is grown as an avenue tree.

Intercropping: It has been grown in taungya plantations along with agricultural crops, which may be grown for 2-3 years between the lines of trees generally 3-4 m apart.

TREE MANAGEMENT
The species is a light demander and fairly drought resistant. It coppices well after pollarding especially if planted on a wide spacing. Spacing of 3-4 m apart in pure plantation is common. Good protection from grazing is required.

GERMPLASM MANAGEMENT
Seed storage behaviour is recalcitrant. There are about 176-420 seeds/kg.

PESTS AND DISEASES
Several insect pests reported for this species include Macalla carbonifera, Thamnurgides indicus, Thamnurgides opacifrons and Trabala vishnou

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