

Biosalinity News

Newsletter of the International Center for Biosaline Agriculture

VOLUME 4, NUMBER 2

JUNE 2003

FROM THE EDITOR

This issue focuses on training, a key role for ICBA. The training course for Central Asian Countries held in Tashkent, Uzbekistan, is a landmark in ICBA's training activities as it is the first to be organized by ICBA outside the Center's host country, the United Arab Emirates.

Readers may not be aware that, in addition to short courses, there are opportunities for students to undertake research for higher degrees at ICBA, for visiting scientists and fellowships, and for on-the-job training and apprenticeships.

This issue also highlights ICBA's participation in the World Water Forum in Kyoto in February. The opportunity for saving freshwater by using saline and brackish water in irrigated agriculture, was the key message delivered by the Director General, Dr. Al-Attar, at the World Water Forum. The concept of using brackish and saline water in irrigated agriculture was emphasized further in the session co-organized by the Islamic Development Bank, ICBA and the World Bank on 'Non-conventional water resources management'.

Biosalinity News is produced three times a year by the International Center for Biosaline Agriculture (ICBA) in Arabic, English and French. The electronic versions are published on ICBA's website www.biosaline.org.

The newsletter is a forum for exchange of news and information among people interested in research and development activities in saline agriculture. Your input and comments are welcome and we look forward to receiving short articles on issues in saline agriculture that would be of interest to readers. We also welcome announcements of seminars, workshops, meetings and training courses, and relevant new publications.

The Editor
Biosalinity News, ICBA
icba@biosaline.org.ae

ICBA urges use of saline water to save freshwater at Third World Water Forum

Dr. Mohammad Al-Attar, Director General, International Center for Biosaline Agriculture (ICBA), called upon delegates at the 3rd World Water Forum (3WWF), in Kyoto, Japan to use brackish and saline water for agriculture to save precious fresh water. The Director General underlined the opportunities for using saline water in his keynote address 'Saline water as a resource for the future in Arab countries' in the session on 'Water in the Arab Countries'.

Dr Al-Attar called for special attention to be given to using brackish or salty water and salt-tolerant crops for agricultural purposes. He stressed that using brackish water resources will help Arab countries to



Dr. Mohammad Al-Attar, Chairman Board of Directors and Director General, ICBA, delivering his address at the Third World Water Forum, Kyoto

save freshwater and make progress in their quest to overcome water scarcity.

(Cont. on Page 2)

First training course in Central Asia (See story on page 2)



Participants and dignitaries after the opening ceremony of the training course 'Biosaline Agriculture and Sustainable Production Systems' Tashkent, Uzbekistan, 12-21 May

International Center for Biosaline Agriculture (ICBA)

P.O. Box 14660, Dubai, UAE. • Tel: +971 4 3361100 • Fax: +971 4 3361155 • E-mail: icba@biosaline.org.ae
Website: www.biosaline.org

ICBA URGES USE OF SALINE WATER TO SAVE FRESHWATER AT THIRD WORLD WATER FORUM

(Cont. from Page 1)

Dr. Al-Attar highlighted ICBA's role in using saline water in agriculture and helping agriculture to expand further despite the shortage of freshwater. The Arab region is the most water-scarce in the world, and water stress is increasingly affecting economic and social development. He called on decision-makers to integrate the use of brackish and saline water into national and regional water strategies.

New biosaline agriculture center for Sudan



Dr. Adel Mahgoub Farah, Dr. Nashwan Abdul Wahab, and Dr. Saniya Saleem Jabir Ahmed are shown the shadehouse at ICBA by Dr. John Stenhouse and Dr. Shoail Ismail

Following meetings between ICBA and the Sudan Ministry of Agriculture last year, establishment of a new research center for biosaline agriculture is being considered. The new center, the Sudan Biosaline Agriculture Center (SBAC), under the umbrella of the Ministry of Science and Biotechnology, will forge strong links with ICBA.

The Sudan Federal Government has provided buildings and 70 acres of land near Soba, 25 kilometers from Khartoum for the new center. The objective of the new center is to develop field crops and trees for production on saline soils, develop technical packages, study the water requirements of different crops, provide training, and establish information databases.

