Review

Role of Traditional Ethnobotanical Knowledge and Indigenous Communities in Achieving Sustainable Development Goals

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Abstract: The sustainable development goals (SDGs) are a set of 17 goals with 169 targets. The Agenda 2030 of the United Nations envisages a holistic approach to achieve these goals by focusing on humankind and the planet. In this review, we analyzed the scientific literature and technical reports of international bodies such as the United Nations and Food and Agriculture Organization relating to traditional ethnobotanical knowledge (TEK). The literature on TEK was mapped with the targets of the SDGs to determine the role of traditional knowledge in the realization of selected goals and targets. Our extensive and systematic reviewing of available literatures suggests that, of the 17 goals, at least seven goals are associated with TEK. To achieve these seven goals, a thorough understanding is required to disentangle the intricacies involving TEK, indigenous people holding TEK, and their future role in achieving the SDGs. Our review points towards the role of TEK in achieving goals linked to poverty, health and wellbeing, responsible consumption and production, climate action, life on land, and partnerships. In summary, we argue that achieving the intended outcomes of the SDGs and the targets requires concerted efforts of all relevant stakeholders, including indigenous communities, common citizens, scientists, policy makers, and world leaders.

Keywords: sustainable development goals; ethnobotany; human health; poverty; traditional knowledge; sustainable agriculture

Citation: Kumar, A.; Kumar, S.; Komal; Ramchiary, N.; Singh, P. Role of Traditional Ethnobotanical Knowledge and Indigenous Communities in Achieving Sustainable Development Goals. *Sustainability* **2021**, *13*, 3062. <https://doi.org/10.3390/su13063062>

Academic Editor: Emanuele Radicetti

Received: 19 January 2021

Accepted: 4 March 2021

Published: 11 March 2021

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1. Introduction

The United Nations General Assembly in its 70th meeting on 25 September 2015 adopted a resolution “transforming our world: the 2030 agenda for sustainable development” [1]. Its member countries adopted 17 set of goals called the sustainable development goals (SDGs) to end poverty, protect the planet, and ensure prosperity for all. Each goal has certain targets to be achieved by 2030. Sustainable development goals are an extension of millennium development goals (MDGs) and part of a new sustainable development agenda to complete what MDGs did not achieve [2]. For the goals to be realized, everyone needs to do their part, including governments, the private sector, and civil society. The Agenda 21 of the Rio Earth Summit in 1992 [3] where the concept of sustainable development emerged, advocated a pivotal role for indigenous people and other local communities in the management of environment and sustainable development because of their traditional knowledge and associated practices [4]. The official UN document of 2015 (transforming our world: the 2030 agenda for sustainable development) did not explicitly explain the role of ethnobotanists and traditional ethnobotanical knowledge (TEK) in achieving these

sustainable development goals. Apart from the role of different countries and various stakeholders mentioned in the document in achieving the goals and targets, we advocate and reiterate a similar role for indigenous communities by recognizing and supporting their identity, cultures, customs, practices, and interests and by enabling their effective and active participation in the realization of sustainable development goals, including the goals that were mentioned in Principle 22 of the 1992 Rio Declaration on the Environment and Development [3]. It was reaffirmed that traditional ethnobotanical knowledge, ethnobotanists, and people's participation can significantly contribute towards achieving the sustainable development goals by 2030 and beyond.

People have a long history of using plants for various purposes such as for food, medicine, shelter, decoration, construction, and clothing [5]. The usage of plants for various purposes by indigenous and local communities comprises traditional ethnobotanical knowledge, which is not well documented by indigenous people, but has been orally and vertically transmitted from generation to generation [6]. However, ethnobotanists have played an important role in unraveling and documenting these plant-people interactions and unlocked the knowledge by conducting various types of interviews and surveys [7,8]. Besides these, archeological, paleontological, and archaeogenetic evidence has also recently been used to determine plant-people interactions from prehistoric times [9–11]. Though the records on the consumption of plants by humans in the prehistoric times are scarce, recently it was discovered that people in South Africa used leaves of *Cryptocarya woodii* for the construction of bedding 77,000 years ago, and the identity of the plants used was established using modern archaeogenetic tools [12]. This plant is still used by the people living in the area of its recovery, and it has now been established that this plant is toxic to mosquitoes because of its larvicidal properties [12]. The recovery of starch granules from the surfaces of at least 105,000 years old stone tools from Mozambique suggests that early humans consumed grass seeds [9]. The discipline of ethnobotany works at the intersection of plants-people at one end and science at the other end; therefore, ethnobotanists can act as a bridge between them [13]. Tuxill and Nabhan [14] have suggested that ethnobotany can act as useful vehicle and process of development. The outcomes of the interactions between the plants and people as deciphered by ethnobotanists holds enormous potential to solve some of the issues that the world faces today. The common global challenges we face today are ending poverty, achieving zero hunger, improving the nutritional status of the people, promoting sustainable agriculture, improving the health status of the people, providing affordable health care services, and combating climate change [15,16]. Therefore, in the present review article, we identified seven sustainable development goals towards which the traditional ethnobotanical knowledge can contribute significantly. These are SDG (1) no poverty, (2) zero hunger, (3) good health and wellbeing, (12) responsible consumption and production, (13) climate action, (15) life on land, and (17) partnerships for the goals. In the following sections, a brief background of major challenges and the potential roles of ethnobotany in overcoming these challenges to achieve the SDG by 2030 are presented (Figure 1).

