

Charting *Suntala*'s Course as Nepal's National Fruit

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Abstract

This article is a testament to the advocacy and continuous efforts that have led to the declaration of *Suntala* (Mandarin orange) as the national fruit of Nepal. *Suntala*'s unique flavor, color, and cultural significance have long been recognized, and its newfound status as the national fruit further highlights its intrinsic qualities and economic potential. Cultivation of *Suntala* is thriving across Nepal's mid-hills which contributes to the nation's citrus production, occupying extensive land area. This designation strengthens the citrus industry, elevates Nepal's standing in the global fruit market, and fosters sustainable economic growth by attracting investment and promoting exports. Moreover, *Suntala*'s nutritional value, rich in vitamins, minerals, antioxidants, and dietary fiber, highlights its importance in promoting public health and encouraging healthier dietary choices. The national recognition of *Suntala* raises awareness about its health benefits as well as promotes environmentally sustainable farming practices, contributing to soil health and biodiversity conservation in the mid-hills. The designation incentivizes further research and development in citrus farming, aiming to improve yields and enhance environmental sustainability. Ultimately, *Suntala*'s national recognition ignites national pride, resonating with Nepal's cultural heritage and celebrating the country's rich agricultural diversity.

Keywords: Cultural symbolism, Economic potential, Environmental conservation, Global fruit market, Sustainable farming practices

Introduction

With the declaration of *Suntala* (Mandarin orange) as the national fruit of Nepal, the country joins the ranks of nations worldwide that have a recognized fruit as emblematic of their national identity. Countries such as India, which chose Mango, and the Philippines, which also opted for Mango, have long used their national fruits to symbolize cultural heritage and agricultural abundance (Swaminathan, 2023). Before this declaration, Nepal had already acknowledged the cow as its national animal, the rhododendron as its national flower, crimson red as its

national color, and the Lophophores as its national bird, but the absence of a national fruit had been a long standing gap in its symbolic repertoire. While Nepal has a rich diversity of fruits, ranging from tropical mangoes and bananas to sub-tropical citrus fruits and temperate apples, the formal recognition of *Suntala* as the national fruit fills this void and reinforces the country's agricultural significance.

The decision to designate *Suntala* as the national fruit of Nepal carries profound implications for various stakeholders, including farmers, consumers, traders, experts, scientists and the nation as a whole. *Suntala*'s official recognition not only acknowledges its cultural and economic importance but also highlights its potential to drive agricultural development and international trade. By conferring national status upon *Suntala*, Nepal signals its commitment to promoting the cultivation, preservation, and promotion of this indigenous fruit, thereby creating opportunities for rural livelihoods, culinary innovation, and tourism (both domestic and foreign tourists) attraction. Moreover, the adoption of *Suntala* as the national fruit underscores Nepal's efforts to harness its agricultural heritage for sustainable development and cultural preservation, paving the way for a fruitful future for generations to come.

Methodology

The concept of this article originated from a metamorphosis of diverse official documents strategically drafted to persuade bureaucratic and political leaders of Nepal to declare *Suntala* as the national fruit of Nepal. The foundation of our review draws upon many references, encompassing native fruits, popular choices among the people, local songs, stories, myths, and tales.

To support our narrative, we collected data from local newspapers reporting on the status and impact of fruits on the lives of farmers. The research process involved a systematic examination of various mediums, including books, research articles, reviews, analyses, and newspaper mentions, to gather a diverse range of perspectives and insights. These mediums provided foundational knowledge and historical context, contributing to the development of a well-informed narrative.

We listened to the interviews with experts and scientists in the field which provided valuable insights, addressing any informational gaps that surfaced during the compilation process. These inputs were integrated into the article, enhancing the overall comprehensiveness and depth of our review.

Findings

The *Suntala* is the most popular fruit in Nepal. It is grown in sixty-six districts and cultivated commercially in fifty-six districts. It is traded, consumed, and liked in all places in Nepal. The adoption of *Suntala* as Nepal's national fruit has spurred a wave of positive developments across the country. *Suntala* cultivation has boosted options for agricultural production, rural incomes, and biodiversity conservation. It has become a symbol of national pride, promoting branding, cultural recognition, and culinary innovation. Support from the government, other

stakeholders, and educational initiatives will further empower farmers with knowledge and resources, while export opportunities and tourism development fuel economic growth. *Suntala*'s rich nutritional content contributes to better health and dietary diversity, and international collaboration strengthens Nepal's position in the global citrus market. Overall, *Suntala*'s national fruit status has become a powerful driver of agricultural development, economic prosperity, and cultural vibrancy for Nepal.

The declaration of *Suntala* as the national fruit has opened up the following prospectives

Agricultural promotion

This citrus fruit, known for its vibrant color, sweet taste, aroma, and rich nutritional content, has spurred increased cultivation efforts across various regions of Nepal. Farmers have been incentivized to expand their orchards and invest in *Suntala* cultivation, thereby boosting agricultural productivity and rural incomes. The promotion of *Suntala* has also encouraged agricultural diversification, reducing dependence on traditional crops and mitigating risks associated with mono-cropping. Furthermore, the recognition of *Suntala* as a national symbol has enhanced its marketability both domestically and internationally, opening up avenues for export and trade. This has led to economic growth in rural areas, fostering sustainable development and poverty reduction.

Moreover, the announcement of *Suntala* as the National fruit of Nepal has catalyzed research and development initiatives aimed at enhancing cultivation techniques, improving post-harvest practices, and developing value-added products. Agricultural institutions and research organizations have intensified efforts to breed high-yielding and disease-resistant *Suntala* varieties tailored to Nepal's agro-climatic conditions. Additionally, government policies and programs have been formulated to provide technical assistance, training, and financial support to *Suntala* farmers, further incentivizing its cultivation. The promotion of *Suntala* has also fostered agro-tourism, with tourists visiting orchards to experience *Suntala* harvesting, tasting and processing firsthand, thereby generating additional income streams for rural communities. Overall, the adoption of *Suntala* as the National fruit of Nepal has not only elevated its cultural significance but has also played a pivotal role in promoting agricultural development, enhancing food security, and advancing rural livelihoods.

