Nature Iraq

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New Directions in 2009

Azzam Alwash, Director, Nature Iraq

They say time passes quickly when we are having fun. Well, judging by how fast time seems to be running, we must be having a blast. I do not want to look back at 2008. There is plenty on this web site that testifies to how much we have done…. I want us to look forward.

Nature Iraq is going to be in a state of flux in 2009 and 2010. As a consequence of being recognized by BirdLife International as a Partner Designate, we have begun the process of evolving our NGO to fit the guidelines of BirdLife International to become a Full Partner. Amongst the many rules that we have to follow is the issue of becoming a membership-based organization with elected boards and membership paying grassroots. This one is the tough one in a country like Iraq, but not impossible. We have plans to begin the transformational process this year with activities to advertise our existence and our history. But while we are doing this, we can not possibly forget that there is work that needs to be done on the ground to capitalize on our previous projects and to continue the process of protecting the environment.

You will read in this issue a lot about scientific projects that we are undertaking (and transferring to the newly created Twin Rivers Institute for Scientific Research). But, we are leaving a lot unsaid (for a latter issue of this newsletter). Besides continuing the all-important KBA surveys both in the south and Kurdistan and now expanding into the west of Iraq, we are re-doing and expanding the floating fish farms. We are building a hatchery in Chibaish that will generate some 2.5 million fingerlings in a year. We are building a mobile feed factory. We are working with like-minded organizations on the refurbishment of two vet clinics. We are building an experimental buffalo station to test feed, water and other variables on their effects on milk production. We are building a Mudhief to act

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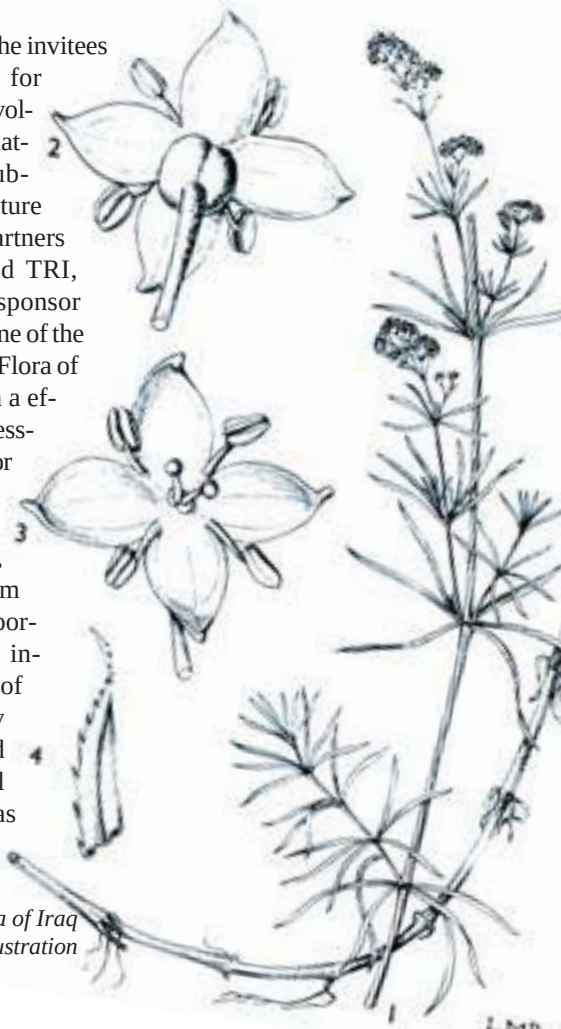
Nature Iraq News - Flora of Iraq Meeting to be held in March

There will be a meeting in Sulaimani, Kurdistan Iraq on 22-23 March, 2009 to discuss the status of the Flora of Iraq. This meeting will bring together of some of the top Iraqi botanists and their international counterparts, in addition to people from the related ministries, Kew Botanical Garden, Twin Rivers Institute (TRI) of the American University in Iraq-Sulaimani, Italian Ministry for Environment, Land and Sea and Nature Iraq.

