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SUSTAINABLE AGRICULTURAL PRODUCTION OF MEDICINAL HERBS

SUMMARY

The concept of development pursued by a modern man must be aligned and balanced with the capacity of the environment, that is, it must be sustainable. Sustainable development is commonly defined as development that meets the needs of the present, and without prejudice to the possibility of future generations to meet their own needs. Failure to comply with the concept of sustainability leads to increasing consumption and waste of natural resources. When all is spent, the development ceases and comes to a major economic crisis. Serbia, thanks to the favourable climate, soil and unpolluted environment, is suitable for intensive cultivation of medicinal plants, and this type of production makes higher profits faster and easier than other agricultural production and as such represents a great opportunity for development, primarily in rural areas in Serbia. In Serbia, there are about 700 species of medicinal and aromatic plants, of which 420 officially registered, and about 270 species in trade. Sustainable development of natural resources of medicinal and aromatic plants is directly dependent on the implementation and improvement of legislation and standards to be harmonized with EU legislation and standards. Regardless of the great opportunities that herbal sector has in the economic system of the country, many resources, especially when it comes to exports, the higher stages of processing and cultivation of medicinal plants (especially the principles of organic agriculture) are not utilized.

Keywords: medicinal and aromatic plants, sustainable development, legal regulations, rural development.

INTRODUCTION

Favourable geographic position and climatic conditions of Serbia resulted in an extremely rich genetic potential of medicinal plants. Serbia's abundant flora includes more than 700 plant species with medicinal properties. Of that number, more than 400 species from 87 families have been studied in detail. Above 250 species of wild medicinal plants is collected in our country; several hundred railway wagons every year. The opportunities in this field are significantly larger as the quantity of wild medicinal plants of a good quality growing every year is

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three times higher than the quantity collected (Dajić Stevanović and Ilić, 2005). Nowadays, in spite of the manifest share of synthetic chemistry in the pharmaceutical industry, the significance of medicinal plants is increasing (Aftab and Sial, 1999).

Over the past few years, the West European pharmaceutical companies have made very radical turns in use of the raw material for manufacturing modern phytopharmaceuticals. Medicinal and aromatic plants are thus becoming an unavoidable source not just for pharmaceutical industry, but for related ones, such as food, cosmetic, alcoholic beverages, tobacco and some other industries. (Kostadinović *et al.*, 2011).

Collecting of wild herbs and their fruits, as well as their processing and placing on the market in line with the organic farming practices is one form of diversification of economic activities, but also ensures better income and standard of living for households in rural and urban communities and all the participants in the market chain. The increasing demand for health-safe products at the world market and organic farming products in particular, is notable.

Table 1. Number of total vegetable and medicinal plant species in the world

Country	Plant species	Medicinal plant species	%
China	26,092	4,941	18.9
India	15,000	3,000	20.0
Indonesia	22,500	1,000	4.4
Malaysia	15,500	1,200	7.7
Nepal	6,973	700	10.0
Pakistan	4,950	300	6.1
Philippines	8,931	850	9.5
Sri Lanka	3,314	550	16.6
Thailand	11,625	1,800	15.5
USA	21,641	2,564	11.8
Vietnam	10,500	1,800	17.1
Serbia	3,665	700	19.1
World	422,000	52,885	12.5

The Republic of Serbia has good conditions for collecting and processing wild herbs and their fruits from clean, unpolluted areas, in line with the organic

farming practices, which also provides opportunities for increase of exports to the European Union market (Stevanetić, 2008).

Serbia is a globally significant biodiversity centre. There are many regions in Serbia with good natural potential, but these are not fully utilized. Larger-scale collecting of medicinal and aromatic plants (MAPs) in Serbia takes place in the south-east. Sokobanja is the most significant region from which wild plants are collected in significant quantities.

According to estimates, there are around 12,000 organized plant collectors in Serbia, but also a certain number of part-time ones, who are active at the periods of an increased demand at the market, which results in a higher price. There are also collectors who collect medicinal and aromatic plants for their own use, or for direct sale at the markets.

Collectors usually work individually, although shared transport would reduce their costs. Often the harvesting takes place along with other activities, such as taking the livestock to grazing, or land cultivation. The quantity of wild plants collected varies, but it can reach up to 50 kg per day. While some producers can produce several tons of dried plants per annum, some manage to collect and sell just a few kilograms. The differences in quantities of wild plants collected are large. The low level of reliability when it comes to the source of the raw material is the limitation factor for investments into this activity. One of problems in collecting of wild plants are insufficient and uncertain earnings of many collectors, but also wholesalers, both at the local and the foreign market (Katić et al., 2006).

