

An Overview of Indigenous Knowledge of Iranian Farmers on Plant Protection

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PREFACE

Economic development, as experienced over the past two centuries or so, is assumed to have begun from a "state of nature" in which a bulk of the economy's resources is devoted to agriculture to meet basic needs. Agriculture is still perceived as an important source of overall output growth and a major source of employment and foreign currency. Yet, food security remains an unfulfilled dream for most developing countries. A rapidly increasing world population and uneven food distribution are among the most important human concerns and will become even more complicated in the future. One of the major constraints in agricultural development in third world countries is lack of appropriate technologies to

increase agricultural productivity by protecting plants from stress and disease without harming the environment.

Many farmers throughout the world rely on traditional knowledge and practices to keep their plants and animals healthy. Indigenous knowledge and practice provide valuable alternatives and complement formal knowledge in protecting plants and controlling diseases. Local communities have an intimate knowledge of many aspects of their surroundings and daily lives. Over the centuries, farmers have learned how to grow food and to protect it in a difficult environment. They know what varieties of crops to plant, when to sow and weed, which plants are poisonous and which can be used for medicine, how to cure, how to protect and how to maintain their environment in a state of equilibrium. This knowledge and experience can be called "ethno-plant protection", and has a specific value in

developing countries, where expensive chemical and biological technologies (pesticides, herbicides, etc.) are often beyond the reach of remote and resource-poor farmers.

Although awareness of ethno-plant protection has increased during the last two decades, it is still under-used in development work. Some of the major causes include lack of formal links that would allow cross fertilization of experiences and learning from other successes and failures, lack of adequate resources and publications.

This book thus attempts to bridge these gaps through the following objectives:

- introducing concrete examples and experiences of ethno-plant protection;
- promoting the role of indigenous knowledge and practices in the process of plant protection among farmers and agriculturalists; and,

- fostering the exchange of experiences and practices of shrinking indigenous knowledge which is by itself, supporting indigenous knowledge in plant protection.

As the fifth book compiled by the authors in the field of indigenous knowledge, this book aims attempts to help those interested in incorporating indigenous knowledge and modern formal knowledge in the domain of disease and pest control. The book is divided into seven inter-related chapters. The information in the book has been compiled through the following four methods: direct participant observations, interviews, group discussions, and literature review.

The materials and strategies adopted by indigenous people in Iran highlighted in this book demonstrate the capabilities of indigenous peoples, their intelligence, knowledge and skills.

The authors conclude that as far as plant protection and preservation is concerned, both indigenous knowledge and formal knowledge have their own constraints and strengths, however, each can well serve as a complement to the other to benefit farmers as the first priority.

We hopefully expect that this book will assist the concerned decision-makers and practitioners in recognizing the important role of indigenous peoples and local communities in plant protection as a farming practice.

A number of people have been instrumental in the process of completing this book. We would like to thank them all, beginning with Mahmoud Khalilifar for his initial type and Mohammad Esmael Noushmand has made translation from Persian to English. Finally, the authors wish to express thanks

to Maryam Rahmanian for her great help and support in editing the English version of this book.

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INTRODUCTION

During the last five decades, our socio-economic context has changed dramatically. Poverty and the global environmental crisis are two of the most pressing problems we face. Agriculture is related to both of these issues. On the one hand, the majority of poor people live in rural areas and are engaged in agriculture, and on the other, agricultural practices have a major impact on the environment. While modern agriculture has come to be criticised as a major polluter of the environment, there is a growing movement which calls for a redefinition of the modern agricultural production system, particularly over the past two decades, including

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among international and national development agencies, to answer not only productivity needs, but also environmental concerns, including loss of biodiversity.

Fundamental to this emerging paradigm shift towards sustainable agriculture is the need to reassess the role of traditional knowledge. The capacity of local communities to sustain their livelihoods and their environments over millennia suggests that, at least until very recently, rural communities in Iran (including farmers, nomadic pastoralists and fisherfolk) had been able to maintain a "sustainable balance" between their environment and their economy based on their accumulated experiences and knowledge.

Many farmers throughout the world rely on traditional knowledge and practice to maintain healthy crops and animals. Indigenous knowledge and practice provide valuable alternatives and

complement formal knowledge to protect plants and control disease. Local people have an intimate knowledge of many aspects of their surroundings and their daily lives. Over the centuries farmers have learned how to grow food and to protect it in a difficult environment. They know what varieties of crops to plant, when to sow and weed, which plants are poisonous and which can be used for medicine; how to cure, how to protect, and how to maintain their environment in a state of equilibrium. All this knowledge and experience could be called "ethno-plant protection", and has specific value in developing countries where expensive chemical and biological technologies are often beyond the reach of remote and resource-poor farmers.

Indigenous knowledge is based on awareness, familiarity, conceptualisation, and beliefs acquired by local people through an accumulation of concrete experiences, non-formal experiments, and an

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intimate understanding of the environment of a given culture, at a specific geographical location and during a specified period of time. Understanding indigenous knowledge systems, not only would lead to a practical pool of knowledge and techniques needed for managing the environment, but also would reflect the ways of understanding and the epistemology of indigenous people as a key factor for bridging local and global knowledge.

Until recent decades indigenous knowledge was perceived by formal science to be based on superstition and was accused of being unscientific and inefficient. It was believed that the only path to development and progress passed through formal scientific knowledge. But today indigenous knowledge is recognised as an important part of the wealth of every people and nation; it is now believed that indigenous knowledge and formal scientific knowledge are not in conflict with each other, and in

fact are even complementary. Indigenous knowledge is accessible, inexpensive, efficient, holistic, oral, suited to local environmental conditions and has stood the test of time. Formal science on the other hand is focused on specifics, based on experimentation and written.

But a combination of the rise of the market-economy, and state policies, have made it difficult to make the best of both of the worlds of formal and informal science. On the one hand modern scientific knowledge is not being adopted by traditional producers, and on the other, indigenous knowledge is being lost very rapidly. Indeed, the situation has degenerated to such an extent that traditional production and its knowledge system are considered by many to be under severe threat.

Increased recognition of the role of indigenous knowledge, particularly in agriculture and natural resource management, would result in the emergence

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of more appropriate and environmentally friendly technologies and would also empower local people, such as farmers and livestock raisers, to have a greater control over their own destinies. They could create technologies more suited to their specific socio-economic situation.

Since 1995, a series of joint activities have been started by a group of colleagues, including the authors of this book, to conserve valuable indigenous knowledge in the field of agriculture, and apply it in the process of agricultural development in Iran. The aim of this effort, which is supported by the Rural Research Centre (RRC) and the Department of Extension and Farming System (DEFS) in the Ministry of Jihad for Agriculture, is to make use of the benefits of indigenous knowledge. Specific activities include: establishment of a research station for indigenous knowledge, designing the first computerised databank and website for indigenous

knowledge (www.iranik.com), conducting a series of workshops/seminars and related publications. So far, eight books have been published to demonstrate the conceptual framework and importance of indigenous knowledge and its role in development through integration with formal knowledge; a number of other books are currently in hand.

In the final part of the book the authors conclude that as far as plant protection and preservation are concerned, both indigenous knowledge and formal knowledge have strengths and constraints; however, each can serve as a complement to the other and ultimately to the benefit of farmers, which is the first priority.