The Flora was a project of the Iraqi Ministry of Agriculture and Kew Gardens in the UK and was one of the best botanical series in the Middle East and one of the oldest floras published in the region. The first volumes were published in 1966 and the last one released was published in 1985. It was supposed to be in nine volumes, but unfortunately, volumes 5, 6, and 7 were never completed due to the situations in Iraq during the eighties and after.

Current botanical research within Iraq would be greatly augmented by the completion of the Flora. Nature Iraq, which has been conducting such research since 2005, has been hindered in this work by a lack of current taxonomical references.

During the meeting the invitees will discuss options for completing the Flora volumes as well as updating the original published volumes. Nature Iraq and its Italian partners have agreed to fund TRI, which in turn will sponsor this first meeting as one of the initial steps of a new Flora of Iraq Project but such a effort, if it is to be successful, will require a major commitment (logistical and financial) to complete. In addition, it will require long-term commitments and coordinated efforts that include the ministries of agriculture, many Iraqi universities and non-governmental organizations such as Nature Iraq and others as well as international experts.



Flora of Iraq Illustration

ABOUT US

Nature Iraq is an Iraqi environmental, non-governmental organization registered in Iraq. Our mission is to protect and restore the environment of Iraq and the rich human heritage that it has fostered. We strive to achieve this mission through fulfillment of the following goals:

>Improve the capacity of Iraq's institutions to protect its environment;

>Develop a scientific database of environmental conditions and trends within Iraq;

>Encourage environmental awareness and stewardship of Iraq's environment, and

>Promote the sustainable use of Iraq's environment and resources.

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Public Lectures/Events *(past & future):*

5th World Water Forum - 16-22 March, Istanbul, Turkey

Born to Travel - 21 March - Nature Iraq joins in BirdLife campaign to protect migratory birds - check our website for activities.

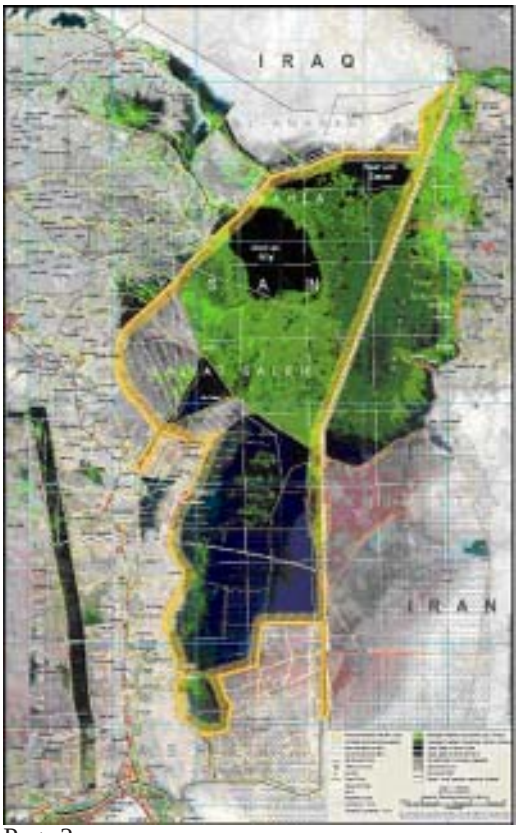
Flora of Iraq Meeting - 22-23 March - Sulaimani, Iraq - Hosted by Nature Iraq

Baghdad Science Conference - 26-28 March - Baghdad, Iraq - Hosted by University of Baghdad

Fisheries and Aquaculture Short Course - 31 March-8 February - Hosted by the Twin Rivers Institute/American University of Iraq-Sulaimani

Training in Bird/Botany Field Work - 14-23 April - Sulaimani, Iraq - Hosted by Nature Iraq

Regional Environmental Remediation Advisory Group (RERAG) meeting - tentatively scheduled May 09



Management of the Hawizeh Marsh Site under the Ramsar Convention – An updated status report – February 2009

By Clay Rubec

The Hawizeh Marsh area was designated a Wetland of International Importance in October 2007 upon Iraq's accession to the international treaty known as the Ramsar Convention on Wetlands. Nature Iraq has led development of a Management Plan for the Hawizeh Marsh with four consultation meetings to date. This project, with financial assistance from the Italian Ministry of Environment, Land and Sea and the expertise of Mr. Clayton Rubec from Canada, was designed to assist the Iraq National Marshes and Wetlands Committee in meeting Iraq's commitments to the Ramsar Convention.