Biodiversity conservation

First and foremost, the increased cultivation of *Suntala* will lead to the preservation of diverse citrus varieties native to Nepal. Farmers are now motivated to maintain traditional *Suntala* orchards alongside newer cultivars, thus safeguarding genetic diversity within the citrus species. This preservation of genetic resources is essential for maintaining resilience in the face of environmental challenges such as pests, diseases, and climate change. Moreover, the promotion of *Suntala* cultivation has encouraged agroforestry and hortoforestry practices, with farmers integrating citrus trees into mixed cropping systems. *Suntala* trees have been used to control soil erosion in the hilly terraces. To conserve moisture and provide organic matter in

the *Suntala* orchard farmers use green manures and mulching which also help in biodiversity conservation. This agroecological approach not only enhances soil health and water retention but also provides habitat and food sources for diverse flora and fauna, thereby promoting overall ecosystem health and biodiversity.

Furthermore, the adoption of *Suntala* as the National fruit of Nepal has sparked conservation efforts aimed at protecting the natural habitats of wild citrus species. Conservation organizations and governmental agencies have collaborated to establish protected areas and conservation corridors for wild citrus populations, ensuring the survival of endangered species and their associated ecosystems. By raising awareness about the importance of citrus biodiversity, the designation of *Suntala* as the national fruit has also fostered community engagement in conservation efforts. Local communities are now actively involved in habitat restoration, seed banking, and sustainable harvesting practices, thereby contributing to the long-term conservation of Nepal's citrus heritage. In this way, the adoption of *Suntala* as a symbol of national pride has not only promoted agricultural development but has also catalyzed biodiversity conservation, ensuring the continued existence of diverse citrus species and their ecological significance.

Branding and identity

Naming a National fruit has played a pivotal role in branding and enhancing the identity of Nepali mandarin oranges both domestically and internationally. This designation has provided a unique selling proposition for Nepali oranges, distinguishing them from oranges produced in other regions and elevating their perceived quality and value. The *Suntala* brand now embodies the rich cultural heritage and agricultural in general and horticultural excellence in particular of Nepal, serving as a symbol of national pride and identity. This branding has facilitated market differentiation and increased market visibility for Nepali mandarin oranges, leading to greater consumer recognition and demand. Additionally, the association of *Suntala* with Nepal's national identity has created opportunities for marketing and promotional campaigns that highlight the unique characteristics and benefits of Nepali mandarin oranges, further enhancing their market appeal.

Moreover, the recognition of *Suntala* as the National Fruit of Nepal has facilitated the development of geographical indication (GI) protection right for one of the Nepalese indigenous citrus species, further bolstering their branding and identity. GI tag provides legal recognition and protection for products with specific geographical origins and unique qualities bestowed by the geographical or environmental specilaaties, preventing unauthorized use of the *Suntala* name and ensuring the integrity of Nepali orange products in the marketplace. This recognition not only adds value to Nepali oranges but also fosters trust and confidence among consumers, who associate GI status with authenticity and superior quality. As a result, Nepali oranges have gained a competitive edge in both domestic and international markets, commanding premium prices and driving economic growth for citrus farmers and rural communities. In essence, the adoption of *Suntala* as the National fruit of Nepal has not only strengthened the branding

and identity of Nepali mandarin oranges but has also contributed to their market success and sustainable development.

Community development

The commercial cultivation of *Suntala* has significant impact on creation of employment opportunities within rural communities. The increased cultivation of *Suntala* has generated demand for labor and skilled human resource in orchards, nurseries, processing industries and marketing facilities, providing livelihoods for residents of rural and urban people. Moreover, the expansion of *Suntala* cultivation has stimulated the growth of ancillary industries such as transportation, per-cooling, grading, packaging, and marketing, further diversifying job prospects in rural, semi-urban and urban areas. This has not only reduced unemployment but has also empowered individuals, particularly women, disadvantaged groups (DAGs) and marginalized groups, by offering them avenues for economic independence and social mobility.

Additionally, the promotion of *Suntala* has facilitated infrastructure development in rural communities. As *Suntala* cultivation requires adequate irrigation, access to markets, and transportation networks, government and non-governmental organizations have invested in improving rural infrastructure such as roads, irrigation systems, and market facilities. These infrastructure investments have not only enhanced the efficiency of agricultural production but have also improved overall connectivity and access to essential services, thereby enhancing the quality of life for rural residents. Furthermore, the recognition of *Suntala* as a symbol of national identity has instilled a sense of pride and cohesion within communities, fostering social capital and collective action for community development initiatives. Overall, the adoption of *Suntala* as the National fruit of Nepal has played a pivotal role in promoting community development by creating employment opportunities, stimulating infrastructure investments, and fostering social cohesion within rural areas.

Culinary innovation

The adoption of a national fruit will spur culinary innovation and creativity, transforming traditional recipes and culinary practices. *Suntala*'s unique flavor profile, characterized by its sweet and tangy taste, has inspired chefs and home cooks alike to experiment with incorporating this versatile citrus fruit into a wide array of dishes. From savory sauces and marinades to sweet desserts and beverages, *Suntala* adds a distinctive and refreshing twist to Nepali cuisine. Restaurants and food establishments have capitalized on the popularity of *Suntala* by featuring it prominently in their menus, attracting both locals and tourists eager to savor its delightful taste. Moreover, the adoption of *Suntala* has led to the development of value-added products such as *Suntala* juice, jams, marmalade, squash, jelly, and candies, providing additional opportunities for culinary innovation and entrepreneurship. This diversification of *Suntala*-based products not only stimulates economic growth but also promotes the preservation and promotion of Nepal's culinary heritage.