Figure 1. A schematic representation highlighting the potential roles of ethnobotanists towards achieving seven sustainable goals and targets.

2. Methodology

To study the role of ethnobotanical knowledge in the realization of sustainable development goals, we searched available literature and information available on the subject [17]. Various reports and documents of the international bodies such as the UN and FAO were studied to understand the sustainable development goals and the targets envisaged under it. We conducted an extensive literature survey to find out papers and reports related to traditional knowledge to link with the sustainable development goals. The research question in the present study was to know whether there were any goals and targets related to ethnobotanical knowledge and whether ethnobotanical knowledge could help in achieving them. After a thorough study, we have identified seven goals related to ethnobotanical knowledge which are SDG 1 (no poverty), 2 (zero hunger), 3 (food health and wellbeing), 12 (responsible consumption and production), 13 (climate action), 15 (life on land), and 17 (partnerships for the goals). The seven goals and targets thereunder are abridged into four broad areas (Table 1) as few goals have overlapping/common targets, and then the gaps or problems in those broad areas are identified. For example, SDG 2 is common for broad area 1 (poverty-hunger-malnutrition) and broad area 2 (desertification, land degradation, and sustainable agriculture). Similarly, SDG 15 is repeated for broad area 2 and 4 (ensuring sustainable consumption-production and reversal of biodiversity loss). The goal 17 (SDG 17) refers to establishing partnerships and synergies among various stakeholders. Therefore, the need of partnerships to achieve different goals or outcomes is discussed in the broad areas. Following this criteria, various papers related to ethnobotanical studies were analyzed to fill the gaps or to solve the problems. Furthermore, various terms relating to sustainable development goals such as “traditional knowledge”, “ethnobotanical knowledge”, “traditional agricultural knowledge”, “traditional ecological knowledge”, “food security”, “abiotic stresses”, “climate change”, “end hunger”, “food security”, “medicinal plants”, “sustainable agriculture”, “climate resilience” and “ethnobotanical knowledge” and various combinations of key terms were searched from various databases such as PubMed, Google Scholar, Web of Science, AGRICOLA, and Scopus [17,18]. The terms were searched either individually or in multiple combinations. The electronic search queries generated more than 3000 papers from various databases. We manually analyzed and removed the duplicates and only 105 articles including reports and websites were included for writing this review. For the survey of various reports relating to sustainable development goals, a simple Google search was used or the website of the organizations were directly visited.

Table 1. The identified four broad areas and the sustainable development goals linked with them.

Broad Area	Goals Linked to the Broad Area
Poverty-hunger-malnutrition	SDG 1: End poverty. SDG 2: Achieve zero hunger and improve nutritional status of the public.
Desertification, land degradation, and sustainable agriculture	SDG 2: Achieve sustainable food production systems. SDG 15: Protect, restore, and promote sustainable use of terrestrial ecosystems; sustainably manage forests; combat desertification; and halt and reverse land degradation and halt biodiversity loss.
Health and wellbeing of the people	SDG 3: Ensure healthy lives and promote well-being for all at all ages.
Ensuring sustainable consumption-production reversal of biodiversity loss	Goal 12: Ensure sustainable consumption and production patterns. Goal 13: Take urgent action to combat climate change and its impacts. SDG 15: Protect, restore, and promote sustainable use of terrestrial ecosystems; sustainably manage forests; combat desertification; and halt and reverse land degradation and halt biodiversity loss.
Partnerships (important for achieving all the goals)	SDG 17: Revitalize the global partnership for sustainable development.

