SEED INFO

Bulletial Newsletter of the WANA Seed Network

Seed Info No. 24 **January 2003**

EDITORIAL NOTE

Seed Info aims to stimulate communication and information exchange among seed staff in the Central, West Asia and North Africa (CWANA) region. The purpose is to contribute towards the development of stronger national seed programs, which supply quality seed to farmers.

In the last issues of Seed Info we covered a new topic on setting up a new enterprise in the seed sector. The subject was well received by readers and we have received several interesting comments. In this issue we will present a first of the two series article on seed policy and regulatory issues. N.P. Louwaars, from CPRO in Wageningen, The Netherlands writes about the widening scope of seed policy and regulation with respect to changes in the global seed industry and international conventions. Moreover, we will conclude the harmonization initiatives undertaken in Sub-Saharan Africa, by presenting a detailed account of one of the regional initiative in Eastern and Central Africa courtesy of Issac Minde from Eastern and Central Africa Program for Agricultural Policy Analysis (ECAPAPA). There is also news from international organizations, namely; the Organization for Economic Cooperation and Development (OECD) and the International Seed Federation (ISF). The former deals with admission requirements to OECD Seed Schemes whereas the latter covers the newly formed organization through the merger of the International Seed Trade Federation and the International Association of Plant Breeders.

The section on SEED PROGRAMS includes news from Afghanistan, Iran, Morocco, Pakistan and Syria. We will continue reporting on the activities of the *Future Harvest Consortium to Rebuild Agriculture in Afghanistan (FHCRAA)* which is coordinated by ICARDA. The report includes seed distribution for autumn planting, wrap up meeting on needs assessment, rehabilitation of infrastructure and human resource development in the seed sector. There is a brief note on the Pakistan seed sector and short report on the First Iran/ICARDA Seed Workshop held in Kaaraj, Iran,

In the HOW TO section, your regular contributor, Abdoul Aziz Niane once again explains the ISTA Quality Assurance program describing the essence of ISTA Seed Testing Laboratory Accreditation Program. This time we will focus on quality policy for seed testing laboratories.

Seed quality is comprised of many aspects including genetic, species and physical purity; physiological quality; freedom from seed-borne pests; and acceptable level of uniformity. In the past, routine laboratory

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seed testing focused on physical and physiological aspects of seed quality with little attention to seed health. However, seed health certification through field inspection of standing crops and laboratory seed testing coupled with seed treatment has become an increasingly popular approach to check the spread of plant pests both at national and international levels. The RESEARCH section highlights the efforts of seed health certification by the Federal Seed Certification and Registration in Pakistan.

We wish you an enjoyable read.

Happy New Year

Zewdie Bishaw, Editor

WANA SEED NETWORK NEWS

This section presents information related to the WANA Seed Network. It regularly updates the progress of Network activities and reports on the meetings of Steering Committee and WANA Seed Council.

Planting the Seed for Harmonization Initiatives in CWANA

From the mid-1980s there has been a strong desire for liberalization to stimulate economic growth and development. The policy shift brought many changes in the seed industry which include: (a) policy and regulatory reforms to create an enabling environment for other actors to enter the seed markets; (b) reduced government involvement in seed production and allowing the participation of the private sector; (c) globalization of the seed industry where seed has become a strategic proprietary product for international trade; and (d) harmonization initiatives to create regional markets to attract external investments in the seed sector.

Within this context, a regional workshop on Review of Seed Programs and Seed Regulations was held on 2-3 November 2002 in Karaj, Iran under the umbrella of the WANA Seed Network. The workshop was organized by the Seed Unit of ICARADA in collaboration with Iran/ICARDA Agricultural Research Project and the Seed and Plant Improvement Institute of the Ministry of Jahad-e-Agriculture.

The participants of the workshop were policy makers or senior program managers with broad knowledge and experience in agricultural research and/or seed program development drawn from relevant institutions of respective countries dealing with variety development, seed production and seed certification. A total of 20 participants from Afghanistan, Azerbaijan, Iran, Iraq, Lebanon, Kazakhstan, Khyrgzstan, Pakistan, Tajikistan, Turkmenistan, Turkey and Uzbekistan attended the meeting including the representatives of UPOV and ISTA.

The workshop reviewed national policies and regulations pertinent to varieties and seeds in respective countries and endorsed harmonization initiatives within the sub-region. It is a first step in a series of regional consultation bringing together stakeholders of the national seed industry of the respective countries to initiate dialogue and build confidence and trust among them. The workshop:

1. Reviewed the status of national seed industry of respective countries with particular reference to policy, regulatory, technical and institutional issues
2. Discussed opportunities and alternatives for harmonization and prioritized feasible policy and regulatory reforms at national and regional levels
3. Agreed on national action plans for implementing the policy and regulatory reforms
4. Discussed and agreed on national commitments in implementing the harmonization initiatives
5. Developed strategies for harmonization of polices and regulations at regional levels
6. Made key recommendation for possible action by policy makers for seed sector development
7. Endorsed harmonization initiative and seeking support from policy makers and international donor organizations

Any one interested to obtain the set of the recommendations can contact: Dr Tony van Gastel, Head, Seed Unit, ICARDA, P.O. Box 5466, Aleppo, Syria; E-mail: a.vangastel@cgiar.org.

Steering Committee Meeting

The Ninth Steering Committee meeting of the WANA Seed Network was held on 1 November 2002 in Karaj, Iran. The Seed and Plant Improvement Institute hosted the meeting where Steering Committee members from Cyprus, Lebanon, Morocco, Syria and Turkey participated.

The Secretariat prepared and presented a comprehensive progress report of the WANA Seed Network activities. The SC agreed that the Network activities be reactivated in earnest and Country Representatives actively participate in implementing them. The Steering Committee made several recommendations to revitalize the WANA Seed Network and requested that efforts be made to put the Network on sound financial footing in partnership with international organizations working in the region.

Network Publications

The Secretariat in consultation with the 'Lead Countries', completed the revision of three Network publications namely; WANA Variety Catalogue, WANA Field and Seed Standards Catalogue and WANA Seed Directory.

The WANA Seed Directory and the WANA Catalogue of Crop Varieties are now published on

the internet and can be accessed from the Seed Unit website. However, it was agreed that the WANA Catalogue of Field and Seed Standards is printed and circulated for use as a reference document. The catalogue includes standards for certification in member countries for crops such as cereals, legumes, oilseeds, industrial crops (cotton, sugar beet), forage crops and some vegetable crops (beans, cabbage, carrot, cucumber, egg plant, onion, potato, pepper, tomato, water melon) in member countries.

Change of Country Representatives

In Iran Mr Kaveh Khaksar has been appointed Head of Seed Control and Certification Department of the Seed and Plant Improvement Institute upon the retirement of Mr Syed Javed Shahamoradi who was the Country Representative of Iran to the WANA Seed Network.

Mr Ammar Tahiri, become the Head of the Service de Contrôle des semences et Plants succeeding Mr Mohamed Tourkamani who was formely the Steering Committee member and the Country Represetative of Morocco to the WANA Seed Network. Mr Tahiri, become the Country Representative of Morocco and member of the Steering Committee.