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ICBA, IDB, World Bank workshop at 3WWF

The Middle East and Mediterranean Regional Day (MMRD) on 20 March at the 3WWF was a real success. As part of the program, the Islamic Development Bank (IDB), ICBA, and the World Bank co-sponsored and co-organized a session on 'Non-conventional water resources management'. Prof. Dr. Faisal Taha, Director Technical Programs, ICBA, delivered the opening remarks. The session attracted a large number of participants, including high-level officials from the Middle East and Mediterranean Region. The event was successful in bringing the critical water challenges of the region to the attention of the world community.

Dr. A. Cisse, Vice President of the

Islamic Development Bank (IDB) and Guest of Honor, in his keynote address emphasized the role of IDB in management of water resources in IDB member countries, and in the establishment of the International Center for Biosaline Agriculture.

Professor Taha, Director Technical Programs ICBA, Dr. Karim Allaoui, Focal Point for Water Resources Management, IDB, and Dr. Manuel Schiffler, Senior Economist, World Bank, were the co-conveners of this session, which was chaired by H.E. Dr. Ali Al-Tokhais, Deputy Minister of Water Affairs, Saudi Arabia.

Among the recommendations put forth by participants was the need to build upon regional networks for mutual benefit and cooperation.

First training course in Central Asia

A course on 'Biosaline Agriculture and sustainable Production Systems' was held for 25 professionals in agriculture from government and non-government sectors in the Central Asia and Caucasus (CAC) region, in Tashkent, Uzbekistan, 12-21 May, in collaboration with the International Center for Agricultural Research in the Dry Areas (ICARDA).

The Private Office of His Highness the President, UAE, the Islamic Development Bank, Jeddah, the OPEC Fund for International Development, Vienna, and the Department for International Development, United Kingdom, co-sponsored the course.

The Uzbek Deputy Minister of Agriculture participated in the opening ceremony. An opening address by Sheikh Mansour Bin Zayed Al Nahyan, Director General of the President's Office, was read by Dr. Abdul Rahman Abdul Khaleg, Advisor of the Private Office of the President of the United Arab Emirates. Other speakers at the



Prof. Dr. Faisal Taha, Director Technical Programs, ICBA, at the opening ceremony

opening session were the Hon. Ilgar Veysal Oglu Isayev, IDB Executive Director for Albania, Azerbaijan, Kazakhstan, Kyrgyzstan, Tajikistan and Turkmenistan, and Dr. Raj Paroda, Regional Coordinator and Head, CGIAR Program for the Central Asian Countries region and Director General of the Irrigation Institute. Prof. Dr. Faisal Taha, Director Technical Programs, ICBA, gave a presentation highlighting ICBA's activities in research and technology development.

The training course in Tashkent was the first that ICBA has arranged outside the UAE.

ICBA signs MOU with Desert Research Center, Egypt



Dr. Mohammad Hassan Al-Attar, Chairman of the Board of Directors and Director General, ICBA, and Dr. Abdul Monem Hijazi, Director of the Desert Research Center, signing the MoU

In April, ICBA and the Desert Research Center (DRC), Egypt, signed a Memorandum of Understanding, to cooperate in studies and projects in biosaline and desert agriculture, and managing and developing natural resources.

The MOU was signed by Dr. Mohammad Hassan Al-Attar, Chairman of the Board of Directors and Director General, ICBA, and Dr. Abdul Monem Hijazi, Director of the Desert Research Center. H.E. Fahmy Ahmad Fayed, Ambassador of the Republic of Egypt in UAE, Hatam

Qabeel, Cultural Attaché in the Embassy, Prof. Dr. Hassan Al Shaer, Deputy Director of the Desert Research Center (DRC) and ICBA scientists were present at the signing ceremony.

The MOU specified six areas of collaboration: field studies on the use of saline water in agriculture in desert and arid environments; research and development on techniques of biosaline agriculture for production of agricultural and greenery crops; protecting the environment; exchange of genetic resources; exchange of information, knowledge, and visiting scientists; and training.

