A “SWOT” Analysis of Medicinal Plant Production in Iran

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Abstract
The use of medicinal plants and their processed essence in industrial countries is increasing. Hence the main purpose of study is carrying out an analysis with a systemic approach to production situations of medicinal plants in Iran. The data were gathered from two methods, consisting of firstly documentary studies and secondly a survey study. The research instrument was a questionnaire. The results have been presented in a SWOT frame, and the results that were found in this research are divided into four categories; Strengths such as: the supply of an effective material of medicines, the supply of an un-side effect medicine, the supply of a raw material of medical industries, the conservation of biodiversity, as raw materials for extraction of active constituents in a pure form, medicinal plants are resistant and strong in physiological aspects, Weaknesses such as: all of medicinal and industrial plant species have not been identified, knowledge of genetics and plant physiology of medicinal plants is unfortunately not as developed as that of food crops, lack of research and development of high-yielding varieties and domestication, low productivity and output, low quality of output, low profitability, uncontrolled, traditional and misuse of this plants, low quality of by products for export, Opportunities such as: diverse climate appropriate for growth of various medicinal species, no dependence on foreign medicine, helping the development of medical industries by providing added value, helping the development of processing industries, preparation of income finally due to development, preparation of employment, increase of by product export, help to human welfare and society, and Threats such as: having no integrated and systemic approach in planning for medicinal plants, drought and climate change, having no coordination between Ministry of Agriculture, industry and commerce for developing relative industries, socio-economic constrains in cooperation for utilizing, limited research and development centers in this case, un-organized market, marketing and access to latest technological and market information, deficiency of information sources and lack of information and research systems on medicinal plants, lack of developmental and extension and advisory services, these are found effective factors in the production of medicinal plants in Iran, that are presented as holistic analysis in a SWOT worksheet.

INTRODUCTION
The use of medicinal plants and their processed essence in industrial countries is increasing. Unlike other economic crops, medicinal plants, with few exceptions, continue to be cultivated in the same way as they were grown thousands of years ago. The earliest available records of herbal medicine date back to the 16th century, consisting of manuscripts and books written by Spanish missionaries (Quisumbing, 1978).

Medicinal and aromatic plants constitute great economic and strategic values for Asia and the Pacific (Haq, 1993) and there is great potential to improve the yield and quality of these plants, either by more selection of existing species or varieties or through plant breeding or other novel methods of plant improvement. Thus, todays medicinal and
industrial plants have a very important role in the world economy, for example; according to FAO report, the export value of medicinal plants in 1995 was 880 million dollars, of which China with 377 million dollars has the first rank in the export of medicinal plants, and Iran’s share of this trade is very negligible.

It was estimated that the area under cultivation of medicinal herbs exceeded 400,000 ha and the amount of medicinal herbs purchased exceeded 13 million ton. (Wijesekera, 1993).

Medicinal plants are a very important resource for the people of some countries such as Iran for two reasons: They have contributed to the welfare of the people through the health care program, and as a source of income derived from production of raw materials.

According to existing information, there are 1700 species of medicinal and industrial plants in Iran. Among them only 200-300 species are harvested. Others spontaneously grow, dry and die without any use. So these potentials and advantages remain unused. On the other hand, in Iran productivity of medicinal plants production is low and output does not follow the opportunities the market offers. Hence, the main objective of this paper is carrying out an analysis with a systemic approach in medicinal plant production conditions in Iran. In Iran, there are two sources of supply of medicinal plants, material collected from the wild and cultivated material. Therefore, researchers, specialists and professionals can use the results of this research.

MATERIAL AND METHODS

The data were gathered from two methods consisting of firstly: documentary studies; study of documents, yearbooks, papers and other available references and secondly: surveying study; interviews with specialists and professionals of Iranian medicinal plants. The research instrument was a questionnaire that has been laid with open question.

Twenty persons consisting of university specialist, researcher and experts of Range and Forests Organization of Iran were interviewed. (The number of persons being interviewed isn’t important because this research is a qualitative research). Results have been presented in a SWOT frame and frequencies and percentages were used to form a SWOT worksheet.

About SWOT Analysis

A SWOT analysis looks at future possibilities through a systematic approach of introspection into both positive and negative concerns. This helps the planner to determine which strengths to increase, which internal weaknesses to eliminate, which external opportunities to exploit, and which external threats to prepare for the best (Weihrich, 1985). Thus it is a general tool designed to be used in the preliminary stage of decision-making and as a precursor to strategic planning in various kinds of applications (Balamuralikrishna, 1992).

SWOT analysis consists of two dimensions. One: internal/external dimension (factor). Strengths and weaknesses are internal factors and, opportunities and threats are external factors. Two: positive/negative dimension (factor) (Fig. 1).