Similarliy, Dr Abdul Mohsen Said Omar has been appointed Director General of the General Organization for Seed Multiplication and has replaced Mr Abdulwahab Madarati as the Country Representative of Syria and memebr of the Steering Committee.

We would like to thank Mr Shahmoradi Mr Tourkmani and Mr Madarati for their valuable contribution to the Network during their terms as Country Representatives of Iran, Morocco and Syria, respectively and welcome Mr Khaksar, Mr Tahiri and Dr Omar as new members. The full contact address of the new members is as follows:

Mr Kaveh Khaksar, Head, Seed Control and Certification Department (SCCD), SPII; P.O. Box 31585-4119, Karaj, Iran; Tel: +98 261 2709456; Fax: +98 261 2709405;E-mail: int.spii@abdnet.com or kavehkhaksar@yahoo.com.

Mr Ammar Tahiri, Service de Contrôl des Semences et des Plants, P.O. Box 1308, Rabat, Morocco; Tel: ++212-3-7771085; Fax: ++212-3-7779852; E-mail: amar.tahiri@menara.org.

Dr Abdul Mohsen Said Omar, Director General, General Organization for Seed Multiplication, P.O. Box 5857, Boustan Al-Basha Street, Aleppo, Syria. Tel: ++963-21-4650291; Fax: ++963-21-4644901; E-mail:gosm@mail.sy.

Change of Address for Country Representatives

The city code for telephone lines has been changed in Cyprus where the two-digit city codes formerly preceded by 0 is now replaced by 2 (e.g. city code for Nicosia was changed from 02 to 22). The WANA Seed Directory was updated accordingly to include the new changes. The correct address of the Country Representative of Cyprus to is as follows:

Mr Efstathios Xenophontos, Head, Seed Production Center, Department of Agriculture, P. O. Box 1412, Nicosia. *Tel: ++357-22-305343; Fax: ++357-22-343419;* E-mail: doagrg@cytanet.com.cy

The Federal Seed Certification and Registration Department (FSCRD) in Pakistan also has a new e-mail address as follows:

Dr Akhlaq Hussain, Director General, FSCRD, G-9/4, Mauve Area, Islamabad 44000. *Tel: ++92-51-9260126; Fax: ++92-51-9260234;* E-mail: fscd @seed.isb.sdnpk.org.

The Secretariat requests that the members of the WANA Seed Network note the changes of the Country Representatives and the addresses for future communication with respective countries.

Seed Unit On-line

The Seed Unit website was launched on 19 August 2002 at ICARDA homepage. The site presents an overview of the Seed Unit activities including the WANA Seed Network. The website will continue posting relevant information on the national seed industry of Network member countries in CWANA region. In addition to Seed Info, the updated series of 'Focus on Seed Programs' and several Network publications will be made available online and can be accessed freely. The support of the Country Representatives and observers in providing up-to-date information related to their respective organizations remains crucial in this endeavor.

The website can be accessed through ICARDA homepage at http://www.icarda.cgiar.org (and then by clicking Seed System Support) or directly at http://www.icarda.cgiar.org/seed%20unit/file/home .htm. The electronic version of Seed Info is now also available under the same website. We welcome your suggestions, comments and ideas in improving the website and to provide you with relevant information and services. If you have any specific queries please do not hesitate to contact us at the Seed Unit. We wish you an enjoyable surfing!

NEWS and VIEWS

News, views, comments and suggestions on varieties and seeds are included in this section. It is also a forum for discussion among professionals in the seed sector.

Seed Policy – a Widening Arena

Seed is the most important primary input in agriculture and as such has become a major issue in agricultural policy. Seed quality, especially the genes embedded in the seed, are important factors for determining yield potential, yield stability and product quality.

In many developing countries, seed became the subject of agricultural policy only from the 1960s following the *'green revolution'*. Seed was seen as an important vehicle for the dissemination of novel technology, both the technology embedded in the seed itself (genetic) and the technology that accompanied the new genes such as chemical fertilizers and plant pesticides. In developed countries, by that time, seed had turned from a technology carrier to a commercial commodity. Furthermore, the concept of seed as the carrier of valuable genetic resources gained importance, especially in the international forum where attempts are made to give a monetary value to this function.

For several decades, seed policies in developing countries were designed by seed specialists, with the aim to allow the sector to develop in a linear fashion, with a growing role for private enterprise in seed production and marketing, and finally in plant breeding and quality control. In the 1980s a four-stage seed industry development concept was proposed:

- Stage 1: no formal seed industry exists because no improved varieties are available;
- Stage 2: farmers start to use varieties from formal breeding but most seed is still produced by farmers;
- Stage 3: emergence of private seed sector along with public enterprises; and
- Stage 4: most seed purchased and varieties bred by private research.

Policy options based on such analysis are quite straightforward. In order to move a seed industry from stage 1 to 2, investments in plant breeding have to be made. In stage 2 the quickest way to increase the use of 'improved' seed is to develop public seed production. Stage 3 requires measures to stimulate private investment in the seed industry and stage 4 requires reducing the use of own seed by farmers through education or regulation.

Increasing complexity

The recognition given to farmers' methods of seed selection, saving and exchange led to the concept of integrated seed systems, whereby the strengths of both formal and local knowledge are combined in various operations within the seed system.

This concept is advanced in terms of farmers' participation in plant breeding, seed system development, germplasm conservation and various other issues. The resulting diversity of approaches makes it impossible to simply follow the historical development and design a blueprint for seed policy.

The first problem of seed policy development arises from the three main functions of seed (i.e. the technology transfer function, the commercial commodity function, and the carrier of genetic diversity function). The second problem is the globalization of policies that have an impact on seed.

The technology transfer function of seed requires free access to new varieties for distribution and exchange from farmer to farmer. This requires subsidizing seed production programs based on public sector breeding with a limited scope for seed regulation.

Emphasis on the commercial aspects of seed may contradict the developmental objectives because it has to recognize the existence of commercial opportunities for seed producers which differ among crops and user groups, and that it requires the protection of markets (breeders' rights etc.) hindering the free flow of technology.

The concept of seed as the carrier of valuable genetic resources that need to be conserved for future generations leads to policies directed towards the sustainable use of genetic diversity on-farm, possibly conflicting with trends towards uniformity oriented modernization and commercialization approaches.

At the international level, these three parallel developments meet in the seed policy debate.

In the field of agriculture, the recognition of the role of farmers in the domestication of crops and the selection of varieties led to the concept of farmers' rights promoting the role of farming communities in development and in the conservation and sustainable use of genetic resources.

In the international aid programs, the International Monetary Fund and the World Bank, through the Structural Adjustment Programs obliged countries to reduce public spending and actively support privatization, thus reducing possibilities for countries to support public research and public seed programs.

In the area of the international agreements on the environment, the Convention on Biological Diversity established the concept of national sovereignty over genetic resources and obliging countries to conserve these valuable materials.