The differences in earnings at different levels (collectors, wholesalers and retail sellers, exporters) are significant. Expectedly, collectors receive the smallest share in the value chain, on average, 0.99 EUR/kg of dried plants delivered to the collecting centres or processing facilities. Wholesalers achieve price that is 2.4 times higher than the amount received by collectors, and exporters around 80 per cent of the price reached at the national wholesale level. Since stances of stakeholders in trade are of particular importance, it is important to make their promotion and advancement as the starting point of every strategy concerning the sustainable MAP sector (Vukomanović and Bojanić, 1999).

Sustainable agricultural production

The development concept that contemporary humankind aspires for has to be in line and balanced with the environmental capacity. In one word, it has to be sustainable.

The very concept of sustainable development is relatively novel, but at the end of 18th century, the English economist and demographer, Malthus claimed that there is a disproportion between the growth rates of the population and natural resources (Kula, 1999). Sustainable development is most frequently defined as development that meets the needs of the present, without compromising the ability of future generations to meet their own needs. Failure to abide by the sustainability concept results in an increasing consumption of and

squandering natural resources. Once everything is used, development stops and major economic crises occur.

Sustainable agriculture, the term originating from the Latin word (*sus-* below, *tenere-* keep), means keeping or preservation over a longer period of time. Sustainable agriculture, as part of a general development is defined in the Agenda 21, at the United Nations Conference on Environment and Development (Rio de Janeiro, 1992): it is a production system integrating the environmental and economic elements of production, care for human health, taking into account the diversity of agriculture and social community. Therefore: *Sustainable agriculture is a method of production that, over a longer period of time, improves the quality of the environment and resources on which the production is based, meets the needs of humans for food and fibres, is cost-effective and improves the quality of life of farmers and the society in general.*

Nowadays, sustainable agriculture is taken as a series of production methods with harmonised relations between agriculture and ecosystem and according to Gold (1994), it includes all environmental production methods.

Organic production is an issue discussed a lot, and as of lately, acted upon. It is a production conducted in line with strictly defined rules, without use of chemicals, with very specific and strict requirements, which increases the interest in food thus produced. The problem is that such production often results in significantly lower yields and requires higher investments. For that reason, the price is higher and in many cases it is several times higher, so demand in such products is, for the time being, present only in highly developed countries. The compromise between organic and conventional production is production in which customary protection products, fertilizers and other are used, but under control, in line with the contemporary knowledge on quantities, method of preparation and use of clearly define chemicals, for which it has been established that they do not harm human health. Such production is mentioned as Good Agricultural Practice, or Controlled Integration Cultivation (Kontroliert Integrierte Anbau).

The details for such production are agreed between the producer and the buyer. Implementation of measures is monitored and documented and control – auditing is mandatory, where one of main preconditions is to establish trust and respect between producers and buyers. In difference to conventional production, achievements and knowledge are applied in production of health-safe and quality food, while all measures and measuring undertaken are documented (Pešić and Janković, 2006).

Sustainable plant use

The great floristic abundance of Serbia and existence of significant natural habitats allows for their exploitation, with application of protection measures, in line with the sustainable development principles. The fact that irrational, uncontrolled and unprofessional collecting resulted in disappearance of a large number of populations of medicinal species from spontaneous flora, with many plant species in danger, reduced and suppressed areas, at the verge of complete

extinction. This is the case from the Red Book species (sundews, certain Satureja, gentian, peony, many orchids, dwarf everlast, hyssop, wolf's-foot clubmoss, yellow pheasant's eye, milk thistle, etc.). Some other, due to high demand, industrialization, construction of roads, expansion of agricultural land, construction of hydropower plants, channels and various other reasons are becoming increasingly rare in some regions (sweet flag, camomile, marshmallow, garden angelica, red centaury, liquorice), so it is necessary to undertake all measures in order to conserve the population, habitats and broader areas (Dajić Stevanović and Ilić, 2005).

In order to protect the biodiversity, it is necessary to apply sustainable collecting of medicinal and aromatic plants. Sustainable collecting may be applied if: earnings of all those who take part in trade are increased and through securing profitable arrangements, in line with sustainable resource management. To that end, it is necessary to support development of associations that would represent the interests of various stakeholders in the chain of wild herbs business; develop applicable plans of management in this sector; educate collectors on appropriate collecting techniques in order to protect the biodiversity; intensify efforts in protecting the cultivation of endangered and species at risk. Defining the best practice standards, both for sustainable collecting and fair trade, is important for this sector (Katić et al., 2008).