3. Results and Discussion

3.1. Poverty-Hunger-Malnutrition Conundrum and the Role of Wild Food Plants

The ever-increasing human population projections indicate an increase in the number of consumers and demand for goods and services [19]. The Agenda 2030 seeks to end poverty (SDG1), achieve zero hunger, and improve nutritional status of the public (SDG2). Poverty, hunger, and nutrition are three interlinked issues with cause and effect relationships which need to be addressed systematically in an integrated manner [20]. Targeting poverty alone may help to achieve zero hunger, but unless people have access to nutritious food, it may not deliver the expected result [21]. Therefore, the initiatives for alleviating poverty must be coupled with addressing the issues related to diet, malnutrition, and undernutrition. Approximately one billion of the poorest people of the world remain undernourished today, and the Food and Agriculture Organization (FAO) estimated that we will need to increase food production by 70% to feed the 9.1 billion people by 2050 [22]. These data suggest the gravity of challenges the world is facing to ensure food security for all.

As per the FAO [23], food security has four main dimensions: (1) physical availability of food (supply of food), (2) economic and physical access to food, (3) food utilization, and (4) the stability of the other three dimensions over time (Figure 2). The ethnobotanical consumption of wild vegetables and food plants by indigenous communities are in congruence with the above four dimensions as locally grown wild vegetables can help increase the supply of food thereby maintaining demand-supply equilibrium (as described in Figure 2). Since the wild food plants are collected and consumed locally by people, the change in the prices of the market foods may not affect the economic access to it. Besides this, the plants are locally grown, adapted to particular local environmental conditions, resilient to climate change, and are suitable to the local agro-climatic conditions [24]. Therefore, researchers have now emphasized the urgent need to diversify and expand the food basket of the people under unpredictable climatic conditions [25], and in this scenario wild food plants if adopted in mainstream diet are the best option to achieve this goal [26,27]. Several study groups also reported the importance and wide usage of wild food plants in various countries such as India [7,8,27,28], Ethiopia [29,30], China [31], Indonesia [32], Greece [33], and Italy [34,35], to name a few. Since the locally grown plants are rich in vitamins and micronutrients, they can help in reducing diet related malnutrition considerably [32,36]. Ethnobotanists have already generated immense amounts of data on the use of wild plants for food. A search on Google Scholar titled “wild plants as food” shows 1,220,000 results (within the years 2000–2020). All these results suggest that many wild plants under consumption by various indigenous communities have already been documented. Therefore, the present challenges of food insecurity necessitate the mainstreaming of wild food plants, their formal addition into the existing food basket of the public by scientifically validating the nutritional composition, the study and development of the mode of their multiplication/reproduction, and the life cycle-related requirements for their germination and cultivation. To achieve this, multidisciplinary approaches and experts in agronomy, plant science, phytochemistry, dietetics, and modern analytical approaches for nutritional profiling need to be employed. Furthermore, potential health effects also need to be understood as some plants may have the presence of harmful compounds which may exert negative side effects on humans. Combining multidisciplinary approaches along with the clues obtained from ethnobotanical data on wild plants for consumption as fruits and vegetables can provide alternative options and aid in diversifying the food basket of the people [25]. The issue of food security can be catered by popularizing and mass propagation of the locally grown plants especially in the developing countries in Africa and Asia. This can further reduce the dependency of people on only a few crop plants available for their nutritional purposes. In the long run, apart from the role of wild food plants in the diversification of food basket, they can also act as valuable genetic resources for the crop improvement programs as some of the food plants consumed indigenously are the wild relatives of the domesticated crops plants currently grown/consumed.

Figure 2. The role of Wild and Traditional Food Plants in FAO's four dimensions for ensuring global food security.