In the area of economic development, the World Trade Organization developed far-reaching obligations to the member states for liberalization of the economy and on the recognition of intellectual property rights, including on plant varieties.

The Way Forward

The conflict between the three functions, and the emerging international debate on the seed sector has widened the policy domain. Seed technologists are loosing ground as the main players in formulation of seed policy. Especially when it comes to translating policies into practice, e.g. through legislation, the widening of the policy arena makes the process much more complex, and subject to changing power relations.

- At the national level, the recognition of local seed systems and alternative ways to improve the quality of seed used by farmers brings in farmers and NGOs into the seed policy debate with varying success.
- The economic agreements under the World Trade Organization need to be implemented without challenging the environmental and equity issues. The requirements for ownership rights over plant varieties lead to debates about the ideal scope of protection in order to safeguard each country's development needs.
- The implementation of the obligations for conservation and sustainable use of genetic resources at community and national levels (IT/GRFA and CBD), have to be designed in such a way that they do not impede development and commercialization strategies.

These developments involve not only the Ministry of Agriculture in seed policy matters (and its stakeholders), because where the FAO falls under the mandate of that ministry, the CBD deals with 'Environment' and the WTO with 'Commerce'. These differences essentially lead to the need for strong and coherent national policies rather than ministries having to satisfy the needs of their specific target groups and stakeholders.

The OECD has developed its Regulatory Impact Analysis to tackle the problem of integration of multiple policies, especially those concerning economic efficiency, trade, equity and the environment. The model not only creates an analytical tool, but also as means to improve transparency of the policy-making processes, and the accountability of policy makers. Lack of transparency remains a major bottleneck in several countries, resulting in a sub-optimal use of knowledge and views of different stakeholders in the policy domain.

A second challenge is to design resulting regulatory tools by balancing the various objectives properly, without stepping into the trap of extremely complicated regulatory systems and their bureaucratic implications. While this balance necessarily has to be found at the national level and that these will differ per country, the international obligations still need to be met objectively. A complete harmonisation of policy and regulations at international levels may be hard to achieve, but a strong harmonisation at the level of technical implementation will be a significant gain. *N.P. Louwaars, Plant Research International, P.O.Box 16, 6700 AA Wageningen, The Nethelands; Email:N.P.Louwaars@plant.wag-ur.nl*

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Harmonization of Seed Regulations in Africa: The Central and East Africa Initiative

Introduction

Most countries in Africa have established crop variety development programs and seed delivery systems. Most of these organizations are in the public sector and are often less efficient and unable to meet national seed demand in their respective countries.

In East and Central Africa, only Kenya has a relatively developed seed sector. The seed delivery system in the rest of the countries is dominated by the public sector and NGOs. Moreover, in each country the seed industry faces different standards and regulations restricting regional trade in varieties and seeds.

The Central and East Africa Initiative

A number of initiatives are currently underway across various sub-regions of Africa to harmonize seed policies and regulations (see Seed Info No 23 for the SADC initiative). The objectives of the initiatives are to facilitate: (a) easier movement of seed and germplasm across national boundaries; (b) creation of regional seed markets, leading to economies of scale; (c) increased investment by

private and public entities; and (d) improved services to farmers for increased productivity in agriculture.

Harmonization of Seed Rules and Regulations
The East and Central Africa initiative is well advanced and is coordinated by the East and Central Africa Program for Agricultural Policy Analysis (ECAPAPA). ECAPAPA is a program within the Association for Strengthening Agricultural Research in East and Central Africa (ASARECA), an umbrella organization of NARS from Burundi, Congo, Eritrea, Ethiopia, Kenya, Madagascar Rwanda, Tanzania, Uganda and Sudan.

In ECA region, the need for harmonization has been long recognized which led into a launching of pilot project entitled '*Harmonization of Seed Policies and Regulations in Eastern* Africa'. The project was approved by the Committee of Directors of ASARECA and funded by USAID/REDSO and its implementation began on a pilot phase in three ECA countries (Kenya, Tanzania and Uganda) in September 1999 with ultimate objective to achieve harmonization in all member countries of the ASARECA.

The project focused on five key areas to achieve harmonization which includes: (i) variety evaluation, release and registration, (ii) seed certification, (iii) phytosanitary regulations, (iv) plant variety protection, and (v) laws and regulations governing seed trade, and seed enterprise development both local and foreign.

National Consultative Workshops
The project's mission is to facilitate the movement and supply of quality seed to farmers in the EAC countries through harmonization of seed policies and regulations in member countries. The project adopted a long consultative process as follows:

- Appointment and orientation of National Resource Persons (NRPs); one each from Kenya, Tanzania and Uganda in August/September 1999
- Review of the (country and other countries') seed laws, regulations and standards by the NRPs
- National consultative workshops organized by the NRPs in October/November 1999, to inform and consult national stakeholders
- NRPs and ASARECA/ECAPAPA Secretariat consultative workshop in February 2000 to review NRPs reports and recommendations from the national stakeholders consultative workshops
- National workshops (one in each country) held between 28 February and 14 March 2000 to present issues for harmonization and draw national responses mainly for decision makers in the public and private sectors

Regional Workshops
The first Regional Workshop was held 4-8 April 2000 in Entebbe, Uganda to address the following three main issues for the harmonization process based on the outcomes of the national workshops:

- Variety evaluation, release and registration
- Seed certification procedures and standards
- Phytosanitary regulations and procedures

The second Regional Workshop was held from 26-30 June 2000 in Arusha, Tanzania to address:

- Outstanding issues from the first Regional Workshop
- Import and export procedures and plant variety protection
- Regional coordinating mechanisms to implement and monitor agreements reached in the two regional workshops

Achievements to Date
Substantial progress has been achieved in harmonization of seed policies and regulations in the three countries. The most important achievements are:

- Reducing the mandatory three years of testing for new varieties. Officials now agreed to accept breeder's data including data from at least one main season in not less than three locations
- Reducing phytosanitary restrictions imposed on 10 most important crops from 33 to three
- Establishing a Seed Regional Working Group to implement agreed standards and procedures for the region
- Providing a forum for public and private sectors to create awareness as partners in the development of the seed sector
- Providing opportunities for scientists, public and private sector officials in the three countries to meet, exchange experiences and build trust amongst them

The Expansion Phase
The process is now being extended to the neighboring countries of Burundi, Eritrea, Ethiopia, Rwanda and Sudan. Consultations have been made to assess the eligibility of these countries through comprehensive seed sector reviews focusing mainly on the regulatory systems. The first meeting was organized in 2001.