Furthermore, the adoption of *Suntala* as the National fruit of Nepal has fostered cross-cultural culinary exchanges and collaborations, leading to the fusion of Nepali cuisine with international flavors. Chefs and food enthusiasts from around the world have been drawn to Nepal to explore the culinary possibilities offered by *Suntala*, resulting in the infusion of global cooking techniques and ingredients into traditional Nepali dishes. This cultural exchange enriches the culinary landscape of Nepal, offering diners a more diverse and dynamic dining experience. Additionally, the popularity of *Suntala*-inspired dishes has contributed to the promotion of Nepali cuisine on the global stage, attracting attention and admiration for its unique flavors and innovative culinary creations. Overall, the adoption of *Suntala* as the National fruit of Nepal has sparked a culinary renaissance, inspiring chefs, entrepreneurs, and food lovers to push the boundaries of creativity and innovation in Nepali's gastronomy.

Cultural recognition

It will catalyze a profound resurgence in cultural recognition both within Nepal and on the global stage. *Suntala* holds deep roots in Nepali culture, symbolizing hospitality, prosperity, and auspiciousness. By bestowing official recognition upon *Suntala*, Nepal has reaffirmed its cultural identity and heritage, celebrating the traditions intertwined with citrus cultivation and consumption. This acknowledgment has not only bolstered national pride but has also fortified social bonds, fostering communal celebrations during festivals and rituals associated with *Suntala*, such as the Nepali New Year (Nepal Sambat) and the auspicious Hindu festival of Dashain. Furthermore, the designation of *Suntala* as a national symbol has amplified Nepal's cultural diplomacy, serving as a distinct emblem of Nepali identity on the global stage. This has cultivated broader awareness and appreciation for Nepali culture, cuisine, and agricultural practices worldwide, enticing tourists and fostering cultural exchange.

Moreover, the adoption of *Suntala* as the National fruit of Nepal has sparked a renaissance in cultural innovation and creativity, inspiring artists, musicians, and writers to weave themes of citrus cultivation and symbolism into their works. *Suntala* has emerged as a muse for song composers, poets, painters, and artisans, prominently featured in traditional art forms such as *Thangka* painting, wood carving, and pottery. This artistic expression not only safeguards and propagates Nepali cultural heritage but also nurtures a profound sense of pride and unity among Nepali communities, both at home and across borders. Additionally, the promotion of *Suntala* has spurred the development of culinary traditions and gastronomic tourism, with chefs and food enthusiasts exploring inventive methods to showcase the versatility and exquisite flavor of Nepali citrus fruits. Thus, the adoption of *Suntala* as the National fruit of Nepal has not only revitalized cultural recognition but has also ignited a spirit of ingenuity, entrepreneurship, and cultural interchange, enriching the vibrant tapestry of Nepali society.

Economic boost

The adoption of national fruit has become instrumental in providing a significant economic boost to the country. This designation has propelled *Suntala* into the spotlight, both domestically and internationally, increasing its market demand and value. With heightened

recognition and promotion, *Suntala* cultivation has expanded across various regions of Nepal, leading to increased agricultural productivity and rural incomes. The economic benefits of *Suntala* cultivation extend beyond the farm gate, as the fruit's popularity has stimulated growth in related activities such as harvesting, grading, pre-cooling, transportation, packaging, and agro-processing industries. Additionally, the export potential of *Suntala* has been unlocked, with Nepali farmers gaining access to international markets and generating foreign exchange earnings for the country. This increased trade has not only bolstered Nepal's economy but has also created employment opportunities along the value chain, from farm laborers to exporters, further contributing to economic growth and poverty reduction resulting in improved livelihoods. Nepal has already signed a MoU with the Government of China for *Suntala* (mandarin orange) and *Junar* (sweet orange) export (Aryal *et al*, 2022) so adopting good orchard management practices will enhance this opportunity and open up marketing opportunities with other countries also.

Moreover, the promotion of *Suntala* as the National fruit of Nepal will catalyze tourism development, as visitors flock to orchards to experience *Suntala* harvesting, tasting and processing firsthand. Agro-tourism has emerged as a thriving sector, with tourists contributing to local economies through accommodation, dining, and purchases of *Suntala*-related products. Furthermore, the recognition of *Suntala* as a symbol of Nepali identity has boosted cultural tourism, attracting travelers eager to explore the cultural heritage and culinary traditions associated with the fruit. This influx of tourism revenue has not only diversified Nepal's economic base but has also promoted sustainable development in rural areas, where *Suntala* cultivation is prevalent. Overall, the adoption of *Suntala* as the National fruit of Nepal has led to a multifaceted economic boost, stimulating agricultural growth, fostering trade and employment, and driving tourism development, thereby contributing to the overall prosperity of the country.

Educational initiatives

This adoption of national fruit can be used to spark various educational initiatives aimed at promoting awareness, knowledge, and skills related to citrus cultivation, agriculture, and sustainability. Educational institutions, including schools, colleges, and universities, have integrated *Suntala* into their curricula, offering courses, workshops, and field trips focused on citrus farming techniques, agroecology, and rural development. By incorporating *Suntala* into formal education, Nepal is nurturing a new generation of farmers, horticulturists, and agricultural entrepreneurs equipped with the knowledge and skills needed to thrive in the citrus industry. Moreover, educational initiatives centered around *Suntala* have fostered interdisciplinary learning, encouraging students to explore topics such as environmental science, economics, and cultural studies through the lens of citrus cultivation and its socio-economic implications. This holistic approach to education not only enhances academic outcomes but also instills a sense of environmental stewardship, research and community engagement among students, preparing them to address the complex challenges facing Nepal's citriculture, one of the major horticultural sub- sectors.

Furthermore, the adoption of *Suntala* as the National fruit of Nepal has catalyzed vocational training programs and capacity-building initiatives targeted at rural communities, particularly women, youths and marginalized groups. Non-governmental organizations (NGOs) and governmental agencies have partnered to offer training in citrus nursery management, organic farming practices, and value-added processing techniques, empowering farmers to improve productivity, quality, and market access. These educational initiatives not only enhance livelihood opportunities but also promote gender equality and social inclusion by providing women, youths and marginalized groups with the skills and resources needed to participate meaningfully in the citrus value chain. Additionally, educational campaigns and extension services disseminate information about sustainable agricultural practices, pest and disease management, integrated soil nutrient management for better production and climate-resilient farming techniques, empowering farmers to adapt to changing environmental conditions and mitigate risks. By investing in education and training related to *Suntala* cultivation, Nepal is laying the groundwork for a more resilient, equitable, and prosperous agricultural sector, fostering sustainable development and poverty alleviation in rural communities.

