Establishment of Integrative Research Base by Humanities and Sciences on Valorization of Useful Plants for Regional Development in North Africa II

Editor Kenichi Kashiwagi

Published by the Alliance for Research on North Africa (ARENA)
University of Tsukuba, Japan
Tsukuba, March 2012
Contents

Preface ii

1. Medicinal value of some edible and medicinal plants that grow in Egypt 1
   Mohamed Salah Kamel

2. Vanishing Tradition: A Story of a Magician in Upper Egypt 21
   Maki Iwasaki

   Junkyu Han, Abdelfatleh EL Omri and Hiroko Isoda

4. Risk assessment of LAS-related water contamination 32
   Mohamed Bradai, Junkyu Han and Hiroko Isoda

5. Natural biological active formulas as anti-carcinogenic drugs 35
   Ali Mokhtar Mahmoud, Hany A. El-Shemy, Junkyu Han and Hiroko Isoda

6. Water resources and irrigation systems in southern Tunisia 39
   Erina Iwasa

7. Overview of olive growing farms in Tunisia and perspectives 45
   Mohamed Kefi, Kenichi Kashiwagi and Hajime Kamiyama

8. Japanese consumer preference on olive oil: 51
   An approach using rank ordered logit model
   Kenichi Kashiwagi and Kiyokazu Ujiie
Preface

Since April 2010, the Alliance for Research on North Africa (ARENA), University of Tsukuba has been implementing a research project entitled “Establishment of Integrative Research Base by Humanities and Sciences on Valorization of Useful Plants for Regional Development in North Africa” under the Japan Society for the Promotion of Science (JSPS) “Asia Africa Science Platform Program”. The objective of this project is (i) to valorize useful endemic plants in North Africa to develop seeds for technology, (ii) to develop seeds for technology that consistent with embedded tradition and culture in Islamic society, (iii) to conceptualize and establish a regional development model that leads to sustainability and stability of North Africa, and (iv) to establish an integrative research base by humanities and sciences and develop a network with North African partners. What we call “seeds for technology” have been investigated for the development of medicine, cosmetics and functional foods.

In this project, the five collaborative researches include “Study of Modern Values on Traditional Usage of Bio-resources in North Africa (R1)”, “Research on Sustainable Use of Bio-resources in North Africa (R2)”, “Screening of Physiological Function of North African Origin Plants (R3)”, “Use of Advanced Technology for Development of High Value-Added Food Production System in North Africa (R4)”, and “Valorization of Useful Plants for Regional Development in North Africa (R5)” are under implementation. We collaborating with institutions in four North African countries: Cadi Ayyad University and Hassan II Institute of Agronomy and Veterinary Medicine (Morocco), Houari Boumedine University (Algeria), Sfax University, Carthage University (Tunisia), and Cairo University, Minia University (Egypt).

For the implementation of these projects, ten Japanese members of this project were dispatched to Tunisia, Egypt and Morocco to conduct these collaborative researches, and four scholars were invited to Japan to further deepen these research activities during FY2011. In January 2012, a seminar entitled Modern Values of Traditional Plants for Sustainable Regional Development in North Africa was held, inviting scholars from Minia University in Egypt and Hassan II Institute of Agronomy and Veterinary Medicine in Morocco. Field investigations on the traditional plants as well as research collaboration of Egyptian counterpart were intensified. Also, the majority of the member of this project participated in the 1st The 1st Morocco-Japan Symposium: Sustainable Society through Advanced Sciences held in March 2012 at Cadi Ayyad University in Morocco. Along with the presentations at several international meetings, we presented our research prospect of Argan oil at the Congrès International de l’Arganier: Acquis et perspectives de recherche scientifique, held at Agadir (Morocco) in December 2011. Also, we held a Séminaire Sur l’Analyse de la Filière de l’Arganier au Maroc in Hassan II-IAV. It is noteworthy that the project regarding on Argan oil has been implemented with Moroccan counterparts.

As a product of the second year, this project issued a book entitled: Establishment of Integrative Research Base by Humanities and Sciences on Valorization of Useful Plants for Regional Development in North Africa II. This volume includes the realization of modern value on traditional food and plants, the application of bio-assay technique for the identification of functionalities, and the development and expansion of export market regarding the value-added products towards the establishment of a model of regional development.

This book is organized as follows. Chapter 1 and 2 describe modern values of traditional food and medicinal plants in Egypt. By using bioassay for screening methods, authors present the results of analysis of physiological functions, biological activities of medicinal plants endemic to North Africa as well as the risk assessment of water contamination from Chapter 3 to 5. The water resources and irrigation systems in southern Tunisia are described in Chapter 6. Chapter 7 explains the overview of olive growing farms in Tunisia, while Chapter 8 examines consumer behaviour and preference in Japan regarding olive oil.

This volume is expected to be useful for students, researchers and engineers who are interested in research and industry-university cooperation to forge the future of industrialization and strengthen the industrial competitiveness of North Africa countries.
We would like to express our sincere appreciation to the Japan Society of the Promotion of Science for their financial support to implement this project under the Program of the Asia Africa Science Platform.

Kenichi Kashiwagi
March 2012