A first meeting on this Plan was held in Sulaimani, Kurdistan in July 2007 with representatives of the Ministry of Environment; a second was held (in Amman, Jordan due to the cholera outbreak in Sulaimani) with representatives of federal ministries (MoE, MoWR, MMPW, Ministry of Agriculture, and others) in September 2007. These two initial sessions established the terms of reference, layout and drafting process of the Plan. Two additional meetings with a broad range of federal and local government representatives, local stakeholders, university specialists and non-government organizations were held in May and October 2008 to discuss working drafts of the Management Plan. This has resulted now in a two-volume report entitled "Draft Management Plan for the Hawizeh Marsh Ramsar Site, Iraq". The document outlines the major social, cultural, environmental and economic challenges facing the Hawizeh area, provides

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Rising of the Twin Rivers Institute

By Husham Abd Munaf Atta & Azzam Alwash

Nature Iraq, since its inception, has been focused on protecting the environment of Iraq. Due to the sanctions of 1991 to 2003, our initial strategy focused on building capacity of graduate students and working with Iraqi talents alongside foreign expertise, to come up with solutions for Iraq's environmental challenges using state of the art technology. During the past year, we have worked on creating a center for academic excellence at the American University of Iraq – Sulaimani, called the Twin Rivers Institute for Scientific Studies. This institute is meant to take over the academic part of Nature Iraq's mandate so that Nature Iraq can focus its efforts on the next stage of its growth in grassroots activities.

We managed to raise approximately 4 Million Euros for the purpose of building a state of the art Green Building on the grounds of American University of Iraq-Sulaimani (AUI-S) and an additional 0.5M Euros for the purchase of equipment and start up of courses. However, we did not wait for the building to be put up (ground breaking will be in March 09 with completion slated for late 2010), but we already started developing course materials for the three departments comprising TRI: GIS/Remote Sensing, Hydrology and Hydraulics, and Ecology. We already have given trainings seminars in which course materials were tried, and in certain cases modified. We plan to integrate the operations of TRI with AUI-S over the next year.

TRI already held three GIS trainings - two beginner and one advanced training and one Remote Sensing preliminary training for professionals from Iraq ministries such as the Ministries of Environment, Municipalities, Water Resources, Planning, Agriculture and Higher Education. Though GIS and Remote Sensing can have a variety of applications, these trainings were focused on environmental issues related to the New Eden Project for the restoration of the Iraqi marshes.

In 2009, TRI is planning to have more trainings on GIS and remote sensing but also will provide a course on sustainable agriculture methods, which will focus on how to manage land and irrigation water in an eco-friendly way. In addition, courses are being planned on environmental sampling design and data analysis, as well as fisheries and aquaculture assessments.

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Summer Fish Kill in Darbandikhan Reservoir

By Anna Bachmann & Raid Abdulmehdi

On Wednesday, 30th of July 2008 it was reported that some individuals threw poison into Darbandikhan Lake near the Tanjero input and that this resulted in a massive fish kill. Nature Iraq/Twin Rivers Institute of the American University of Iraq-Sulaimani (NI/TRI-AUIS), the KRG Ministry of Environment (KMoE) and the University of Sulaimani (UoS) were contacted and visited the area to collect site information and samples on three separate occasions (August, September & October). Measurements and samples were taken and initial consultative meetings organized by the KMoE were held with various stakeholders to discuss the problem of the fish kill, but the results of the meetings were inconclusive as opinions in regards to the causality of the fish kill varied and agreement could not be even reached in regards to the number, size, species, etc., of animals killed in the incident. Some of those present opined that the fish kill was due to depleted oxygen and not due to the use of poison to catch fish; still others indicated that it was due to low flow of water (lack of rain).