Environmental stewardship

It prompts a heightened sense of environmental stewardship across the country. One significant aspect is the promotion of sustainable agricultural practices in *Suntala* cultivation. Farmers are increasingly embracing organic farming methods, reducing reliance on chemical inputs, and implementing agroecological approaches that prioritize soil health and biodiversity conservation. By minimizing the use of pesticides and synthetic fertilizers, *Suntala* growers are safeguarding the ecological balance of their farmlands and mitigating environmental pollution, thus contributing to the overall health of Nepal's ecosystems. Furthermore, the adoption of *Suntala* as a symbol of national pride has sparked awareness campaigns and environmental education initiatives aimed at fostering a deeper appreciation for the interconnectedness of agriculture and the environment. Through workshops, seminars, and community outreach programs, stakeholders are empowered to adopt practices that minimize environmental impact, such as water conservation, waste reduction, and habitat restoration, thereby fostering a culture of environmental responsibility.

Moreover, the designation of *Suntala* as the National fruit of Nepal has catalyzed conservation efforts aimed at protecting the natural habitats and biodiversity hotspots associated with citrus cultivation. Conservation organizations, governmental agencies, and local communities are collaborating to establish protected areas, conservation corridors, and wildlife sanctuaries that safeguard critical ecosystems and endangered species. By conserving these habitats, Nepal not only preserves its rich natural heritage but also maintains essential ecosystem services such as pollination, soil fertility, and water regulation. Additionally, the promotion of agroforestry practices in *Suntala* cultivation contributes to carbon sequestration and climate change mitigation, as citrus orchards act as carbon sinks and enhance landscape resilience. Through these multifaceted initiatives, the adoption of *Suntala* as the National fruit of Nepal underscores the country's commitment to environmental stewardship, promoting sustainable

development practices that balance economic growth with ecological conservation for the benefit of present and future generations.

Export opportunities

It is time to expand export opportunities for the country, leveraging its unique citrus industry to access international markets. With *Suntala* gaining recognition as a symbol of Nepal's agricultural prowess and cultural heritage, it has become a flagship export product, attracting attention from buyers around the world. The designation of *Suntala* as the national fruit has served as a powerful marketing tool, enhancing the product's appeal and distinguishing it from competitors in the global marketplace. This increased visibility has facilitated entry into new markets and has opened doors for Nepali exporters to showcase the quality and authenticity of their citrus produce. Additionally, the promotion of *Suntala* cultivation has led to improvements in post-harvest handling and packaging practices, ensuring that exported fruits meet international standards for freshness and safety, thereby enhancing Nepal's reputation as a reliable supplier of premium citrus products.

Moreover, the adoption of *Suntala* as the National fruit of Nepal has stimulated investment in infrastructure and logistics, strengthening the country's export capacity and competitiveness. Government initiatives and private sector partnerships have focused on upgrading transportation networks, cold storage facilities, and processing centers, reducing supply chain inefficiencies, and ensuring timely delivery of *Suntala* to international markets. Furthermore, the recognition of *Suntala* as a national symbol has facilitated trade negotiations and promotional campaigns, with Nepali diplomats and trade delegations advocating for preferential treatment and market access for Nepali citrus exports. As a result, Nepal has been able to capitalize on the growing demand for exotic fruits and premium agricultural products in markets such as Europe, North America, and the Middle East, thus diversifying its export portfolio and generating foreign exchange earnings vital for economic growth and development. Overall, the adoption of *Suntala* as the National fruit of Nepal has not only expanded export opportunities but has also positioned Nepal as a key player in the global citrus industry, contributing to the country's socio-economic advancement.

Farmer empowerment

It should be an instrumental step in empowering farmers across the country, particularly those engaged in citrus cultivation. With *Suntala* receiving national recognition and support, farmers have been encouraged to expand their orchards and invest in citrus production, leading to increased agricultural productivity and rural incomes. This empowerment stems from various factors, including enhanced access to markets, technical assistance, and financial resources. Government programs and initiatives aimed at promoting *Suntala* cultivation provide farmers with training on best practices, modern techniques, and pest and soil nutrient management strategies, empowering them with the knowledge and skills needed to optimize yields and ensure crop quality. Furthermore, the designation of *Suntala* as a national symbol has elevated its market value, enabling farmers to fetch higher prices for their produce both domestically and internationally, thus improving their economic status and livelihoods.

Moreover, the adoption of *Suntala* as the National fruit of Nepal has fostered community cohesion and collective action among farmers, leading to increased collaboration and mutual support. Farmers are now organized into farmers groups, cooperatives and associations, allowing them to pool resources, share knowledge, and negotiate better terms with buyers and suppliers. This collective empowerment has enabled smallholder farmers, in particular, to access markets and opportunities that were previously out of reach, reducing their vulnerability to market fluctuations and middlemen exploitation. Additionally, the promotion of *Suntala* cultivation has created employment opportunities along the value chain, from farm laborers to agro-processing workers, further empowering rural communities and stimulating economic growth in Nepal's agricultural heartlands. Overall, the adoption of *Suntala* as the National fruit of Nepal has not only empowered individual farmers but has also strengthened the resilience and sustainability of Nepal's agricultural sector, paving the way for inclusive development and poverty reduction.

