

# Support Services

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## Geographic Information Systems Unit

In 2006 the Geographic Information Systems Unit (GISU) supported ICARDA's research agenda with mapping applications in the areas of water resources, poverty, and crop diversification. A case study in Syria, reported in the MP1 section, describes a methodology for outscaling the biophysical potential for supplemental irrigation. In the MP5 section a new approach to poverty mapping is reported that, building on the concept of resource poverty, combines macro-level socioeconomic with micro-level environmental determinants of rural poverty.

During the year, the Unit also mainstreamed its methods for implementing land suitability models in a GIS environment through collaboration with research institutes in Maragheh, Iran (Dryland Agricultural Research Institute, DARI) and Ankara, Turkey (Central Research Institute for Field Crops, CRIFC). These methods aim to assist these countries in their drive to match crops and cropping systems to the biophysical potentials and constraints of their diverse agroecological zones.

The Unit was heavily involved in various training activities. It provided scientific coordination and lectures in the joint CIHEAM-ICARDA Advanced Training Course on 'Characterizing spatial variability for agricultural planning and site-specific crop management in Mediterranean conditions', held in Zaragoza, Spain, 7-17 March 2006. It provided technical support to both ICARDA and CRIFC teams involved in the joint project 'Agroecological zoning of Turkey'. It organized an introductory course on GIS software for ICARDA staff. It hosted a technician of Tottori University, Japan, and a GIS analyst of the National Agricultural Planning Commission, Damascus, for on-the-job training in operational GIS methods. In addition, the Unit provided specialized lectures in other training events at ICARDA.

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## Computer and Biometrics Support Unit

The major focus of the Computer and Biometrics Support Unit (CBSU) during 2006 was to improve IT security in the Center. Within the scope of the CGIAR ICT-KM project on 'Enterprise security and business continuity', considerable effort was made to maintain and enhance the overall IT security by implementing security standards. This reduces losses caused by viruses and external attacks, and helps ICARDA move towards CGIAR common standards. Documents and diagrams were created for IT assets and resources. Vulnerability, penetration

scanning and risk analysis were carried out on the computer network.

Particular attention was directed towards strengthening the networks of the ICARDA outreach offices in Cairo, Kabul and Tashkent and to establish connectivity to the Oracle Applications in a secure manner.

High availability of network and services (Exchange, Proxy/ISA, File Servers, Intranet) was achieved with an uptime of 99%. Old file servers were phased out smoothly. CBSU staff successfully decommissioned the old Proxy server and transferred data to the new ISA server, without disruption, leading to significantly improved network performance. In all, six new servers were installed for the library, Oracle Applications, Intranet, GRU, and photolibrary. The CGIAR Live Communication Server was installed. ICARDA School was assisted in organizing network and servers and installing an e-mail system. Orientation was provided to the new school network administrator. A new Travel System linked to Oracle Applications was developed and implemented by a contractor. On-line budget entry was also implemented.

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More than 1000 user requests were serviced. A new 100KVA UPS in the main building and an old 66 KVA UPS in Laboratory 3 were installed.

A 1 Mbit/sec link to Aleppo University was established. The Unit maintained ICARDA Intranet, 'Water Benchmarks of CWANA' and 'RALF Electronic Database' websites. The ICARDA Intranet was moved to a new server.

A CGIAR Performance Measurement System was developed on the request of the CGIAR Secretariat. Data loading for the Project Manager system was updated. The new Payroll System for daily staff at headquarters was developed and is being implemented. In a joint effort with GISU, a new GIS Intranet website was developed; the ICARDA online node for the GeoNetwork project is in its final phase.

Biometrics advisory support was provided to both ICARDA and NARS researchers. Support was provided on a number of specialized software programs for molecular data analysis. Computing modules were developed for analyzing multi-factors in CRD and one-way augmented design.

Experimental designs were offered for various experiments: evaluating photosynthesis activity under drought stress; lentil yield response to variety and agronomic practices; tillage systems under crop rotations; direct



seeding with combinations of shrub species; harrowing, irrigation and other management factors; and range nurseries of shrub species.

Statistical analyses were carried out on a large number of datasets. These included international nurseries, trials of lentil and other crops to evaluate efficiency of experimental designs, heritability and gain due to selection; comparing drought versus core collections of bread wheat; wheat yield loss due to YR and ST; evaluating species diversity; olive productivity models; moisture variability and its effect on barley yield; the benefits of phosphogypsum treatment; cereal and forage yields from compost trials with crop rotations to evaluate tillage and nitrogen factors; safflower experiments;

dose-response relationships in insecticides; and germination studies on salsola. A technical report on modeling spatio-temporal covariance structures in barley trials was prepared and ten manuscripts were reviewed.

CBSU conducted two biometrics courses for 18 participants, delivered lectures in four courses organized by ICARDA Mega-Projects for 65 participants, and assisted six non-degree individual trainees. Ten MSc and PhD students in genetics and plant breeding, agronomy and socio-economics from Bangladesh, Canada, Ethiopia, Mexico, Sudan and Syria used biometrics support to pursue their studies. An M.Sc. student from Sudan completed his thesis work.

# Communication, Documentation and Information Services

### Publications and website

ICARDA produced a wide range of publications in 2006, targeted at various audiences. They included, among others: the corporate annual report; 'The Week at ICARDA'; a special issue of *Caravan* on Deserts and Desertification; several newsletters for regional seed networks; an illustrated book on the architectural history of Aleppo; '25 years of cooperation between ICARDA and Syria' (in Arabic); and a series of documents for the External Program and Management Review (EPMR). The publications were distributed widely to NARS and other partners worldwide. A large number of posters were produced for presentation at scientific conferences and book fairs. In addition, over 110 journal articles, conference papers and abstracts were processed for publication or presentation.

