Commercialisation of an American colonizer

India is a land rich with biodiversity. Her forests, shrublands, grasslands, wetlands, desserts, freshwater, coastal, and marine ecosystems along with the life she harbours, makes her one of the 17 megadiverse countries in the world. But sadly, 40% of the floral species growing in India are alien species and 25% of the non-native species are invasive (Convention on Biological Diversity 2005).

Lantana camara. © Supriya Samanta.

Among all these invasives one of the most common invasive, seen in our backyard is *Lantana camara*, has escaped and is invading 40% of India's tiger range today (Mungi et al. 2020). The total forest cover of the country is 712,249 sq.km. of which *Lantana* has likely invaded 303,607 sq.km. (Mungi et al. 2020).

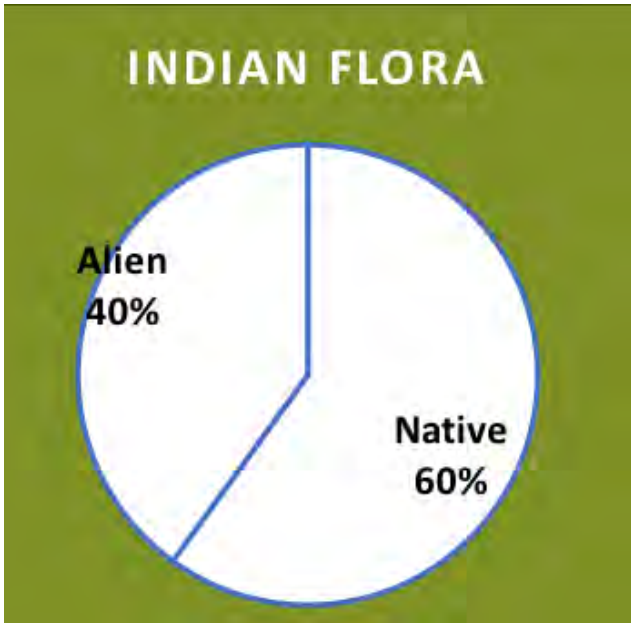
Being a very resistant and adaptable plant, eradication of *Lantana* has been a big challenge to conservationists for a long period of time now. Fruit eating birds like bulbul have been found feeding on the fruits and then dispersing the seeds in Rajaji National Park, and thus paving its path into the ecological cycle (Mungi et al. 2020). In some parts of the country *Lantana* saplings are been sold as ornamental plants to attract butterflies.

In many parts of the country incentives are being given to tribal people and communities for uprooting *Lantana* plants and making products out of them to earn money by selling them (Priya Davidar, Shweta Madgulkar, Trisa Bhattacharjee pers. comm.). This not only helps in solving the problem from its base but, at the same time it also helps the communities to get a 'better' life. But the question is, is it really a sustainable and conservation friendly option to do so? In the longer run is it a practical option to continue with? Is it right to make people dependant on an invasive for their livelihood?

At the first batch of the Ram Hattikudur Advanced Training in Conservation by Zoo Outreach Organisation in 2021-22, this question was posed to the fellows to debate on. Some of the responses that came up are mentioned below.

The spread is not equal all across, being a major threat in some places, while a budding threat in other. Thus, if the incentives are to be given and

***Lantana camara* eradication as a livelihood option**	***Lantana camara* eradication not as a livelihood option**
Help in economic upliftment of the people and thus giving them a better quality of life.	Making people dependent on an invasive plant, they may start harvesting.
Using *Lantana* as fuelwood and reducing the load on other forest trees.	There will be more dispersion of seeds if not looked after properly.
Teaching people to make *Lantana* brickettes, furniture, packaging, cremation, and use it as an alternate. This will give people incentive and also help them gain skills and have small scale business	A lot of investment will go into this and will involve several other industries like chemical, storage, transportation which in turn will increase the pollution. Also, a lot of investment goes into training the people, and we are yet to know if it will be successful in the market.
This is the only sustainable option as both wildlife and livelihoods are benefited	*Lantana* is not the only invasive species out there, should we start commercialising all the invasives then?



Present status of floral diversity in India

commercialization becomes successful then people will start harvesting the weed in parts of the country. *Lantana* has its strongest base in Shivalik hills, central India, and southern Western Ghats (Mungi et al. 2020). Being a rich base for the weed, people in parts of southern Western Ghats are still cutting the plant instead of uprooting it, along with the fact that bigger plants are only being cut (Priya Davidar pers. comm., 2021), in a way harvesting it. But *Lantana* stems are not hard enough and thus if used to make furniture it may not stay for long. If the commercialization is not successful enough, it will be a big waste of time, money, labour, and raw materials.

Livelihood is an emotion, rather it is much more scientific to make people aware about the harmful effects of *Lantana* and explain them why they should remove it from their nearby places. This would be a far more scientific approach. Also, *Lantana* is harmful for animal health; if fed on, it causes diarrhoea, liver failure, and even death of animals (Mungi et al. 2020). Workers clearing *Lantana* have complained of respiratory irritation (The State of Queensland (Children's Health Queensland) 2022). *Lantana* pollen is the most common IgE (Immunoglobulin E) sensitivity inducing pollen known (Ghoshal et al. 2016). Usually, symptoms are delayed, including nausea, vomiting, diarrhoea, laboured breathing, dilated pupils, lethargy, weakness, dermatitis, and as much as death in a few situations (The State of Queensland (Children's Health Queensland) 2022). Thus, if people are involved in making products out of *Lantana*, it may subsequently affect them, their kids, and the old people in the house, who are not directly involved but are around. Also, the waste and the remains, that include leaves and branches which if not

thrown properly, may be consumed by domestic animals. During our trip to Mudumalai, we have seen Elephants actively avoiding *Lantana* plants and rather opting for native plants to feed on.

Lantana products are not environment friendly. They involve setting up of various industries including, transport, packaging, chemical, and storage. This adds to the environment pollutions. Also, the unused parts need to be burnt which causes more pollution. Rather it can be given to people as fuelwood or for burning the dead, which in turn can reduce the pressure on timber plants. At the same time, making products using *Lantana* will need a lot of man power and resources, for training the people how to make it, uproot it, commercialise it, and also for creating market visibility. Also, people involved need to be kept a check on so that they don't start harvesting it. Rather this resource can be spent on hand in hand restoration work along with uprooting. Invasive plants usually, are seen to lose their strength once there is a shade or a canopy cover above them (Divya Mudappa pers. comm.). Thus, planting fast growing native species of plants along with removal of *Lantana* will make the eradication process much faster and more efficient. This has been successful in Valparai. Also, restoration as a livelihood is environment friendly and sustainable.

There are many arguments on both sides, and no one yet knows a better solution to come up with. A lot of work and research is needed to know the best possible way to deal with this. But, *Lantana camara* is not the only invasive knocking our doors, there are many more. So, are we going to do the same for all of them and wait to see that it turns out to be a great success or a bigger threat? Thus, we need to think fast and act faster, as there are plants around us many of which are native and require conservation efforts for their survival.

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