Government support

Government support and intervention aimed at promoting its cultivation and enhancing the country's agricultural sector should be the next step. Recognizing the economic, cultural, and nutritional significance of *Suntala*, the Nepalese government has implemented various policies and initiatives to support citrus farmers and boost production. These efforts include financial incentives, subsidies, and credit facilities to facilitate investment in *Suntala* orchards and infrastructure development. Additionally, the government has prioritized research and development in citrus farming, allocating resources for breeding programs, disease management, and the adoption of sustainable agricultural practices. Furthermore, the designation of *Suntala* as a national symbol has led to the establishment of specialized agencies and institutions tasked with overseeing citrus cultivation, marketing, and export promotion, ensuring coordinated efforts and effective implementation of government policies.

Moreover, the adoption of *Suntala* as the National fruit of Nepal has influenced broader agricultural policies and strategies, emphasizing the importance of crop diversification, value addition, and market linkages. The government has integrated *Suntala* cultivation into its broader agenda for agricultural development, recognizing its potential to contribute to food security, rural livelihoods, and poverty alleviation. Furthermore, the promotion of *Suntala* has been leveraged in international trade negotiations and diplomatic engagements to showcase Nepal's agricultural prowess and enhance its global competitiveness. Through targeted support and strategic interventions, the government aims to harness the full potential of *Suntala* cultivation to drive rural development, economic growth, and sustainable food systems in Nepal. Overall, the adoption of *Suntala* as the National fruit of Nepal reflects the government's commitment to supporting and promoting agricultural innovation, entrepreneurship, and resilience in the face of evolving socio-economic challenges.

Health and nutrition advantages

The adoption of *Suntala* as the National fruit of Nepal will bring numerous health and nutrition advantages to the population. *Suntala* is renowned for its rich nutritional profile, being an excellent source of vitamin C, dietary fiber, and various antioxidants. The widespread

cultivation and consumption of *Suntala* have contributed to improved dietary diversity and micronutrient intake among Nepali communities, particularly in rural areas where access to fresh fruits and vegetables may be limited. The high vitamin C content in *Suntala* supports immune function, helping to combat infectious diseases and reduce the incidence of illnesses such as colds and flu. Additionally, the dietary fiber in *Suntala* promotes digestive health and may help prevent chronic conditions such as constipation, heart disease, and diabetes. By incorporating *Suntala* into their diets, Nepali individuals and families can enjoy the health benefits of this nutritious fruit, leading to improved overall well-being and quality of life.

Furthermore, the adoption of *Suntala* as the National fruit of Nepal has spurred initiatives and campaigns aimed at raising awareness about the importance of fruit consumption for health and nutrition. Government agencies, non-profit organizations, and community groups have launched educational programs promoting the consumption of *Suntala* and other locally-grown fruits as part of a balanced diet. These efforts have focused on reaching vulnerable populations such as children, pregnant women, and the elderly, emphasizing the role of fruits like *Suntala* in preventing malnutrition, micronutrient deficiencies, and diet-related diseases. Moreover, the cultivation of *Suntala* has provided employment opportunities in rural areas, contributing to poverty reduction and food security. As *Suntala* production continues to expand, it not only provides health benefits to consumers but also economic opportunities for farmers and communities, thus contributing to the overall well-being and resilience of Nepal's population.

International collaboration

It will catalyze international collaboration and partnerships aimed at promoting agricultural development, trade, and cultural exchange. Recognizing the potential of *Suntala* as a flagship export product, Nepal has actively engaged with international stakeholders, including governments, multilateral organizations, and private sector entities, to strengthen its position in global citrus markets. Bilateral and multilateral trade agreements have been negotiated to facilitate the export of *Suntala* to countries around the world, leveraging diplomatic channels to overcome trade barriers and regulatory hurdles. Additionally, international development agencies and non-governmental organizations have provided technical assistance, capacity building, and financial support to enhance citrus production, post-harvest handling, and marketing capabilities in Nepal. Through collaborative efforts, Nepal has been able to tap into international expertise and resources, accelerating the growth of its citrus industry and expanding opportunities for farmers and exporters.

Moreover, the adoption of *Suntala* as the National fruit of Nepal has promoted cultural diplomacy and people-to-people exchanges, fostering greater understanding and appreciation between Nepal and its international partners. *Suntala* has become a symbol of Nepali identity and hospitality, serving as a center piece in cultural events, festivals, and diplomatic receptions both at home and abroad. Nepali embassies, consulates, and cultural centers worldwide showcase *Suntala* as a unique aspect of Nepali culture, attracting interest and curiosity from foreign audiences. This cultural recognition has facilitated broader collaborations in areas such as tourism promotion, education, and sustainable development. Furthermore, international visitors and tourists are drawn to Nepal to experience *Suntala* harvesting and processing firsthand, contributing to the growth of agro-tourism and cultural exchange programs. In this

way, the adoption of *Suntala* as the National fruit of Nepal has not only strengthened economic ties with international partners but has also deepened cultural connections, enriching Nepal's global engagement and fostering mutual understanding and cooperation.

Job creation

This step will play a pivotal role in job creation across various sectors of the economy. As *Suntala* cultivation expands in response to increased demand and government support, there is a growing need for labor in orchards, nurseries, and establishment of the processing industries. This surge in agricultural activity has created employment opportunities for rural communities, providing livelihoods for farmers, farmworkers, and agricultural technicians. Additionally, the development of ancillary industries such as packaging, transportation, and marketing has further boosted job creation along the *Suntala* value chain. Small-scale entrepreneurs have emerged to meet the demand for value-added products such as *Suntala* juice, jams, and candies, generating employment in food processing and agro-processing industries. Moreover, the promotion of *Suntala* has stimulated agro-tourism and hospitality sectors, with visitors flocking to citrus orchards for agro-tourism experiences, creating jobs in ecotourism, hospitality, and local handicrafts.

Furthermore, the adoption of *Suntala* as the National fruit of Nepal will catalyze job creation through government initiatives and private sector investments in infrastructure and rural development. The government's focus on enhancing post-harvest handling facilities, cold storage, and transportation networks has generated employment opportunities in construction, logistics, and maintenance. Moreover, the establishment of research institutions and agricultural extension services has created jobs for scientists, agronomists, and educators, driving innovation and knowledge dissemination in the agricultural sector. Additionally, the recognition of *Suntala* as a national symbol has attracted investment in branding, marketing, and international trade, leading to job creation in sectors such as advertising, export management, and trade facilitation. Overall, the adoption of *Suntala* as the National fruit of Nepal has not only boosted agricultural employment but has also spurred economic growth and diversification, creating opportunities for sustainable development and poverty alleviation across the country.