But, from the testing that was done, what was clear is that there are larger and more extensive problems in the basin. It is known that there are some obvious problems that exist in the Darbandikhan reservoir and the Tanjero basin in particular due to sewage inputs from the city of Sulaimani and other towns and villages. Also heavy metals have been found in the water and sediments in different areas of the basin. Other issues that may be affecting water quality and/or quantity include industrial wastes, landfill and trash burning operations, in-stream and pit gravel mining operations, agricultural run-off, wastes from river and lake users (for example motor oil and solvents from car washing and fishing boats, dumping of garbage and fill within the flood plain), etc. There is little to no control, oversight or examination of many of these activities.

Google Earth Map of affected area

Given these considerations it is necessary to change the focus from just trying to identify the reasons for the fish poisoning/fish kill to formulating a better and deeper understanding of the underlying systematic problems associated with the tributaries of the reservoir both inside Iraq and outside. Further, it is the opinion of those studying the issue that there is no magical solution to the problems underlying the water quality of Darbandikhan reservoir, other than long-term solutions that focus on cleaning up the environment and stopping practices that are causing the degradation of the water.

Thus a project was conceived to evaluate and seek strategies to solve the diverse environmental problems affecting water quality, environmental and public health within the Darbandikhan Basin including the Tanjero River and its tributaries, the Zalm River and its tributaries, the Sirwan River and its tributaries, Darbandikhan Lake, and the Diyala River downstream.

The ultimate goals of this project are to determine the cause of the fish kill and to ensure projects be undertaken and improvements in practices are implemented such that the waters of Darbandikhan Lake are suitable, once more, for human consumption and use.

To accomplish these goals the following basic tasks are identified:

1. Identify all existing data on the basin and assemble into an integrated database for analysis by stakeholders and setting up a system by which new information on the basin can be added and shared.
2. Identify gaps in information and all potential sources of contamination within the basin and develop a list of sub-projects for addressing and obtaining missing information (for example: if information on industrial inputs to the basin is lacking, a sub-project might be started under the oversight of the committee to begin a survey of area industries and small, medium, to large-scale businesses to determine what waste products that they are generating)
3. Produce a "State of the Basin" Report documenting current knowledge of the basin, identifying gaps and suggesting next steps, including further research projects, preliminary lists of projects that can be undertake to immediately improve the water quality or at least stop further deterioration.

It should be understood that this will be a long-term process that will require a consistent level of commitment and funding from the Iraqi government. This report should be a living document that is revised periodically to update the state of the knowledge and follow up on the implementation of recommended actions. The document should clearly identify the challenges, but strive to identify short-term, medium-term and long-term solutions and/or strategies to address the problems identified.

Water Quality Index, Indices of Biological Integrity and Standardization of Environmental Methods in Iraq: "a 3 in 1 Project" – An update

By Haider Sahib, NI Data Indices Project Manager

It has been nearly five years since Nature Iraq (NI) was formed and started to participate in environmental research in Iraq beginning with the KBA project in the marshes of southern Iraq and expanding during the last two years to include the Kurdistan region of Iraq. During these five years, NI identified a number of problems and shortages that hindered our efforts and, at the same time, appeared to affect the work of other researchers in the environmental field in Iraq. Some of the problems encountered included the lack of standardized procedures and protocols for collection of data, preservation of the samples, maintaining a chain of custody and time lines on samples, lack of standardized testing methodologies, and lastly, the lack of a standard reporting system and units that can be used to compare newly collected data with historical records. The sanctions of 1991 through 2003 played a major role in isolating Iraqi scientist from developments worldwide, not to say anything about the forced migration of Iraqi scientists.

In January 2008, a small team inside NI started the process of devising a scheme in which the data collected can be easily summarized and converted, as a collection of parameters, into an index, or indices, or plots that can be easily digested by scientists as well as decision makers. The ultimate goal of the project was to develop a standard method that can allow all Iraqi researchers to work together and come up with a tool that allows them as well as policy-makers the ability to synthesize the huge amount of data into graphical representations. This will help both the Iraqi researchers and policy-makers to concentrate limited resources into areas of concern as indicated by the data.