Conclusion
Since the inception of the initiative in 1999, Tanzania and Uganda have experienced increased investment in the seed sector. In Uganda, the

number of seed companies increased from one in 1999 to 9 in 2001. There is increased movement of seed among the East African Communities buoyed by the development and also by the formal establishment of the Community. The countries are capitalizing on the comparative advantages that exist among themselves. *I.J. Minde, ECAPAPA, Plot 13, John Babiiha Road, P.O. Box 765, Entebbe, Uganda; E-mail: ecapapa@imul.com.*

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Admission Procedures to OECD Seed Schemes

In Seed Info No 23 we reported on procedures of how to become an accredited laboratory to issue ISTA international seed lot certificates. In the following article we summarize the admission procedures to OECD seed certification schemes. At present 52 countries are members implementing seven different seed schemes: (i) Cereals (48 countries); (ii) Maize and sorghum (38 countries); (iii) Crucifers and other oil or fiber species (49 countries); (iv) Grasses and legumes (49 countries), (v) Beet (29 countries), and (vi) Vegetables (25countries); and (vii) Subterranean clover and similar species (4 countries). From WANA only six countries (Cyprus, Egypt, Iran, Morocco, Tunisia and Turkey) are members of one or more seed schemes.

Eligibility
Any member country of the UN or its specialized agencies may submit a written application to the Secretary General of the OECD to join one or more of OECD seed schemes. OECD member countries may use the schemes by writing and notifying the Secretary General. The technical criteria shall apply equally to both OECD member and non-member countries.

Technical Criteria
Any applicant country or the notifying OECD member country should provide a detailed description of the national seed certification scheme and a copy of the rules and procedures governing seed certification. A comparison shall be made between the rules of the OECD scheme and the rules of the national scheme, specifically in respect of: (i) previous cropping, (ii) isolation, and (iii) varietal purity standards.

The country should also provide details of its certification scheme during the previous five years and specify the amount of certified seed produced over the last three years. There should be a national list of varieties that have been tested and found to be distinct, uniform and stable and of acceptable value for cultivation and use in at least one country to operate OECD certification schemes. There should be adequate arrangements for variety maintenance, breeder, pre-basic and basic seed production as well as pre- and post-control plot testing for at least three years.

The country should have qualified staff and facilities to carry out seed certification efficiently and enforce the minimum OECD varietal purity standards. Moreover, all sampling and sealing of basic and certified seed lots should be handled by official or authorized seed samplers according to ISTA methods, all seed testing conducted by an ISTA accredited laboratory and labeled according to OECD requirements.

Review of National Scheme
The OECD Secretariat will acknowledge receipt of the application/notification and will examine the submitted technical documentation. If the documentation is considered satisfactory, the Secretariat will visit the applicant/notifying country with a representative of a National Designated Authority to explain the technical and administrative implications of the Rules and Directives of the Schemes, as well as its organization and coordination at the international level. Moreover, the team will ascertain that adequate technical and administrative facilities are available for the operation of the schemes and the need for expert assistance during the initial period of operating the scheme.

Obligations of Applicant or Notifying Country
On admission, the applicant country should agree that its representative attends the annual meetings of the National Designated Authorities and become directly responsible for implementing the schemes in their country. During the first two years the scheme will be under review and a seed certification specialist selected by the OECD will make annual visits and examine the administrative and technical procedures with particular reference to documentation of seed crop inspection and control plot testing.

Annual Contributions and Payments
The applicant/notifying country shall agree to the payment of an annual fee as set out in the General Principles from the calendar year immediately following the year of the Decision of the Council admitting the country to the schemes.

The cost of the mission prior to admission will be borne by the country whereas the costs after the admission will be arranged in agreement with the Secretariat. However, the attendance of Annual Meetings will be borne by the country. Before admission, the applicant/notifying country will be

authorized to attend the Annual Meeting, as an observer, to explain the documentation submitted.

Granting admission

Provided the OECD is satisfied with the review of the national scheme and the applicant/notifying country has submitted in writing, to meet its obligations on admission, the Annual Meeting will advise that the application/notification be granted. The Committee for Agriculture of the OECD will then recommend that the Council approve the admission of the country to the seed schemes.

Following approval by the Council, the Secretary General of the OECD will notify the applicant country accordingly. The National Designated Authorities in all countries participating in the schemes will also be informed. For more information on OECD visit the website at: http://www.oecd.org.

Source: AGR/CA/S(2002)22, June 2002.

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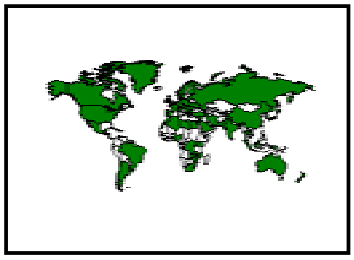
The International Seed Federation

The International Seed Federation (ISF) is a non-governmental, not-for-profit organization representing the seed industry. With members spread over 68 developed and developing countries, ISF represents the seed trade and plant breeders and serves as an international forum where issues of interest to the world seed industry are discussed.



ISF results from the merger in 2002 of the International Seed Trade Federation (FIS) and the International Association of Plant Breeders (ASSINSEL).

Mission

The mission of ISF is to:

- Represent the interests of its members at international level and improve relationships between its members
- Develop and facilitate the free movement of seed with fair and reasonable regulations whilst serving farmers, growers, industry and consumers
- Increase recognition of its members' contribution to world food security, genetic diversity and sustainable agriculture through development, production and supply of quality seed using modern technology
- Promote the establishment and protection of intellectual property rights for seeds, plant varieties and associated technologies which follow from research investments in plant breeding, plant biotechnology and seed technology
- Facilitate the marketing of seeds and other reproductive planting materials by publishing rules for the seed trade in international markets and for the licensing of technology
- Provide for the settlement of disputes through mediation, conciliation and/or arbitration
- Encourage and support the development of national and regional seed associations
- Encourage and support the education and training of seedsmen throughout the world

Activities

ISF represents the seed and plant breeding institutes, in particular at the: (i) International Union for the Protection of New Varieties of Plants; (ii) Organization for Economic Cooperation and Development; (iii) International Seed Testing Association; (iv) Food and Agriculture Organization; and (v) Convention on Biological Diversity. ISF maintains official contacts with these organizations in order to promote the views and safeguard the interests of its members, notably in improving the conditions of international seed trade and strengthening intellectual property rights worldwide.

Exchange among the members

ISF organizes annual congresses, bringing together up to 1500 seedsmen to:

- Exchange information on recent developments in seed trade and plant breeding;
- Identify mutual concerns, enable strategic thinking and discussion on these issues, and adopt common positions;
- Meet customers and suppliers to negotiate business contracts.

Communication

ISF maintains:

- Internal communication: publication of congress reports, a quarterly newsletter, seed trade statistics, etc. for the members;
- External communication: publication of leaflets on the contribution of the seed and plant breeding industries to sustainable agriculture;
- Internet site: ISF has a regularly updated website.

Trade Rules

ISF has issued:

- Trade rules that clarify and standardize the contractual relations between buyers and sellers at the international level;

- Procedure Rules for Dispute Settlement for the Trade in Seeds for Sowing Purposes and for Management of Intellectual Property.

Membership
FIS membership is of two kinds:
Ordinary Members are national associations representing seed trade or plant breeders in respective countries
Associate Members are individual seed enterprises or plant breeding institutions
Affiliate Members are provider companies to the seed industry

Crop Related Sections:
ISF is constituted of six sections to handle problems related to the seeds of specific crops. These are: (i) Cereals and Pulses, (ii) Forage and Turf Crops, (iii) Industrial Crops, (iv) Maize and Sorghum, (v) Sugar and Fodder Beets, and (vi) Vegetables and Ornamentals.