These dimensions (factors) are:
1. **Strengths (S).** Strength is a basic asset that provides a competitive advantage for its growth and development (Kundu and Seeman, 2000). There are positive aspects that are considered as internal factor for issue under analyze (Kothai, 1993).
2. **Weaknesses (W).** Weakness is the liability or limitation that can create at a time and situation, specific disadvantage for its growth and development (Kundu and Seeman, 2000). Weaknesses operate against Strengths and there are negative aspects that are considered as internal factor (Kothai, 1993). In fact this factor identifies a scope which needs to be revised.
3. **Opportunities (O).** Opportunity is the ability to grow and achieve its specific objectives in a given situation (Kundu and Seeman, 2000). Strengths are one factor that
make an opportunity with provide a appropriate situation and there are positive/external aspects.

4. Threats (T). Threat is a situation that blocks the abilities to grow and develop for meeting its ultimate goal (Kundu and Seeman, 2000). Threats are negative aspects that are considered as external factor for issue under analyze (Kothai, 1993). Thus, Weaknesses and Threats are negative/external aspects.

RESULTS AND DISCUSSION

Because of the aim of this paper, the results of this research were presented as a SWOT framework, which is able to establish a systemic and integrated thinking of readers. Therefore, the results of this surveying research (interview with 20 specialists of medicinal plants of Iran) were provided on a worksheet of SWOT (Fig. 2).

CONCLUSION AND SUGGESTIONS

1. They can not and do not participate in further stages of processing and the very suitable value added margins accruing in these stage of transformation do not return to them;
2. There is hardly any attention to the multi-purpose properties of many pharmaceutically or cosmetically relevant plants, the cultivation of which could serve several developmentally relevant purposes;
3. Government and contrary concerned authorities should pay enhanced attention to the fact that the time of exploiting natural, wild-growing resources is drawing to an end;
4. In research and development, more attention should be given to the R&D in the medicinal plant production sector;
5. New attention edition should be given to the local herbalist culture and its extinction should be prevented;
6. In Iran the medicinal plant sub-sector is only a minor part of agriculture and while offering considerable potential for expansion and income-earning to those who enter it, more attention should be given to this sector behalf of the government;
7. There is no or state-wide market and marketing infrastructures for medicinal plants in Iran. Therefore organization and infrastructures should be formed to support in this sector; and
8. There are no specific agencies dealing with seed production and distribution.

Literature Cited

Haq, N. 1993. Breeding and improvement of medicinal and aromatic plants. Proc. regional expert consultation on breeding and improvement of medicinal and aromatic plants in Asia, Thailand, 1-6 June 1993, FAO.

Figures

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Fig. 1. Main dimensions and factors of SWOT.
### Opportunities

1. Diverse climate appropriate for growth of various medicinal species (Iran has 11 climates of the 13 climates in the world)
2. No dependence on foreign medicine
3. Helping the development of medical industries by providing added value
4. Helping the development of processing industries
5. Preparation of income finally due to development
6. Preparation of employment
7. Increase of by product export
8. Development and exchange of common product standard and analytical methods
9. Help to human welfare and society

### Strengths

1. Supply of an effective material of medicines
2. Supply of an un-side effect medicine
3. Supply of a raw material of medical industries
4. Land coverage in range land and environmental conservation
5. Conservation of biodiversity
6. Deep history of Iran and considerable indigenous knowledge in this case
7. As preparation for herbal and indigenous medicines
8. As raw materials for extraction of active constituents in a pure form
9. Medicinal plants are resistant and strong in physiological aspects

### Threats

1. Having no integrated and systemic approach in planning for medicinal plants
2. Drought and climate change
3. Having no coordination between Ministry of Agriculture, industry and commerce for developing relative industries
4. Socio-economic constrains in cooperation for utilizing
5. Limited research and development centers in this case
6. Un-organized market, marketing and access to latest technological and market information
7. Very few government agencies are paying attention to the production of these valuable crops
8. Deficiency of information sources and lack of information and research systems on medicinal plants
9. Communities do not have appropriate knowledge on methods and techniques of utilization for byproducts of medicinal plants
10. Lack of research on re-growth, utilization methods and techniques for medicinal plants
11. Lack of developmental, extension and advisory services

### Weaknesses

1. All of medicinal and industrial plants species have not been identified
2. Knowledge of genetics and plant physiology of medicinal plants is unfortunately not as developed as that of food crops
3. Lack of research and development of high-yielding varieties, domestication, etc.
4. Lack of organized efforts to collect and conserve germplasm of medicinal plants
5. Low productivity and output
6. Low quality of output
7. Low profitability
8. Lack of appropriate processing, storage and packaging system
9. Uncontrolled, traditional and misuse of this plants
10. Low quality of by products for export
11. Shortage of trained personnel and equipment
12. The breeding and improvement of medicinal plant species has not received any attention

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Fig. 2. SWOT worksheet. All of items that can be found in the research process are absolute, therefore we don’t discuss them.