The Center's website continued to be popular. The English version of the site received almost 30,000 hits per day on average, during the year. An RSS service was set up to provide users with quick updates.

### Media and public awareness

Visits by international journalists and photographers helped raise the Center's profile. Two journalists from the

GreenPeace Magazine met management, program directors and senior scientists, and gained a good overview of ICARDA's work. A team from Singing Nomads Productions, Australia, filmed ICARDA's work on genetic resources conservation.

The regional and international media continued to provide positive coverage of ICARDA's work. The clippings are posted on the Center's website ([www.icarda.org/Media.htm](http://www.icarda.org/Media.htm)). Key stories appeared in a number of regional newspapers and magazines.



### Multimedia products

Major emphasis was placed on developing and strengthening e-learning resources. Lectures in training courses were re-processed into e-learning modules. Two pilot modules were prepared: 'Business planning for seed enterprises' and 'Variety management and seed quality'. Both are now available online and on CD-ROM.

Video coverage was provided for several key events such as the ICARDA Presentation Day, the 25th anniversary of ICARDA-Tunisia collaboration, and two large-scale farmers' field days in Al-Hassakeh and Idleb provinces in Syria. Key addresses and speeches were compiled on video.

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### Library and Documentation Services

The library added to its collection over 380 books, 910 issues of journals and Annual Reports, and updates of AGRIS databases on CD-ROMs. It fulfilled 1700 requests for literature searches and other services, from NARS scientists and other researchers. The Virtual Library (CD-ROM library) on the Intranet received over 1200 hits (average of 100 per month), and was enriched with additional links to useful reference sources.

ICARDA's new library system, NewGenLib, was made fully operational. Records of the library database were moved to the new system, and are now

accessible to all ICARDA users through the Open Public Access Catalog. NewGenLib allows computerization of all library activities, and networking of program libraries at headquarters and regional offices.

Considerable progress was made on ICARDA's digitization project, which aims to consolidate information from a vast number of reports, technical papers and other publications into a comprehensive searchable database.

ICARDA continued to work with professional associations, regional fora, and other agencies to strengthen library and documentation services in the CWANA region.

### Training

The Center continued to contribute to help strengthen NARS capacity to document, manage and disseminate information. ICARDA staff offered lectures on science writing, PowerPoint presentations, pre-press technology, web design and other aspects to trainees from different CWANA countries. A two-week training course was conducted in November for 12 participants from eight countries. The training covered modern library management systems, NewGenLib, and management of electronic documents and web databases.

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## Human Resources Development Unit

During the year, ICARDA offered training opportunities to 568 national scientists from 42 countries from the CWANA region, Asia, Asia-Pacific, Europe, and from CGIAR Centers. In addition, 60 national scientists from developing as well as developed countries have been conducting their graduate research training for MSc and PhD degrees jointly between ICARDA and their parent universities. More than 25% of all ICARDA training participants in 2006 were women. ICARDA continued to gradually decentralize its training activities by offering more courses outside headquarters.

In 2006, 13 training courses were offered at headquarters (accounting for about 44% of total participants) and 17 at in-country, regional and sub-regional locations, in close collaboration with NARS. In its continued efforts to respond to the evolving training needs of NARS, the Human Resources Development Unit (HRDU) also facilitated and coordinated implementation of training courses for several externally funded projects.

During the year, 13 training courses and workshops were held at ICARDA headquarters, attended by 175 participants from 24 countries: Afghanistan, Algeria, Egypt, Ethiopia, Eritrea, Iran, Iraq, Jordan, Kazakhstan, Kyrgyzstan, Lebanon, Libya, Morocco, Oman, Pakistan, Palestine, Tunisia, Turkey, Saudi Arabia, Sudan, Syria, UAE, Uzbekistan and Yemen. These courses covered various areas, including crop improvement, integrated crop and livestock production, water management and supplemental irrigation, biotechnology, including genetic transformation and detection of GMOs, experimental design and data analysis, field plot techniques, livelihood characterization and impact assessment, soil analysis, seed processing, storage and marketing, seed sector liberalization, utilization of expert systems, information and library management systems, scientific writing and data presentation. Seventeen training courses and workshops were held at locations

outside ICARDA, and were attended by 310 participants from 30 countries: Afghanistan, Albania, Algeria, Armenia, Azerbaijan, Egypt, Eritrea, Ethiopia, India, Iran, Iraq, Jordan, Kazakhstan, Kenya, Kyrgyzstan, Lebanon, Malta, Morocco, Oman, Palestine, Spain, Sudan, Syria, Tajikistan, Tanzania, Tunisia, Turkey, Uganda, USA and Uzbekistan. These courses covered various areas, including hybridization techniques, crop management, integrated pest and disease management, technologies to combat salinity, participatory and community-based approaches, GIS analysis,

greenhouse management, seed production, processing and testing, quarantine, impact assessment, and scientific writing.

Collaboration extended beyond NARS to cover several universities, CGIAR Centers, and regional and international centers globally. These included JICA, ACIAR, CLAES, GAP, CIHEAM, University of Vermont, UNESCO, ASDW-Trieste, Italy, GCSAR-Syria, MAWM and IWM-Uzbekistan, CRIFC-Turkey, CIMMYT, the Global Rust Initiative, NARI-Eritrea, FAO, AREO-Iran, Wageningen University, The Generation Challenge Program,

Cornell University, Khartoum University in Sudan, and Aleppo, Damascus and Tishreen universities in Syria. Inter-Center collaboration was also strengthened through participation in the Inter-Center Training Group, exchange of training databases, and participation in CGIAR reviews on training and human resources development. ICARDA was actively involved in many CGIAR activities including the Global Open Food and Agricultural University, Virtual University, distance education, e-learning and knowledge management and dissemination.