Thematic Committees
The Thematic Committees include: (i) Breeders, (ii) Intellectual Property, (iii) Phytosanitary Issues, (iv) Risk Management & Regulatory Matters, (v) Rules & Arbitration, (vi) Sustainable Agriculture and (vi) Communication & Promotion

Technical Groups
There are two main technical groups: (i) Tree and Shrub Seed and (ii) Seed Treatment & Environment.

For more information you may contact: ISF Secretariat, Ch. du Reposoir 7, 1260 Nyon, Switzerland; Tel: ++41-22-365 44 20; Fax: ++41-22-365 44 21; E-mail: isf@worldseed.org; Website: http://www.worldseed.org. *Information supplied by Radha Ranganathan, ISF, E-mail: r.ranganathan @worldseed.org*

CONTRIBUTIONS from SEED PROGRAMS and PROJECTS

In this section we invite national seed programs, projects, universities, regional or international organisations to provide news about their seed related activities.

Rebuilding the Afghanistan Agriculture

Wrap UP Meeting on Needs Assessment
ICARDA convened a Wrap-up Meeting on 18-20 November 2002 in Aleppo, Syria on Need Assessments for the agriculture sector which have been carried out under the umbrella of the *Future Harvest Consortium to Rebuild Agriculture in Afghanistan*. About 30 participants representing a wide range of different organizations, including international agricultural research centers, development agencies, NGOs, universities, private sector and donors, together with Afghan agricultural experts, attended the meeting. The meeting discussed the results of the Need Assessments on Seeds and Crop Improvement and Soils and Water.

The meeting identified research and development priorities for the short, medium and long-term. Draft concept notes (project proposals) were developed based on the need assessments.

Domestic Seed Production and Supply
For 2002 autumn planting over 5000 tonnes of wheat seed produced on contract with farmers was purchased, cleaned, treated and distributed throughout the country. The seed was distributed through a network of NGOs in collaboration with the Ministry of Agriculture and Livestock. Some of the harvest can be used as source seed for the next cycle of seed multiplication and distribution within the country to replenish the seed stocks.

Delivery of Breeding Materials and Source Seed
In August 2002 ICARDA delivered about 53 tonnes of seed of over 70 released varieties and/or promising lines of wheat, barley, lentil, chickpea and vetch, some of which are of Afghanistan origin and with better adaptation to the agroecological conditions of the country. The released varieties will be used for immediate seed multiplication and distribution to farmers whereas the promising lines will be used for wider scale testing and evaluation throughout the country.

Delivery of Equipment and Cleaners
The equipment ordered for central and satellite seed testing laboratories including three for seed health had arrived and is ready for installation. In addition, six small cleaning machines fabricated in Syria were dispatched to Afghanistan to be used for cleaning seed for next planting season.

Institutional Strengthening
In July 2002, ICARDA in cooperation with the MoAL had organized the first in-country course on Seed Quality Seed Production and Field Inspection where more than 75 participants drawn from relevant ministries and NGOs attended the course. For more details on FHCRAA visit the website at http://www.futureharvest.org or http://www.icarda.cgiar.org: *A.J.G. van Gastel, Seed Unit, ICARDA,*

P.O. Box 5466, Aleppo, Syria; E-mail: a.vangastel@cgiar.org

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Pakistan: Emerging Seed Sector For Investment

Introduction

Agriculture is a vital sector of the economy contributing 25% to GDP and employing 50% of labor force. Land resources are meager and holding sizes are small. Despite the constraints surplus wheat is being produced and the agricultural sector continues to have a major share in total export of industrial products. Cotton and rice are the main export commodities and in 2001 constituted 61 and 6.3% of export earnings, respectively. Agriculture is the main supplier of raw materials for agro-based industries producing semi-manufactured and finished goods leading to tremendous transformation in the sector and providing job opportunities for millions of people.

Privatization and Liberalization

The Government has adopted a vigorous liberalization policy and encouraged private sector investment in agriculture. It has allowed import and export of all agricultural commodities by the private sector and given special incentives for the private sector to produce and supply inputs. Leasing of agricultural land initially for 30 years with further extension to 20 years to multinationals is now possible under the corporate agricultural farming guidelines.

National Seed Sector and Policy

In 1976, the seed industry project was established by the public sector. The national seed project was launched with an investment of US$ 60 million through the assistance of the World Bank and FAO. The national seed policy is aimed at ensuring unrestricted access of all farmers to high quality seed at the right time and reasonable price and the development of competitive market practices for fair return on investment by the private sector. At present, seed of various crops is produced, processed and distributed both by public and private sectors. The Federal Seed Certification and Registration Department provides seed quality control and certification services.

Crop Variety Development and Scope for Investment

Crop variety development remains within the domain of public research institutes. The registration of varieties following DUS test is the responsibility of FSCRD. The new variety is approved by the National Seed Council and is notified by the Ministry of Food, Agriculture and Livestock. About 364 crop varieties have been registered and computerized in variety data bank of FSCRD (Table 1).

Plant breeding is a long process. Crop variety development needs huge investment and it is not easy to calculate the exact cost of each variety/hybrid. In Pakistan, an estimated expenditure for the development of crop varieties is given in Table 1. In the public sector, the expenditure on variety development is borne by the Government, whereas this is not the case with the private sector. The private sector undertakes the development of varieties provided that they are assured of adequate return on their investments. Therefore, legal variety protection is required to attract private sector investment in plant breeding. This demands the protection of their varieties against unauthorized commercial exploitation. Draft legislation for plant breeders' rights was prepared by FSCRD and is actively pursued for enactment by the Ministry of Agriculture, Food and Livestock. There are huge investment opportunities in crops such as maize, millet, vegetable crops, fodder and forages (Table 1).

Table 1. Number of crop varieties registered and released from 1947 to 2002 in Pakistan

Crop	Number of varieties			Estimated cost/variety (Rs m)
	Public	Private	Total	
Wheat	78	-	78	2.7
Rice	29	-	29	-
Barley and Oats	11	-	11	-
Pulses	41	-	41	-
Oilseeds	38	5	43	-
Maize[1] & millet	22	2	24	2.8
Potato	11	-	11	-
Vegetable	32	-	32	-
Fodder and forage	11	1	12	2.3
Cotton	61		61	6.8
Sugarcane	22	-	22	-
Total	356	8	364	-

NB: [1]Hybrid variety will cost Rs 7.5 million ($1=60 Rs)

Seed Production and Marketing

Seed production and marketing is handled both by public and private sectors. The private sector was allowed to enter seed business since 1979. In 1994, the Government declared seed business at par with the other industries. To date 376 public

and private seed companies are operating in the country (Table 2).

Seed Quality Control and Certification

The FSCRD is lead institution in seed related activities in collaboration with public and private sectors. FSCRD performs the following functions under the Seed Act, 1976 and Seed (Truth-in-Labeling) Rules, 1991:(a) registration of new crop varieties; (b) seed quality control and certification; (c) enforcement of seed act and regulations; and (d) providing training and dissemination of information on seed science and technology. Although the Department has limited resources and manpower it has managed to create awareness about seed among various stakeholders. FSCRD has 82 graduates (7PhD, 74 MSc and 1 BSc) and 225 technical and support staff.