The Desert Research Center (DRC) has over half century of accumulated scientific experience in research in desert and dry land areas.

The delegation also visited the Ministry of Agriculture and Fisheries (MAF), UAE University, Abu Dhabi Municipality, Sharjah University, and environmental and natural protection authorities in Sharjah and the Northern Agricultural Area.

NEW BIOSALINE AGRICULTURE CENTER FOR SUDAN (Cont. from Page 2)

The main facilities will include a laboratory for soil and water analysis, fields, houses and offices.

The establishment of the new center follows an ICBA mission to Sudan last year and discussions with the Ministry of Agriculture and Animal Wealth. As a result of this mission a proposal was developed to establish a national biosaline agriculture center in Sudan, which would undertake joint projects with ICBA.

In February a delegation from Sudan, Dr. Adel Mahgoub Farah, Agricultural Research Organization, Sudan, Dr. Nashwan Abdul Wahab, Arab Authority for Agricultural Investment and Development (AAAID), Sudan, and Dr. Saniya Saleem Jabir Ahmed, Ministry of Agriculture and Animal Wealth, Khartoum State, Sudan visited ICBA to discuss operational aspects of the new center and potential joint projects.

ICBA and Nakheel sign MOU



Sultan Ahmed Bin Sulayem (left), Chairman of The Nakheel, and Dr. Mohammad Al-Attar (right), Chairman, Board of Directors, and Director General, ICBA, at the signing ceremony

ICBA and The Nakheel, an organization within Dubai Ports, Customs and Free Zone Authority, recently signed an agreement to work closely to implement practices that enhance the conservation and management of natural resources for the landscaping and greenery components of The Nakheel projects.

The Nakheel is a premier land developer of residential and commercial properties in the Emirate of Dubai. The company is deeply committed to sound conservation practices and environmental resource sustainability in implementing landscaping projects in its developments.

Nakheel plans to use biosaline horticulture technology for landscaping and greening of residential and commercial developments in the Emirate of Dubai. ICBA will provide the expertise for growing flowers, shrubs and trees that will survive on seawater alone, thus saving Dubai's valuable freshwater.

INBA NEWS



Inter-Islamic Network On
Biosaline Agriculture
Réseau Inter-Islamique
d'Agriculture Biosaline

The Inter Islamic Network on Biosaline Agriculture, established by the Committee on Science and Technology (COM-STECH) of the Organization of the Islamic Conference and IDB in 2002 and coordinated by ICBA, now has a logo.

The logo design symbolizes the concept of the INBA network. The clasped hands, a design element from IDB's logo, signify IDB's purpose of fostering the economic development and social progress of member countries, and the green fronds and blue water represent the role of biosaline agriculture in development.

An information brochure on INBA is being prepared and will soon be distributed together with the INBA Statutes, recently approved by COMSTECH.

For further information about INBA, contact:

Dr. Shoaib Ismail,
Coordinator (INBA)
PO Box 14660, Dubai - UAE
Tel: 971 (4) 336 1100 (Ext. 203)
Fax: 971 (4) 336 1155
Email: s.ismail@biosaline.org.ae

Forthcoming event

International Workshop on the Development of Medicines From Plants, September 8-13, 2003, Karachi, Pakistan
For further information contact: Dr Zabta K. Shinwari, Email: comstech_cpc@mail.com, shinwari2002@yahoo.com
Tel: +92-51-9201242-43 Fax: +92-51-9211115, 9220265

ICBA NEWS

Study to assess brackish and saline water resources in WANA completed

An assessment of saline water resources for biosaline agriculture in the West Asia and North Africa (WANA) region was recently completed by ICBA on behalf of the International Fund for Agricultural Development (IFAD).

Information on the amount and quality of water available for agriculture typically focuses on freshwater resources and data on brackish and saline water is limited. This study aimed to collect information and data specifically on brackish and saline water that could be used for irrigated biosaline agriculture in seven countries, thus saving scarce freshwater.