Research and development

It will surge in research and development initiatives aimed at advancing citrus cultivation techniques, sapling production technologies, enhancing fruit quality, and addressing agricultural challenges. With *Suntala* receiving national recognition and support, research institutions, agricultural universities, and government agencies have intensified their efforts to improve citrus production through scientific innovation. Research projects focus on breeding high-yielding and disease-resistant *Suntala* varieties tailored to Nepal's diverse agro-climatic conditions, ensuring resilience to pests, diseases, and environmental stressors. Additionally, research is underway to optimize cultivation practices, irrigation management, and soil fertility to maximize yields and minimize input costs for farmers. Furthermore, research and development efforts extend to post-harvest technologies, storage solutions, and value-added product development, aimed at reducing post-harvest losses, extending shelf life,

and increasing the marketability of *Suntala* both domestically and internationally. Through collaborative partnerships and interdisciplinary approaches, research and development in *Suntala* cultivation contribute to the sustainable growth of Nepal's agricultural sector, driving innovation, productivity, and economic prosperity.

Moreover, the adoption of *Suntala* as the National fruit of Nepal has fostered a culture of scientific inquiry and knowledge sharing, leading to capacity building and skill development in agricultural research. Research institutions collaborate with international partners, participate in scientific exchanges, and leverage technological advancements to accelerate progress in citrus research. Additionally, government funding and support for research projects enable scientists and researchers to conduct field trials, collect data, and disseminate findings to stakeholders across the agricultural value chain. Furthermore, research and development in *Suntala* cultivation have implications beyond agriculture, with studies exploring the potential health benefits, culinary applications, and cultural significance of *Suntala*. This interdisciplinary research approach fosters a holistic understanding and appreciation of *Suntala*'s role in Nepal's economy, environment, and society. Overall, the declaration of *Suntala* as the National fruit of Nepal will further promote research and development activities, driving scientific innovations, knowledge creation, and development of sustainable agricultural practices for the benefit of present and future generations.

Rural-urban linkages

This adoption will strengthen rural-urban linkages by creating symbiotic relationships between agricultural producers in rural areas and urban consumers and markets. As *Suntala* cultivation expands in rural regions, there is a growing need for transportation, logistics, and marketing services to connect farmers with urban markets. This has led to the emergence of intermediary actors such as traders, wholesalers, and transporters who facilitate the movement of *Suntala* from farms to urban centers. Additionally, the promotion of *Suntala* has spurred investments in agro-processing facilities for product diversification and value-addition industries in both rural and urban areas, creating employment opportunities and economic synergies across the supply chain. Moreover, the recognition of *Suntala* as a national symbol will increase consumer demand and appreciation for Nepali citrus products in urban markets, driving sales and revenue for the rural producers. This interdependence between rural *Suntala* growers and urban consumers fosters economic integration and mutual benefits, contributing to the overall development and prosperity of Nepal's rural and urban communities.

Furthermore, the adoption of *Suntala* as the National fruit of Nepal has facilitated cultural exchanges and social interactions between rural and urban populations, bridging geographic and social divides. The promotion of *Suntala* as a symbol of Nepali identity and heritage has sparked interest and curiosity among urban consumers, leading to cultural festivals, culinary events, and agro-tourism experiences that celebrate *Suntala* and its cultural significance. Urban residents visit citrus orchards in rural areas to experience *Suntala* production, fruit harvesting, learn about traditional cultivation techniques, and engage with rural communities, fostering mutual understanding and appreciation. Additionally, rural-urban migration flows driven by agricultural employment opportunities and urban demand for *Suntala* products will

further strengthen linkages between rural and urban areas. This exchange of people, ideas, and goods contributes to social cohesion, cultural diversity, and economic resilience, laying the foundation for inclusive and sustainable development in Nepal. Overall, the adoption of *Suntala* as the National fruit of Nepal catalyzes rural-urban linkages, promoting collaboration, exchange, and shared prosperity between Nepal's rural heartlands and modern urban centers.

Social cohesion

Suntala holds deep cultural significance in Nepali society, symbolizing hospitality, prosperity, and auspiciousness. By designating *Suntala* as the national fruit, Nepal has reinforced its cultural identity and heritage, celebrating the rich traditions associated with citrus cultivation and consumption. This recognition of *Suntala* as a national symbol transcends regional, ethnic, and linguistic differences, serving as a unifying force that brings people together to celebrate shared values and traditions. Festivals and rituals centered around *Suntala*, such as the Nepali New Year (Nepal Sambat), Thulo Ekadashi, and the Hindu festival of Dashain, Tihar and Chhatha Parwa provide opportunities for communities to come together, strengthen bonds, and forge connections across social divides. Additionally, the promotion of *Suntala* cultivation has created cooperative networks and mutual support systems among farmers, who collaborate to share knowledge, resources, and best practices, further enhancing social cohesion and solidarity in rural areas.

Moreover, the adoption of *Suntala* as the National fruit of Nepal has facilitated cultural exchange and dialogue, fostering understanding and respect among different ethnic and cultural groups. *Suntala*'s cultural significance transcends borders, attracting interest and appreciation from international audiences and visitors. Nepali embassies, consulates, and cultural centers worldwide should showcase *Suntala* as a symbol of Nepali identity and hospitality, promoting cultural diplomacy and people-to-people exchanges. Furthermore, the cultivation of *Suntala* since ancient times has created employment opportunities, contributed to food and nutritional security, and economic empowerment in rural communities, reducing poverty and inequality and promoting social inclusion. As *Suntala* production expands, it not only provides economic benefits but also strengthens social bonds and solidarity among Nepali communities, contributing to the overall well-being and resilience of society. Overall, the adoption of *Suntala* as the National fruit of Nepal has played a vital role in fostering social cohesion, cultural pride, and unity among diverse communities, laying the foundation for a more inclusive and harmonious society.