Table 2. Number of public and private seed companies in Pakistan, 2000/01

Province/ Territory	Public sector	Private sector		Total
		National	Multinational	
Punjab	1	328	4	333
Sindh	1	27	1	29
NWFP	1	5	-	6
Balochistan	1	3	-	4
Islamabad	-	3	-	3
Gilgit	-	1	-	1
Total	4	367	5	376

Investment in Seed Processing

In 1976, four seed processing plants were installed with an annual capacity of 103,000 tonnes for crops like wheat, rice, maize and cotton. In 1979, the private sector was encouraged to invest in seed processing plants to increase the capacity. The processing facility has now increased from 12.2% to cover 35.4% of the estimated seed requirement by installing 143 seed processing plants with a total investment cost of Rs 818.7 million (Table 3). The seed storage capacity can meet 18.2% of the estimated potential seed requirement.

Investment Potential in Seed Sector

With the induction of private sector seed availability of major crops has improved (8 to 17.3%) but it is still below the desired level for many crops. There is great potential for investment in vegetables, oilseeds, fodder and forages and pulse crops (Table 4).

In Pakistan, the value of seed available from formal sector is about US$561.1 million. The seed required to fill the gap is estimated at US$437.9 million, a huge potential for investment. Although, seed storage capacity has increased to 18%, an additional facility for 250,000 tonnes requires an investment of US$ 13.2 million.

Table 3. Seed processing and storage capacity (1000 tonnes), 2001

Sector	Seed processing			Seed storage
	No. of plants	Cost (Rs m)	Capacity (t)	Capacity (t.)
Public sector	36	178.9	216.2	50.6
National	103	229.8	239.5	178.8
Multinational	4	410.0	19.4	14.3
Total	143	818.7	475.1	243.7

Table 4. Estimated national seed requirement and potential seed market (1000 tonnes) in 2000/01

Crop	National seed required	Seed available				Gap (%)
		Local	Import	Total	%	
Wheat	846.2	161.4	-	161.4	19.1	80.9
Cotton	59.3	32.0	-	32.0	54.0	46.0
Gram	38.9	0.23	-	0.2	0.5	99.4
Paddy	50.3	3.82	-	3.8	7.6	92.4
Lentil	1.1	0.001	-	0.001	0.1	99.9
Mung	4.4	0.3	-	0.3	6.9	93.1
Potato	221	0.4	0.83	1.2	0.5	99.5
Maize	26.8	2.1	3.143	5.2	19.5	80.5
Canola	0.7	0.1	0.04	0.1	20.1	79.9
Sunflower	1.3	0.1	0.36	0.5	36.4	63.6
Soybean	0.8	0.1	-	0.1	12.9	87.0
Fodders	14.5	0.04	10.98	11.0	76.1	23.9
Vegetable	5.1	0.2	3.37	3.6	70.34	29.7
Total	1270.4	200.8	18.7	219.4	17.3	82.7

Human Resources in Agriculture and Seed Sector

The national seed industry has generated new employment opportunities where over 24,500 professionals (including technical and support staff) are working both in public and private sectors (Table 3). It is expected that the seed industry will become one of the leading employers in the country.

About 1562 scientists are working in research and 2336 in education in the agricultural sector excluding veterinary sciences. From this total 665 are working directly or indirectly in seed related issues. In Pakistan, at the end of 2000, staff from agricultural research institutes (97), colleges/universities of agricultural sciences (129) and the Federal Seed Certification and Registration Department (100) altogether contributed about 326 scientific publications.

Table 5. Manpower in national seed sector, 2001

Institution/ Sector	Staff number and qualification				
	Professional	Technical	Support	Dealers	Total
Public sector	76	33	707	2003	2819
Multinationals	177	90	165	702	1134
Private sector	426	305	1216	7902	9849
FSCRD	82	38	187		302
Total	761	466	2275	10607	14109

NB: Normally two employees work with each seed dealer shop

Seed Association/Societies

The FSCRD played a proactive role in providing a forum for interaction among public and private seed companies. The emerging seed market created awareness and the private sector has established its associations to play more active role in partnership with the public sector. There are six seed trade associations representing multinational seed companies, national private seed companies, seed merchants and traders and one professional seed society. Such organizations will enhance the investment culture within the country and with the foreign companies. *A. Rauf Bhutta and A. Hussain, FSCRD, G-9/4, Islamabad-44000; E-mail: fscd@seed.isb.sdnpk org.*

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First Iran/ICARDA National Seed Workshop

The First Iran/ICARDA National Seed Workshop was held on 28-31 October 2002 in Karaj, Iran under the umbrella of the WANA Seed Network. The workshop was organized by the Seed Unit of ICARADA in collaboration with Iran/ICARDA Agricultural Research Project and the Seed and Plant Improvement Institute of the Ministry of Jahad-e-Agriculture.

In Iran, organized agricultural research and crop improvement started in the 1930s with the establishment of Sugar Beet Research Institute (1933) and the Iran Tobacco Center (1937). In 1959, the Seed and Plant Improvement Institute was established to conduct research on major food crops such as cereals, rice, oilseed, cotton, horticultural, and forage crops.

The origin of formal seed sector is associated with the establishment of agricultural research centers and their crop improvement programs. At present, commodity-oriented agricultural research institutions carry out variety development and responsible for variety maintenance and seed multiplication of breeder, pre-basic and basic seed. The Agriculture Support Company, a public sector company, produces certified seed through contract with farmers. The Seed Control and Certification Department of the Seed and Plant Improvement Institute monitors the quality of seed through a network of regional seed testing stations located within provincial agricultural research centers.

The provision of quality seed of a wide range of adaptable crop varieties to farmers for increasing agricultural production and achieving food security is given high priority. However, the performance of the seed sector did not reach the desired level due to constraints in policy, regulatory, institutional and technical issues. The seed industry is dominated by the public sector and the participation of private sector is limited. At present the Iran seed industry is at crossroads. The Government agricultural policy is aimed at establishing sustainable seed supply system through the participation of public, private sector, farmer groups and non-governmental organizations.

The objective of the workshop was to bring together national stakeholders of the Iranian seed industry and a number of international experts to discuss options for the improvement and development of the sector. The main objectives of the workshop were to: (i) review the status of national seed sector with particular reference to policy, regulatory and institutional issues; (ii) discuss the role of public and private sector in seed sector development; (iii) discuss recent trends in regional and global seed sector development; (iv) discuss policy and regulatory issues for development of the seed sector; (v) present key recommendation for possible action by policy makers.

The participants of the seed workshop were drawn from relevant institutions dealing with variety development, seed production and seed quality control as well as policy and decision makers from the Ministry of Jahad-e-Agriculture. Apart from national participants, a number of international organizations (ISTA, ICARDA, OECD, UPOV, CIHEAM), senior seed program managers from selected countries of WANA region (Cyprus, Egypt, Lebanon, Morocco, Syria, Turkey) were participated

in the meeting. A total of 41 participants attended the national seed workshop.