After long discussions, the team decided to apply the models of the Water Quality Index (WQI) for water quality data and the Indices of Biological Integrity (IBI) for those of biota. The idea was soon reviewed and thoroughly discussed with the CEO and the Director of Operations of NI who agreed to the idea. Soon after that the idea became a project with a project manager, a team, and a work plan. Six months later, in July 2008, it was time to present the results to the scientific community. More than 15 well known Iraqi experts in the field of environmental research were invited to Sulaimani to discuss four models produced so far by NI in cooperation with experts from Basrah University. For the WQI, the Canadian model was selected and one example was produced using NI raw data from surveys in the Hawizeh marsh. Dr Najah Aboud from Basrah University and Mr. Ibrahim Mahdi (PhD student) from NI produced this model as well as another model that dealt with a Fish Index of Biological Integrity (F-IBI). Mr. Mahdi was also part of the team that produced similar indices for phytoplankton (P-IBI) and zooplankton (Z-IBI) in cooperation with Dr Azhar Al Sabonchi from Basrah University and Mrs. Ghasak Sabah (MSc) from NI. In addition to providing information on new trends in environmental studies, the workshop was also an opportunity for the invitees to listen to more details about the WQI idea and models through lectures presented by Drs Abdul Hameed Mohammed Jawad from the University of Technology and Dr Hussein Musa from Kufa University.

The workshop was an exciting event filled with scientific discussions, in which it was common to see the young NI staff standing with their eyes and ears open to catch what the experts were saying. Not surprisingly, besides maturating the two original tasks of WQI and IBI, the experts provided a very important suggestion. It came according to the following logical sequence "If you want to use more efficient methods to process your data, then you should have credible data which, in turn, requires credible and applicable methods". The experts suggested starting a new task that aims at standardization of the methods used all over Iraq to study the different hydrological and biological aspects of aquatic environments. The experts also suggested that NI support and executes this task and NI agreed to this suggestion. Again, another dream of the senior and junior staff of NI is on the way to becoming true!

Since then, this huge task has required that the original circle of the experts involved to grow larger; whenever a decision was made to include the methods of a new parameter, a new expert was asked to join the team. Now, the team includes 10 experts from the universities of Technology, Basrah, Erbil and Baghdad who are nearing completion to a set of methods that can be used by scientists in Iraq to investigate the environment in terms of WQ, fish, benthos, zooplankton and phytoplankton.

A second workshop for the project will hopefully be held in Sulaimani in June of 2009. It will witness the announcements of two major achievements: a new set of WQI and IBI models that can be applied by scientists and students Iraq-wide and an additional announcement of a comprehensive and ready-to-use set of methods or procedures that were prepared by a number of the best specialists in the country. The last, but not least, step is the production of reports and/or books by NI that covers these important topics and puts the fruits of more than one year of efforts within the hands of the Iraqi specialists and ministries.

After all, this project gives an example on one of the most important tasks that NI decided to have in Iraq: "Seeding the new ideas and helping the community to apply them in the field."

Management of Hawizeh, Continued from Page 2

background information on the people and landscape present at Hawizeh, and presents management recommendations for the future wise use of the Marsh's natural resources, its sustainable development, and a healthier future for the area. Several "first step" projects are proposed.

This project is one of Iraq's first actions under the Ramsar Convention following Iraq's accession to this international environmental treaty. Further activities may include development of a national marshes strategy, a national inventory of wetlands, continued environmental monitoring of marshes and other Key Biodiversity Areas in Iraq, and designation of additional Wetlands of International Importance in Iraq.

See the Nature Iraq website for a draft copy of the Plan.