Sustainable farming practices

The adoption of *Suntala* as the National fruit of Nepal has incentivized the adoption of sustainable farming practices across the country, promoting environmental stewardship and agricultural resilience. *Suntala* cultivation requires careful management of natural resources such as water, soil, and biodiversity, making it conducive to sustainable farming approaches. Farmers are encouraged to adopt agroecological practices such as organic farming, intercropping, and agroforestry, which enhance soil health, conserve water, and promote biodiversity in *Suntala* orchards. By integrating *Suntala* trees with other crops and vegetation, farmers can create diverse and resilient agroecosystems that mimic natural ecosystems, reducing the reliance on

chemical inputs and mitigating the risks associated with monoculture farming. Additionally, the promotion of *Suntala* has led to investments in soil conservation measures, erosion control, and watershed management, safeguarding fragile ecosystems and promoting long-term sustainability in Nepal's agricultural landscapes.

Furthermore, the recognition of *Suntala* as the National fruit of Nepal will encourage research and innovation in sustainable agriculture system, driving the development and dissemination of new technologies and practices. Agricultural extension services and research institutions collaborate with farmers to promote climate-smart farming techniques, such as rainwater harvesting, drip irrigation, integrated pest management and integrated soil nutrient management, tailored to the needs of improved *Suntala* cultivation for increased yields. Moreover, government policies and programs provide incentives and support for farmers to adopt sustainable practices, including subsidies for organic certification, training in sustainable agriculture, and access to eco-friendly inputs. By embracing sustainable farming practices in *Suntala* cultivation, Nepal is not only enhancing the resilience and productivity of its agricultural sector but also contributing to global efforts to address climate change, conserve biodiversity, and promote food security. Overall, the adoption of *Suntala* as the National fruit of Nepal catalyzes sustainable farming practices, fostering environmental stewardship, economic prosperity, and social well-being in rural communities.

Tourism attraction

Suntala orchards are popular tourist destinations, attracting visitors eager to experience the beauty of citrus groves and participate in agricultural activities such as photographing, fruit picking, tasting and harvesting. Agro-tourism initiatives offer travelers immersive experiences, allowing them to engage with local farmers, learn about traditional cultivation techniques, and sample fresh *Suntala* fruits and products. Additionally, cultural festivals and events centered around *Suntala*, such as harvest celebrations and citrus-themed fairs, draw both domestic and international tourists, providing opportunities for cultural exchange and enrichment. Moreover, the scenic landscapes of *Suntala* orchards nestled amidst Nepal's picturesque mountains and valleys offer unparalleled photo shoot opportunities and outdoor recreational activities, further enhancing their appeal as tourist attractions.

Furthermore, the promotion of *Suntala* as the National fruit of Nepal has stimulated gastronomic tourism, with travelers seeking out culinary experiences that showcase the diversity and flavor of Nepali citrus fruits. Restaurants, cafes, and food tours feature *Suntala*-inspired dishes and beverages, enticing visitors with unique flavors and culinary innovations. The cultural significance of *Suntala* as a symbol of hospitality and prosperity also extends to hospitality establishments, where guests are welcomed with *Suntala*-themed amenities and offerings. Overall, the adoption of *Suntala* as the National fruit of Nepal will enrich the tourism landscape, offering travelers authentic experiences, culinary delights, and cultural immersion opportunities that showcase the natural beauty and cultural heritage of the country.

Misconception

The common English name of *Suntala* is “Mandarin Orange” which makes people relate it to China and have the perception that it could be of Chinese origin. However, the Nepalese *Suntala* is the native plant of the country and has retained its uniqueness- soft and loose skin, easily removable peel, refreshingly sweet flavor, and strong aroma.

Hindus and Nepalese people do not eat beef or are prohibited from slaughtering cows in Nepal. The general reason provided is that the cow is the national Animal and hence should not be eaten, and if *Suntala* is declared as the national fruit – *Suntala* will be a forbidden fruit for Nepalese people, or by making edible *Suntala* Nepal’s national fruit, we open logic for the consumption of beef which is not true.

Prohibition of cattle slaughter and beef consumption is based on Buddhist and Hindu beliefs regarding the milk provider equivalent to one’s mother. Cow is worshipped during Tihar as Goddess Laxmi, so it must not be consumed. Based on people’s belief and respect for the cow, it has been declared Nepal’s national animal and not the other way round.

Challenges and solutions

Regional resentment: Regions with alternative fruits may perceive the selection of *Suntala* as favoritism towards certain areas, potentially causing resentment. Far west province may suggest *Kaphal*, Fig or Walnut; Karnali may suggest Apple; Lumbini may suggest Banana, Mango; Bagmati may suggest *Lapsi*, Indigeneous Pear, Pomagranate, Junar; and Madesh province may suggest Jack fruit, Mango, Litchi or and Koshi province may go for Aerica nuts, Kiwi or Coconuts.

Economic imbalance: As *Suntala* cultivation is concentrated along the mid-hills from west to east- this region for sure will get more support and an instant economic boost upon declaration. The high Himalayas or hot terai where *Suntala* is not commercially grown will feel neglected, leading to economic imbalances and discontentment. For this other fruit crops suitable to those geographical locations will be equally promoted.

Cultural sensitivity: Newar community may consider beals (bels)/wood apple closer to their culture than *Suntala*, Maithili people prefer more sour citrus fruits than some regions might feel that their culturally significant fruits are overlooked, resulting in cultural dissonance. But *Suntala* is used by all communities so it should not be a problem and its National Fruit status won’t compromise the distinct usages of above mentioned fruits as the season varies and purposes vary. To accomodate such concerns, following should be considered.

Solution 1: The east-to-west extension provides the best cultivation region and source for fresh fruits for both Terai and Himals. Therefore, the climatic and geographic diversity can be harnessed following *Suntala*’s pathway for the respective fruits.