A sustainable MAP sector is important also for securing a better standard in most of rural households and for biodiversity preservation. It makes possible: economic value (economic sustainability), reduces poverty and inequality (social sustainability) and protects and renews natural resources (environmental sustainability).

The most closely linked are social and environmental sustainability. Social sustainability refers to the earnings of those included in this sector; security, sustainability and standard of earnings depends for the most part on sustainable use of medicinal and aromatic plants. Also, social and environmental sustainability are linked with economic sustainability so there are justified reasons for adoption and strict application of sustainable practice by organizations doing business in this sector. The general development and growth in MAP sector cannot be implemented without the implementation of the strategy aimed at increasing the sustainability of natural resources. In case sustainable practice is not adopted, the mid-term and long-term business success would be in danger. Identification of a solution for establishing of a MAP business that would operate in a sustainable way is a complex issue.

In order to have MAP business operating in line with the principles of sustainable development, it is necessary to introduce a process of gradual changes. Various stakeholders (public sector, private sector, civil society and donors) are included into complementary interventions, and all are making effort to contribute to the long-term objective of a sustainable MAP sector (Balkan Developmental Initiative for plant sector).

Adequate regulations protect autochthonous plant species and govern their controlled use. In Serbia, legislation protects certain species of wild flora at risk of extinction, and their collecting from natural habitats is placed under strict control. There are 152 species of wild flora, three lichen species and 15 fungi species placed under control (Official Gazette of the Republic of Serbia 09/2010). Collecting of wild flora is allowed with a permit for collecting of protected species in specified quantities and periods. In order to achieve a rational sustainable exploitation of these resources, it is necessary to provide long-term benefits, which requires a coordinated and efficient management of resources with appropriate mechanisms in place to control the exercising of the rights. The long-term benefit is directly linked with the responsibility of collectors in resource management, as their existence depends on that, either entirely or partially. Furthermore, appropriate penalties have to be laid down and implemented for those who breach the principles of sustainable exploitation of these resources (Official Gazette of the Republic of Serbia 52/2008).

Cultivation of species at risk and endangered species

Majority of importers in the European Union demands and appreciates more the cultivated medicinal and aromatic plant. Cultivation of plants is one of ways to alleviate the pressure exerted on wild plants. Although cultivation can be used as a good and purposeful way to secure larger quantities of raw materials and produces and a larger market, it has its limitations, such as:

- Not all species are easy to cultivate;
- Some species take several years to reach harvest ripeness;
- The problem of quality of seed and/or material is evident;
- Cultivation technologies are known for just a few MAP species;
- Lack of information on the process of cultivation of most of MAP species.

European market of medicinal and aromatic plants

The European Union is the largest commercial market for medicinal and aromatic plants worldwide, with imports of about 120,000 tons worth 200 million USD; which is a wholesale price for dried raw material for the period 1991-2000. The estimated annual growth rate ranges from 5 to 10%.

Within the European Union, Germany is by far the major importer, with the share of about 38 per cent of the market, followed by France with 17% and Italy 9% of the total goods imported. Germany is at the same time also the major European exporter, with about 15,000 tons of the plants exported every year to the European Countries and the ISA. The major exporters to the European Union, by value, are: USA (15.8 %), India (8.0 %), China (7.45 %), Bulgaria (6.44 %) and Egypt (5.47 %) (Katić *et al.*, 2006).

Former Federal Republic of Yugoslavia was the largest exporter of medicinal and aromatic plants into the European Union while today Serbia's

share together with Montenegro is only 0.43 per cent of the MAP imports. The major East European competitors of Serbia are Bulgaria, Poland and Hungary.

The medicinal and aromatic plants of the Balkan countries are limited to raw materials such as: dried herbs, often already cut, sieved and classified, as well as semi-processed products such as alcohol extracts and essential oils.

Quality should be the basic element of the marketing strategy that could improve the MAP sector. Although the competition among exporting countries is tough, the number of suppliers who meet the international standards for organic harvesting and processing are few. That is why the organic agriculture, including the harvesting of wild plants and fruit is a good opportunity for Serbia to penetrate new markets (Savić et al., 2006).