The study documents the amount and general areas where water with salinities of more than 6,000 ppm occurs in Syria, Oman, Yemen, Jordan, Algeria, Tunisia and Libya.

The assessment indicated that in the seven countries, there are considerable resources of brackish and saline water that could be used for biosaline agriculture, ranging from 7 to 43 percent of the irrigated area (1990 data) of the seven countries. The potential for saline agriculture in overall terms is greatest in Algeria, Syria and Tunisia. However, in relative terms the potential is greatest in Oman, Jordan and Algeria.

ACSAD and ICBA discuss collaboration

Dr. Adel Safar, Director General, Arab Center for the Studies of Arid Zones and Dry Lands (ACSAD) and Mr. Muhammad Wardeh, Director of Animal Sciences, ACSAD, visited ICBA in February to discuss collaborative activities.

ACSAD works under the umbrella of the Arab League, representing 16 countries, and is primarily funded by the International Fund for Agricultural Development (IFAD), the Islamic Development Bank (IDB), and the Arab Fund, in addition to member countries. ACSAD's main interests are in: water resources (both surface and underground);

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ACSAD AND ICBA DISCUSS COLLABORATION
(Cont. from Page 4)

desertification; Geographic Information Systems/remote sensing; salt-tolerant plants, especially wheat; and camels, sheep and goats. ACSAD is also working on projects related to

land resources mapping, land rehabilitation and the use of saline water for agriculture

ACSAD and ICBA have many interests in common, especially in the areas of water resources and plant production systems, and the two organiza-

tions discussed a draft Memorandum of Understanding on collaborative activities. The members of the delegation inspected ICBA's training center and facilities and hope to organize training programs in collaboration with ICBA in the future.

Resource Mobilization

OPEC Fund grant to ICBA and ICRISAT for pearl millet and sorghum project



ICRISAT Director General Dr. William Dar (center at left) in ICBA's pearl millet fields in May 2001 and Dr. Abdullah Dakheel, ICBA Field and Forage Crops Scientist, inspecting the same crop irrigated with low salinity water (5 dS/m) five weeks later

The OPEC Fund for International Development has approved a grant of US\$200,000 to help support a three-year research project developed by ICBA.

The project aims to identify salt-tolerant, high-yield genotypes of pearl millet and sorghum and will be executed in cooperation with ICRISAT. Pearl millet and sorghum are two important staple crops grown in the arid and semi-arid tropics of Asia and Africa.

Sorghum and pearl millet are adaptable to extremely hot climates and drought conditions, and produce high yields in poor soils. Both also provide an excellent source of fodder. Only a few studies, however, have examined

the salt-tolerant characteristics of these species. This is a vital issue as soil salinity is emerging as an increasingly serious agricultural problem worldwide.

ICRISAT, based in India, is the world center for research on sorghum and pearl millet.

Over the past two years, ICBA and ICRISAT have been screening and evaluating sorghum and pearl millet genotypes, and have identified a number of promising varieties. Under the present three-year project, more extensive research will be carried out to identify strains that possess the highest nutritional values and salt tolerance.

Once this step is completed, ICBA

will conduct on-farm evaluations of the plants' performance in the United Arab Emirates, Oman, Yemen, Iran I.R. and the Sudan. ICRISAT will follow this up with trials at test locations in India. Other objectives of the research include the transfer of technology and crop production packages to national programs and farmers in the countries concerned.

The OPEC Fund is one of the founding partners in the establishment of the ICBA, having provided grants totaling US\$1.45 million towards its initial construction, the installation of an irrigation and drainage system network, and strengthening human resources.

FOCUS ON TRAINING

Developing human resources in biosaline agriculture

ICBA is widely recognized as the only international research center dedicated to biosaline agriculture. A key role for ICBA is therefore to provide training in technical aspects of saline irrigated agriculture.

ICBA's training program takes advantage of the Center's knowledge base of biosaline agriculture research, its staff of international experts in biosaline agriculture, its strong links with other organizations involved in biosaline agriculture research worldwide, and the excellent research and training facilities at ICBA headquarters in Dubai.