3.2. Overuse of Chemicals in Agriculture, Desertification, Land Degradation and the Need for Sustainable Agriculture

The increased demand for nutritious, safe, and healthy food for the burgeoning human population and the promise to maintain biodiversity and other natural resources are posing a major challenge to agriculture that is already threatened by climate change and excessive use of chemical fertilizers and pesticides [25]. The excessive use of fertilizers has rendered soils unfit for agricultural purposes. Its long-term use has increased the salinity of the soils and reduced the total land available for cultivation of crops [37]. This problem of soil degradation is severe in tropics and subtropics, and it has led to decrease in the soil ecosystem services by 60% in the 60 years from 1950 to 2010 [38]. It has been reported that nearly 500 million hectares (Mha) of the land is affected due to the soil degradation in the tropics [39], and globally 33% of the total land is affected due to land degradation [40,41]. Besides affecting agronomic production, soil degradation can also slow down the economic growth of developing countries which are majorly dependent on agriculture [42]. The use of chemical pesticides has a deteriorating effect on the non-target beneficial insects such as honey bees [43–45]. Pesticides can affect bee populations directly by causing mortality and by altering their behaviour through sublethal effects. Sublethal pesticides also interfere with brood development and shorten the life cycle of adults [46]. An unusual phenomenon of the disappearance of bees from beehives was observed in the US in 2006 which was termed as colony collapse disorder (CCD) [43,47]. It has been established that many factors might contribute to CCD but pesticides play a synergistic role in this disorder [43,48,49]. Interestingly, organic beekeepers did not face such CCD-like situations [50]. Considering the importance of bees in pollination of the food crops, the increased use of pesticides can lead to reduced food production endangering our food security [50]. The fertilizer and pesticide runoff have also adversely affected quality of surface and groundwater [51]. Thus total land available for cultivation is reduced due to its degradation caused by various activities such as water and wind erosion, salinity, sodicity, alkalinity, reduction in soil fertility, and urban expansion [52]. The increase in productivity of land available using sustainable practices, conservation of the remaining land resources, and reclamation of the degraded land are some of the challenges in land use and sustainable agriculture [53–55].

Besides achieving zero hunger and improved nutrition, SDG2 also seeks to achieve sustainable food production systems (sustainable agriculture) through the implementation of resilient agricultural practices that increase productivity by maintaining the health of the ecosystems [56]. Through the intimate association with the plants and agriculture related activities, people have gained tremendous knowledge on the various aspects of agriculture and crops plants [57]. The knowledge ranges from the soil types, season of sowing a particular crop, the water and nutrient requirements, and other conditions which promote or limit crop productivity [58,59]. The knowledge also pertains to the diseases caused by pathogens and attack by pests and their management strategies [60,61]. The ethnobotanical knowledge is vast, not uniformly distributed, and locally suited as per the environmental conditions and the availability of particular crops [62,63]. In addition to the lack of proper documentation, researchers have suggested that increased modernization may have led to the loss of this knowledge in many places [64]. Turner and Turner [65] have ascribed some other reasons to this loss which include dynamism and changing knowledge systems, loss of indigenous languages, lack of time and opportunities for cultural practices, urbanization of indigenous people, globalization, and industrialization. These challenges in the world agriculture calls for the immediate attention not only to protect the knowledge base of the communities involved in ethnobotany in active sense but also to revive where it is dormant [24]. Rockstrom et al. [66] have stressed the necessity of identifying environmental conditions that enable prosperous human development and set limits for the planet to remain in that state. The study further suggests that the Holocene epoch provides a reference point when the naturally occurring environmental change was within the limits of earth's regulatory capacity and it helped our ancestors to develop agriculture and modern societies to prosper [66]. Therefore, efforts must be taken to

understand, preserve, and promote traditional agricultural knowledge locked with the indigenous communities encompassing wide range of domains of agriculture ranging from types of soils, diseases, environmental conditions, to the management of diseases, interventions required in the soils for disease prevention, irrigation, the types of genotypes, and their selection for a particular soil type [63]. Literature on linking of various domains on traditional agricultural knowledge is scarce [67], and it is advisable to take up studies that consider linking across domains of traditional agricultural knowledge. The knowledge of traditional and sustainable agricultural practices must be strengthened in the interest of the public and the planet; therefore, a greater role of traditional knowledge experts and the communities holding this knowledge is suggested [68–70]. Greater public participation, more funding, and scientific research must be promoted. Sustainable agricultural practices need to be followed which involve the minimal use of chemical fertilizers and pesticides. The reduced use of chemicals and promotion of sustainable agriculture will help combat climate change (SDG 13). Sustainable agriculture and climate resilient cultivation practices will further arrest and reverse land degradation caused by the rampant use of chemical fertilizers. This would also halt biodiversity loss especially the bees and other pollinator species, which is very important for crop diversification (SDG 15).