The certificate for sustainable harvest in MAP sector

There are intensive ongoing activities on establishing of certificates for non-wood forest products. From the viewpoint of sustainable harvesting, three certificates are of particular importance (Official Gazette of the Republic of Serbia 62/06; (Official Gazette of the Republic of Serbia 135/04) as follows:

- Forest estate certificate;**
- Social certificate;**
- Organic certificate.**

The International Federation of Organic Agriculture Movements (IFOAM) adopted the rules lying down that plants in organic agriculture should: originate from a sustainable forest environment; be harvested and collected in a way that does not compromise sustainability; originates from a precisely defined area; be collected by collectors who are known and are have good knowledge of the area.

HACCP (Hazard Analysis and Critical Control Points) is an internationally recognized concept for the prevention of microbiological, chemical and physical pollutions in the chain of suppliers, processors and distributors of food products. In EU Member States, the HACCP concept has become an obligation with regard to ensuring the food safety in line with the EU Regulation 93/43/ (EEC).

Sustainable use of plants implies their rational exploitation that enables their survival and durability, ensuring at least the same level of exploitation for the generations to come.

Based on the competition of the Ministry in charge of environmental protection, the species and contingents of wild flora, fauna, lichen and fungi that can be collected in a given year is set and persons eligible for applying to permits are legal persons and entrepreneurs engaged in their collecting for the purpose of use and placing on the market. Thus, the species given by the said decree for 2008 (Katić et al., 2008) in the list includes:

- 94 protected species of wild flora with quantities permitted for harvesting, depending on the species, ranging from only 500 kilograms of rhizome of the butcher's broom (*Ruscus aculeatus L*) and mouse thorn (*Ruscus*

hypoglossum L.), to the whole 5 million kilograms of the dog rose fruit (*Rosa canina L.*), which gives the ratio of 1:10000.

Among the species collected in larger quantities are also the blueberry fruits (*Vaccinium myrtillus L.*) in the amount of 3 million kilograms, blackberry herb (*Rubus fruticosus L.*) and juniper berries (*Juniperus communis L.*) in the amount of 2 million kilograms each, while among smaller quantities of 1000 kilograms each are: yellow yarrow herb (*Achillea clypeolata Sibth. & Sm.*), wolfsbane tubers (*Aconitum vulparia Reichenb.*), lady fern rhizome (*Athyrium filix-femina L Roth*), birch buds (*Betula pendula Roth*), autumn crocus seeds (*Colchicum autumnale L.*), small flowered black hawthorn fruit (*Crataegus pentagina*), male fern rhizome (*Dryopteris filix-mas L Schott*), scented hellebore root (*Helleborus odoratus Waldst. & Kit.*), and white nettle flowers (*Lamium album L.*);

-3 lichen species in small quantities of herb: beard moss (*Usnea barbata L. Web. In Wigg*) and Iceland moss (*Cetraria islandica L Ach*) 100 kilograms each and oakmoss (*Evemia prunastri L Ach*) 200 kilograms;

-15 fungi species in quantities ranging from 4 million kilograms of king bolete (*Boletus edulis Bull. Fr.*) to 30 kilograms of white truffle (*Tuber magnatum*). Larger quantities apply to chanterelle (*Cantharellus cibarius L. Fr.*) - 1800 tons and black trumpet (*Craterellus cornucopioides Pers.*) 500 tons. Small quantities also apply to summer truffle (*Tuber aestivum*) 200 kilograms and black winter truffle (*Tuber brumale*) 100 kilograms and 10 fauna species.

Harvesting of several species in the list set was not allowed on the whole territory of the Republic 2008 (Dajić Stevanović and Ilić, 2006)), while for some there are areas where harvesting of certain species is not allowed, for example: autumn crocus (*Colchicum autumnale L.*), butcher's broom (*Ruscus aculeatus L.*) and mouse thorn (*Ruscus hypoglossum L.*) in all seven districts of Vojvodina; horned viper (*Vipera ammodytes*) in the Mačvanski, Kolubarski, Zlatiborski, Raški, Rasinski and Pčinjski district (Balkan Development Initiative for Plant Sector). Contingents approved and required, i.e. allowed quantities (harvesting permits issued) differ from year to year. For the most part, that is the basis for assessment of opportunities, limitations and reliability for engaging in this business.