At the end of the workshop key recommendation were made to assist policy makers in improving the national seed industry in Iran. The recommendations covered short-term and long-term issues and presented to the Director General of the SPII, one of leading institutions responsible for seed production and supply in Iran and co-sponsors of the workshop. The full recommendation of the workshop can be obtained from Dr Tony van Gastel, Head of Seed Unit at ICARDA. *Samad Mobasser, Seed Control and Certification Department, SPII, Karaj; E-mail: Sa_mobasser@yahoo.com*

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Triticale Varieties Released in Ethiopia

Triticale is a high potential grain crop and found to be suitable to the Ethiopian Highlands. In 2002, two triticale varieties were released for cultivation. In north western Ethiopia the crop has shown an outstanding yield performance with average yields of over 8 tonnes/ha under research condition and 2-2.5 tonnes and up to 4.5 tonnes in on farm trials with farmers, under unfertilised and fertilized conditions, respectively.

Triticale combines the positive aspects of both parents, the deep rooting ability and drought tolerance of rye combined with high yielding ability of wheat. The crop showed high tolerance to disease, drought, waterlogging, acidic soils, frost and a wide range of adaptability, growing from sea level to an altitude of over 3000m.

The crop can be used for making the Ethiopian traditional food (*injera)*, bread, pasta, pastry, etc. It has a balanced nutritional value with a high amount of metabolizable energy, lower fibre, higher content of digestible aminoacids compared to some cereal crops. *Source: Addis Tribune, October 2002*

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GOSM Erected New Seed Processing Plant

In August 2002, the General Organization for Seed Multiplication inagurated a modern high capacity seed processing plant located near its headquarter in Aleppo province. The seed processing plant has a capacity of 15 tonnes/hour and expected to be operated for a period of 180 days/year (15,000 to 20,000 tonnes per year). The full cost of the plant is estimated at US $4 million and supported by the grant from the Japanese government through JICA. The plant will serve seed production in Aleppo and Idelib provinces. Moreover, Japan will alos assist the Syrian national seed program by providing funds to build potato sorting and grading facilty and seed storage facility of 3000 tonnes.

During the second pahse Japan would assist GOSM to develop its tissue culture laboratory to enahnce local cpacity in production of elite potato seed in the country. The GOSM is a public organization responsible for seed production and distribution of strategic crops such as cereals, legumes, potato, cotton and suga beet. *Abdul Mohsen Said Omar, General Organization for Seed Multiplication, P.O. Box 5857, Aleppo, Syria; E-mail: gosm@mail.sy*

HOW TO

In this section we provide technical/practical information that seed sector staff may find useful. It is simple to follow instructions for technical staff in seed production and quality control.

How to No 26: Quality Policy for Seed Testing Laboratory

In our last issue of Seed Info, the four major components of Quality Manual have been briefly explained. In this issue we give more details on the quality policy of a seed testing laboratory. The quality policy is a clearly and briefly written statement which explains:

- The purposes for which a seed testing station have been established
- Type of the station (public or private)
- Type of tests for which the laboratory is equipped and the staff trained to perform
- The crops for which the laboratory is equipped and the staff trained to analyze
- The standard methods it uses to deliver services that ensure client satisfaction
- The standards of the services

An example of quality policy could be as follows:
The (name) Seed Testing Station is a (public or private) seed testing laboratory that is specialized on analyzing seeds of (field crops, horticulture crops, grasses, forest trees, shrubs, medicinal plants, etc.). The laboratory is well equipped with the necessary facilities and trained staff to deliver

top quality seed testing services on the above crop species. The laboratory uses standardized testing methodologies that have been developed by (names of specialized international or regional seed testing organizations). The legal aspects in the work of the laboratory are based on the relevant national and international rules and regulations. The laboratory provides reliable test results at reasonable cost and without delay on (physical purity, viability, germination, vigor, etc.) and is accredited to issue internationally recognized certificates that are needed for seed trade. A quality policy is a case specific; and it varies in content from laboratory to laboratory. *Abdoul Aziz Niane, Seed Unit, ICARDA, P.O. Box 5466, Aleppo, Syria; E-mail: a.niane@cgiar.org*

RESEARCH NOTES

Short communication of practical oriented research/information in agriculture or seed technology are presented in this section

Seed Health Certification in Pakistan

Introduction

In Pakistan, total estimated losses due to plant diseases are about Rs. 3,600 million each year. Loose smut infection in wheat seed lots reduced from 6.9% in 1984/85 to 0.2-0.5% through seed health certification system in 1992. Losses due to wheat bunt and loose smut is reported to be Rs.14.4 and 26 million, respectively in 1971 whereas yield losses due to chickpea blight was US$90 million in 1978 and 1979.

It is reported that 5% tuber infections by potato leaf roll virus reduces potato yield by 13%. Proper seed production by the private sector coupled with free crop inspection and tuber testing services reduced infection of potato seed from 22.2% to 4.5% over ten year period from 1990/91 to 1998/99. In Pakistan, seed health testing was initiated in the 1980s as part of seed certification program and made significant progress.

Production of Healthy Seed

The list of important seed-borne diseases is given in Table 6. To produce high quality seed, the following steps are important in the management of seed-borne diseases.

Location of seed production: The southern parts of the country have comparatively low level of seed-borne diseases. Therefore, R.Y. Khan and Sukkur are the best area to produce healthy seed of cotton and wheat. Seed infected with karnal bunt (*Tilletia indica)* should not be transported to other areas of the country.

Cropping pattern: Crop sequencing of cotton, sunflower and maize may increase the infection of *Macrophomina phaseolina*, a common fungal disease of these crops. Including wheat and rice in crop rotation will break the disease cycle.

Table 6. List of major seed-borne diseases in Pakistan

Crop & common name	Casual agent
Wheat Loose smut Karnal bunt	 *Ustilago tritici* *Tilletia indica*
Rice Brown spot Bakanae disease	 *Bipolaris oryzace* *Fusarium monliiforme*
Maize Root &stalk rot Leaf spots & blight	 *F. moniliforme* *F.graminearum* *Macrophominaphaseolina* *Bipolaris maydis*
Chickpea Ascochyta blight	 *Ascochyta rabiei*
Sunflower Charcoal rot Alternaria leaf spot	 *Macrophominaphasealina* *Alternaria alternata*
Cotton Bacterial blight	 *Xanthomonas campestric pv. malvacearum*

Selection of cultivars: New varieties are screened against a number of important seed-borne diseases. Seed producers are advised to use resistant cultivars to reduce the level of seed-borne diseases.

Field inspection of seed crops: Seed crops must be inspected to determine the level of disease infection. Isolation distance of 10m is suggested, but for loose smut of wheat an isolation distance of 150m is recommended. Annually, 350 to 450,000 acres are inspected including for seed health.