3.3. Health and Wellbeing of the People: Blend of Traditional Knowledge and Modern Science

Of the various uses of plants, medicinal plants used for human health and well-being are the most important because of the presence of specialized metabolites in those plants (SM's) [71]. Specialized metabolites with medicinal properties are non-uniformly distributed in certain families of plants, and these plants act as natural chemical factories for the production of SM's [72]. The SM's have promising health promoting effects and are an important source of many of the present-day drugs [73]. It has been suggested that medicinal plants play a major role in the primary health care of nearly 80 percent of people living in the developing countries [74]. Not only in the developing countries, but natural products and medications derived from them also contribute significantly to the health care systems of the remaining 20 percent of the people residing in developed countries [75]. Interestingly, of the 25 best-selling pharmaceutical drugs, 12 are natural products derived from the plants [76,77]. Ethnobotanists have significantly contributed to the discovery of numerous medicines such as artemisinin (from *Artemisia annua* L.), aspirin (from *Filipendula ulmaria* (L.) Maxim.), ephedrine (*Ephedra* spp.) codeine and papaverine (from *Papaver somniferum* L.), colchicine (from *Colchicum autumnale* L.), taxol (from *Taxus brevifolia* Nutt.), digoxin and digitoxin (from *Digitalis purpurea* L.), capsaicin (from *Capsicum* spp.), and tetrahydrocannabinol and cannabidiol (from *Cannabis sativa* L.), to name a few [71,78–80]. The importance of the discovery of Artemisinin was recognized when Tu Youyou, a Chinese scientist, was awarded Nobel prize in 2015 [81]. Further, a search on Google Scholar titled “wild plants as medicine” shows 216,000 results (between the years 2000–2020).

Indigenous and tribal communities use thousands of plants for medicinal purposes, many of them are not even botanically named, and many drugs of the plant origin are waiting to be discovered by modern science [82–84]. The famous anthropologist David Maybury-Lewis had emphasized the role of tribal communities in assisting the discovery of more and more medicinal plants which are used by them for medicinal purposes [85]. Ethnobotanists can expedite the identification process of probable medicinally valuable plants, and it is suggested that instead of undertaking random screening expeditions, clues and leads can be derived from the ethnobotanical knowledge that can ease the task of bioprospecting of the plants [86]. Garnatje et al. [6,71] suggested the term “ethnobotanical convergence” for the similar uses of plants included in the same node of a phylogeny. Although the term “ethnobotanical convergence” was criticized by Hawkins and Teixidor-Toneu [87], it is nevertheless believed that linking of new technologies with the traditional ethnobotanical knowledge can expedite the process of target-based drug discovery. Linking ethnobotany with other disciplines such as phytochemistry, pharmacology, pharmacognosy,

and molecular biology can aid in the identification and screening of important plants for their promising role in treating diseases [88]. Furthermore, approaches such as genomics and omics can also be employed to identify the genes underlying the (specialized) metabolites present in the plants characterized by high throughput metabolomics approaches such as gas chromatography-mass spectrometry (GCMS), liquid chromatography-mass spectrometry (LCMS) and nuclear magnetic resonance spectroscopy (NMR) [89,90]. The proper identification, utilization, and conservation of medicinal plants can assist in providing better alternative healthcare services in rural areas, especially in developing countries [91,92]. Furthermore, a number of wild medicinal and aromatic plants are highly valuable, and a significant proportion of the people consume them for medicinal purposes [93]. The scarcity of better health care systems ensuring healthy lives and promoting wellbeing of the people at all ages (SDG 3) in the developing countries of Asia and Africa underpins the importance of ethnomedicinal plants [91,92]. The upward trend of dependency on plant-based medicines, especially in the past few decades, suggests that the role of plant-based drugs will continue to grow in the coming years which may put pressure on the available medicinal plant resources. With the growing burden of diseases coupled with issues such as population growth and climate change, the discovery of plant-based medicines needs to be hastened using leads from indigenous communities in collaboration with experts from multiple disciplines.