Upon reviewing the data available (the Institute for Nature Conservation of Serbia), significant differences can be noted between the contingents set for the same species in two years (Official Gazette of the Republic of Serbia 31/2005, 45/2005- amended by 22/2007 and 38/2008), then, the most frequent large difference is between the contingent itself and the quantity approved for harvesting, where the quantity allowed for harvesting in most cases smaller than foreseen as possible (Official Gazette of the Republic of Serbia 52/2008). It is interesting to note that there are species for which quantities allowed were larger than quantities set by the competition (as a contingent for the give year). This happens with products for which quantities demanded are far larger than the

contingents, so based on the opinion given by the Institute for Nature Conservation of Serbia, the quantity is increased and approved (Official Gazette of the Republic of Serbia 24/2008). Some of major limitations are also: lack of interest of harvesters (rural population), poor knowledge of opportunities for more intensive engaging in such activity, not well organized stakeholders in the chain of use of the resources. The limitations could be gradually overcome, with appropriate organization of activities.

Collecting, use of and trade in protected species has been placed under control in order to prevent collecting of species from natural habitats in quantities and in a way that would endanger their survival in the future, thus ruining the biocenose structure and stability. Thus, sustainable use of wild medicinal and aromatic plants is provided. It is prohibited to collect: plants from small populations; pulling or damaging subterranean parts (root, rhizome, etc.) in species whose upper parts are used; breaking or cutting trunks and branches of trees and bushes while collecting fruits, flowers or leaves or inflicting other forms of damage to the plant and its habitat; collecting in the vicinity of high traffic roads and landfills. Also it is necessary to: identify the species collected; keep herbarium specimens of the species collected; be well aware of the morphological properties of the species in order to avoid collecting of similar plants that pose potential health risk but also to avoid collecting of rare and endangered plants; collect the species in habitats where it is the most numerous and use only mature plants for exploitation; collect only plant parts when they contain the highest level of active substances for which the plant in question is used (Tabela 2).

Table 2. The period of collection of certain parts of plants

Subterranean parts	Autumn months
Bark	Spring months, rarely in autumn
Herb	In early stages of plant flowering
Leaves	In early stages of plant flowering
Flowers	When buds start opening
Fruits	dry: immediately before ripening juicy: when ripe
Seeds	When fully ripe

When collecting the roots of woody species, the root stem must not be cut or dug out, only some of side roots. When collecting subterranean parts (roots, rhizome or bulbs) minimum 80% of the individual plants should be left intact. The root stem or rhizome with buds has to be put back into the soil. Bark is taken off branches in the form of longwise strips along one side. Where herb is

collected, minimum 30% of plants should be left intact. Where leaves are collected, minimum 70% of leaves should be left on each plant. When collecting flowers, 30% of flowers of each plant has to be left. Herb, leaves, umbel and flowers are to be cut by knife or scissors. If fruits and seeds are collected, at least 20% has to be left on each plant for regeneration purposes.

In Serbia, medicinal plants are grown on more than 3,500 ha, mostly in the region of Vojvodina. Most frequently cultivated plants are camomile, lemon balm, valeriana, peppermint, hyssop, thyme, coriander, caraway, lovage, artichoke, anise, marshmallow, echinacea and others (Sekulović, 1999).

Compared to collecting of wild herbs, cultivation of medicinal plants has several advantages: a) cultivation results in a raw material of a standard quality, particularly when larger quantities of a stable drug is needed for pharmaceutical and related industries (quality depends on genotype, chemotype, ecotype – habitat, climate, year); b) it is easier to use the advantages of already existing agro-technics i.e. machinery, sowing structure, measures of protection, treatment and processing of medicinal plants; c) agricultural land resources are used more effectively as soil of poorer quality is utilised as well; d) labour force needed for collecting is annulled; e) economic effects are higher compared to cultivation of standard cultures; f) the quality of raw material is more easily adjusted to the pharmacological standards; g) rare, endemic and endangered species are protected from extinction, in particular the species harvesting of which is prohibited or strictly limited, and h) underutilized resources, necessary for other economic and agricultural activities (soils in the hilly and mountainous parts, flooded soils, soils prone to erosion, territories of national parks and nature reserves) are revived. Cultivation and processing of medicinal plants results in significant quantities of waste material that can be used as natural fertilizer in organic agriculture (compost and various biodynamic fertilizers) or feed.