ICBA firmly believes that training is the key to sustainable agricultural production. Thus, shortly after commencing operations in 1999, ICBA developed a vigorous short course program to provide specialist skills and knowledge in biosaline agriculture.

ICBA's training activities fall into five main categories:

- Technical training short courses at ICBA
- Technical training short courses in other countries
- Technical on-the-job training
- Higher degrees by research
- Workshops and seminars

Technical training short courses at ICBA

Technical training courses (Box 1) are aimed at a wide range of individuals involved in aspects of biosaline agriculture, for example: technicians and research assistants, engineers from ministries and municipalities, forage farm managers, managers of dairy farms, and soil and land reclamation specialists.

The short courses are held at ICBA's headquarters near Dubai, in the United Arab Emirates, and field trips are arranged for students to see salinity issues and solutions at first hand. ICBA staff provide the core lecturers and instructors, drawing on their

experience and current research. Additional specialist input to courses is provided by consultants, teaching staff, and research scientists from universities and research institutions in the Gulf and elsewhere.

Between 2000 and May 2003, over 200 agriculturalists, from an increasing number of countries, have attended nine training courses at ICBA headquarters. The International Atomic Energy Agency, the OPEC Fund, and ICBA provided

Box 1 Technical training short courses

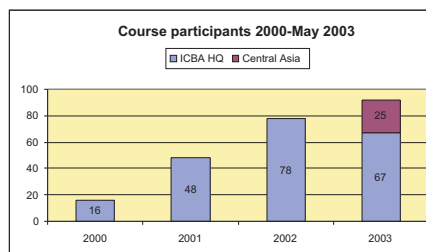
Agro-ecological surveys and germplasm collection, October 2002



Quality evaluation and utilization of salt-tolerant forages, February 2003



Salinization of irrigated lands and reclamation, April 2003



funding and, in 2003, the OPEC Fund provided funds which enable participants from least-developed countries to attend.

Technical training courses in countries affected by salinity

Problems of salinity vary from country to country and region to region. Environments, climates and agro-ecosystems differ widely. In May 2003, for the first time, ICBA arranged a course in Tashkent specifically for Central Asian Countries, to address the very serious problems of salinity the region is facing (Box 2). In collaboration with the International Center for Agricultural Research in the Dry Areas (ICARDA), and Russian-speaking instructors from agricultural research centers in the CAC region, ICBA

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developed an intensive two-week course in biosaline agriculture.

Technical on-the-job training

In addition to formal training courses, ICBA on-the-job training focuses on "learning by doing" intern or apprenticeships. Individuals have the opportunity to become familiar with specific field or laboratory technologies during intern or apprenticeships of up to four months.

Higher degrees by research

Increasingly, postgraduate research is becoming an important form of training. ICBA welcomes proposals from students wishing to pursue higher degrees by research. Students enrol at international or local univer-



M.Sc. student from the United Arab Emirates University working on his research at ICBA

sities and conduct their research at ICBA. A suitable supervisor is identified at ICBA and the subject is agreed to, both by ICBA as suitable for the Center's objectives, and by the university as academically suitable.

Visiting scientists and fellowships

Scientists and fellows who wish to update their technical knowledge and skills may also arrange to work at ICBA on a research project of mutual interest to ICBA and their organization.

Financing

Training and capacity building at ICBA are financed from several sources. The OPEC Fund for International Development, the Islamic Development Bank, and other donors have co-sponsored courses arranged by ICBA. The United States Agency for

International Development (USAID) and the Department for International Development UK (DFID) have also sponsored participants from certain countries for specific training activities. The OPEC Fund has provided financial support for participants from least developed Islamic Development Bank member countries.

Box 2 Biosaline Agriculture and Sustainable Production Systems, Tashkent, May 2003

The first course for agriculturalists from the Central Asia and Caucasus region was attended by participants from Azerbaijan, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan.

The course program was developed jointly by ICBA and the International Center for Agricultural Research in Dry Areas (ICARDA) and focused on practical applications for using salty water in agriculture. Classroom lectures and discussions complemented field visits and hands-on training. The training was given in both Russian and English.