Solution 2: As *Suntala* is well grown in heat of Nagpur (lower belt-hot place)- a similar research-based adaptation can be tried in Terai for growing *Suntala* with appropriate variety

development. With its success, it's possible to produce and supply *Suntala* throughout the year, without having to depend on import. With cultivation of *Suntala*- other citrus fruits are cultivated together- it increases citrus cultivation areas.

Solution 3: The upcoming programs should focus on other regionally, commercially and culturally important fruits also to get equitable focus in terms of support and promotion similar to the national fruit. Let the national fruit become the gold standard to evaluate the standard and status of other fruits and prepare a future roadmap.

Solution 4: Such policies must be drafted and implemented that encourage and support the cultivation of various fruits across different regions to promote balanced nutritional availability and economic development.

Solution 5: Communicate the criteria and rationale behind selecting *Suntala* as the national fruit, emphasizing fairness, objectivity, transparency in decision making.

Solution 6: Promote inter-regional collaboration by encouraging joint efforts for the promotion of diverse fruits, thereby fostering a collective sense of unity and shared prosperity. Emphasize cultural celebrations that highlight the significance of fruits across different regions, organizing events to cultivate a strong sense of national pride. Execute educational campaigns aimed at informing the public about the rationale behind selecting *Suntala* as the national fruit, while underscoring the importance of preserving varied regional agricultural practices. Adopt a consultative approach by involving representatives from diverse regions in the decision-making process, ensuring inclusivity and consideration of their perspectives. Consider a flexible symbolism approach by contemplating the adoption of multiple national symbols, including fruits, to aptly represent the rich and diverse cultural and agricultural heritage of the entire nation.

Besides having one fruit as the national fruit does not prohibit provinces from declaring the popular fruit in their province as the provincial fruits. Many countries have more than one fruit as national fruits, some countries have as per their states, some countries have different national fruit for summer and winter.

Opportunity to start a golden revolution

The Green Revolution of 1950s revolutionized production and productivity of cereal crops such as wheat and rice that prevented great famine in the world, similarly, white revolution brought a significant increase in milk production. Therefore, there is a need for such revolution in fruit sector which can be referred to as “Golden revolution” and Nepal can be the initiator of this revolution starting from the citrus sector that can be applied to other fruit crops as per the ecological suitability of the country.

Recommendation

The major recommendations to consider for developing a prosperous citrus sector following the adoption of *Suntala* the National fruit of Nepal are as follows:

Investment on Infrastructure: Allocate resources for the development of transportation, cold storage facilities, and processing centers to support increased production of *Suntala* through expansion of its cultivation and promote export.

Research and Development: Prioritize funding for research initiatives aimed at improving *Suntala* varieties, cultivation techniques, economically important insect/pest and disease management and post-harvest practices.

Capacity Building: Provide training and technical assistance to farmers by enhancing the number and capacity development of the frontline extension workers on sustainable *Suntala* farming practices, nursery management for quality planting material production, pest management, orchard management and post-harvest management.

Value-Added Products: Encourage the development of value-added products such as *Suntala* juice, jam, jelly, marmalade, squash, and candies to diversify products which will further increase revenue streams and strengthen marketability.

Market Access: Facilitate trade agreements and market access for Nepali *Suntala* products in international markets through diplomatic channels and trade negotiations.

Promotion and Marketing: Launch marketing campaigns to raise awareness about the health benefits, culinary versatility, and cultural significance of *Suntala* both domestically and internationally.

Quality Standards: Implement quality control measures and certification programs to ensure the consistency and safety of *Suntala* products for consumers.

Agro-Tourism Development: Support the development of agro-tourism initiatives that showcase *Suntala* orchards and offer immersive experiences for visitors.

Cooperative Networks: Foster collaboration among *Suntala* farmers through cooperative networks, enabling them to share resources, knowledge, and best practices.

Environmental Conservation: Promote agroecological approaches to *Suntala* cultivation that prioritize environmental conservation, soil health, and biodiversity preservation.

Community Empowerment: Empower rural communities through capacity building, access to resources, and economic opportunities generated by *Suntala* cultivation.

Youth Engagement: Engage youth in *Suntala* farming through educational programs, training workshops, and entrepreneurship opportunities to revitalize agricultural communities.

Cultural Preservation: Preserve traditional knowledge and cultural practices associated with *Suntala* cultivation and utilization through documentation, heritage initiatives, conservation and cultural festivals.

Gender Equality: Promote gender-inclusive policies and programs in *Suntala* cultivation, ensuring equitable access to resources and opportunities for women farmers.

Policy Support: Advocate for policies and regulations that support the sustainable growth of the *Suntala* industry, including incentives for organic farming, research funding, and market access facilitation.

Conclusion

In conclusion, the adoption of *Suntala* (Mandarin orange) as the National fruit of Nepal represents a significant milestone in the country's agricultural, cultural, and economic development. This symbolic recognition of *Suntala* underscores its importance as a cultural icon, a source of national pride, and a driver of rural prosperity. The designation of *Suntala* as the national fruit has catalyzed a range of initiatives and collaborations aimed at promoting sustainable agriculture, rural livelihoods, and international trade. From investments in research and development to the promotion of agro-tourism and value-added products, Nepal has leveraged the potential of *Suntala* to enhance food security, generate employment, and foster social cohesion across diverse communities.

Furthermore, the adoption of *Suntala* as the National fruit of Nepal serves as a testament to the country's commitment to harnessing its agricultural heritage for inclusive and sustainable development. By embracing *Suntala* cultivation and innovation, Nepal has positioned itself as a leader in citrus production, cultural preservation, and environmental stewardship. Looking ahead, continued support for *Suntala* cultivation, research, and market development will be essential to unlocking its full potential as a catalyst for economic growth, cultural exchange, and environmental sustainability in Nepal. Through collaborative efforts and strategic investments, Nepal can build upon the foundation laid by the adoption of *Suntala* as the national fruit to create a vibrant and resilient agricultural sector that benefits both present and future generations.

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