With regard to the cultivation technologies in Serbia, three plant groups are defined as follows: 1) plants whose cultivation technology is known (marshmallow, angelica, valeriana, camomile, peppermint, coriander, fennel, lovage, hyssop, thyme, sage, borage, caraway, evening primrose, pyrethrum, echinacea and tarragon), 2) whose production technology is partly known (yellow yarrow, common agrimony, milk thistle, liquorice, baby's breath, St. John's wort, elecampane, motherwort, common mallow, wild marjoram, rue, soapwort, heather, saffron and others) and 3) whose cultivation technology is unknown (common yarrow, monkshood, dandelion, plantain, belladonna, wormwood, stemless carline thistle, autumn crocus, gentian, dwarf everlast, wolf's-foot clubmoss, henbane, juniper, common mullein, comfrey, cowslip, centaury, stone fem, etc.). Species to be grown from the nature protection viewpoint (Dajić Stevanović and Ilić, 2005) are: *Achillea sp.*, *Aconitum sp.*, *Acorus calamus*, *Adonis vernalis*, *Allium victorialis*, *Arctostaphylos uva ursi*, *Castanea sativa*, *Centaureum erythraea subsp. erythraea*, *Cnicus benedictus*, *Colchicum autumnale*, *Corylus colurna*, *Crocus sp.*, *Gentiana lutea*, *Gentiana punctata*, *Gypsophila paniculata*, *Helichrysum arenarium*, *Lycopodium*

clavatum, *Menyanthes trifoliata*, *Micromeria* sp., *Orchis* sp, *Pinus mugo*, *Primula* sp, *Herniaria* sp., *Inula helenium*, *Ruta graveolens*, *Satureja* sp., *Sideritis scardica*, *Veratrum* sp, *Vaccinium vitis-idaea* and others.

The selection of plant species, selection of soil, application of appropriate technology of cultivation, drying and, possibly, further processing, can result in drugs of a better and far more even quality compared to drugs from wild medicinal plants.

CONCLUSION

Serbia has a great potential for production of medicinal plants, taking into account the natural conditions. With observance of the legislation in force, the principle of sustainability of species and their population with particular protection of endangered species, there are significant opportunities for a better utilization of these natural resources and hence the improvement of the standard of living of persons engaged in this activity. Serbia's great advantage and development opportunity is also the fact that industrialization has not significantly destroyed the harmony of human activities and nature, so our country is one of rare healthy oases of Europe. Environmentally, it is a huge advantage, particularly when it comes to the production of healthy food, high quality raw material and healthy lifestyle. Production of medicinal plants and products thereof is particularly important, as it is known that foreign buyers demand products from environmentally clean areas, so there lays our chance to significantly increase exports and foreign currency inflow.

We are of the opinion that production of medicinal and aromatic plants in line with the principles of organic agriculture (application of organic fertilizers, weed control using alternative control measures, including mulching, crop rotation and other measures) has a future, particularly in hilly and mountainous areas that are, on one side environmentally acceptable for such an activity, and on the other, they cover the key autochthonous habitats of most of medicinal and aromatic plant species.

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ODRŽIVA POLJOPRIVREDNA PROIZVODNJA LEKOVITOG BILJA

SAŽETAK

Koncept razvoja kome teži savremeni čovek mora biti usklađen i uravnotežen sa kapacitetom životne sredine, odnosno on mora biti održiv. Održivi razvoj se najčešće definiše kao razvoj koji zadovoljava potrebe sadašnjice, a ne dovodi u pitanje mogućnost budućim generacijama da zadovolje vlastite potrebe. Nepoštovanje koncepta održivosti vodi ka sve većoj potrošnji i rasipanju prirodnih resursa. Kada se sve potroši, prestaje razvoj i dolazi do velikih ekonomskih kriza. Srbija, zahvaljujući povoljnoj klimi, zemljištu i nezagađenoj sredini, veoma je pogodna za intenzivno gajenje lekovitog bilja, a ova vrsta proizvodnje donosi veći, brži i lakši profit od drugih poljoprivrednih proizvodnji i kao takva predstavlja razvojnu šansu, pre svega, ruralnih područja u Srbiji. U Srbiji, u lekovite i aromatične biljke ubraja se oko 700 vrsta, od čega je 420 zvanično registrovano, a oko 270 vrsta je u prometu. Održiv razvoj prirodnih resursa lekovitog i aromatičnog bilja, direktno je zavisano od primene i unapređenja zakonske regulative i standarda koji se moraju usaglasiti sa zakonima i standardima EU. Bez obzira na velike mogućnosti koje herbalni sektor ima u okviru privrednog sistema zemlje, mnogi potencijali, posebno kada je reč o izvozu, višim fazama prerade i kultivaciji, odnosno gajenju lekovitog bilja (posebno na principima organske poljoprivrede), nisu iskorišćeni.

Ključne riječi: lekovito i aromatično bilje, održivi razvoj, zakonska regulativa, ruralni razvoj.