Hawizeh in Summer, 2007 - Photo by Nature Iraq

New Directions, Continued from Page 1

as a welcome house for the national park in the central marshes. We are going to build an experimental house of adobe. We are discussing with developers the idea of putting up bird hides and floating hotels. Our team is full of ideas that we want to see accomplished, while we do the mundane tasks of fund-raising and administering an NGO. There are a number of other activities that we are undertaking that I have no space to talk about. But the following I must share with you:

I visited the marshes, with my wife, in January of 09 and we were dismayed at the low water levels in the Euphrates, which are causing the water to drain out of the marshes. People in the marshes were pleading that they need nothing from the government except to give them water. My wife and I went to Baghdad to speak for them and I must say that I was heartily encouraged by the officials and their readiness to work on this issue. Aowni Dhiab of the design department of MOWR wants a design he can implement. Dr. Hussien Jaber at the Prime Minister's office is ready to act in support. Ms. Ikram Qassim Nasser, the newly appointed head of Ramsar committee has much to add, and last, but not least, is the new head of CRIM, Mr. Abed Kadhum Lahmod Yasser who is a man of action that you do not encounter often in Iraq. They all promised to help and I am looking forward to seeing water restored to the marshes and to await the completion of the regulator structures being built by CRIM that will assure the regulation of the waters going into and out of the marshes. This is the stuff of advocacy that I love and that keeps me coming back for the hard work.

Judging by the above, I suspect that 2009 will pass even faster than 2008 did. All I will say in the end is to ask you to check our website on a periodic basis to check on our progress. May the year 2009 be a year of successful transitions and please accept my best wishes for a peaceful and prosperous year.

TRI, Continued from Page 3

As we stated above, TRI in the future will consist of three departments, GIS and remote sensing, Hydrology, and Ecology. All these departments will have highly equipped laboratories with ac- curate, state-of-the-art instruments to provide data that has not been available to Iraqi researchers in the past. These departments will accept students from all over Iraq according to the same standards of the American University.

TRI will also adopt the Massachusetts Institute of Technology management practices and will be striving to become a reference institute for both the Iraqi government and foreign investors using state of the art technologies and finding solutions in an Iraqi context. You will be hearing more about TRI from the AUI-S web site as we disentangle TRI from NI activities and integrate it more completely with AUI-S operations.

Hope for the Tigris River? – Status of the Ilisu Dam Project in Turkey

By Anna Bachmann

A decision was to be made earlier in the winter as to whether Austria, Germany and Switzerland would finance the building of Turkey's Ilisu Dam Project on the Tigris River in Eastern Turkey. The Dam is part of a wider project called the Southeastern Anatolia Project, or GAP, with the stated aim of bringing development to the Southeastern Turkey. As the largest of a series of dams it would flood a region that includes more than 83 archaeological sites including the ancient town of Hasankeyf. In addition, 50,000 to 80,000 people would be forced to relocate. The flooding caused by the controversial Dam would also affect many vulnerable species that call the area home such as the endangered Egyptian Vulture *Neophron percnopterus* and vulnerable Great Bustard *Otis tarda*, as well as many mammals and other wildlife.

In November of 2008, protesters from Doga Dernegi (Nature Iraq's BirdLife partner in Turkey) unfurled a banner over a prominent building in Istanbul to bring attention to Dam project. The banner, showed views of ancient Hasankeyf displayed a message of 'Hasankeyf today, tomorrow, forever." It was hung by demonstrators wearing the flags of Austria, Germany and Switzerland.

The Tigris River from Hasankeyf, Turkey, photo by Anna Bachmann

Doga Dernegi argues that the Turkish Government show stop the Ilisu Dam project and to save Hasankeyf from destruction.

In an article on the BirdLife International website after the protect Erkut Erturk, the campaign coordinator of Doğa Derneği said that "It is time for a positive decision. Prime Minister Erdogan should honour his commitment to our heritage and save Hasankeyf forever by registering this culturally and biologically diverse region on the UNESCO World Heritage Sites list".

Iraq also has an important stake in this issue. The building of the Ilisu Dam would decrease the amount of water reaching Iraq, particularly as the dam is filled, and, if the extensive irrigation projects planned in Turkey go forward, the water quality in the Tigris as it enters Iraq would also decline.