In addition to scientists from both ICBA and ICARDA, Russian-speaking instructors contributed to the course.

Most countries of the Central Asia region, particularly Kazakhstan, Uzbekistan, Turkmenistan, Tajikistan, and Kyrgyzstan, face major salinity problems. The affected areas in each of these countries vary significantly, but range between 30 percent in Kazakhstan and 50 percent in Uzbekistan.



The course brochure in English and Russian. Course materials were provided to all participants on CD-ROM

Box 3 Apprenticeships at ICBA and ICARDA April-July 2003

Three Afghani agriculturalists started a 4-month apprenticeship at ICBA on sustainable irrigated agricultural production on degraded and saline land in April 2003. The apprenticeships aim to help rebuild agriculture in Afghanistan by enhancing the skills of Afghani agriculturalists so that they can make improvements to agricultural practices.

USAID provided funds for the apprenticeships through the Short-Term High Impact Program coordinated by ICARDA and the UAE government provided logistical support.



Apprentices from the Afghanistan Ministry of Agriculture, Abdul Ghani Ghoryani, Askar Ali Faqir Zada, and Asghar Ali Shirzad, becoming familiar with field and laboratory technologies at ICBA headquarters

SEMINARS

ICBA seminar at Abu Dhabi Chamber of Commerce and Industry



Participants at the seminar given by ICBA at the Abu Dhabi Chamber of Commerce and Industry (ADCCI) in January

A seminar held by ICBA for the Abu Dhabi Chamber of Commerce and Industry (ADCCI) in January drew more than 85 participants from federal, government, and private sectors. Oil companies, including Abu Dhabi National Oil Company (ADNOC) were particularly well represented. Many participants from the Private Office of HH Sheikh Zayed Bin Sultan Al Nahayan were also present.

The seminar, held under the patronage of His Excellency Said Saif Bin Jaber Al-Suwaidi, Chairman ADCCI, focused on technologies of biosaline agriculture in arid areas.

Prof. Dr. Faisal Taha, Director Technical Programs, Dr. Bassam Hasbini, Irrigation Management Scientist, and Dr. Abdullah Al-Dakheel, Field and Forage Crops Scientist, made presentations on ICBA's research and development in biosaline agriculture relating to agriculture in the United Arab Emirates.

The seminar was a component of the cooperation program between the ADCCI and ICBA and will be followed by a two-part workshop in October in Abu Dhabi and Dubai on 'Irrigation Systems', by Dr. Bassam Hasbini.

Dr. Abdullah Abboudi joins ICBA

Dr. Abdullah Abboudi joined ICBA recently on secondment from the Ministry of Agriculture and Fisheries (MAF), United Arab Emirates. Dr. Abboudi's secondment will improve and strengthen collaboration, not only with MAF but also with all other governmental and international organizations in the UAE. ICBA will benefit from Dr. Abboudi's wide experience in R&D.

Dr. Abboudi is a UAE national and his main area of study was in post-harvest storage and preservation of dates. Prior to his secondment to ICBA, he held the post of Director

New members for ICBA Board of Directors

At its 214th meeting, ICBA's Board of Executive Directors of the Islamic Development Bank, in its capacity as the Board of Trustees of ICBA approved the new members of ICBA's Board of Directors, Dr. Ismaeil Al-Hosani representing the United Arab Emirates, and Dr. Mohamed Roozitalab representing the Islamic Development Bank. The new members replace Eng. Mohamed Sager Al-Asam, Assistant Deputy Minister Soil & Water Department, MAF, UAE, and Dr. S.H. Mujtaba Naqvi, Consultant, Pakistan, who have completed their terms.

Dr. Ismaeil Al-Hosani is from the Agriculture Extension and Marketing and Livestock Department, Abu Dhabi Municipality and Town Planning Department, United Arab Emirates.

Dr. Mohamed Roozitalab is Deputy Head, Agricultural Research, Education and Extension Organization, Iran.



Dr. Abdullah Abboudi

of the Department of Research and Plant production Productivity at MAF.