Seed health testing: All 17 seed testing laboratories of the FSCRD carry out visual inspection, purity and germination tests. The Central Seed Health Laboratory is equipped to conduct blotter test, embryo count test and ELISA. All pre-basic and basic seed and 5-10% of certified seed of all crops are tested for seed-borne pathogens.

Seed treatment: Infected seed lots are treated with suitable fungicides before sowing. Regular chemical treatment of pre-basic and basic seed has minimized seed-borne pathogens to its lowest level. Seed health standards for important seed-borne diseases have been notified and lots having high

incidence than prescribed limits, are removed from seed production.

Testing imported seed: Imported seed lots are tested for detection of seed-borne diseases. The FSCRD has established two seed testing laboratories at Karachi and Lahore port of entries. These laboratories are being equipped for regular testing of imported seed consignment against exotic pests. *A. Bhutta and A. Hussain, FSCRD, G-9/4, Islamabad-44000; E-mail: fscd@seed.isb.sdnpk*

MEETINGS and COURSES

Announcements of meetings, seminars, workshops and training courses are made. Please send us national, regional or international announcements for workshops, seminars and training courses organized in your country for inclusion in the next issue.

Conferences

2003 Congress of the African Seed Trade Association 26-28 March 2003, Nairobi, Kenya. Details can be found on the AFSTA website: http://www.afsta.org. Please contact: Justin J. Rakotoarisaona, P.O Box 2428–00202, Nairobi, Kenya; Tel: ++254-2-272 7853 or 272 7860; Fax: ++254-2-2727861; E-mail: afsta@insightkenya.com; Website: http://www.afsta.org

ISTA Flower Seed Testing Workshop, 12-16 May 2003, Budapest, Hungary. ISTA Flower Seed Committee organizes a workshop on flower seed testing for the first time during the last 10 years. The workshop provides an opportunity to discuss the methodology and get acquainted with each other. An ISTA Handbook on Flower Seed Testing is in preparation and the workshop will be a good opportunity to discuss the completed work and find the way forward. For more information contact: Zita Ripka, Chairperson, ISTA Flower Seed Committee, National Institute for Agricultural Quality Control, # Keleti Károly Uu. 24, 1024 Budapest, Hungary; Tel: ++36 1 2122957; Fax: ++36 1 2124194; Email: RipkaZ@ommi.hu

ISTA Seed Vigor Testing Workshop, 14-16 May 2003, Parndorf, Austria. Seed Vigor Testing was accepted into the ISTA Rules at the ISTA Congress in Angers in June 2001. The ISTA Vigor Test Committee is organizing a series of workshops to inform ISTA members regarding the concept of seed vigor and provide training on seed vigor testing. The workshop includes lectures and practical work in vigor testing (Accelerated Ageing, Conductivity and Controlled Deterioration). For more information contact Dr Alison A Powell, Department of Agriculture and Forestry, University of Aberdeen, Aberdeen, AB24 5UA, UK. Email: a.a.powell@abdn.ac.uk.

World Seed Congress 2003, Bangalore India, 7-11 June 2003. For more information contact: Dr. Manmohan Attavar, Conference Secretariat, Indo-American Hybrid Seeds (India) Pvt. Ltd., 17th Cross, 2nd 'A' Main, K.R. Road, Banashankri 2nd Stage, Bangalore-560070, India. Tel: ++91-80-6760111; Fax: ++91-80-6761479; E-mail: isf2003.ho@indamseeds.com; Website: http://www.worldseed2003.com

27th ISTA Congress, 13-25 May 2004, Budapest, Hungary. The International Seed Testing Association has made a preliminary announcement of the venue for the 27th ISTA Congress to be held in Budapest, Hungary from 13–25 May 2004. The program for the Congress includes Preliminary Meeting of Technical Committees and Executive Committee (13-15/5), Pre-congress Tours (16/5), Seed Symposium (17-19/5), Ordinary Meeting (20-21/5), Establishment of New Technical Committees (22/5) and Post-congress Tours to places of interest (23-25/5). For more information you may contact ISTA Secretariat or visit the website at: http://www.seedtest.org/27congress/27istac.cfm

LITERATURE

Literature, books and journal articles of interest to readers are presented here. Please send list of seed publications on policy, regulation and technology to the Editor for inclusion in Seed Info.

N.P. Louwaars. (ed.) 2002. Seed Policy, Legislation and Law: Widening a Narrow Focus. (Co-published simultaneously in Journal of New Seeds Vol 4. No.1/2, 2002.) Seed policies in most countries currently concentrate on stimulating private enterprises. More recently developed concepts promote an integration of formal and informal seed systems to increase the availability of seeds to the majority of farmers in developing countries. Moreover, new technological developments such as biotechnology and international agreements on intellectual property rights and genetic resources are far reaching and bringing a changing landscapes in

seed policy matters. Policies, therefore, need to develop a much wider scope than before. This volume brings together authors (seed system

specialists, agronomists, biotechnologists, economists and anthropologists) with widely varying backgrounds from different continents. The articles presented covers wide ranging issues including policy, regulatory, technical and institutional issues. It is hoped that the book will contribute to the formulation of effective seed policies and the improvement of seed regulatory frameworks to enable farmers have better access and use quality seeds. The Haworth Press Inc., 10 Alice Street, Binghamton, NY13904-9981, USA; Website: http://www.haworthpress.com.

W. Buhler, S. Morse, E. Arthur, S. Bolton and J. Mann. 2002. Science, Agriculture and Research: A Compromised Participation? 'Science, Agriculture and Research' is essentially a collection of mini-histories covering the early and recent development of agricultural research in the UK, the changing nature of agricultural research in a developing country, Nigeria, and the origins and elaboration of participatory appraisal methods in rural development since the 1970s. As the title suggests, while participatory methods have been widely adopted as a tool for writing development plans, the authors believe the participatory movement may be losing its momentum. There are growing doubts about the approach: simply helping people to identify their livelihood constraints, for example, does not necessarily give them greater opportunities for overcoming them. Poor people may come to resent spending time on participatory activities which do nothing to change the inequalities of power that keep them in poverty. And what influence do their views have on donors and aid agencies? They will, it is argued, be swept into the maelstrom of different influences and agendas that guide donors and their funding decisions, and their priorities will inevitably be compromised. Published by Earthscan, 120 Pentonville Road, London, N1 9JN, UK; Email: earthinfo@earthscan.co.uk; Website: http://www.earthscan.co.uk; 174pp; (Pb) £17.95.

Useful Internet Sites/Electronic Publications

Reports on Intellectual Property Rights

The report of Commission on Intellectual Property Rights (UK) entitled 'Integrating Intellectual Property Rights and Development Policy'—the full text is accessible at www.iprcommission.org/text/documents/final_report.htm while the executive summary is at www.iprcommission.org/papers/text/final_report/execsumwebfinal.htm.

Directory of Development Organizations

The latest edition of the Directory Development Organizations is now available. It is a comprehensive reference point for researchers, donors and policy makers interested in private sector development and poverty alleviation. The directory lists 25,000 organizations in seven geographical areas including Africa with English, French and Spanish versions. Further information is available at http://www.devdir.org (free).

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