A recent article on the Hurriyet Daily News website stated that the original credit agreement required that Turkey abide by over 150 criteria including measures to protect social and environmental life in the area, many of which, by beginning construction and nationalizing the land near the building site, Turkey appears to have violated.

Doğa Derneği obtained photographs in the fall showing a heavy construction vehicle along with dam-related building and construction material seen in the riverbed of the Ilısu region, which were not present at the site in summer.

Germany, Austria and Switzerland sent a warning letter in October that advised Turkey to fulfill the necessary criteria before they would release the credit. Turkey was supposed to conduct a study of the historical and cultural assets that would be affected by the Dam but earlier in the year Turkey was criticized for having taken few efforts in this regard.

As a result by the end of 2008, it was announced that the German government, as well as Austria and Switzerland, had suspended credit guarantees to the project. This may be a temporary blow to the project for the moment but Turkey will still continue to pursue dam construction. Iraq needs to engage more actively in an issue that could have many far-reaching and adverse affects.

For more information, see:
http://www.birdlife.org/news/news/2008/12/turkey_protest.html
http://www.hurriyet.com.tr/english/domestic/10624093.asp

Plant Tissue Culture Program

By Sarbagh Salih

Nature Iraq (NI) and Twin River Institute (TRI) have undertaken an important initiative to establish and support a plant tissue culture program to enhance agriculture and biotechnology in Iraq. This article will discuss the benefits of implementing such a project under the supervision of an Iraqi environmental NGO. TRI has assumed responsibility for this initiative as part of its greater goal to preserve biodiversity in Iraq.

Zana Jamal, Sarbagh Salih and Adel Hallawi handling questions at a Plant Tissue Culture Meeting in Sulaimani.

Plant tissue culture involves propagating plants in controlled environments with aseptic cultures. This procedure has many advantages, including but not limited to: the ability to proliferate mass production of clonal plants in a relatively short period of time and at anytime during the year; eliminating pathogens such as viruses from infected plants; safe transportation of plants (germplasm) across countries in a confined environment; and the provision of essential tools for gene transformation. The environmental importance of tissue culture includes: 1. Mass production of forest plants, which has proven successful with Pine; 2. Preservation of germplasm as plantlets or meristems tips in repositories or genebanks worldwide through conventional methods using tubes or through more advanced methods such as cryopreservation, such as used for apples at the repositories in Geneva and New York; 3. Safe transportation for endangered and rare plants in cross-country breeding programs. The last 30 years saw the loss of millions of trees in Iraq due to deforestation, forest fires and neglect. More than 13 million date palm trees alone have been lost, affecting the environmental makeup of the country and increasing the distribution of desert land. This transformation must be reversed through initiatives that establish tissue culture laboratories to mass produce date, olive and forest trees.

As with other sectors in Iraq, agriculture production has been down for the last 25 years and tissue culture has been especially neglected due to war, sanctions and a lack of international relations. In November, 2008 TRI held a meeting in Sulaimani which brought together 25 tissue culture experts from various regions in Iraq to determine the status and assess the needs of Iraq's agricultural sector. The conference concluded that in the 1980s, Iraq was one of the first countries in the region to establish tissue culture centers in Baghdad but the centers were quickly crippled by war. It is clear that Iraq holds the intellectual capability to lead the way in tissue culture projects, but is hindered with a lack of organizational and institutional capacity.

The plant tissue culture project will begin activities, including micropropagating varieties of potatoes, olives, pistachios and other endangered species, at TRI this spring. Potato propagation will be used as a pilot project to demonstrate to farmers the importance of variety, giving them the tools necessary to assess current farm management practices, enhance marketing methods and evaluate proactive planning. Olives and pistachios will be grown in areas of neglected forest, either via individual farmers or an arrangement with local government agencies. This program aims to provide first-hand training for university students in Sulaimani, where there are currently no tissue culture labs.

Many NI and TRI programs can serve as pilot projects to demonstrate to government agencies and individual farmers the potential of advanced approaches to sustainable water development and agriculture.

Nature Iraq Reports & other publications are now available on Nature Iraq Website: www.natureiraq.org