3.4. Ensuring Sustainable Consumption-Production Patterns Would Halt Biodiversity Loss

Harvesting practices of wild plants are generally invasive and are destructive to the naturally occurring wild vegetables and medicinal plants which may pose serious threat to these important plants and if kept unchecked sometimes may lead to the extinction of some of the important species [94]. According to the World Wildlife Fund and International Union for Conservation of Nature, approx. 50,000 to 80,000 species of flowering plants are currently being used for medicinal purposes worldwide [95]. Nearly 15,000 of them are threatened with extinction due to excessive exploitation and habitat destruction [96]. The issues related to harvesting coupled with over-exploitation, over usage, and climate change necessitates the need for change in collection and consumption patterns. The collection and consumption patterns need to be congruous with the self-regeneration potential of wild genetic resources; therefore, ethnobotanists can play important roles in the conservation of genetic resources by providing feedback to the communities relying on collection and consumption of medicinal plants [97]. Several researchers have demonstrated the importance of ethnobotany in the conservation and management of natural resources. For example, Phillips and Gentry [98,99] have shown that the number of uses of a plant and its popularity can be used to indirectly access the harvesting pressure on a species and the roles of the communities involved in its usage. Bussmann [75] has also highlighted the role of ethnobotany in the conservation of biodiversity [75]. Ethnobotany can help conserve biodiversity by evolving achievable models for natural resource use and effective management that can be integrated into decision and policy making [100]. A case study from Southern Ecuador has stressed the need to include interdisciplinary approaches for the conservation of ethnomedicinal plants to prevent them from over harvesting. To reduce the pressure on wild plants, alternative methods can be adopted to propagate them. For example, the most popular herbal tea of Southern Ecuador is “Horchata” which consists of more than 30 medicinal herbs, and the harvesting of them directly from the wild may endanger their survival. Nowadays, these 30 ingredients are organically produced by local farmers in small managed gardens instead of directly collecting from the wild, thereby reducing the pressure on the wild populations [75]. Peters, Alexiades, and Laird [101] have suggested the need of imparting skills to the indigenous communities for the better management of the tropical forests. This would reduce the dependency on the external inputs and create a skilled workforce of local communities. Experts from various disciplines such as forestry, ecology, ethnobotany, economics, and anthropology can intervene and play a crucial role in managing the forests and other resources. Skills and knowledge of the best

practices such as how to grow, harvest, and consume wild vegetables and other resources in a sustainable manner (SDG 12) would also play a synergistic role in strengthening the community management of the valuable resources. Awareness programs at larger scale must also be integrated while training selected members of local indigenous communities to highlight negative effects of destructive harvesting practices. The sustainable consumption production patterns would further halt biodiversity loss (SDG15). Besides this, the conservation initiatives can be undertaken along with the help of conservation scientists, geneticists, and people's participation. Integration of traditional knowledge into ecological research for biodiversity conservation involving local communities holds the potential towards sustainable development [102], and it must be recognized and promoted [103,104].

4. Conclusions

The role of ethnobotanical knowledge, indigenous communities, and ethnobotanists has to be recognized on an urgent basis in realizing sustainable development goals. An international collaboration consortium deriving people from various countries and various fields can be established to reap the benefits of traditional ethnobotanical knowledge to alleviate poverty, end hunger, provide better healthcare facilities, combat climate change, and conserve biodiversity and solve biodiversity related issues. Digitization and the creation of universal databases of the usage of plants for various purposes as a global common can be initiated to disseminate information with regard to ethnobotanically important plants and the knowledge associated with it. The modern scientists can use these clues to further establish scientific reasoning, for example, to investigate which compound may be responsible for treating a particular disease; what the nutritional profile of a plant is; whether it can be recommended as a source of nutrition, and if yes, how much is sufficient. Thus, we call for strengthening ethnobotanical studies, and sufficient funding needs to be channeled for promoting research in this field in order to meet SDGs. This can be concluded with a quote by Dr. Margaret Chan (former Director General of WHO), "The two systems of traditional and Western medicine need not clash. Within the context of primary health care, they can blend together in a beneficial harmony, using the best features of each system, and compensating for certain weaknesses in each. This is not something that will happen all by itself. Deliberate policy decisions have to be made. But it can be done successfully" [105]. This holds true not only for the traditional medicines but also for other domains of traditional knowledge such as food plants, sustainable agriculture, biodiversity conservation, and climate change. Traditional knowledge can be supplemented with the modern advancements in science. This integrated approach involving a blend of traditional knowledge and modern advancements in science can contribute to achieving the SDGs if planned and implemented properly. These integrated approaches are in consonance with the SDG 17 (revitalize the global partnership for sustainable development) which emphasizes the importance of global partnership for achieving the rest of the 16 goals. We believe that ethnobotany research groups and societies from various parts of the world must initiate collaborations and partnerships among themselves and with other fields in a cross-disciplinary manner for realizing the sustainable development goals in the greater interest of people and the planet.

Author Contributions: A.K., S.K. and N.R.: conceptualization, methodology, writing—original draft preparation, review and editing, visualization; K., and P.S.: writing—original draft preparation, review and editing. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: All data generated or analyzed during this study are included in this publication.

Acknowledgments: We gratefully acknowledge the continuing support by Central University of Kerala and Jawaharlal Nehru University, New Delhi.

Conflicts of Interest: The authors declare that they have no competing interests.

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